New as of: 05.2022

Dentsply Sirona

CEREC Primemill

Operating Instructions (not valid for USA)

English

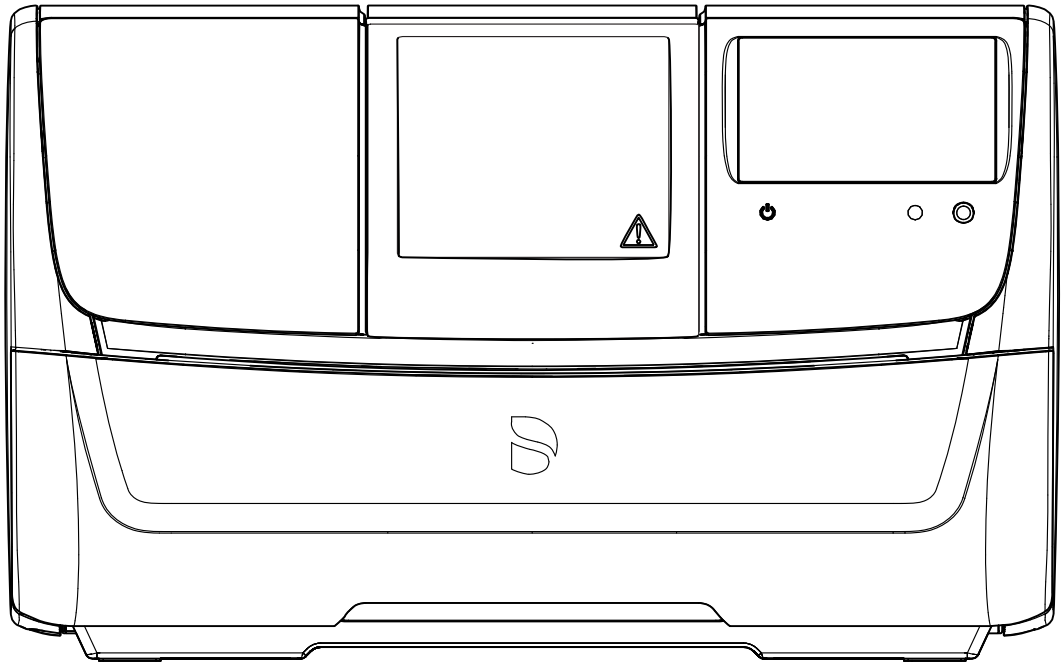


Table of contents

1 Dear Customer,

Thank you for your purchase of this CEREC Primemill® unit from Dentsply Sirona.

This device enables you to produce dental restorations, e.g. from ceramic material with a natural appearance (**CE**ramic **REC**onstruction).

Improper use and handling can create hazards and cause damage. Please therefore read and follow these operating instructions carefully. Always keep them within easy reach.

Also pay attention to the safety instructions to prevent personal injury and material damage.

Your
CEREC Primemill team,

1.1 Contact data

Customer Service Center

In the event of technical queries, please use our online contact form at the following address:
http://srvcontact.sirona.com

Manufacturer's address

Sirona Dental Systems GmbH
Fabrikstrasse 31
64625 Bensheim
Germany

Tel.: +49 (0) 6251/16-0
Fax: +49 (0) 6251/16-2591
email: contact@dentsplysirona.com
www.dentsplysirona.com

2 General data

Please read this document completely and follow the instructions exactly. You should always keep it within reach.

Original language of the present document: German.

2.1 Identification of 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 minor or moderate 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 on making work easier.

2.2 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	Requests 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.

2.3 Note PC / Acquisition Unit

When a PC is described in this document, this refers to a PC for the acquisition unit (if present). The PC is represented symbolically.

3 General description

3.1 Certification

CE mark

Sirona Dental Systems GmbH hereby declares that the CEREC Primemill radio system type complies with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at Dentsply Sirona Internet homepage.

CE

This product bears the CE mark in accordance with the provisions of Council Directive 2006/42/EC (machinery directive). As such, the following standards apply: DIN EN ISO 12100:2011-03, DIN EN 61010-1:2020-03 and DIN EN 61326-1:2013-07.

⚠ CAUTION

CE mark for connected products

Further products which are connected to this unit must also bear the CE mark. These products must be tested according to the applicable standards.

Examples of CE mark for connected products:

- EN 60601-1:2006 based on IEC 60601-1:2005
- EN 60950-1:2006 based on IEC 60950-1:2005
- UL 60950 second edition 2010

RoHS compliance

This symbol indicates that this product does not contain any toxic or hazardous substances or components above the maximum concentration value set out in the Chinese standard SJ / T 11364-2014, and can be recycled following disposal and should not be carelessly discarded.

IC declaration (For Canada only)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ANATEL warning (only for Brazil)

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

3.2 Intended use

This device is used for computed-aided production of dental restorations, abutments, parts of abutments and drilling templates for implant placement.

This unit must not be used for any other purpose. If the unit is used for any purpose other than the one mentioned above, it may be damaged.

Intended use also includes compliance with these Operating Instructions and the relevant maintenance instructions.

⚠ CAUTION

Follow the instructions

If the instructions for operating the unit described in this document are not observed, the intended protection of the user may be impaired.

For the USA only

USA: Rx only

CAUTION: According to US Federal Law, this product may be sold only to or by instruction of physicians, dentists, or licensed professionals.

Dry processing

⚠ CAUTION

In the event of dry processing without a suction device, dust can be created from the materials being processed. Breathing in this dust can have associated health risks. As such, observe the information and requirements of the suction device.

Dry processing is only permitted in conjunction with CEREC Suction devIce 230 V or 120 V.

- CEREC Suction Device 230 V/120 V, ordered together with the unit: REF 6569730.
- CEREC Suction Device 230 V/120 V, if ordered separately: REF 6580786.

NOTE

Before using dry processing, verify the functioning, correct connection and the tightness of the connections. All available suction openings must be free.

NOTE

Before dry processing check that the CEREC suction device contains a functioning HEPA fine-dust filter.

3.3 Legend

This symbol can be found on the rating plate on the unit.

Meaning: See warning notice in section "Replacing the main fuses [→ 71]".

This symbol can be found on the door of the unit.

Meaning: See warning in section "Opening the processing chamber door during the machining process [→ 14]".

This symbol can be found on the rating plate on the unit.

Meaning: ESD warning sign,
see section "Electrostatic charge [→ 15]".

This symbol can be found on the drawer of the unit.

Meaning: Meaning: No heavy loads.

See notice in section "Installation site [→ 19]".

This symbol can be found on the rating plate on the unit.

Meaning: The accompanying documents are available on the Dentsply Sirona homepage.

Product disposal symbol (see "Disposal [→ 76]").

Follow the operating instructions.

To ensure safe operation of the unit, the user must follow the operating instructions.

Symbols on the packaging

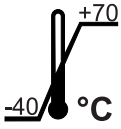
Take note of the following symbols on the packaging:

Top

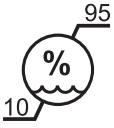
Protect from moisture

Fragile; handle with care

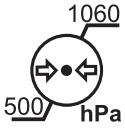
Stack limit



Temperature during storage and transport



Relative humidity during storage and transport



Air pressure during storage and transport

4 Safety

4.1 Basic safety information

4.1.1 Prerequisites

NOTE

Important information on building installation

In order to prevent the risk of an electric shock, this unit must only be connected to a supply mains with a ground wire.

The building installation must be performed by a qualified expert in compliance with the national regulations.

NOTE

Restrictions regarding installation site

The system is not intended for operation in areas subject to explosion hazards.

NOTE

Do not damage the unit!

The unit can be damaged if opened improperly.

It is expressly prohibited to open the unit with tools!

4.1.2 Maintenance and repair

As manufacturers of dental instruments and laboratory equipment, we can assume responsibility for the safety properties of the unit only if the following points are observed:

- The maintenance and repair of this unit may be performed only by Dentsply Sirona or by agencies authorized by Dentsply Sirona.
- Components which have failed and influence the safety of the unit must be replaced with original (OEM) spare parts.
- Only original cables may be used, so that EMC requirements are met.

Please request a certificate whenever you have such work performed. It should include:

- The type and scope of work.
- Any changes made in the rated parameters or working range.
- Date, name of company and signature.

4.1.3 Modifications to the product

Modifications to this product which may affect the safety of the operator, patients or third parties are prohibited by law!

4.1.4 Accessories and consumables

In order to ensure reliable, high-quality results, product safety, and durability, our range of CEREC Primemill production units must only be operated with original accessories and consumables from Dentsply Sirona or approved accessories and consumables from third-party suppliers.

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 nonapproved accessories and consumables.

Approved accessories and consumables include grinding/milling tools, blocks and coolants. The current selection of approved blocks and corresponding grinding/milling tools can be found in the latest software and on the touch interface of the CEREC Primemill.

You will find additional information in the CEREC Primemill tool tables. These are updated continuously with important software updates.

4.2 Opening the processing chamber door during the machining process

⚠ CAUTION

Coasting tools

When the processing chamber door is opened during the machining process, it may take a short time (approximately 2-3 seconds) for the tools to coast to a stop.

- ➢ Be careful not to touch the tools with your hand or any other object during this time.
- ➢ Avoid opening the processing chamber door while the production unit is in operation.
- ➢ Before you open the processing chamber door, end any actions that are running by pressing the *"Stop"* button on the touch interface of the production unit or in the application software.

4.3 Electrostatic charge

4.3.1 ESD warning labels

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.

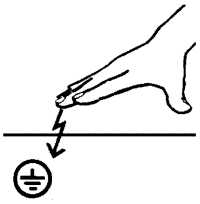
4.3.2 ESD protective measures

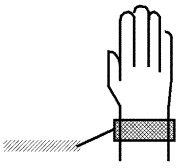
ESD

ESD stands for **E**lectro**S**tatic **D**ischarge.

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.

Training

We therefore recommend that all persons working with this system be instructed on the significance of this warning label. Furthermore, they also should receive training in the physics of electrostatic discharges which can occur in the practice and the destruction of electronic components which may result if such components are touched by electrostatically charged USERS.

The content of this training is explained in the Chapter "About the physics of electrostatic charges" [→ 15].

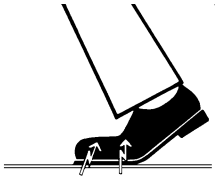
4.3.3 About the physics of electrostatic charges

What is an electrostatic charge?

An electrostatic charge is a voltage field on and in an object (e.g. a human body) which is protected against conductance to ground potential by a nonconductive layer (e.g. a shoe sole).

Formation of an electrostatic charge

Electrostatic charges generally build up whenever two bodies are rubbed against each other, e.g. when walking (shoe soles against the floor) or driving a vehicle (tires against the street pavement).



Amount of charge

The amount of charge depends on several factors:

Thus the charge is higher in an environment with low air humidity than in one with high air humidity; it is also higher with synthetic materials than with natural materials (clothing, floor coverings).

Electrostatic discharge must be preceded by electrostatic charging.

The following rule of thumb can be applied to assess the transient voltages resulting from an electrostatic discharge.

An electrostatic discharge is:

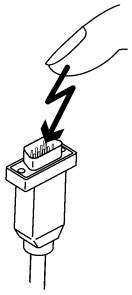
- perceptible at 3,000 V or higher
- audible at 5,000 V or higher (cracking, crackling)
- visible at 10,000 V or higher (arc-over)

The transient currents resulting from these discharges have a magnitude of 10 amperes. They are not hazardous for humans because they last for only several nanoseconds.

Background

Integrated circuits (logical circuits and microprocessors) are used to implement a wide variety of functions in dental/X-ray/CAD/CAM systems.

The circuits must be miniaturized to a very high degree in order to include as many functions as possible on these chips. This leads to structure thicknesses as low as a few ten thousandths of a millimeter.



It is obvious that integrated circuits which are connected to plugs leading outside of the unit via cables are sensitive to electrostatic discharge.

Even voltages which are imperceptible to the user can cause breakdown of the structures, thus leading to a discharge current which melts the chip in the affected areas. Damage to individual integrated circuits may cause malfunction or failure of the system.

To prevent this from happening, the ESD warning label next to the plug warns of this hazard. ESD stands for **E**lectro**S**tatic **D**ischarge.

Connector pins or sockets bearing ESD warning labels must not be touched or interconnected without ESD protective measures.

4.4 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.

4.5 Disturbance of data transmission

Note on wireless communication

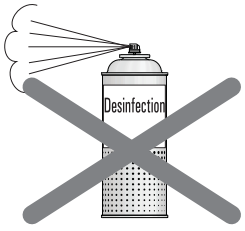
Data communication between the acquisition unit and the CEREC Primemill production unit should preferably be wireless data communication via WLAN.

As for all wireless connections (e.g. cell phones), heavy utilization of the available radio channels or shielding caused by building installations (e.g. metal-shielded X-ray enclosures) may impair the quality of the connection. This may become noticeable through a reduction in range and/or a slower data transmission rate. In extreme cases, it will be impossible to establish a wireless connection at all.

