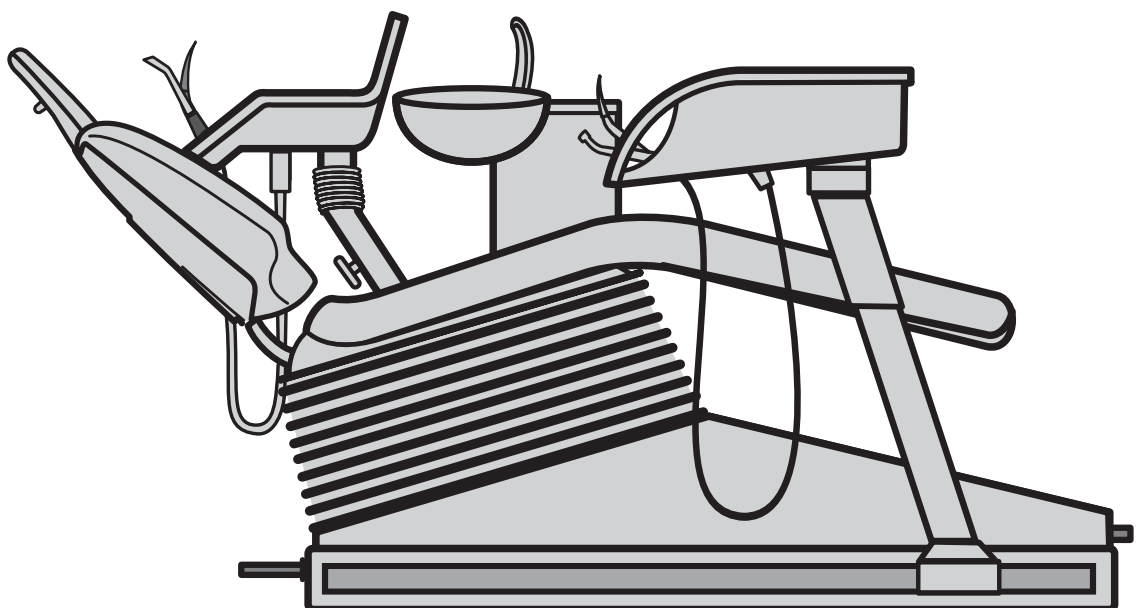


C4⁺

Operating Instructions

English



General information

Dear customer,

We thank you for purchasing your C4⁺ dental treatment center from the Sirona company.

The technical documentation supplied is also part of the product. You should always keep this documentation within reach.

These **Operating Instructions** describe your treatment center with maximum possible equipment.

For daily care of your treatment center, please observe the instructions provided in “**Care and Maintenance by the Practice Team**”.

To safeguard your warranty claims, please complete the attached “**Installation Report / Warranty Passport**” together with the service engineer immediately after the installation of your treatment center.

Separate Operating Instructions with corresponding instructions for care are enclosed with the dental instruments, SIROLUX FANTASTIC, monitor, Cerec Chairline, SIROCAM 3, tray and X-ray image viewer.

Prior to start-up, you must read all Operating Instructions to familiarize yourself with the treatment center.

To prevent any personal injury or material damage, pay special attention to any notes printed in bold type or marked in one of the ways indicated below:

NOTE

Additional information, explanation or supplement

CAUTION

The information provided under this keyword directly concerns the functioning of the product and/or warns against possible operating errors.

WARNING

This warning symbol warns against possible hazards for the product or the user.

In case you get stuck despite having thoroughly studied the Operating Instructions, please contact your dental depot.

Your C4⁺ Team

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1 Warning and safety information

Intended use

This dental treatment center is intended for diagnosis, therapy and dental treatment of humans by properly trained personnel.

This unit is **not** intended for **operation in areas subject to explosion hazards**.

On-site installation

The **on-site installation** must have been performed according to our requirements. The details are described in the document "Installation Requirements".

Maintenance and repair

As manufacturers of dental medical equipment and in the interest of the operational safety of your system, we stress the importance of having **maintenance and repair** of your treatment center performed only by ourselves or by agencies expressly authorized by us. Furthermore components influencing the safety of the unit should always be replaced with **original spare parts** upon failure.

When having such work done, we suggest that you request a certificate stating the type and extent of work performed, including statements concerning any modifications of the rated parameters or of the operating ranges (if applicable), as well as the date, name of organization and signature.

Modifications of the system

Modifications of this system which could impair the safety of the system owner, patients or other persons are prohibited by law!

For reasons of product safety, only original Sirona accessories approved for this product, or accessories from third parties approved by Sirona, may be used. The user is responsible for dangers resulting from the use of non-approved accessories.

If any equipment not approved by Sirona is connected, it must comply with the applicable standards:

IEC 60950 for information technology equipment (e.g. PCs), and IEC 60601-1 for medical electrical equipment.

Combination with other equipment

Any person who assembles or modifies a medical electrical system complying with the standard IEC 60601-1-1 (safety requirements for medical electrical equipment) by combining it with other equipment (e.g., by connecting it with a PC) is responsible for ensuring that the requirements of this regulation are met to their full extent for the safety of the patients, operators and environment.

In case of doubt, contact the manufacturer of the system components.

Electromagnetic compatibility (EMC)

The C4⁺ complies with the requirements of IEC 60601-1-2:2001.

Medical electrical equipment is subject to special precautionary measures with regard to EMC. It must be installed and operated in compliance with the specifications provided in the document "Installation Requirements".

Portable and mobile RF communication systems may interfere with medical electrical equipment. For this reason, the use of mobile radio telephones in practice or hospital environments must be prohibited.

With video systems:

Electromagnetic disturbances in the environment of the C4⁺ may result in reduced image quality. In such cases, it is advisable to repeat the exposure before saving the image.

In case of line voltage drops, image data stored in the video camera may be lost. Place down the camera and repeat the exposure.

Image artifacts may possibly occur as a result of radio-frequency interference caused by the transmitters of e.g. radio services or radio amateurs.

Influence on cardiac pacemakers

The workstation includes strong magnets which can affect cardiac pacemakers of patients, users and technical personnel.

Therefore, please pay attention to the safety information on pages 7 and 57.

Treatment of highly immunosuppressed patients

Highly immunosuppressed patients should not come in contact with water from the treatment center. The use of sterile solutions is recommended.

Quality of water / air supply

Air and water supply must meet the requirements specified in the installation instructions. Use only clean water.

Water quality compliance

To ensure compliance with the medical and national legal requirements for water from treatment centers, Sirona recommends equipping the treatment center with a disinfection system. As owner of the treatment center, you are responsible for the water quality and may have to take alternative measures to ensure its compliance if you operate the treatment center without a disinfection system.

Please contact your specialized dealer or your relevant dental association for the respective national requirements and measures.

Highlighting of warning and safety information

To avoid personal injury and material damage, you must also observe the warning and safety information provided in the present operating instructions. They are highlighted by the caption  **NOTICE**,  **CAUTION** or  **WARNING**.

Symbols used



Observe accompanying documents (on name plate of chair)

Ventilation slots

Under no circumstances may the ventilation slots on the unit be covered, since otherwise the air circulation will be obstructed.

Do not spray with disinfectants or the like into ventilation slots.

Vacuum system

The suction removal of aluminum and other metal oxides from blasting devices via the automatic separator and the amalgam separator integrated in the treatment center is prohibited!

This would cause extreme wear and clogging of the suction and water paths.

A separate vacuum system must be used in connection with metal oxide blasting devices.

Treatment centers equipped with a central wet suction system are generally suitable for suction removal of the above material. However, make sure to observe the instructions provided by the manufacturer of your vacuum system.

No restrictions apply when using salt blasting devices in connection with Sirona treatment centers. However, in such cases, make sure that the system is subsequently flushed with an adequate amount of water.

Patient chair

Please observe the maximum load capacity of the chair of **135kg according to EN ISO 6875 (tested with a four-fold safety factor according to IEC 60601-1)**

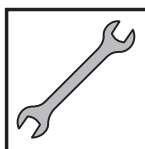
Electric micromotors in dentist element

Intermittent operation: 1 min. ON – 7 min. OFF with a motor current of 1.5A.

Drive motors for chair and backrest

6% duty time, cycle time 250s.

Maintenance of the treatment center



Despite the outstanding quality of your treatment center and regular care by the practice team, it is required in the interest of operational safety that preventive maintenance be performed at predetermined intervals.

In order to guarantee the operational safety and reliability of your treatment center and to avoid damage due to natural wear, you as the system owner must have your system checked through regularly by an authorized service engineer from your dental depot. Furthermore, safety checks must be performed.

Please contact your dental depot to obtain a maintenance offer.

For details please refer to chapter 17 “Maintenance” on page 106 .

Dismantling and reassembly

When dismantling and reassembling the system, proceed according to the installation instructions for new installation in order to guarantee its functioning and stability.

Disposal



Please observe the disposal regulations applicable in your country.

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 contact your dealer if final disposal of your product is required.

2 Technical description

Model designation	C4 ⁺ , C4 ⁺ Cart and C4 ⁺ Cabinet
Power supply	230VAC, 50Hz, 115VAC, 50/60Hz 100VAC, 50/60Hz
Nominal current	4.5A at 230V 9.5A at 115V 11.5A at 100V
Main unit fuse	for 230VAC: T 6.3 A H , 250 VAC, REF 10 77 452 for 100/115 VAC: T 10 A H , 250 VAC, REF 10 77 460
Operating conditions	Ambient temperature: 10°C – 40°C (50°F – 104°F) Relative humidity: 30% – 75% Air pressure: 700hPa – 1060hPa
Transport and storage conditions	Temperature: -40°C – +70°C (-40°F – 158°F) Relative humidity: 10% – 95% Air pressure: 500hPa – 1060hPa
Protection class	Class I equipment
Degree of protection against electrical shock:	Type B applied parts, except CEREC 3D camera, SIROCAM 3 / SIROCAM C: Type BF applied parts
Degree of protection against ingress of water	Ordinary equipment (not protected) The foot switch has an IPX1 degree of protection against liquids (drip-proof).
Mode of operation	Continuous operation with intermittent loading corresponding to the dental mode of working. Permanently connected unit.
Year of manufacture	 20xx (on name plate of chair)
Tests / approvals	This dental treatment center complies with the requirements of IEC 60601-1: 1988 + A1: 1991 + A2: 1995 and IEC 60601-1-2): 2001.

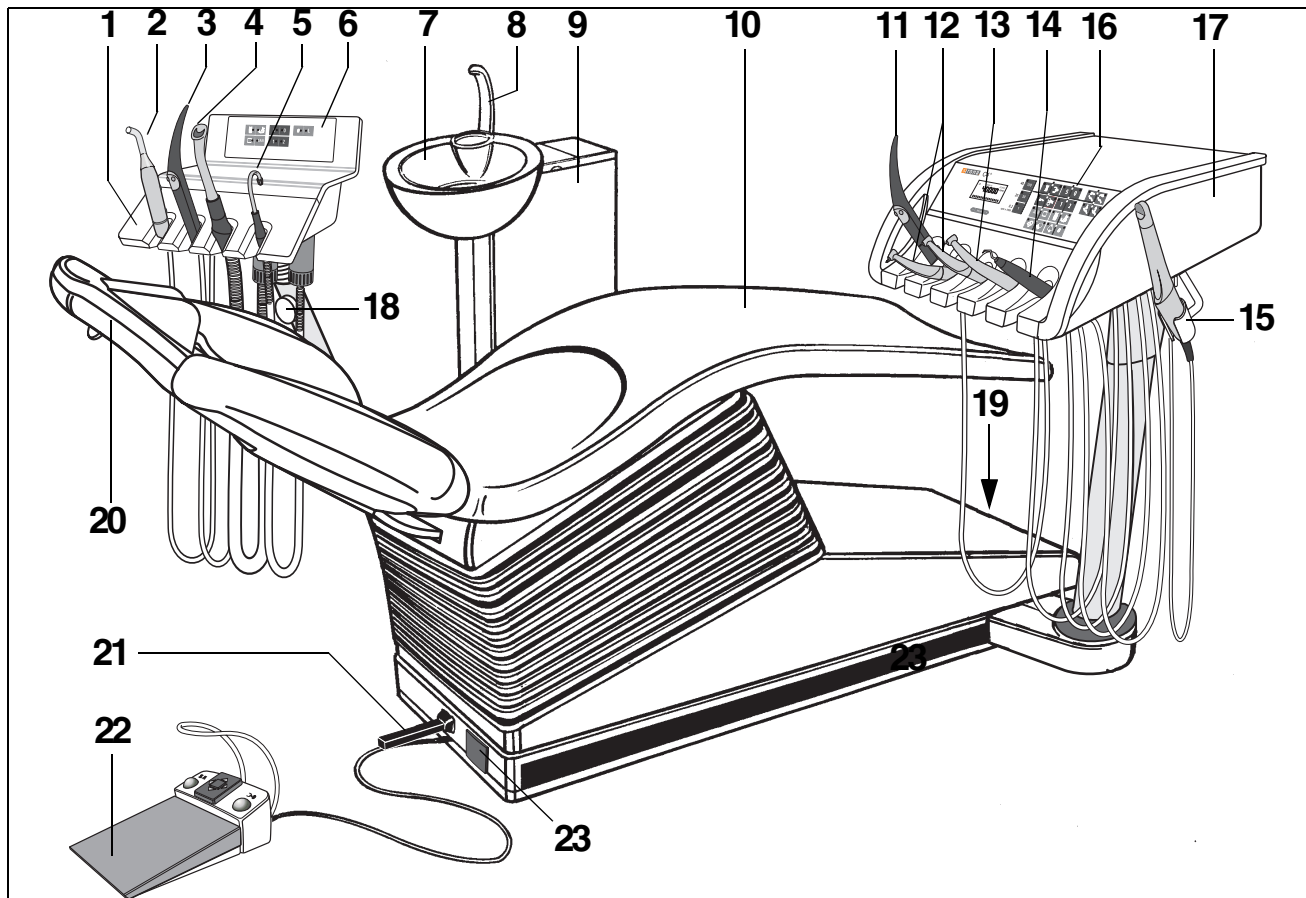


DVGW: This unit complies with the technical rules and safety and hygiene requirements for connection to the drinking water supply, provided that a disinfection system is integrated.

This product bears the CE marking in accordance with the provisions of the Council Directive 93/42/EEC of June 14, 1993 concerning medical devices.

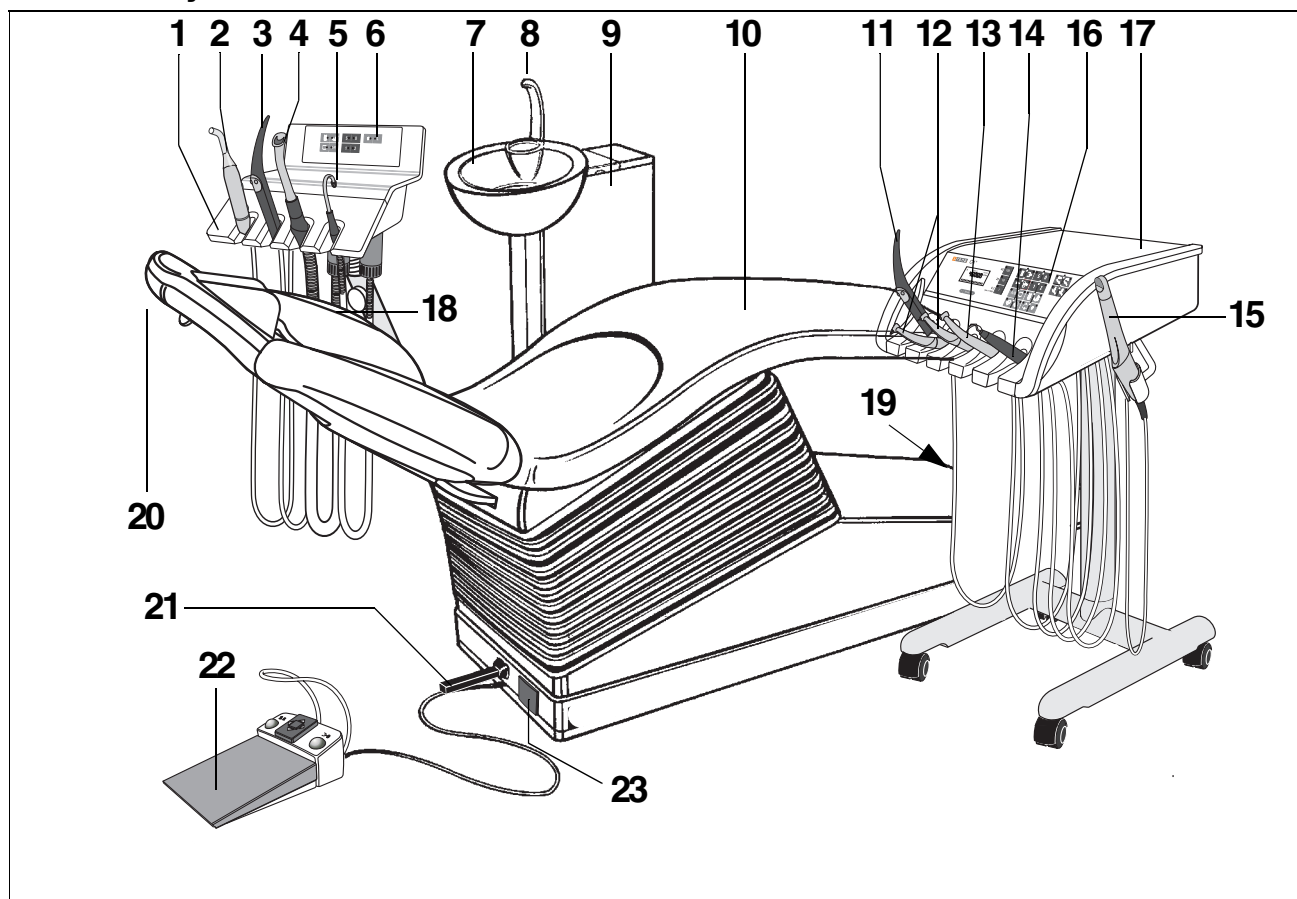
3 System versions

3.1 System overview C4⁺



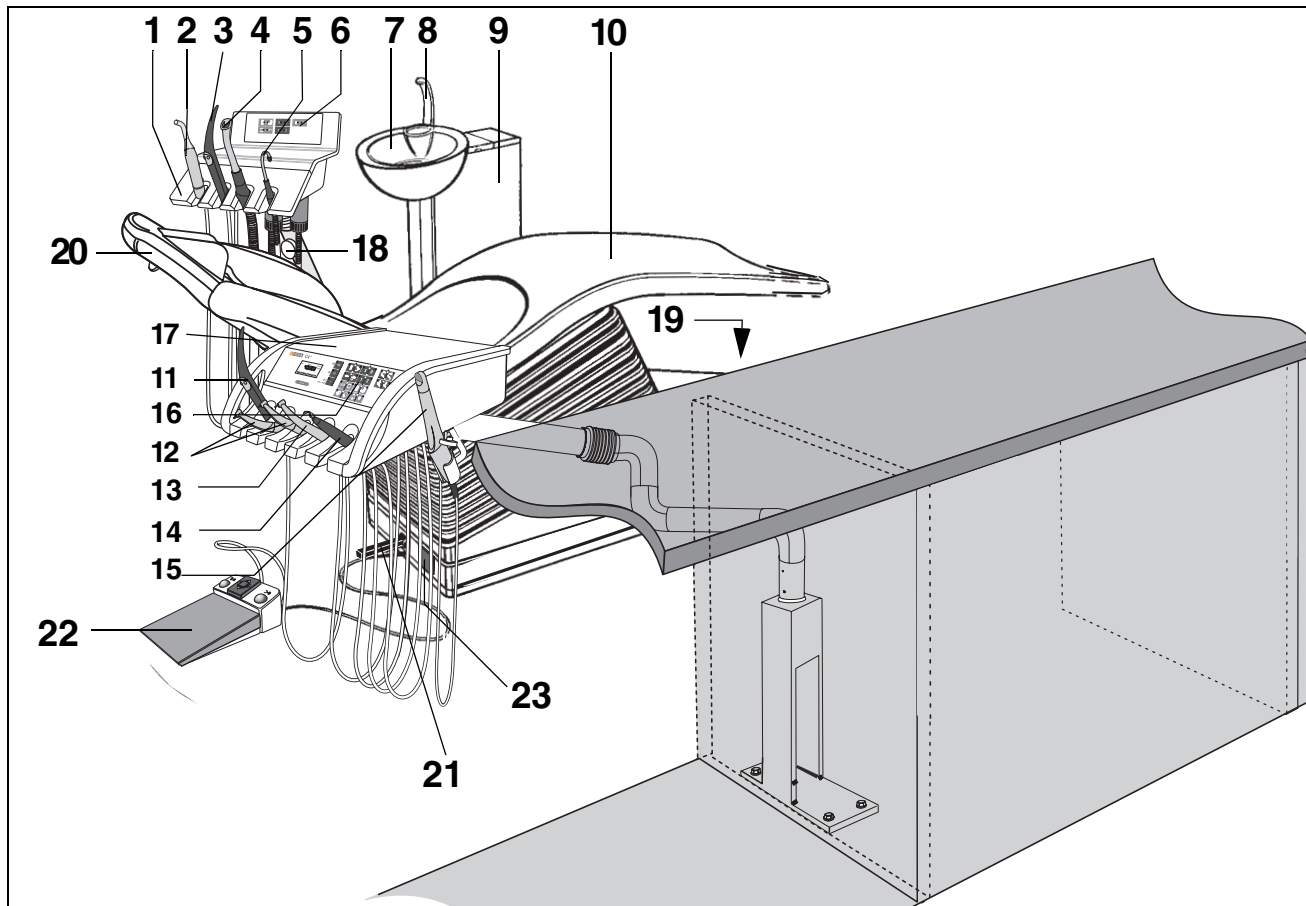
- | | |
|--|---|
| <p>1 Assistant element</p> <p>2 Holder 1: Mini L.E.D. polylight or 3rd suction hose or SIROCAM 3 / SIROCAM C</p> <p>3 Holder 2: SPRAYVIT in the assistant element or SIROCAM 3 / SIROCAM C</p> <p>4 Holder 3: Suction handpiece</p> <p>5 Holder 4: Saliva ejector</p> <p>6 Control panel on the assistant element</p> <p>7 Rigid or swivelable cuspidor</p> <p>8 Tumbler filler</p> <p>9 Water unit with amalgam rotor, disinfection system, automatic separator, wet suction</p> <p>10 Patient chair, option: folding armrest</p> <p>11 Holder 1: SPRAYVIT in the dentist element</p> <p>12 Holder 2 and 3: Electric motor / highspeed hand-piece burr drives</p> | <p>13 Holder 4: 3rd electric motor / highspeed handpiece burr drive or SIROSONIC L scaler or Mini L.E.D. polylight</p> <p>14 Holder 5: 4th burr drive (only highspeed handpiece) or SIROSONIC L or Mini L.E.D. polylight or SIROCAM 3 / SIROCAM C</p> <p>15 Additional instrument holder (only for SIROCAM 3 / SIROCAM C)</p> <p>16 Control panel on the dentist element</p> <p>17 C4⁺ dentist element</p> <p>18 Locking brake on the assistant element</p> <p>19 Unit main switch</p> <p>20 Flat headrest or manually adjustable headrest or motorized headrest</p> <p>21 4-way foot control of chair</p> <p>22 Unit foot switch C⁺ or C</p> <p>23 Foot button for SIROCAM 3 / SIROCAM C on the assistant element</p> |
|--|---|

3.2 System overview C4⁺ Cart



- | | |
|--|---|
| <p>1 Assistant element</p> <p>2 Holder 1: Mini L.E.D. polylight or 3rd suction hose or SIROCAM 3 / SIROCAM C</p> <p>3 Holder 2: SPRAYVIT in the assistant element or SIROCAM 3 / SIROCAM C</p> <p>4 Holder 3: Suction handpiece</p> <p>5 Holder 4: Saliva ejector</p> <p>6 Control panel on the assistant element</p> <p>7 Rigid or swivelable cuspidor</p> <p>8 Tumbler filler</p> <p>9 Water unit with amalgam rotor, disinfection system, automatic separator, wet suction</p> <p>10 Patient chair, option: folding armrest</p> <p>11 Holder 1: SPRAYVIT in the dentist element</p> <p>12 Holder 2 and 3: Electric motor / highspeed hand-piece burr drives</p> | <p>13 Holder 4: 3rd electric motor / highspeed handpiece burr drive or SIROSONIC L scaler or Mini L.E.D. polylight</p> <p>14 Holder 5: 4th burr drive (only highspeed handpiece) or SIROSONIC L or Mini L.E.D. polylight or SIROCAM 3 / SIROCAM C</p> <p>15 Additional instrument holder (only for SIROCAM 3 / SIROCAM C)</p> <p>16 Control panel on the dentist element</p> <p>17 C4⁺ Cart – dentist element</p> <p>18 Locking brake on the assistant element</p> <p>19 Unit main switch</p> <p>20 Flat headrest or manually adjustable headrest or motorized headrest</p> <p>21 4-way foot control of chair</p> <p>22 Unit foot switch C⁺ or C</p> <p>23 Foot button for SIROCAM 3 / SIROCAM Con the assistant element</p> |
|--|---|

3.3 System overview C4⁺ Cabinet

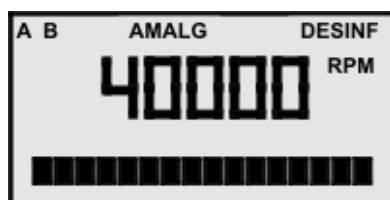
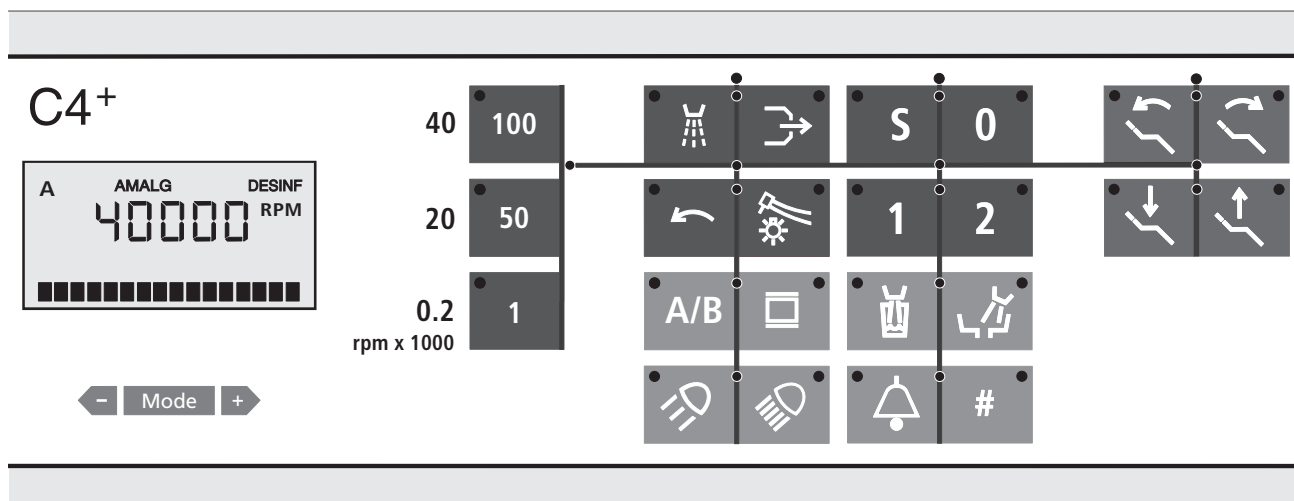


- | | |
|---|---|
| <p>1 Assistant element</p> <p>2 Holder 1: Mini L.E.D. polylight or 3rd suction hose or SIROCAM 3 / SIROCAM C</p> <p>3 Holder 2: SPRAYVIT in the assistant element or SIROCAM 3 / SIROCAM C</p> <p>4 Holder 3: Suction handpiece</p> <p>5 Holder 4: Saliva ejector</p> <p>6 Control panel on the assistant element</p> <p>7 Rigid or swivelable cuspidor</p> <p>8 Tumbler filler</p> <p>9 Water unit with amalgam rotor, disinfection system, automatic separator, wet suction</p> <p>10 Patient chair, option: folding armrest</p> <p>11 Holder 1: SPRAYVIT in the dentist element</p> <p>12 Holder 2 and 3: Electric motor / highspeed handpiece burr drives</p> | <p>13 Holder 4: 3rd electric motor / highspeed handpiece burr drive or SIROSONIC L scaler or Mini L.E.D. polylight</p> <p>14 Holder 5: 4th burr drive (only highspeed handpiece) or SIROSONIC L or Mini L.E.D. polylight or SIROCAM 3 / SIROCAM C</p> <p>15 Additional instrument holder (only for SIROCAM 3 / SIROCAM C)</p> <p>16 Control panel on the dentist element</p> <p>17 C4⁺ Cabinet – dentist element</p> <p>18 Locking brake on the assistant element</p> <p>19 Unit main switch</p> <p>20 Flat headrest or manually adjustable headrest or motorized headrest</p> <p>21 4-way foot control of chair</p> <p>22 Unit foot switch C⁺ or C</p> <p>23 Foot button for SIROCAM 3 / SIROCAM C on the assistant element</p> |
|---|---|

4 Controls and functional elements

4.1 Control panel on the dentist element

Control panel



System status indication display and Mode key

AMALG appears when the amalgam rotor needs to be replaced.

DESINF is flashing when **DENTOSEPT P** must be refilled.

A appears when user A is selected.

B appears when user B is selected.



Mode key with **+** / **-** keys for programming basic settings.

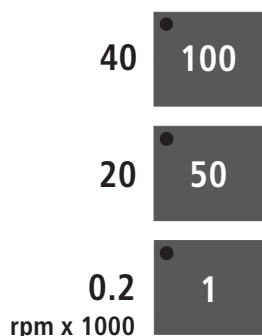
In addition to the settings in the Mode dialog, the following direct settings can be made with the **+** / **-** keys:

- Intensity of the instrument lights
- Intensity of the operation light
- Tumbler filling time
- Cupidor flushing time

■ Main functions – dark blue keys

Quick setting keys for instrument intensity and speed

for electric motors and SIROSONIC L ultrasonic scaler



Spray ON / OFF

on burr drives



Chip blower

on burr drives



Counterclockwise rotation

for electric motor



Instrument light ON / OFF

Pressing this key for some time displays the light intensity settings dialog.



Mouth rinsing position chair program.

with last position memory function (freely programmable)



Chair program 0

Entry/exit position (freely programmable)



Chair programs 1 and 2

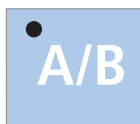
(freely programmable)



NOTICE

The four program keys are also used for reprogramming the chair programs.

■ **Additional functions – light blue keys**



Preselection of user A or B

All instruments must be in place.

You cannot switch between the two users after picking up an instrument.

Saving the instrument settings

The instrument to be programmed must have been picked up.



X-ray image viewer ON/OFF.

For SIVISION 3 also WHITE SCREEN activation



Composite key ON / OFF

for SIROLUX operation light, reduced light intensity $\leq 8,000$ lux for composite fillings



SIROLUX operation light ON / OFF

for normal light intensity $> 24,000$ lux

Pressing this key for a while displays the light intensity settings dialog:

OPERATING LIGHT



Tumbler filling

Pressing this key for a while displays the settings dialog:

CUP FILL TIMER



Cuspidor flushing

Pressing this key for a while displays the settings dialog:

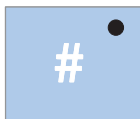
BOWL FLUSH TIMER



Freely selectable function

e.g. call key, always functions as button

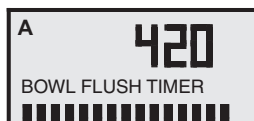
freely available relay 230 V, 6 A
(connected by the service engineer)

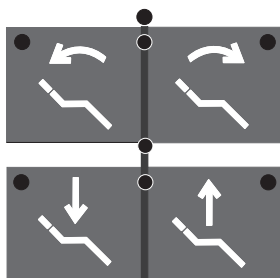


Freely selectable function

The function can be preset in the **Mode dialog** as button or switch.

freely available relay 230V, 6 A
(connected by the service engineer).





■ Chair functions – gray keys

for manual chair settings:

Tilt backrest backward or forward.

