

New as of:

09.2011

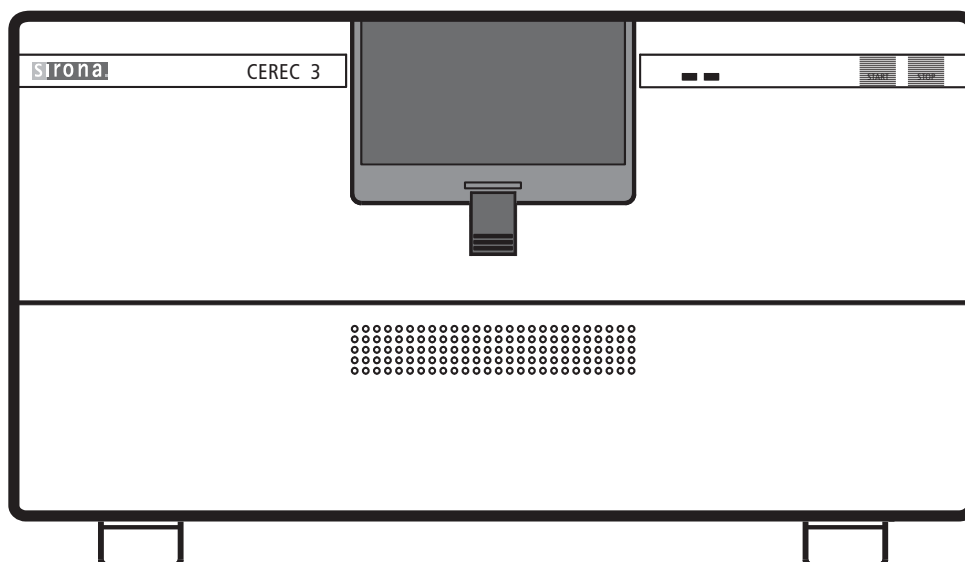
CEREC 3

Operating Instructions

English

This product is covered by one or more of the following US patents:

- US6454629
- US6394880
- US6614538
- US6485305
- US6702649
- US7522764
- US7163443



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1 Dear Customer,

Thank you for purchasing your CEREC 3[®] from Sirona.

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

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

To prevent personal injury or material damage, it is important to observe all safety information.

To safeguard your warranty claims, please complete the attached **Installation Report / Warranty Passport** when the system is handed over and send it to the indicated fax number.

Your
CEREC 3 Team

2 General information

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 Structure of the document

2.1.1 Identification of danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in this document. 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.

NOTICE

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.

2.1.2 Formats and symbols used

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

| | |
|---|---|
| <ul style="list-style-type: none"> ✓ Prerequisite 1. First action step 2. Second action step or ➤ Alternative action ↪ Result | Requests you to do something. |
| See "Formats and symbols used [→ 7]" | Identifies a reference to another text passage and specifies its page number. |
| • List | Identifies a list. |
| "Command/menu item" | Identifies commands, menu items or quotations. |

2.2 Legend



Year of manufacture

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.

Please observe our recommendations for PC configuration (see System requirements).

2.4 Warranty

To safeguard your warranty claims, please complete the attached Installation Report / Warranty Passport when the unit is handed over. Then fax it to the specified fax no.

3 General description

3.1 Certification



CE mark

This product bears the CE mark in accordance with the provisions of directives 2006/95/EC (Low Voltage Directive) and 2004/108/EC (EMC Directive).

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 60601-1:1990 + A1:1993 + A2:1995 based on IEC 60601-1
- EN 60950:1992 + A1: 1993 + A2: 1993 + A3: 1995 + A4: 1997 based on IEC 60950
- UL 60950 third edition 2000

GOST mark



3.2 Intended use

This unit produces computer-aided dental restorations, e.g. from natural-appearing ceramic material. It must not be used for any other purpose.

If the unit is used for any usage purpose other than the one mentioned above, it may be damaged.

Intended use also includes observing the present 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

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

4 Safety

4.1 Basic safety information

4.1.1 Prerequisites

NOTICE

Important information on the building installation

The building installation must be performed by a qualified expert in compliance with the national regulations. DIN VDE 0100-710 applies in Germany.

NOTICE

Restrictions regarding installation site

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

NOTICE

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 Sirona or by agencies authorized by Sirona.
- Components which have failed and influence the safety of the unit must be replaced with original (OEM) spare parts.

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 Changes to the product

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

4.1.4 Accessories

In order to ensure product safety, this product may be operated only with original Sirona accessories or third-party accessories expressly approved by Sirona. The user assumes the risk of using non-approved accessories.

4.2 Milling chamber door open during the milling operation

CAUTION

Milling instruments that continue to run

When the milling chamber door is opened during the milling operation, the milling instruments could continue to run for a short time.

- Be careful not to touch the milling instruments with your hand or any other object during this time.
- Avoid opening the milling chamber door while the milling unit is in operation.
- Before you open the milling chamber door, end any actions that are running by selecting the "Stop" key on the milling unit or in the application software.

4.3 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.

4.4 Disturbance of data transmission via radio module (option)

DECT radio module

Data transmission may be adversely affected in the following cases:

- if more than 6 pairs of radio interfaces are used in one area
- if an E-net mobile phone is used near the radio interface

Höft&Wessel radio module

Data transmission may be adversely affected if more than 8 pairs of radio interfaces are used in one area.

If the radio module is operated in Norway, please note that it must not be operated within a radius of 20 km around Ny-Alesund.

5 Installation and startup

5.1 Transport and unpacking

All Sirona products 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.

NOTICE

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.

Before every transport, the unit must be drained prior to shipment (if it has been operated). See "Removing water from the unit" [→ 38]

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 milling unit in the vicinity of the patient (place it at least 1.5 m away from the patient).

The milling unit requires a level floor space of approx. 480 x 440 mm. The height of the milling unit is 250 mm.

Install the milling unit in such a way that it is not difficult to operate the main switch.

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

Note that the unit weighs 30 kg!

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

NOTICE

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 and 40°C.

5.4 Initial startup

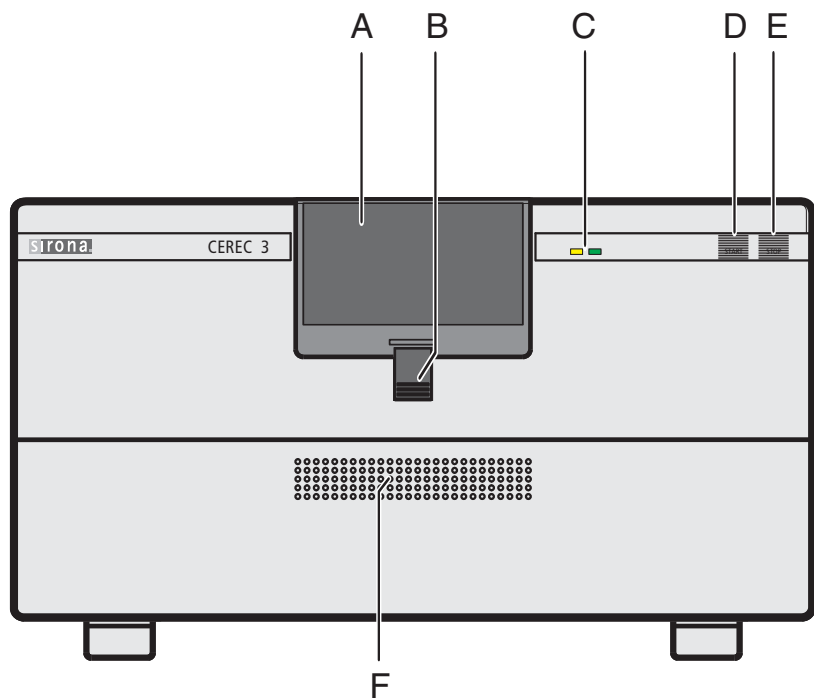
NOTICE

Important information on initial startup

Observe the software installation instructions!

