New as of: 12.2014

sirona
The Dental Company

CEREC MC XL

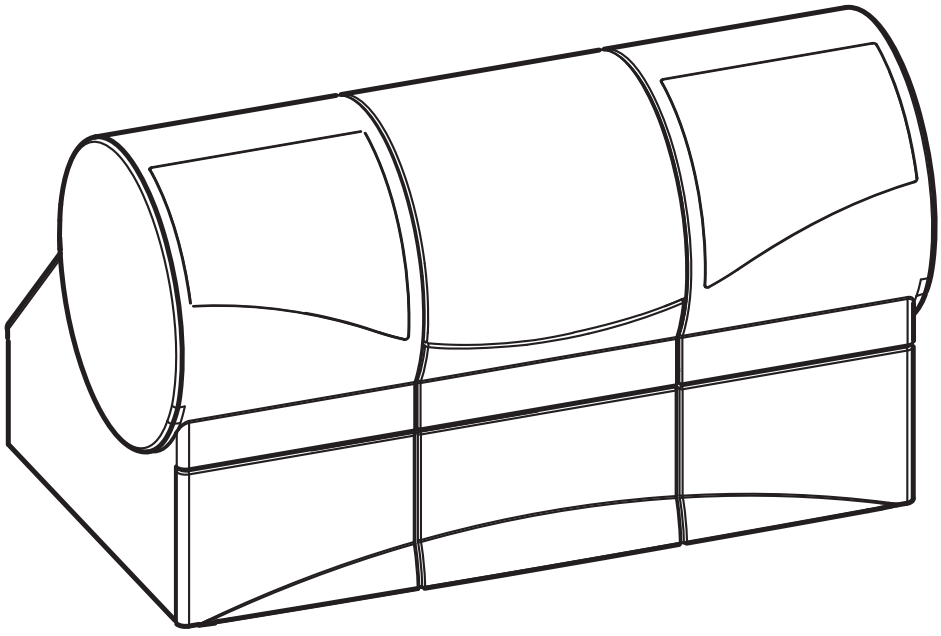
(up to serial number 199.999)

Operating Instructions

English

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

- US6454629
- US6394880
- US6702649
- US7522764
- US7163443



Contents

1 Dear Customer, ... 5

2 General data 6

2.1 Identification of danger levels 6

2.2 Formats and symbols used 7

2.3 Note PC / Acquisition Unit 7

3 General description 8

3.1 Certification 8

3.2 Normal use 8

4 Safety 9

4.1 Basic safety information 9

4.1.1 Prerequisites 9

4.1.2 Maintenance and repair 9

4.1.3 Modifications to the product 9

4.1.4 Accessories 10

4.2 Opening the grinding chamber door during the production process 10

4.3 Wireless phone interference with equipment 10

4.4 Disturbance of data transmission 10

5 Installation and startup 11

5.1 Transport and unpacking 11

5.2 Disposal of packaging materials 11

5.3 Installation site 12

5.4 Commissioning 12

5.4.1 Functional elements 13

5.4.2 Standard accessories 15

5.4.2.1 Instruments 15

5.4.2.2 Calibration pins 15

5.4.2.3 Torque wrench 16

5.4.3 Display description 17

5.4.4 Lighting of the grinding chamber 17

5.4.5 Inserting the grinding chamber sieve 18

5.4.6 Connecting the bar code reader 18

5.4.7 Installation 19

5.4.7.1 Connecting to the PC via LAN 19

5.4.7.2 Connecting the unit to the power supply 19

5.4.7.3 Installing the unit 19

5.4.7.4 Connecting to the PC via WLAN (option) 21
5.4.7.5 Operating several grinding units over one access point ... 22
5.4.7.6 Connecting to the PC via the wireless H&W interface (optional) 22
5.4.8 Filling the water tank 23
5.4.8.1 CEREC MC XL Basic 23
5.4.8.2 CEREC MC XL with premium package 24
5.4.9 Switching the unit ON and OFF 25
5.5 Repacking 26
5.6 Scope of supply 26
5.7 Storage 26
6 Operation 27
6.1 Configuration (CEREC MC XL) 27
6.2 Calibrating the unit 28
6.3 Production process 31
6.3.1 Process types 31
6.3.1.1 Grinding 31
6.3.1.2 Milling 32
6.3.1.3 Milling models 33
6.3.1.4 Permitted instrument combinations 33
6.3.2 Preparations 34
6.3.3 Starting the production process 34
6.3.4 Terminating the production process 35
6.3.5 Information regarding the quality seal (CEREC MC XL with premium package) 36
6.4 Entering the bar code 36
6.5 Using the manual block fixing 37
7 Service 39
7.1 Changing the water 40
7.1.1 General information 40
7.1.2 Changing the water (CEREC MC XL Basic) 42
7.1.3 Changing the water (CEREC MC XL with premium package) 43
7.1.3.1 Procedure for all materials except for base metals 43
7.1.3.2 Procedure for processing base metal materials 44
7.2 Instruments 47
7.2.1 Overview of materials/instruments 47
7.2.1.1 CEREC MC XL Basic 47
7.2.1.2 CEREC MC XL with premium package 47
7.2.2 Changing instruments 47
7.3 Care, cleaning agents, and disinfectants 49

7.4 Cleaning surfaces 50
7.4.1 Disinfecting 50
7.4.2 Protection against medicaments 50
7.4.3 Cleaning 50
7.5 Replacing the main fuses 51
7.6 Changing the filter 52
7.6.1 CEREC MC XL Basic 52
7.6.2 CEREC MC XL with premium package 53
7.6.2.1 Procedure for all materials except for base metals 54
7.6.2.2 Base metal operation or mixed operation with base metal and other materials 54
7.6.3 Changing filters on the external tank 54
7.7 Removing water from the unit 58
7.7.1 Procedure for all materials except for base metals 58
7.7.2 Base metal operation or mixed operation with base metal and other materials 58
7.8 Using the tank cap opener 59
8 Technical description 61
8.1 System requirements 61
8.1.1 CEREC MC XL Basic 61
8.1.2 CEREC MC XL with premium package 61
8.2 Grinding and milling unit 61
8.2.1 General technical description 61
8.2.2 Technical data 63
8.2.3 Controller board 63
9 Disposal 64
Index 65

1 Dear Customer,

Thank you for your purchase of this CEREC MC XL® unit from 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 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.

Your
CEREC MC XL team,

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 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.

2.2 Formats and symbols used

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

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

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 [→ 61]).

3 General description

3.1 Certification

CE mark

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 61010-1:2011-07 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

GOST mark

ИМ24

3.2 Normal 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 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 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

In order to ensure product safety, this device may be operated only with original Sirona accessories or third-party accessories expressly approved by Sirona. In particular, only the power cable supplied with the unit or the corresponding original spare part may be used with the unit. The user assumes the risk of using non-approved accessories.

4.2 Opening the grinding chamber door during the production process

⚠ CAUTION

Instruments that continue to run

When the grinding chamber door is opened during the production process, the instruments could continue to run for a short time.

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

Note on wireless communication

Data communication between the acquisition unit and the CEREC MC XL grinding unit should preferably be established via the wireless H&W interface or 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.

Sirona has selected the best possible configuration for data communication via the wireless H&W interface or 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 CEREC AC is occupied by another plug, remove this H&W wireless interface connection and instead connect the LAN cable with the CEREC MC XL grinding unit.

5 Installation and startup

5.1 Transport and unpacking

All products from 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.

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.

The unit must be drained prior to shipment (if it has been operated). Removing water from the unit [→ 58]

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

The grinding unit requires a level floor space of approx. 700 x 420 mm
The height of the grinding unit is:

- with the grinding chamber door closed: 425 mm
- with the grinding chamber door open: 570 mm

Install the grinding 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 back of the unit and the wall must at least be 10 cm.

Note that the unit weighs 43 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 Commissioning

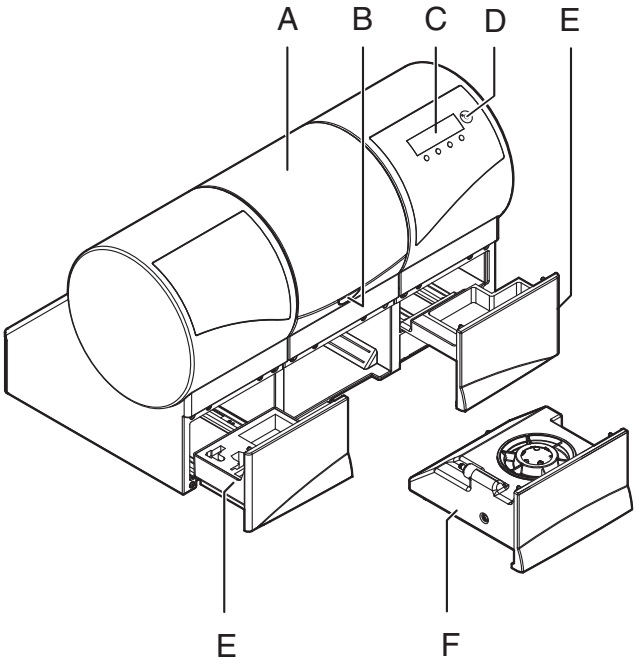
NOTICE

Important information on initial startup

Observe the software installation instructions!