Height adjustment down / up

■ Additional functions of the control panel video keys

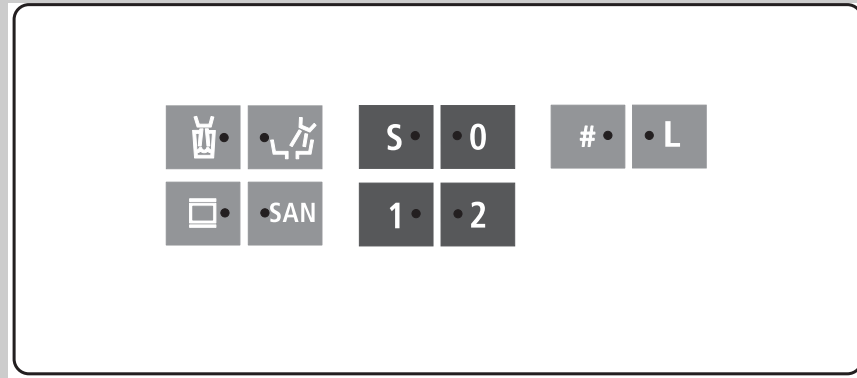


NOTICE

Apart from the previously described functions, the keys of the dentist element have additional functions in connection with the video application. These are described in chapter 14 starting on page 71 .

4.2 Control panel on the assistant element

Control panel



■ Main functions – dark blue keys



Mouth rinsing position chair program.

with memory function (freely programmable)



Chair program 0

Entry/exit position (freely programmable)



Chair programs 1 and 2

(freely programmable)

***i* NOTICE**

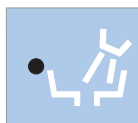
The four program keys are also used for reprogramming the chair programs.

■ **Additional functions – light blue keys**



Tumbler filling

ON / OFF



Cuspidor flushing

ON / OFF



X-ray image viewer ON / OFF

for SIVISION 3 also WHITE SCREEN activation



Treatment center sanitation

This key can be used to start the treatment center sanitation program (see **instructions “Care and Cleaning by the Practice Team”**).



Freely selectable function

The function can be preset in the **Mode dialog** as button or switch.



Light ON/OFF

With SPRAYVIT picked up:

- **Instrument light**

With SPRAYVIT in holder:

- **Operation light**

5 Putting the system into operation

Initial startup

The disinfection system adds a disinfectant to the water (1:100) to prevent the formation of microorganisms in the water system.

Prior to initial startup of your treatment center, **sanitation** must be performed.

If the service engineer has skipped the sanitation procedure after installation of your treatment center on the basis of an agreement with you, please perform sanitation yourself as described in the separate instructions **“Care and Cleaning by the Practice Team”**.

Sanitation takes approx. 24 hours.

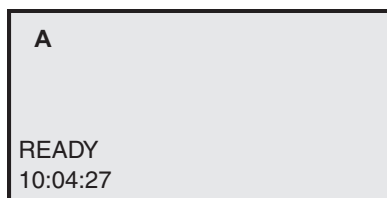
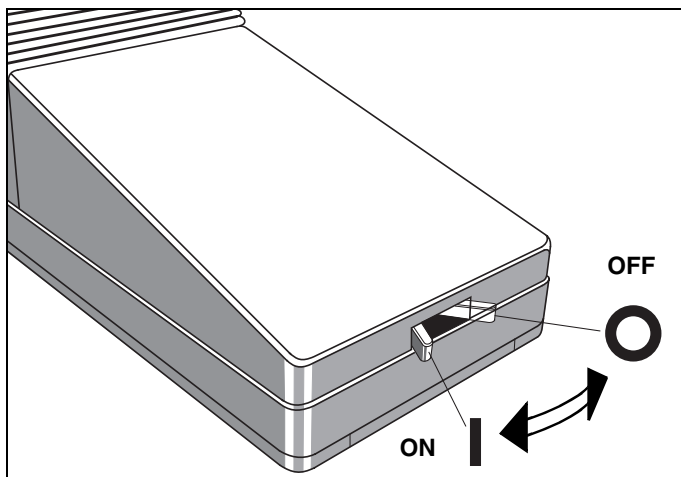
Main switch

Switch **ON** the main switch (I).

During power-up, the treatment center automatically performs a self-test.

CAUTION

*For safety reasons, always switch the treatment center **OFF** (O) after consulting hours. This cuts off the air and water supply as well as the line voltage.*

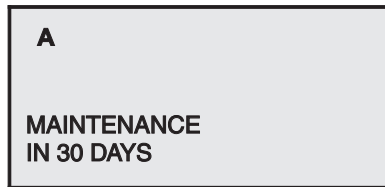


Ready for operation

After the end of the self-test, the message **READY** the **time** and the last user selected (**A** or **B**) appear on the display.

After the treatment center is switched on, the cursor is between the chair program keys **1** and **2**. If a program LED is illuminated, then the chair was in a programmed position before switching off. If no program LED is illuminated, then the chair was in a non-programmed position before switching off.

The unit is now ready for operation.



Display of next maintenance date

the next maintenance date is less than 30 days away, this message appears each time the unit is switched on. (see MAINTENANCE Mode dialog).

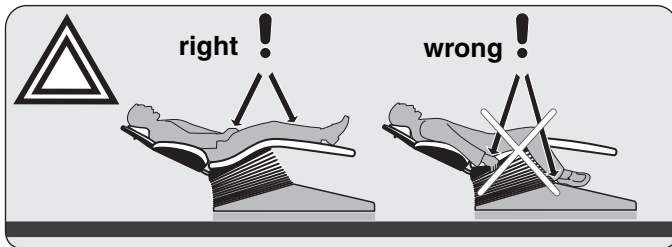
After this date has expired, the following message is displayed:

MAINTENANCE REQUIRED

The display message then disappears as soon as an instrument is removed from its holder.

i NOTICE

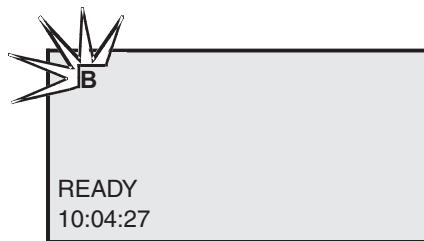
This message can be reset only by the service technician after completion of maintenance work.



! CAUTION

The dental chair has a maximum load capacity of 135kg according to EN ISO 6875 (tested with a four-fold safety factor according to IEC 60601-1). The patient's arms and legs must rest on the upholstery of the chair!

A/B



Preselecting the user

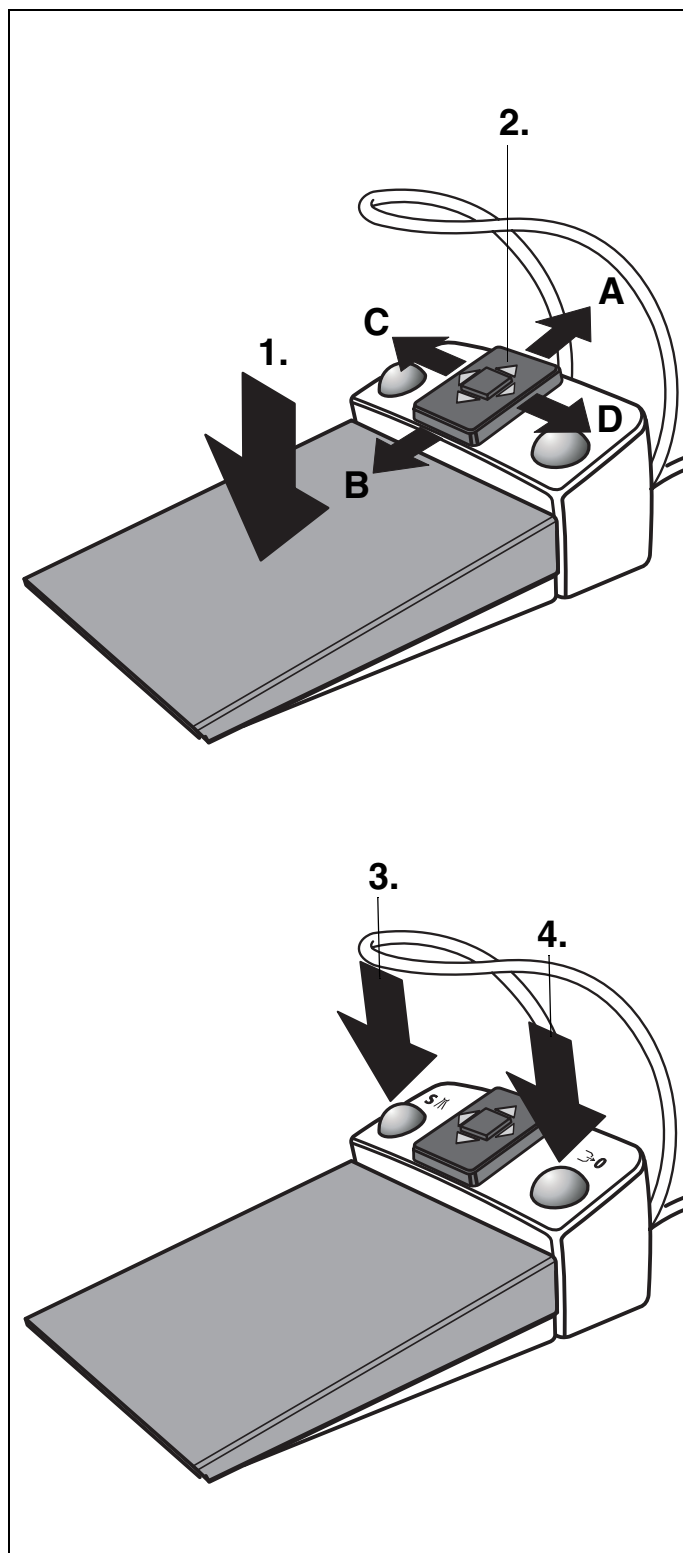
The treatment center offers the possibility of managing two different chair and instrument programs for two users.

Preselect user **A** or **B** using the **A/B** key, with all instruments in place.

The preselected user is shown in the top left corner of the display. All settings which have been stored for that user are then activated.

6 Foot switch

6.1 C+ foot switch



This foot switch enables hands-free operation by means of the cursor control, but also manual operation by means of the keys.

The foot switch has a 4-way foot control plate for cursor navigation, which works independently of the pedal.

Functions

Step on foot pedal – instrument picked up

Activation of the instrument.

If appropriate, intensity control relative to pedal movement (if “speed controller foot switch” has been preset under Mode).

1. Shift 4-way foot control plate

With cursor control enabled
(Mode dialog 11.8):

- A** to the front – cursor upward
- B** to the back – cursor downward
- C** to the left – cursor to the left
- D** to the right – cursor to the right

Cursor navigation along the marked path and release of the corresponding key function.

2. Actuate left button – all instruments in place

Programmed movement of the chair to the mouth rinsing position **S** or the last treatment position (according to starting situation).

Actuate left button – instrument picked up

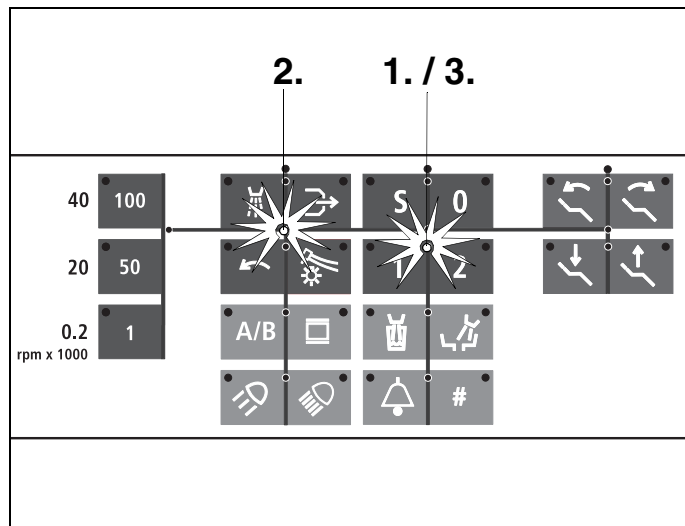
Toggling between spray ON and spray OFF, or SIVISION function.

3. Actuate right button – all instruments in place

Programmed movement of the chair to the entry/exit position **0**.

Actuate right button – instrument picked up

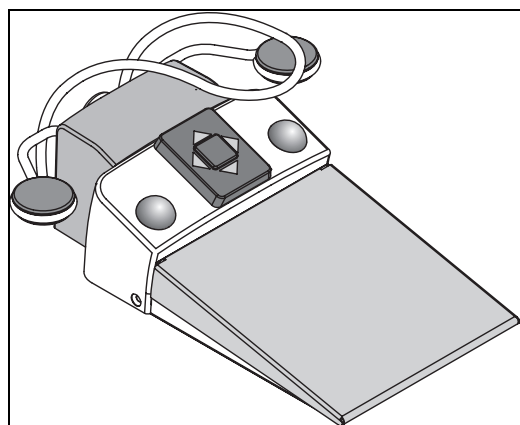
Chip blower active for duration of actuation, or SIVISION function.



Automatic cursor control with C⁺ foot switch

A yellow diode on the dentist element indicates the position of the cursor. The cursor path is marked by lines.

1. After you switch on the system, or when the chair has reached the entry/exit position 0, the cursor is between the chair program keys 1 and 2.
2. When you pick up an instrument or activate any of the instruments, the cursor jumps to the horizontal navigation path (position between 1st and 2nd row of keys) in the instrument block.
3. After you have placed the instrument in its holder, the cursor jumps back to its position between the chair program keys 1 and 2.



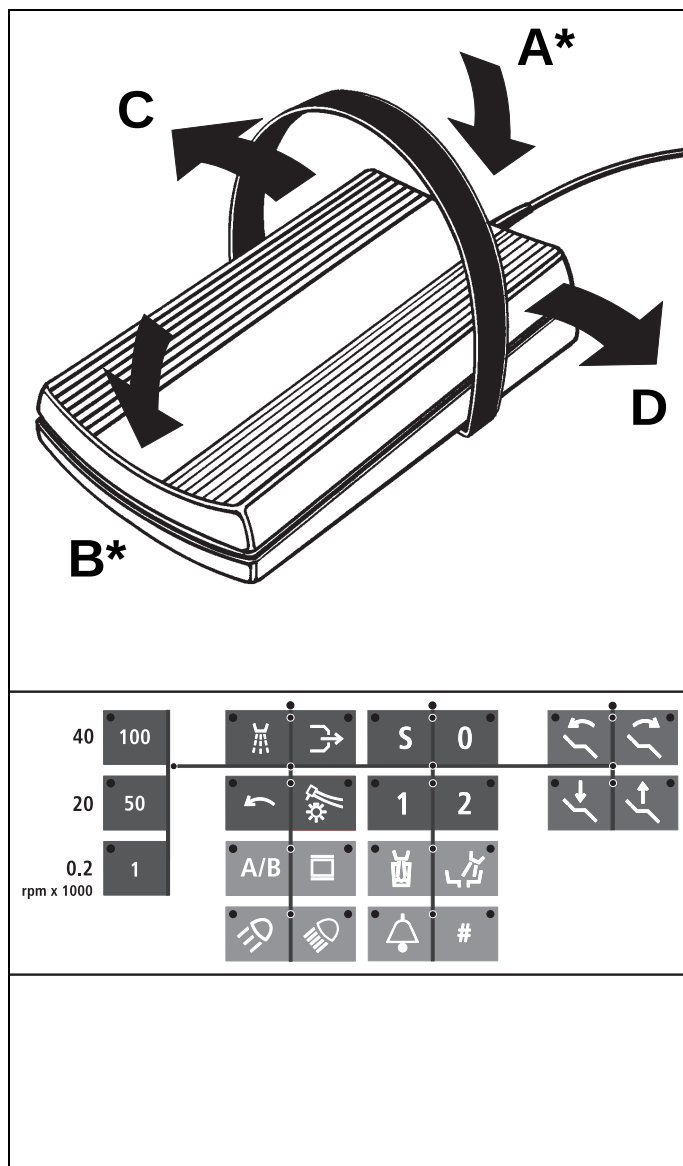
CEREC Chairline foot switch

This foot switch includes all of the functions of the C⁺ foot switch.

It also features an additional pedal for operation of the CEREC Chairline.

For details please refer to the CEREC Chairline Operating Instructions, REF 60 46 028.

6.2 C foot switch



This foot switch enables hands-free operation by controlling all functions with the entire pedal surface. However, it is also possible to control the unit manually with the keys.

For cursor navigation, place your foot fully on the pedal surface.

Functions (factory settings)

NOTICE

The foot switch functions **A** and **B** can be reversed by the service engineer upon request.

With cursor control enabled (Mode dialog 11.8)

Actuate foot switch in direction **A** – cursor upward.

Actuate foot switch in direction **B** – cursor downward.

Swing foot switch to the left **C** – cursor to the left.

Swing foot switch to the right **D** – cursor to the right.

Cursor navigation along the marked path and release of the corresponding key function.

Instrument start

The cursor must be between the **spray** and the **chip blower** key.

Actuate the foot switch in direction **A** after picking up the instrument.

With cursor control disabled (Mode dialog 11.8)

Actuate foot switch in direction **A**:

With instrument picked up – Activation of the instrument.

Actuate foot switch in direction **B**:

With instrument picked up – No function

Swing foot switch to the left **C**:

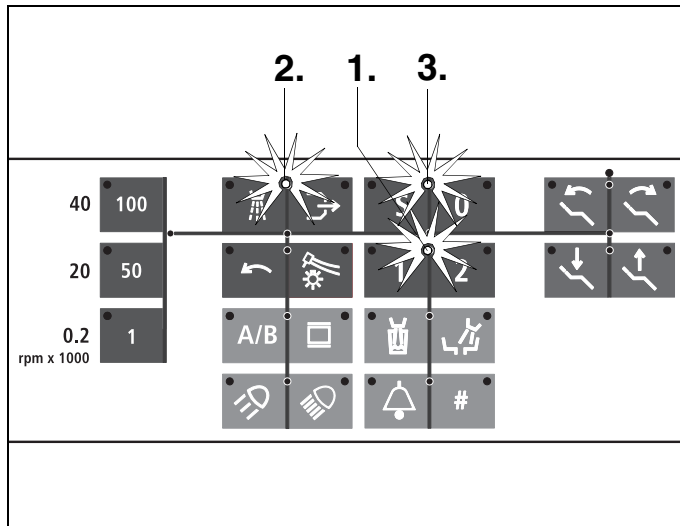
With instrument picked up – Spray ON/OFF for burr instruments or SIVISION function.

With instruments in place – SIVISION function.

Swing foot switch to the right **D**:

With instrument picked up – Chip blower ON for burr instruments or SIVISION function.

With instruments in place – SIVISION function.



Automatic cursor control with C foot switch

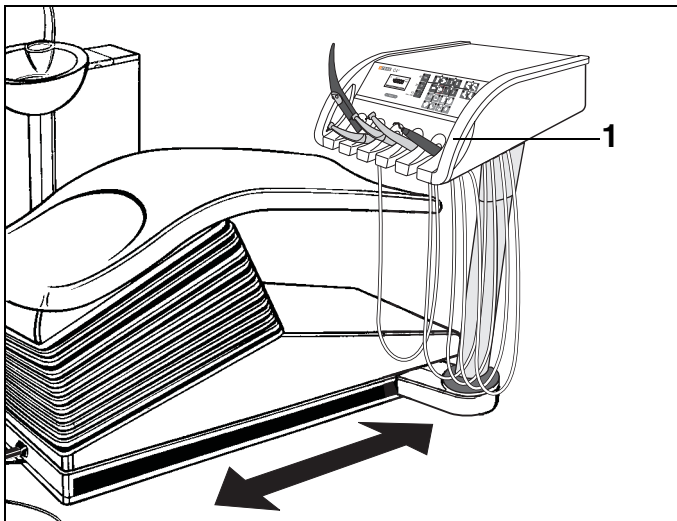
A yellow diode on the dentist element indicates the position of the cursor. The cursor path is marked by lines.

1. After you switch on the system, or when the chair has reached the entry/exit position **0**, the cursor is between the chair program keys **1** and **2**.
2. When you pick up an instrument or activate any of the instruments, the cursor jumps to a position between the **spray** and **chip blower** keys in the first instrument block.

If the cursor is in the quick setting key column at the very left, it also jumps to a position between the **spray** and **chip blower** keys in the instrument block when you swing the foot switch to the right (**D**).

3. After you have placed the instrument in its holder, the cursor jumps back to its position between the chair program keys **S** and **0**.

6.3 Selecting the chair program



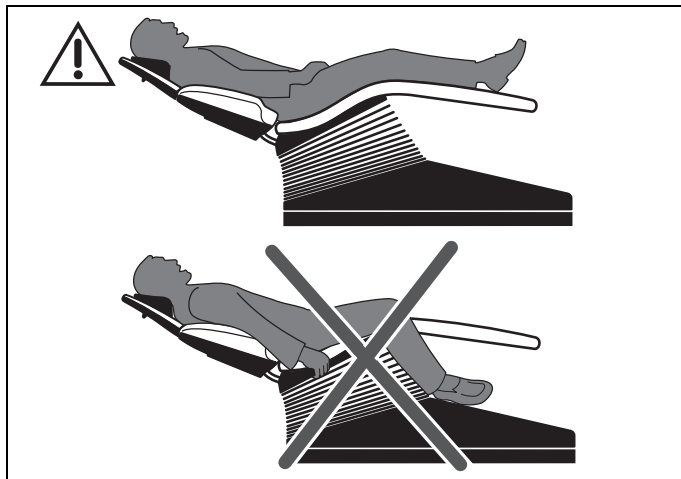
Activate the desired chair program **1** or **2**. The chair moves to the programmed treatment position.

Move the dentist element by hand to the desired treatment position. Use the handle (1) on the dentist element to do this.

The dentist element can be fixed by the service engineer at a height which is convenient for you.

7 Program selection

7.1 Safety

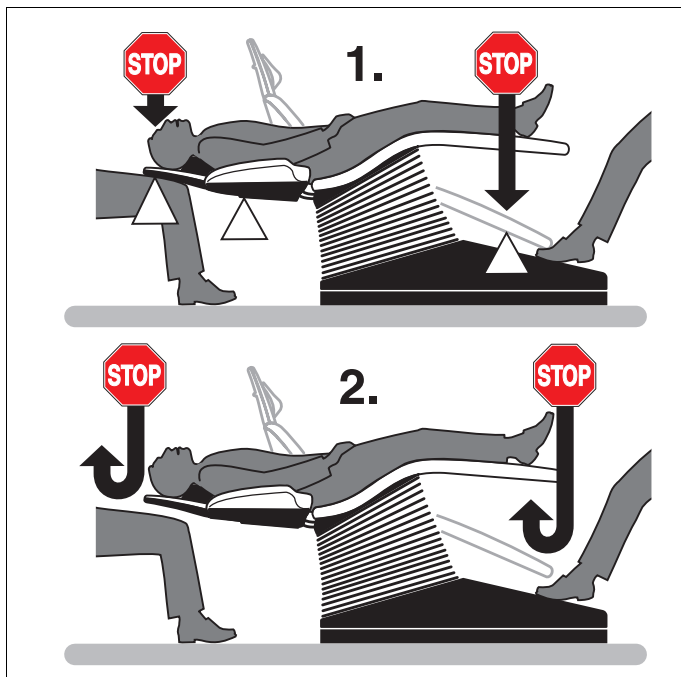


⚠ CAUTION

The patient's arms and legs must be resting on the chair upholstery during the program run!

⚠ CAUTION

Make sure that no obstacles (e.g. window wings, drawers, devices, ...) extend into the movement range.



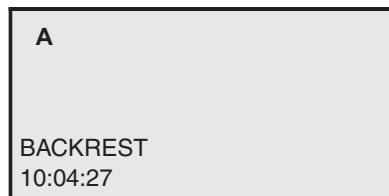
Safety stop

A built-in safety circuit stops the chair movement in the following situations:

- The toeboard collides with an obstacle.
- The backrest collides with an obstacle.
- The motorized headrest (if available) collides with an obstacle
- The swivelable cuspidor is swiveled in during chair movement.
- The assistant element is pushed upward or downward by an obstacle.

At the same time, a double beep signal sounds.

The chair then moves automatically a little upward until the obstacle is cleared (except for the swivelable cuspidor and assistant element).

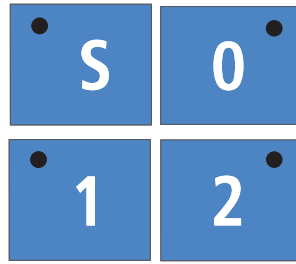


With instruments in place, the last activated safety switch is indicated in plain text on the display:

- TILTING PART for motorized headrest
- BACKREST
- TOEBOARD
- ASSISTANT ELEMENT (is also displayed when the cuspidor safety switch is activated)

The message CUSPIDOR appears after 10 seconds if the automatic return movement of the cuspidor to its position is inhibited.

7.2 Program selection



Keys for **selecting the programmed patient positions**.

With swivelable cuspidor:

Before the chair moves to the selected program position, the swiveled-in cuspidor automatically returns to its starting position.

Factory settings:

The operation light switches **OFF** automatically before the chair moves to the entry/exit position **0** or the mouth rinsing position **S**.

The operation light switches **ON** automatically after the chair has reached patient position **1** or **2**.

Changing the factory settings:

When programming the patient positions you can preset whether the operation light should switch OFF or ON in the different chair programs 0, S, 1 or 2 (see page 36).



Program key 0

Intended for the entry/exit position.



Program key S with memory function.

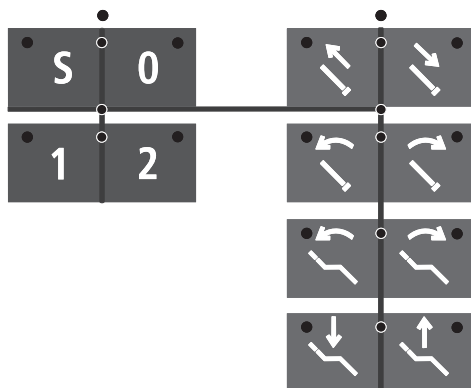
In the **S** program, you can program the **tumbler filling** and / or the **cuspidor flushing** functions (see Mode dialog 11.9 and 11.10).

When you press this key a second time, the treatment center returns to its previous position (memory function).

Example: You have programmed this key for the mouth rinsing position. When you press this key, the treatment center moves to the programmed position.

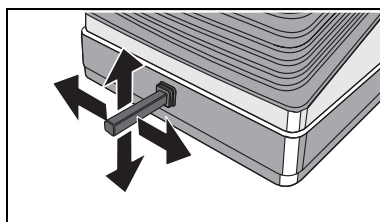
Memory function: When you press this key a second time, the treatment center returns to its previous position.

7.3 MOVEMENT STOP!

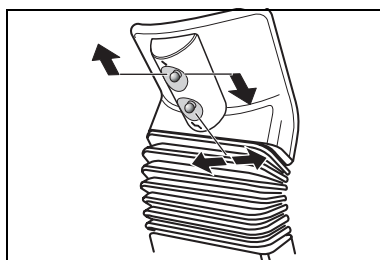


You can stop the movement of the chair to a programmed position as follows:

- By pressing one of the chair-related keys on the dentist or assistant element.



- By actuating the 4-way foot control.



- By pushing the 4-way switches on a motorized headrest in any direction.

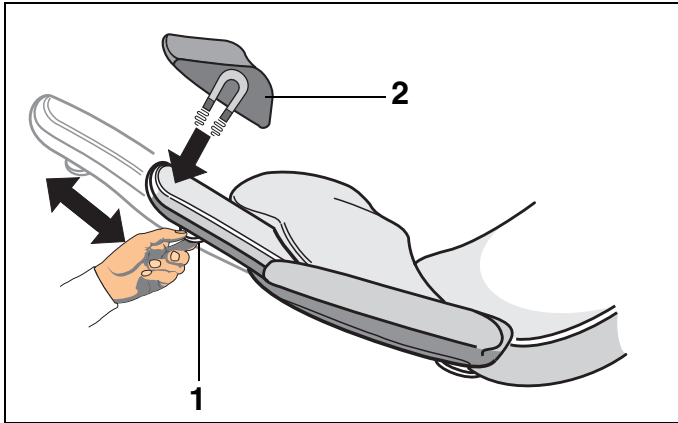
All movements of the treatment center are stopped immediately.

At the same time, a double beep signal sounds.

Please note that when you press the program key of the program which is just running a second time, the movement will NOT stop!

8 Patient positions

8.1 Flat headrest



The headrest must be adjusted manually.

To do this, take the load off the backrest and pull out or push in the headrest using the handle (1).

The head pad (2) is held magnetically.

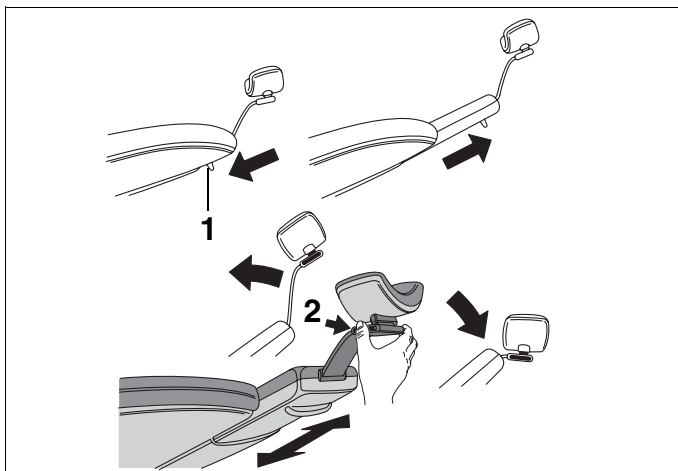
⚠ DANGER

A strong magnet is integrated in the underside of the head cushion (2) which could affect a nearby cardiac pacemaker.

Therefore, please avoid bringing the magnet in close proximity of a cardiac pacemaker of a patient, user or technical personnel.

In addition, direct contact of the head cushion with magnetic cards can lead to a data loss.

8.2 Articulated headrest



The headrest must be adjusted manually.

To do this, take the load off the backrest and pull out or push in the headrest using the handle (1).

Tilt the headrest backward using the locking button (2).

⚠ DANGER

Tilt the headrest forward by simply pulling it out.

8.3 MultiMotion headrest



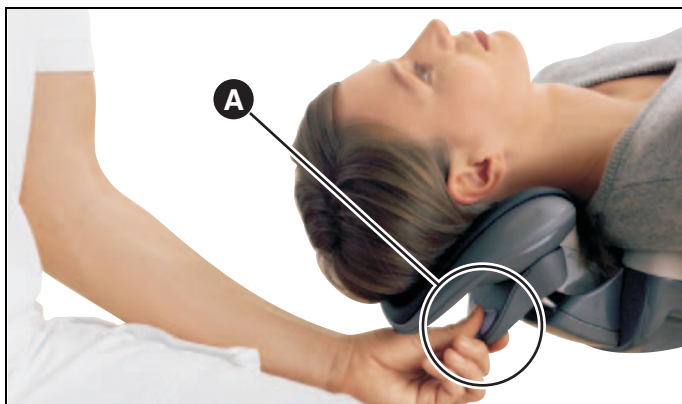
Adjustment to patient's height

The headrest can be adjusted to the patient's height by pulling out or pushing in the headrest extension. This adjustment is usually required at the beginning of treatment!

i NOTICE

Before positioning the patient on the headrest, make sure that the head support has been optimally adjusted to the patient's height. This simplifies all subsequent work with the MultiMotion considerably, since readjustment to the patient's height can thus be omitted when changing over from mandibular to maxillary treatment.

The MultiMotion enables you to adjust the patient's head in a way that optimally supports viewing of areas of the mouth which are difficult to access.



Adjustment of hyperextension

Mandibular position

The mandibular position can be set by pulling the operating handle (A). The anatomical movement of the arched extension keeps the patient's head in the support.

- Pull the headrest out of the guide by pulling handle A.



i NOTICE

You can reduce the adjustment noise by pressing release A.



Maxillary position

- Take the load off the headrest by lifting it slightly.
- Press release **A** on the handle.
- Let the headrest slide down slowly.
- Let go of the release when the headrest reaches the desired position.

