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Dentsply Sirona

inLab MC XL

Operating Instructions (not valid for USA)

English

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

- US6454629
- US6394880
- US7178731
- US6702649
- US7522764
- US7163443

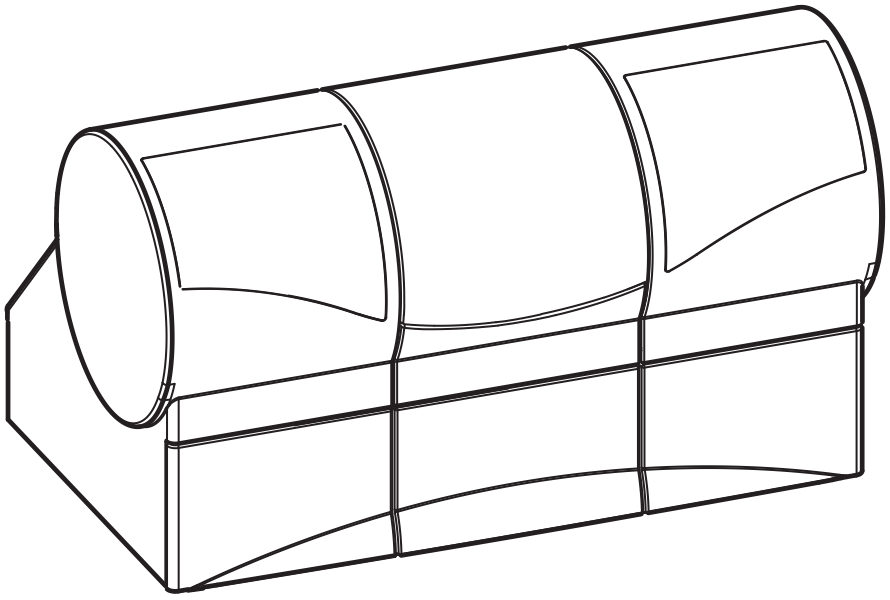


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1 Dear Customer,

Thank you for your purchase of this inLab MC XL® unit from Dentsply Sirona.

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

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

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

Your
inLab MC XL team

1.1 Contact information

Customer service center

For technical questions, use the contact form on the internet at the following address:
http://srvcontact.sirona.com

Manufacturer's address



Sirona Dental Systems GmbH
Fabrikstrasse 31
64625 Bensheim
Germany

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

2 General data

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

Original language of the present document: German.

2.1 Identification of the danger levels

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTE

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

IMPORTANT

Application instructions and other important information.

Tip: Information for simplifying work.

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.

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

EAC certification



Mark of conformity of the Eurasian Economic Community

RoHS compliance



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

3.2 Intended use

This unit produces computer-aided dental restorations, e.g. from natural-appearing ceramic material.

This unit produces computer-aided partial dental restorations, e.g. from natural-appearing ceramic material.

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

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

⚠ CAUTION

Follow the instructions

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

For the USA only

CAUTION: Federal law (USA) restricts sale of this device to or on the order of a physician, dentist, or licensed practitioner.

4 Safety

4.1 Basic safety information

4.1.1 Prerequisites

NOTE

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.

NOTE

Restrictions regarding installation site

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

NOTE

Do not damage the unit!

The unit can be damaged if opened improperly.

It is expressly prohibited to open the unit with tools!

4.1.2 Maintenance and repair

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

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

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

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

4.1.3 Modifications to the product

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

4.1.4 Accessories

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

4.2 Opening the processing chamber door during the machining process

⚠ CAUTION

Instruments that continue to run

When the processing chamber door is opened during the machining 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 processing chamber door while the milling and grinding unit is in operation.
- ➢ Before you open the processing chamber door, end any actions that are running by pressing the *"Stop"* button on the milling and 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.

5 Installation and startup

5.1 Transport and unpacking

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

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

NOTE

Damage during transport

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

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

The unit must be drained prior to shipment (if it has been operated). Removing water from the unit [→ 55]

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

The milling and grinding unit requires a level Approx. footprint: 700 x 420 mm (W x D). The height of the milling and grinding unit is:

- with the processing chamber door closed: 425 mm
- with the processing chamber door, open: 570 mm

Install the milling and 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!

NOTE

Installation in a cabinet

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

The ambient temperature surrounding the unit must be between 5°C and 40°C.

5.3.1 Installation site without strong incidence of light

NOTE

Impairment of the scanned result due to sudden incidence of light.

A sudden, strong incidence of light may falsify the scanned result.

Set the unit up so that the grinding chamber is not located directly in the beam path of an extreme light source and is not exposed to direct sunlight.

5.4 Commissioning

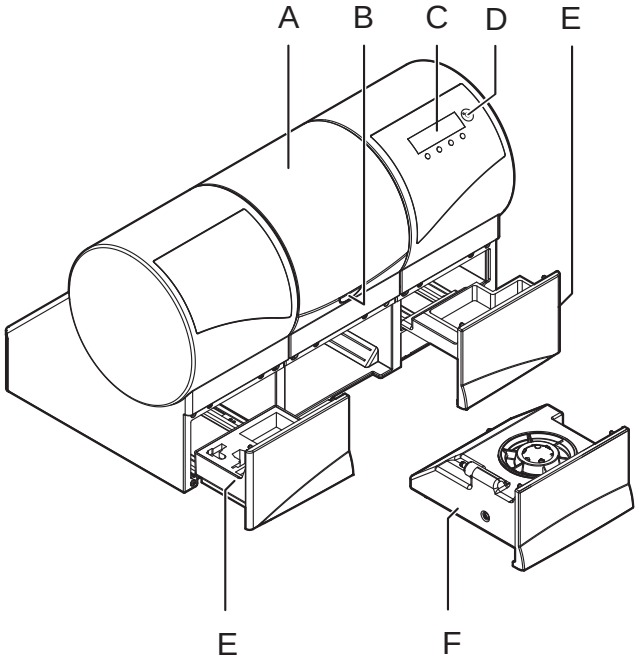
NOTE

Important information on initial startup

Observe the software installation instructions!