5.4.1 Controls and functional elements

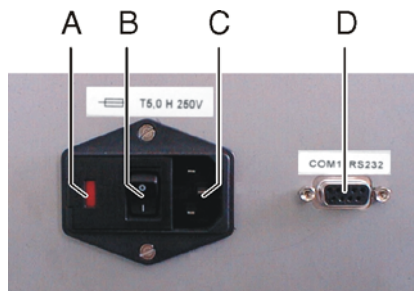
Overview of the front panel



Front view of CEREC 3 milling unit

| | | | |
|---|-------------------------------|---|--------------|
| A | Milling chamber | D | START button |
| B | Catch of milling chamber door | E | STOP button |
| C | LEDs | F | Front flap |

Ports on the back side



Rear side

| | | | |
|---|--------------------------------|---|------------------|
| A | Fuse cover | C | Power connection |
| B | Main switch I = ON, 0 = OFF | D | Serial port |

5.4.2 Information on the START/STOP button

START button

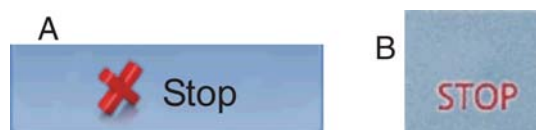


START button

| | | | |
|---|----------------------|---|----------------------------------|
| A | Button on the screen | B | START button on the milling unit |
|---|----------------------|---|----------------------------------|

You can confirm all dialog boxes either by clicking the SW button Start on the screen or by pressing the HW START button on the milling unit.

STOP button



STOP button

| | | | |
|---|----------------------|---|---------------------------------|
| A | Button on the screen | B | STOP button on the milling unit |
|---|----------------------|---|---------------------------------|

A machining operation can be interrupted either by clicking on the SW Stop button on the screen or by pressing the HW STOP button on the milling unit.

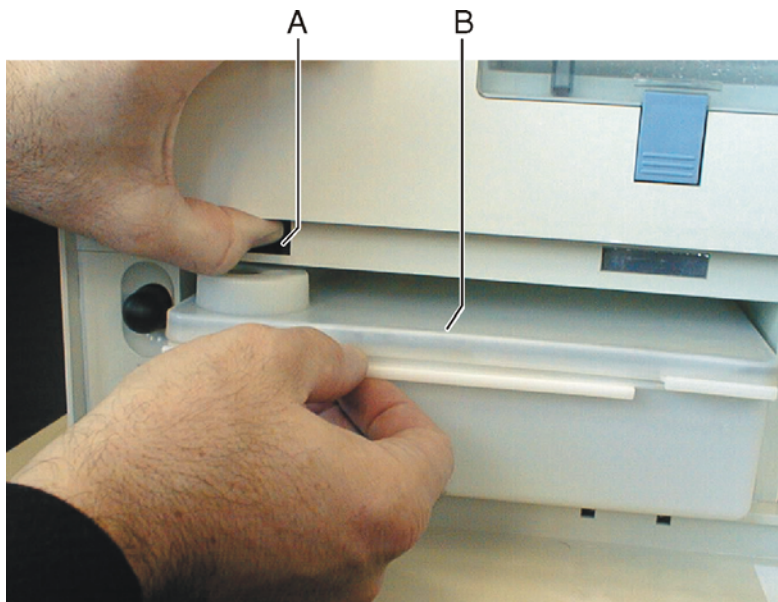
5.4.3 Description of LEDs

The following table is also available as a label affixed to the inside of the front flap.

It describes the system states indicated by the LEDs.

| Green LED | Yellow LED | Description | Actions required |
|-----------|----------------------------|-------------------------------------|--|
| ON | OFF | Ready for operation | - |
| ON | Intermittent fast flashing | Milling chamber door open | Close milling chamber door |
| ON | Intermittent slow flashing | Request to insert part | Insert part, close milling chamber door, press START |
| ON | Slow flashing | Just before end of milling/scanning | Wait |
| ON | ON | Error, STOP button pressed | Observe message to PC/acquisition unit |

5.4.4 Filling the water tank



2 liter water tank

| | | | |
|---|------------|---|------------|
| A | Tank catch | B | Water tank |
|---|------------|---|------------|

- ✓ The water tank has been drained, see "Removing water from the unit" [→ 38].
- 1. Open the flap on the front panel of the unit. To open the front flap, pull it on both sides.
- 2. Press the tank catch upward and carefully pull out the water tank toward the front of the unit.



3. Open the water tank.
4. Take the accessories out of the tank and remove the transport lock of the water filter.

NOTICE

Damage to surfaces!

When undiluted, DENTATEC milling additive etches plastic surfaces and can cause discoloration.

- Do not place DENTATEC on the unit.
- Do not spill DENTATEC.

5. Add approx. 50 ml* of DENTATEC to the tank.
* With the materials IVOCLAR VIVADENT IPS Empress CAD and IVOCLAR VIVADENT IPS e.max CAD, approx. 75 ml

IMPORTANT

Recommended mixing ratio:

25 ml of DENTATEC with 1l of water.

Deviations are possible for certain materials:

- With IVOCLAR VIVADENT IPS Empress CAD and IVOCLAR VIVADENT IPS e.max CAD, mix approx. 37.5ml with 1 liter of water.
- With CAD-Waxx, mix approx. 5 ml with 1 liter of water. See also the operating instructions for the corresponding material.

6. Fill the tank up to the notch with water (bottom edge of cover; approx. 2 liters).
7. Reinsert the water filter and close the water tank.
8. Push the water tank back into the housing just far enough so that the tank catch engages (press the catch downward if necessary).

5.4.5 Installation

5.4.5.1 Connection to the PC

CAUTION

Electric shock

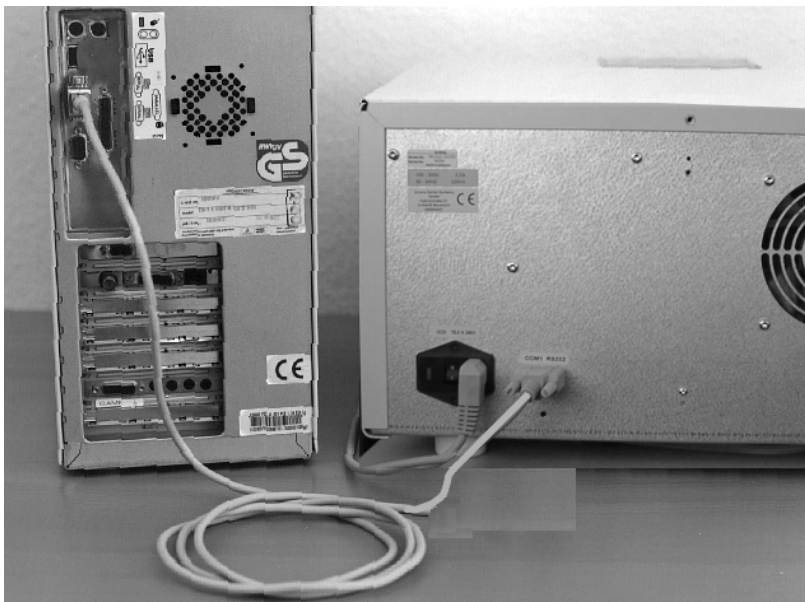
Low voltages are applied to the socket (A) for connecting the serial interface.