5.4.1 Functional elements

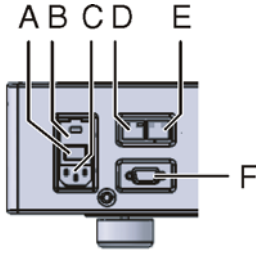
Unit overview



Overview of the milling unit

A	Milling chamber	D	ON/OFF switch
B	Milling chamber door catch	E	Drawer
C	Display	F	Water tank

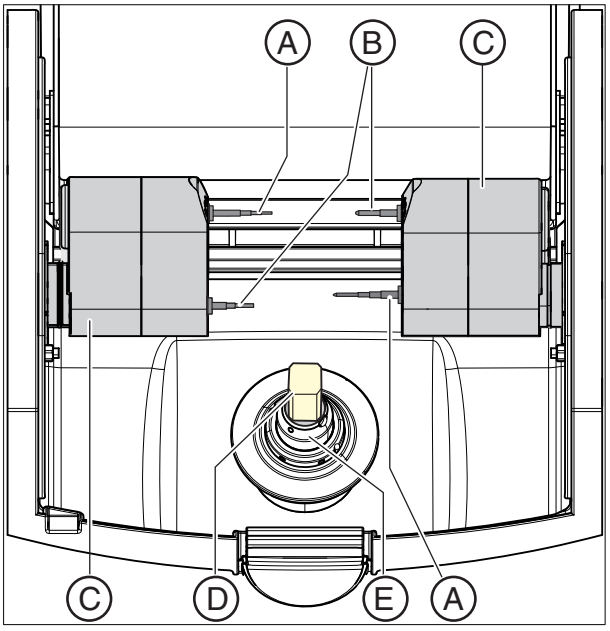
Ports on the back side



Ports

A	Main switch **I** = ON, **0** = OFF	D	LAN port Ethernet
B	Fuse cover	E	This connection is not used
C	Power connection	F	Bar code reader connection

Grinding chamber



Grinding chamber

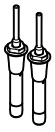
A	Instrument set 1	D	Ceramic block
B	Instrument set 2 (CEREC MC XL with premium package)	E	Workpiece spindle
C	Motor mount		

5.4.2 Standard accessories

5.4.2.1 Instruments

The following instruments are available for production purposes. When replacing instruments, ensure the permitted instrument combinations are used (see "Permitted instrument combinations [→ 33]“).

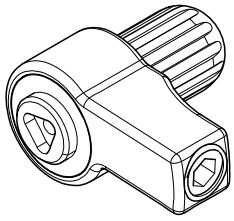
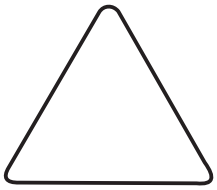
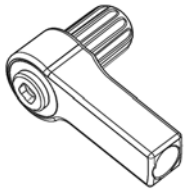
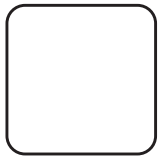
5.4.2.2 Calibration pins



The calibration pins are used when calibrating the instrument sets (see "Calibrating the unit [→ 28]“).

5.4.2.3 Torque wrench

To insert or replace the instruments or calibration pins, use the following torque wrench.

Instrument	REF	Usage	Torque wrench	Clamping format of the force transmission
Step Bur 12 S 	6240167	Grinding		Triangular 
Cyl. Pointed Bur 12 S 	6240159	Grinding		
Step Bur 20 	6259597	Grinding		
Cyl. Pointed Bur 20 	6259589	Grinding		
Step Bur 12 	6260025	Grinding		
Shaper 25 	6299395	Milling		
Finisher 10 	6299387	Milling		
Calibration pin (AiO*) 	6241132	Calibration		
Shaper 25 RZ 	6433440	Milling		Square 

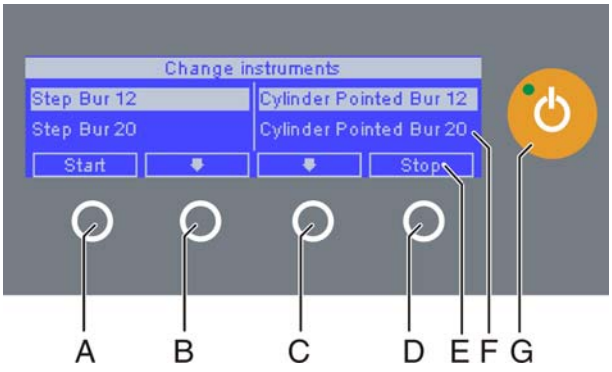
* All-in-One

5.4.3 Display description

These operating instructions describe how to operate the unit by executing and confirming commands via your PC.

You can also confirm commands such as *"Start"*, *"Stop"*, *"Cancel"* or *"OK"* directly on the display of your grinding unit.

Possible commands are then shown above the corresponding button on the display. In the example shown, **button 1, (A)** would confirm the command *"Start"* and **button 4, (D)** would confirm the command *"Stop"*.



Display

A	Button 1	E	Command
B	Button 2	F	Display
C	Button 3	G	ON/OFF switch
D	Button 4		

5.4.4 Lighting of the grinding chamber

The lighting of the grinding chamber depends on the machining operation involved:

Machining operation	Lighting color
Grinding	White
Operation completed	Green
Error or *"Stop"* button pressed	Red

5.4.5 Inserting the grinding chamber sieve

⚠ CAUTION

Risk of injury on instruments

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

NOTICE

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 sieve is suitable for all restoration and material types. It is absolutely essential that no chips enter into the cooling circuit.



1. Remove the grinding chamber sieve from the packaging.
2. Wet the underside of the sieve with water before insertion and press it firmly against the floor of the grinding chamber.

5.4.6 Connecting the bar code reader

The bar code reader is optional for the basic CEREC MC XL device.

The bar code reader is included with the CEREC MC XL device as standard in the premium package.

Tool holder



➢ Insert the block clamp tool on the left and the bar code reader on the right.

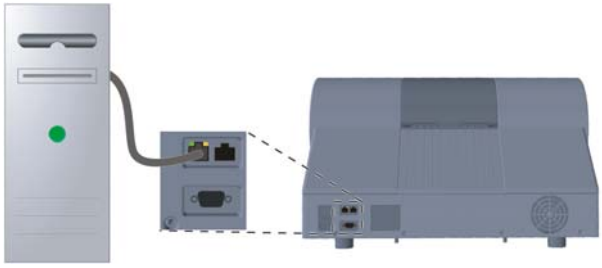
Connecting the bar code reader

➢ Plug the bar code reader into the serial interface to the rear of the grinding unit and secure with screws.

5.4.7 Installation

5.4.7.1 Connecting to the PC via LAN

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



Using a network cable

Connect the PC to the LAN connection of the unit.

If problems arise when connecting via a network cable, please read the separate instructions "Operating the MC XL via LAN".

5.4.7.2 Connecting the unit to the power supply

NOTICE
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.

5.4.7.3 Installing the unit

You must connect the unit to the PC before putting it into operation. This is described in the section entitled "Connecting to the PC via LAN" [→ 19] or "Connecting to the PC via WLAN (option)" [→ 21].

Searching for unit automatically

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 on the *"Devices"* button.
3. Click on 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.
4. Enter a name for the new unit.

Search for unit manually

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 on the *"Devices"* button.
3. Click on the *"Add Device (Manual)"* button.
4. Choose whether the device should be connected via the network or a serial connection.
5. Network: Enter the network address.
   Serial: Enter the COM port and the baud rate.
6. Click on the *"Ok"* button.
   ↳ The software attempts to contact the device.

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

Unit removal

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

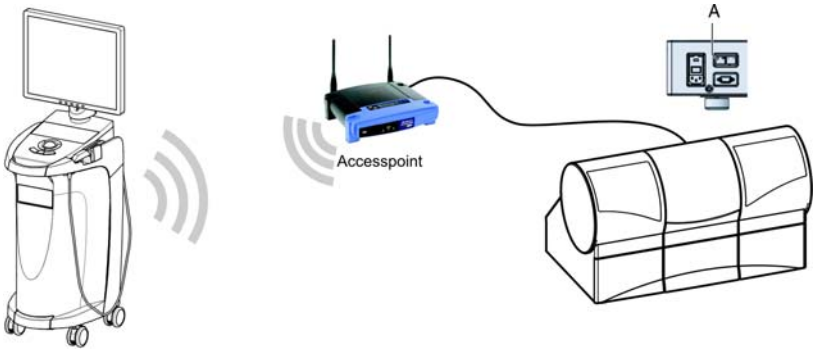
✓ The unit is operation.

1. Click the *"Configuration"* button in the system menu.
2. Click on the *"Devices"* button.
3. Click on the unit that you wish to uninstall.
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 device is removed.

5.4.7.4 Connecting to the PC via WLAN (option)

Making the connection



Connect access point

➢ Connect the LAN port **A** of the grinding unit and the access point, using the network cable (10 m, Order No.: 61 51 521).

↳ The access point is pre-configured at the factory for this application.

Positioning the access point

1. As a test, place the access point near the grinding unit at head level or higher.
2. Perform a communication test as described in the separate instructions (see "Operating MC XL via WLAN in infrastructure mode", chapter "Final work, analyzing connection quality"). If applicable, follow the instructions on changing channels.
3. After you have found the optimum setting, take the acquisition unit and place it in the position in which it will be operated that is farthest away from the access point.
4. From this position, repeat the communication test you conducted earlier. If the results are satisfactory, leave the access point permanently in this position.
5. If the results are not satisfactory, position the access point outside of the room in which the grinding unit is located and repeat the communication test.

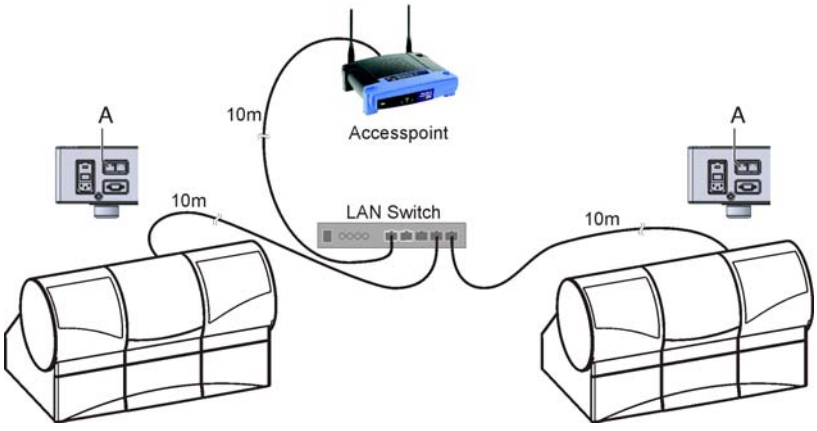
↳ If the connection quality is still not adequate, WLAN communication cannot be easily achieved under the local conditions. In this case, ask your network administrator for assistance.