5.4.1 Functional elements

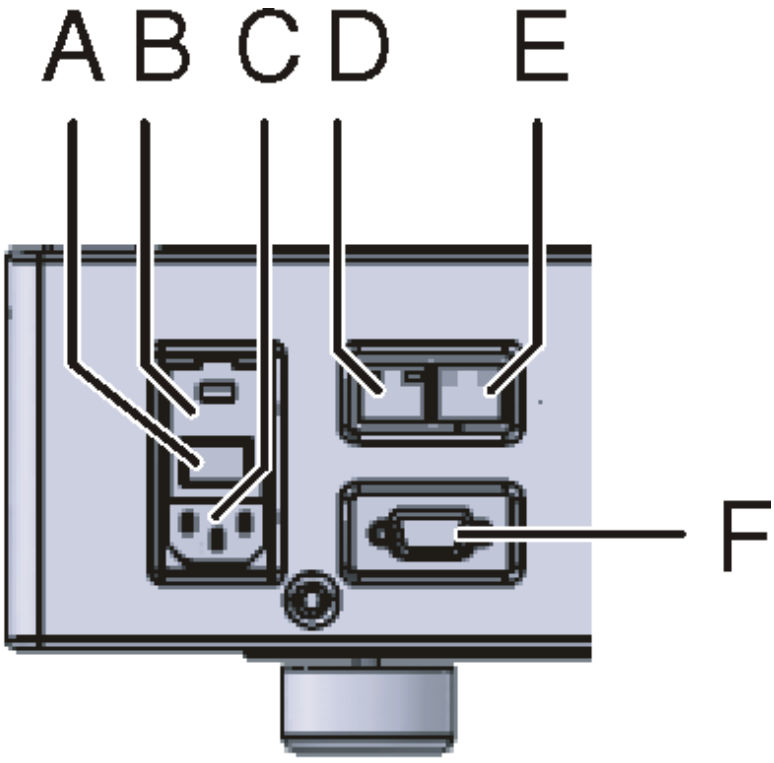
Unit overview



Overview of the grinding unit

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

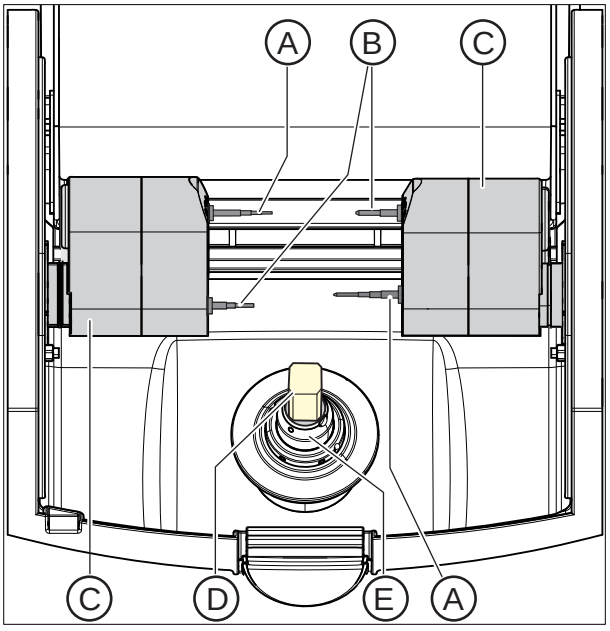
Ports on the back side



Connections

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

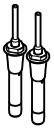
A	Instrument set 1	D	Ceramic block
B	Instrument set 2	E	Workpiece spindle
C	Motor mount		

5.4.2 Standard accessories

5.4.2.1 Instruments

The following instruments are available for milling and grinding purposes. When replacing instruments, ensure the permitted instrument combinations are used (see "Permitted instrument combinations [→ 31]").

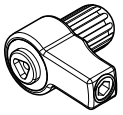
5.4.2.2 Calibration pins



The calibration pins are used when calibrating the instrument sets (see "Calibrating the unit [→ 27]“).

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	62 40 167	Grinding		Triangular 
Step Bur 12	62 60 025	Grinding		
Cyl. Pointed Bur 12 S 	62 40 159	Grinding		
Step Bur 20 	62 59 597	Grinding		
Cyl. Pointed Bur 20 	62 59 589	Grinding		
Cylinder Bur 12 EF 	65 35 186	Extra-fine grinding		
Cylinder Pointed Bur 12 EF 	65 35 178	Extra-fine grinding		
Shaper 25	62 99 395	Milling (dry)		
Finisher 10 	62 99 387	Milling (wet and dry)		
Calibration pin (AiO*) 	62 41 132	Calibration		
Shaper 25 RZ 	64 33 440	Milling (wet)		Square 

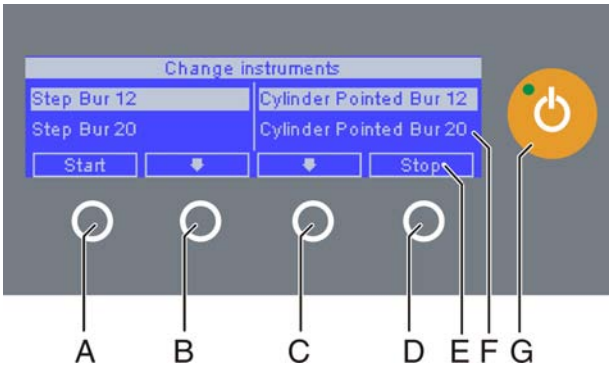
* All-in-One

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 milling and 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 Illumination of the processing chamber

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

Machining operation	Lighting color
Milling and 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.