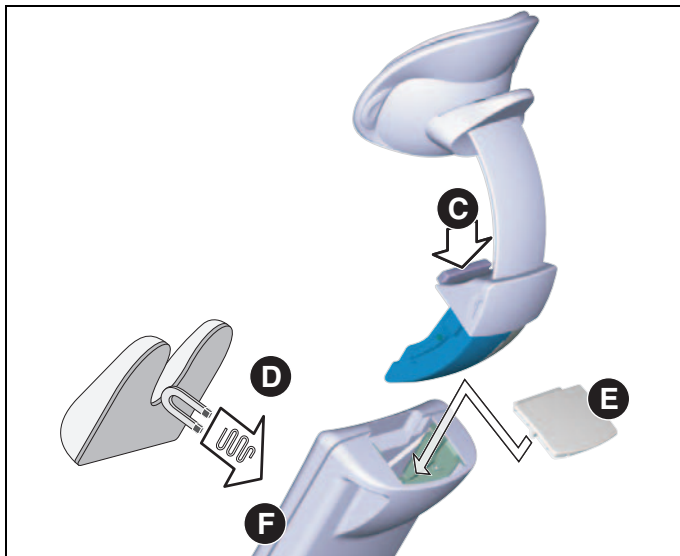
Rotation and tilt

The MultiMotion enables rotation of the patient's head about the longitudinal axis of his body as well as lateral tilting of his head.

The MultiMotion is set to the desired position as follows:

1. Press and hold one or both of the two side control elements **B**.
The rotation and tilt adjustment locks of the headrest are now released.
 2. Set the headrest to the desired position.
 3. Let go of the control elements **B**.
- ☒ The supporting surface is fixed in place.

Make sure that the headrest is indeed fixed in place after you let go of the control elements!



Removing the MultiMotion

For certain treatments (e.g. of children) it may be expedient to remove the MultiMotion completely in order to obtain better access to the patient. The patient's head will then be supported on the contact surface of the headrest extension **F**.

To remove the MultiMotion, proceed as follows:

1. Press release button **C**.
2. Pull the complete headrest out of the headrest extension.
3. Cover the opening of the headrest extension with cover cap **E**.
4. If a children's head pad **D** is available, place it on the headrest extension. The head pad is held magnetically.

i NOTICE

The children's head pad (D) is not included in the scope of supply, however, is available from your dental dealer.

! DANGER

The children's head pad (D) contains a strong magnet on its bottom side. This magnet could affect any cardiac pacemaker located nearby.

Therefore, do not allow patients, users and technical personnel with a cardiac pacemaker to be located near this magnet.

Furthermore, direct contact of the head pad with magnetic cards can lead to data loss.

i NOTICE

Deposit the removed MultiMotion in a safe place where it cannot fall onto the floor.

Inserting the MultiMotion

To insert the MultiMotion, proceed as follows:

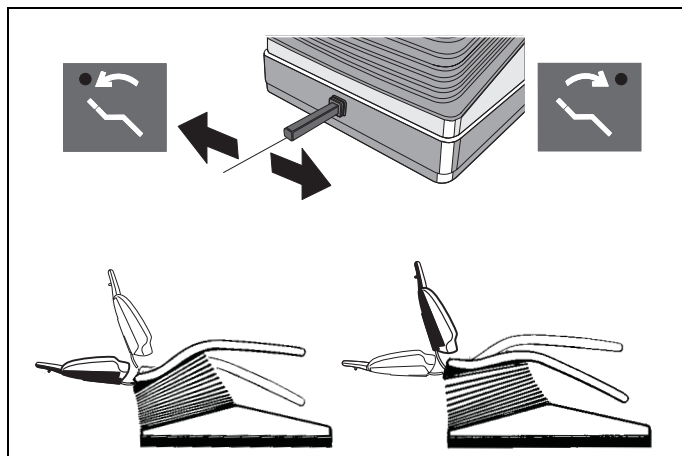
- Check the guide of the removed headrest for contamination. Remove any contamination.
- Remove the cover cap **E**.

! DANGER

Reinsert the MultiMotion in the guide from above until it audibly locks in place.

Pull on the headrest again to make sure that it is locked securely in place.

8.4 Adjusting the patient positions manually



You can start the motorized chair movements manually with the keys in the right block on the dentist element control panel.

Backrest tilt

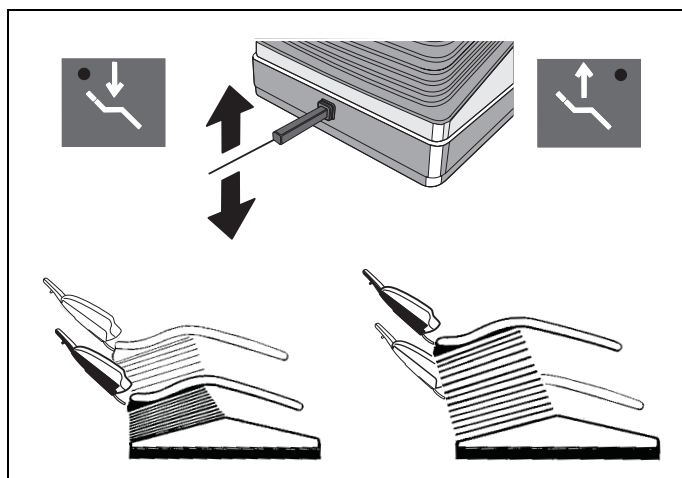
You can tilt the backrest also with the 4-way foot control on the chair base.

Lever to the left:

The backrest tilts backward

Lever to the right:

The backrest tilts forward



Height adjustment

You can adjust the height also with the 4-way foot control on the chair base.

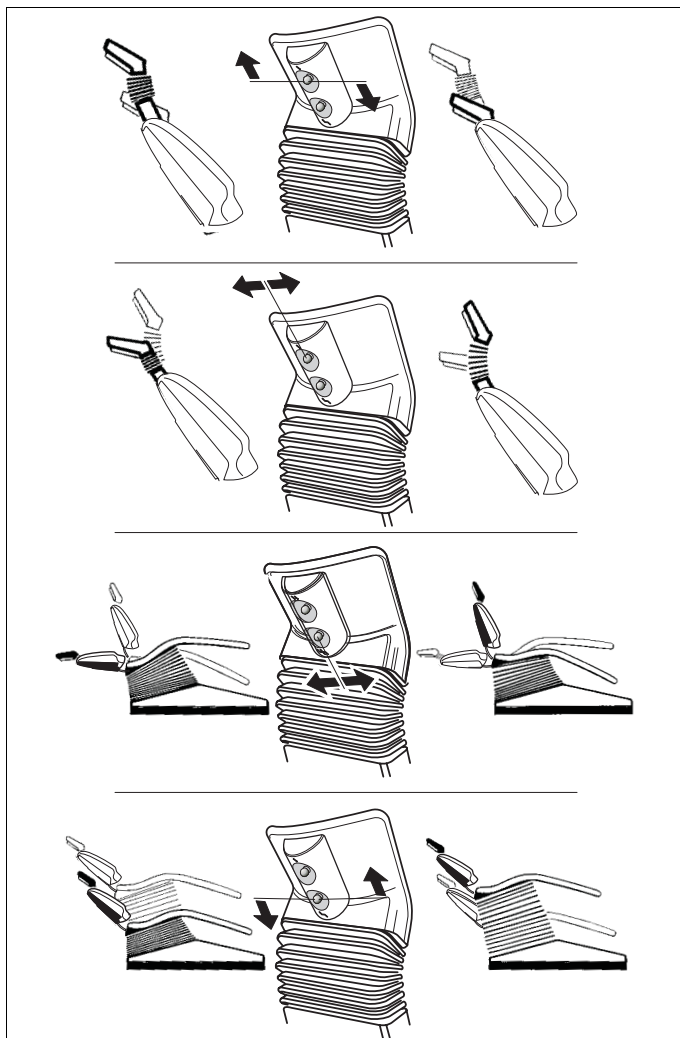
Lever up:

The chair moves up

Lever down:

The chair moves down

8.5 Motorized headrest



Moving the headrest in/out

Move the headrest out/in by pushing the upper 4-way switch at the back of the headrest up/down.

Tilting the headrest

Tilt the headrest backward/forward by pushing the upper 4-way switch at the back of the headrest to the left/right.

Backrest tilt

You can tilt the backrest with the lower 4-way switch at the back of the headrest.

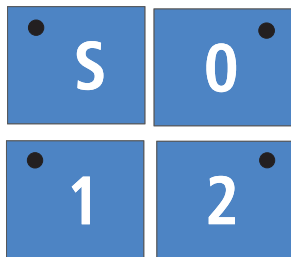
- Lever to the left:
The backrest tilts backward.
- Lever to the right:
The backrest tilts forward.

Height adjustment

You can adjust the height with the lower 4-way switch at the back of the headrest.

- Lever down:
The chair moves down.
- Lever up:
The chair moves up.

8.6 Programming patient positions



The four factory-set programs can be reprogrammed individually by user **A** and user **B**.

- Programs **1** and **2**
- Entry/exit program **0**
- Mouth rinsing program **S**

1. Move the chair to the desired treatment position by pressing the different setting keys (see page 30).
2. To make the SIROLUX FANTASTIC operation light switch on or remain off when the chair reaches the programmed treatment position, you must switch the lamp ON or OFF now. This setting is then also programmed.



CAUTION

In order to avoid damage to the dentist and assistant elements and to the chair upholstery, make sure that these elements do not protrude into the movement range of the chair.

3. To save the program settings, press the desired program key approx. 3 seconds until an audible signal sounds and the LED of the corresponding key lights up.

Programming is completed now.

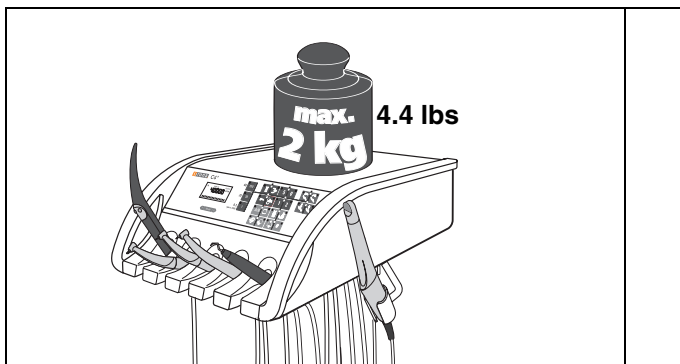


NOTICE

Programming is not possible by activating the program keys with the foot switch (cursor control). Thus programming errors are avoided.

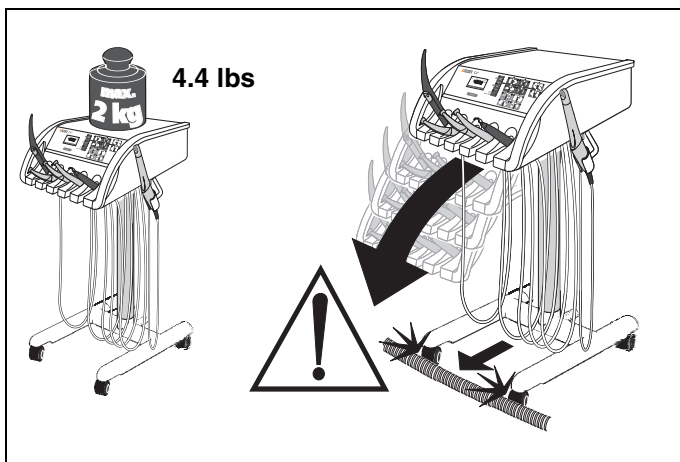
9 Dentist element and instrument functions

9.1 Dentist element



Maximum load capacity

The maximum load of the dentist element is 2 kg (4.4 lbs).



Dentist element C4⁺ Cart

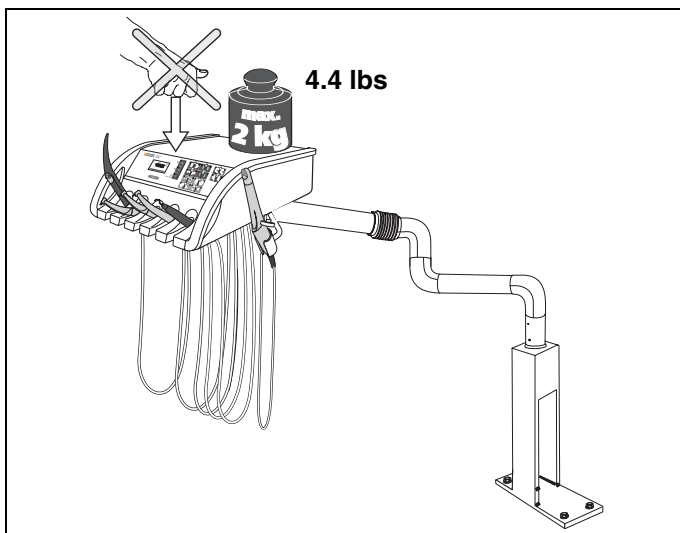
The maximum load of the dentist element C4⁺ Cart is 2 kg (4.4 lbs).

⚠ CAUTION

Risk of toppling over! Move cart slowly and only on even floors without any obstacles!

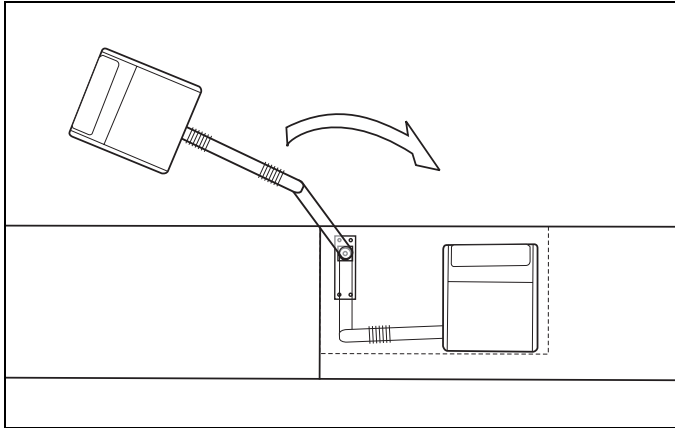
⚠ CAUTION

Take care to distribute any additional loads evenly on the dentist element!



Dentist element C4⁺ Cabinet

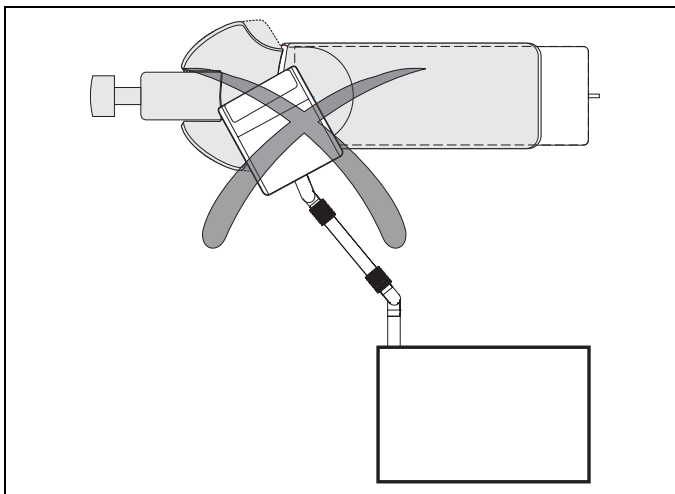
The maximum load of the dentist element C4⁺ Cabinet is 2 kg (4.4 lbs).



The dentist element C4+ Cabinet lets you save on space by swiveling it under the work surface after use.

CAUTION

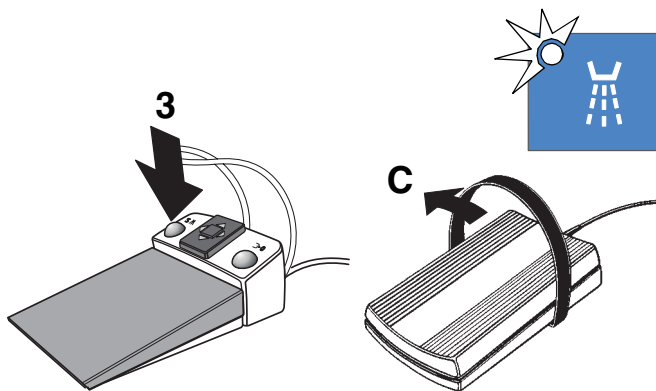
When stowing the cabinet away, please take care that nothing is crushed and that no objects lying on the dentist element are knocked off.



CAUTION

When moving the chair (via program or manually), make sure that the patient or the patient chair does not under any circumstances come into contact with the support arm or the dentist element.

9.2 General instrument functions



Spray

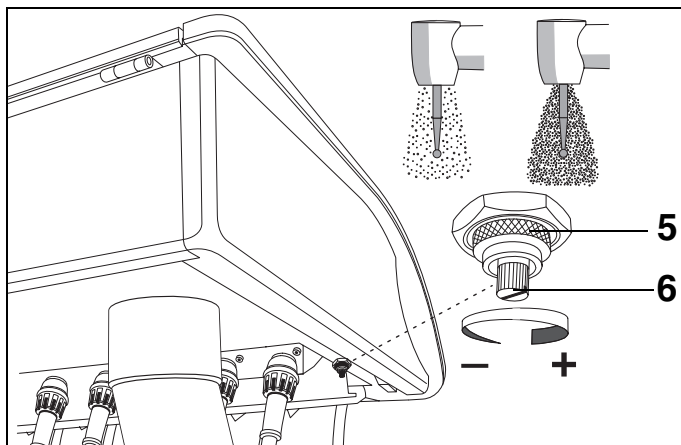
You can switch the spray cooling ON/OFF by pressing the **spray** key on the dentist element control panel. If spray is preselected, the green LED in the key is illuminated.

With the C⁺ foot switch

you can switch the spray for the picked-up instrument ON/OFF by stepping on the left foot switch button (3).

With the C foot switch

the cursor jumps directly between the **spray** and **chip blower** keys when you pick up an instrument. You can switch the spray cooling ON/OFF by swinging the foot switch to the left (C).

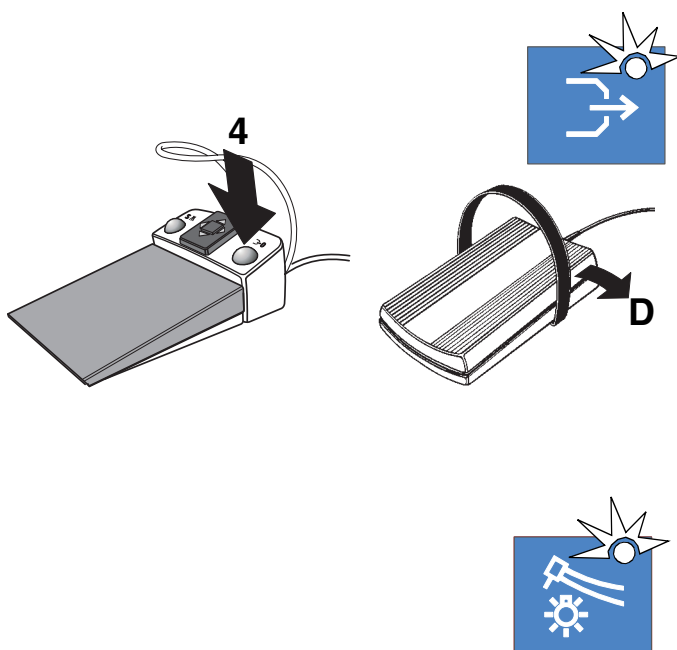


Spray amount

The spray amount is preset at the factory. However, it can be adjusted by means of the control valve at the bottom front part of the dentist element.

To make the adjustment loosen the ring (5) counter-clockwise, adjust the spray by turning the screw (6) and screw the ring (5) tight again.

This setting is then valid for all burr drives.



Chip blower

C⁺ foot switch

With a C⁺ foot switch, you activate the **chip blower** for a picked-up instrument by stepping on the right foot switch button (4). As long as you keep the button pressed, an air jet escapes from the nozzle of the burr instrument.

C foot switch

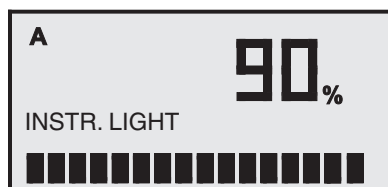
With a C foot switch, the cursor jumps directly between the spray and chip blower keys when you pick up an instrument. When you swing the foot switch to the right (D), an air jet escapes from the nozzle of the burr instrument for the duration of actuation. When the chip blower is active, the green LED in the key is illuminated.

Instrument light ON / OFF

With this key on the dentist element control panel, you preset the **instrument light** for the picked-up instrument.

If **light ON** is preset, the green LED in the key is illuminated.

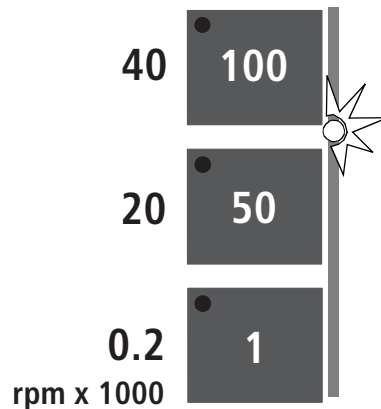
When you press the key for more than 3 seconds, the **INSTR. LIGHT** settings dialog is displayed. Here you can set a light intensity between 60% and 100% with the **- / +** keys.



i NOTICE

If more than one instrument is picked up, only the instrument which was picked up first is operative.

9.3 Electric motor



Speed setting

When you pick up an **electric motor**, the programmed speed of the motor in **RPM** (revolutions per minute) appears on the display.

You can set the speed with the quick setting keys on the left side of the dentist element control panel.

If the cursor is in the intensity setting block, you can set the speed also with the foot switch using the forward/backward cursor.

When you press the corresponding key briefly (< 0.5s) then the value in RPM indicated next to the relevant key appears on the display:

Key	1	–	200 rpm
Key	50	–	20000 rpm
Key	100	–	40000 rpm

When you set the speed with the cursor, the displayed value is incremented/decremented in steps of 10000 when you actuate the foot switch briefly (< 1 s) forward or backward.

At the values of 200, 20000 and 40000, the green LED in the corresponding key lights up.

When you **press and hold down** a key for > 0.5s, you adjust the speed in predefined increments:

Increments of	200:	from	200	–	2000 rpm
Increments of	400:	from	2000	–	10000 rpm
Increments of	1000:	from	10000	–	40000 rpm

When you press a key whose value is $\geq$ the value shown on the display for > 0.5s, the speed is increased.

When you press a key whose value is less than the value shown on the display for > 0.5s, the speed is reduced.

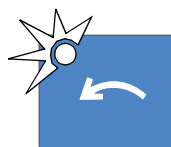
When you actuate the foot switch forward or backward for > 0.5s, the displayed speed value is increased or reduced in predefined increments.

When you set intermediate values, the green key LED does **not** light up.

Counterclockwise rotation key

Counterclockwise rotation key, only for **electric motor**.

When this key is activated the green LED in the key is illuminated.



After you start the electric motor with the foot switch, an audible warning signal sounds 6 times.

You can activate counterclockwise rotation of the electric motor also with the foot switch:

- 4-way foot control plate to the left – counterclockwise rotation
- 4-way foot control plate to the right – clockwise rotation

The corresponding motor must have been picked up before.

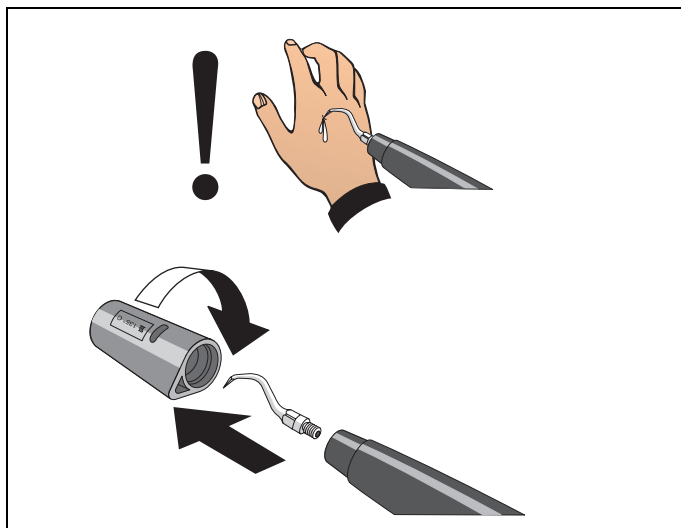
9.4 Highspeed handpiece



Starting the highspeed handpiece

When you pick up the highspeed handpiece, 0 bar or PSI (according to the presetting in Mode dialog 10.13) appears on the display. When you start or operate the highspeed handpiece, the current air pressure in bar or PSI always appears on the display.

9.5 SIROSONIC L scaler



Tip protector

The tip protector is used as a tool for screwing in instrument tips.



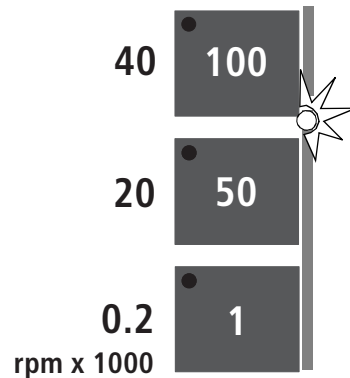
CAUTION

While the handpiece is in its holder, the tip protector must remain fitted to prevent injuries.



Intensity setting

When you pick up the **SIROSONIC L** handpiece, the programmed intensity value appears on the display.



You set the intensity in increments of 1 / 50 / 100 by pressing the quick setting keys briefly (< 0.5s).

If the cursor is in the intensity setting block, you can set the intensity also with the foot switch using the forward/backward cursor.

When you set the intensity with the cursor, the displayed intensity value is incremented/decremented in steps of 25 when you actuate the foot switch briefly (< 1 s) forward or backward.

At the values of 1, 50 and 100, the green LED in the corresponding key lights up.

When you **press and hold down** a key for > 0.5s, you adjust the intensity in predefined increments:

Increments of 1 from 1 – 4

Increments of 5 from 10 – 100

When you press a key whose value is $\geq$ the value shown on the display for > 0.5s, the intensity is increased.

When you press a key whose value is less than the value shown on the display for > 0.5s, the intensity is reduced.

When you actuate the foot switch forward or backward for > 0.5s, the displayed intensity value is increased or reduced in predefined increments.

When you set intermediate values, the green key LED does **not** light up.

The cooling water flow is always switched on automatically.



Endodontics setting

An intensity range of 1 – 4 is provided for endodontics mode. It can be adjusted in increments of 1.

The message **ENDO** appears on the display.

For safety reasons, we recommend that you program the set value for endodontics. Otherwise, the previously programmed value becomes active again when the instrument is placed back in its holder in the meantime.



CAUTION

When you exceed the value of 4 in endodontic therapy, temperature damage and needle breakages can occur.

9.6 SPRAYVIT



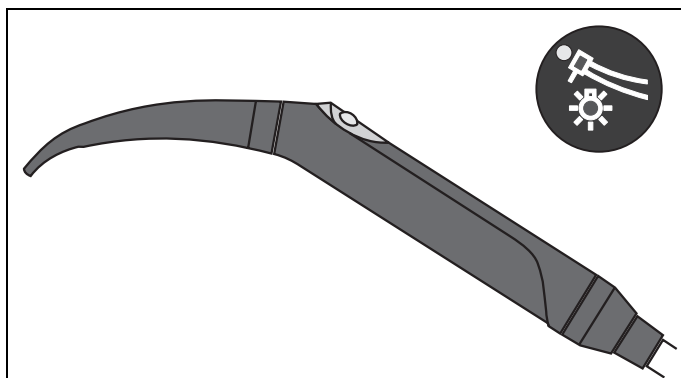
If the SPRAYVIT is the only instrument that has been picked up, you may switch the instrument light on or off. You can also set the brightness.

The instrument light switches on when you activate the SPRAYVIT (if preset).

The instrument light switches off after a time lag of 10s when the SPRAYVIT is no longer activated.

When you place the SPRAYVIT back in its holder, the instrument light switches off immediately.

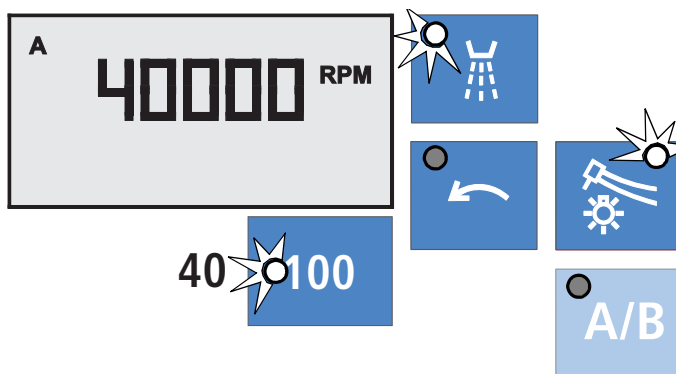
If the SPRAYVIT is activated together with another instrument, the SPRAYVIT light is not switched on.



! DANGER

After changing hoses, press the water button of the SPRAYVIT repeatedly until water comes out! Only then can you begin treatment.

9.7 Saving the instrument programs



The factory-set instrument programs can be changed individually by user **A** and user **B**.

Select the corresponding user, i.e. **A** or **B**, pick up an instrument and set it according to your wishes.

Example for electric motor:

- 40,000 rpm
- CW rotation
- with cooling spray
- with instrument light

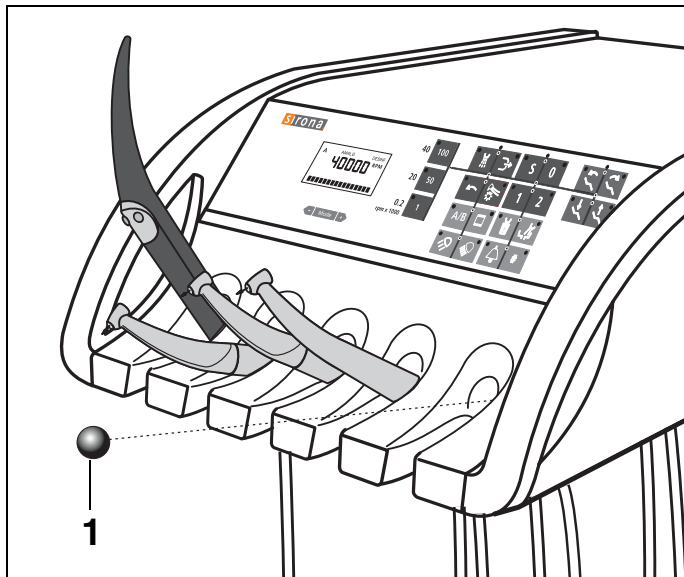
To save the settings, press key **A/B** for some time (approx. 3 s). An audible signal sounds. These settings are then activated whenever the instrument is picked up.

You cannot switch between the two users after picking up an instrument.

i NOTICE

If counterclockwise rotation was programmed, the motor is reset to clockwise rotation after you switch the treatment center off and back on.

9.8 Placing treatment instruments in their holders

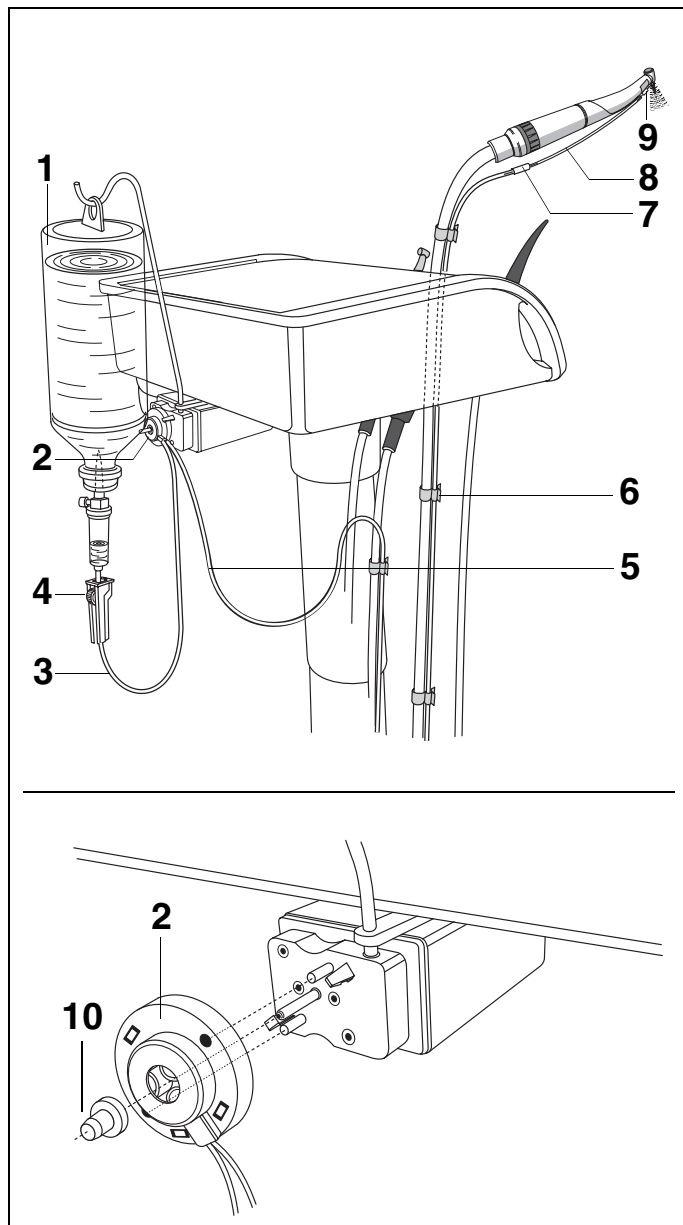


A ball stopper for an unoccupied instrument holder comes with the dentist element.