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

5.4.7.5 Operating several grinding units over one access point

To operate several MC XL grinding units over one access point, you need the following additional components:

- 1x LAN switch (e.g. Netgear ProSave 5 Port Gigabit Switch, Model GS105)
- 1x LAN network cable (10m, Sirona Order No.: 61 51 521).



1. Connect the LAN port **(A)** of the MC XL grinding unit with the LAN switch using the included 10m LAN network cable.
2. Connect the access point with the LAN switch using the additional 10 m LAN network cable.

↳ Now, all MC XL grinding units connected to the LAN switch can be operated via WLAN.

5.4.7.6 Connecting to the PC via the wireless H&W interface (optional)

✓ The CEREC AC is equipped with a wireless module HW 8614/F2.
Mounting assembly: 62 79 694
Retrofit kit: 62 79 702

1. Connect the wireless module HW 8614/F2 to the LAN port of the grinding unit, using the LAN crossover cable (1 m).
2. Connect the plug-in power supply included in the scope of delivery with the wireless module HW 8614/F2 and plug it into the power supply.
3. If necessary, secure the wireless module in the selected operating position using the preassembled Velcro ® tape.
In doing so, ensure that the rod antenna is vertically positioned.
4. Pair the wireless module of the grinding unit as described in the installation instructions included with the wireless module (Order Number 62 80 064).

You can pair multiple grinding units with a CEREC AC. If more than 2 grinding units are operated at once, the limited data bandwidth may cause grinding time delays.

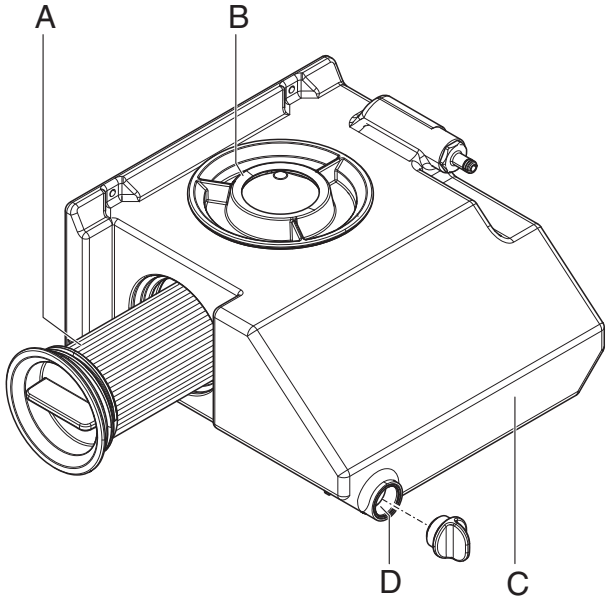
5.4.8 Filling the water tank

NOTICE

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" [→ 59]).

5.4.8.1 CEREC MC XL Basic



Water tank

A	Filter insert	C	Tank
B	Tank cap	D	Tank drain

✓ The water tank has been drained, see "Removing water from the unit" [→ 58].

1. Pull out the water tank at the front of the unit.
2. Turn the tank cap counter-clockwise and take it off.

NOTICE

Damage to surfaces!

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

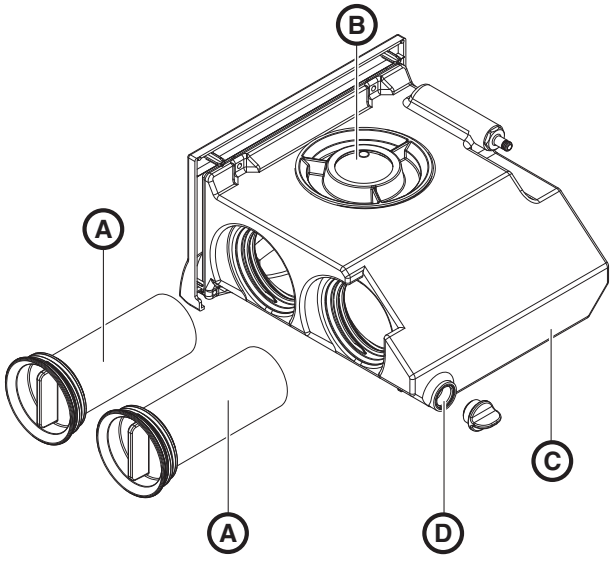
➢ Do not place DENTATEC on the unit.

➢ Do not spill DENTATEC.

3. Add approx. 75 ml of DENTATEC to the tank.
4. Fill the tank with water until the filter insert is completely immersed (up to the bottom edge of the cover thread, approx. 3 liters).
5. Wait for a short time until the filter insert is completely soaked; then add an appropriate amount of water.

6. Close the water tank by tightening the tank cap clockwise by hand. **Do not use the tank cap opener for this.**
7. Push the water tank back into the housing.
8. Switch the unit on (see Switching the unit ON and OFF [→ 25]).
9. Switch the pump on (press the *"Pump"* button) to fill the water circuit.
10. Fill the water tank up again until the filter insert is completely immersed (up to the bottom edge of the cap thread).

5.4.8.2 CEREC MC XL with premium package



Water tank

A	Filter inserts	C	Tank
B	Tank cap	D	Tank drain

✓ The water tank has been drained, see "Removing water from the unit" [→ 58].

1. Pull out the water tank at the front of the unit.
2. Turn the tank cap counter-clockwise and take it off.

NOTICE

Damage to surfaces!

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

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

3. Add approx. 75 ml of DENTATEC to the tank.
4. Fill the tank with water until the filter inserts are completely immersed (up to the bottom edge of the cover thread, approx. 3 liters).
5. Wait briefly until the filter inserts are soaked full and add a corresponding amount of water.
6. Close the water tank by tightening the tank cap clockwise by hand. **Do not use the tank cap opener for this**.

7. Push the water tank back into the housing.
8. Switch the unit on (see Switching the unit ON and OFF [→ 25]).
9. Switch the pump on (press the *"Pump"* button) to fill the water circuit.
10. Fill the water tank up again until the filter inserts are completely immersed (up to the bottom edge of the cover thread).

5.4.9 Switching the unit ON and OFF

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.

Within the machine, grease depots are included for lubricating components that 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

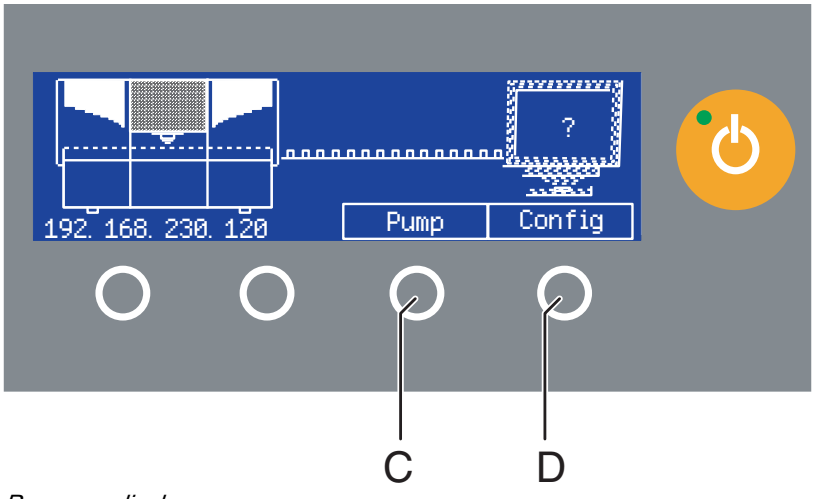
The unit automatically adjusts to the line voltage.

Switching the unit on

✓ The grinding unit is connected to the power supply.

1. The main switch on the rear side of the unit is set to position **I** (ON).
2. Press the ON/OFF button on the front panel.

↳ The unit switches on and the display lights up.



Power-up display

When the grinding unit is switched on, the display shows a picture of the grinding unit trying to contact the PC.

You can start or stop the water pump by pressing the *"Pump"* button (**C**). This enables you to drain the water circuit without connecting to the PC (e.g. prior to transport) or fill the water circuit during startup.

You can call up the IP address by pressing the *"Config"* button (**D**). You can configure the grinding unit in the network with this address.

Switching the unit off

✓ The unit has finished the machining operation.
➢ Briefly press the ON/OFF button on the front panel.
↳ When you let go of the button, the unit switches off.

5.5 Repacking

NOTICE
Repack only drained units!
Drain the unit! See "Removing water from the unit [→ 58]".

✓ 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

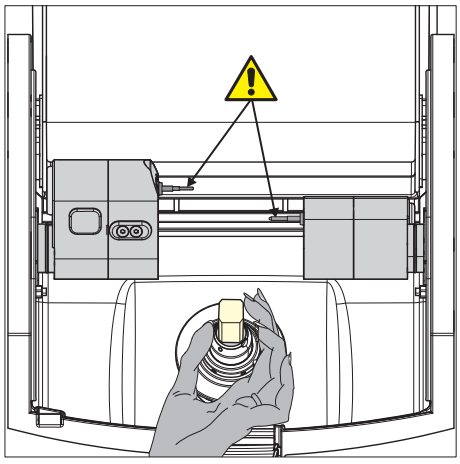
The detailed scope of supply is specified in the document "Checklist CEREC MC XL".

5.7 Storage

NOTICE
Repack only drained units!
Drain the unit! See "Removing water from the unit [→ 58]".

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/instruments

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

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

Always insert your hand in the grinding chamber underneath the calibration pins/instruments.

6.1 Configuration (CEREC MC XL)

In the *"Devices"* area of the CEREC SW software, various settings can be subsequently modified.