NOTE

Risk of blockage in the cooling circuit

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

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



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



Inserting the upper screen

The upper screen enables simpler cleaning of processing chambers when milling CEREC Guide 2 drilling templates. It can also be used with other materials, but is particularly helpful when it comes to removing material waste, which gathers during each milling process of CEREC Guide 2 on the floor of the processing chamber.

1. Position the upper screen on the existing processing chamber screen on the floor of the chamber. If needed, you can easily remove and clean the upper screen. It is essential that the upper screen is emptied and washed following each milled drilling template.
2. Check the water level in the water tank following each milled drilling template, as water is absorbed in the material waste.

NOTE

Make sure the milling cutters are used correctly

If the milling cutters are not used as described below, this may cause damage to the grinding unit.

➢ Use the Shaper 25 and Finisher 10 milling cutters only in inLab MC XL grinding units, as of serial number 120 000 or in inLab XL grinding units that have been upgraded using the motor upgrade kit for inLab (REF 6338631).

➢ Use the Shaper 25 and Finisher 10 milling cutters only for manufacturing models from the inCoris S model (REF 6299361) and inCoris L model blocks (REF 6299379).

5.4.6 Connecting the bar code reader

Tool holder



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

NOTE

Using the block clamp tool

When milling models, the block clamp tool with 1.6 Nm is required. This block clamp tool is also part of the milling model starter kit (REF 63 20 993).

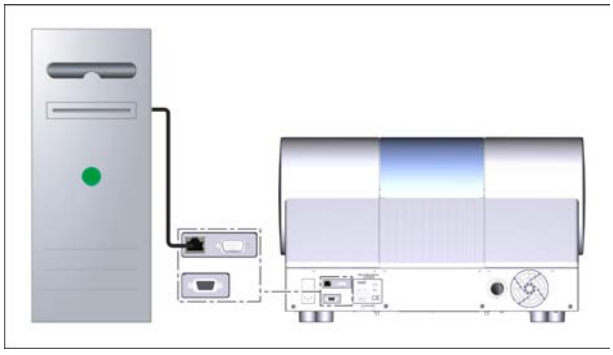
Connecting the bar code reader

➢ Plug the bar code reader into the serial interface to the rear of the milling and 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 milling and 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

NOTE

Grounded power outlet

The unit must be connected to a grounded power outlet.

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

5.4.7.3 Installing the unit

You must connect the unit to the PC before putting it into operation. This is described in the chapter "Connecting to the PC via LAN [→ 21]".

Searching for unit automatically

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

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.

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.

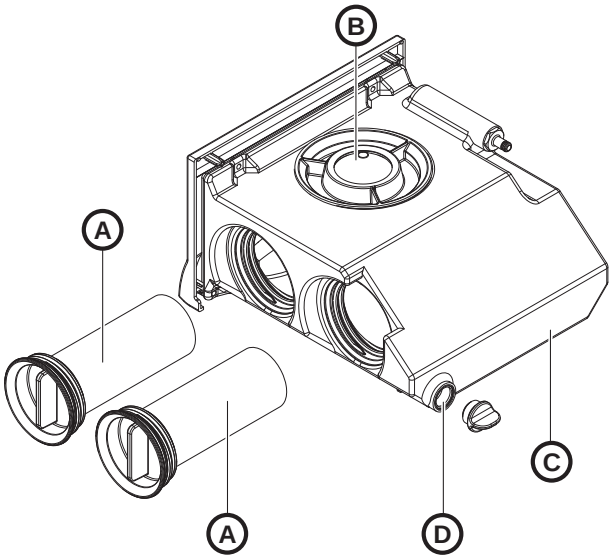
↳ The device is removed.

5.4.8 Filling the water tank

NOTE

Using the tank cap opener

If you find the tank cap, tank drain or filter insert hard to open by hand, use the tank cap opener (see "Using the tank cap opener" [→ 56]).



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".

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

NOTE

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 [→ 24]).

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

NOTE

Do not put the unit into operation at low temperatures!

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

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.

NOTE

Do not adjust the line voltage

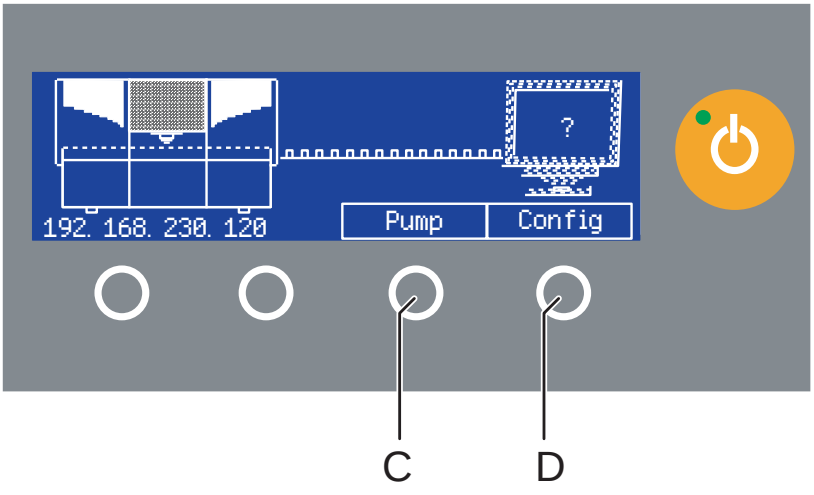
The unit automatically adjusts to the line voltage.

Switch on the unit

✓ The milling and 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 milling and grinding unit is switched on, the display shows a picture of the milling and 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 milling and 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

NOTE

Repack only drained units!

Drain the unit! See "Removing water from the unit [→ 55]".

✓ 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 inLab MC XL".