Dentsply Sirona has selected the best possible configuration for data communication via WLAN, which generally provides perfect functioning of this connection. However, in individual cases unrestricted wireless data communication may be impossible for the reasons mentioned above and/or due to local circumstances. In such cases, a cable LAN connection should be selected to ensure uninterrupted operation. If the only LAN interface on the rear of the acquisition unit is occupied by another plug, remove this wireless interface connection and instead connect the LAN cable with the CEREC Primemill production unit.

4.6 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.



Do not spray liquids such as disinfectants into the ventilation slots. This may lead to malfunctions. Use wipe disinfection only in the vicinity of the ventilation slots.

5 Installation and startup

5.1 Transport and unpacking

All products from Dentsply Sirona are carefully checked prior to shipment. Please perform an incoming inspection immediately after delivery.

1. Check the delivery note to ensure that the consignment is complete.
2. Check whether the product shows any visible signs of damage.

NOTE

Damage during transport

If the product was damaged during transport, please contact your carrying agent.

If return shipment is required, please use the original packaging for shipment.

The unit must be drained before it is ever transported if it has been in operation (see "Removing water from the unit [→ 73]").

Transport without packaging

⚠ CAUTION

Damage to the unit or risk of injury during transport without packaging

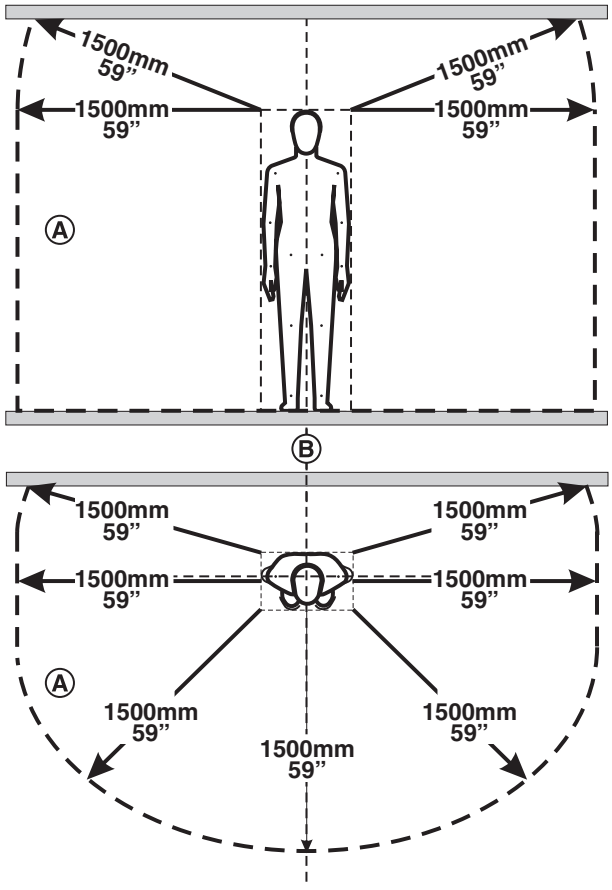
There is a danger of the unit falling down if it is grasped by its plastic housing.

➢ The unit should always be carried by two persons.
➢ Do not grasp the unit by its plastic housing.
➢ Always grasp the unit by its chassis next to its feet.

5.2 Disposal of packaging materials

The packaging must be disposed of in compliance with the relevant national regulations. Please observe the regulations applicable in your country.

5.3 Installation site



⚠ CAUTION

Install out of the reach of patients!

Do not install or operate the production unit in the vicinity of the patient (place it at least 1.5 m away from the patient).

The production unit requires a level base of approx. 729 mm x 465 mm (W x D). The height of the production unit is:

- with the processing chamber door closed: 454 mm
- with the processing chamber door, open: 675 mm

Install the production unit in such a way that access to the mains connector plug is guaranteed at all times.

Make sure that the ventilation slots underneath and at the back of the unit remain unobstructed. The distance between the back of the unit and the wall must at least be 10 cm.

Note the weight of 46 kg!

The unit must not be installed at sites with a high level of humidity or dust!

NOTE

Installation in a cabinet

If the unit is installed in a cabinet, you must provide for adequate heat exchange.

The ambient temperature surrounding the unit must be between 5 °C (41 °F) and 40 °C (104 °F).

⚠ CAUTION

Risk of injury and damage to the unit

The unit can be tilted when the drawer is extended.

➢ Install the unit so that the front does not project beyond the base.

⚠ CAUTION

Risk of injury and damage to the unit

Avoid tilting the unit. Do not lean against the pulled-out drawer and do not apply a vertical load of more than 5 kg onto the pulled-out drawer.

5.4 Commissioning

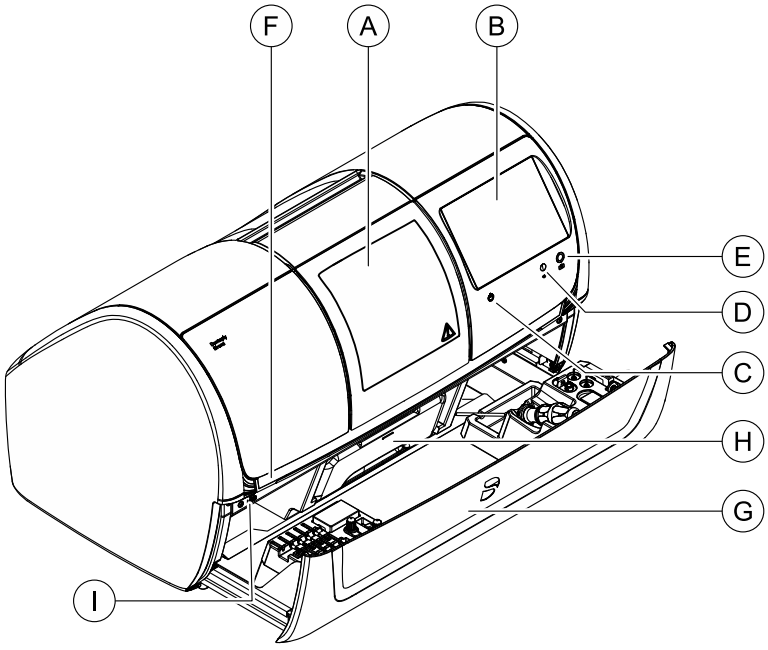
NOTE

Important information on initial startup

Observe the software installation instructions!

5.4.1 Functional elements

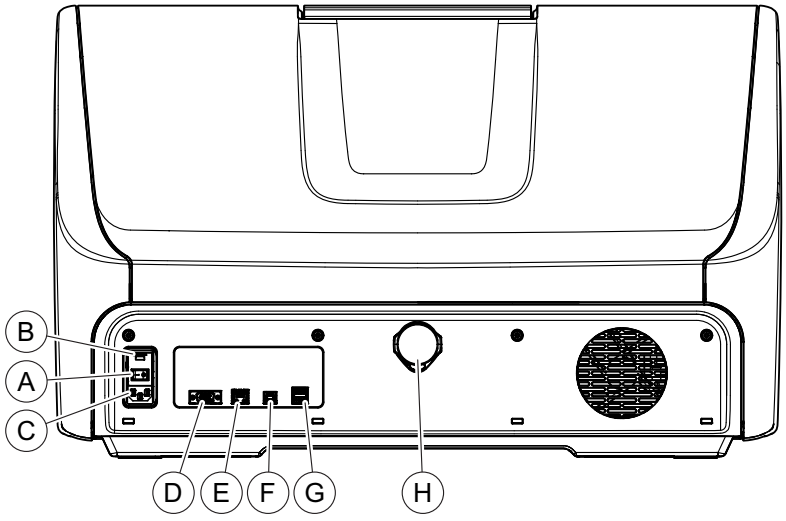
Unit overview



Production unit overview

A	Processing chamber	F	LED light strip
B	Touch interface	G	Drawer
C	ON/OFF switch	H	Water tank
D	RFID reader	I	USB interface
E	DataMatrix code scanner		

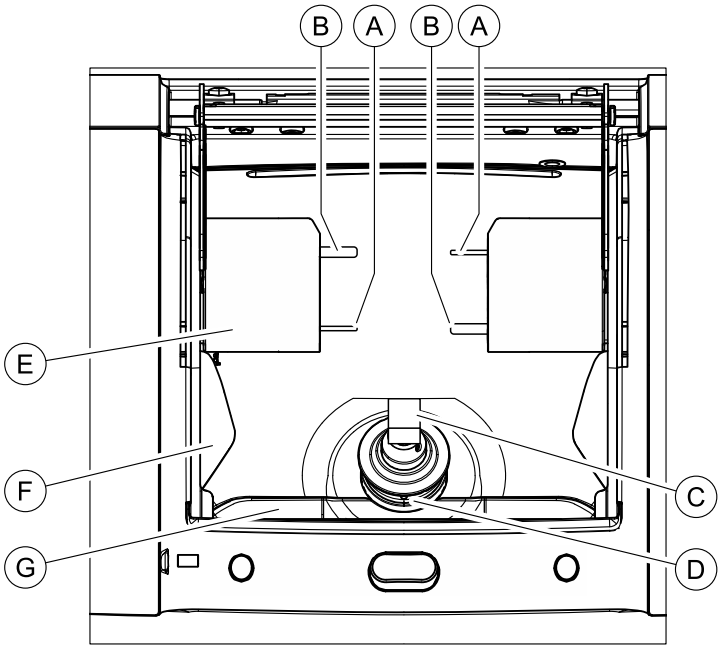
Ports on the back side



Connections

A	Main switch **I** = ON, **0** = OFF	E	LAN
B	Fuse cover	F	USB B
C	Power connection	G	USB 1 USB 2
D	Communications interface for suction	H	Connection for suction

Processing chamber



Processing chamber

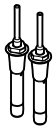
A	Tool set 1	E	Motor mount
B	Tool set 2	F	Suction connection
C	Block	G	Screen
D	Workpiece spindle		

5.4.2 Supplied tools

5.4.2.1 Tools

The following tools are available for grinding and milling. When changing tools, ensure that permitted tool combinations are used (see "Permitted tool combinations [→ 54]").

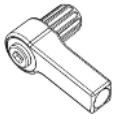
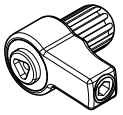
5.4.2.2 Calibration pins



The calibration pins are used when calibrating the tool sets (see "Calibrating the unit [→ 50]").

5.4.2.3 Torque wrench

Use the proper torque wrench for inserting and changing tools and calibration pins. When doing so, pay attention to the connection geometry of the torque wrench.

Tool	REF	Usage	Color	Connection geometry of the force transmission
Bur 2.5 ZrO2 CS 	6713940	Milling of zirconium oxide (wet and dry)	Yellow	Square 
Bur 2.5 PMMA CS 	6737469	Milling of PMMA (wet)	Red	
Bur 1.0 CS 	6713932	All-purpose milling (wet and dry)	Black	Triangular 
Bur 0.5 CS 	6713924	All-purpose milling (wet and dry)	Black	
Diamond 1.4 CS 	6714088	Grinding	White	
Diamond 1.2 CS 	6714070	Grinding	White	
Diamond 1.0 CS 	6714062	Extra-fine grinding[I]	White	
Diamond 0.6 CS 	6714054	Extra-fine grinding[II]	White	
Calibration pin 	6732528	Calibration	Light blue	

[I] Planned starting from CEREC SW 5.2

[II] Planned starting from CEREC SW 5.2

5.4.3 Description of the touch interface

These operating instructions describe operations in such a way as to enable you to use your PC or the touch interface to execute and confirm commands, such as *"Start"*, *"Stop"*, *"Cancel"* or *"Okay"*. Other possible commands are then available in the buttons on the touch interface.