1. Click the *"Configuration"* button in the system menu.
2. Click on the *"Devices"* button.
3. Click on the unit that you wish to configure.

De-activating an instrument set (only for grinding units with 4 motors)

You may need to deactivate an instrument set, e.g. unless it is possible to replace a defective instrument or in case a grinding motor is defective or cannot be calibrated.

In all of these cases, you can deactivate sets 1 and 2 separately. A deactivated set will simply be ignored during production, calibration etc.

NOTICE

Milling tools may only be used in set 1.

NOTICE

Risk of collision

The restoration may become damaged if longer instruments are present in the deactivated instrument set than in the active set.

➢ Ensure that the instruments installed in the deactivated instrument set are not longer than those in the active set.

➢ You can deactivate an instrument set by removing the check mark in front of the instrument set in the software or by deactivating the instrument set on the touch display under *"Edit Device Settings"*.

6.2 Calibrating the unit

NOTICE

Use only the supplied calibration tools

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

NOTICE

Faulty production result

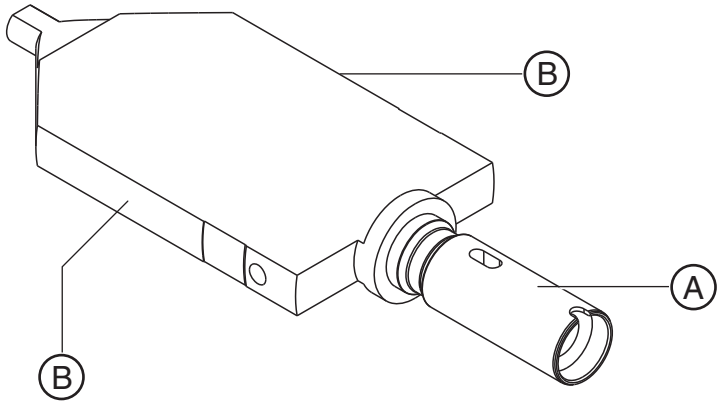
If the unit is not calibrated, the production result may be faulty.

Preparing a calibration

1. Take the calibration pins and calibration phantom out of the drawer of the unit.
2. In the software, navigate to the system menu, and click on the *"Configuration"* button.
3. Click on the *"Devices"* button.
4. Click on the unit that you wish to calibrate.
5. Click on the *"Calibrate"* step.
   - ↳ If two instrument sets are set:
     A dialog box then opens where you can select the instrument set to be calibrated or the two instrument sets to be calibrated consecutively. The date of the last calibration is also displayed.
6. If necessary, select the desired instrument set.
   You can also select the desired instrument set on the grinding unit (up/down arrow).
7. Click on the *"Start"* button.
   - ↳ The grinding unit then moves into position to insert the calibration tools.
     A dialog box prompts you to insert the calibration pins and the calibration phantom and to close the grinding chamber door again.

Inserting the calibration pins and phantom

1. Press the catch of the grinding chamber door and open the door.
2. Loosen the instruments with the torque wrench and remove them.



Calibration phantom

NOTICE

Grasp the calibration phantom correctly

Grasping the calibration phantom by its wide surfaces may cause calibration errors.

➢ Always grasp the calibration phantom by its clamping shank **(A)** when removing it from the storage box.

➢ Always grasp the calibration phantom by its narrow surfaces **B** when inserting it into the block fixing.

3. Remove the adapter sleeve (see "Using the manual block fixing [→ 37]“).
4. To insert the calibration phantom into the block fixing, grasp it by its narrow surfaces **B**.
5. Clamp the calibration phantom with the ball pressure screw. Use the block clamp tool for this purpose.
6. Insert the calibration pins in the motor mount by hand. Tighten the corresponding chuck with the torque wrench until a clicking sound can be heard.
7. Close the grinding chamber door.

Performing a calibration

➢ Confirm your selection in the *"Calibrate milling unit"* window with the *"Start"* button.

↳ The automatic calibration begins and takes approx. 12 minutes. Wait until the calibration has been completed.

Inserting instruments

1. Open the grinding chamber door following calibration.
2. Loosen the calibration pins with the torque wrench and remove them.
3. Loosen the ball pressure screw.
4. Remove the calibration phantom by grasping it by its narrow surfaces **(B)**.

NOTICE

Store the calibration tools in a safe place

Store the calibration pins and the calibration body in a safe place (e.g. in a storage box in the unit drawer).

5. Insert the instruments in the motor mount by hand. Tighten the corresponding chuck with the torque wrench until a clicking sound can be heard.
6. Close the grinding chamber door.
   ↳ The dialog box for selecting the instruments then appears.
7. Select the inserted instruments and confirm by clicking the *"Start"* button in the window.
   ↳ The motor mounts move to their starting positions.
   The *"Calibration succeeded"* dialog box appears.

Exiting the calibration

1. Click on the *"OK"* button.
2. Click on the step *"Exit Configuration"*.

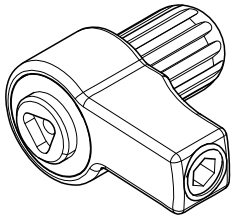
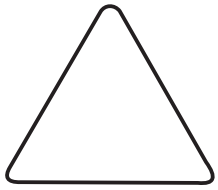
6.3 Production process

6.3.1 Process types

Various process types are available for production purposes. These vary in terms of the type of materials to be processed and the instruments to be used.

6.3.1.1 Grinding

For grinding purposes, use the following instruments as well as the appropriate torque wrench:

Instrument	REF	Torque wrench	Clamping format of the force transmission
Step Bur 12 S 	6240167		Triangular 
Step Bur 12 	6260025		
Cyl. Pointed Bur 12 S 	6240159		
Step Bur 20 	6259597		
Cyl. Pointed Bur 20 	6259589		

6.3.1.2 Milling

The milling option is available from the following serial numbers onwards:

Machine type	Serial number
inLab MC XL	129001
CEREC MC XL	129001
CEREC MC XL Premium Package	302001
CEREC MC	202001
CEREC MC X	231001

Other machines must be equipped with the milling starter kit for connected motors (REF: 64 51 079).

NOTICE

Only machines with a manual block fixing and a grinding chamber sieve (REF: 62 99 403) should be used for the milling function.

IMPORTANT

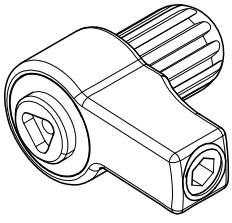
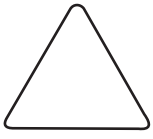
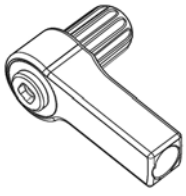
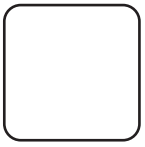
The milling process is supported in the CEREC software from version 4.3.0 and in the inLab software from version 4.2.3

Activating the milling option

1. Select *"Configuration"*| *"Settings"*| *"Milling"*.
2. Check *"Activate"*.

Instruments and torque wrenches

For milling purposes, use the following instruments as well as the appropriate torque wrenches:

Instrument	REF	Torque wrench	Clamping format of the force transmission
Finisher 10 	6299387		Triangular 
Shaper 25 RZ 	6433440		Square 

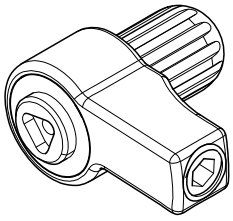
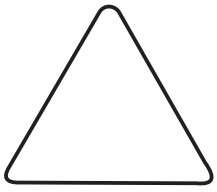
6.3.1.3 Milling models

NOTICE

The "Milling models" option can only be used if you have one of the following machines:

- inLab MC XL from serial number 120 000
- CEREC MC XL Premium Package

For milling purposes, use the following instruments as well as the appropriate torque wrench:

Instrument	REF	Torque wrench	Clamping format of the force transmission
Shaper 25 	6299395		Triangular 
Finisher 10 	6299387		

NOTICE

Chips gathered in the grinding chamber

When milling models, a large number of chips collect in the grinding chamber.

➢ Each time a model block is milled, remove the chips from the grinding chamber by hand.

➢ Before removing them, squeeze the chips so that any stored water is released into the cooling circuit.

6.3.1.4 Permitted instrument combinations

Depending on the materials to be processed and the process type used, various instrument combinations are permitted.

For a continuously updated table of approved instrument combinations, please visit the *"www.sirona.com"*. To access the online portal for technical documentation, follow the *"SERVICE"* | *"Technical Documentation"* menu items in the navigation bar. The portal can also be accessed directly via the following address
http://www.sirona.com/manuals
Select your product there and then open the *"Bur table"* document.

6.3.2 Preparations

✓ Download or design a restoration (see operator's manual).

✓ When the *"Milling"* option is activated, in the *"Select Material"* material selection step, you can choose between the *"Grinding"* and *"Milling"* manufacturing processes for plastic and zirconium oxide materials.

✓ You are in the *"MILL"* phase and have selected the grinding unit, tested the settings, and positioned the restoration in the block.

➢ Click on the *"Start Milling"* step.

↳ The grinding unit then moves to the insertion position.

6.3.3 Starting the production process

✓ The instrument sets are equipped with the required instrument combinations for the production process.

1. Depending on the configuration, you will be prompted to enter the bar code (see also "Entering the bar code“).
2. Press the catch of the grinding chamber door and open the door.

NOTICE

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.

3. Place the selected ceramic block in the block fixing.
4. Clamp the ceramic block with the ball pressure screw. Use the block clamp tool for this purpose (see also "Using the manual block fixing [→ 37]“).
5. Close the grinding chamber door and confirm the procedure by clicking *"Start"*.

↳ The estimated time required for the production process will then appear in a message window.