5.7 Storage

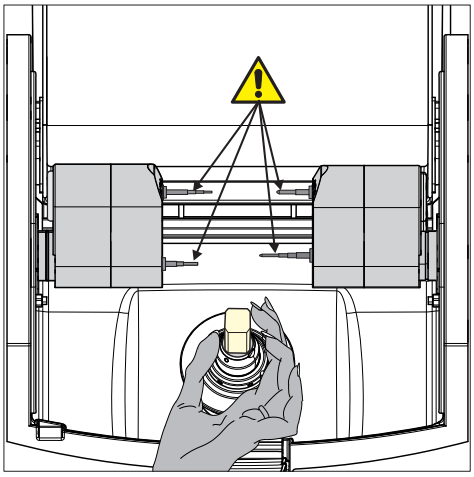
NOTE

Repack only drained units!

Drain the unit! See "Removing water from the unit [→ 55]".

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 processing 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 processing chamber underneath the calibration pins/instruments.

6.1 Configuration (inLab MC XL)

In the *"Devices"* area of the inLab 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.

Deactivating an instrument set

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.

NOTE

Milling tools may only be used in set 1.

NOTE

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.

➢ To deactivate an instrument set, you can remove the check mark in front of the respective instrument set in the software.

6.2 Calibrating the unit

NOTE

Use only the supplied calibration tools

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

Unit calibrated ex works

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

NOTE

Faulty production result

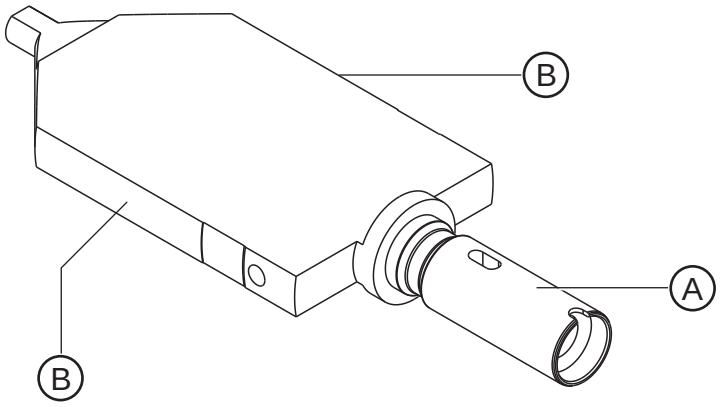
If the unit is not calibrated, the production result may be faulty.

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

NOTE

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 "Manual block clamp [→ 36]“).
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)**.

NOTE

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

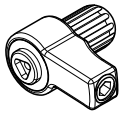
1. Click on the *"OK"* button.
2. Click on the step *"Exit Configuration"*.

6.2.1 Process types

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

6.2.1.1 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		

6.2.1.2 Milling

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

Machine type	Serial number (wet milling)	Serial number (dry milling also with retrofit)
CEREC MC XL	129001	Not possible
CEREC MC XL Premium Package	302001	304801
CEREC MC X	231001	236001
CEREC MC	202001	202501

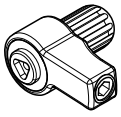
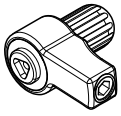
Other machines must be equipped with the milling starter kit, Design 2011 (REF: 64 48 893) or with the milling starter kit for connected motors (REF: 64 51 079) (only for wet milling).

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 (dry and wet) 	6299387		Triangular 
Shaper 25: Milling (dry)	6299395		Triangular 
Shaper 25 RZ: Milling (wet) 	6433440		Square 

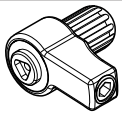
6.2.1.3 Milling models

NOTE

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		

NOTE

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.

6.2.1.4 Permitted instrument combinations

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

For an updated table of approved instrument combinations, please visit http://www.dentsplysirona.com/manuals.
Select your product there and then open the *"Bur table"* document.

6.2.2 Preparations

- ✓ Download or design a restoration (see operator's manual).
- ✓ When the milling option is activated, you can choose between the grinding and milling manufacturing processes for plastic and zirconium oxide materials in the material selection step.
- ✓ You are in the *"MANUFACTURE"* phase and have selected the milling and grinding unit, checked the settings and positioned the restoration in the block.
- ➢ Click the *"Start Milling"* step.
  - ↳ The milling and grinding unit moves into position to insert the set screw.

6.2.3 Starting the machining processes

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

1. Depending on the configuration, you will be prompted to enter the barcode (see also “Entering the bar code [→ 35]”).
2. Press the catch of the processing chamber door and open the door.

NOTE

Error message during touch process!

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

3. Place the selected block in the block fixing.
4. Clamp the block with the ball pressure screw. Use the block clamp tool for this purpose (see also “Manual block clamp [→ 36]”).
5. Close the processing chamber door and confirm the procedure by clicking *"Start"*.
   ↳ In a PC notification window, the expected duration of the machining process is displayed. The restoration is also represented from the occlusal point of view and machining mode.

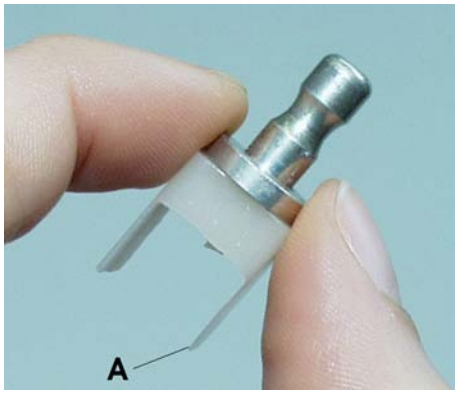
NOTE

Ending the machining processes

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

6.2.4 Ending the machining processes

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



⚠ WARNING

Risk of injury on the remainder of the ceramic block

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

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

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

⚠ CAUTION

Do not use defective milling and grinding results!

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

NOTE

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

6.2.5 Information on the seal of approval

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 software. These machine parameters are coordinated between 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. Consistently high quality of the grinding or milling result and the fit can be guaranteed and damage to the processing machines can be excluded only if certified materials are used.

NOTE

Block without seal of approval

If a block is found without a seal of approval during the machining 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?"