Plug the ball stopper (1) into the unoccupied instrument holder to prevent a treatment instrument from being placed inadvertently in this holder.

To block further unoccupied instrument holders, you can order more ball stoppers (REF 58 99 575).

9.9 Surgery with saline solution (NaCl)



Preparation of the unit

- Hook the NaCl bottle (1) in place.
- Attach the peristaltic pump hose set (2).
- Push the short end of the hose (3) with the cannula through the stopper and into the NaCl bottle as illustrated.
- The regulator in the hose clip (4) must be in the top-most position (completely open).
- Run the long hose (5) along the corresponding motor hose up to the contra-angle handpiece and fasten it with the clips (6).
- Fit the coupling (7) onto the hose and connect it with the thin silicone hose (8).
- Connect the spray clip (9) with the thin hose and attach it to the contra-angle handpiece.

i NOTICE

The one-way NaCl pump must be secured with a cap after it is attached to the drive (10). Only then is proper operation of the pump guaranteed. The safety cap is supplied with every one-way pump.

Pump hose set

The **peristaltic pump hose set (2)** is a disposable article and can be purchased in packs of 10 pcs. as consumable material under article number F 58707 directly from the manufacturer.

Ordering address: Satelec
Industriestr. 9
D-40822 Mettmann, Germany

i NOTICE

How to preset a certain instrument holder for saline solution is described under "Basic treatment center settings in the Mode dialog" 11.2 on page 57.

⚠ CAUTION

The pump flow rate must be at least 70ml/min for reasons of safe cooling and to prevent a pressure rise in the hose (risk of bursting). This is not always given when using third-party ultrasonic tips.



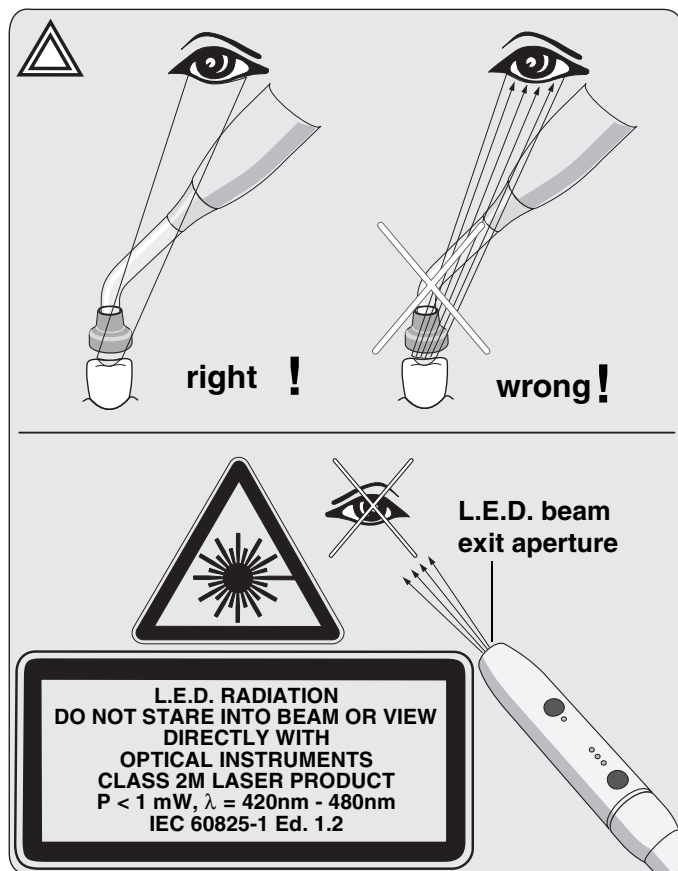
Switching the NaCl pump on / off

After picking up the respective handpiece, you can switch the **NaCl pump ON/OFF** by pressing the **spray** key (or by stepping on the left button on the C⁺ foot switch or by swinging the pedal plate to the left on the C foot switch).

When the green LED of the key lights up, the NaCl pump is ON.

NACL appears on the display in the instrument dialog of the instrument to which the NaCl pump has been assigned.

9.10 Satelec Mini L.E.D. curing light



Safety information

CAUTION

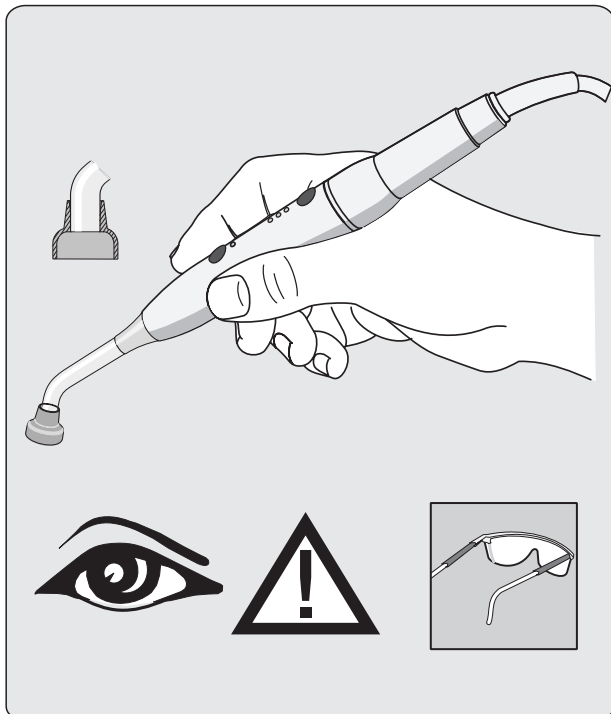
Always use the glare shield!

The light beams emitted by this instrument may be hazardous and may never be directed to the eyes of any person, even if this person wears goggles with protective lenses. The light may be directed exclusively to the treatment area in the oral cavity.

CAUTION

Do not stare into the beam path with the glass rod removed (Class 2M laser product).

Viewing the L.E.D. beam exit aperture with certain optical instruments (e.g. a magnifying lens) within a distance of 100mm may constitute an eye hazard.

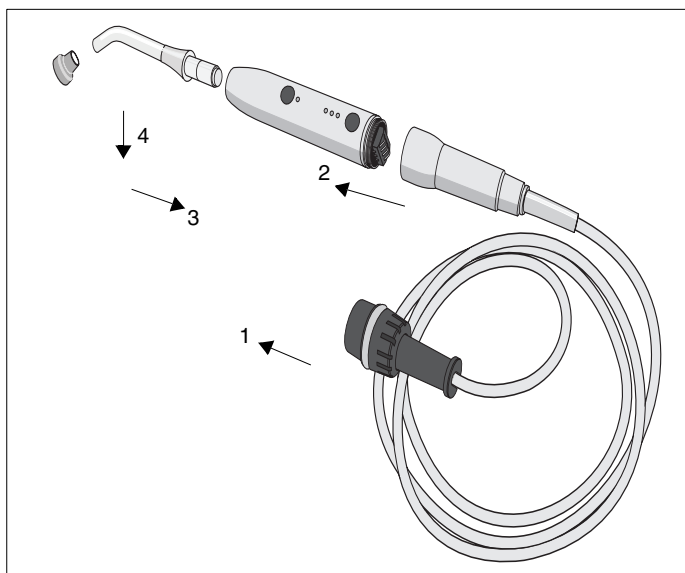


Additional safety information

Any condensation occurring in the handpiece of the Mini L.E.D. may cause impairments (e.g. fogging of the L.E.D.). If the handpiece is moved from a cool environment to a warm room, always wait for it to reach room temperature before putting it into operation.

Curing lights must not be used on persons who are suffering from or have in the past been afflicted by photobiological reactions (including solar urticaria and erythropoietic porphyria). Nor should they be used on persons currently being treated with any medicine which increases one's sensitivity to light (including methoxsalene and chlorotetracycline).

Any persons who have in the past suffered from retinal or eye lens disorders or have undergone eye surgery, especially for gray cataracts, must consult their medical eye specialist before using the light or undergoing treatment with the Mini L.E.D. Caution is advisable even if the patient gives his or her consent, since the light intensity can cause accidents. It is especially advisable to always wear appropriate protective goggles (UV filter).

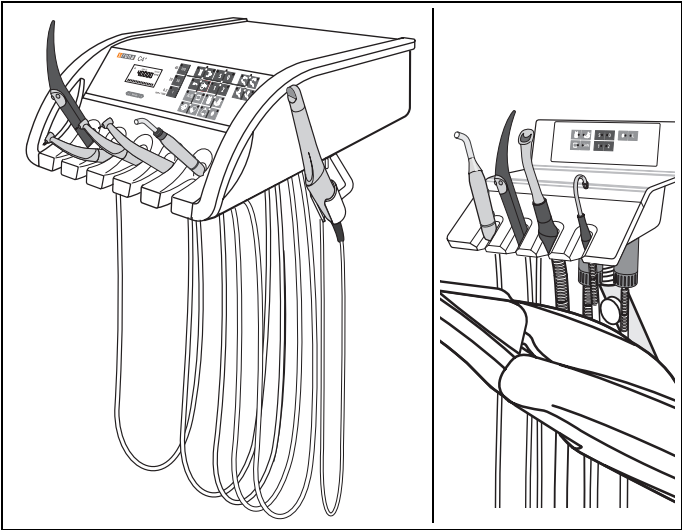


Installation

1. Connect the supply cable to the treatment center.
2. Screw the handpiece on.
3. Attach the sterilized light guide to the handpiece. Make sure to insert the light guide correctly.

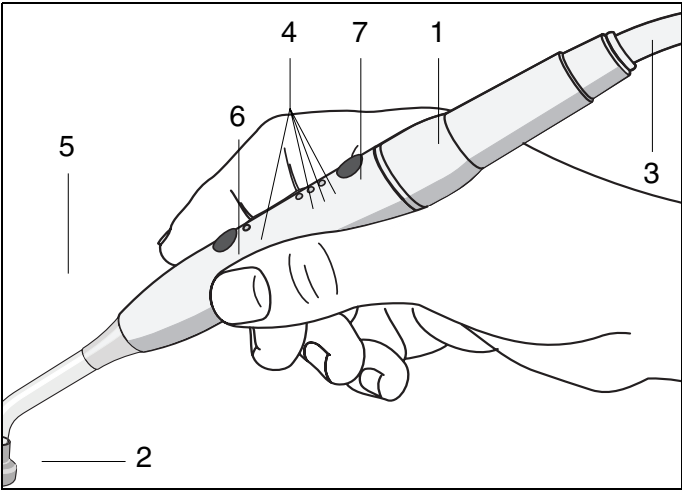
The light guide engages with a "click".

4. Slip the glare shield onto the light guide. It protects your eyes against reflected light.



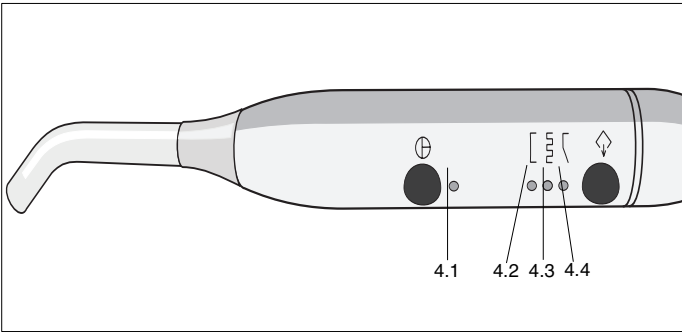
Installation options

- in the dentist element, holder 4 or 5
- in the assistant element, holder 1



Handpiece and accessories

- 1 Handpiece
- 2 Light guide
- 3 Supply cable
- 4 Status LEDs
- 5 Glare shield
- 6 ON/OFF switch
- 7 Function button



Operating modes

The **Mini L.E.D.** has three different modes. To select the desired menu, press the function button.

4.1 Status LED

The status LED signals the following states:

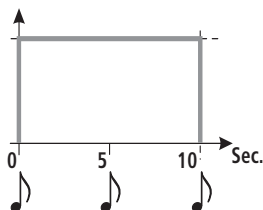
Color	Mode
green	Normal operation
red, flashing	Overheat protection

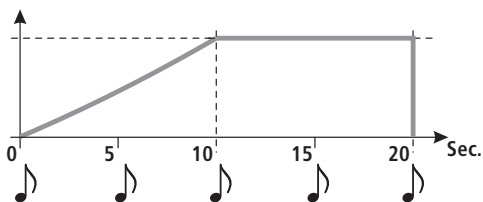
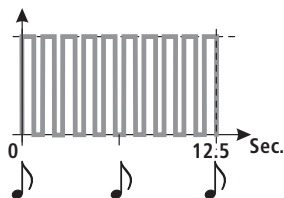
4.2 Quick curing mode

In this mode the **Mini L.E.D.** operates at full power for 10 seconds.

LED 4.2 shows your selection.

In this mode, the light intensity output is approximately as follows:





- 1100mW/cm² (± 10%) with the standard light guide, dia. 7.5mm.
- 2000mW/cm² (± 10%) with the optional booster light guide, dia. 5.5mm.

4.3 Pulsed curing mode

This mode is selected by pressing the function button. The light operates at full power in “pulsed” mode; it emits radiation in 10 consecutive light pulses of 1 s each. Between the individual pulses there is a 250 ms break. LED 4.3 shows your selection.

4.4 “Soft start” mode

This mode is selected by pressing the function button. The “soft start” mode provides:

- A 10-second “soft start” from 0 to 1100 mW/cm², or from 0 to 2000 mW/cm² with the (optional) “booster light guide”, dia. 5.5 mm.
- Full power during 10 seconds.

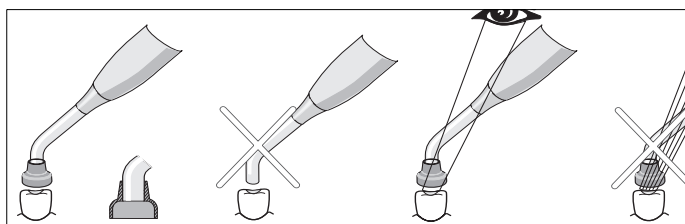
LED 4.4 shows your selection.

Handling

After you switch on the treatment center, the **Mini L.E.D.** is by default in the quick curing mode (4.2).

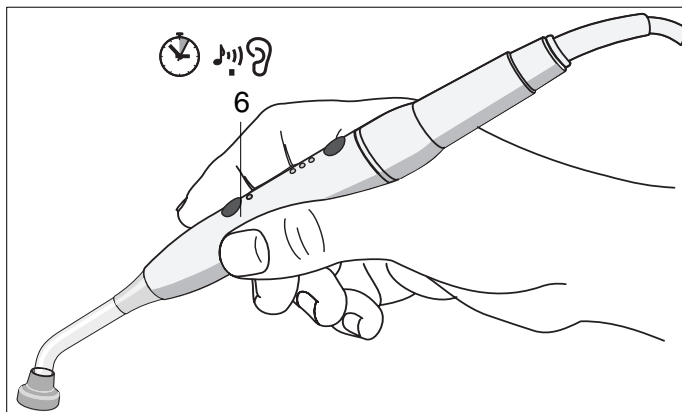
If you change the operating mode of the **Mini L.E.D.** while the treatment center is in operation, the new mode remains valid even after placing the **Mini L.E.D.** in its holder.

After you have selected a mode, the **Mini L.E.D.** is ready for operation.



Position the light guide as close as possible to the composite material surface you want to photopolymerize. Make sure that the light guide never touches the material to be cured, as this may cause damage to the light guide and reduce its effectiveness.

- Never work without the glare shield (5).
- Never look into the light which is reflected by the tooth surface.



To start the polymerization cycle, briefly press the ON/OFF switch (6). This is confirmed by an audible signal.

In each mode, an audible signal sounds every 5 seconds.

The end of the cycle is also indicated by an audible signal. You may interrupt the cycle at any time though by lightly pressing the ON/OFF switch.

Technical data

General technical data

Model:	Mini L.E.D.
Weight of handpiece without hose:	105 g
Dimensions:	dia. 23mm x 240mm
Power supply of handpiece:	5 V DC / 2 A
Thermal safety:	Overheat protection

Optical specification

Wavelength:	420nm – 480nm
Intensity dia. 7.5mm (standard version):	1100mW/cm ²
Intensity dia. 5.5 mm (optional, available from Satelec):	2000 mW/cm ²
Power:	450 mW – 500 mW
Laser power:	< 1mW

10 Operation light, tumbler filling, cuspidor flushing, purge

10.1 Operation light



Operation light – dentist element control panel

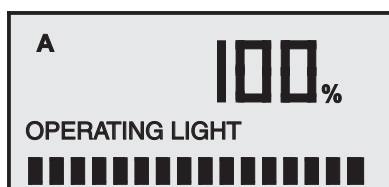
Press the SIROLUX key briefly to switch the **operation light ON** or **OFF**.

When you press this key for more than 3 seconds, the **OPERATING LIGHT**.

Here you can set a light intensity between 20% and 100% with the **– / +** keys.

(approx. 8000 lux – approx. 24000 lux).

When you exit the dialog, the last set value is saved.



The composite key is located next to the SIROLUX key. This key is used to switch the operation light **ON** or **OFF** with **reduced brightness** (≤ 8000 lux).

You can toggle directly between the intensities by pressing the two keys alternately.

When the light is **ON**, the green LED in the corresponding key is illuminated.



Operation light – assistant element

By pressing the light key **L**, you can switch the operation light **ON** or **OFF** with the set **intensity**.

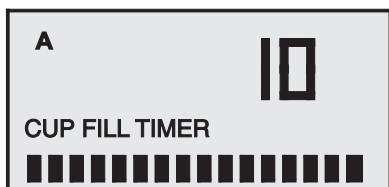
This is only possible when the **SPRAYVIT** on the assistant element is in its holder.

10.2 Tumbler filling



When you press this key briefly, the tumbler is filled with a preset amount of water.

When you press the key again during water flow, the tumbler filling function is switched off.



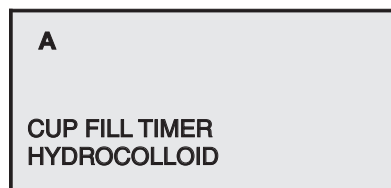
Only for tumbler filling key of the dentist element:

Pressing this key for > 3 seconds displays the settings dialog

CUP FILL TIMER

You can set a filling time between 2 and 10 seconds with the **– / +** keys.

When you exit the dialog, the last set value is saved.



Hydrocolloid (continuous operation)

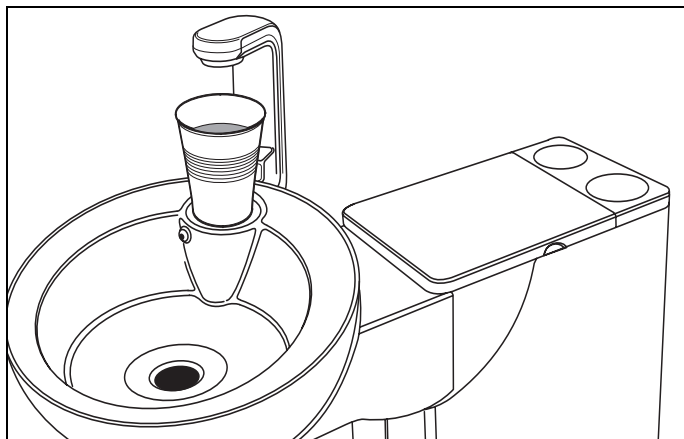
After the filling time of 10 seconds or before the filling time of 2 seconds, the following appears on the display:
CUP FILL TIMER HYDROCOLLOID

An unlimited time is then set, as is required for the hydrocolloid function.

However, when you activate the chair program **S**, the last saved tumbler filling time (2 – 10s) is always started, i.e. **no** continuous operation!

You can start continuous operation only with the tumbler filling key.

10.3 Tumbler filling with automatic sensor control (Special equipment, not available in all countries)



Functioning of the automatic sensor control

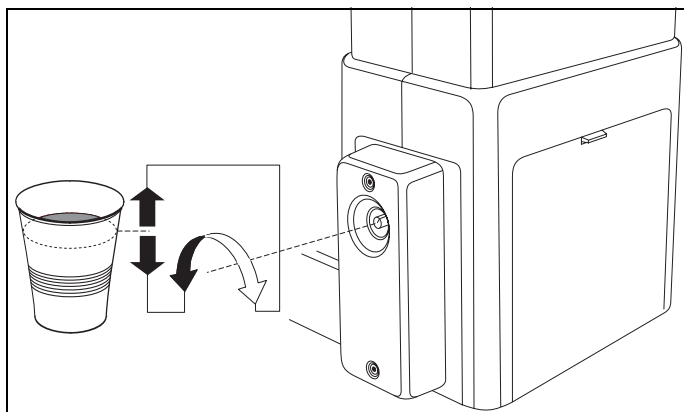
With this tumbler filler, the automatic sensor control recognizes the filling level of the tumbler.

When you place the tumbler beneath the tumbler filler, the tumbler will be filled automatically.

After the preset filling level has been reached, the water flow stops automatically.

If the tumbler is removed before the preset filling level has been reached, the water flow stops immediately.

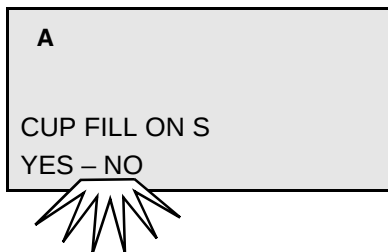
If required, the tumbler can be refilled manually by pressing the corresponding "tumbler filling" key.



Setting the filling level

You can preset the filling level of the tumbler with the knob on the base of the water unit (foot end).

Clockwise rotation increases the filling amount.



CAUTION

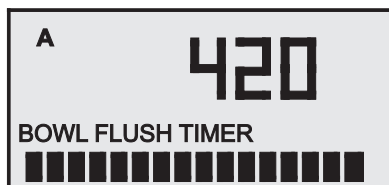
- The tumbler must not be transparent.
- The tumbler must always be placed in the center of the area provided for it.
- If an empty tumbler is standing below the tumbler filler when the treatment center is switched on with the main switch, the tumbler will not be filled automatically. To activate automatic tumbler filling, remove the tumbler briefly and then put it back again.
- The Mode dialog "CUP FILL ON S YES - NO" must be set in such a way that "NO" flashes.
- Hydrocolloid connection is not possible if tumbler filling with automatic sensor control is installed.

10.4 Cuspidor flushing



When you press this key briefly, the flushing function is switched ON and the cuspidor is flushed for a preset period of time.

When you press the key again while the cuspidor is being flushed, flushing stops.



Only for cuspidor flushing key of the dentist element:

Pressing this key for > 3 seconds displays the settings dialog

BOWL FLUSH TIMER

You can set a flushing time between 20 and 420 seconds (in steps) with the - / + keys.

10.5 Purge / Auto Purge function (purging the water paths)

PURGE function

(only for dentist element)

The purge function enables you to flush the water paths.

To do this, press the quick setting key 1 (> 3 s) when all instruments are in their holders.

You will be prompted to choose between PURGE/ APURGE and SANITATION¹.

Select PURGE with the – or + key. PURGE must flash.

If you press quick setting key 1 briefly (< 3 s), the following prompt will appear if all instruments are in their holders:

SELECT ITEMS FOR PURGING

Pick up the instruments you want to flush and hold them above the cuspidor.

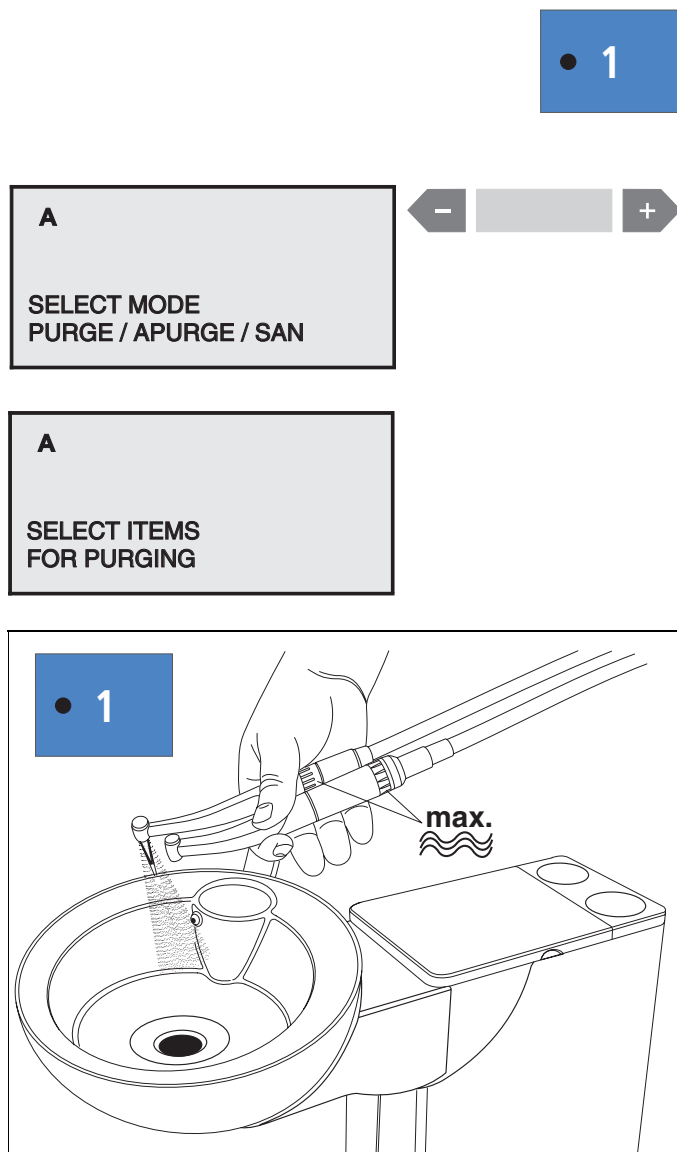
The maximum water flow must be set on the instruments.

Press quick setting key 1 again (< 3 s), the instruments are then purged one after the other.

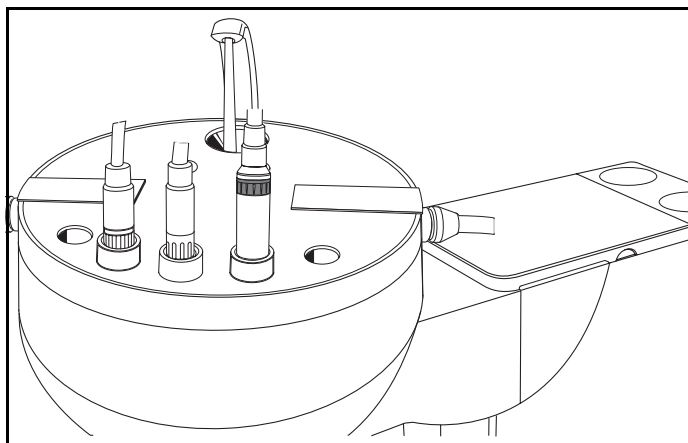
The purging time in seconds set previously in the Mode dialog (11.14) runs down for each instrument individually.

An audible signal sounds after the last instrument has been flushed.

Finally place the instruments back in their holders.



1. The SANITATION function is described in the instructions "Care and Cleaning by the Practice Team".



■ Auto Purge (APURGE) function

The Auto Purge function offers possibility of automated purging of all water carrying instruments in the dentist element, of the assistant Sprayvit and of the tumbler filling unit.

All of the instruments inserted in the sanitation bowl will be purged when APURGE is activated. If the instruments remain in the sanitation bowl after the treatment center is switched off, the purging process will automatically be started again the next time the treatment center is switched on.

We recommend the APURGE function in the following cases:

- APURGE function before beginning and at the end of the work day:

A complete purge cycle is performed following activation. The instruments remain in the sanitation bowl and the treatment center can be switched off. On the next day, the APURGE function is automatically performed again on all of the instruments remaining in the sanitation bowl as well as on the tumbler filling unit immediately after the treatment center is switched on.

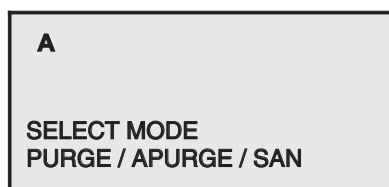
Then you can prepare the treatment center for daily practice operation.

- APURGE function after longer periods of disuse:

A complete purge cycle is performed following activation. The instruments remain in the sanitation bowl and the treatment center can be switched off. Now you can switch on the treatment center briefly every day and then switch it off again after the purging process.

Setting the APURGE function

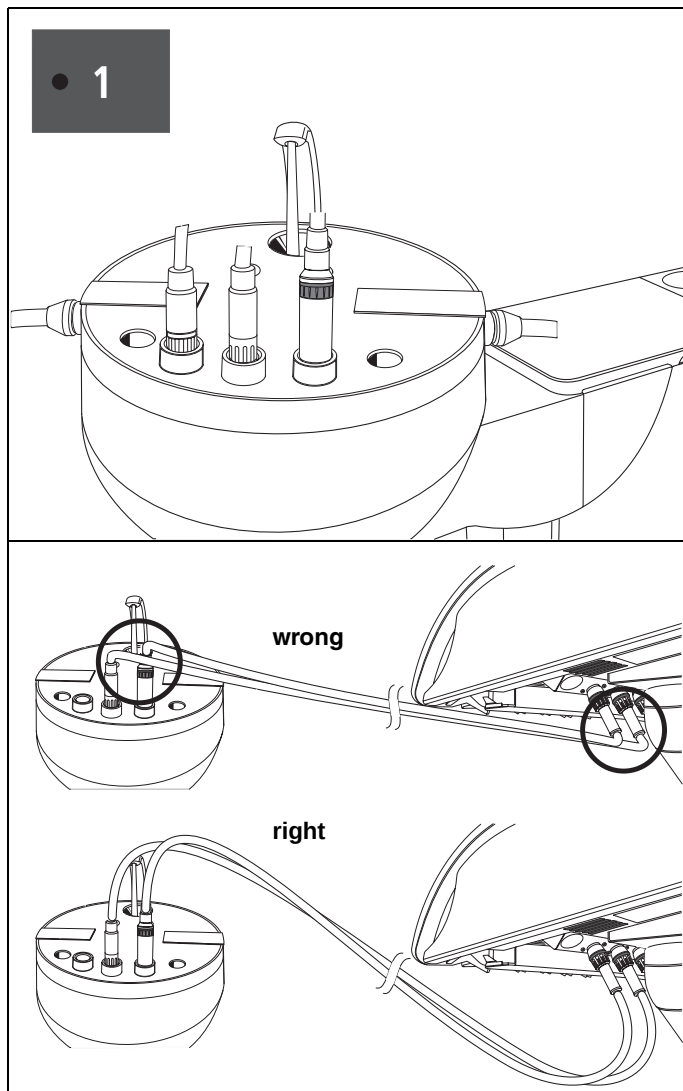
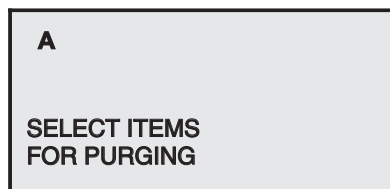
Activate the selection dialog box by pressing quick setting key 1 (> 3 s) when all of the instruments are deposited in their holders.