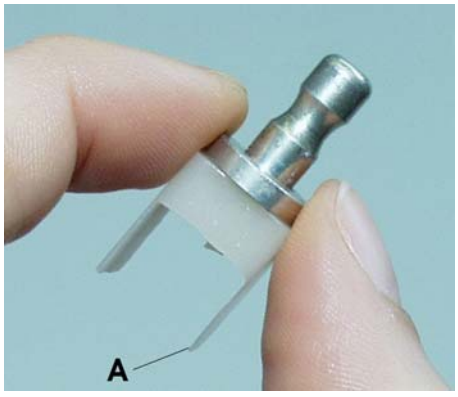
NOTICE

Aborting the production process

You can abort the production process at any time by pressing the *"Stop"* button.

6.3.4 Terminating the production process

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

⚠ CAUTION

Do not use inaccurate production results!

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

NOTICE

If you have not used the grinding unit for a rather long time, we recommend you should switch it off and then open the grinding chamber door so that the grinding chamber can dry out.

6.3.5 Information regarding the quality seal (CEREC MC XL with premium package)

Proper selection and processing of the material are decisive for the long-term clinical success of the restoration, especially in the case of zirconia. However, different types of zirconia require individually matched machine parameters. This is the reason why you can and must select different types of zirconia in the inLab software. These machine parameters are coordinated between Sirona and its material partners in complex development processes. In addition to the desired fit and surface quality, they also guarantee a maximum degree of material and equipment safety. The consistently high quality of the production results and the fit can only be guaranteed and damage to the production machines can only be excluded if certified materials are used.

NOTICE

Block without seal of approval

If a block is found without a seal of approval during the production process (milling or grinding), the following message appears:
„No quality label was recognized on the block. The grinding and milling processes as well as the instruments are specially verified for certified materials. Certified materials can be identified by the engraved "inLab" lettering on the block. The use of zirconium oxide materials without quality label can lead to inferior results as well as increased wear on the device and instruments.
Do you still wish to start the manufacturing process?“

6.4 Entering the bar code

Barcode Reader active

If you have activated the option *"Barcode Reader"* in the system configuration dialog (e.g. for inCoris ZI), you must read-in both bar codes with the bar code reader. To do this, hold the bar code reader tilted to a slight angle and move it over both of the bar codes on the block continuously and evenly.

If the reading process fails, you can read-in the bar code once again by pressing *"Retry"* (button 1 on the unit display). Alternatively, you also can enter the substitute code (8-digit character string, e.g. *1234XYZ) on the PC manually.

No bar code reader available

➢ Enter the substitute code (8-digit character string, e.g. *1234XYZ) on the PC manually.

6.5 Using the manual block fixing

Store the block clamp tool in the corresponding holder (see also "Gluing on the tool holder" [→ 18]).
You can attach the holder to a suitable location with the adhesive pad. Clean and degrease the contact surface beforehand.

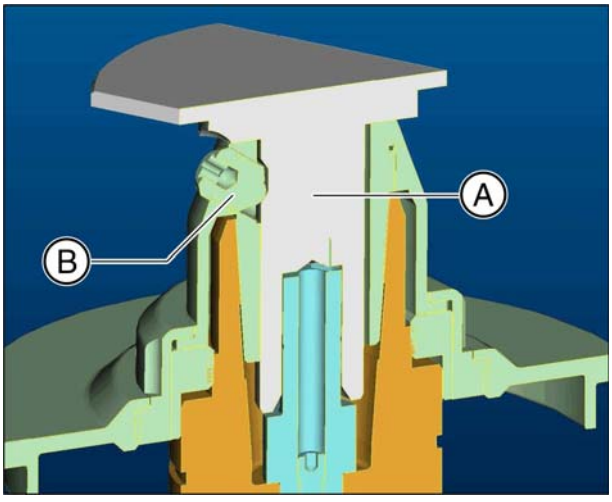
NOTICE

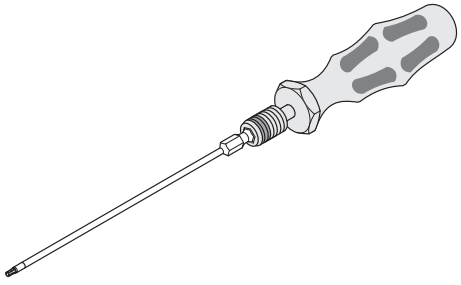
Wear of the ball pressure screw

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

➢ Replace the ball pressure screw every 500 clamping operations.

Blocks with 10 mm diameter block holders





NOTICE

Fasten the block tightly

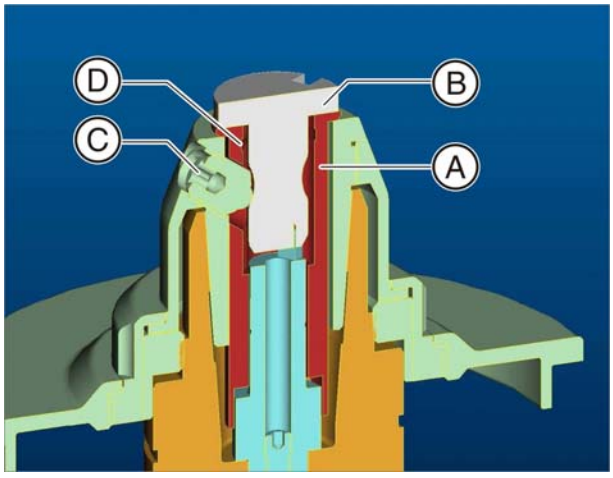
If the block is not tightened sufficiently, this may result in falsification of the production result and fracturing of its ceramic material.

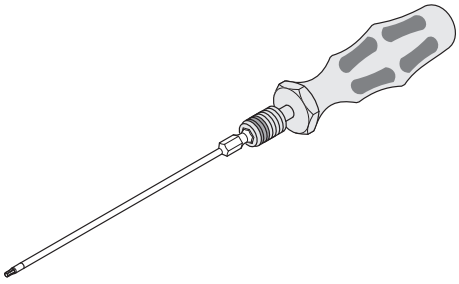
➢ **Fasten the block tightly using the block clamp tool with torque wrench until you hear a click.**

➢ Check to make sure that the block is seated very firmly.

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.

Blocks with 6 mm diameter block holders





NOTICE

Fasten the block tightly

If the block is not tightened sufficiently, this may result in falsification of the production result and fracturing of its ceramic material.

➢ **Fasten the block tightly using the block clamp tool with torque wrench until you hear a click.**

➢ Check to make sure that the block is seated very firmly.

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

NOTICE

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 block clamp tool in the inner groove (**D**) and pull out the adapter sleeve.

7 Service

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

Machine care (CEREC MC XL Basic)

Interval: Once a month

- ➢ **Clean** the block chuck and block clamping nut according to the cleaning set instructions (REF 61 77 161).
- ➢ **Clean** the chucks of the grinding instruments according to the cleaning set instructions (REF 61 77 161).
- ➢ If the jets of water do not strike the grinding instruments, carefully remove any foreign particles from the water nozzles with a probe.

NOTICE

Machine care (CEREC MC XL with premium package)

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

- ➢ Change the filter (see Changing the filter [→ 52])
- ➢ **Clean** the manual block fixing according to the cleaning set instructions (REF 61 77 161).
- ➢ **Clean** the clamping cones and chucks of the grinding instruments according to the cleaning set instructions (REF 61 77 161).
- ➢ If the jets of water do not strike the grinding instruments, carefully remove any foreign particles from the water nozzles with a probe.

NOTICE

Chips gathered in the grinding chamber

When milling models, a large number of chips collect in the grinding chamber.

➢ Each time a model block is milled, remove the chips from the grinding chamber by hand.

➢ Before removing them, squeeze the chips so that any stored water is released into the cooling circuit.

NOTICE

Do not confuse the block screw with the ball pressure screw

When operating a CEREC 3 grinding unit and a CEREC MC XL grinding unit in the same room, be careful not to confuse the block screw of the CEREC 3 with the ball pressure screw of the CEREC MC XL.

NOTICE

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" [→ 59]).

NOTICE

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 Changing the water

7.1.1 General information

NOTICE

Damage to the pump and grinding drives!

An excessively high ceramic content in the cooling water will damage the pump and grinding 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 grinding 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 grinding 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 grinding additive etches plastic surfaces and can cause discoloration.

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

NOTICE

Permissible grinding additive

Use only DENTATEC as a grinding additive.

7.1.2 Changing the water (CEREC MC XL Basic)

To change the water, proceed as follows:

✓ The unit is switched on.

✓ No machining process is running.

1. Pull out the water tank at the front of the unit.
2. Open the drain opening.
3. Drain the water tank.
4. 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 (see "Opening the tank cap" [→ 59]).
5. Unscrew the side cap.
6. Remove the filter insert from the tank and clean the filter thoroughly under running water.
7. Rinse the water tank.
8. Insert the cleaned filter with its cap into the unit and screw it tight.
9. Close the drain opening.

NOTICE

Foaming not permissible!

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

Do not use any cleaning agents.

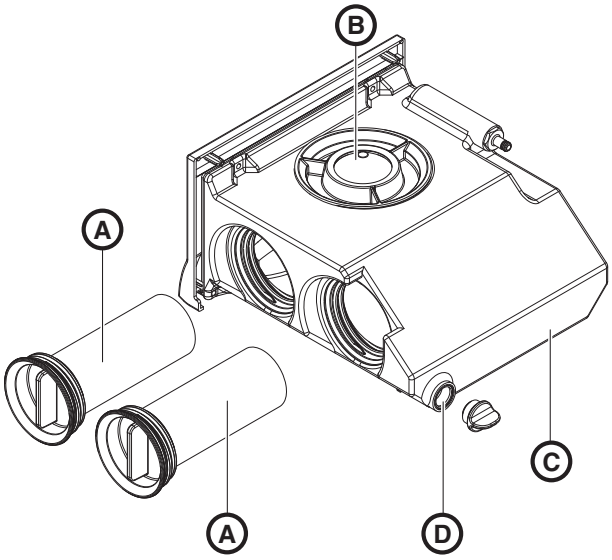
10. Add approx. 75 ml of DENTATEC to the tank.
11. Fill the tank with water until the filter insert is completely immersed (up to the bottom edge of the cover thread, approx. 3 liters).
12. Wait for a short time until the filter insert is completely soaked; then add an appropriate amount of water.
13. Close the water tank by tightening the tank cap clockwise by hand. **Do not use the tank cap opener for this.**
14. Push the water tank back into the housing.