6.3 Entering the bar code

Scanner active, Barcode Reader not active

If you have activated the option *"Scanner"* in the system configuration dialog and the option *"Barcode Reader"* is not active, the bar code will automatically be read by the scanner. You will be able to enter the substitute code (8-digit character string, e.g. *1234XYZ) manually on the PC only if this process fails.

Barcode Reader active

If you have activated the option *"Barcode Reader"* in the system configuration dialog (e.g. for CEREC Zirconia), 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.

Scanner not active, Barcode Reader not active

If neither the option *"Barcode Reader"* nor the scanner has been activated in the system configuration dialog, you always will be prompted to enter the substitute code (8-digit character string, e.g. *1234XYZ) on the PC manually.

6.4 Manual block clamp

Store the block clamp tool in the corresponding holder.
You can attach the holder to a suitable location with the adhesive pad.
Clean and degrease the contact surface beforehand.

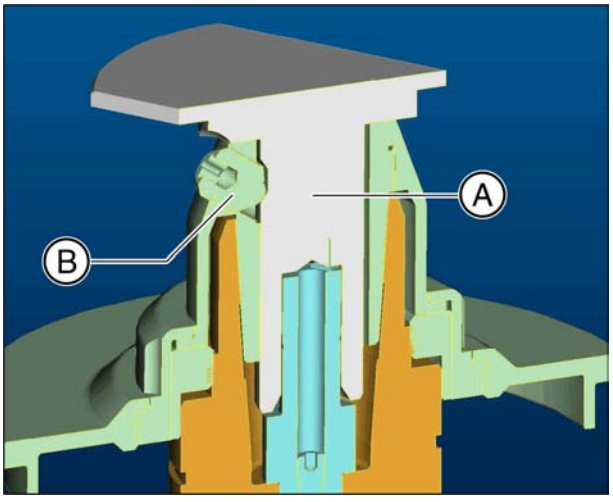
NOTE

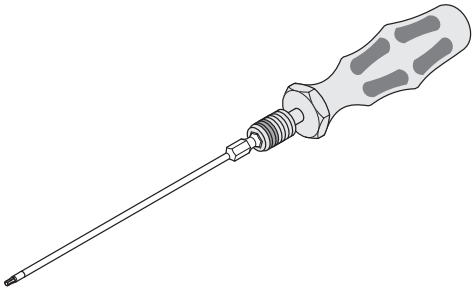
Wear of the ball pressure screw

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

➢ Replace the ball pressure screw every 500 clamping operations.

Blocks with 10 mm diameter block holders





NOTE

Fasten the block tightly

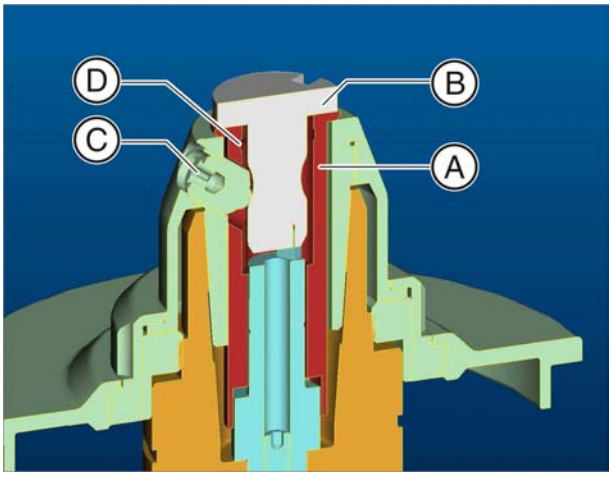
If the block is not sufficiently tightened, it can lead to unsuitable results and ceramic breakages.

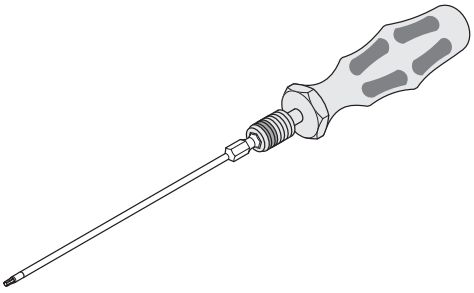
➢ **Securely tighten the block with the block clamping tool with the torque wrench, until you can hear a clicking sound.**

➢ 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





NOTE

Fasten the block tightly

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

➢ **Securely tighten the block with the block clamping tool with the torque wrench, until you can hear a clicking sound.**

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

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

NOTE

Insert the adapter sleeve

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

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

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

Removing the adapter sleeve

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

7 Service

NOTE

Observe country-specific Regulations!

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

NOTE

Perform maintenance regularly!

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

NOTE

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.

NOTE

Machine care

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

- ➢ Change the filters (see Changing filters [→ 50])
- ➢ **Clean** the manual block chuck according to the cleaning set instructions (REF 61 77 161).
- ➢ **Clean** the clamping cones and chucks of the instruments according to the cleaning set instructions (REF 61 77 161).
- ➢ If the jets of water do not strike the instruments, carefully remove any foreign particles from the water nozzles with a probe.

NOTE

Chips gathered in the grinding chamber

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

- ➢ After each milling process, 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.

NOTE

Do not confuse the block screw with the ball pressure screw

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

NOTE

Using the tank cap opener

If you find the tank cap, tank drain or filter insert hard to open by hand, use the tank cap opener (see "Using the tank cap opener" [→ 56]).

NOTE

Wear of the ball pressure screw

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

➢ Replace the ball pressure screw every 500 clamping operations.

7.1 Cleaning the unit with MC Care liquid

1. Clean your unit once per week with the MC Care liquid provided.
2. Please refer to the operating instructions provided with the MC Care liquid.

7.2 Changing the water

7.2.1 General information

NOTE

Damage to the pump and drives!

If too much ceramic and/or base metals are in the cooling water, this damages the pump and 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 coolant additives contain a biodegradable preservative. Despite this, however, odors may still develop under unfavorable conditions.

Observe the following:

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

NOTE

Damage to surfaces!