You will be prompted to choose between PURGE/ APURGE and SANITATION¹.

Select APURGE with the – or + key. APURGE must flash.

1. The SANITATION function is described in the instructions "Care and Cleaning by the Practice Team".



If you press quick setting key 1 briefly (< 3 s), the following prompt will appear if all instruments are in their holders:

SELECT ITEMS FOR PURGING

Remove the instruments to be purged from the dentist and assistant elements and insert them in the adapters of the sanitation bowl as far as they will go.

! CAUTION

Be careful not to snap off the instrument hoses when inserting the instruments.

The maximum water flow must be set on the instruments.

Press quick setting key 1 again (< 3 s), the instruments are then purged one after the other.

The purging time in seconds set previously in the Mode dialog (11.14) runs down for each instrument individually.

An audible signal sounds after the last instrument has been flushed.

You now can continue in either of the following ways:

- Leave the instruments in the sanitation bowl:
 The treatment center can then be switched off. The instruments will automatically be purged as soon as the treatment center is switched on again.
 ↳ The APURGE function remains activated.
- The instruments are returned to their holders:
 The treatment center can be prepared for daily practice operation.
 ↳ The APURGE function is completed.

i NOTICE

When removing the sanitation bowl, please notice that it is filled with water.

11 Basic treatment center settings in the Mode dialog

11.1 Mode key



When you press the **Mode** key, you can access and change various basic treatment center settings in a certain order.

They usually apply both to user A and B.

The corresponding display disappears automatically after approx. 10 seconds. To exit the Mode dialog more quickly, press the Mode key for > 3 seconds.

The flashing text is selected and saved when you exit the Mode dialog.

You can select the desired setting by pressing the — or + key.



Key lock

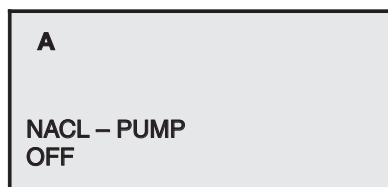
The key lock can be activated and deactivated again by pressing the - and + keys simultaneously.

The key lock affects the entire control panel of the dentist element

i NOTICE

The key lock can be deactivated only as described above. Switching the treatment center off and on again has no effect on this state.

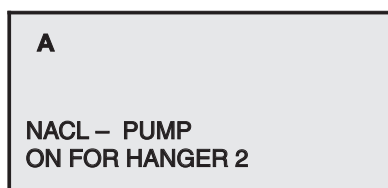
11.2 Mode: NACL PUMP OFF or ON for instrument holder ..



Saline solution for the desired burr instrument or the SIROSONIC L scaler (instrument holder 2 –5)

Here you can assign the NaCl pump to a certain instrument using the — / + keys.

For preparation of the NaCl pump, see page 45 .



i NOTICE

NACL appears on the display in the instrument dialog of the instrument to which the NaCl pump has been assigned.

i NOTICE

*If you want to assign the NaCl pump to the SIROSONIC L scaler, **always** select holder 5, regardless of the scaler's position in the instrument rack.*

11.3 Mode: MAINTENANCE



Display of next maintenance date

This dialog displays the number of days until the next maintenance date. You should have maintenance performed by your service engineer at least once annually. The instrument running time is indicated in the lower right-hand corner of the display (for service engineers only).

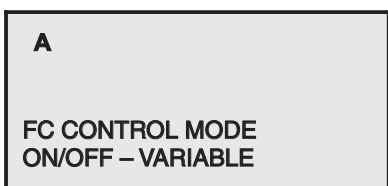
As soon as the time remaining until the next maintenance date is less than 30 days, the message is automatically displayed each time the unit is switched on. The display message then disappears as soon as an instrument is removed from its holder.

11.4 Mode: SERVICE ONLY START –STOP



For service engineers only!

11.5 Mode: FC CONTROL MODE ON/OFF –VARIABLE



Direct starter or speed controller foot switch

Presetting of the foot switch control mode for the instrument start.

With **direct starter (ON/OFF) presetting**, the bar display always jumps immediately to the maximum value when you step on the foot switch. You are working with the displayed maximum value.

With **speed controller foot switch (VARIABLE) presetting**, the bar display depends on the pedal position. You are working in a range between 0 and the displayed maximum value.

This setting can be chosen individually for user A or B!

11.6 Mode: TIME –HOURS : MIN



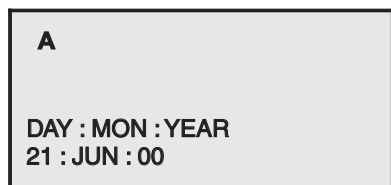
Setting the time

Here you can set the **time of day in hours and minutes**.

The hours display flashes first and can be adjusted with the – / + keys.

When you press the **Mode** key a second time, the minute display starts flashing and can be adjusted in the same way.

11.7 Mode: DAY : MON : YEAR



Setting the date

Here you can set the **year, month and day**.

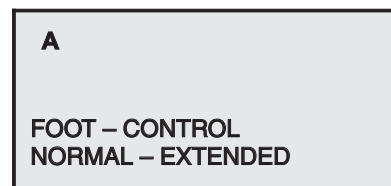
The setting is made in the same way as for Mode

TIME –HOURS : MIN in the order of year, month, day.

The date is not displayed during operation of the unit.

It is required only for internal treatment center functions, e.g. for service information.

11.8 Mode: FOOT – CONTROL NORMAL –EXTENDED



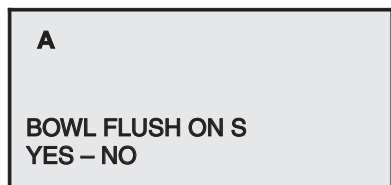
Switching the cursor on/off

If you want to control the treatment center only manually, you can switch the cursor control off.

The then differing functions of the relevant foot switch are described in the “Foot switch” section.

This setting can be chosen individually for user A or B!

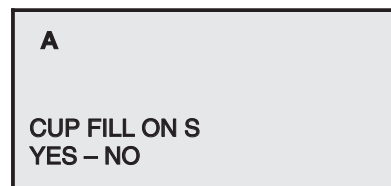
11.9 Mode: BOWL FLUSH ON S YES –NO



Cuspidor flushing with chair program S

If you want the cuspidor flushing to switch on in program **S** of the treatment chair.

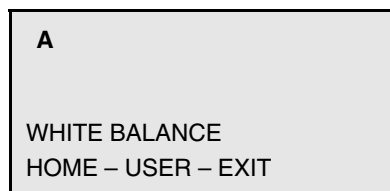
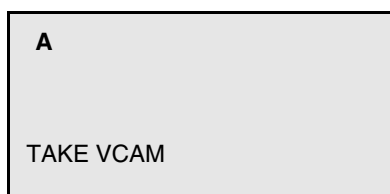
11.10 Mode: CUP FILL ON S YES –NO



Tumbler filling function with chair program S

If you want the tumbler to be filled in program **S** of the treatment chair.

11.11 Mode: WHITE BALANCE (only with an integrated SIROCAM 3)



White balance for the SIROCAM 3

This Mode dialog is only displayed in connection with an integrated SIROCAM 3.

The camera handpiece contains data making it possible to restore the factory-set color definitions regardless of the dental treatment center where the camera is used.

Thus the camera can be used at different dental treatment centers.

For adjustments, e.g. if you wish to set individual colors, you must perform a white balance.

Select the “**TAKE VCAM**” display in the Mode dialog.

When you pick up the camera, the dialog for performing the white balance is displayed.

There are 3 options available:

- USER** - individual white balance
- HOME** - factory settings (can be restored at any time)
- EXIT** - to exit the WHITE BALANCE dialog.

The display shows the current camera status, i.e., if an individual white balance was performed the last time, **USER** is displayed in bold type.

If the factory settings are valid, **HOME** is displayed in bold type.

The selected item is flashing.

Select **USER** with the **- / +** keys. **USER** starts flashing.

Set the slide switch (2) of the camera to its middle position (overview exposure).

Then hold the camera so that its lens is located 2–5 cm above a color pattern sheet of your own choice (A) in the live mode.

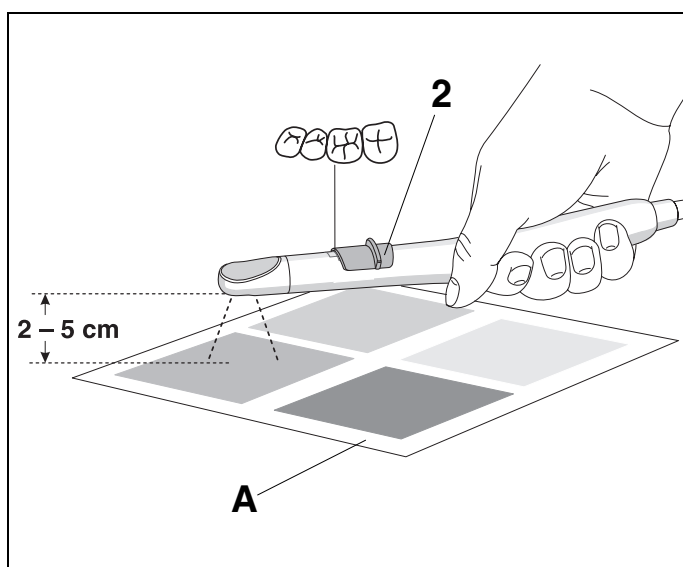
The screen must be **completely** filled by the focused color area.

- Press the **Mode** key to start the white balance (takes several seconds).

If the white balance has been completed successfully, **USER** is displayed in bold type and an audible confirmation signal sounds.

If the white balance has not been successful, **USER** will not be displayed in bold type. You may repeat the white balance as often as desired.

Different color patterns will produce different results with respect to the color settings. For example, a color area with a high amount of blue will reduce the amount of blue color in the video image.



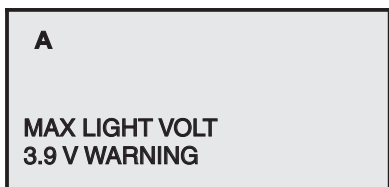
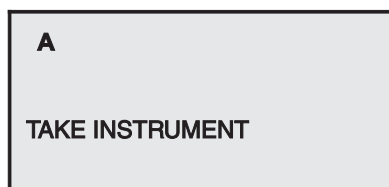
If you want to reset the camera to its factory settings, select **HOME** with the **- / +** keys. When you confirm by pressing the Mode key, **HOME** is displayed in bold type.

To exit this Mode dialog, select **EXIT** and press the Mode key, or put the camera back in place. Automatic exit from the dialog is disabled as soon as **USER** or **HOME** is selected. This allows you to repeat the white balance as often as necessary until you obtain the desired result.

11.12 Instrument settings via Mode dialog: REMOVE INSTRUMENT.

This Mode dialog enables the following settings

- Instrument light voltage
- and
- Maximum torque of SL motors



Setting the instrument light voltage

You can change the voltage setting for instruments in this Mode dialog.

First a message prompting removal of an instrument appears.

Then the current voltage setting of the (removed) instrument is displayed.

Using the **-/+** keys, you can adjust the instrument light voltage from 3.0 to 5.6V in steps of 0.1V.

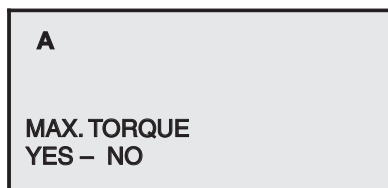
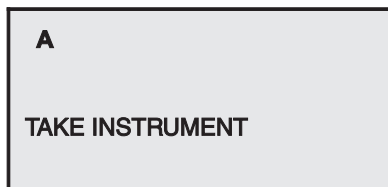
Starting at 3.9V, **WARNING** also appears.

After depositing the instrument, please remove and set the next instrument.

Observe the voltage specified by the instrument manufacturer!

NOTICE

The voltage (3.6V) is already preselected for Sirona instruments.



Setting the torque of the electric motors

This Mode dialog is used to set the automatic controller action of the SL or SL ISO electric motors. Individual settings are possible for each motor holder.

First a message prompting removal of an instrument appears.

After removing the instrument, select the setting dialog by pressing the Mode key again:

MAX TORQUE

If **Yes** is flashing:

The motor will attain a higher torque at speeds > 15,000 rpm.

If **No** is flashing:

The running smoothness of the motor will be higher at speeds > 15,000 rpm.



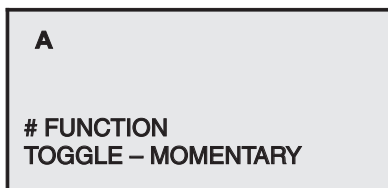
NOTICE

The new setting becomes effective only after the corresponding motor is removed again.



NOTICE

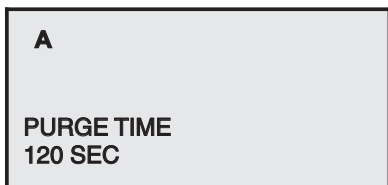
11.13 Mode: # FUNCTION TOGGLE –MOMENTARY



Free function key # as button or switch

In this mode you can preset whether you want to use the free function key # as a button or as a switch (see page 17).

11.14 Mode: PURGE TIME... SEC

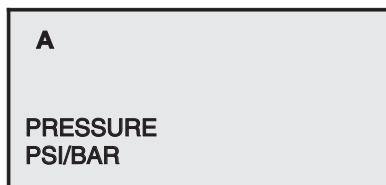


Setting the purge time for flushing the water paths

(Only for dentist element)

You can preset a purging time between 60 and 120 seconds for each instrument with the **-/+** keys for the **purge function** (see page 54).

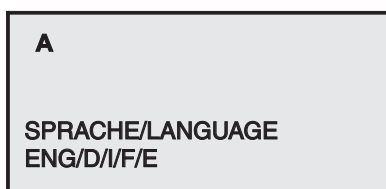
11.15 Mode: PRESSURE PSI / BAR



Indication of pressure in PSI or bar

In this mode, you can select whether you want the **driving air pressure** of the highspeed handpiece to be displayed in **PSI** or **bar**.

11.16 Mode: SPRACHE / LANGUAGE ENG / D / I / F / E



Language setting

In this mode, you can select the desired display language: **ENG=English**, **D=German**, **I=Italian**, **F=French** and **E=Spanish**.

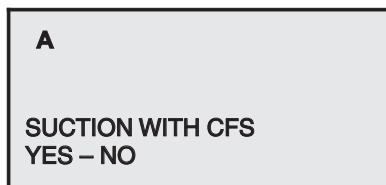
11.17 Mode: POLYLUX WITH CFS YES – NO



This dialog has no function in connection with the Mini L.E.D. curing light.

Set **NO**.

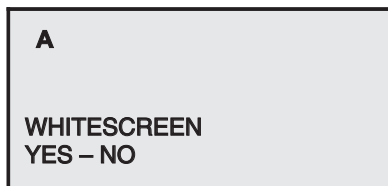
11.18 Mode: SUCTION WITH CFS YES – NO



Interrupting or restarting the suction flow with the 4-way foot control

If **YES** is flashing, you can interrupt or restart the **suction flow** of the large suction hose (not at the saliva ejector hose) by pushing the 4-way foot control on the chair in any direction. When you put the large suction hose in its holder while the suction flow is interrupted, the suction flow is automatically restarted when you pick up the hose again.

11.19 Mode: WHITESCREEN YES – NO



Presetting a white screen for the SIVISION monitor

If **YES** flashes –

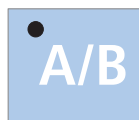
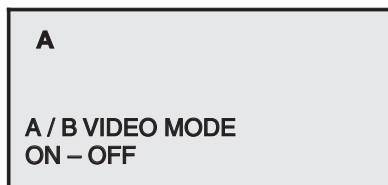
The “**X-ray image viewer**” key switches ON/OFF both the X-ray image viewer and a **WHITE SCREEN** on the SIVISION 3 monitor.

If **NO** flashes –

The “**X-ray image viewer**” key only switches the X-ray image viewer ON and OFF.

If an X-ray image viewer and SIVISION 3 are installed, always select “**NO**”.

11.20 Mode: A/B VIDEO MODE ON – OFF



Locking the video mode switchover

This mode is only displayed in connection with an integrated SIVISION 3.

If **ON** is flashing –

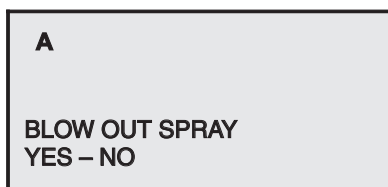
You can use the “**A/B**” key to switch between VIDEO mode and PC mode after picking up the SIVISION 3 camera.

If **OFF** is flashing –

You cannot use the “**A/B**” key to switch between VIDEO mode and PC mode for SIVISION 3.

This prevents the selected mode from being changed inadvertently.

11.21 Mode: BLOW OUT SPRAY



Prevents drop formation

You can activate the instrument blow-out function in this setting option. This removes any residual water (one to two drops) by blowing air through the instrument heads.

Just press the – or + key to switch this function **ON** or **OFF**.

The selected item flashes.



NOTICE

*This function is switched **OFF** in the factory setting.*

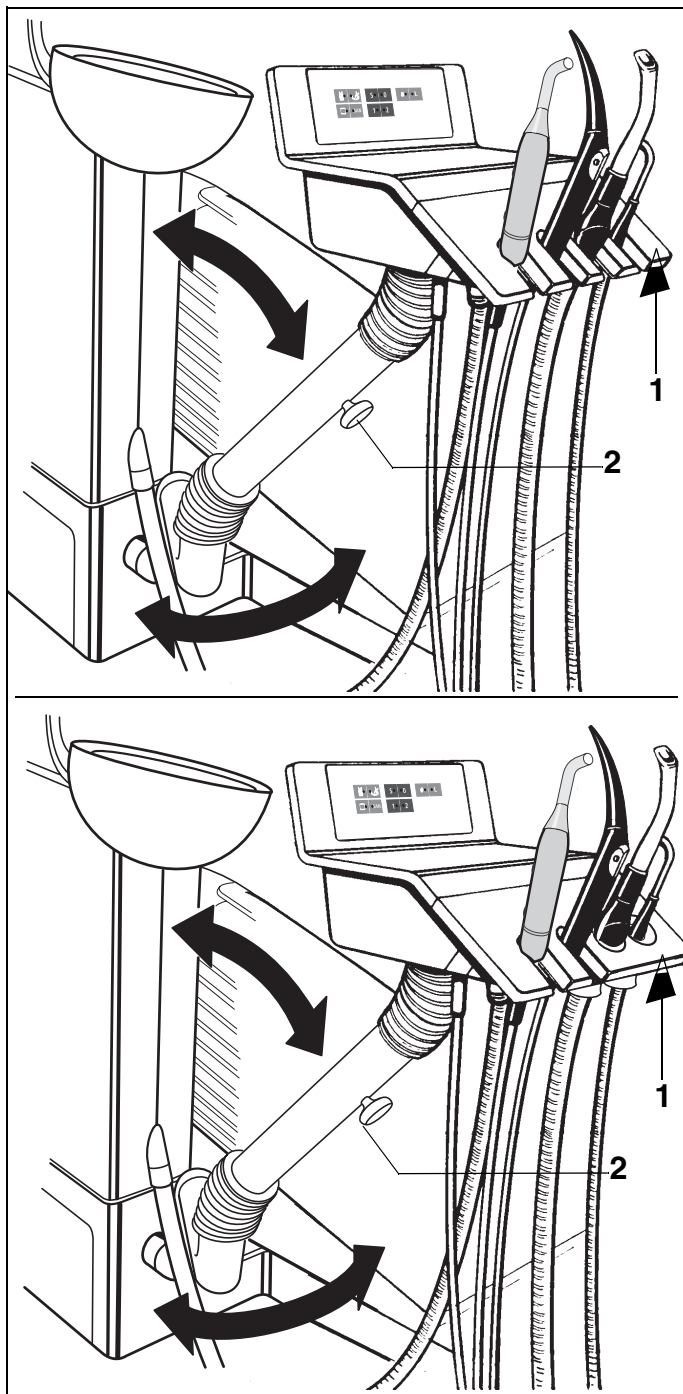


NOTICE

Sirona recommends activating this function especially for the C3⁺ treatment center.

12 Assistant element

12.1 Assistant element



The assistant element can be swiveled to the side and to the front.

To do this grasp the assistant element laterally at the handpiece rack (1).

The ease of the swivel movement towards the front can be set with the knob (2).

⚠ CAUTION

- Make sure that the backrest does not collide with the assistant element if you have positioned the latter in the movement range of the backrest.
- Also make sure that the assistant element is not positioned above the patient when the chair moves upward (on contact with the patient, a safety switch stops the movement).

Removing a handpiece rack with closed suction handpiece holders is described in the document “**Care and Cleaning by the Practice Team**”.

⚠ DANGER

The suction hose handpieces contain magnets. In the case of body contact of the suction hose handpiece in the vicinity of a cardiac pacemaker, this can have a disturbing effect on the functioning of the cardiac pacemaker.

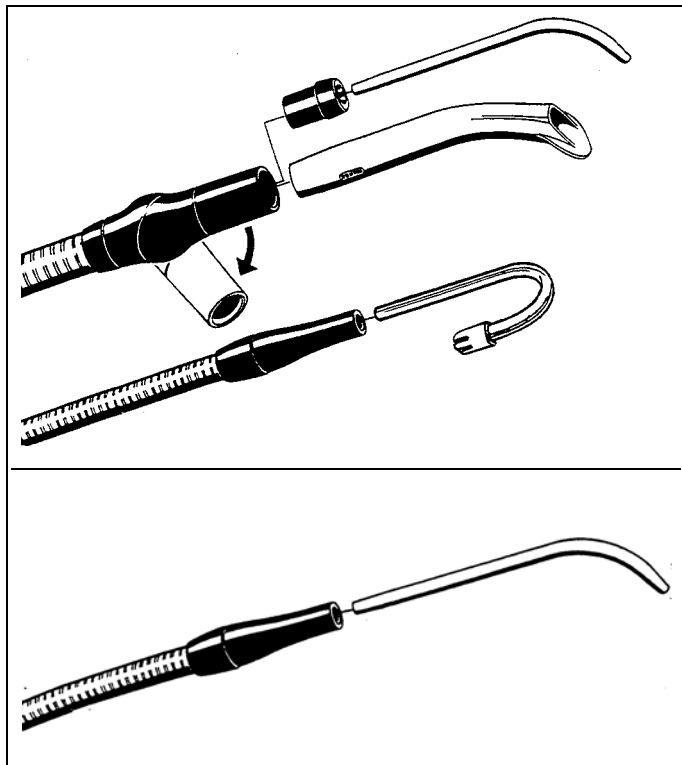
Therefore avoid bringing the suction hose handpiece into the vicinity of a cardiac pacemaker.

Furthermore, direct contact of the suction hose handpiece with magnetic cards can lead to data loss.

Suction hose handpieces with integrated magnets are marked with the following symbol:



12.2 Suction handpieces on the assistant element



The vacuum system switches on when you pick up a suction hose from the holder.



CAUTION

Observe the warning and safety information on page 9 (vacuum system).

You can angle the suction handpiece by turning it.



CAUTION

With a wet suction system, never pour water into the cuspidor while the unit is switched off.



CAUTION

If the vacuum system switches off by accident, immediately remove the suction cannula from the patient's mouth.

If the unit has no second saliva ejector hose for the surgical cannula, the thick suction hose must be used for surgical aspiration.

To insert a surgical cannula, please attach the adapter supplied.

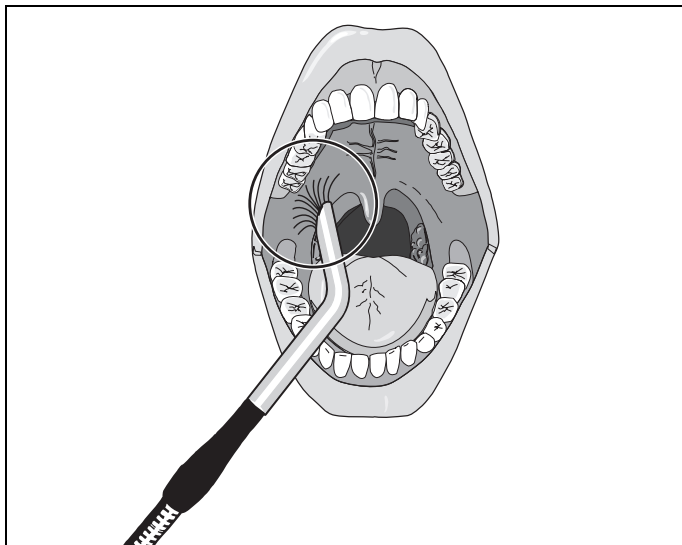
If the unit is equipped with a second saliva ejector hose, the surgical cannula can be inserted directly into the saliva ejector handpiece.

A

SUCTION WITH CFS
YES – NO

You can interrupt or restart the **suction flow** of the large suction hose also by pushing the 4-way foot control on the chair in any direction.

You can preset this under **Mode 11.18**. When you put the large suction hose in its holder while the suction flow is interrupted, the suction flow is automatically restarted when you pick up the hose again.



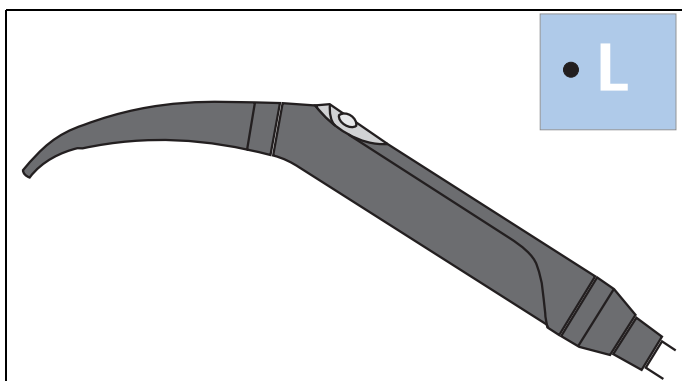
! CAUTION

Make sure to hold the suction cannula in such a way that the cannula opening cannot attach itself to the oral mucous membranes by accident.

i NOTICE

The factory-set suction power can be adjusted in the water unit by a service engineer.

12.3 SPRAYVIT on the assistant element



If the SPRAYVIT is the only instrument that has been picked up, you may switch the instrument light on or off.

Its brightness is set to an optimum value and cannot be changed.

The instrument light switches on when you activate the SPRAYVIT (if preset).

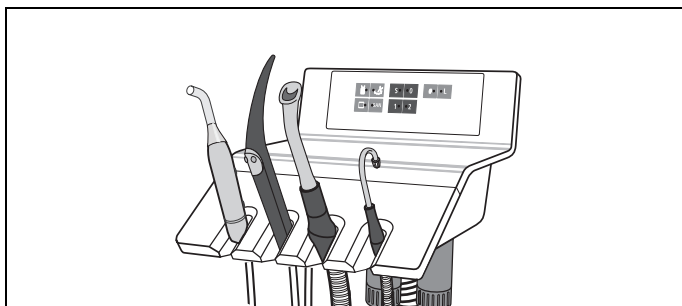
The instrument light switches off after a time lag of 10s when the SPRAYVIT is no longer activated.

When you place the SPRAYVIT back on the instrument rack, the instrument light switches off immediately.

! DANGER

After changing hoses, press the water button of the SPRAYVIT repeatedly until water comes out! Only then can you begin treatment.

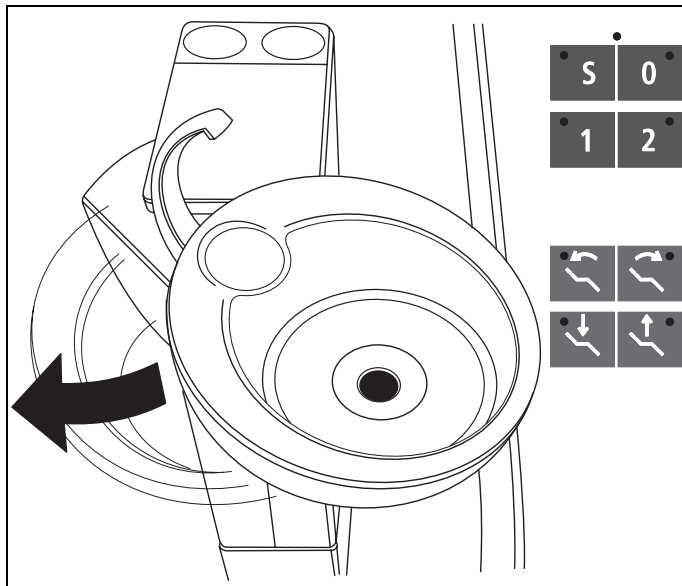
12.4 Satelec Mini L.E.D. curing light on the assistant element



For safety instructions and operation, see page 46.

13 Water unit

13.1 Swivelable cuspidor (alternative equipment))



The cuspidor on the water unit can be swiveled manually by approx. 110mm towards the patient chair.

Collision protection

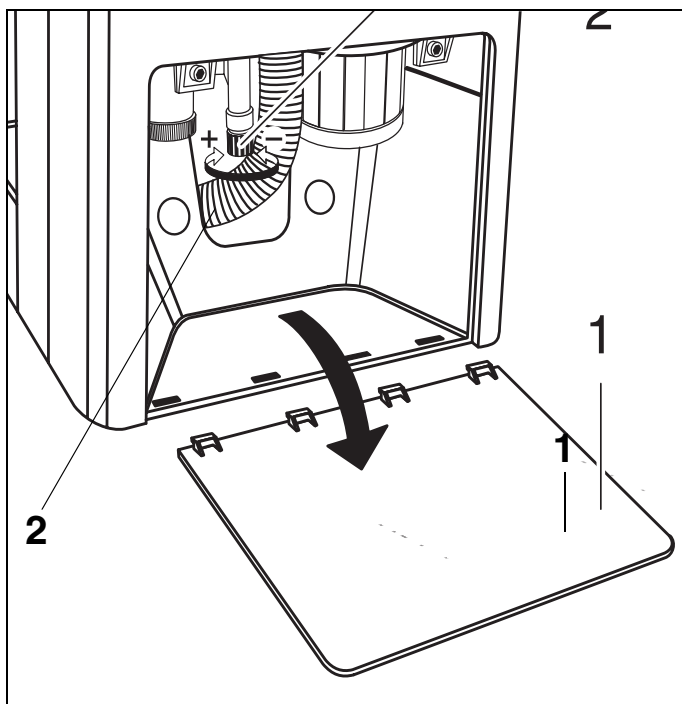
Certain chair movements are locked as long as the cuspidor is swiveled in. When you start a programmed movement **S**, **0**, **1** or **2**, the cuspidor first moves back to its starting position before the chair moves to the programmed position.

When you press a key for the individual adjustment of the chair, i.e. **height adjustment up/down** or **backrest tilt backward/forward**, the cuspidor also swivels back first, and if the corresponding key is still pressed, the chair moves.

You can make individual adjustments of the motorized headrest even when the cuspidor is swiveled in.

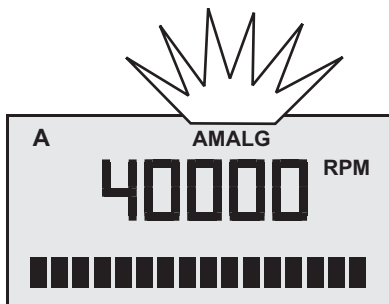
If the cuspidor is swiveled in while the chair is moving, the program is aborted. This is signaled by a double beep.

13.2 Adjusting the water amount for the cuspidor



- Open the flap (1) on the base of the water unit.
- Adjust the amount of water with the valve (2).

13.3 Amalgam rotor



The message **AMALG** appears on the display when the amalgam rotor needs replacement, i.e., when having reached a filling level of 95% (see **instructions “Care and Cleaning by the Practice Team”**).

A continuous sound indicates that the rotor is full and no longer functioning properly.

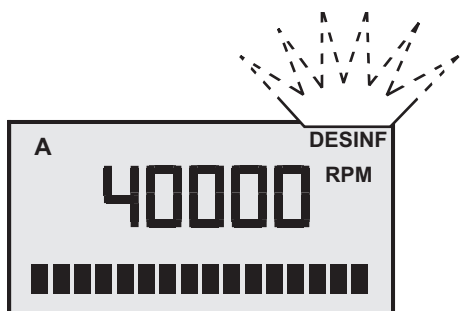
An intermittent sound indicates a system error. The water supply is interrupted. Please contact your service engineer.