7.1.3 Changing the water (CEREC MC XL with premium package)

NOTICE

Change the filter inserts regularly!

Replace both filter inserts after every fourth water change.



Water tank

A	Filter inserts	C	Tank
B	Tank cap	D	Tank drain

7.1.3.1 Procedure for all materials except for base metals

To change the water, proceed as follows:

✓ The unit is switched on.
✓ No production/scanning process is running.
1. Pull out the water tank at the front of the unit.
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 grinding water.
8. Close the drain opening (D).
9. Turn the tank cap (B) counter-clockwise and take it off.

NOTICE

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 approx. 75 ml of DENTATEC to the tank.
11. Fill the tank with water until the filter inserts (A) are completely immersed (up to the bottom edge of the cover thread, approx. 3 liters).
12. Wait briefly until the filter inserts (A) are soaked full and add a corresponding 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.

7.1.3.2 Procedure for processing base metal materials

7.1.3.2.1 Important information

NOTICE

Observe the safety information from the material manufacturer

Observe the safety instructions regarding occupational safety and disposal referred to in the material manufacturer's operating instructions.

IMPORTANT

Use a waterproof receptacle with a nominal volume of 10l as a collecting vessel for changing the water (e.g. a commercially available 10l plastic bucket). When selecting the collecting vessel, bear in mind that it will also serve as a transporting container for disposal and is not reusable.

IMPORTANT

Wearing protective waterproof gloves is recommended.

IMPORTANT

Ask your disposal company whether the filter waste needs to be correctly sorted for disposal.

IMPORTANT

Once the water has been changed, the collecting vessel will contain a mixture of base-metal slurry (in mixed operation, there will also be other materials) and water. The machining particles dispersed in the water will settle to the bottom of the collecting vessel within 24h, resulting in a clear separation between the water and the settled solid matter.

The clear water can then be removed or siphoned off from the collecting vessel. The collecting vessel can be used until it is max. half-full of grinding slurry (solid matter) or until the permitted weight for the collecting vessel used has been reached. 5l of correctly sorted base-metal machining waste corresponds to 40kg in weight depending on the base-metal alloy.

NOTICE

The external tank (REF 6377662) must not be used for processing base metal materials.

7.1.3.2.2 **Emptying the water tank**

Emptying the grinding water and grinding slurry

✓ The unit is switched on.
✓ No grinding process is running.
✓ A collecting vessel of approx. 10l is available.
1. Pull out the water tank at the front of the unit.
2. Pan the tank vigorously 5x in circular movements.





3. Open the drain opening (D). Tilt the tank so that no liquid escapes through the drain opening.



4. Close the drain opening (D) using your thumbs and pan the tank vigorously 5x in circular movements again.



5. Empty approx. 1/3 of the contents of the tank into the collecting vessel provided. Operating the spring-loaded inlet opening of the tank cap (B) allows the contents to flow out more easily.
6. Close the drain opening (D) using your thumbs and pan the tank vigorously 5x in circular movements again.
7. Empty approx. 1/2 of the remaining contents of the tank into the collecting vessel provided. Operating the spring-loaded inlet opening of the tank cap (B) allows the contents to flow out more easily.
8. Close the drain opening (D) using your thumbs and pan the tank vigorously 5x in circular movements again.
9. Empty the residual contents into the collecting vessel provided.
10. Close the drain opening (D) with the screw cap.

Rinsing and emptying the water tank

1. Turn the tank cap (B) counter-clockwise and take it off.
2. Fill the tank approx. 1/3 full with water.
3. Close the tank cap (B).
4. Open the drain opening (D). Tilt the tank so that no liquid escapes through the drain opening.
5. Close the drain opening (D) using your thumbs and pan the tank vigorously 5x in circular movements again.
6. Empty the residual contents into the collecting vessel provided.
7. Close the drain opening (D) with the screw cap.

7.1.3.2.3 Filling the water tank

1. Turn the tank cap (B) counter-clockwise and take it off.
2. Add approx. 75 ml of DENTATEC to the tank.
3. Fill the tank with water until the filter inserts are completely immersed (up to the bottom edge of the cover thread, approx. 3 liters).
4. Wait briefly until the filter inserts are soaked full and add a corresponding amount of water. This applies in particular after the filter has been changed.
5. Close the water tank by tightening the tank cap clockwise by hand. Do not use the tank cap opener for closing the tank cap.
6. Push the water tank back into the housing.

7.2 Instruments

7.2.1 Overview of materials/instruments

7.2.1.1 CEREC MC XL Basic

For a continuously updated table of approved instrument combinations, please visit the *"www.sirona.com"*. To access the online portal for technical documentation, follow the *"SERVICE"* | *"Technical Documentation"* menu items in the navigation bar. The portal can also be accessed directly via the following address
http://www.sirona.com/manuals
Select your product there and then open the *"Bur table"* document.

7.2.1.2 CEREC MC XL with premium package

For a continuously updated table of approved instrument combinations, please visit the *"www.sirona.com"*. To access the online portal for technical documentation, follow the *"SERVICE"* | *"Technical Documentation"* menu items in the navigation bar. The portal can also be accessed directly via the following address
http://www.sirona.com/manuals
Select your product there and then open the *"Bur table"* document.

7.2.2 Changing instruments

NOTICE

Instruments without chuck

In order to ensure that no grease residue from previously used chucks remains in the **clamping cone** when using instruments without a chuck, we **strongly** recommend **degreasing** the clamping cone.

NOTICE

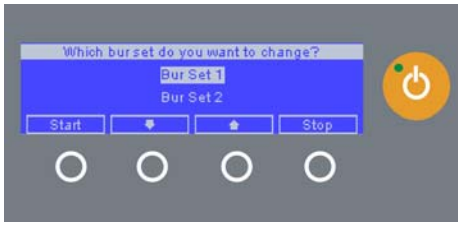
Regular replacement of instruments

Change the instruments as soon as the system prompts you to do so.

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

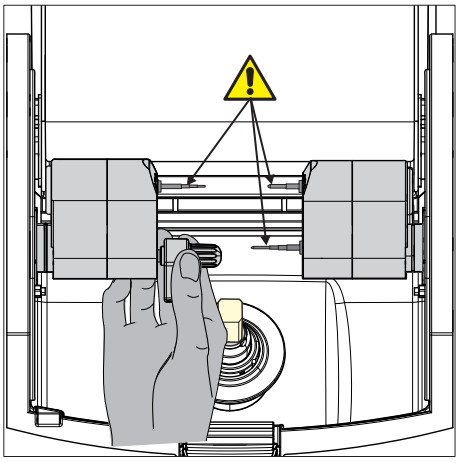
✓ The torque wrench from the draw of the grinding unit is ready-to-hand.

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 instruments you wish to replace.
   ↳ If two sets are set:
   A dialog box then opens where you can select the set to be calibrated or the two sets to be calibrated consecutively. The date of the last calibration is also displayed.



4. If necessary, select the desired set.
   You can also select the desired set on the grinding unit (up/down arrow).

5. Click on the *"Start"* button.
   ↳ The motors travel to the change position for the instruments. The dialog box for changing the instruments opens.
6. Press the catch of the grinding chamber door and open the door.



⚠ CAUTION

Risk of injury on instruments

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

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

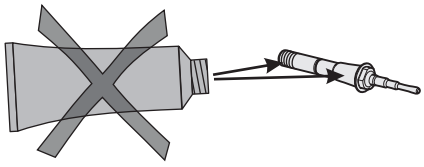
Apply the torque wrench as shown.

7. Loosen the worn-out or defective instrument with the torque wrench and pull it out manually.

NOTICE

Instrument without chuck

When replacing an **instrument with chuck** with an **instrument without chuck**, remove the installed instrument chuck and **degrease** the **clamping cone**.



8. **NOTICE! Do not grease the instrument without chuck!** Insert the new instrument into the motor mount by hand. Tighten the corresponding chuck with the torque wrench until a clicking sound can be heard.

NOTICE

Inaccurate production results

Interchanging instruments leads to faulty production results.

9. Close the grinding chamber door.
10. Select the instrument(s) you have inserted on the PC monitor and click *"Start"*.
    You can also select the instruments on the grinding unit (up/down arrow) and confirm with *"Start"*.

NOTICE

Cleaning cooling water nozzles

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

✓ The cooling water nozzles are dirty.

➢ Clean the nozzles with a cleaning wire and the SPRAYVIT syringe (if available).

NOTICE

Use only suitable instruments!

Do not use any instruments from CEREC 2 or CEREC 3 units.

Replacing a defective instrument

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

✓ The instrument is broken.

1. Change the defective instrument as described above.
2. Select the instrument which you have inserted.
3. Press the *"Start"* button.

7.3 Care, cleaning agents, and disinfectants

NOTICE

Approved care, cleaning, and disinfecting agents

Use only care, cleaning and disinfecting agents approved by Sirona!

For a continuously updated list of approved agents, please visit *"www.sirona.com"*. To access the online portal for technical documentation, follow the *"SERVICE"* | *"Technical Documentation"* menu items in the navigation bar. The portal can also be accessed directly via the following address http://www.sirona.com/manuals Click on the menu item *"General documents"* and then open the *"Care, cleaning and disinfection agents"* document.