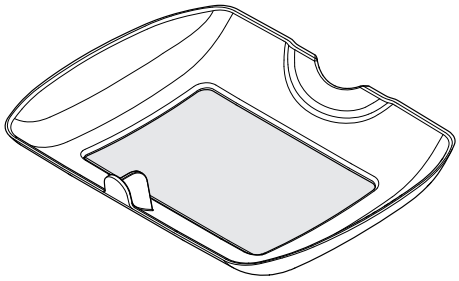
5.4.4 Illumination of the processing chamber, LED light strip, and On/Off button

The following function elements are illuminated differently depending on the machining process and sub-process:

Machining operation	Sub-process	Processing chamber	LED light strip	ON/OFF button
Unit off – Main switch on	-	Off	Off	Blue, constant
Switch the unit on – Booting process	-	Off	Off	Yellow, constant
	Self-test	Off	White, pulsating	Yellow, constant
	Referencing run	White, pulsating	White, pulsating	Yellow, constant
	Complete	White, constant	White, constant	Green, constant
	Errors	Red, constant	Red, constant	Red, constant
The unit is ready to receive processing operations	Status OK	White, constant	White, constant	Green, constant
	Warning – Operation is continued; information at the end of the operation can be ignored – e.g. water pressure or water level critical; tool at end of service life	White, constant	White, constant	Green, constant
Unit is in operation	Status OK	White, constant	**Process progress:** Blue with white background **Process completed:** Green, constant	Green, constant
	Problem – Process pauses and can be restarted; e.g. tool broken, water pressure inadequate	Red, constant	Red, constant	Green, constant
	Serious error – Process stopped; e.g. broken block	Red, constant	Red, constant	Green, constant
Processing concluded successfully	Door closed	White, constant	Green, constant	Green, constant
	Door open	White, constant	White, constant	Green, constant
	Door closed again	White, constant	White, constant	Green, constant

Machining operation	Sub-process	Processing chamber	LED light strip	ON/OFF button
Maintenance	Action required – Close door, change tool	White, constant	Yellow, constant	Green, constant
	Longer actions; e.g. calibration	White, constant	**Process progress:** Blue with white background **Process completed:** Green, constant	Green, constant
	Shorter actions; e.g. machine moves to starting position	White, constant	White, constant	Green, constant
	Action completed successfully	White, constant	Yellow, constant	Green, constant
Unit shuts down	Machine moves to starting position	White, constant	White, constant	Yellow, constant
	-	Off	Off	Blue, constant

5.4.5 Using the processing chamber screen



NOTE

Risk of blockage in the cooling circuit

If chips enter into the cooling circuit of the machine, there is a risk that the cooling circuit will become blocked.

➢ The processing chamber screen is suitable for all restoration and material types. It is absolutely essential that no chips enter into the cooling circuit.

IMPORTANT

It is essential that the screen is emptied and washed following each milled drilling template.
Check the water level in the water tank following each milled drilling template, as water is absorbed in the material waste.

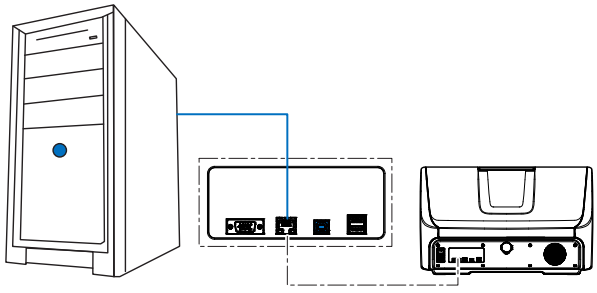
The screen enables simpler cleaning of processing chambers.

Place the screen at the bottom of the processing chamber. If needed, you can easily remove and clean the screen.

5.4.6 Installation

5.4.6.1 Connecting to the PC via LAN

An Ethernet port is located on the rear of the unit, which can be used to connect the PC to the production unit. Use a network cable to do this (LAN connection).



Using a network cable

Connect the PC to the LAN connection of the unit.

5.4.6.2 Connecting the unit to the power supply

NOTE

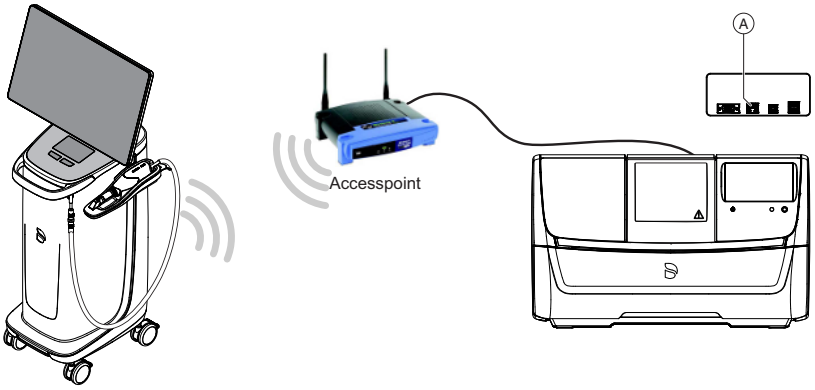
Grounded power outlet

The unit must be connected to a grounded power outlet.

➢ Connect the unit to the power supply using the supplied power cable.

5.4.6.3 Connection to PC via WLAN with access point or router (recommended)

Making the connection



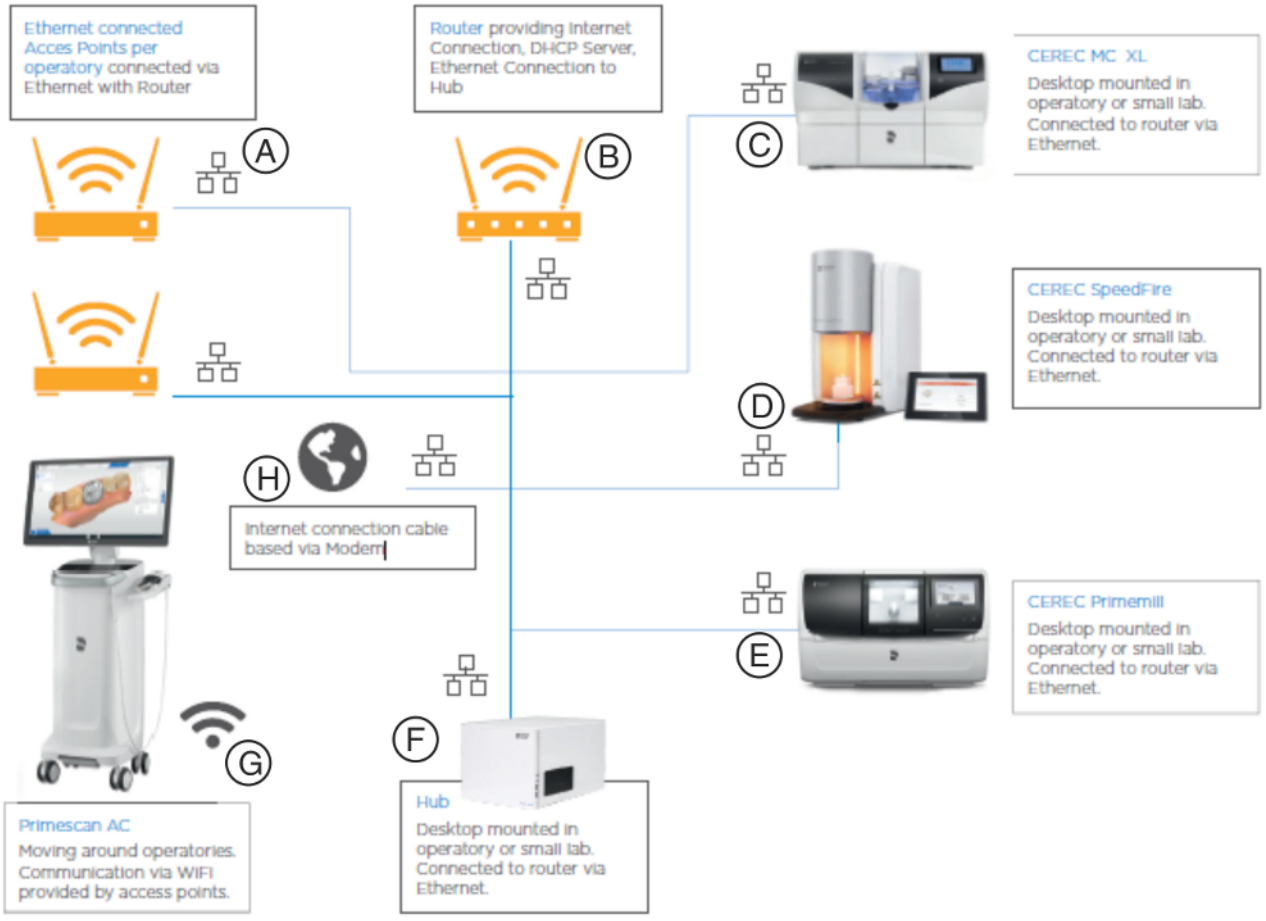
Connecting the access point or router

The production unit(s) and hub use Ethernet-based connections to a router. Ethernet ports in combination with a network switch are required at the operating point.

The acquisition unit (CEREC) Primescan AC / (CEREC) Omnicam AC is connected via WLAN to the network, which is provided by individual WLAN access points per facility. These are connected to the router via Ethernet with an SSID and operate as a mesh network.

➢ Connect the LAN port **A** of the production unit to an access point or router using the network cable.

Find the position of the access point/router



A	**Ethernet-connected access points in the treatment room** connected to the router via Ethernet.
B	**Router** with Internet connection, DHCP server, Ethernet connection to the hub.
C	**CEREC MC XL** Installation on the table in the treatment room or in the small laboratory. Connected to the router via Ethernet.
D	**CEREC SpeedFire** Installation on the table in the treatment room or in the small laboratory. Connected to the router via Ethernet.
E	**CEREC Primemill** Installation on the table in the treatment room or in the small laboratory. Connected to the router via Ethernet.
F	**Hub** Installation on the table in the treatment room or in the small laboratory. Connected to the router via Ethernet.

G	**Primescan AC** Movable in the treatment room. WiFi communication via access points.
H	Internet connection with cable via modem.

➢ Position the access point or router in such a way that you have adequate reception with the acquisition unit from every relevant point in your practice.

NOTE

LAN connection

Operation via a LAN cable connection is possible at any time.

NOTE

Do not use CEREC radio modules

The CEREC radio modules should not be used for CEREC Primemill.

NOTE

Communication via power cables not recommended

Connections via PowerLAN / Powerline Communication (PLC) are not recommended!

List of recommended devices

The following lists provide an overview of components that essentially meet the various specifications.
The devices marked with (* 1) were tested in dental environments during the CEREC Primemill test phase.
The devices marked with (* 2) have passed a completed 30-day test with hub.

Router

- Fritzbox 7490 (*1, *2)
- Netgear Nighthawk AX3000 (*2)
- Asus RT-AC3200 (*2)
- Asus ROG Rapture GT-AC 5300 (*2)
- AX3000 (*2)
- Cisco RV130W (*2)
- D-Link Exo AC 2600 (*2)
- DrayTek Vigor 2925 ac (*2)
- Fortinet Fortigate FWF 60E (*2)
- Lancom 1781VA(*2)
- Linksys EA9500 (*2)
- Linksys WRT 1200 AC (*2)

Access points

- Unifi Ubiquity AP (*1)
- Netgear Orbi and Orbi Pro mesh WLAN system (*1)

IMPORTANT

Interference by multiple DHCP servers in the network

The Netgear Orbi Mesh system can be configured as either a router or an access point. We recommend setting it up as an access point if the practice router assigns IP addresses. If there are two active DHCP servers in the network, they may interfere with each other.

IMPORTANT

Create connectivity plans with IT specialists

In most cases, the default settings of the components allow plug-and-play installation of Dentsply Sirona devices. As not all practices and clinics are equally well equipped, we recommend that all users review the connectivity plans with IT specialists and/or create an alternative installation plan based on the technical specifications and practice requirements.

5.4.6.4 Installing the unit

The following steps must be performed before putting the unit into operation.

5.4.6.4.1 Process steps that have to be taken on the unit.

✓ The unit is connected to a power supply source and the main switch on the rear of the unit is switched on.

1. Switch the unit on by pressing the On/Off button at the front.
   ↳ A start screen will shortly appear on the touch interface.
2. Select the user language.
3. Select the continent.
4. Select the region.
5. Select the date format and time format.
6. Check the touch interface to see if a suction device is connected.

5.4.6.4.2 Process steps that have to be performed on the acquisition unit or the PC

Automatic unit search

✓ The unit is connected to the PC via a LAN cable or via WLAN.

1. Click the *"Configuration"* button in the system menu.
2. Click the *"Devices"* button.
3. Click the *"Scan for New Devices"* button.
   ↳ All units connected to the PC are recognized. In the case of new units, you will be prompted to enter a name.

Manual unit search

✓ The unit is connected to the PC via a LAN cable or via WLAN.

1. Click the *"Configuration"* button in the system menu.
2. Click the *"Devices"* button.
3. Click the *"Add Device (Manual)"* button.
4. Enter the network address. You can read them out on the touch interface of the production unit under *"Settings"* / *"Network Settings"*.
5. Click the *"Ok"* button.
   ↳ The software attempts to contact the device.

If the connection fails, check the connection. If necessary, ask a qualified technician.

Remove the unit

✓ If you no longer require a unit (e.g. a unit is replaced), you can remove it.

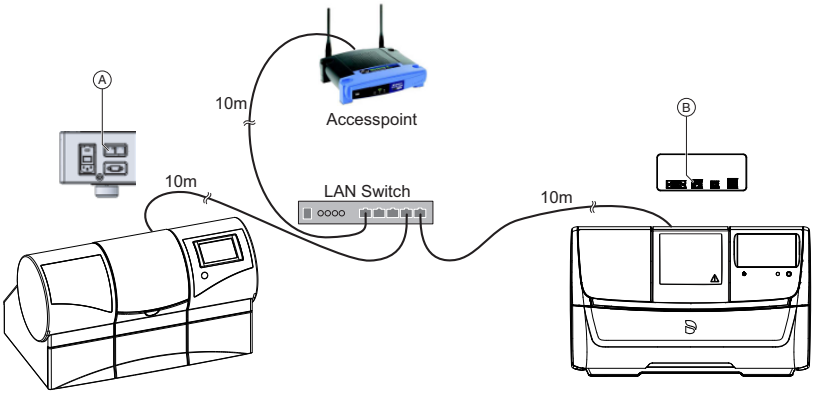
✓ The unit is not in operation.