NOTICE

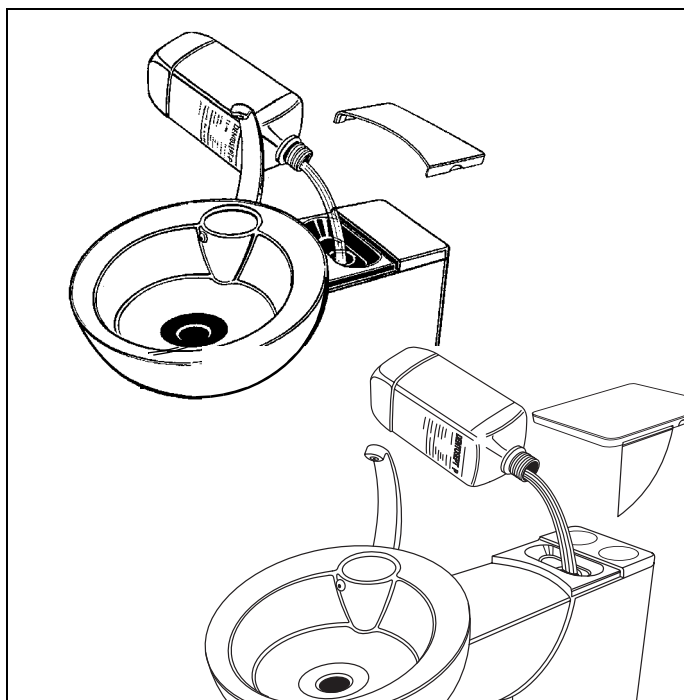
The rotor inside the amalgam separator must be replaced at least once a year, even if the AMALG message does not light up. Otherwise, unpleasant odors can develop.

13.4 Disinfection system (optional)



When the message **DESINF** flashes on the dentist element display during treatment, you should refill 1 liter of **DENTOSEPT P** at the latest after the end of the treatment day.

When the message flashes, it is **not** possible to perform sanitation.



Remove the cover behind the cuspidor and fill in 1 liter of **DENTOSEPT P**.

The **filler trough** should always be kept **clean**. Always make sure that **no tap water** enters the filler trough!

For reorders:

DENTOSEPT P:

1 carton = 6 x 1 liter, REF 33 18 156

For Canada and Japan only:

1 carton = 6 x 1 liter, REF 59 69 535

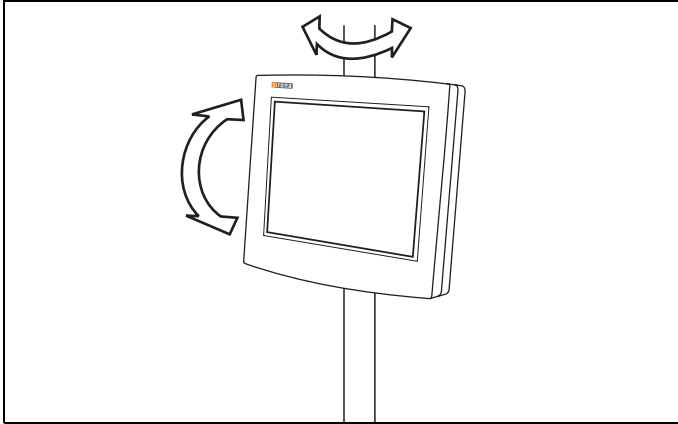
Microbiological water test (after an operating pause of more than **1 week**)

Sanitation of the unit

Perform sanitation every **4 weeks**. This is the only way to effectively combat the formation of biofilm in the water paths (see instructions "**Care and Cleaning by the Practice Team**").

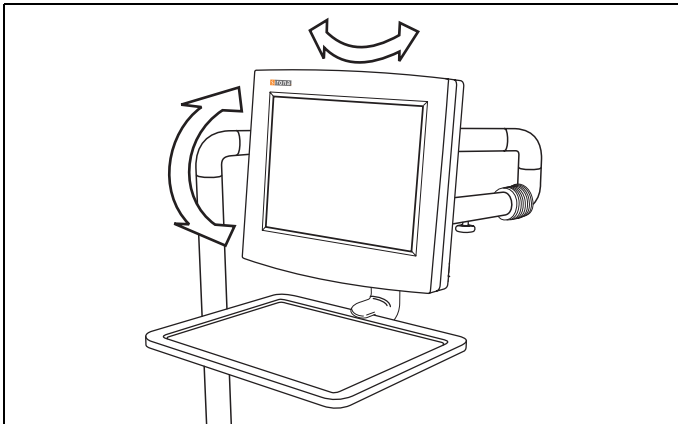
14 SIVISION 3

14.1 System overview of SIVISION 3



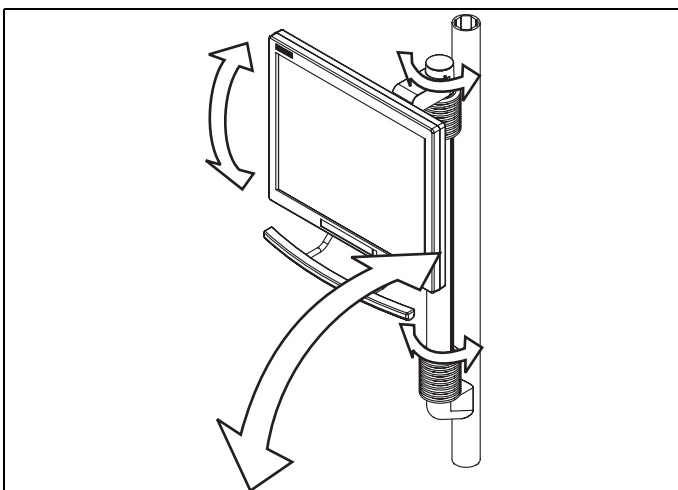
SIVISION on the lamp support tube

- Rotatable
- swivelable



Monitor on tray arm

- Rotatable
- swivelable



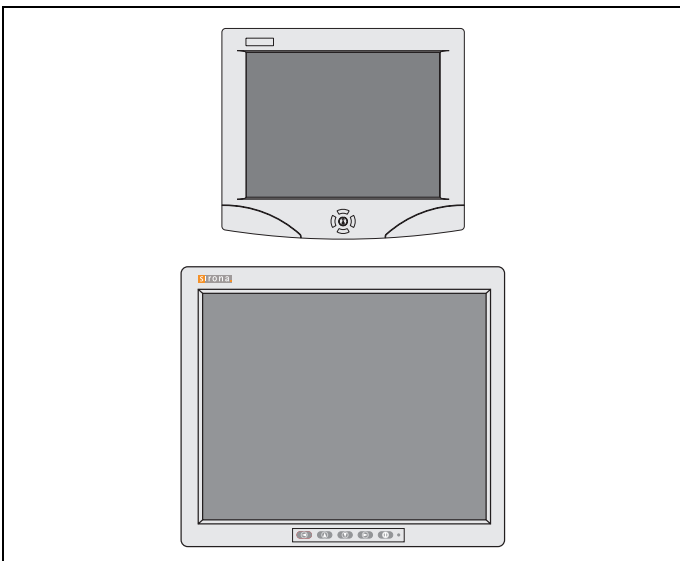
Monitor on swivel arm

- Rotatable
- swivelable
- Height adjustable



⚠ CAUTION

Make sure that the patient does not collide with the monitor during movements of the dental treatment chair and/or operation of the cuspidor. Swivel the monitor out of the collision area if necessary.



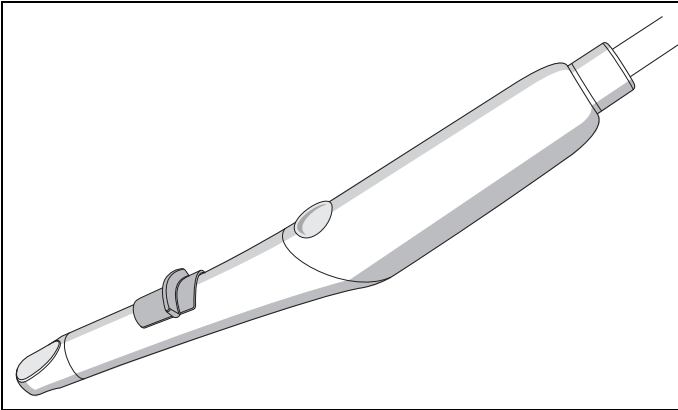
SIVISION 3 monitor versions

- 15" Monitor
- with glass pane
- 19" Monitor
- with glass pane
- with loudspeaker

⚠ CAUTION

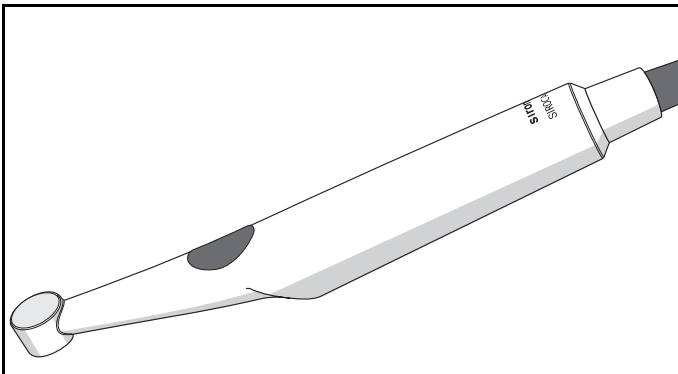
The loudspeaker socket of the monitor may be connected only to a device which complies with IEC 60950 (e.g. PC) or IEC 60601-1, and under no circumstances e.g. to a stereo system etc.

14.2 Camera versions



SIROCAM 3

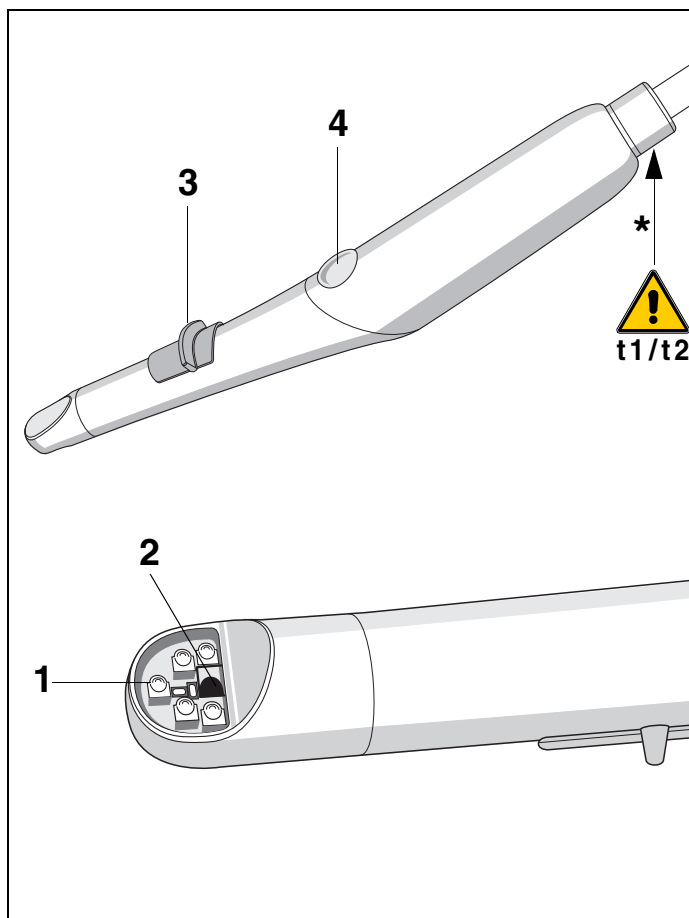
- Integrated 4-view image memory
- 3-fold adjustable focusing range
- Titanium case



SIROCAM C

- Integrated 4-view image memory
- 2-fold adjustable focusing range
- Plastic case

14.3 SIROCAM 3 intraoral camera (extra equipment)



The SIROCAM 3 intraoral camera combined with SIVISION 3 is a perfect system for effective communication with the patient.

The camera images cannot be used for diagnosis!

The SIROCAM 3 intraoral camera is a sensitive optical instrument and must therefore always be handled with care.

The camera illuminates the tooth areas to be imaged with 7 white-light LEDs (1).

These are arranged around the entrance prism (2).

The LEDs and the lens are protected by a scratch-proof antiglare glass cover.

CAUTION

* = Intermittent camera operation:

t1 = 1 min on, **t2** = 3 min off.

The camera heats up during operation.

To prevent overheating of the camera, the camera must be put down for a time interval **t2** = 3 min after an operating time of **t1** = 1 min.

The camera will heat up even when it is placed in its holder, as one of the states "black screen", "white screen" or "quad image" is always active.

The slide switch (3) is used for presetting the depth of focus.

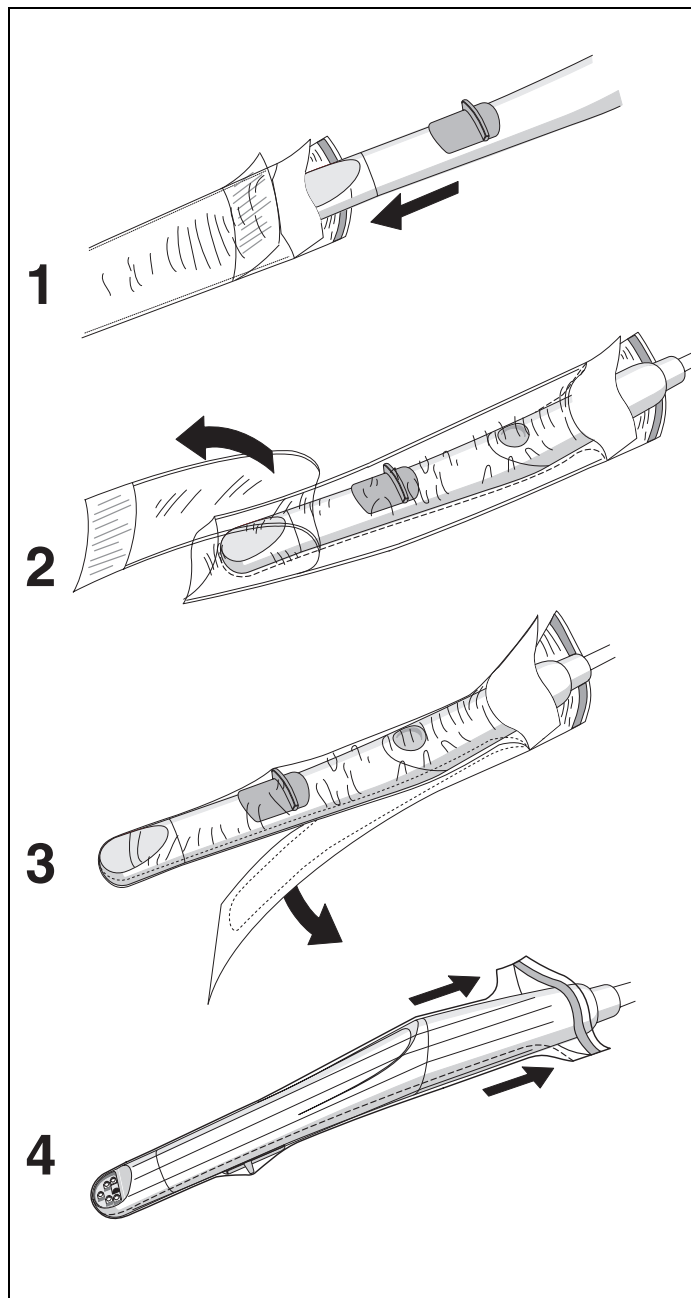
The camera button (4) is intended for controlling different SIVISION 3 functions.

NOTICE

For camera operation and further information, please refer to the operating instructions of the SIROCAM 3.

NOTICE

The camera handpiece contains data making it possible to restore the factory-set color definitions regardless of the dental treatment center where the camera is used. Thus the camera can be used at different dental treatment centers. To customize the color settings, you can perform a white balance as long as the camera is active, (see Mode dialog, section 11.11).



Hygienic protective covers for SIROCAM 3

Hygienic protective covers are available for the camera. They can be ordered under REF 59 38 654. Package size: 500 pcs.

How to use the hygienic protective covers:

1. Hold the hygienic protective cover with its paper side face-down and insert the camera with the optical system downward into the cover.
2. Pull off the upper protective foil with the blue stripe.
3. Then pull off the backing paper.
4. Finally, stretch the hygienic protective cover over the camera from front to rear.



CAUTION

For optimum image quality, there must not be any folds in the transparent area of the cover above the lens window.

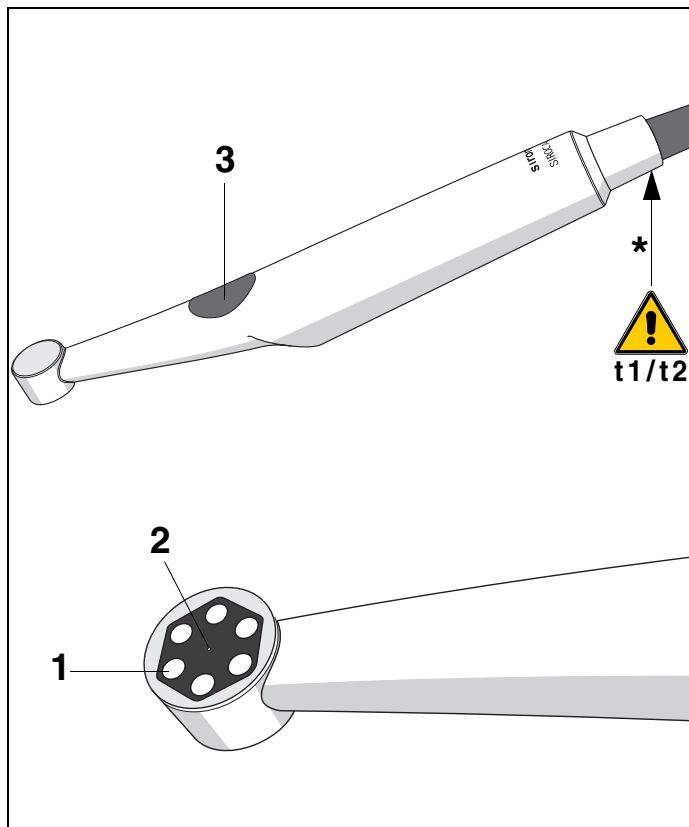


CAUTION

Use only the hygienic protective covers offered by Sirona.

Prior to each application on a new patient, the camera must be covered with a new hygienic protective cover.

14.4 SIROCAM C intraoral camera (extra equipment)



The SIROCAM C intraoral camera combined with SIVISION 3 is a perfect system for effective communication with the patient.

The camera images cannot be used for diagnosis!

The SIROCAM C intraoral camera is a sensitive optical instrument and must therefore always be handled with care.

The camera illuminates the tooth areas to be imaged with 6 white-light LEDs (1).

These are arranged around the single-lens optical system (2).

The LEDs and the lens are protected by a scratch-proof antiglare glass cover.

CAUTION

** = Intermittent camera operation:*

t1 = 1 min on, t2 = 3 min off.

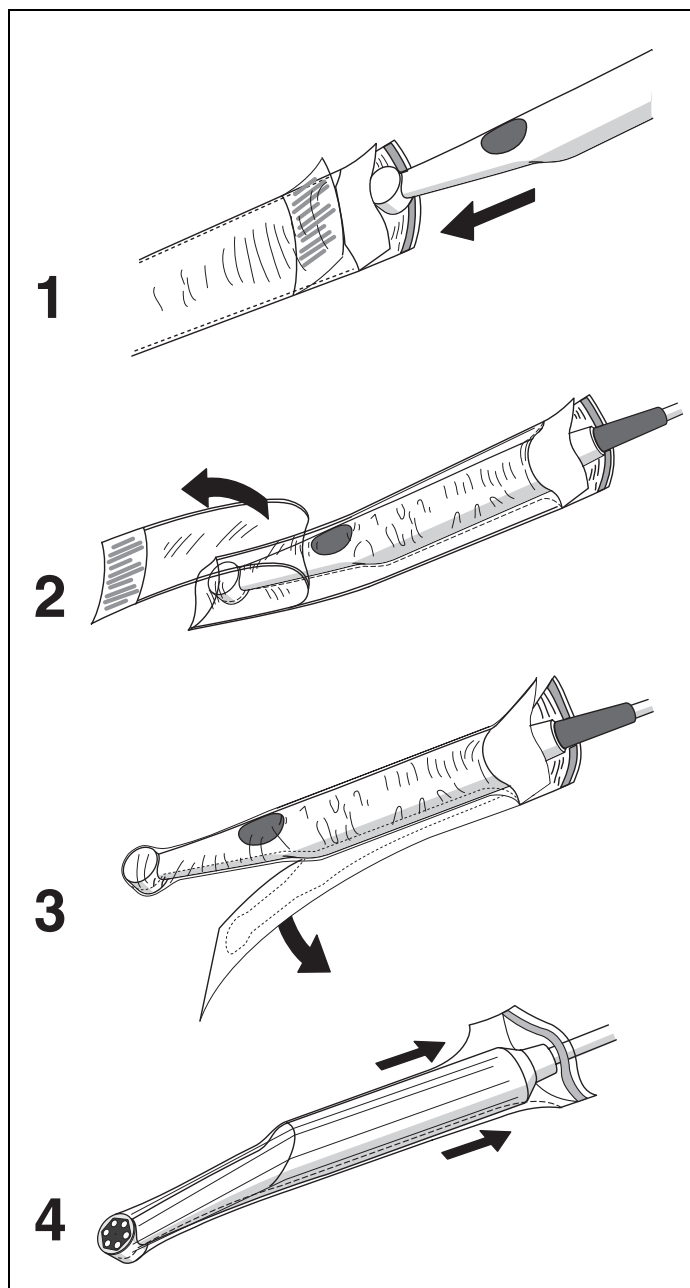
The camera heats up during operation.

To prevent overheating of the camera, the camera must be put down for a time interval t2 = 3 min after an operating time of t1 = 1 min.

When the camera is in LIVE IMAGE mode, it is possible to toggle between close range and far range by pressing button (3) on the camera.

Button released – close range **5 – 15mm**

Button pressed – far range **from 15mm** to smile line.



Hygienic protective covers for SIROCAM C

Hygienic protective covers are available for the camera. They can be ordered under REF 59 14 705. Package size: 500 pcs.

How to use the hygienic protective covers:

1. Hold the hygienic protective cover with its paper side face-down and insert the camera with the optical system downward into the cover.
2. Pull off the upper protective foil with the blue stripe.
3. Then pull off the backing paper.
4. Finally, stretch the hygienic protective cover over the camera from front to rear.

CAUTION

For optimum image quality, there must not be any folds in the transparent area of the cover above the lens window.

CAUTION

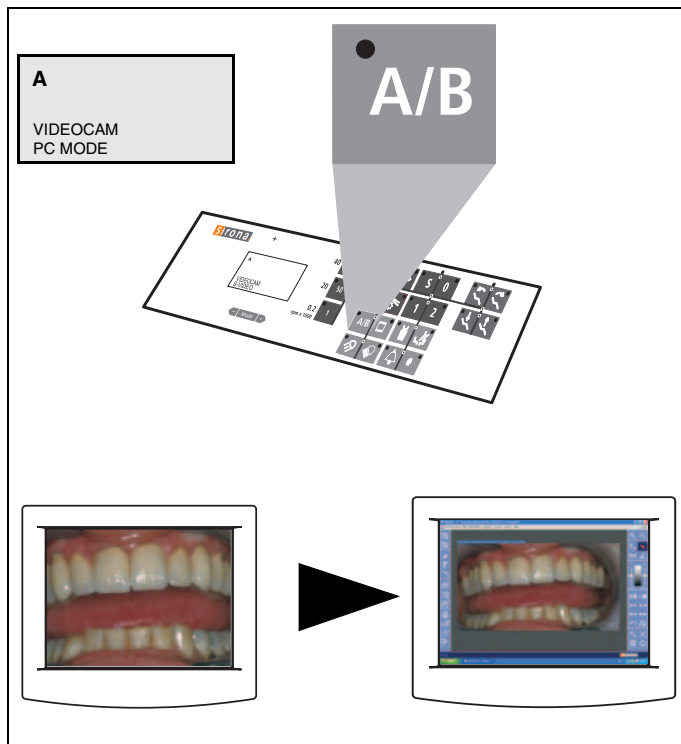
Use only the hygienic protective covers offered by Sirona.

Prior to each application on a new patient, the camera must be covered with a new hygienic protective cover.

14.5 Operating modes of SIVISION 3

SIVISION 3 with SIROCAM 3 or SIROCAM C can be used basically in two different operating modes:

- **VIDEO mode**
The camera image is directly displayed on the SIVISION monitor.
The quad image memory of the camera is activated.
- **PC mode**
The camera image is first processed on the PC and then the image generated on the PC is displayed on the SIVISION monitor.



SWITCHING TO PC MODE

A/B key on the control panel

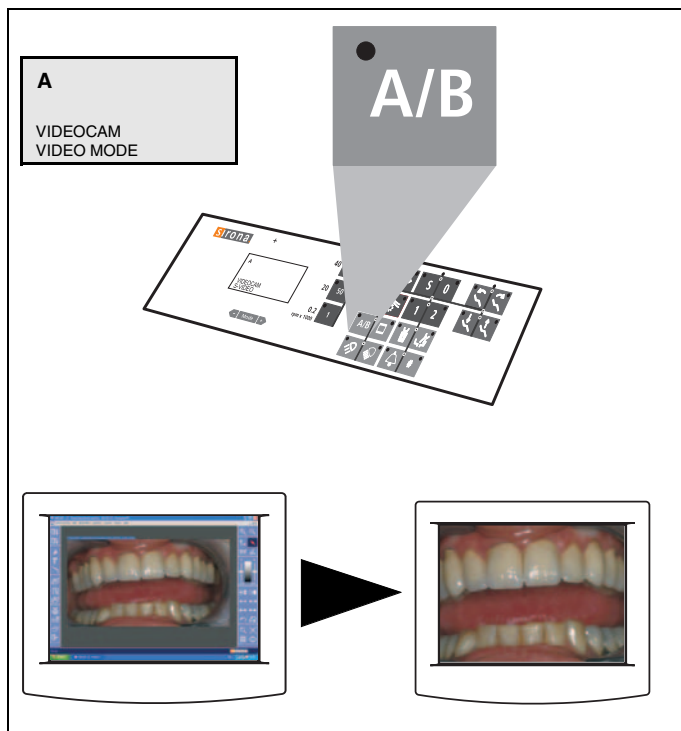
Only with:

- camera picked up and activated,
- manually or by cursor (using the foot switch),

- ☒ “**VIDEOCAM**” and the operating mode “**PC MODE**” now appear on the display.

- ☒ The image from the PC monitor, e.g. SIDEXIS/VIDEXIS, appears on the SIVISION monitor. The camera switches to **LIVE IMAGE**.

This mode remains active even after you switch OFF and back ON the treatment center.



SWITCHING TO VIDEO MODE

A/B key on the control panel

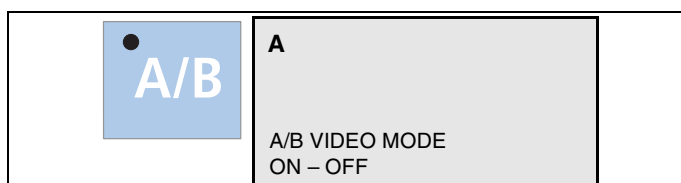
Only with:

- camera picked up and activated,
- manually or by cursor (using the foot switch),

- ☒ “**VIDEOCAM**” and the operating mode “**VIDEO MODE**” now appear on the display.

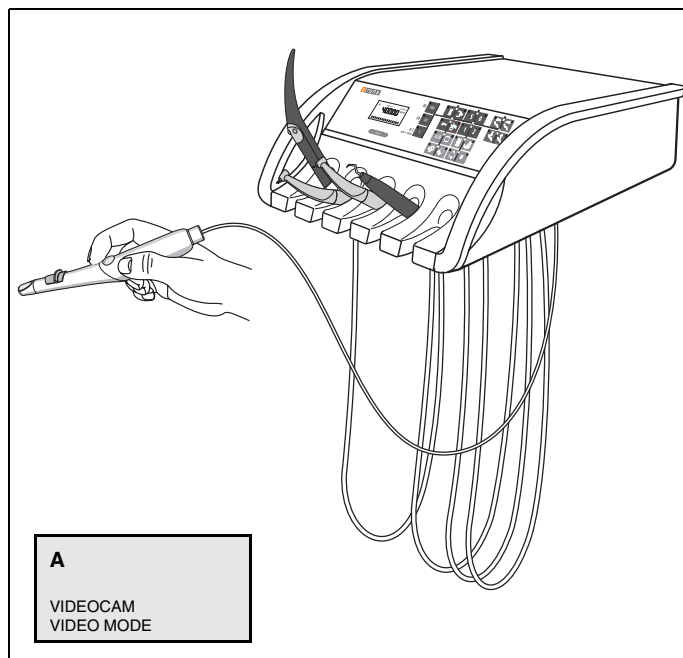
- ☒ The **SIVISION** monitor displays the camera image.

This mode remains active even after you switch OFF and back ON the treatment center.



This toggling function of the “mode switchover” key can be disabled in Mode dialog **11.20 Mode: A/B VIDEO MODE ON – OFF** to prevent inadvertent switching.

14.6 SIROCAM 3 / SIROCAM C integrated in the dentist element (video)

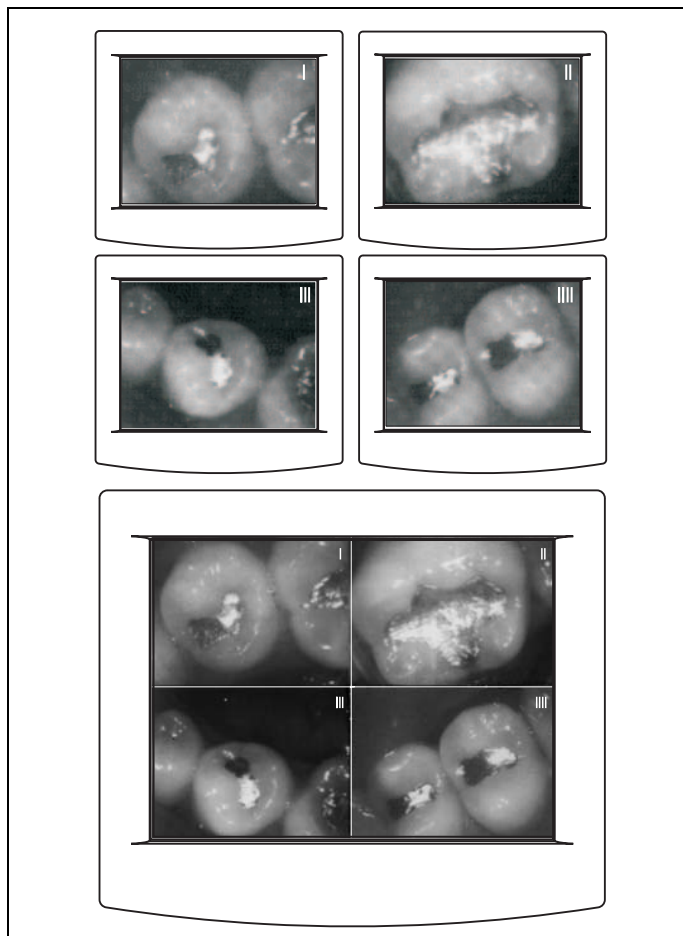


Operation in video mode

In this version the **SIROCAM 3** / SIROCAM C intraoral camera is installed in **holder 5** of the dentist element or in an **additional holder on the dentist element**.

The camera can be controlled with the unit foot switch if no other instrument is activated (picked up and controllable with foot switch) when you pick up the camera.