- Never touch the pins of the connectors.

- Switch the PC OFF.

5.4.5.1.1 Using the RS 232 interface cable

- ✓ The PC is located near the milling unit.
- ✓ The PC and the milling unit are switched off.

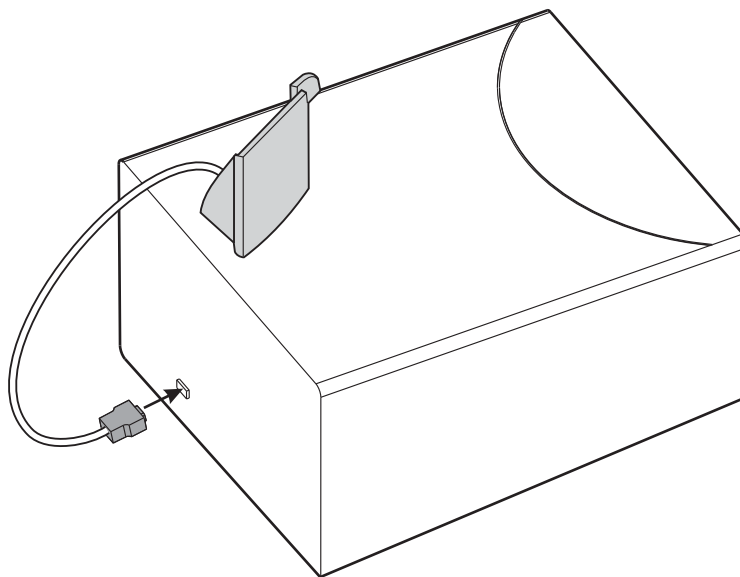


Connecting the milling unit with the interface cable

1. Use the supplied interface cable to connect the milling unit to the RS 232 interface of the PC (COM1, COM2).
2. Screw the interface cable onto the PC and milling unit tight in order to ensure reliable operation.

5.4.5.1.2 Using the DECT radio module (optional)

Connecting the DECT radio module to the milling unit



DECT radio module

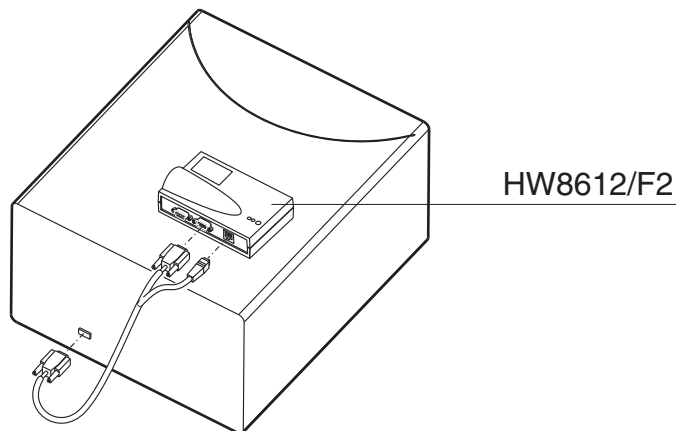
1. If you ordered a DECT radio module, connect it instead of the interface cable and screw it tight.
2. Place it on top of the milling unit as shown.

Connecting the DECT radio module to the PC

1. Plug the connectors of the RS-232 cable into the radio module and into the RS-232 interface of the PC (COM1, COM2) and screw them tight.
2. Connect the radio module to the power supply using the supplied plug-in power supply unit.

5.4.5.1.3 Using the Höft&Wessel radio module (optional)

Connecting the Höft&Wessel wireless module to the milling unit



Höft&Wessel wireless module for milling unit

1. If you ordered a Höft&Wessel wireless module, connect it (with the label **HW8612/F2**) instead of the interface cable and screw it in place.
2. Place it on top of the milling unit as shown.
Tip: The CEREC AC acquisition unit must be equipped with a HW8614/F2 wireless module. This is available as a retrofit kit (Order No. 62 79 702).
3. Pair the wireless module of the milling unit as described in the installation instructions included with the wireless module (Order Number 62 80 064).

5.4.5.2 Connecting the milling unit to the power supply

NOTICE

Grounded power outlet

The milling unit must be connected to a grounded power outlet.

- Connect the milling unit to the power supply with the power cable included in delivery.

5.4.6 Switching the units on

NOTICE

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 milling unit contains grease depots for lubricating components which can 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.

NOTICE

Do not adjust the line voltage

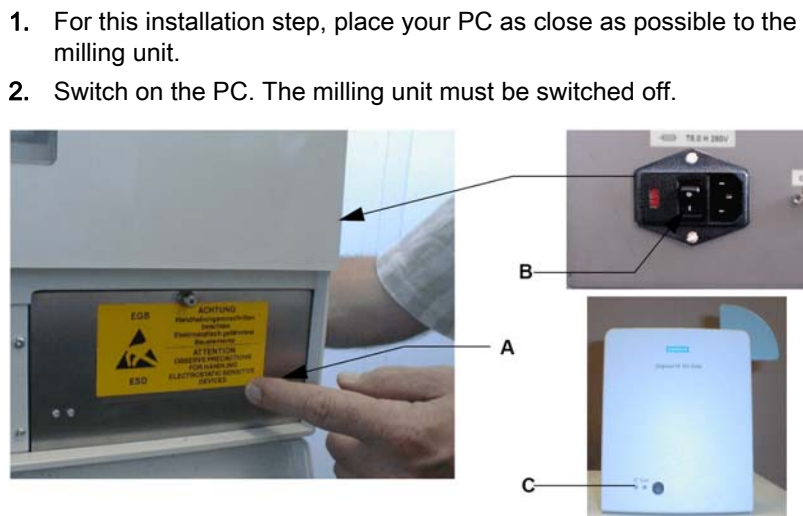
The unit automatically adjusts to the line voltage.

The following three chapters describe how to download (Download) the latest software version to the milling unit. Observe the chapter corresponding to the data transmission hardware installed.

5.4.6.1 Download via the DECT radio interface

Preparations

Downloading the milling program



Switching the milling unit on (DECT)

- Switch the milling unit on (B), **while** keeping the Download key (A) pressed. Wait until the left operating indicator (C) of the radio interface on the milling unit lights up continuously. You can now release the Download key on the milling unit.
- ↳ The green LED on the milling unit is lit and the yellow LED is off.