1. Click the *"Configuration"* button in the system menu.
2. Click the *"Devices"* button.
3. Click on the unit that you wish to uninstall.
4. Click the *"Delete Device"* button.
   ↳ You will be asked if you would like to remove the unit.
5. Click the *"YES"* button.

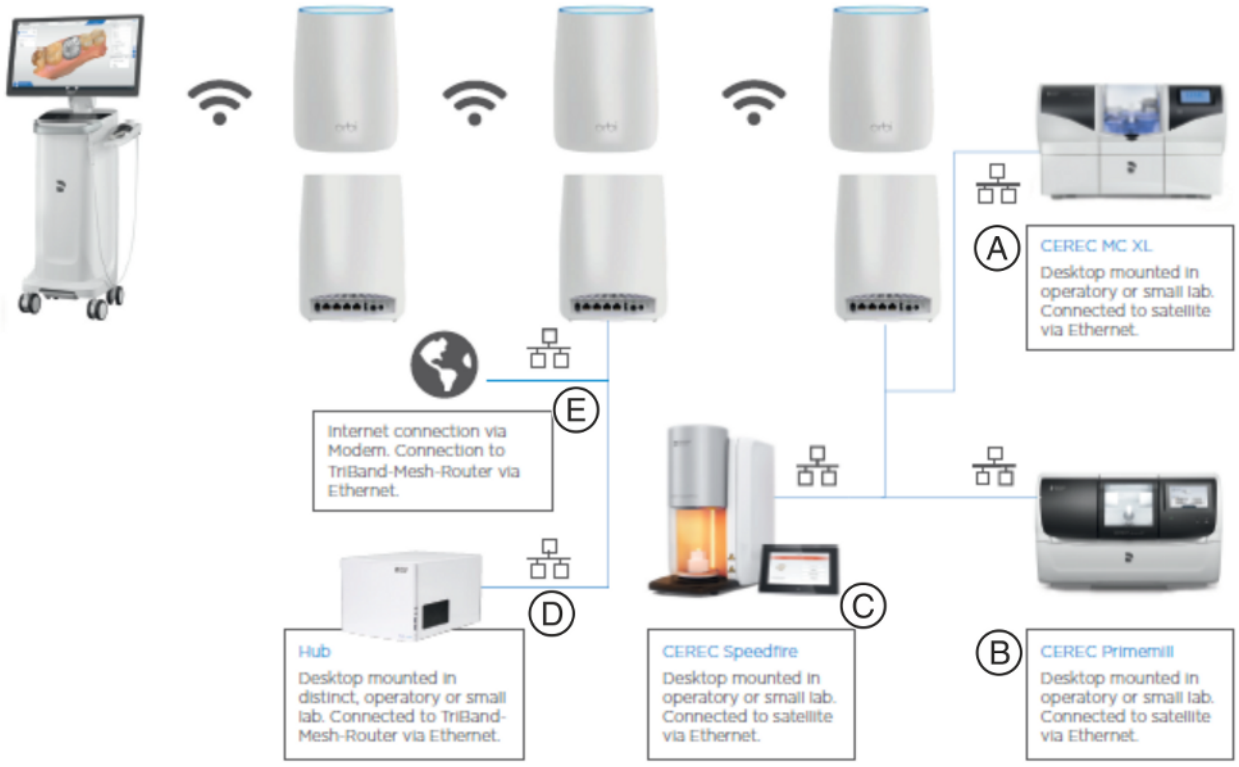
↳ The device is removed.

5.4.6.5 Operating several production units at one access point

For operation of several production units on one access point, you also need a switch to which you connect the production units.



5.4.6.6 Production unit connected via WLAN satellites (optional)



A	**CEREC MC XL** Installation on the table in the treatment room or in the small laboratory. Connected to the satellite via Ethernet.
B	**CEREC Primemill** Installation on the table in the treatment room or in the small laboratory. Connected to the satellite via Ethernet.
C	**CEREC SpeedFire** Installation on the table in the treatment room or in the small laboratory. Connected to the satellite via Ethernet.
D	**Hub** Installation on the table in a separate room, in the treatment room or in a small laboratory. Connected to the triband mesh router via Ethernet.
E	Internet connection with modem. Connected to the triband mesh router via Ethernet.

If the specified infrastructure does not provide Ethernet cabling and sockets at the time of operation of the production unit(s), it is recommended to set up a triband mesh network with satellites. These satellites provide Ethernet ports. Manufacturers of such systems include Netgear (Orbi System) and TP-Link.

These systems enable a strong WLAN in the entire practice. A central mesh router operates as master device and the satellites are placed near the CEREC Primemill (or other production units and hub). The

production unit(s) is/are connected to the satellite(s) via Ethernet cabling.

The acquisition unit (CEREC) Primescan AC / Omnicam AC is connected via WLAN to the network provided by the WiFi mesh router and the mesh satellites. They should be equipped with an SSID.

Mesh network systems:

- Orbi RBK 53 Mesh WiFi System (*1)
- Orbi RBK 43 Mesh WiFi System (*1)
- TP-Link Deco M9 Plus Mesh WiFi System – Ubiquiti Amplifi

The devices marked with (* 1) were tested in dental environments during the CEREC Primemill test phase.

5.4.6.7 Requirements for WLAN and Ethernet connectivity of acquisition units and production systems

Typical network loads

- Download firmware update to CEREC Primemill = approx. 60 MB
- Download new operating system to CEREC Primemill = approx. 250 MB

Network bandwidth requirements

- Not recommended: < 50 Mbps
- Acceptable: 50 Mbps to 100 Mbps
- Excellent: > 100 Mbps

List of hardware standards

Device type	Recommended standard
WLAN frequency	Dual Channel 2.4 Ghz and 5 Ghz
WLAN standard	802.11ac or better
Ethernet cable	CAT5e or better
Router	DHCP / IPV4 / IPV6
WLAN SSID	Mesh setup with a single SSID recommended

5.4.6.8 Settings for CEREC Primemill

Unblocked mDNS multicast address

- IPv4: 224.0.0.251
- IPv6: ff02::fB

Open ports

- 5353 / udp
- 28930 / tcp
- 50926 / tcp

5.4.6.9 Network features

Unit	CEREC Primemill
Ethernet connection	100BASE-T (100 Mbps)
Operating system	Linux with TCP/IP stack
Network setup (ex works, can be changed manually)	
IPV4	DHCP / AutoIP
IPV6	SLAAC
Port	28930, 50926 (web server only)
mDNS	5353/udp
Subnet mask	
Internal buffer	50 packets (approx. 1 min)
Maximum required data transfer rate per process	350 kbps
Average required data transfer rate per process	200 kbps

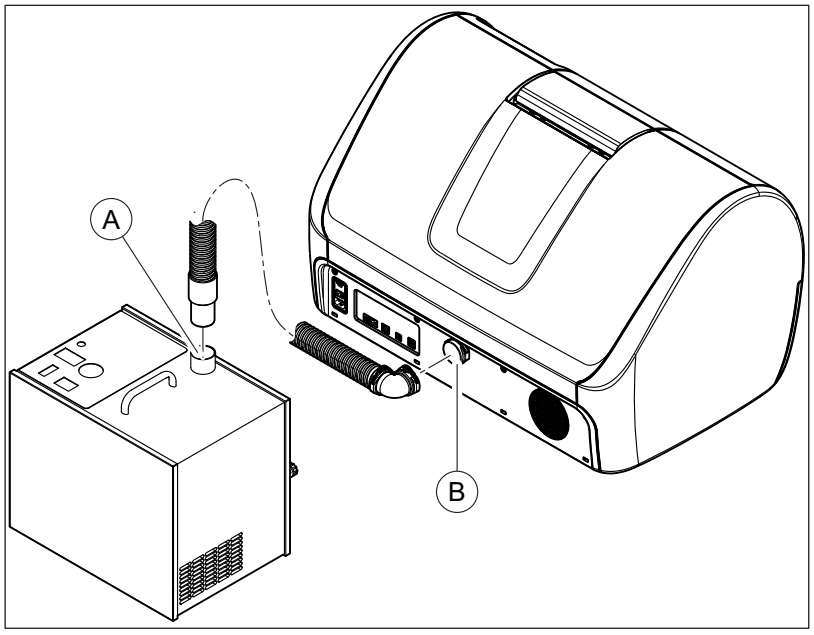
5.4.6.10 Checklist for the installation

Characteristic	Status	Recommendation
Router type	IPV4 capable IPV6 capable DHCP possible	
IPV4 activated	◯ Yes ◯ No	If "No", activate IPV4 in the router settings
IPV6 activated	◯ Yes ◯ No	If "No", activate IPV6 in the router settings
DHCP activated	◯ Yes ◯ No	If "No", activate DHCP
Ethernet socket at operating point (min. CAT5E)	◯ Yes (free socket) ◯ Yes (but no free socket) ◯ No	If "Yes (but no free socket)", use a switch. If "No", use a mesh system.
WiFi available	◯ Yes ◯ No If "Yes", name of the SSID:	If "No", select the correct setup and install it according to the requirements.
WiFi standard 802.11ac or better	◯ Yes ◯ No	If "No", select components from the recommendation list.
Bandwidth of WiFi at the operating point of the acquisition unit (in Mbits)	Treatment room 1: Better than 100 Mbits: ◯ Yes ◯ No Treatment room 2: Better than 100 Mbits: ◯ Yes ◯ No Treatment room 3: Better than 100 Mbits: ◯ Yes ◯ No Listed for all treatment rooms	If "No", create a new mesh network, add access points or satellites.
Bandwidth of the Ethernet at the operating point of the production equipment or hub (in Mbps) at least better than 50 Mbps.	◯ Yes ◯ No	If "No", ask an IT specialist about the total network load and/or the CAT standard of the Ethernet cable.

Characteristic	Status	Recommendation
Open ports	5353 ◯ Yes ◯ No 5353 / upd ◯ Yes ◯ No 28930 / tcp ◯ Yes ◯ No 50926 / tcp ◯ Yes ◯ No 2222 ◯ Yes ◯ No	If "No", open the corresponding ports.
Unblocked multicast addresses	IPV4: 224.0.0.251 ◯ Yes ◯ No IPV6:ff02::fB ◯ Yes ◯ No IPV4: 239.0.0.222 ◯ Yes ◯ No	If "No", unlock the corresponding multicast addresses.

5.4.6.11 Connecting the suction device (optional)

5.4.6.11.1 Connecting the suction tube



⚠ CAUTION

Trip/fall hazard

If the suction tube is routed poorly, there may be a risk of tripping.

➢ To prevent injuries caused by tripping, route the suction tube so that there is no risk of tripping.

1. Connect one end of the suction tube to the available connection point on the suction device (**A**).
2. Connect the other end of the tube to the rear side of the production unit (**B**).

Notes on the suction tube:

The suction tube is supplied at a length of approx. 2.0 m. When connecting the suction device to the unit, please ensure that no sharp bends occur over the full length of the suction tube.

Reduce the length of the tube according to your requirements and your installation location. Note that suction power drops along the length of the tube. You obtain decent suction power if the suction device is placed immediately below the machine and you have a tube length of 1.2 m or less.

5.4.6.11.2 Connecting the power cord

NOTE

Grounded power outlet

The unit must be connected to a grounded power outlet.

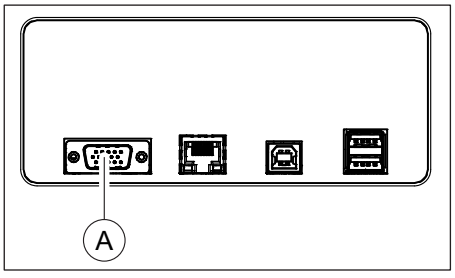
1. Insert the power cable into the relevant socket on the suction device.
2. Plug the other end into an appropriate power socket with a protective ground terminal.

Note on the power cable:

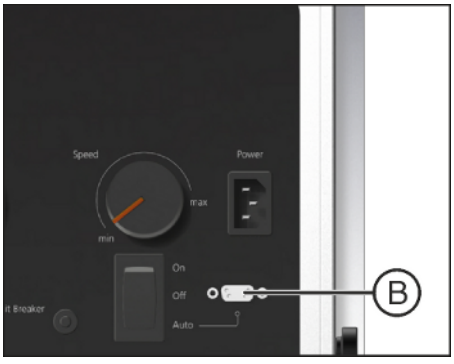
The suction device must only be operated with a power cable with a plug system designed for the relevant country.

Check the voltage specification on the rating plate. The system must conform to the country-specific supply voltage.