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

➢ Do not place DENTATEC on the unit.

➢ Do not spill DENTATEC.

NOTE

Approved coolant additive

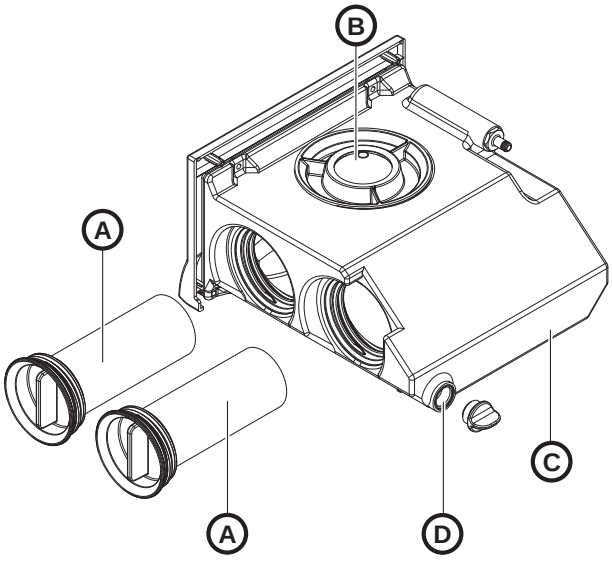
Use only DENTATEC as a coolant additive.

7.2.2 Changing the water

NOTE

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

7.2.2.1 Procedure for all materials except for base metals

To change the water, proceed as follows:

✓ The unit is switched on.

✓ No machining / scan 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.

NOTE

Foaming not permissible!

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

Do not use any cleaning agents.

10. Add 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.

7.2.2.2 Procedure for processing base metal materials

7.2.2.2.1 Important information

NOTE

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

In mixed operation, the tank can be used with base metals and other materials. It is, however, recommended that you use an additional standard tank which is only used for processing base metal materials.

Tank double filter with CS aperture, traffic white spare, order no.: 63 91 895

IMPORTANT

In mixed operation, the tank can be used with base metals and other materials. It is, however, recommended that you use an additional standard tank which is only used for processing base metal materials.

inLab double filter tank, complete, order no.: 62 00 898

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.

NOTE

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

7.2.2.2.2 Emptying the water tank

Emptying the grinding water and grinding slurry

- ✓ The unit is switched on.
- ✓ No machining 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.

7.2.2.2.3 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.

7.3 Instruments

7.3.1 Overview of materials/instruments

For an updated table of approved instrument combinations, please visit http://www.dentsplysirona.com/manuals.
Select your product there and then open the *"Bur table"* document.

7.3.2 Changing instruments

NOTE

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.

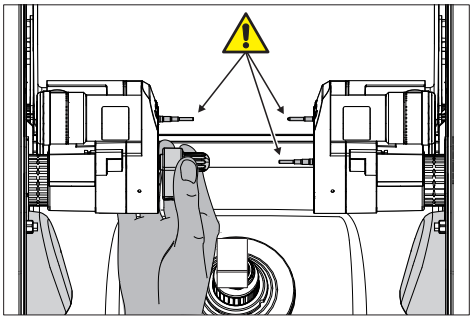
NOTE

Regular replacement of the instruments

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

- Milling instruments (wet grinding): Typically after no more than around 25 restorations. The type of material, block size and processing options may affect the service life.
- Shaper 25 (dry milling): After 50 restorations.
- Shaper 25 RZ (wet milling): After 30 restorations.
- Finisher 10 (dry and wet milling): After 50 restorations.

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.
4. Click on the *"Change Instruments"* button.
   ↳ If two sets are activated:
   A dialog box then opens where you can select the set, whose instruments should be replaced.
5. If necessary, select the desired set.
6. Click on the *"Start"* button.
   ↳ The motors travel to the change position for the instruments.
   The dialog box for changing the instruments opens.
7. Press the catch of the processing chamber door and open the door.



⚠ CAUTION

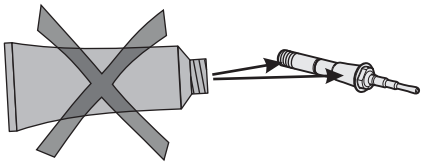
Risk of injury on instruments

If you put your hand in the processing 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.

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



9. **NOTE! Do not grease instruments 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.

NOTE

Incorrect milling or grinding results

Interchanging instruments leads to faulty milling or grinding results.

10. Close the processing chamber door.
11. In the software, select the instrument(s) you have used and click *"Start"*.

NOTE

Cleaning cooling water nozzles

The cooling water nozzles in the processing chamber must be free from limescale, grinding dust/milling 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 a syringe.

NOTE

Use only suitable instruments!

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

Changing a defective instrument

If an instrument breaks during the machining 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.

7.4 Care, cleaning agents, and disinfectants

NOTE

Approved care, cleaning, and disinfecting agents

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

A continuously updated list of approved agents can be downloaded from the Internet on the online portal for technical documents. You can reach this portal at the address:
www.dentsplysirona.com/manuals
.Click on the menu item *"General documents"* and then open the *"Care, cleaning and disinfection agents"* document.

If you do not have access to the internet, please contact your dental depot to order the list (REF 59 70 905).

7.5 Cleaning surfaces

NOTE

Do not allow liquids to run into the ventilation slots!

7.5.1 Disinfecting

Wipe surfaces down with a surface disinfectant (wiping disinfectant).

Observe the manufacturer's instructions regarding restrictions for use.