Adding the milling unit automatically

- ✓ The unit is connected to the PC.
- 1. Start the user software
- 2. Click on the system menu button.
- ↳ The system menu is displayed.
- 3. Click on the "Configuration" button.
- 4. Click on the "Devices" button.
- 5. Click on the "Scan for New Devices" button.
- ↳ All units connected to the PC are detected. You will be prompted to enter a name for new units.
- 6. Enter a name for the new unit.
- ↳ The milling unit is added.

Adding the milling unit (manually)

Devices can be added manually using the "Add Device (Manual)" function. This is essential for units which cannot be operated at the maximum speed of 115200 baud. This affects units with long cable connections or when using certain radio modules (e.g. Futaba, 19200 baud).

1. Start the user software
2. Click on the system menu button.
 ↳ The system menu is displayed.
3. Click on the *"Configuration"* button.
4. Click on the *"Devices"* button.
5. Click on the *"Add Device (Manual)"* button.
6. Select whether the unit is connected to the network or in series.
7. Network: Enter the network address.
 In series: Enter the COM port and the baud rate.
8. Click on the *"Ok"* button.
 ↳ The software attempts to establish contact with the unit.

If the unit fails to connect, check the connection. If necessary, consult a qualified technician.

Configuring the milling unit

- ✓ The milling unit has been successfully added.
1. Click on the unit icon.
 2. Adjust the milling unit's configuration to your unit's configuration.
 3. Click on the *"Ok"* button.

Calibrating the milling unit

1. Calibrate the milling unit (see "Calibrating the milling unit").
 ↳ Once the milling unit is calibrated, its installation is complete. In the dialog box, a green check mark appears next to the milling unit icon.
2. If you encounter problems with one of the above points, please observe the information in the appendix.

Unit removal

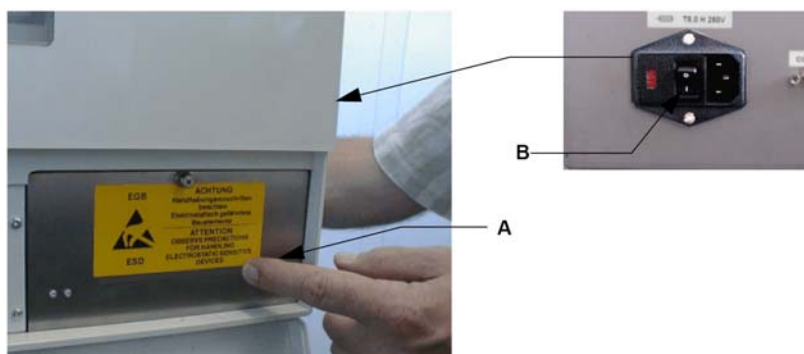
- ✓ If you no longer require a unit (e.g. a unit is replaced), you can remove it.
 - ✓ The unit is operation.
1. Click the *"Configuration"* button in the system menu.
 2. Click on the *"Devices"* button.
 3. Click on the unit that you wish to deinstall.
 4. Click on the *"Delete Device"* button.
 ↳ You will be asked if you would like to remove the unit.
 5. Click on the *"YES"* button.
 ↳ The unit is removed.

5.4.6.2 Download via the Höft&Wessel radio interface

Preparations

1. For this installation step, place your PC as close as possible to the milling unit.
2. Switch on the PC. The milling unit must be switched off.

Downloading the milling program



Switching the milling unit on

- Switch the milling unit on (B), **while** keeping the Download key (A) pressed. You can release the Download key on the milling unit after approx. 5 seconds.
 - ↳ The green LED on the milling unit is lit and the yellow LED is off.

Adding the milling unit automatically

- ✓ The unit is connected to the PC.
 1. Start the user software
 2. Click on the system menu button.
 - ↳ The system menu is displayed.
 3. Click on the "Configuration" button.
 4. Click on the "Devices" button.
 5. Click on the "Scan for New Devices" button.
 - ↳ All units connected to the PC are detected. You will be prompted to enter a name for new units.
 6. Enter a name for the new unit.
 - ↳ The milling unit is added.

Adding the milling unit (manually)

Devices can be added manually using the "Add Device (Manual)" function. This is essential for units which cannot be operated at the maximum speed of 115200 baud. This affects units with long cable connections or when using certain radio modules (e.g. Futaba, 19200 baud).

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2. Click on the system menu button.
 - ↳ The system menu is displayed.
3. Click on the "Configuration" button.
4. Click on the "Devices" button.
5. Click on the "Add Device (Manual)" button.
6. Select whether the unit is connected to the network or in series.
7. Network: Enter the network address.
In series: Enter the COM port and the baud rate.
8. Click on the "Ok" button.
 - ↳ The software attempts to establish contact with the unit.

If the unit fails to connect, check the connection. If necessary, consult a qualified technician.

Configuring the milling unit

- ✓ The milling unit has been successfully added.
- 1. Click on the unit icon.
- 2. Adjust the milling unit's configuration to your unit's configuration.
- 3. Click on the "Ok" button.

Calibrating the milling unit

- 1. Calibrate the milling unit (see "Calibrating the milling unit").
 - ↳ Once the milling unit is calibrated, its installation is complete. In the dialog box, a green check mark appears next to the milling unit icon.
- 2. If you encounter problems with one of the above points, please observe the information in the appendix.

Unit removal

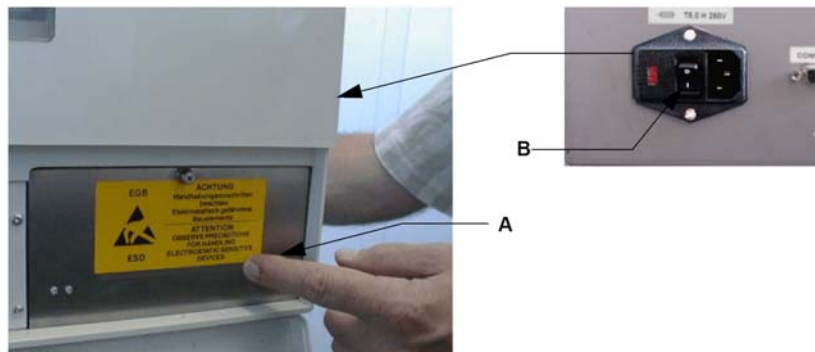
- ✓ If you no longer require a unit (e.g. a unit is replaced), you can remove it.
- ✓ The unit is operation.
- 1. Click the "Configuration" button in the system menu.
- 2. Click on the "Devices" button.
- 3. Click on the unit that you wish to deinstall.
- 4. Click on the "Delete Device" button.
 - ↳ You will be asked if you would like to remove the unit.
- 5. Click on the "YES" button.
 - ↳ The unit is removed.

5.4.6.3 Download using the serial cable supplied

Preparations

Downloading the milling program

- Switch on the PC. The milling unit must be switched off.



Switching the milling unit on

- Switch the milling unit on (B), **while** keeping the Download key (A) pressed. You can release the Download key on the milling unit after approx. 5 seconds.
 - ↳ The green LED on the milling unit is lit and the yellow LED is off.

Adding the milling unit automatically

- ✓ The unit is connected to the PC.
- 1. Start the user software
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Adding the milling unit (manually)

Devices can be added manually using the *"Add Device (Manual)"* function. This is essential for units which cannot be operated at the maximum speed of 115200 baud. This affects units with long cable connections or when using certain radio modules (e.g. Futaba, 19200 baud).