5.4.6.11.3 Connecting the interface cable (for automatic mode)



1. Plug the 15-pole connector into the socket (**A**) on the rear of the production unit.



2. Plug the 9-pole connector into the socket (**B**) of the suction device.

5.4.6.11.4 Automatic mode

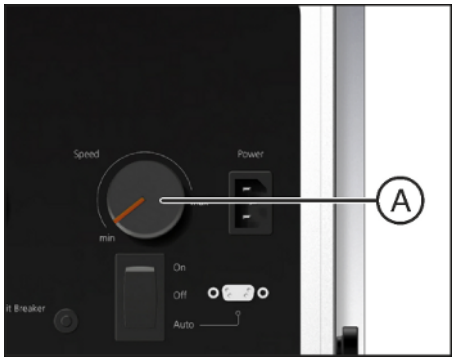
✓ The interface cable is connected.

➢ Set the on/off switch to the position `Auto`.

Note on the automatic mode:

The production unit monitors the correct connection (interface cable and suction tube) and the operation of the suction system during the running processes.

5.4.6.11.5 Setting the suction power



Use the control dial (**A**) to set the suction power.

➢ **Recommendation**: Set the suction power to the minimum (`min`).

NOTE

For the CEREC suction device, we recommend changing the filter bag at the following intervals:

CEREC Primemill: after around 8 hours of processing.
After 8 hours of processing, a yellow warning appears on the home screen of the touch interface. If the filter bag is not changed, a red error message appears after 10 hours of processing.

5.4.7 Filling the water tank

Using the tank cap opener

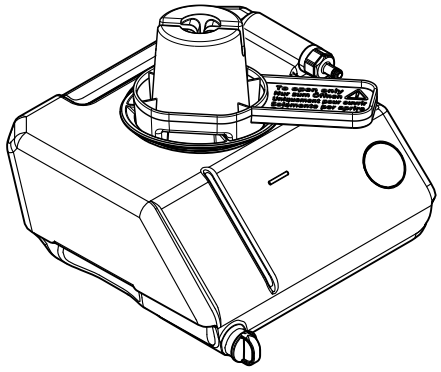
NOTE

Damage to the tank

Use the tank cap opener **only for opening** the tank cap.

Do not use the tank cap opener for closing the tank cap. It is sufficient to tighten the tank cap clockwise by hand.

Opening the tank cap



✓ The water tank has been pulled out and drained.

➢ Place the tank cap opener on the tank cap as shown, and take off the tank cap by unscrewing it counter-clockwise.

Opening the tank drain

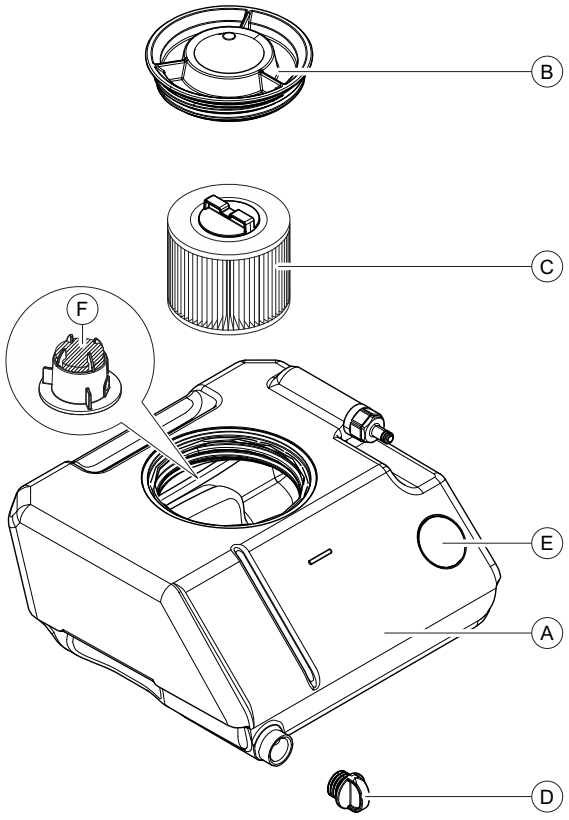
✓ The water tank has been pulled out.

➢ The black rubber stopper can be removed by hand.

NOTE

Coolant

Use distilled or demineralized water.



Water tank

A	Tank	D	Tank drain
B	Tank cap	E	RFID chip
C	Filter insert	F	Sponge

✓ The water tank is drained, see "Removing water from the unit [→ 73]".

1. Open the drawer of the unit.
2. Pull the water tank out of the unit's housing with the handle on the bottom front side of the tank.
3. Turn the tank cap counter-clockwise and take it off.

NOTE

Damage to surfaces!

In the undiluted state, the coolant additive DENTATEC disintegrates plastic surfaces and can cause discoloration.

➢ Do not place DENTATEC on the unit.

➢ Do not spill DENTATEC.

4. Add approx. 75 ml of DENTATEC to the tank.
5. Fill the tank with water until the filter insert is completely immersed (up to the bottom edge of the cover thread, approx. 3.5 liters).
6. Wait for a short time until the filter insert is completely soaked; then add an appropriate amount of water.

7. Close the water tank by tightening the tank cap clockwise by hand. **Do not use the tank cap opener for this**.
8. Push the water tank back into the housing.
9. Close the drawer of the unit.

10. Select the symbol shown on the left on the touch interface.
11. Activate the water pump in order to fill the water circuit.
12. Leave the water pump running until a constant jet of water strikes the tools (approximately 10 seconds).
13. Deactivate the water pump.
14. Fill the water tank up again until the filter insert is completely immersed (up to the bottom edge of the cap thread).

15. Select the symbol shown on the left on the touch interface.
16. To reset the water tank counter, press the *"Replace"* button next to the *"Water Tank"* category.

5.4.8 Switching the unit ON and OFF

NOTE

Do not put the unit into operation at low temperatures!

If you move the unit to the operating site from a cold environment, condensation may form and result in a short circuit.

The unit contains grease depots for lubricating components that may cause error messages at low temperatures.

✓ Install the unit at room temperature.

➢ Wait until the unit has reached room temperature and is absolutely dry (for at least one hour).

↳ The unit is dry and can be put into operation.

Switching on the unit

✓ The unit is connected to the power supply.

1. The main switch on the rear side of the unit is set to position **I** (ON). The On/Off button lights up blue.
2. Press the On/Off button on the front.
   ↳ The unit switches on and the On/Off button changes from blue to orange.
3. Select the appropriate language and region.
4. Confirm the date and time.
5. Activate the suction settings if necessary.

Switching off the unit

➢ Press the On/Off button on the front.

↳ The unit then switches off. The On/Off button changes from green to blue.

NOTE

Do not switch off the unit at the main switch.

5.5 Repacking

NOTE

Repack only drained units!

Drain the unit!

✓ The water tank is empty.

✓ The main switch on the back side of the unit is set to the **0** (OFF) position.

1. Disconnect the power cable and the connecting cable from the back side of the unit and stow them away.
2. Stow away the calibration tools in the drawer.
3. Check the unit for completeness according to the scope of supply!
4. Pack the unit securely.

5.6 Scope of supply

The detailed scope of supply is specified in the document "Checklist CEREC Primemill".

5.7 Storage

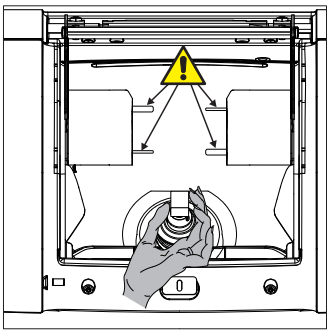
NOTE

Repack only drained units!

Drain the unit! See "Removing water from the unit [→ 73]".

Store the unit in a closed and dry room at a temperature of -40 °C (-40 °F) to 70 °C (158 °F).

6 Operation



⚠ CAUTION

Risk of injury from calibration pins/tools

If you reach into the processing chamber, for example, to insert/remove a ceramic block, change tools or insert/remove a calibration phantom, you may injure yourself on the calibration pins/tools.

Be careful not to brush against the calibration pins/tools with your hand.

Always insert your hand into the processing chamber below the calibration pins/tools.

In the event of cleaning or maintenance work in the processing chamber, we recommend removing the Bur 1.0 and/or Bur 0.5 tools beforehand.

We also recommend that you select the *"Cleaning Position"* option on the touch interface to position the motors together so that the floor of the production chamber is easier to access and clean.

6.1 Configure

When you switch on the machine for the first time, you can make the following settings in the initial setup:

- Language
- Select Continent
- Region
- Date And Time

You can make the following settings via the menu item *"Settings"* (symbol on left-hand side):

- Machine Name
- Serial Number
- Firmware
- Theme
- Language
- Region
- Date And Time
- Network Settings
- Manage Water Tanks
- Suction Unit
- Camera
- Calibration
- Write Logs to USB
- Service

6.1.1 Machine name

Here you can give the unit a unique name for identification in your network.

6.1.2 Serial number

The serial number of the unit is displayed here. It cannot be changed.

6.1.3 Firmware

The firmware version currently installed on the unit is displayed. It is possible to update the firmware of the unit with a USB stick.

1. Download the ".zhex" file and save it, e.g. in the root directory of a USB stick.
2. Insert the USB stick into the USB port behind the left side of the front drawer.

3. Select the gear icon below on the start screen of the touch interface of the CEREC Primemill to go to the *"Settings"* area.
4. Select the third option *"Firmware"*.
5. Select *"Update from USB"*.
6. Select the firmware version to be displayed and click on the *"Install"* button to start the download.

General installation information:

- A firmware update can take longer than 5 minutes.
- Please do not interrupt the download by switching off the unit before that.
- After installation of the firmware, a restart of the unit is recommended.

6.1.4 Color scheme

You can select either a light or dark touch interface here.

6.1.5 Language

The language that will be used in the display is selected here.

6.1.6 Region

The region in which the unit is installed is selected here. Select the continent first and then the country.

6.1.7 Date and time

The date and time displayed on the unit can be changed here.

6.1.8 Network settings

You can change the network settings here.

6.1.9 Managing water tanks

Here it is possible to assign different names to make identification and management easier.

6.1.10 Suction

If a suction device is connected to the CEREC Primemill, it is activated here.

6.1.11 Camera

The integrated webcam for scanning data matrix codes on blocks and the calibration body can activated or deactivated here.

6.1.12 Calibration

Here you can see the calibration history and status and start a new calibration operation. The touch interface guides you through all the required steps.

6.1.13 Write log files to a USB sticks

Here it is possible to export the log files of the unit to a USB stick. Please insert the USB stick into the port behind the left side of the front drawer before activating the export.

6.1.14 Service

Here, a service technician can perform diagnostics tests to check the status of the unit.

6.2 Remote access

If your acquisition unit (CEREC) Primescan AC / Omnicam AC, PC or mobile device is located in the same network as the CEREC Primemill production unit, you can easily access the unit remotely. This means that the touch interface of the CEREC Primemill is also mirrored on the acquisition unit, PC or mobile device.

Enter the IP address and port 50926 of the CEREC Primemill in Google Chrome (recommended browser) in your respective device and press Enter.

The IP address of the CEREC Primemill can be found in the menu option *"Settings"* and *"Network Settings"* of the touch interface.

Example: http://169.254.5.195:50926/

6.3 Calibrating the unit

NOTE

Use only the supplied calibration tools

Use only the supplied calibration pins and the corresponding calibration phantom when calibrating the unit.

Unit calibrated ex works

The unit is calibrated at the factory. No additional calibration is required during initial startup. Proceed as described below when performing a subsequent calibration.

NOTE

Incorrect machining result

If a unit is not calibrated, the machining result may be incorrect.

NOTE

Calibrating the machine at room temperature

The machine must be at room temperature for the calibration and be switched on for at least 15 minutes.

Calibration procedure

1. Select the symbol shown on the left on the touch interface.
2. Select *"Calibration"* and then *"Start"*.
3. Register the calibration phantom on the machine (scanning the code) and insert it in the machine.
4. Close the door.
5. Register the calibration pins (set 1) on the machine (RFID reader) and insert them in the machine.
6. Close the door.
   - The calibration for set 1 is performed. The automatic calibration starts and lasts approximately 5 minutes. Wait until the calibration has been completed.
7. Remove the calibration pins from the machine.
8. Close the door.
9. Register the calibration pins (set 2) on the machine (RFID reader) and insert them in the machine.
10. Close the door.
    - The calibration for set 2 is performed. The automatic calibration starts and lasts approximately 5 minutes. Wait until the calibration has been completed.
11. Remove the calibration pins from the machine.
12. Close the door.
13. Remove the calibration phantom.
14. Close the door.
    - The calibration is completed.

6.4 Machining process

IMPORTANT

Note the processing instructions of the respective material manufacturer for all manufacturing processes.

NOTE

Check the processed restorations after completion of the process and finishing (e.g. sintering, stain & glaze, polishing) for any defects. Note the requirements and instructions of the respective material manufacturer for this.

6.4.1 Process types

⚠ CAUTION

Risk of injury through sharp-edged restorations and material residues

There is risk of injury through sharp-edged restorations as well as sharp-edged material residues.