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

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

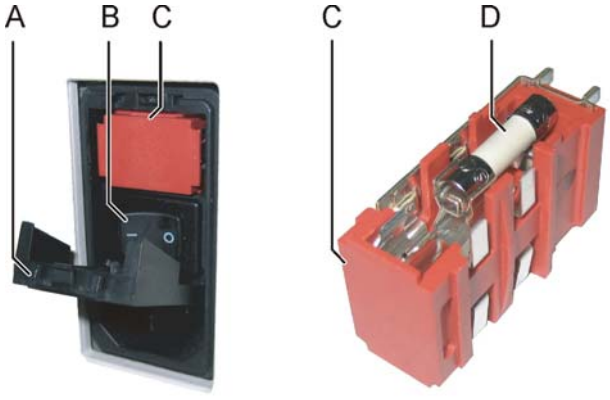
Electric shock

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!



Fuse holder

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 Changing the filter

7.6.1 CEREC MC XL Basic

NOTICE

Change the filter regularly

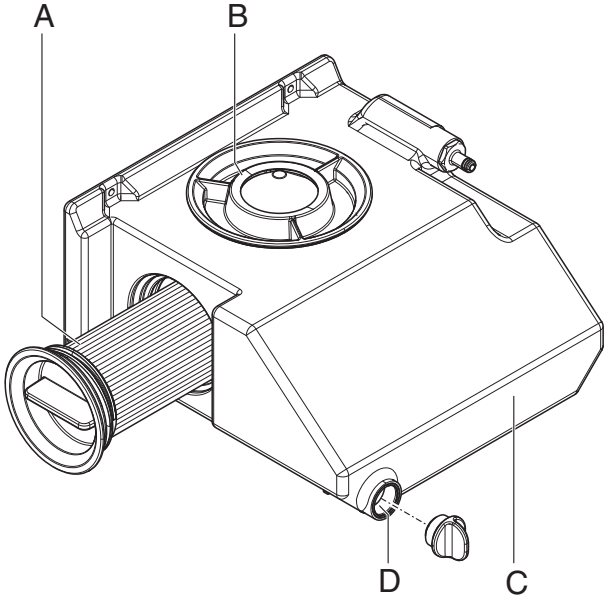
Clean the filter regularly and change it immediately when damaged. Otherwise, change it every 3 months.

If a message appears stating that the water pressure is too low, you must clean the filter or, if it is damaged, replace it immediately.

⚠ CAUTION

Filter

Use only filters approved by Sirona!



Water tank

A	Filter insert	C	Tank
B	Tank cap	D	Tank drain

✓ The tank is drained, see "Removing water from the unit" [→ 58].

1. Pull out the water tank at the front of the unit.
2. Unscrew the cover on the side and take it out of the tank along with the filter insert.
3. Rinse the water tank.
4. Insert a new filter with cover into the tank and screw it tight.
5. Fill the tank, see "Changing the water“ [→ 40].

Filter insert: Order No. 61 29 519

NOTICE

Cleaning the filter

Clean the filter approx. every 12 to 15 units under running water, but at least with every water change.

7.6.2 CEREC MC XL with premium package

NOTICE

Change the filter inserts regularly!

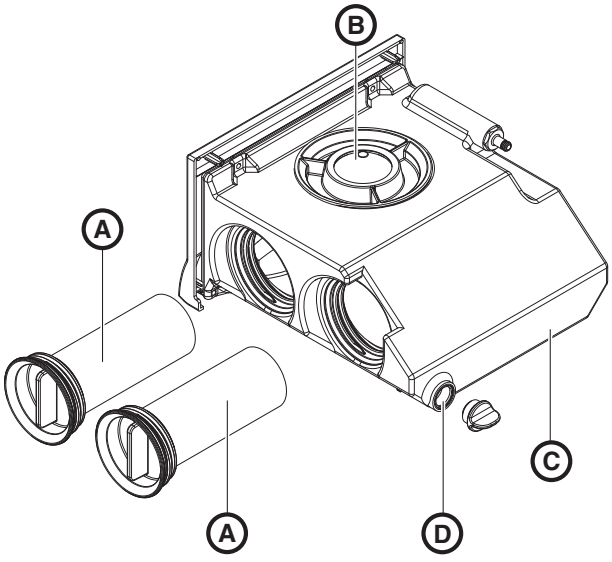
Replace both filter inserts once a week or after every fourth water change.

If a message stating that the water pressure is too low appears, you must change the filter inserts.

NOTICE

Filter

Use only filter cartridges approved by Sirona!



Water tank

A	Filter inserts	C	Tank
B	Tank cap	D	Tank drain

7.6.2.1 Procedure for all materials except for base metals

✓ The tank is empty, see "Removing water from the unit".

1. Pull out the water tank at the front of the unit.
2. Unscrew the covers on the side and take them out of the tank along with the filter inserts.
3. Rinse the water tank.
4. Insert the new filters with cover into the tank and screw them tight.
5. Fill the tank, see "Changing the water" [→ 40].

Filter insert: Order No. 61 29 519

7.6.2.2 Base metal operation or mixed operation with base metal and other materials

NOTICE

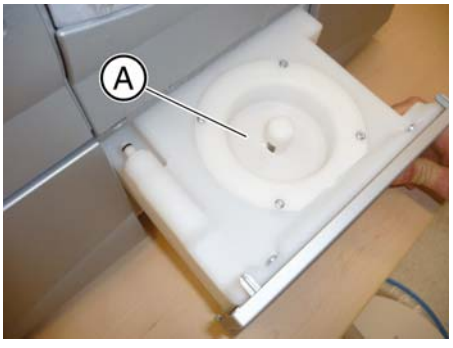
Observe the safety information from the material manufacturer

Observe the safety instructions regarding occupational safety and disposal referred to in the material manufacturer's operating instructions. Dirty filters must be disposed of appropriately in accordance with these specifications.

1. Empty the water tank (see "Emptying the water tank [→ 45]").
2. Unscrew the covers on the side and take them out of the tank along with the filter inserts.
3. Rinse the water tank.
4. Insert the new filters with cover into the tank and screw them tight.
5. Fill the tank (see Filling the water tank [→ 46]).

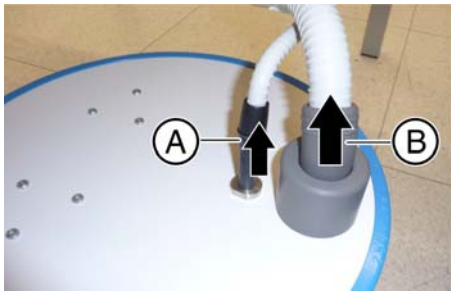
7.6.3 Changing filters on the external tank

Cleaning the plug-in tank



1. Pull out the plug-in tank.
2. Clean the outlet (A) and then rinse it with water.
3. Reinsert the plug-in tank.

Opening the external water tank



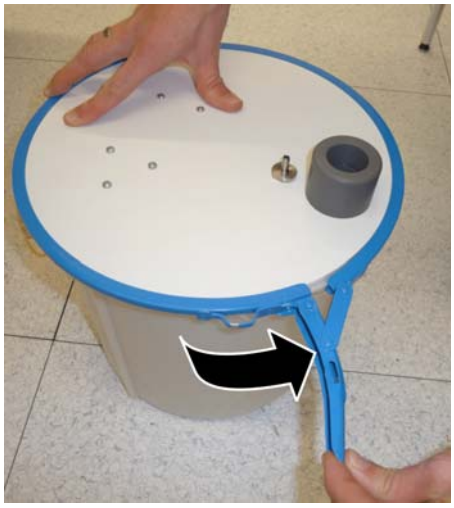
NOTICE

Risk of damage to the hoses

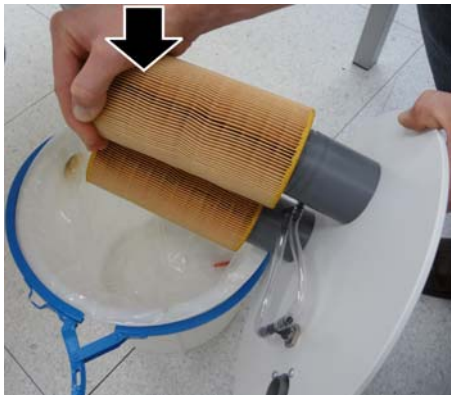
If you pull on the hose, you may damage it.

➢ Always pull it from the pipe section (A or B).

1. Pull off the suction connection (A).
2. Pull off the drain hose (B).
3. Open the clamping ring and lay it down.



Disposing of filter cartridges and ceramic sludge



1. Release the filter cartridges by tilting them slightly. The springs remain attached.
   Tip: If a spring accidentally comes loose, you can reattach it by screwing it in counter-clockwise.
2. Dispose of the filter cartridges with domestic waste.
3. Slowly pour the water out of the container into the outlet so that the ceramic sludge remains in the container.
4. Take the plastic bag out of the container and dispose of it with domestic waste.

Preparing the external water tank



1. Insert the plastic bag into the external water tank in such a way that it protrudes by around 3-4 cm.
2. Ensure that it protrudes evenly around the edge of the container.

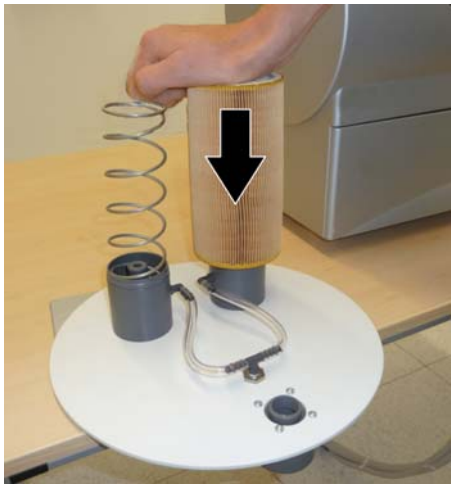


3. Place the clamping ring onto the external water tank with the labeling (A) facing up.
4. Add approx. 400 ml of DENTATEC to the tank.