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8. Click on the *"Ok"* button.
 - ↳ The software attempts to establish contact with the unit.

If the unit fails to connect, check the connection. If necessary, consult a qualified technician.

Configuring the milling unit

- ✓ The milling unit has been successfully added.
- 1. Click on the unit icon.
- 2. Adjust the milling unit's configuration to your unit's configuration.
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Calibrating the milling unit

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 - ↳ Once the milling unit is calibrated, its installation is complete. In the dialog box, a green check mark appears next to the milling unit icon.
2. If you encounter problems with one of the above points, please observe the information in the appendix.

Unit removal

- ✓ If you no longer require a unit (e.g. a unit is replaced), you can remove it.
- ✓ The unit is operation.
- 1. Click the *"Configuration"* button in the system menu.
- 2. Click on the *"Devices"* button.
- 3. Click on the unit that you wish to deinstall.
- 4. Click on the *"Delete Device"* button.
 - ↳ You will be asked if you would like to remove the unit.
- 5. Click on the *"YES"* button.
 - ↳ The unit is removed.

5.5 Repacking

NOTICE

Repack only drained units!

Drain the unit! See chapter on "Removing water from the unit". [→ 38]

- ✓ 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 block changing tool and the torque wrench in their holders (to the left of the water tank).
- 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 3".

5.7 Storage

CAUTION

Only drained units may be stored!

Drain the unit! See chapter on "Removing water from the unit". [→ 38]

Store the unit in a closed and dry room at a temperature of -10°C to 50°C for a maximum period of 12 months.

6 Operation

CAUTION

Risk of injury on calibration pins/milling instruments

If you reach into the milling chamber (e.g.: when inserting/removing a ceramic block, changing milling instruments or inserting/removing a calibration phantom), you may injure your hand on the calibration pins/milling instruments.

Be careful not to brush against the calibration pins or milling instruments with your hand.

Always insert your hand in the milling chamber underneath the calibration pins and milling instruments.

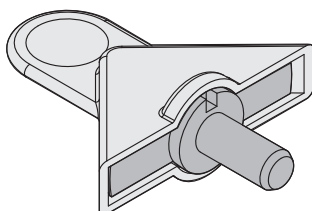
6.1 Calibrating the unit

NOTICE

Faulty milling result

If the unit is not calibrated, the milling result may be faulty.

Calibrate the unit prior to initial use



IMPORTANT

Errors during calibration

If you do not keep the Calibration body clean, proper calibration cannot be performed.

- Keep the calibration phantom clean; do not touch its sensor area with your bare fingers.
- Always insert and remove the calibration phantom with the calibration protection.
- Place the calibration body with calibration protection in the storage box after each calibration.

NOTICE

Use only the supplied calibration tools

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

Calibrating the milling unit

Performing calibration



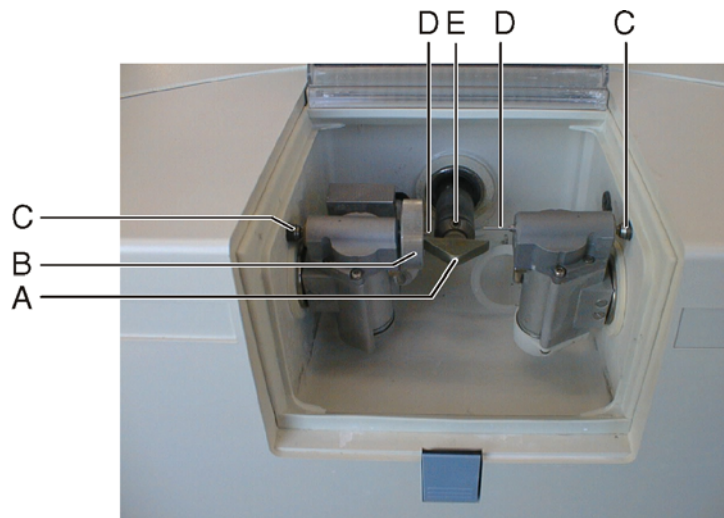
Tools

| | | | |
|---|---------------------|---|---------------|
| A | Block changing tool | B | Torque wrench |
|---|---------------------|---|---------------|

- ✓ The block changing tool, torque wrench and calibration phantom are ready-to-hand.
- ✓ The milling unit and PC are switched on.
- ✓ The software has been started.
- 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 unit you wish to calibrate.
- 4. Click on the "Calibrate" step.

Inserting the calibration pins and phantom

1. Press the catch of the milling chamber door and open the door.



Calibrating the milling unit

| | | | |
|---|-----------------------------------|---|-----------------|
| A | Calibration phantom | B | Torque wrench |
| C | Catch | D | Calibration pin |
| E | Setscrew in the workpiece spindle | | |

2. Loosen the milling instruments with the torque wrench and pull them out manually.

3. Insert the calibration phantom in the workpiece spindle so that its groove fits into the locking pin of the workpiece spindle.
 4. Fasten the calibration phantom with the setscrew.
 5. Turn the calibration pins into the motor mount by hand. Tighten the corresponding chuck with the torque wrench until a clicking sound can be heard.
 6. Close the milling chamber door.
- Performing the calibration**
1. Confirm with the "Start" button.
 - ✎ The automatic calibration begins and takes approx. 4 minutes. Wait until the calibration is complete.
 2. Open the milling chamber door following calibration.

IMPORTANT

Store the calibration tools in a safe place

Store the calibration pins and calibration phantom in a safe place (storage box).

3. Loosen the calibration pins with the torque wrench and pull them out manually.
4. Remove the calibration phantom.

NOTICE

Use only suitable milling instruments.

Do not use CEREC 2 milling instruments with a chuck (1.2 mm) or 2.0 mm milling instruments in this milling unit.

The Step Bur 14 and Cone Bur 14 milling instruments are used in connection with the inLab gearing (serial number 11 200 and higher) to process the following asymmetric blocks:

– VITA In-Ceram 2000 YZ CUBES: YZ-55 (Flip Block), YZ-20/19, YZ-40/19

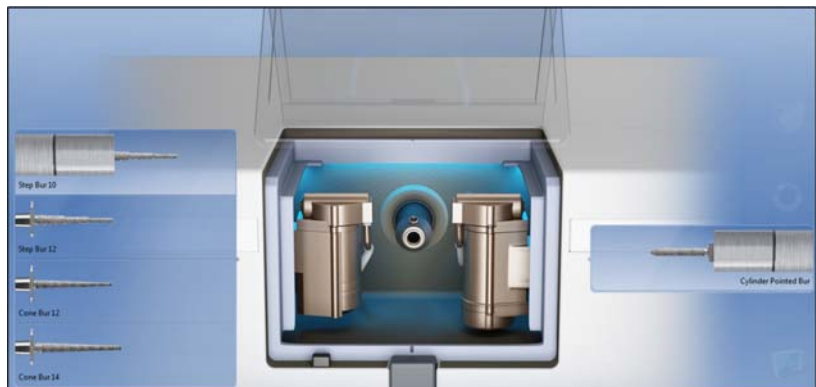
– VITA In-Ceram 2000 AL CUBES: AL-20, AL-40

Any use of other materials may result in failures when creating the restoration and cause damage to the unit.