➢ Remove the restored objects and material residues carefully after the processing.

➢ Pay attention to the sharp-edged material residues while cleaning the processing chamber.

Different process types are available for machining. These differ in the type of the materials to be processed, the tools to be used and the corresponding fixture in the unit.

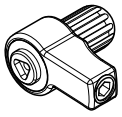
⚠ CAUTION

Risk of injury by machining tools

There is a risk of cut injuries caused by sharp edges of accessible parts and the use of rotating milling and grinding tools that are sharp and/or pointed.

6.4.1.1 Grinding

For grinding, use the following tools as well as the appropriate torque wrench: When doing so, pay attention to the connection geometry of the torque wrench.

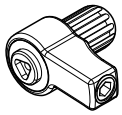
Tool	REF	Usage	Color	Connection geometry of the force transmission
Diamond 1.4 CS 	6714088	Grinding	White	Triangular 
Diamond 1.2 CS 	6714070	Grinding	White	
Diamond 1.0 CS 	6714062	Extra-fine grinding[I]	White	
Diamond 0.6 CS 	6714054	Extra-fine grinding[II]	White	

[I] Planned starting from CEREC SW 5.2

[II] Planned starting from CEREC SW 5.2

6.4.1.2 Milling

For milling, use the following tools as well as the appropriate torque wrench: When doing so, pay attention to the connection geometry of the torque wrench.

Tool	REF	Usage	Color	Connection geometry of the force transmission
Bur 2.5 ZrO2 CS 	6713940	Milling of zirconium oxide (wet and dry)	Yellow	Square 
Bur 2.5 PMMA CS 	6737469	Milling of PMMA (wet)	Red	
Bur 1.0 CS 	6713932	All-purpose milling (wet and dry)	Black	Triangular 
Bur 0.5 CS 	6713924	All-purpose milling (wet and dry)	Black	

6.4.1.3 Permitted tool combinations

Depending on the materials to be processed and the process type used, various tool combinations are permitted. These are permanently defined.

6.4.2 Preparations

- ✓ Load or design a restoration (see Operator's Manual).
- ✓ You are in the *"MANUFACTURE"* phase and have selected the production unit, tested the settings, and positioned the restoration in the block.
- ➢ Click the *"Start"* step.
  - ↳ The production unit moves to the application position.

6.4.3 Starting the machining processes

✓ The touch interface of the production unit shows the home screen and the unit door is closed.

1. The production unit positions the tools as soon as the door is closed.
2. If a DataMatrix code is present:
   The DataMatrix code scanner is activated and you can scan in the DataMatrix code of the block (see "Scanning in the DataMatrix code [→ 56]").

or

➢ If no DataMatrix code is present:
   You can manually enter manufacturer, type of material, size, color, and enlargement factor of the block.

3. Open the door.
4. Place the selected block in the block fixing.
5. Clamp the block with the ball pressure screw. Use the block clamp tool for this purpose (see also "Block clamping [→ 57]").
6. Close the processing chamber door.
   ↳ The expected duration of the machining process is displayed on the touch interface.

NOTE

Error message during touch process!

Always be sure to insert the block that you selected for the restoration. Otherwise an error message will be displayed during the touch process.

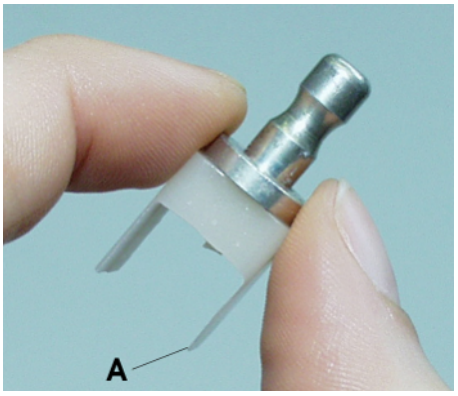
NOTE

Terminating the machining process

You can terminate the machining process at any time by clicking the *"Stop"* button on the PC or touch interface.

6.4.4 Ending the machining processes

1. When the machining process has been completed, open the processing chamber door.
2. Remove the restoration.



⚠ WARNING

Risk of injury on the remainder of the ceramic block

The remaining portion of the ceramic block may have sharp edges (e.g. **A**) that could injure you if it is not removed carefully.

Always grasp the remainder of the ceramic block by its metal holder.

3. Loosen the ball pressure screw.
4. Remove the remainder of the ceramic block. When removing the remaining block from blocks with 6 mm diameter block holders, make sure that the adapter sleeve remains in the machine.
5. Close the processing chamber door.

⚠ CAUTION

Do not use defective milling and grinding results!

Machining results must be judged by the user (dentist or dental technician) and must not be used if defects are detected!

NOTE

If you have not used the production unit for an extended period, we recommend switching it off and then opening the processing chamber door so that the processing chamber can dry out.

6.5 Scanning in the DataMatrix code

If the block to be processed has a compatible DataMatrix code, the built-in DataMatrix code scanner can be used to query the block information.

When prompted to do so by the touch interface, hold the side of the block with the DataMatrix code 1.5 mm in front of the DataMatrix code scanner until the successful scan is confirmed on the touch interface.

If the scan attempt fails or if the selected block has no DataMatrix code, you can manually enter the block information on the touch interface or PC.

6.6 Block clamping

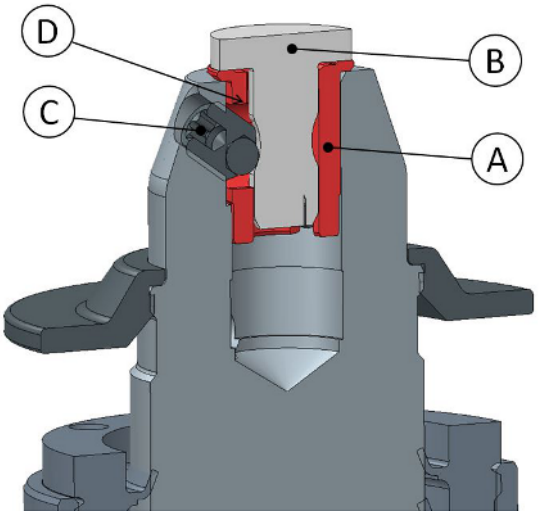
NOTE

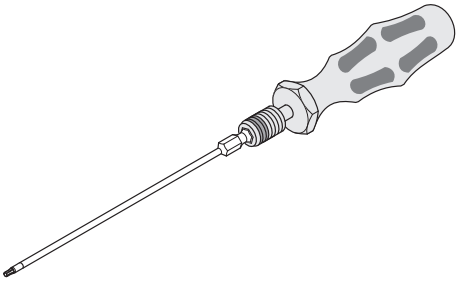
Wear of the ball pressure screw

The high clamping forces cause wear of the ball pressure screw.

➢ Replace the ball pressure screw every 500 clamping operations.

Blocks with 6 mm diameter block holders



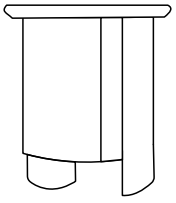


NOTE

If the block is not sufficiently tightened, it can lead to unsuitable results and ceramic breakages.

➢ **Tighten the block with the block clamp tool with torque wrench until you hear a cracking sound.**

➢ Check to make sure that the block is seated correctly.



1. Insert the adapter sleeve (**A**) into the block fixing.

NOTE

Insert the adapter sleeve

The slot at the bottom end of the adapter sleeve must lie above the radial pin of the block fastener in order to be inserted fully.

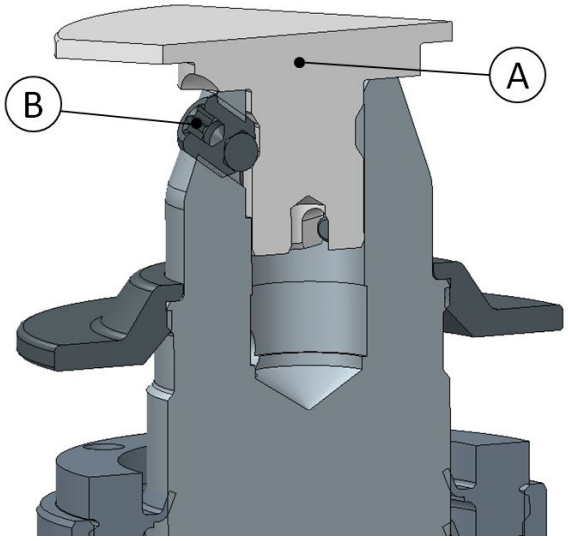
The hole for the ball pressure screw is then automatically in the correct position, i.e. coincides with the threaded hole in the block fixing.

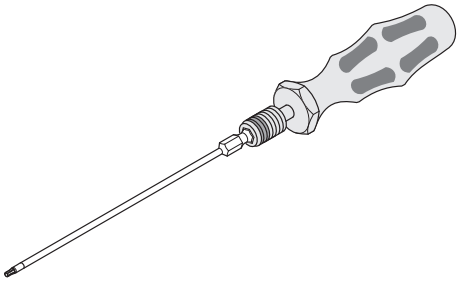
2. Insert the block (**B**) into the adapter sleeve.
3. **Clamp** the ceramic block **securely** with the ball pressure screw (**C**). Use the block clamp tool with torque wrench for this purpose.
   ↳ The block is pressed laterally against the contact surface of the block fixing and simultaneously pulled in axially. The plate of the block holder thus rests on the block fixing.

Removing the adapter sleeve

1. Loosen the ball pressure screw.
2. Place the adapter sleeve removal tool in the inner groove (**D**) and pull out the adapter sleeve.

Blocks with 10 mm diameter block holders





NOTE

If the block is not sufficiently tightened, it can lead to unsuitable results and ceramic breakages.

➢ **Tighten the block with the block clamp tool with torque wrench until you hear a cracking sound.**

➢ Check to make sure that the block is seated correctly.

1. Place the block (**A**) directly into the block fixing.
2. **Clamp** the ceramic block **securely** with the ball pressure screw (**B**). Use the block clamp tool with torque wrench for this purpose.
   ↳ The block is pressed laterally against the contact surface of the block fixing and simultaneously pulled in axially. The plate of the block holder thus rests on the block fixing.

7 Service

NOTE

Observe country-specific Regulations!

Some countries have legal regulations which require regular safety inspections of electrical devices or systems by the operator.

NOTE

Annual maintenance

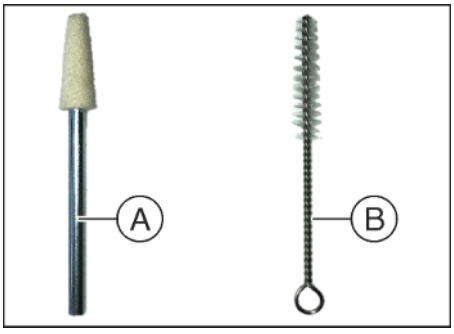
Have maintenance performed on your unit annually by trained technical personnel / a service engineer.

The touch interface shows a reminder notification when it is time for maintenance.

NOTE

Observe error messages

You must observe error messages shown on the touch interface on in the software. If the error message does not disappear even after you have performed the prompted action, contact your service engineer.



NOTE

Machine care

Interval: Once a week or after every 4th water change

- ➢ Change the filter (see "Replacing filter and sponge [→ 72]").
- ➢ **Clean** the block fixing with the supplied tools (**A** and **B**).
- ➢ Also **clean** the tool clamping cones with the supplied tools (**A** and **B**).
- ➢ If the jets of water do not strike the tools, the service life of the tools will likely be reduced. In this case, clean the water nozzles carefully with a probe to free them of foreign matter.

NOTE

Processing chamber wet cleaning process

Interval (if dry milling is predominantly used): Once a week or in the case of heavy soiling.

- ➢ Clean the processing chamber.

NOTE

Using the tank cap opener

If you find the tank cap, tank drain or filter insert hard to open by hand, use the tank cap opener (see "Using the tank cap opener").

NOTE

Wear of the ball pressure screw

The high clamping forces cause wear of the ball pressure screw.

- ➢ Replace the ball pressure screw every 500 clamping operations.

7.1 Using the cleaning hose and the wet cleaning process

The processing chambers of devices used for dry milling of zirconium oxide should be cleaned regularly in order to prevent deposits of zirconium oxide dust in the chamber. A manual suction set with cleaning hose can be used before the wet cleaning process in order to support the user when vacuuming zirconium oxide dust out of the device's processing chamber. This set is available as a spare part (REF 67 21 307). We recommend vacuuming the chamber after each dry-milled restoration and performing a wet cleaning process (or wet grinding of a restoration) at least once a week.

Proceed as follows to use the manual suction set and to execute the recommended wet cleaning process:

1. Activate the cleaning position in the *"Routine Actions"* area of the touch interface in order to bring the motors together so that the production chamber is easier to access and clean. This function can be started via the *"Routine Actions"* area (symbol on left) by selecting the *"Cleaning Position"* item.

2. Rotate the black adapter of the manual cleaning hose set from suction of the chamber to suction through the manual cleaning hose.