7.5.2 Protection against medicaments

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

NOTE

Damage to the surface

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

7.5.3 Cleaning

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

7.6 Replacing the main fuses

⚠ WARNING

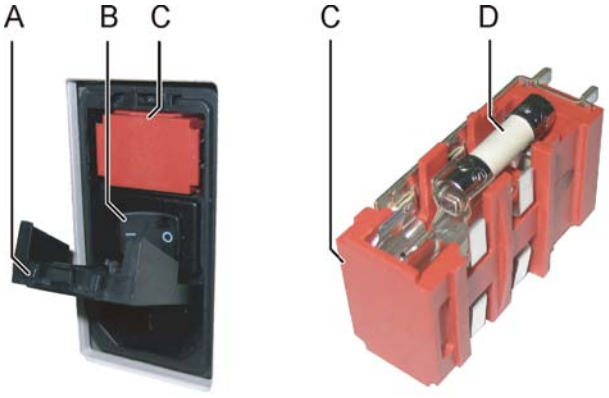
Electric shock

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

NOTE

Fuse type

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



Fuse holder

A	Cover	C	Fuse holder
B	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.

7.7 Changing the filter

NOTE

Change the filter inserts regularly!

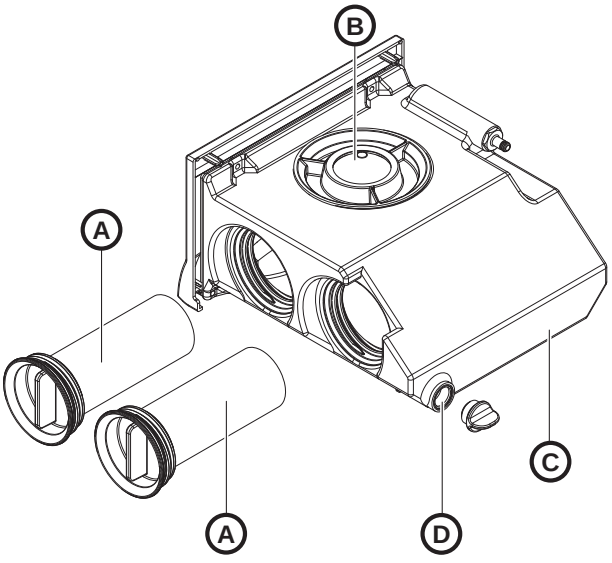
Replace both filter inserts once a week or after every fourth water change.

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

NOTE

Filter

Only use filter inserts approved by Dentsply Sirona!



Water tank

A	Filter inserts	C	Tank
B	Tank cap	D	Tank drain

7.7.1 Procedure for all materials except for base metals

✓ The tank is empty, see "Removing water from the unit [→ 55]".

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

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

NOTE

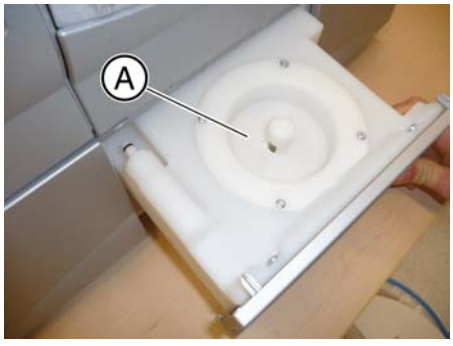
Observe the safety information from the material manufacturer

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 [→ 43]“).
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 [→ 45]).

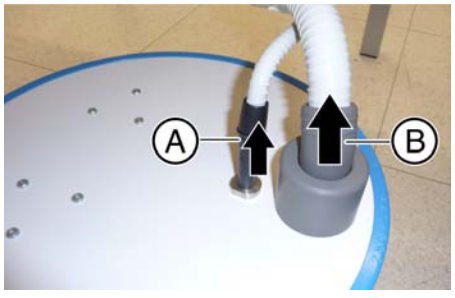
7.7.3 Changing filters on the external tank

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



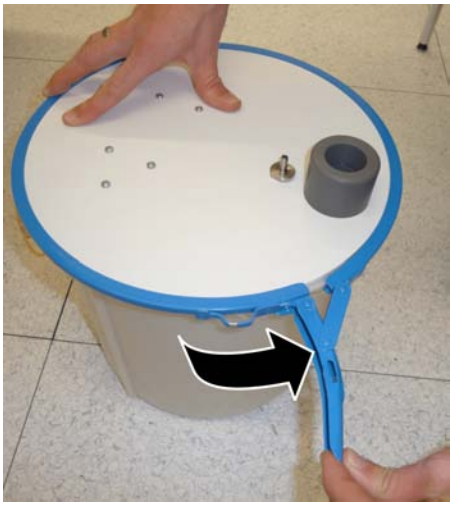
NOTE

Risk of damage to the hoses

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

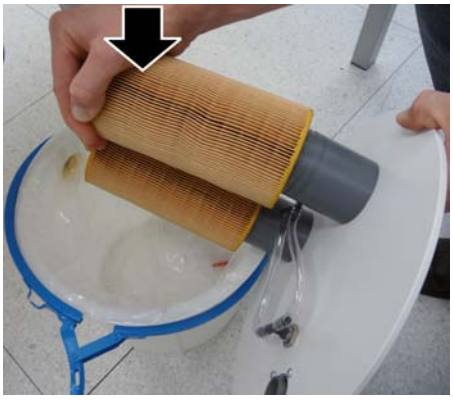
➢ Always pull it from the pipe section (A or B).

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.

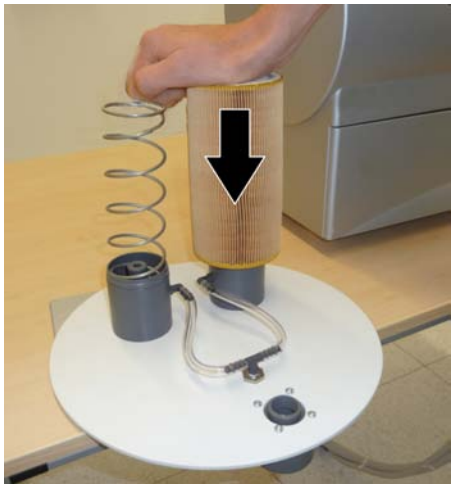


3. Place the clamping ring onto the external water tank with the labeling (A) facing up.
4. Add approx. 400 ml of DENTATEC to the tank.