Reinserting the milling instruments

1. Insert the milling instruments in the motor mount by hand. Tighten the corresponding chuck with the torque wrench until a clicking sound can be heard.

Tip: The combination of milling instruments is listed in chapter "Overview of materials and milling instruments".
2. Close the milling chamber door.
 - ✎ The dialog box for selecting the milling instruments then appears.



Selecting the milling instruments following calibration

3. From the "Left" list, select the milling instrument **that you inserted into the left gearing** and from the "Right" list select **the milling instrument that you inserted into the right gearing**.
4. Confirm this procedure with "Start".
 - ✎ A dialog box appears stating "Calibration successful!".
5. Confirm with "Ok".

6.2 Start the milling process

Starting the milling process

- ✓ Downloading or designing a restoration (see Operator's Manual).
- ✓ You are in the "MILL" phase, and have selected the milling unit, verified the settings and positioned the restoration in the block.
- Click on the "Start Milling" step.
 - ✎ The milling unit then moves to the insertion position.

A summary table of the milling instruments and the materials that can be milled using them is listed in chapter "Overview of materials and milling instruments".

Performing the milling process

1. Press the catch of the milling chamber door and open the door.

IMPORTANT

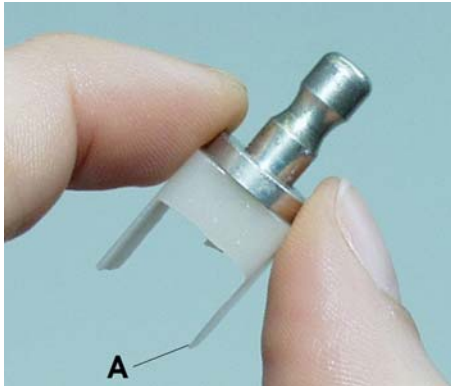
Error message during touch process!

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

2. Insert the selected ceramic block in the workpiece spindle so that its groove fits into the locking pin of the workpiece spindle.
3. Fasten the ceramic block with the setscrew.
4. Close the milling chamber door and confirm the procedure by clicking "Start".
 - ✎ The expected duration of the scanning process is indicated by a message window.
 - Tip:** You can cancel the scanning process at any time by pressing the "Stop" button.

Removing the restoration

1. When the milling process has been completed, open the milling chamber door.



2. Remove the restoration.

⚠ CAUTION

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 setscrew on the spindle and remove the rest of the ceramic block.
Tip: After a specified operating time, the surfaces of the shafts will obtain a mirror finish. This has no influence on the accuracy of the milling result.
4. Close the milling chamber door.

⚠ CAUTION

Do not use defective milling results!

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

7 Maintenance

NOTICE

Observe country-specific Regulations!

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

NOTICE

Perform maintenance regularly!

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

NOTICE

Observe error messages

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

NOTICE

Clean water paths regularly

Clean the water paths annually using the DENTACLEAN cleaning set.

7.1 Changing the water

7.1.1 General information

NOTICE

Damage to the pump and milling drives!

An excessively high ceramic content in the cooling water will damage the pump and milling drives.

Change the water regularly!

When the water is due to be changed, a message window appears on your monitor to remind you that it is time to change the water.

Preventing odors

All milling additives contain a biologically degradable 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, 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 DENTATEC milling additive 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.

NOTICE

Damage to surfaces!

When undiluted, DENTATEC milling additive etches plastic surfaces and can cause discoloration.

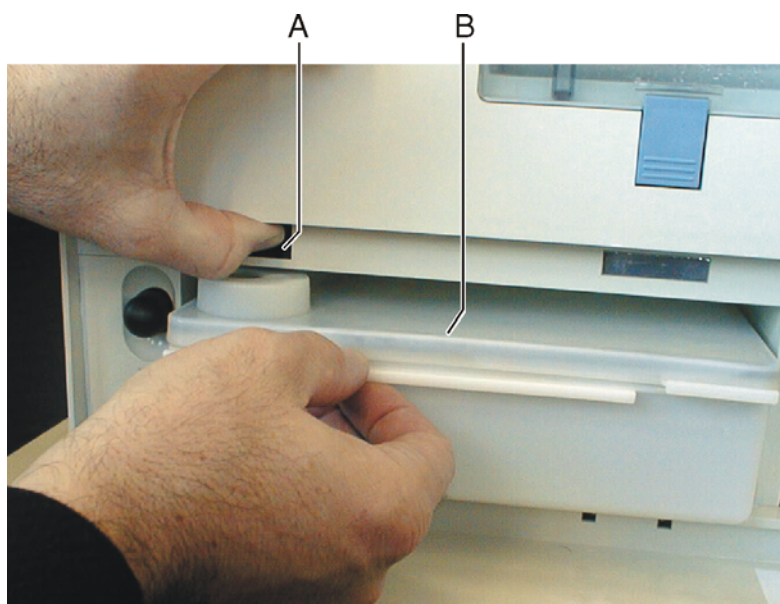
- Do not place DENTATEC on the unit.
- Do not spill DENTATEC.

NOTICE

Permissible milling additive

Use only DENTATEC as a milling additive.

7.1.2 Changing the water



2 liter water tank

| | | | |
|---|------------|---|------------|
| A | Tank catch | B | Water tank |
|---|------------|---|------------|

When changing water, proceed as follows:

- ✓ The unit is switched on.
 - ✓ No milling procedure is running.
1. Open the flap on the front panel of the unit.
To open the front flap, pull it on both sides.
 2. Press the tank catch upward and carefully pull out the water tank toward the front of the unit.
 3. Drain the water out of the water tank through the drain opening.



4. Open the water tank and rinse it out.
5. Check the water tank and the filter for dirt and contamination.
6. If the water tank or the filter is dirty, clean it thoroughly under running water. Detach the filter, rinse it out with water, and then reinsert it.

NOTICE

Foaming not permissible!

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

Do not use any cleaning agents.

7. Add approx. 50 ml* of DENTATEC to the tank.
* With the materials IVOCLAR VIVADENT IPS Empress CAD and IVOCLAR VIVADENT IPS e.max CAD, approx. 75 ml

IMPORTANT

Recommended mixing ratio:

25 ml of DENTATEC with 1l of water.

Deviations are possible for certain materials:





- With IVOCLAR VIVADENT IPS Empress CAD and IVOCLAR VIVADENT IPS e.max CAD, mix approx. 37.5ml with 1 liter of water.
- With CAD-Waxx, mix approx. 5 ml with 1 liter of water. See also the operating instructions for the corresponding material.






8. Fill the tank up to the notch with water (bottom edge of cover; approx. 2 liters).
9. Close the water tank.
10. Push the water tank back into the housing just far enough so that the tank catch engages (press the catch downward if necessary).