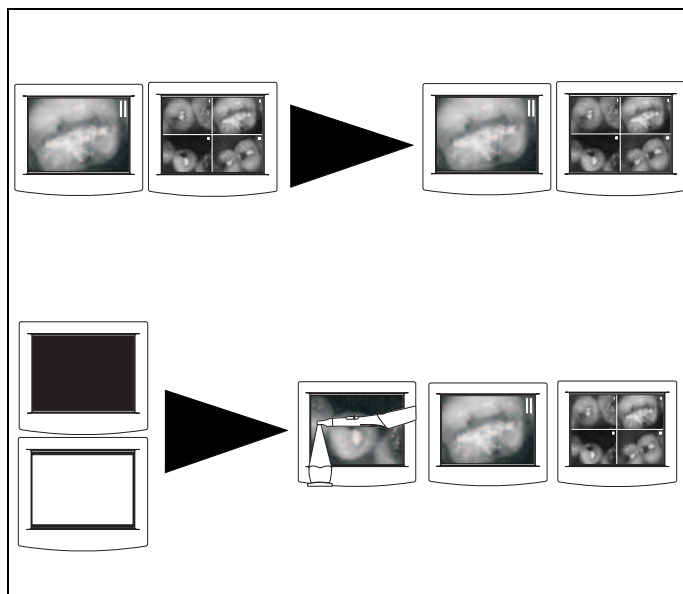
- ☑ If the camera is the active instrument “**VIDEOCAM**” and the operating mode “**VIDEO MODE**” appear on the display.



SAVING AN IMAGE

In **VIDEO mode**, the camera can save 4 still images consecutively (indexed with **I**, **II**, **III** and **IV**).

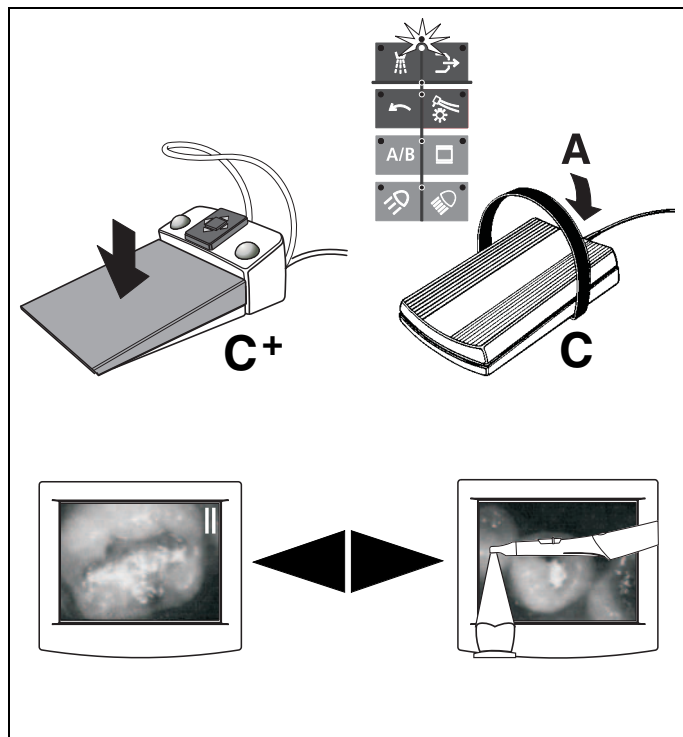
A 5th view shows a **QUAD IMAGE** in which these 4 still images are tiled on the screen.



Picking up the camera

If a **STILL IMAGE** or **QUAD IMAGE** was displayed while the camera was in place, this view is retained.

If a **BLACK SCREEN** or a **WHITE SCREEN** was displayed while the camera was in place, the view preceding the BLACK or WHITE SCREEN, i.e. a **LIVE, STILL or QUAD IMAGE**, reappears.



TOGGLING BETWEEN STILL IMAGE AND LIVE IMAGE

Foot switch C⁺ or C

With camera **picked up** and cursor being in the **instruments** key block.

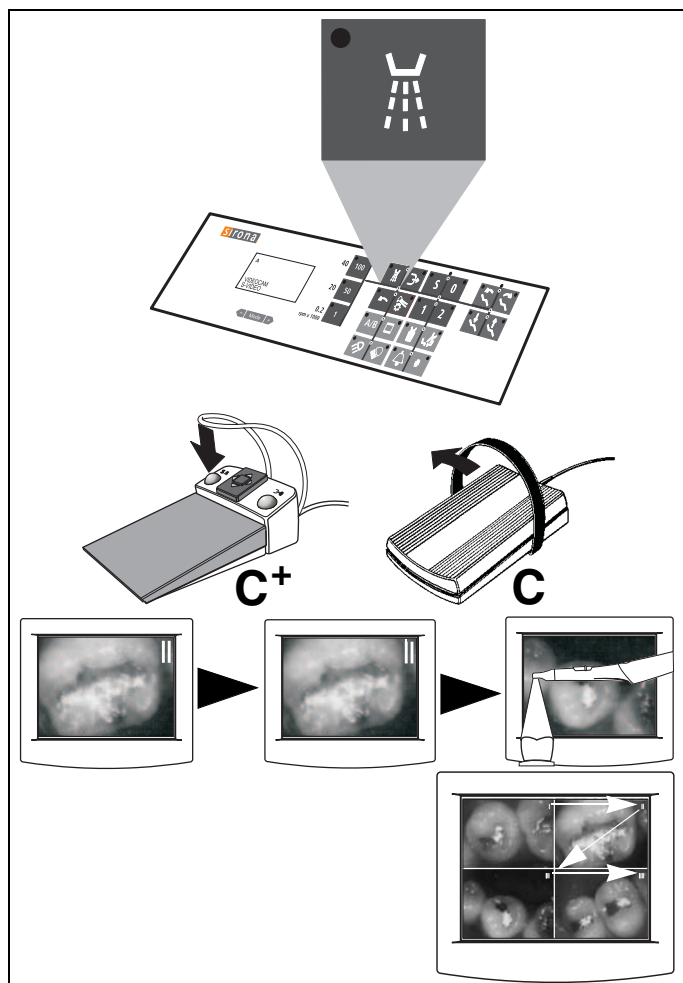
With the C⁺ foot switch:

Step on the foot pedal.

With the C foot switch:

Actuate the foot switch in direction A – cursor upward.

Toggling between a **STILL IMAGE** and a **LIVE IMAGE**.



SWITCHING TO THE NEXT IMAGE

Spray ON / OFF key on the control panel

Manually or by cursor (using the foot switch) with instruments in place or camera picked up.

With C⁺ foot switch also left foot switch button (only with camera picked up).

i NOTICE

If the camera is in the LIVE IMAGE mode, the LIVE IMAGE is stored in the current memory location when you switch to the next image.

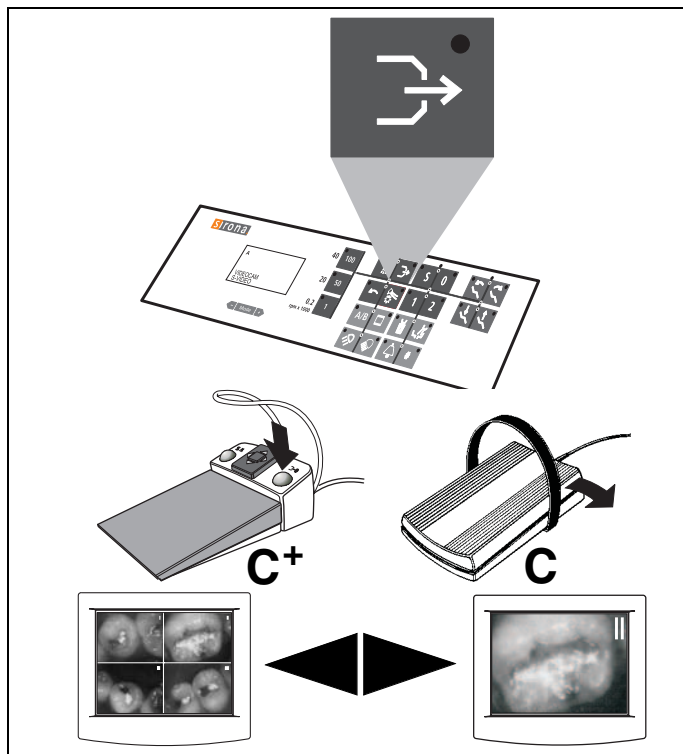
With the camera in place, a BLACK SCREEN is stored in the current memory location when you switch to the next image with empty memory.

In **SINGLE IMAGE** mode, switching to the next memory location.

- If a **STILL IMAGE** is stored there, it will be displayed.
- If no **STILL IMAGE** is stored there, a **LIVE IMAGE** will appear with the camera picked up.

In **QUAD IMAGE** mode, switching to memory location I, II, III or IV for image selection.

- ☒ The number of the currently selected image lights up in the upper right corner of the image.



TOGGLING BETWEEN QUAD IMAGE AND SINGLE IMAGE

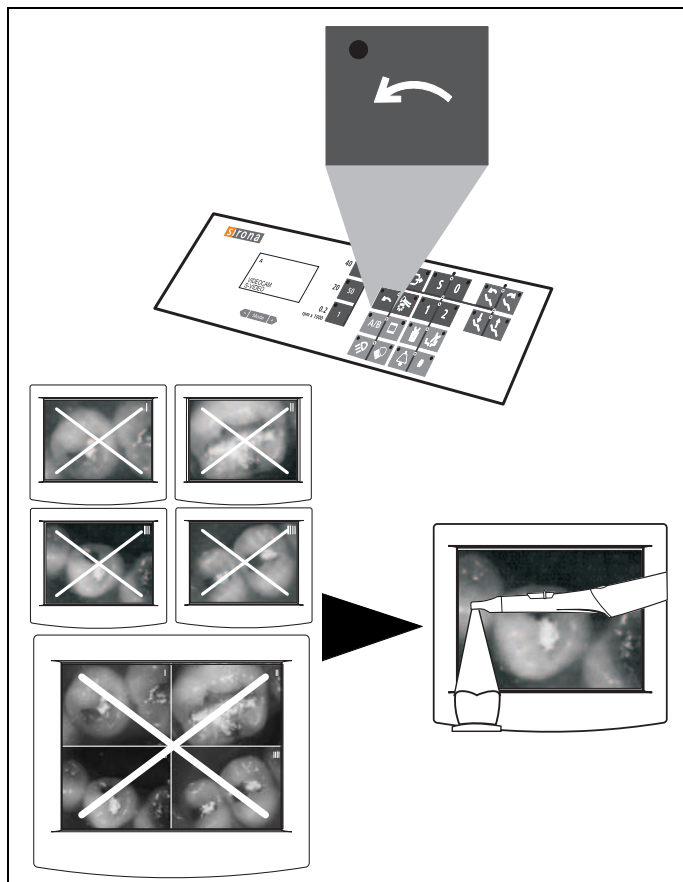
Chip blower key on the control panel

Manually or by cursor (using the foot switch) with instruments in place or camera picked up.

With C⁺ foot switch also right foot switch button (only with camera picked up).

Toggling between a **QUAD IMAGE** and a **SINGLE IMAGE**.

When you switch to a **SINGLE IMAGE**, the image previously selected in the **QUAD IMAGE** is displayed.

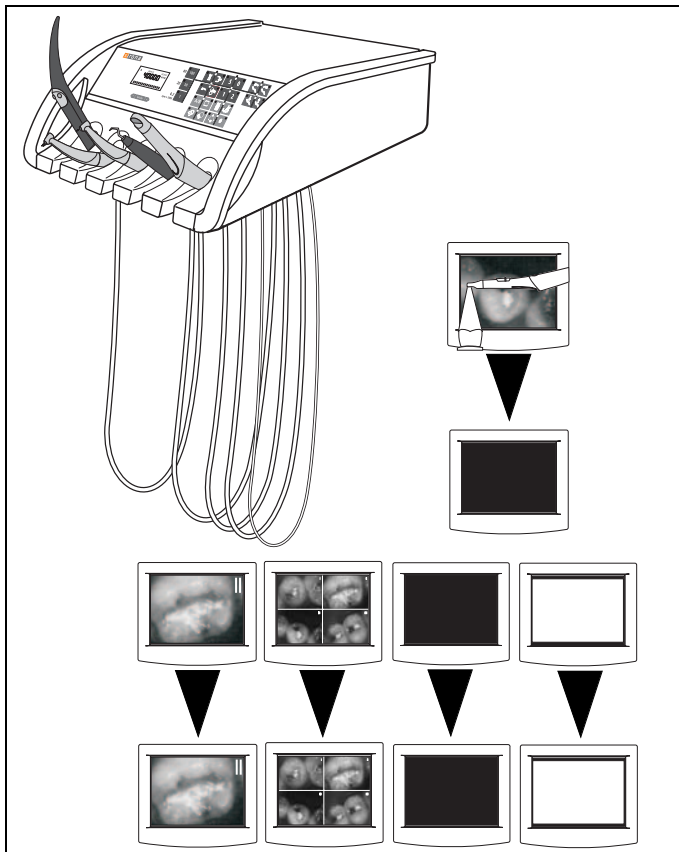


CLEARING THE MEMORY

Electric motor CCW rotation key on the control panel

Only with the camera picked up and activated, manually or by cursor (using the foot switch).

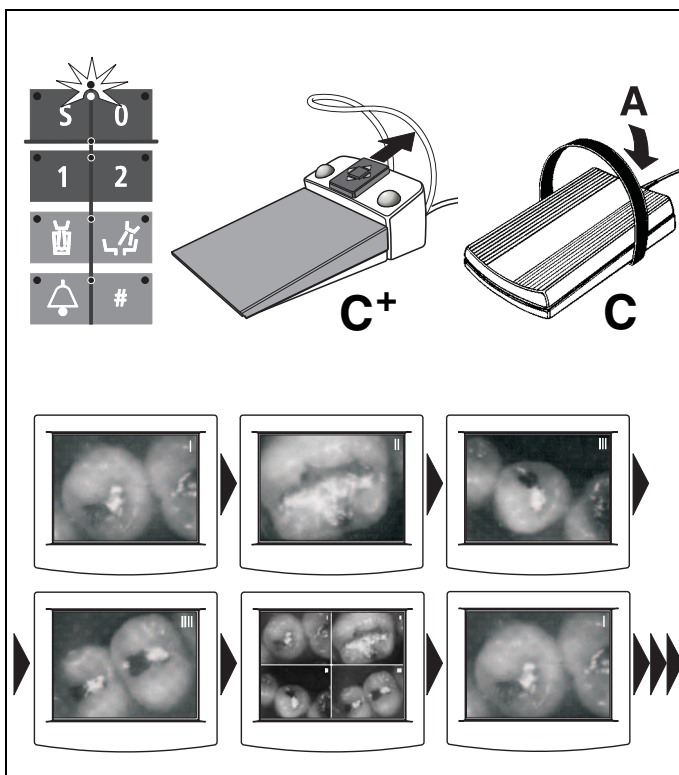
Clears all image memory locations of the camera. The **LIVE IMAGE** mode for image I appears.



Placing back the camera

- If a **LIVE IMAGE** was displayed, a **BLACK SCREEN** appears.

- A **STILL IMAGE** or **QUAD IMAGE**, **BLACK SCREEN** or **WHITE SCREEN** remain displayed.



SWITCHING TO THE NEXT IMAGE WITH THE CURSOR

Special function **only** with cursor:

The cursor is in the **chair programs** key block, level 1.

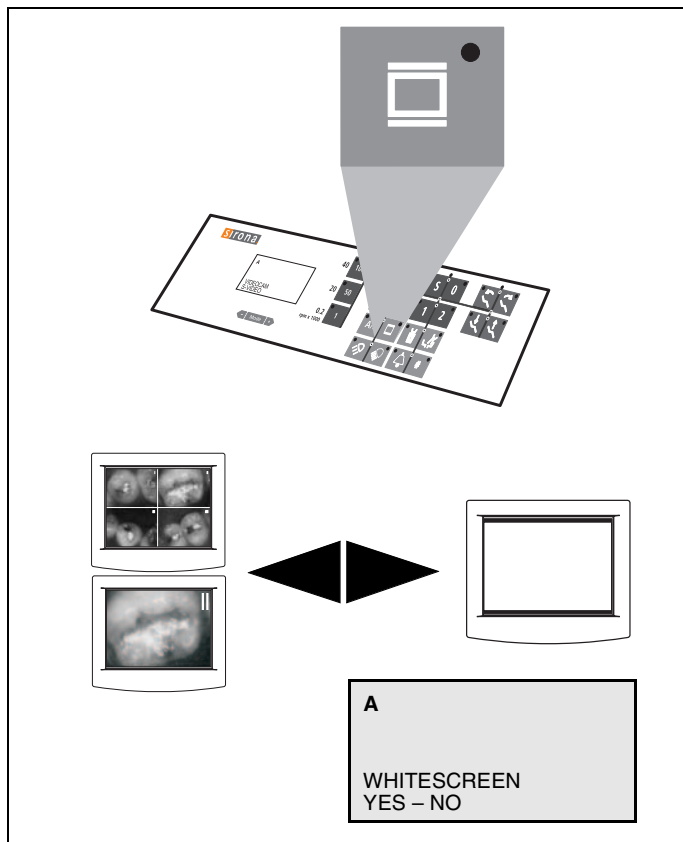
With the C⁺ foot switch:

4-way foot control plate forward.

With the C foot switch:

Actuate the foot switch in direction A – cursor upward.

- Switching through the images:
STILL IMAGE I, STILL IMAGE II, STILL IMAGE III, STILL IMAGE IIII, QUAD IMAGE, STILL IMAGE I, STILL IMAGE II ...



WHITE SCREEN

X-ray image viewer ON / OFF key on the control panel

- Switch X-ray image viewer or **WHITE SCREEN** on the SIVISION monitor ON/OFF.

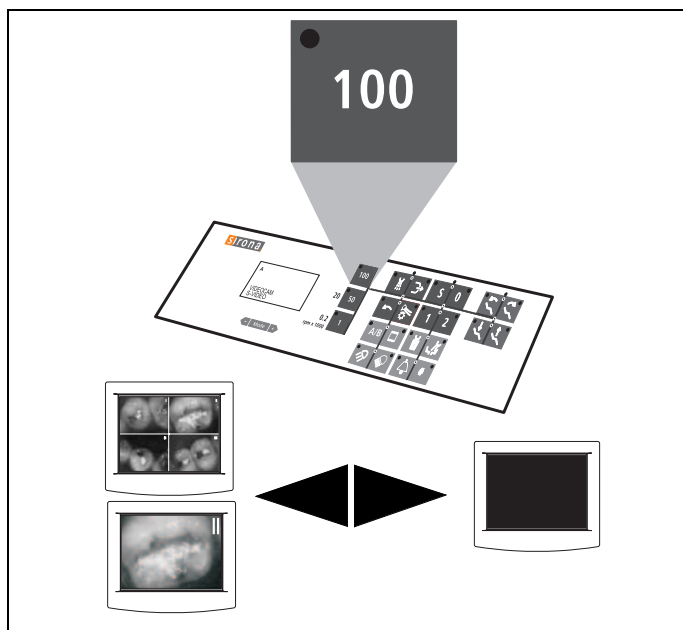
Presetting possible in the **Mode menu (11.19)**:

- Only X-ray image viewer ON/OFF if **NO** flashes
- or
- X-ray image viewer and **WHITE SCREEN** on the SIVISION monitor ON/OFF if **YES** flashes.



NOTICE

WHITESCREEN - NO should be selected if an X-ray image viewer is installed. If no X-ray image viewer is installed, select WHITESCREEN - YES.



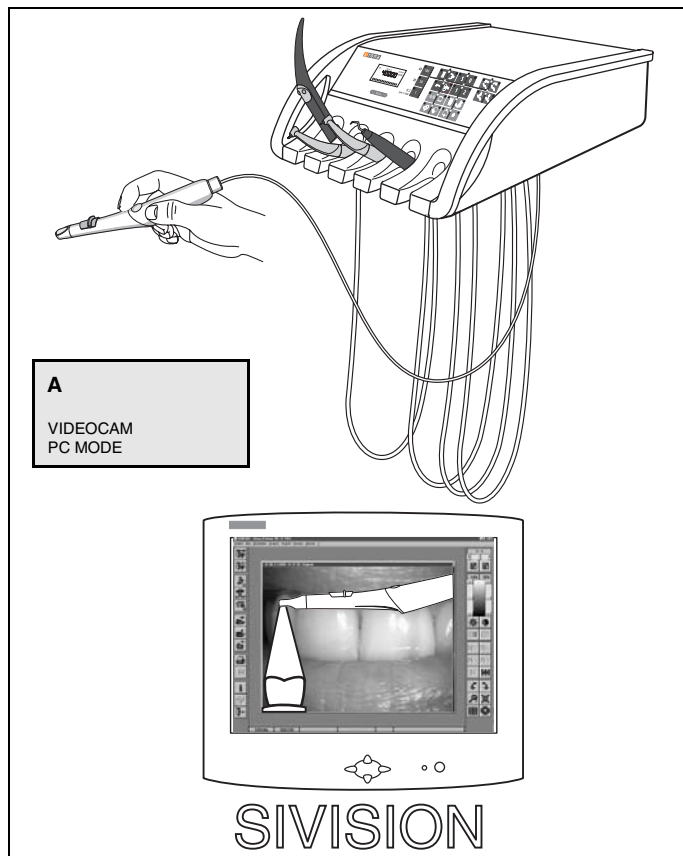
BLACK SCREEN

“100” quick setting key on the control panel

Manually or by cursor (using the foot switch) with instruments in place or camera picked up. Cursor forward if the cursor LED next to the quick setting keys lights up.

- Toggling between any view and a **BLACK SCREEN**.
- The previous view reappears when you press this key again.

14.7 SIROCAM 3 / SIROCAM C integrated in the dentist element (PC)



Operation in PC mode using a PC connection and SIDEXIS/VIDEXIS

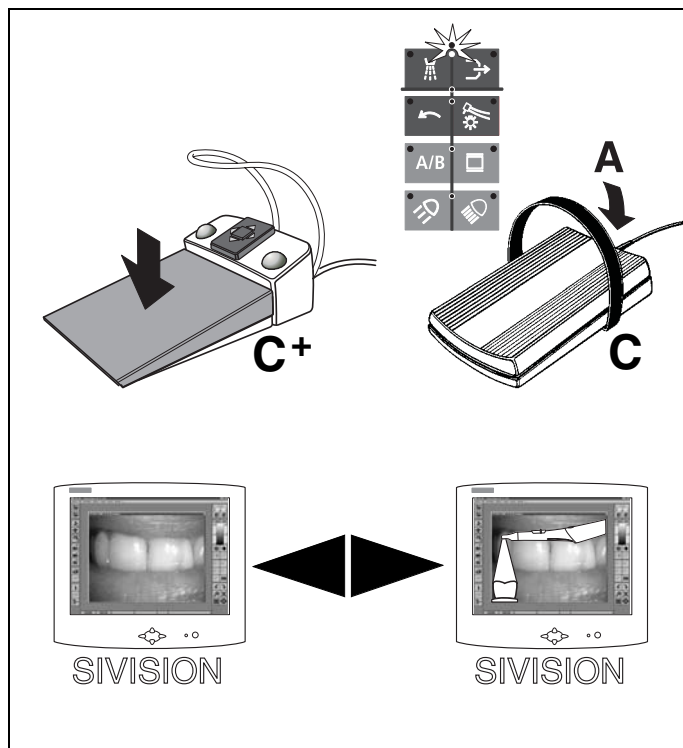
The monitor is controlled by the PC in this case.

The functional scope of the PC can be used in this mode.

If the camera is the active instrument, “**VIDEOCAM**” and the operating mode “**PC MODE**” appear on the display.

Picking up the camera

- The **LIVE IMAGE** window opens.



TOGGLING BETWEEN STILL IMAGE AND LIVE IMAGE

Foot switch C⁺ or C

With camera **picked up** and cursor being in the **instruments** key block.

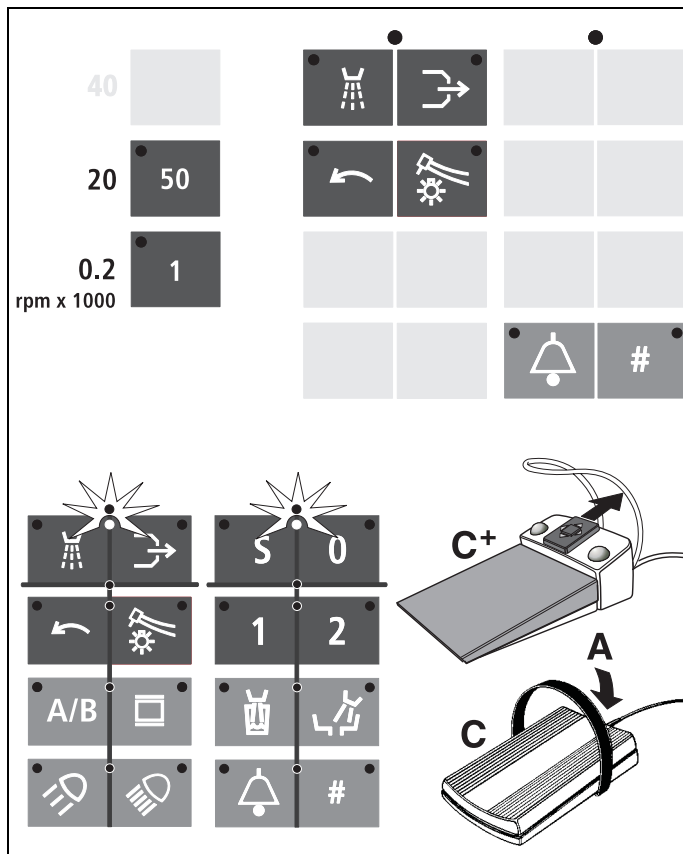
With the C⁺ foot switch:

Step on the foot pedal.

With the C foot switch:

Actuate the foot switch in direction A – cursor upward.

Toggling between a **STILL IMAGE** and a **LIVE IMAGE**.

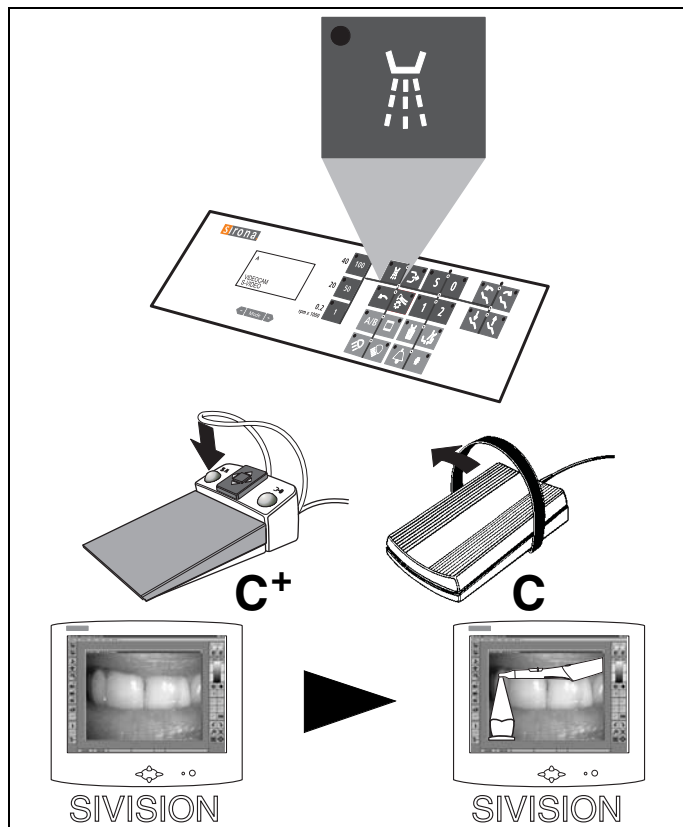


USING THE FUNCTION KEYS

Other functions, e.g. the **SIDEXIS/VIDEXIS** functions **Tile**, **Next Image**, **Full Frame**, **Zoom In**, **Zoom Out**, **Rotate Image** as well as other PC controls can be assigned as desired to the following function keys on the dentist element control panel:

- Spray
- Chip blower
- Electric motor CCW rotation
- Instrument light
- Quick setting keys 50 and 1
- **Cursor forward, if the cursor is between the spray and chip blower keys** (with C foot switch: only if the camera is in its holder)
- **Cursor forward, if the cursor is between the S and 0 chair program keys**
- (With C⁺ foot switch – cursor forward. With C foot switch – Actuate foot switch in direction A – cursor upward)
- with instruments in place or camera picked up.
- **Call key**
- and **# key** (if not already used for relay functions)

The factory settings as well as the configuration procedure are described in the "Installation manual for PC software", **REF 59 11 719 Operator's Manual**.



SAVING AN IMAGE

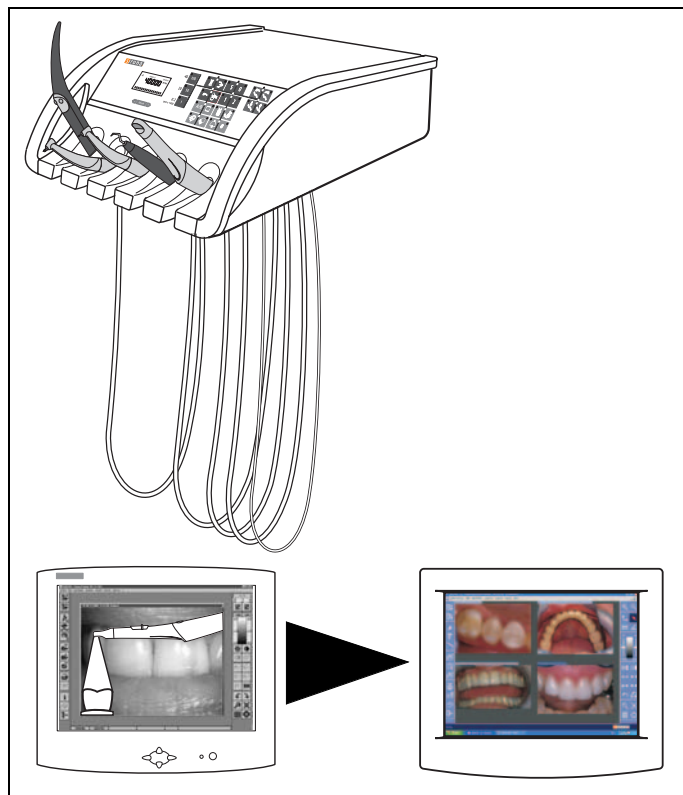
Key example: Spray ON / OFF key on the control panel

For this purpose, a patient must be registered in SIDEXIS/VIDEXIS.

Manually or by cursor (using the foot switch) with instruments in place or camera picked up.

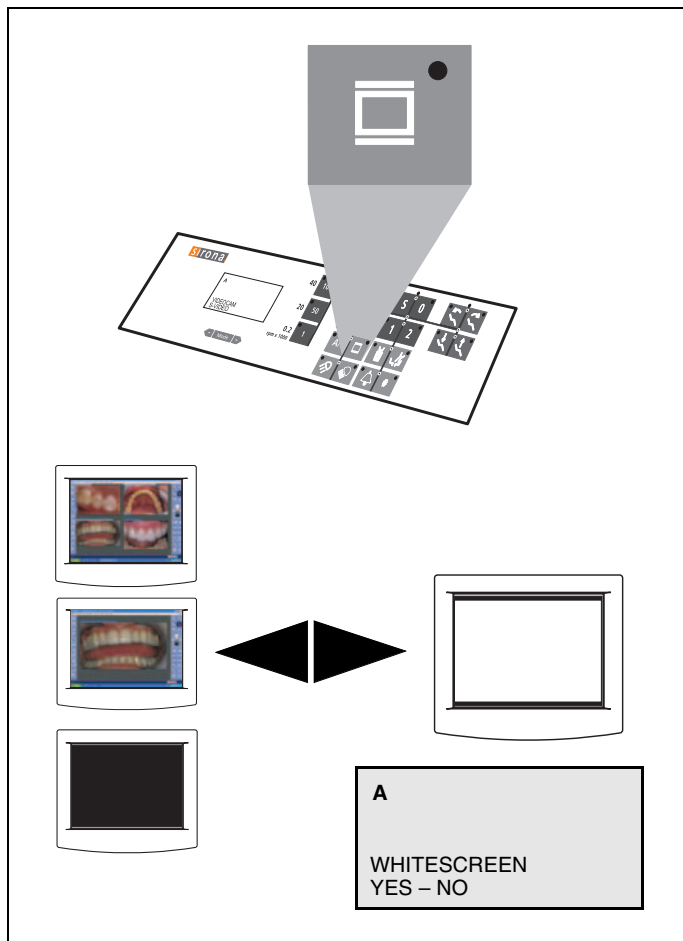
With C⁺ foot switch also left foot switch button (only with camera picked up).

- Save the **STILL IMAGE**.
With the camera picked up, a **LIVE IMAGE** appears.