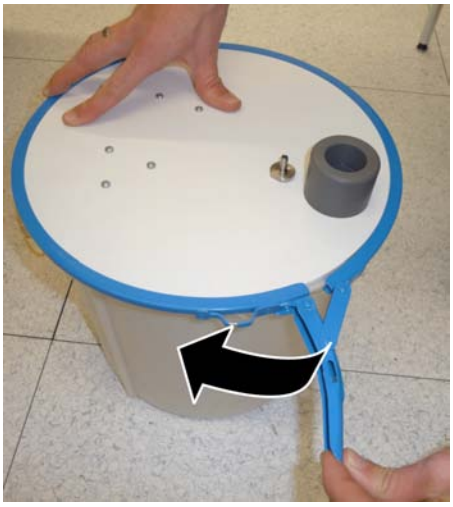


5. Fill the tank up to the filling level with water (approx. 16 liters).

Installing the filters

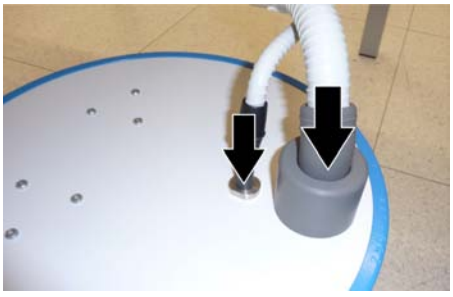


1. Press down the 2 filters until they click into place on the lid.
2. Insert the lid with the filters into the container.



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.





NOTE

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).

7.8 Removing water from the unit

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

7.8.1 Procedure for all materials except for base metals

✓ No machining process is running.

1. Turn the device 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.

NOTE

Pump button active at power-up

When the unit is switched on, the touch display shows the *"Pump"* button. You can start or stop the water pump by pressing this button.

5. 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.
6. Press the *"Pump"* button to switch the pump off.
7. Pull out the water tank and empty it.
8. Push it back into the housing.

✓ No machining process is running.

1. Turn the device 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.
5. 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.
6. Press the *"Pump"* button to switch the pump off.
7. Pull out the water tank and empty it.
8. Push it back into the housing.

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

NOTE

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 [→ 43]) and insert it back into the unit.
2. Switch the unit on.

NOTE

Pump button active at power-up

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

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.
1. Empty the water tank (see Emptying the water tank [→ 43]) 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.

7.9 Using the tank cap opener

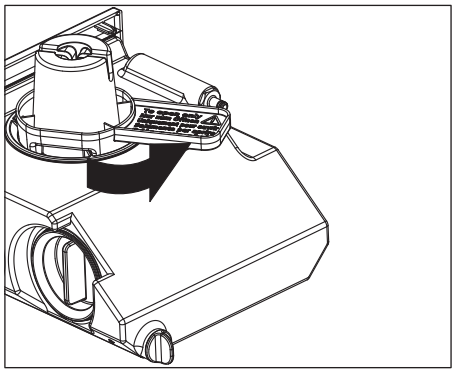
NOTE

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.

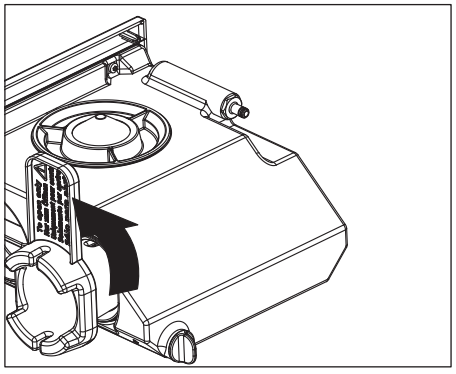
Opening the tank cap



✓ 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.

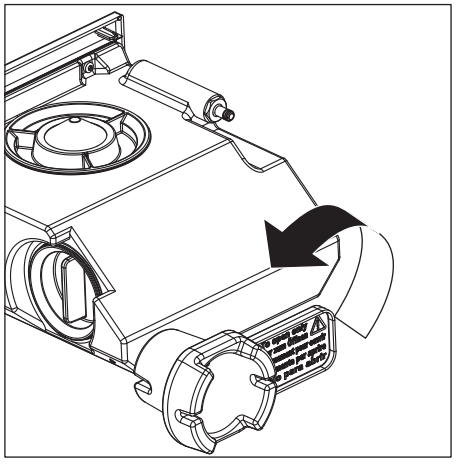
Opening the filter cap



✓ 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.

Tip: If a black rubber plug is available on the tank, this can be removed by hand.

8 Technical description

8.1 System requirements

The inLab SW software may be installed only on the 64-bit inLab PC.

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

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
- Milling speed: 1.0 - 1.5 mm/min.

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

- Grain size: 64 µm
- Speed: 42,000 ^{rpm}
- Step Bur 12 S
- Step Bur 20
- Cyl. Pointed Bur 12 S
- Cyl. Pointed Bur 20

Milling instruments

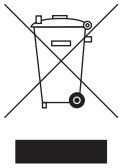
- Shaper 25 RZ (wet milling)
- Shaper 25 (dry milling)
- Finisher 10 (wet and dry milling)

Type designation	Milling and grinding unit inLab MC XL
Rated line voltage	100 V - 230 V AC
Rated power frequency	50/60 Hz
Nominal 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 equipment
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
Operating mode	Continuous operation
Dimensions (WxHxD) in mm	700 x 425 x 420
Approx. weight	43 kg

8.2.2 Controller board

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

9 Disposal



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

Disposal procedure

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

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

In Germany

To initiate return of the electrical device, please send a disposal request to enretec GmbH. You have the following options here:

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

  enretec GmbH
  Kanalstraße 17
  16727 Velten, Germany
  Phone: +49 3304 3919-500
  E-mail: eom@enretec.de

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

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

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

Other countries

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

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

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