7.2 Milling instruments

7.2.1 Overview of materials and milling instruments

The following table shows the two pairs of milling instruments, the positions where they must be inserted and the materials that can be milled with each instrument pair:

| Material | Left | | Right | |
|-------------------|-----------------|---|----------------------|---|
| Silicate Ceramic* | Step Bur 12**** |  | Cylinder Pointed Bur |  |
| Composite** | Cone Bur 14*** |  | Cylinder Pointed Bur |  |

| | | | |
|---|---|----------------------|-----------|
| <p>* Silicate Ceramic: Sirona CEREC Blocs Sirona CEREC Blocs PC VITA VITABLOCS® Mark II VITA VITABLOCS® TriLux VITA VITABLOCS® TriLux forte IVOCLAR VIVADENT IPS Empress® CAD IVOCLAR VIVADENT IPS Empress® CAD Multi IVOCLAR VIVADENT IPS e.max® CAD 3M ESPE Paradigm™ C Glass Ceramic</p> <p>** Composite: VITA CAD-Temp monoColor VITA CAD-Temp multiColor IVOCLAR VIVADENT TelioCAD Merz artBloc® Temp 3M ESPE Paradigm™ MZ 100</p> <p>*** Not possible with milling unit serial numbers < 5000</p> <p>**** Not possible with milling unit serial numbers < 5000 Alternative: Step Bur 10 (REF 60 89 010)</p> | | | REF |
| |  | Step Bur 12 | 60 52 265 |
| |  | Step Bur 10 | 60 89 010 |
| |  | Cylinder Pointed Bur | 58 55 734 |
| |  | Cone Bur 14*** | 59 99 771 |
| |  | Cone Bur 12*** | 59 35 668 |

7.2.2 Changing milling instruments (burs)

Unscrewing the milling instruments

NOTICE

Regular replacement of milling instruments

Change the milling instruments as soon as the system prompts you to do this.

Change the milling instruments after using them to mill 25 restorations at the latest.

After 30,000 minutes of milling operation, a maintenance prompt is displayed during each milling instrument change until the service technician performs maintenance and the milling time is reset.

- ✓ The torque wrench is ready-to-hand.
 - ✓ The milling unit and PC are switched on.
 - ✓ The software has been started.
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 unit whose milling instruments you wish to change.
 4. Click on the "Change Instruments" step.

- ↩ The motors travel to the change position for the milling instruments.

The "Change instruments" dialog box opens.

5. Press the catch of the milling chamber door and open the door.

CAUTION

Risk of injury from milling instruments

If you put your hand in the milling chamber, you could injure it on the milling instruments.

Be careful not to brush against the milling instruments with your hand.

6. Loosen the worn out/defective milling instrument with the torque key and unscrew it counterclockwise by hand.

NOTICE

Use only suitable milling instruments.

Do not use CEREC 2 milling instruments with a chuck (1.2 mm) or 2.0 mm milling instruments in this milling unit.

If you use the milling unit in connection with the inLab 3D software, you can use additional milling instruments. In this regard, observe the following two safety instructions.

The Cone Bur 12 and Step Bur 12 milling instruments may be used only in milling units with long travel ranges (Serial No. 5000 or higher).

The Step Bur 14 and Cone Bur 14 milling instruments are used in connection with the inLab gearing (serial number 11 200 and higher) to process the following asymmetric blocks:

– VITA In-Ceram 2000 YZ CUBES: YZ-55 (Flip Block), YZ-20/19, YZ-40/19

– VITA In-Ceram 2000 AL CUBES: AL-20, AL-40

Any use of other materials may result in failures when creating the restoration and cause damage to the unit.

Inserting the new milling instrument

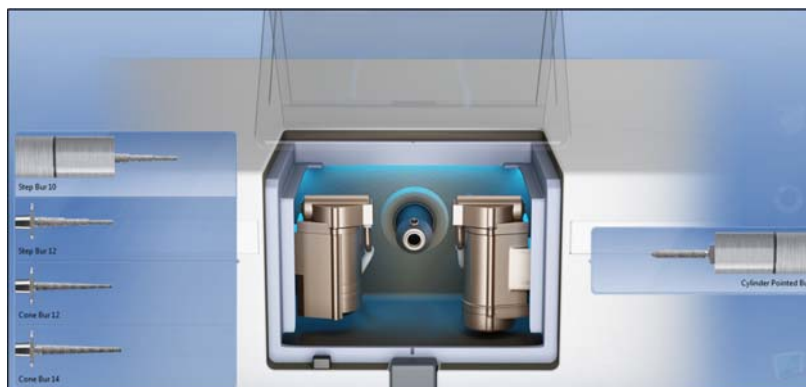
1. Screw the new milling instrument into the gearing by turning it clockwise by hand; then tighten it securely with the torque key until you hear an audible clicking noise.

IMPORTANT

Faulty milling results

Interchanging milling instruments leads to faulty milling results.

2. Close the milling chamber door.



a defective milling instrument

3. On the PC, select the milling instrument(s) you have installed and click on "Start" (also refer to the Operator's Manual).

NOTICE

Cleaning the cooling water nozzles

The cooling water nozzles in the milling chamber always must be kept free of lime and milling dust deposits. The corresponding cooling water jet always must strike the milling instrument accurately!

- ✓ The cooling water nozzles are dirty.
- Clean the nozzles with a cleaning wire and the SPRAYVIT syringe (if available).

Changing a defective milling instrument

If a milling instrument breaks during a milling operation, the corresponding motor travels to the change position. A dialog box which marks the side with the broken milling instrument with a red cross then opens.

- ✓ The milling instrument is broken.
1. Change the defective milling instrument as described above.
 2. Select the milling instrument which you have inserted.
 3. Press the "Start" button.

7.3 Care and cleaning agents

NOTICE

Approved care and cleaning agents

Use only care and cleaning agents which have been approved by Sirona!

A continuously updated list of approved agents can be downloaded from the Internet at the address "www.sirona.com". In the navigation bar, go to the menu items "SERVICE" / "Care and cleaning" and then open the document "Care and cleaning agents".

If you do not have any access to the Internet, please contact your dental depot to order the list.

REF 59 70 905

7.4 Cleaning surfaces

NOTICE

Care and cleaning agents

Use only cleaning and care agents which have been approved by Sirona, see Cleaning and care agents.

NOTICE

Do not allow liquids to run into the ventilation slots!

7.4.1 Disinfecting

Wipe surfaces down with a surface disinfectant (wiping disinfectant).
Observe the manufacturer's instructions regarding restrictions for use.

7.4.2 Protection against medicaments

Due to their high concentrations and the substances they contain, many medicaments can dissolve, etch, bleach or discolor surfaces.

NOTICE

Damage to the surface

Clean the surface immediately with a moist cloth and a cleaning agent.

7.4.3 Cleaning

Remove dirt, grime and disinfectant residue regularly using mild, commercially available cleaning agents.

7.5 Replacing the main fuses



WARNING

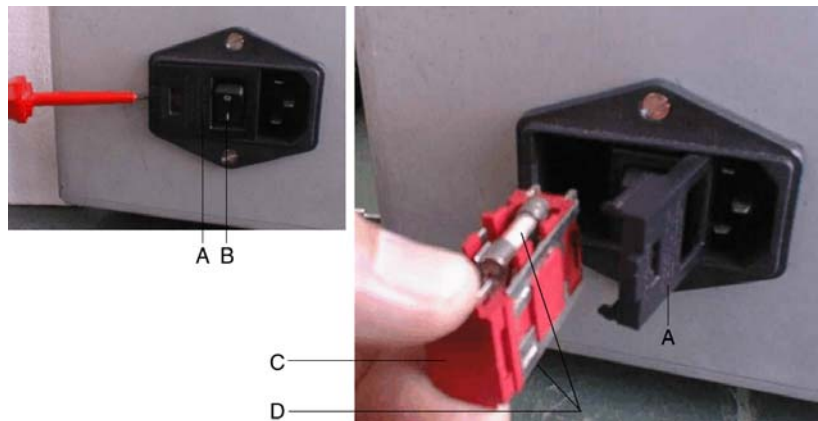
Electric shock

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

NOTICE

Fuse type

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



Main fuses

| | | | |
|---|-------|---|-------------|
| A | Cover | C | Fuse holder |
| B | CC | D | Fuse |

Fuses: T5H250V

Order No. 20 33 111

- ✓ 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.