3. Activate the manual operation for the suction by setting the switch at the top of the device from "`Auto`" to "`On`".

4. Suck up the dust from the chamber as required.
5. Sucking up as much dust as possible from the workpiece axis is recommended. Also remove the dust from the bottom side of the block axis (see arrows).

6. Close the door.
   ↳ The motor mounts and the tool axis move back to initial position.

7. After vacuuming the chamber, you should perform the wet cleaning of the machine. This function can be started via the *"Routine Actions"* area (symbol on left) by selecting the *"Cleaning Program"* item. There are two cleaning options: 2 minutes and 15 minutes. Each cleaning option can be stopped at any time when the desired results have been achieved.
8. You can remove any zirconium oxide deposits in the lower part of the workpiece axis with a nylon brush between the wet cleaning processes.

7.2 Changing filter bags and HEPA filters

Changing filter bags

NOTE

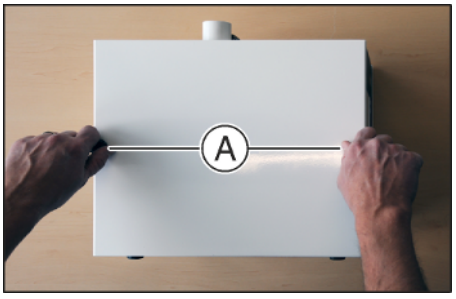
For the CEREC suction device, we recommend changing the filter bag at the following intervals:

CEREC Primemill: after around 8 hours of processing.
After 8 hours of processing, a yellow warning appears on the home screen of the touch interface. If the filter bag is not changed, a red error message appears after 10 hours of processing.

If the filter bag is full before the notification, the touch interface may display a low-pressure warning which means that the filter bag must be replaced.

NOTE

If there is a significant fall in suction power, the filter bag may be full and must be replaced.



1. Loosen the two knurled nuts (**A**) on the maintenance cover.
2. Remove the lid.

3. Remove the filter bag from the nozzle and put a new filter bag on.
4. Put the maintenance cover on and screw it down with the two knurled nuts.

NOTE

Do not jam the filter bag

Make sure that the cap is sealed properly and the filter bag is not jammed.

5. After replacing the filter bag, activate the *"Reset"* button on the screen of the touch interface.

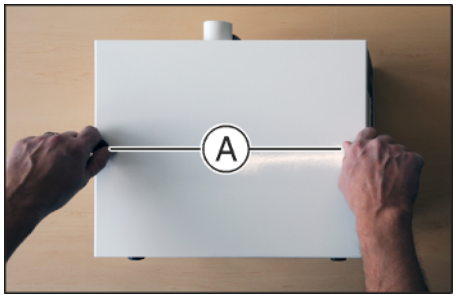
Changing HEPA filters

After every **fourth filter bag change**, the touch interface automatically displays a notification to replace the HEPA filter. This number may differ depending on the amount of zirconium oxide material milled and suctioned. If the HEPA filter is full before the notification, the touch interface may display a low-pressure warning which means that the HEPA filter must be replaced.

The HEPA filter is located behind the filter bag.

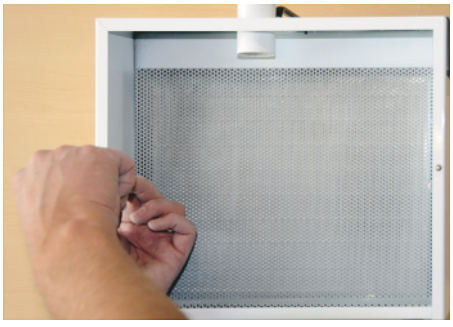
NOTE

Replace the HEPA filter if suction power is still weak after replacing the filter bag.



1. Loosen the two knurled nuts (**A**) on the maintenance cover.
2. Remove the lid.

3. Remove the filter bag from the nozzle.



4. Unscrew the two Phillips screws on the perforated sheet on the inside of the suction device.

5. Take the perforated sheet out.

6. Remove the dusty HEPA filter and insert a new HEPA filter.
7. Put the perforated sheet back on and screw it down with the two Phillips screws.
8. Put the filter bag back on again.
9. Put the maintenance cover on and screw it down with the two knurled nuts.

NOTE

Do not jam the filter bag

Make sure that the cap is sealed properly and the filter bag is not jammed.

10. After replacing the filter bag, activate the *"Reset"* button on the screen of the touch interface.

7.3 Changing the water

7.3.1 General information

NOTE

Coolant

Use distilled or demineralized water.

If a water change is due, a notification appears on your touch interface.

Preventing odors

All coolant additives contain a biodegradable preservative. Despite this, however, odors may still develop under unfavorable conditions.

Observe the following:

- Change the water at least once a week.
- With ambient temperatures above 25 °C (77 °F), change the water every 2 to 3 days to prevent foul odors.
- Drain the tank if you do not intend to operate the unit for more than one week.
- Clean the tank if the odors recur.
- Add the coolant additive DENTATEC and fill the tank up to the brim with water. Let it stand for at least 24 hours and then rinse it out thoroughly with water once again.
- Leave the chamber door open when the production unit is not in operation.

NOTE

Damage to surfaces!

In the undiluted state, the coolant additive DENTATEC disintegrates plastic surfaces and can cause discoloration.

➢ Do not place DENTATEC on the unit.

➢ Do not spill DENTATEC.

NOTE

Approved coolant additive

Use only DENTATEC as a coolant additive.

7.3.2 Changing the water

NOTE

Change the filter insert regularly!

Replace the filter insert with a new one on every fourth water change at the latest.

Using the tank cap opener

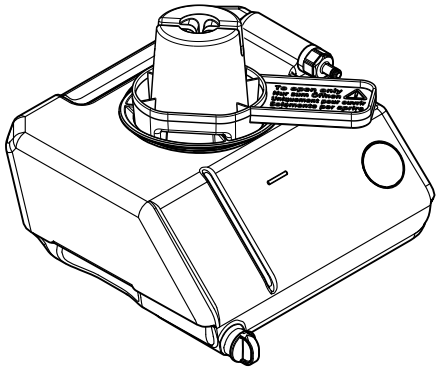
NOTE

Damage to the tank

Use the tank cap opener **only for opening** the tank cap.

Do not use the tank cap opener for closing the tank cap. It is sufficient to tighten the tank cap clockwise by hand.

Opening the tank cap



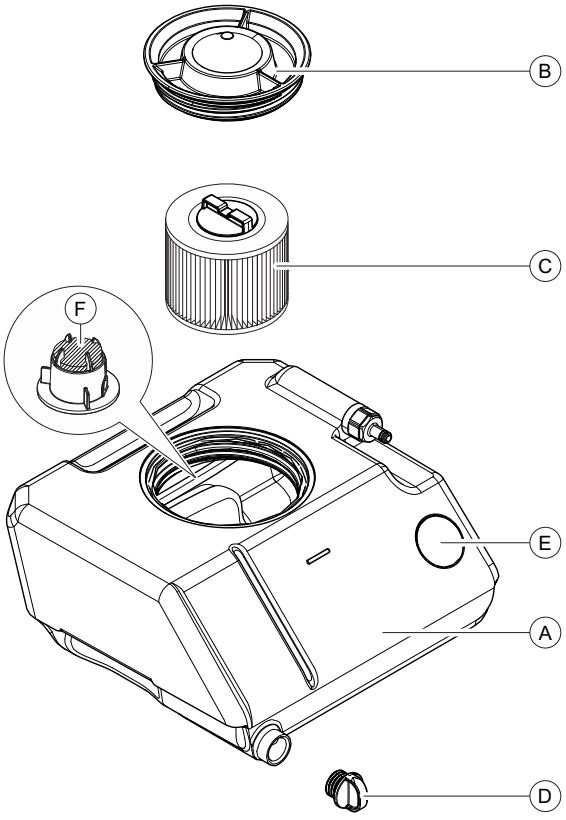
✓ The water tank has been pulled out and drained.

➢ Place the tank cap opener on the tank cap as shown, and take off the tank cap by unscrewing it counter-clockwise.

Opening the tank drain

✓ The water tank has been pulled out.

➢ The black rubber stopper can be removed by hand.



Water tank

A	Tank	D	Tank drain
B	Tank cap	E	RFID chip
C	Filter insert	F	Sponge

7.3.2.1 Procedure

NOTE

Disposal

Dispose of the contents of the container in accordance with local, national, and international regulations.

To change the water, proceed as follows:

- ✓ The unit is switched on.
- ✓ No machining process is running.
- ✓ Open the drawer.

1. Pull the water tank out.
2. Open the drain opening (D).
3. Empty two thirds of the water from the tank.
4. Close the drain opening (D).
5. Shake the tank vigorously.
6. Open the drain opening (D).
7. Drain the rest of the water.
8. Close the drain opening (D).
9. Turn the tank cap (B) counter-clockwise and take it off.

NOTE

Foaming not permissible!

If any cleaning agents are used, this will create foam, which is not permitted.

Do not use any cleaning agents.

10. Add 75 ml of DENTATEC to the tank.
11. Fill the tank with water until the filter insert (C) is completely immersed (up to the bottom edge of the cover thread, approx. 3.5 liters).
12. Wait for a short time until the filter insert (C) is completely soaked; then add an appropriate amount of water.
13. Close the water tank by tightening the tank cap (B) clockwise by hand. **Do not use the tank cap opener for this**.
14. Push the water tank back into the housing.

15. Select the symbol shown on the left on the touch interface.
16. To reset the water tank counter, press the *"Replace"* button next to the *"Water Tank"* category.
17. If the filter was also replaced, press the *"Replace"* button next to the *"Filter"* category to reset the filter counter.

7.4 Tools

7.4.1 Overview of materials / tools

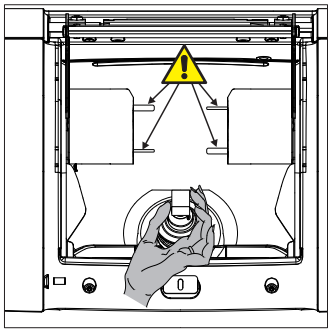
Permitted tool combinations are indicated on the touch interface.

7.4.2 Changing tools

NOTE

Replacement of tools

Change the tools when the system prompts you to do so.



⚠ CAUTION

Risk of injury from calibration pins/tools

If you reach into the processing chamber, for example, to insert/remove a ceramic block, change tools or insert/remove a calibration phantom, you may injure yourself on the calibration pins/tools.

Be careful not to brush against the calibration pins/tools with your hand.

Always insert your hand into the processing chamber below the calibration pins/tools.

In the event of cleaning or maintenance work in the processing chamber, we recommend removing the Bur 1.0 and/or Bur 0.5 tools beforehand.

We also recommend that you select the *"Cleaning Position"* option on the touch interface to position the motors together so that the floor of the production chamber is easier to access and clean.

✓ The touch interface displays a dialog box that specifies the tool to be changed or the application to be used.

1. Select either the individual tool or the individual tool set.
   - The motors move to the position for changing the tools.
   - The dialog box for changing the tools opens.
2. Open the processing chamber door.
3. Loosen the tool with the torque wrench and pull it out manually.
4. Hold the colored rear end of the tool approximately 1 mm in front of the RFID scanner.
   - If the correct tool type is selected and read by the RFID scanner, the touch interface indicates this. The motor on which the tool is to be inserted is also indicated.
   - If an incorrect or defective/worn-out tool type is selected and read by the RFID scanner, the touch interface indicates that another (correct or new) tool should be selected.
5. Insert the tool into the appropriate motor as shown on the touch interface. Tighten the respective chuck with the torque wrench until a cracking sound is heard.
6. Close the processing chamber door.
7. If an application is selected requiring the replacement of more than one tool, repeat the aforementioned process for the remaining tools.

NOTE

Cleaning cooling water nozzles

The cooling water nozzles in the processing chamber must be free from limescale and grinding dust/milling dust deposits at all times. The respective cooling water jet must always strike the tool accurately!

✓ The cooling water nozzles are dirty.

➢ Clean the nozzles with a probe.

NOTE

Only use suitable tools!

Do not use any tools of the CEREC MC XL / MC X / MC / inLab MC XL or inLab MC X5 units.

Changing a defective tool

If a tool breaks during the machining process or a tool with low remaining service life is indicated during routine maintenance, the tool is displayed in red on the touch interface. The touch interface also offers the option of replacing the defective tool.

✓ The touch interface displays a dialog box that specifies the tool to be changed or the application to be used.

1. Select the tool.
   - The motors move to the position for changing the tool.
   - The dialog box for changing the tools opens.
2. Open the processing chamber door.
3. Loosen the tool with the torque wrench and pull it out manually.
4. Hold the colored rear end of the tool approximately 1 mm in front of the RFID scanner.
   - If the correct tool type is selected and read by the RFID scanner, the touch interface indicates this. The motor on which the tool is to be inserted is also indicated.
   - If an incorrect or defective/worn-out tool type is selected and read by the RFID scanner, the touch interface indicates that another (correct or new) tool should be selected.
5. Insert the tool into the appropriate motor as shown on the touch interface. Tighten the respective chuck with the torque wrench until a cracking sound is heard.
6. Close the processing chamber door.