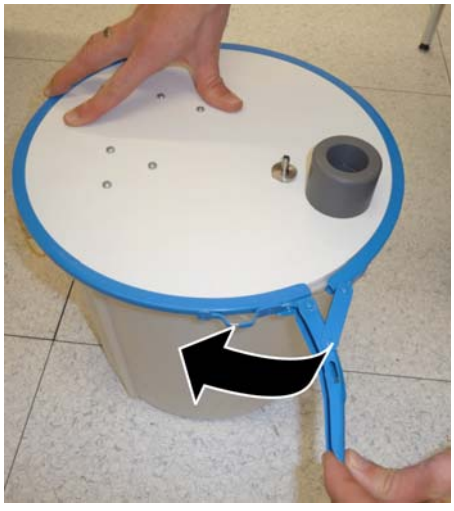


5. Fill the tank up to the filling level with water (approx. 16 liters).

Installing the filters

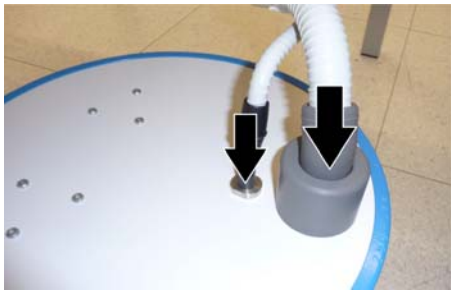


1. Press down the 2 filters until they click into place on the lid.
2. Insert the lid with the filters into the container.



3. Close the clamping ring.

Connecting the External Water Tank



1. Insert the suction connection up to the stop.
2. Insert the drain hose up to the stop.





NOTICE

Risk of overflowing

Sagging of the drain hose may result in overflowing.

➢ Arrange the external water tank in such a way that there is a continuous incline in the drain hose (you may need to rotate or move the external water tank).

7.7 Removing water from the unit

7.7.1 Procedure for all materials except for base metals

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.

✓ No machining process is running.

1. Switch the unit off.
2. Pull out the water tank at the front of the unit.
3. Drain the water out of the water tank through the drain opening and reinsert the water tank in the unit.
4. Switch the unit on.

NOTICE

Pump button active at power-up

The *"Pump"* button appears on the display when the grinding unit is switched on. You can start or stop the water pump by pressing this button.

5. Press the *"Pump"* key to switch the pump on.
   ↳ The water pump then starts pumping the water out of the unit. Let the pump run until no more water escapes from the nozzles.
6. Press the *"Pump"* key to switch the pump off.
7. Pull out the water tank and empty it.
8. Push it back into the housing.

7.7.2 Base metal operation or mixed operation with base metal and other materials

NOTICE

Observe the safety information from the material manufacturer

Observe the safety instructions regarding occupational safety and disposal referred to in the material manufacturer's operating instructions. Dirty filters must be disposed of appropriately in accordance with these specifications.

1. Empty the water tank (see Emptying the water tank [→ 45]) and insert it back into the unit.
2. Switch the unit on.
3. Press the *"Pump"* button to switch the pump on.
   ↳ The water pump then starts pumping the water out of the unit. Let the pump run until no more water escapes from the nozzles.
4. Press the *"Pump"* button to switch the pump off.
5. Pull out the water tank and empty it.
6. Push it back into the housing.

7.8 Using the tank cap opener

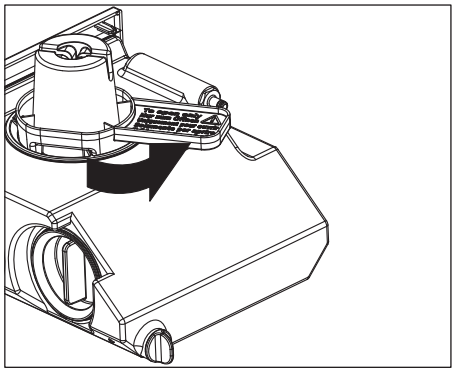
NOTICE

Risk of damage to the tank

Use the tank cap opener **only for opening** the tank cap, tank drain and filter insert.

Do not use the tank cap opener for closing the tank cap. To close the tank cap, tank drain and filter insert it is sufficient to tighten them clockwise by hand.

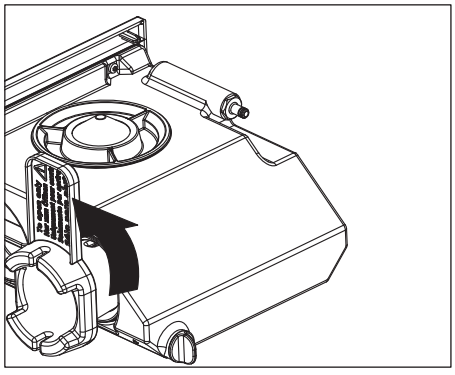
Opening the tank cap



✓ 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.

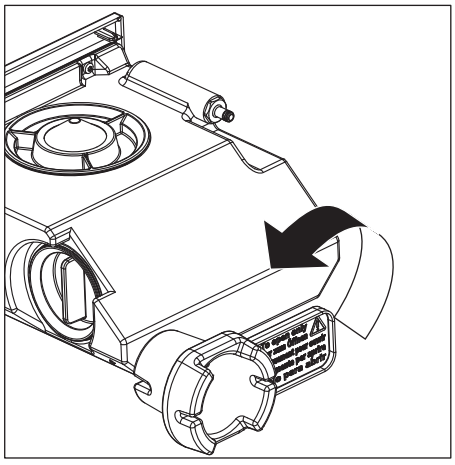
Opening the filter cap



✓ The water tank has been pulled out and drained.

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

Opening the tank drain



✓ The water tank has been pulled out.

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

8 Technical description

8.1 System requirements

8.1.1 CEREC MC XL Basic

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.

Units as of serial no. 126001 are equipped with new stepping motors. The milling units can only be used in conjunction with CEREC SW 4.0.2 software, inLab SW 4.0.2 or more recent versions.

8.1.2 CEREC MC XL with premium package

The CEREC SW/inLab software must only be installed on CEREC AC acquisition units or on the 64-bit inLab PC (optional). The hardware version must be **PC Hardware HQ** with Windows 7 (64 bit) or higher.

If necessary, upgrade your operating system.

Units as of serial no. 126001 are equipped with new stepping motors. The milling units can only be used in conjunction with CEREC SW 4.0.2 software, inLab SW 4.0.2 or more recent versions.

8.2 Grinding and milling unit

8.2.1 General technical description

- Digital feed control with force monitoring for extremely sensitive processing of ceramic materials
- Process-controlled grinding motors
- Production repeatability: +/- 25 µm
- Grinding speed: 1.0 - 1.5 mm/min.

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

- Grain size: 64 µm
- Speed: 42,000 rpm
- Step Bur 12 S
- Step Bur 20 (only for CEREC MC XL with premium package)
- Cyl. Pointed Bur 12 S
- Cyl. Pointed Bur 20 (only for CEREC MC XL with premium package)

Milling instruments

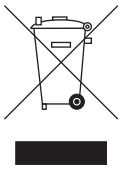
- Shaper 25 RZ
- Shaper 25 (only for milling models)
- Finisher 10

8.2.2 Technical data

Type designation	Grinding unit CEREC MC XL
Rated line voltage	100 V - 230 V 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	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 – 1,060 hPa
Temperature range	5 °C - 40 °C
Humidity range	80% rel. up to 31 °C decreasing to 50% rel. up to 40 °C
Operating mode	Continuous operation
Dimensions (WxHxD) in mm	700 x 425 x 420
Approx. weight	43 kg

8.2.3 Controller board

- 3x 2-axis stepping motor controller with microstepping
- 2 (4) DC motor controllers with integrated speed and current control and force monitoring
- Ethernet, RJ45 interface 10 Mbit/sec



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.

Index

B

Bar code reader, 13

Building installation, 9

C

Calibration tools

- Calibration phantom, 28
- Calibration pins, 28
- Storage, 30

Care, cleaning, and disinfecting agents, 49

CE mark, 8

Changing

- Instruments, 47

Connection

- Ethernet, 19
- LAN, 19

Cooling water nozzles, 48

D

Dimensions, 63

Disinfectant, 50

Disposal

- Disposal of electronic and electrical equipment, 64

E

Ethernet

- LAN port, 13

F

filter

- change, 52, 53
- Order No., 52, 54

floor space, 12

Fuse, 13

- Fuse type, 51
- Order No., 51
- replacement, 51

G

Grinding instruments, 61

Grinding speed, 61

Grinding unit

- Display, 17
- Grinding chamber, 14

H

Humidity range, 63

I

Installation site, 12

installing unit

- manually, 20

Instruments, 48

- Replacing a defective instrument, 49

Intended use, 8

M

Main switch, 13

Maintenance, 9

- Regulations, 39

Milling unit

- Overview, 13

O

Operating mode, 63

P

Packaging, 11

Packing, 26

port

- WLAN, 21

Ports, 13

Power connection, 13

Product safety, 10

Protection class, 63

R

Rated current, 63
Rated line voltage, 63
Repair, 9

S

Safety information, 6
Scope of supply, 26

T

Temperature range, 63
Transport, 11
Type designation, 63

U

Unit installation
    automatically, 19
Unit removal
    removal, 20
Unpacking, 11
Usage purpose, 8

W

Water, 63
Water tank
    Change water, 42, 43
    Filling the, 23, 24
    Odors, 41
    Overview, 23, 24, 43, 52, 53
    Removing water from the unit, 58
    Water change, 40
Weight, 63

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

© Sirona Dental Systems GmbH 2006-2014
D 3439.201.02.19.02 12.2014
Sprache: englisch
Ä.-Nr.: 120 005
Printed in Germany

Sirona Dental Systems GmbH

Fabrikstraße 31
D-64625 Bensheim
Germany
www.sirona.com

in the USA:
Sirona Dental Systems LLC
4835 Sirona Drive, Suite 100
Charlotte, NC 28273
USA

Order No **61 46 885 D 3439**