7.6 Removing water from the unit

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

- ✓ No milling/scanning process is running.
- 1. Open the flap on the front panel of the unit.
To open the front flap, pull it on both sides.
- 2. Press the tank catch upward and carefully pull out the water tank toward the front of the unit.
- 3. Open the water tank, drain it and reinsert it.
- 4. You can start the service program after installing the CEREC 3D program in the "CEREC" program group. To do this, click "Start"/ "Programs"/ "CEREC"/ "Service".
- 5. You can also change the water of the milling unit **without** a service password by clicking the "Maintenance only" button.
- 6. Let the water pump continue running until no more water comes out of the nozzles (approx. 1min.).
- 7. Pull out the water tank and empty it.
- 8. Push the water tank back into the housing just far enough so that the tank catch engages (press the catch downward if necessary).

8 Technical description

8.1 System requirements

The CEREC SW must only be installed on CEREC AC acquisition units.

The hardware version of the acquisition unit must be **PC Hardware HQ** with Windows 7 (64 bit) or higher.

If necessary, upgrade your operating system.

8.2 Milling unit

- Digital feed control with force monitoring for extremely sensitive processing of ceramic materials
- Process-controlled milling motors
- Positioning step size: 12,5 µm
- Milling repeatability: +/- 30 µm
- Milling speed: approx. 0.4-0.6 mm/min

Milling instruments (performance-monitored, backlash-free bearing)

- Grain size: 64 µm
- Speed: 40.000 rpm
- **Step Bur 12** included in the scope of supply
- **Cylinder Pointed Bur** included in the scope of supply

8.2.1 Technical data

| | |
|---|---|
| Type designation | Milling unit CEREC 3 |
| Rated line voltage | 100V - 230V AC |
| Rated power frequency | 50/60 Hz |
| Rated current | 1.5 - 3.5 A |
| Nominal power output: | 320 VA |
| Permissible line voltage fluctuations | ±10% of nominal voltage |
| Type of protection against electric shock | Unit classified as a Class 1 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 |
| Temperature range | 5°C to 40°C |
| Humidity range | 80% rel. up to 31°C decreasing to 50% rel. up to 40°C |
| Mode of operation | Continuous operation |
| Dimensions (WxHxD) in mm | 480 x 250 x 440 |
| Approx. weight | 30 kg |

8.2.2 Controller board:

- Real Time Micro Controller Board C167
- 6-axis stepping motor controller
- 2 DC motor controllers with integrated speed and current control
- RS-232 interface 115kBaud

8.3 Radio module (optional)

European/US radio interface (Höft & Wessel)

| | |
|-----------------------|---|
| Transmission speed: | 115.2 kBaud |
| Range: | up to 60m indoors, up to 300m outdoors |
| Data interface; | RS-232 |
| Operating temperature | 0°C to +55°C |

Radio interface, DECT/T-Sinus 45 Data 1 (Telekom)

| | |
|-----------------------|---|
| Transmission speed: | 115.2 kBaud |
| Range: | up to 50m indoors, up to 300m outdoors |
| Data interface; | RS-232 |
| Operating temperature | +5°C to +45°C |



9 Disposal

Your product is marked with the adjacent symbol. Within the European Economic Area, this product is subject to Directive 2002/96/EC as well as the corresponding national laws. This directive requires environmentally sound recycling/disposal of the product. The product must not be disposed of as domestic refuse!

Please observe the disposal regulations applicable in your country.

Disposal procedure

Please note that this product is subject to the stipulations in EC Directive 2002/96 governing waste electrical and electronic equipment and must be disposed of in line with these special requirements within the European Union (EU).

Prior to disassembly / disposal of the product, it must be fully prepared (cleaned / disinfected / sterilized).

When disposing of equipment permanently, please proceed as follows:

In Germany:

To initiate return of the electrical device, please send a disposal order to "enretec GmbH".



1. You can find a form for placing a disposal order on the company's homepage (www.enretec.de) under the menu item "Entsorgung elektrischer und elektronischer Geräte" (Disposal of electric and electronic devices). The form can either be downloaded or completed online.
 2. Fill out the form with the corresponding details and send it as an online order or fax it to enretec GmbH at +49(0)3304 3919 590. You can also get in touch with the following contacts for disposal orders and any questions relating to this you may have:
Phone: +49(0)3304 3919 500;
E-mail: pickup@eomRECYCLING.com
Mailing address: enretec GmbH, Geschäftsbereich eomRECYCLING
Kanalstrasse 17, 16727 Velten
- ↳ Any nonpermanently installed equipment will be picked up at its installation site in the practice. Permanently installed equipment will be picked up curbside at your address by appointment.

All disassembly, transport and packaging costs are to be borne by the owner/operator of the equipment. The disposal itself is free of charge.

Worldwide (outside Germany):

Please contact your local dental equipment specialist for country-specific information on disposal.

9.1 Additional note on disposal

The system mainboard contains a lithium battery.

10 Appendix

10.1 Procedure in case of problems downloading via the Höft&Wessel radio interface

See "Download via the Höft&Wessel radio interface"

1. Make sure that the radio interface(s) is (are) correctly connected.
2. Shut down the PC and switch it off. Unplug the plug-in power supply of the PC radio interface from the power outlet for 5 seconds. Switch the milling unit off. Restore all cable connections and test these. Start over again at **Preparations**, Item 2.
3. Click on the system menu button.
☞ The system menu opens.
4. Click on the "*Configuration*" button.
5. Click on the "*Devices*" button.
6. Click on the unit you wish to configure.
7. Make sure that the correct COM interface and baud rate have been selected. The baud rate must be set to **115200**. If an optical impression unit is used, set the COM 1 port. When using a PC set the port to which the radio interface is connected.
8. Should the installation of the software on the milling unit fail again, attempt the installation using the serial cable supplied.

10.2 Procedure in case of problems downloading with the supplied serial cable

See "Download using the serial cable supplied"

Tip: For CEREC AC you require a USB to serial interface adapter (REF 60 27 598).

1. Shut down the PC and switch it off. Switch the milling unit off. Restore all cable connections and test these. Make sure that you have used the 2 meter long serial interface cable supplied. Start over again at **Preparations**.
2. Click on the system menu button.
☞ The system menu opens.
3. Click on the "*Configuration*" button.
4. Click on the "*Devices*" button.
5. Click on the unit you wish to configure.
6. Make sure that the correct COM interface and baud rate have been selected. The baud rate must be set to **115200**. Proceed in the same way as a PC and select the port to which the serial cable is connected.

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

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