7.5 Cleaning surfaces

NOTE

Do not allow liquids to run into the ventilation slots!

Remove dirt regularly using mild, commercially available cleaning agents.

Cleaning agents categorized as "nonionic and anionic surfactant-based soap solutions" can be used.

7.6 Replacing the main fuses

⚠ WARNING

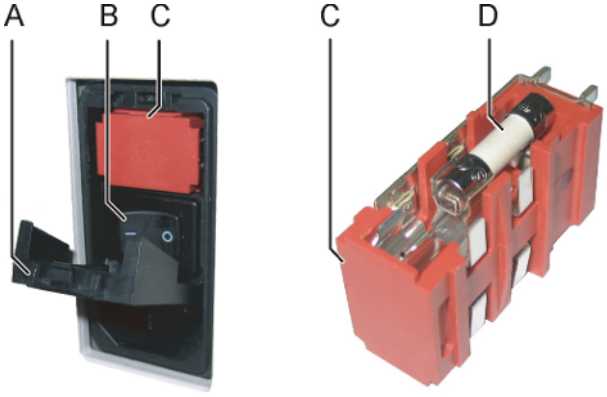
Electric shock

Disconnect the power plug at the unit end before replacing the fuses.

NOTE

Fuse type

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



Fuse holder

A	Cover	C	Fuse holder
B	Main switch	D	Fuse

Fuses: T3.15 250V Order no. 64 45 378

✓ The power plug must be disconnected.

1. Use a screwdriver to carefully pry off the cover of the fuses on the back side of the unit.
2. Pull out the fuse holder.
3. Replace the defective fuses.
4. Reinsert the fuse holder.
5. Close the cover.

7.7 Replacing filter and sponge

NOTE

Change the filter insert regularly!

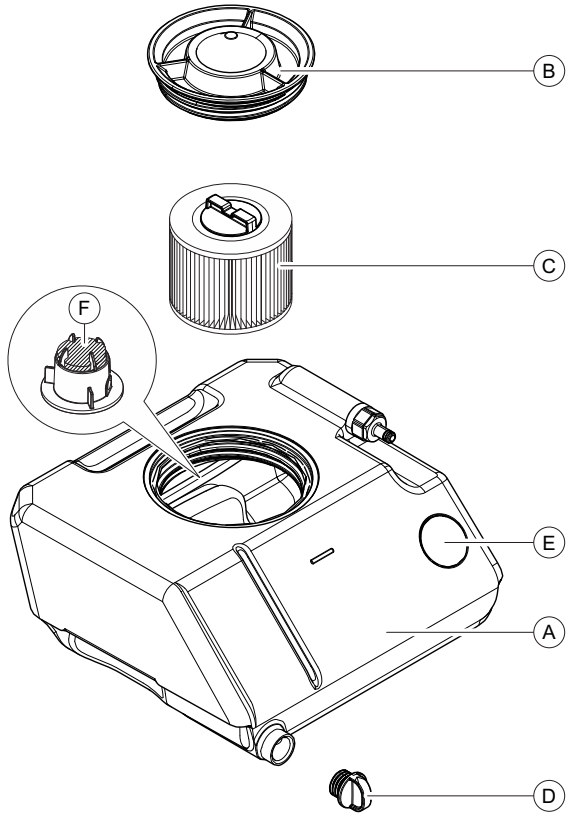
Replace the filter insert and the sponge with new ones at every fourth water change at the latest. Depending on the number and quantity of materials processed, the replacement cycle may be shorter.

You must also replace with a new filter cartridge when the "water pressure is too low" message appears.

NOTE

Filter

Only use filter inserts approved by Dentsply Sirona!



Water tank

A	Tank	D	Tank drain
B	Tank cap	E	RFID chip
C	Filter insert	F	Sponge

7.7.1 Procedure for all materials

✓ The tank is drained, see "Removing water from the unit [→ 73]".

1. Open the drawer of the unit.
2. Pull the water tank out of the unit's housing with the handle on the bottom front side of the tank.
3. Turn the tank cap counter-clockwise and take it off. If you find the tank cap hard to open by hand, use the tank cap opener.
4. Take the filter insert out of the tank.
5. Rinse the water tank.
6. Take the old sponge out of the tank and press a new one into the round area above the suction hose of the water tank.
7. Insert a new filter with handle into the tank and press it firmly onto the base in the floor of the tank.
8. Fill the tank, see "Changing the water [→ 65]".

Filter insert	Order number
Filter unit (1 pcs)	63 87 067
Filter unit (six pack)	64 29 950

7.8 Removing water from the unit

You must remove water from the unit if you will not be using it for a long period of time or wish to transport it.

7.8.1 Procedure

✓ No machining process is running.

1. Turn the device off.
2. Open the drawer of the unit.
3. Pull the water tank out of the unit's housing with the handle on the bottom front side of the tank.
4. Drain the water out of the water tank through the drain opening and reinsert the water tank in the unit.
5. Switch the unit on.
6. Select the symbol shown on the left on the touch interface.
7. Activate the *"Water Pump"* option to switch on the pump.
   ↳ The water pump then starts pumping the water out of the unit. Let the pump run until no more water escapes from the nozzles.
8. Deactivate the *"Water Pump"* option to switch off the pump.
9. Pull out the water tank and empty it.
10. Push it back into the housing.
11. Close the drawer of the unit.

8 Technical description

8.1 System requirements

- CEREC SW 5.1.1 and higher versions

8.2 Production unit

8.2.1 General technical description

- Digital feed control with force monitoring for extremely sensitive processing
- Process-controlled tool drives

Grinding tools

- Diamond 1.4 CS (white)
- Diamond 1.2 CS (white)
- Diamond 1.0 CS (white) [1]
- Diamond 0.6 CS (white) [2]

Milling tools (wet and dry milling)

- Bur 2.5 ZrO2 CS (Yellow)
- Bur 2.5 PMMA CS (Red)
- Bur 1.0 CS (Black)
- Bur 0.5 CS (Black)

[1] as of CEREC SW 5.2

[2] as of CEREC SW 5.2

8.2.2 Technical data

Type designation	CEREC Primemill or CEREC Primemill US
Nominal mains voltage	100 V–240 V ~
Nominal mains frequency	50/60 Hz
Nominal current	2.1 – 4.2 A
Nominal power output	400 VA
Permissible mains voltage fluctuations	±10% of nominal voltage
Type of protection against electric shock	Protection class I device
Degree of protection against ingress of water	Ordinary device (without protection against ingress of water)
Overvoltage category	II
Ambient conditions	For indoor use Pollution degree 2 Air pressure: 700 hPa – 1060 hPa Operating altitude: ≤ 3000 m
Temperature range	5°C to 40°C 41°F to 104°F
Humidity range	80% rel. up to 31°C (87.8°F) decreasing to 50% rel. up to 40°C (104°F)
Operating mode	Continuous operation
Radio equipment frequency band:	13,553 MHz–13,567 MHz
Max. transmission power	< 200 mW
Dimensions (WxHxD) in mm	729 x 454 x 465
Approx. weight	46 kg

8.2.3 Controller board

- 3x 2-axis stepping motor controller with microstepping
- 4 DC motor controllers with integrated speed and current control and force monitoring
- Ethernet, 2 USB, USB B, suction

9 Disposal

On the basis of the Directive 2012/19/EU and the country-specific disposal regulations on waste electrical and electronic equipment, we would like to point out that such equipment must be disposed of in a specific way within the European Union (EU). These regulations demand environmentally friendly recycling/disposal of waste electrical and electronic equipment. These parts may not be disposed of as household waste. This is indicated by the “crossed out trash can” symbol.

Disposal procedure

We feel responsible for our products from the first idea to their disposal. For this reason, we give you an option to return our waste electrical and electronic equipment.

If you wish to dispose of your equipment, please proceed as follows:

In Germany

In order to arrange return of the electrical equipment, please send a disposal request to enretec GmbH. The following options are available for this purpose:

- Use the "Returning an electrical device" button under the "eom" menu item on the enretec GmbH homepage (www.enretec.de).
- Alternatively, you can also contact enretec GmbH directly.

  enretec GmbH
  Kanalstrasse 17
  16727 Velten

  Tel: +49 3304 3919-500
  Email: eom@enretec.de

In accordance with the national disposal regulations regarding old electrical and electronic devices (ElektroG), as the manufacturer, we assume the costs for disposing of the electrical and electronic devices in question. Disassembly, transport, and packaging costs shall be borne by the owner/operator.

⚠ DANGER

Risk of cross contamination!

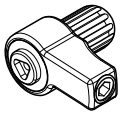
➢ Prior to disassembly/disposal of the unit, all parts must be properly processed (cleaned/disinfected/sterilized).

If your unit is not permanently installed, it will be collected from the practice. If it is permanently installed, it will be picked up curbside at your address by appointment.

Other countries

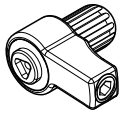
For country-specific information on disposal, contact your local dental dealers.

10 Consumable

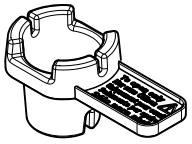
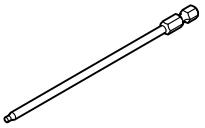
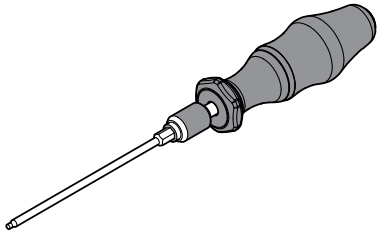
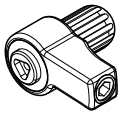
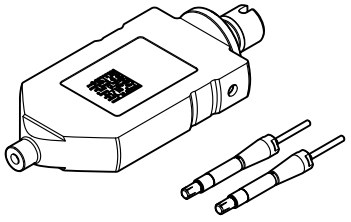
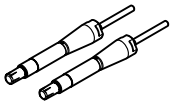
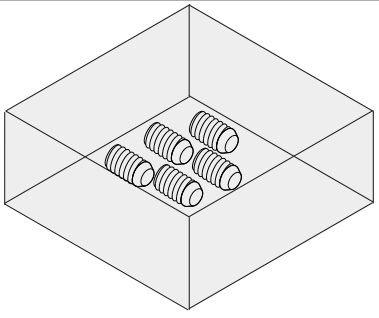
Tool	REF	Usage	Color	Connection geometry of the force transmission
Diamond 1.4 CS 	6714088	Grinding	White	Triangular 
Diamond 1.2 CS 	6714070	Grinding	White	
Diamond 1.0 CS 	6714062	Extra-fine grinding[I]	White	
Diamond 0.6 CS 	6714054	Extra-fine grinding[II]	White	

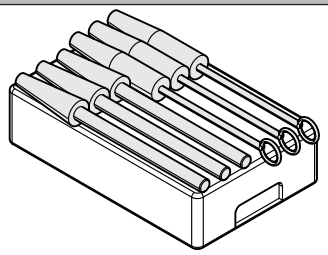
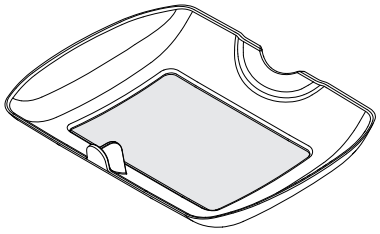
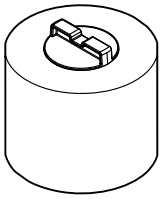
[I] Planned starting from CEREC SW 5.2

[II] Planned starting from CEREC SW 5.2

Tool	REF	Usage	Color	Connection geometry of the force transmission
Bur 2.5 ZrO2 CS 	6713940	Milling of zirconium oxide (wet and dry)	Yellow	Square 
Bur 2.5 PMMA CS 	6737469	Milling of PMMA (wet)	Red	
Bur 1.0 CS 	6713932	All-purpose milling (wet and dry)	Black	Triangular 
Bur 0.5 CS 	6713924	All-purpose milling (wet and dry)	Black	

REF	Designation	Illustration
5809640	DENTATEC, 1000ml	
6631191	MC Care Liquid, 250ml (not available in all markets)	

REF	Designation	Illustration
6280171	Tank cap opener	
6711340	Interchangeable blade TX 10x132	
6718410	Block clamp tool, spare part	
6479856	HT torque wrench, spare	
6479849	Torque wrench, spare	
6623792	Adapter sleeve	
6704790	Adapter sleeve removal tool	
6718444	Calibration set, spare part	
6732528	Calibration pin (2x), spare part	
6258987	Ball pressure screw set (5x), spare	

REF	Designation	Illustration
6718451	Cleaning set, spare part	
6718469	Screen insert, spare part	
6429950	Filter MC/MCX (pack of 6 units)	
6151562	10 Base-T crossover cable 10m	

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We reserve the right to make any alterations which may be required due to technical improvements.

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