Placing back the camera

- The **LIVE IMAGE** window closes.
The displayed **STILL IMAGE** or any saved images remain open.



WHITE SCREEN

X-ray image viewer ON / OFF key on the control panel

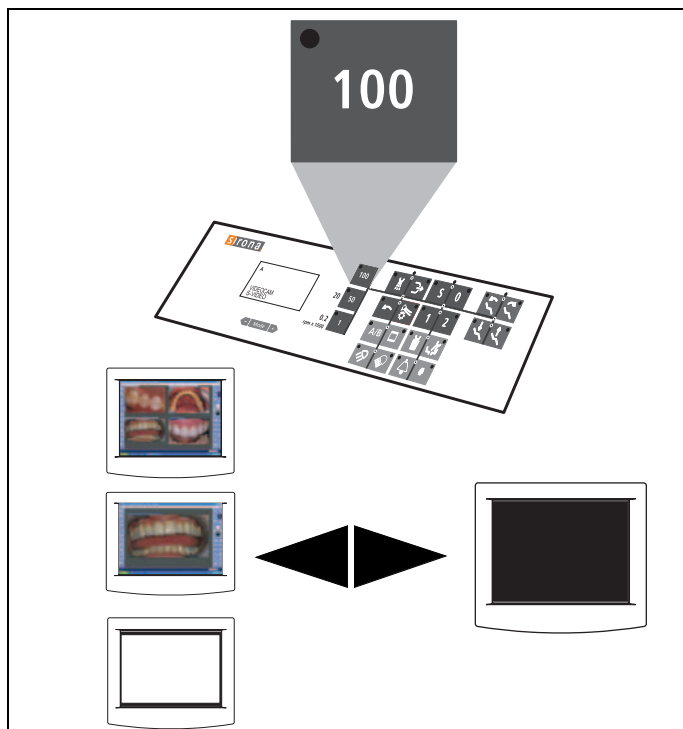
- Switch X-ray image viewer or **WHITE SCREEN** on the SIVISION monitor ON/OFF.

Presetting possible in the Mode menu (11.19):

- only X-ray image viewer ON/OFF if **NO** flashes
- or
- X-ray image viewer and **WHITE SCREEN** on the SIVISION monitor ON/OFF if **YES** flashes.

i NOTICE

WHITESCREEN - NO should be selected if an X-ray image viewer is installed. If no X-ray image viewer is installed, select WHITESCREEN - YES.



BLACK SCREEN

“100” quick setting key on the control panel

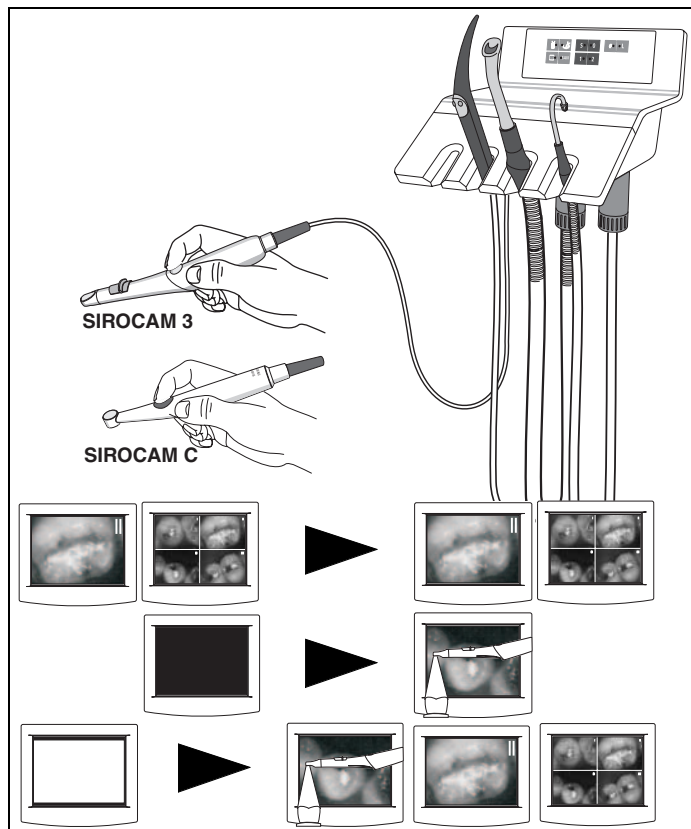
Manually or by cursor (using the foot switch) with instruments in place or camera picked up. Cursor forward if the cursor LED next to the quick setting keys lights up.

- Toggling between any view and a **BLACK SCREEN**.
- The previous view reappears when you press this key again.

i NOTICE

WHITE SCREEN/BLACK SCREEN is only possible when “AUTO” is set on the monitor (see SIVISION 3 “Operating Instructions for the Flat-Screen Monitor”)

14.8 SIROCAM 3 / SIROCAM C integrated in the assistant element (video)



Operation in video mode

If a PC is connected, PC mode must be switched OFF!

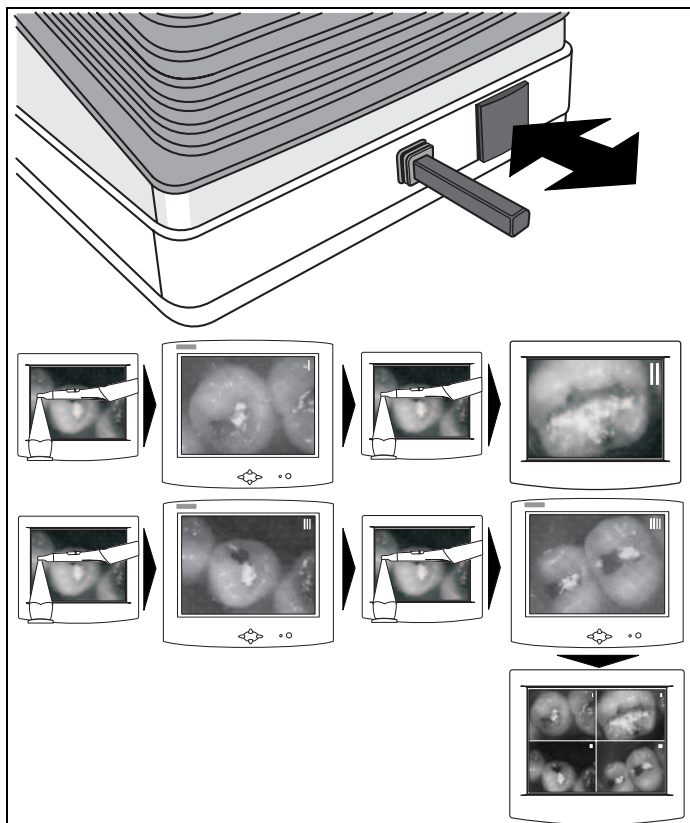
See section 14.10 „Switching between VIDEO mode and PC mode“

In this version the **SIROCAM 3 / SIROCAM C** intraoral camera is installed in **holder 1 or 2** of the assistant element.

It is operated exclusively with a separate foot button in the chair base and the camera button.

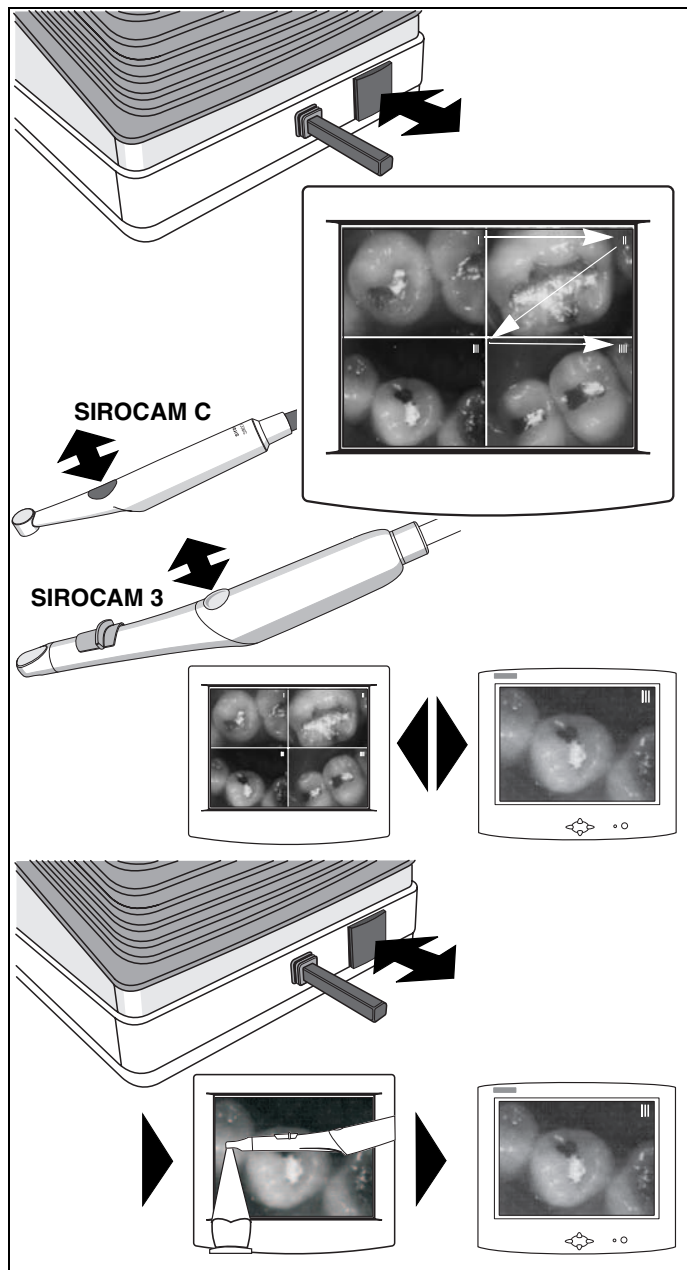
Picking up the camera

- If a **STILL IMAGE** or **QUAD IMAGE** was displayed while the camera was in place, this view is retained.
- If a **BLACK SCREEN** was displayed while the camera was in place, a **LIVE IMAGE** appears.
- If a **WHITE SCREEN** was displayed while the camera was in place, the view preceding the **WHITE SCREEN**, i.e. a **LIVE, STILL** or **QUAD IMAGE**, reappears.



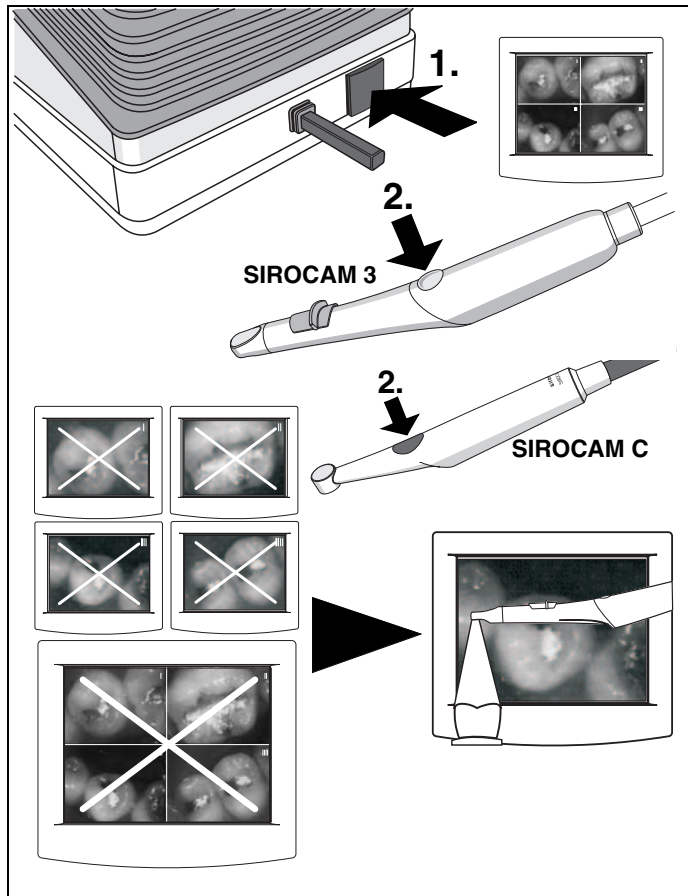
GENERATING STILL IMAGES

- Briefly touch the foot button when the camera has been picked up. The image number **I** appears in the upper right corner of the image.
- When you touch the foot button again briefly, a **LIVE IMAGE** reappears.
- To freeze the next **STILL IMAGE** briefly touch the foot button again. Image number **II** appears in the upper right corner of the image.
- Use the same method to generate **STILL IMAGE III** and **IIII**.
- When you briefly touch the foot button after **STILL IMAGE IIII** has appeared, the **QUAD IMAGE** (the 4 single images in a tiled view) is displayed on the screen.



SELECTING / OVERWRITING IMAGES

- When a **QUAD IMAGE** is displayed with the camera picked up, you can select a specific image from the **QUAD IMAGE** by briefly touching the foot button. The image number of the selected image appears in the upper right corner of the image.
- When you briefly press the camera button, the selected image is displayed on the screen as a single **STILL IMAGE**. When you press the button again, the view changes to the **QUAD IMAGE**, etc.
- When you briefly touch the foot button while the selected single **STILL IMAGE** is displayed on the screen, a **LIVE IMAGE** appears. It can be frozen by touching the foot button again and overwrites the selected single **STILL IMAGE** at this memory location.

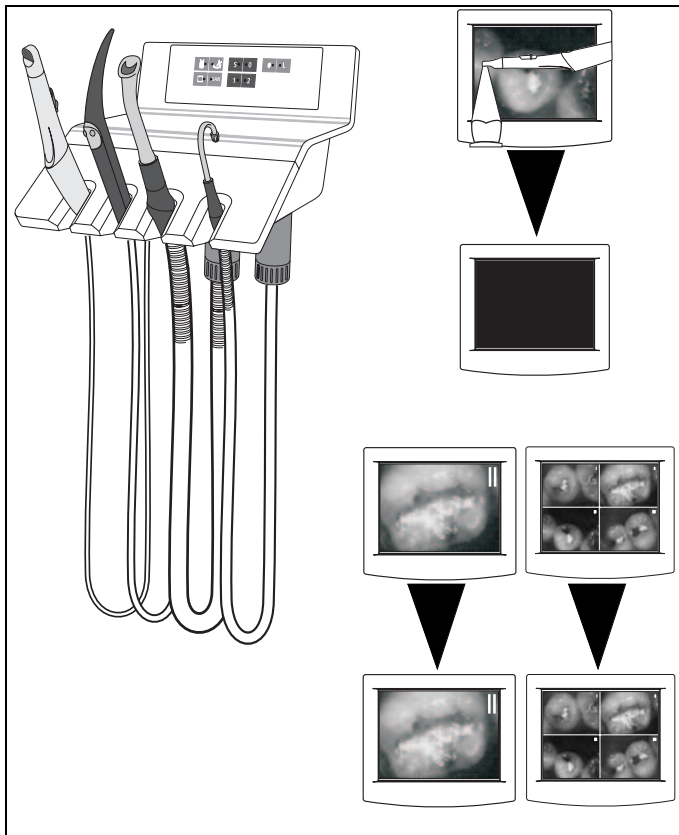


DELETING ALL IMAGES (from the camera memory)

With a **QUAD IMAGE** displayed and the camera picked up.

- **Press and hold down** the foot button and **then** press the camera button.

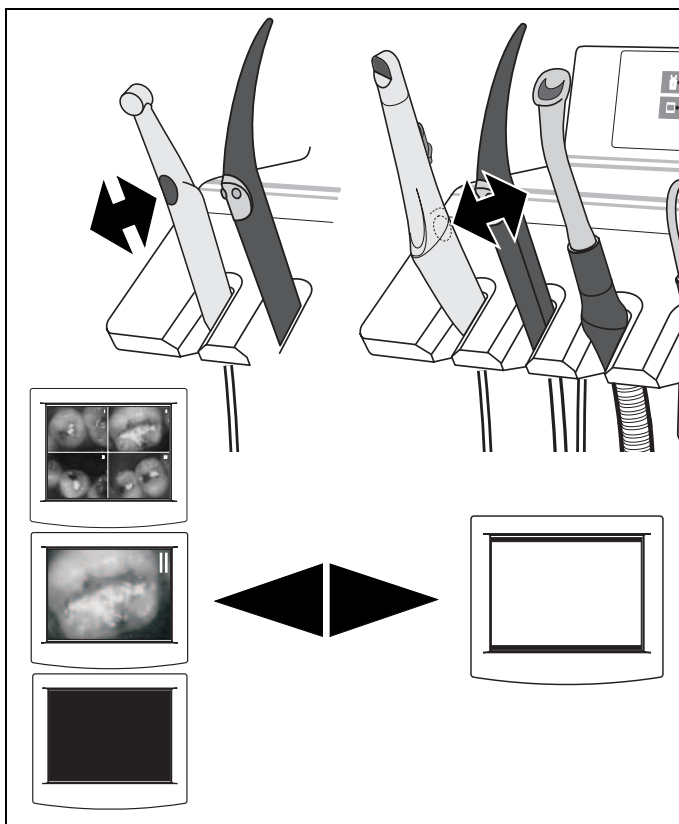
- A **LIVE IMAGE** appears.



Placing back the camera

- If a **LIVE IMAGE** was displayed, a **BLACK SCREEN** appears.

- A **STILL IMAGE** or a **QUAD IMAGE** remains displayed.

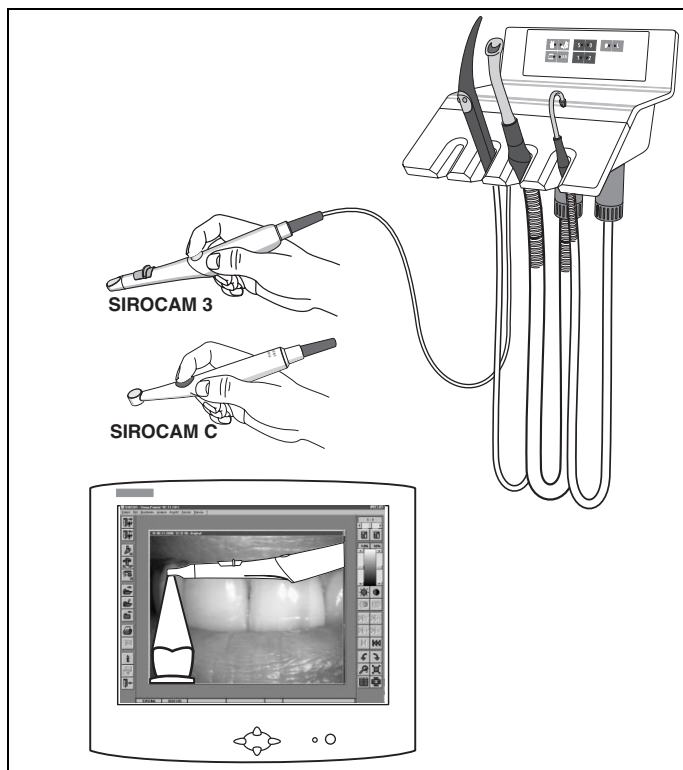


WHITE SCREEN

To activate a **WHITE SCREEN**, the camera must be placed in its holder.

When you briefly press the camera button now, a **WHITE SCREEN** is displayed on the monitor. When you press the button again, the view changes to a **QUAD IMAGE**, **STILL IMAGE** or **BLACK SCREEN**, etc.

14.9 SIROCAM 3 / SIROCAM C integrated in the assistant element (PC)



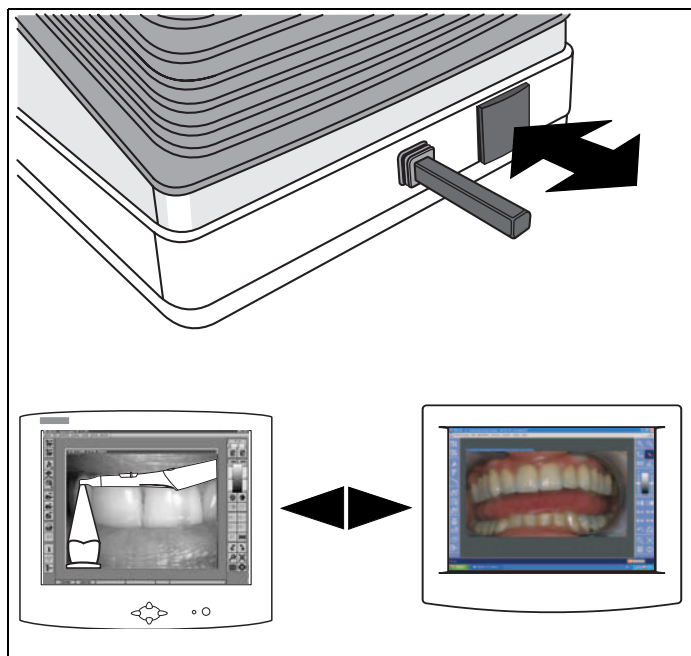
Operation in PC mode using a PC connection and SIDEXIS/VIDEXIS

To use the PC mode, SIDEXIS/VIDEXIS must be open.

The PC mode must be activated on the PC! See section 14.10 “Switching between VIDEO mode and PC mode”.

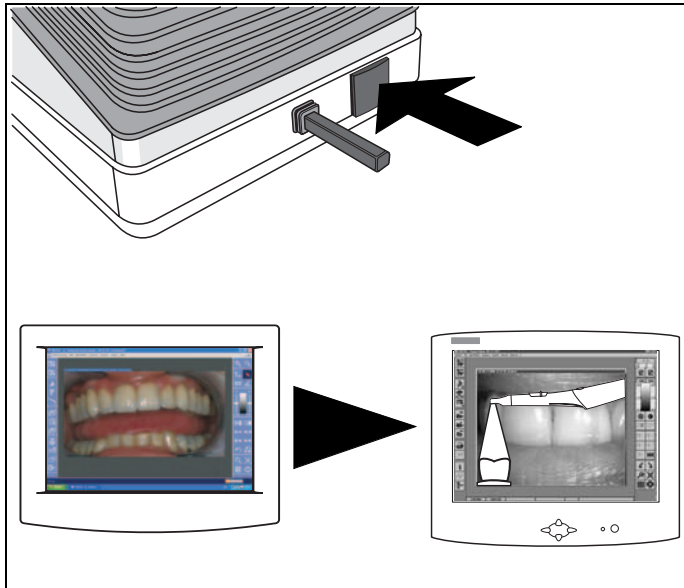
Picking up the camera

- A **LIVE IMAGE** opens.



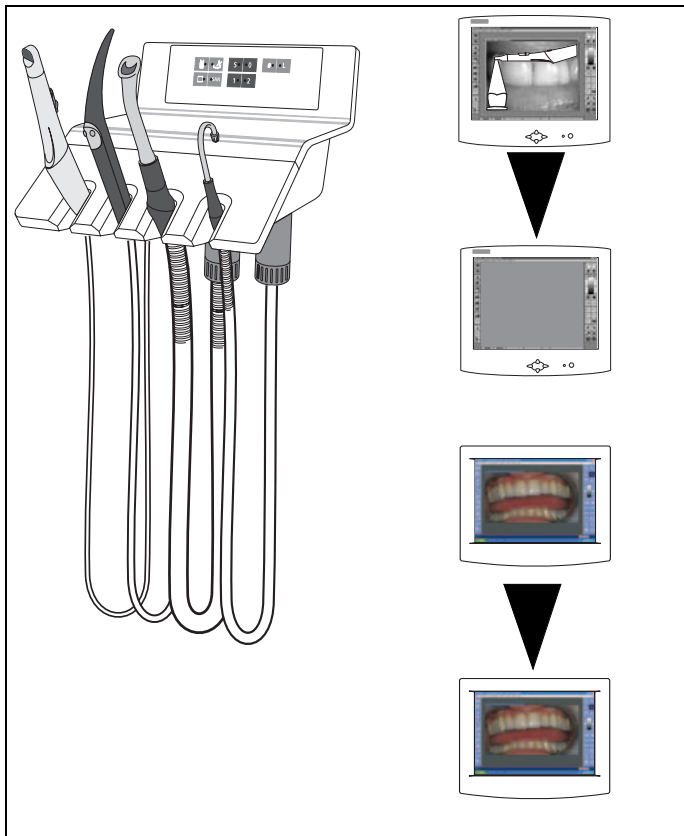
TOGGLING BETWEEN LIVE IMAGE AND STILL IMAGE

- Briefly touch the foot button when the camera has been picked up.
- When you briefly touch the foot button again (< 1 s), a **LIVE IMAGE** reappears.



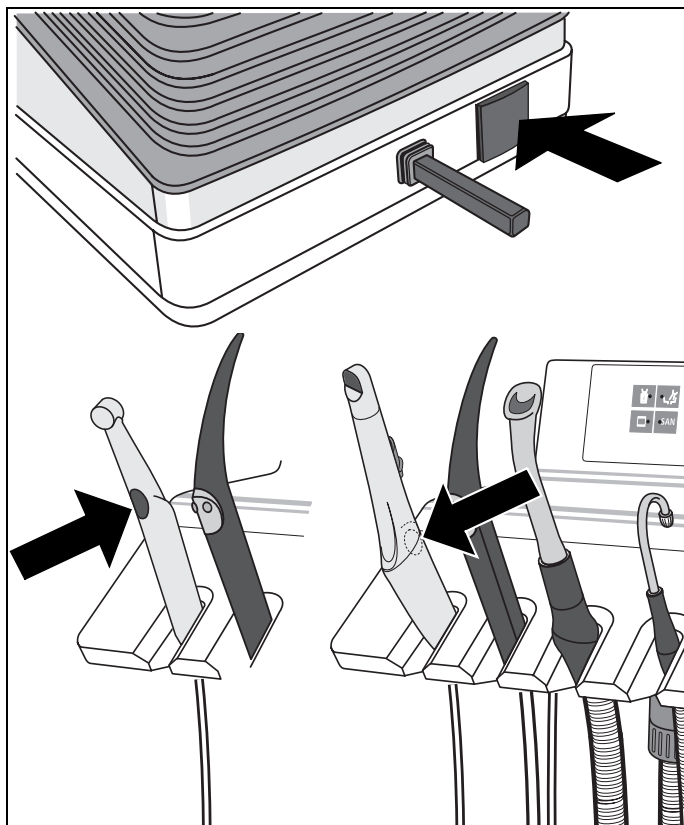
SAVING A STILL IMAGE IN SIDEXIS/VIDEXIS

- Save the displayed **STILL IMAGE** by pressing the foot button **for some time** (> 1 s) when the camera has been picked up.
- A **LIVE IMAGE** opens again automatically.



Placing back the camera

- The **LIVE IMAGE** is closed.
- A **STILL IMAGE** remains displayed.



USING THE CAMERA BUTTON AND THE FOOT BUTTON AS FUNCTION KEYS

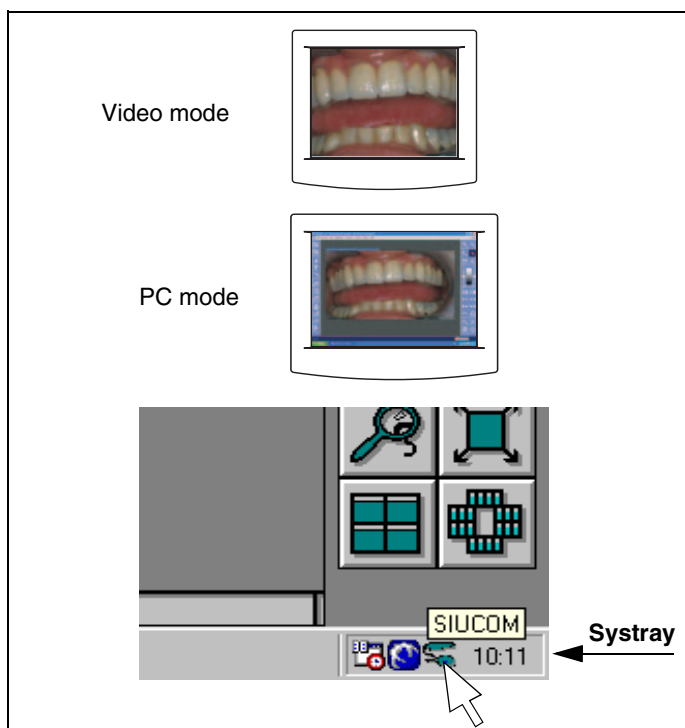
The camera must be placed in its holder.

Further functions, such as **WHITE SCREEN**, **BLACK SCREEN** or the **SIDEXIS/VIDEXIS** functions

Tile, **Next Image**, **Full Frame**, **Zoom In**, **Zoom Out**, **Rotate Image** as well as other PC controls can be assigned as desired to the **camera button** and the **foot button**.

The factory settings as well as the configuration procedure are described in the “**Installation manual for PC software**“, REF 59 11 719 Operator's Manual.

14.10 Switching between VIDEO mode and PC mode



Only with **SIROCAM 3 / SIROCAM C** in the assistant element and a connected PC

The system can be used in two operating modes:

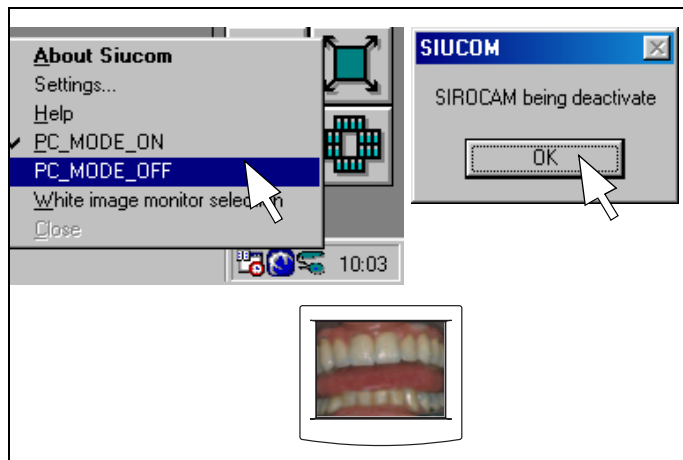
- **Video mode**
The video image from the camera is directly displayed on the **SIVISION** monitor.
- **PC mode**
The video image is processed on the PC. The **SIVISION** monitor shows the PC user interface.

To toggle between the two modes, the popup menu of the **Siucum** program on the PC is used.

The **SIROCAM 3 / SIROCAM C** camera is always in **video mode** after the treatment center is switched on or the camera is connected to the assistant element.

When the **Siucum** program is running (executes simultaneously with **SIDEXIS/VIDEXIS**) and the entry “**PC_MODE_ON**” has been activated (factory setting), the **SIROCAM 3 / SIROCAM C** camera automatically switches to the **PC mode**.

The **SIROCAM 3 / SIROCAM C** camera remains in **PC mode** until one of the following occurs: **video mode** is activated on the PC, the camera is disconnected from the treatment center or the treatment center is switched off.



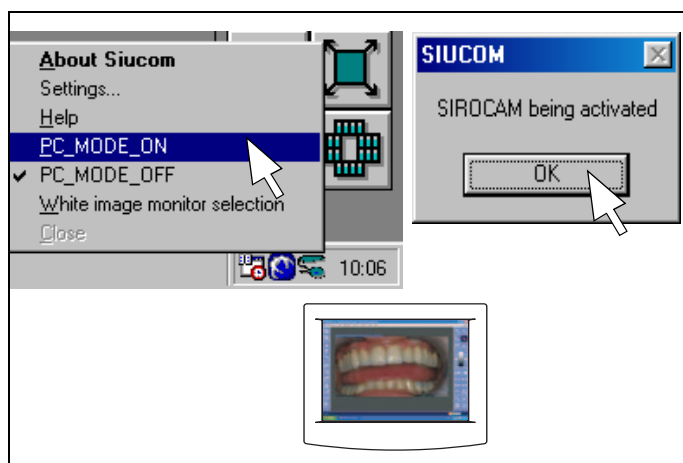
Switching to video mode

Right-click the Siucom icon in the Systray (usually in the lower right corner of the screen).

In the **Siucom** popup menu which then opens, click **“PC_MODE_OFF”**. Confirm by clicking **OK** in the **„SIROCAM being deactivate“** message box.

These settings will remain saved even after you switch off the PC.

The **SIVISION** monitor must also be set to **video mode (S Video Port)**; see monitor operating instructions).



Switching to PC mode

Right-click the Siucom icon in the Systray (usually in the lower right corner of the screen).

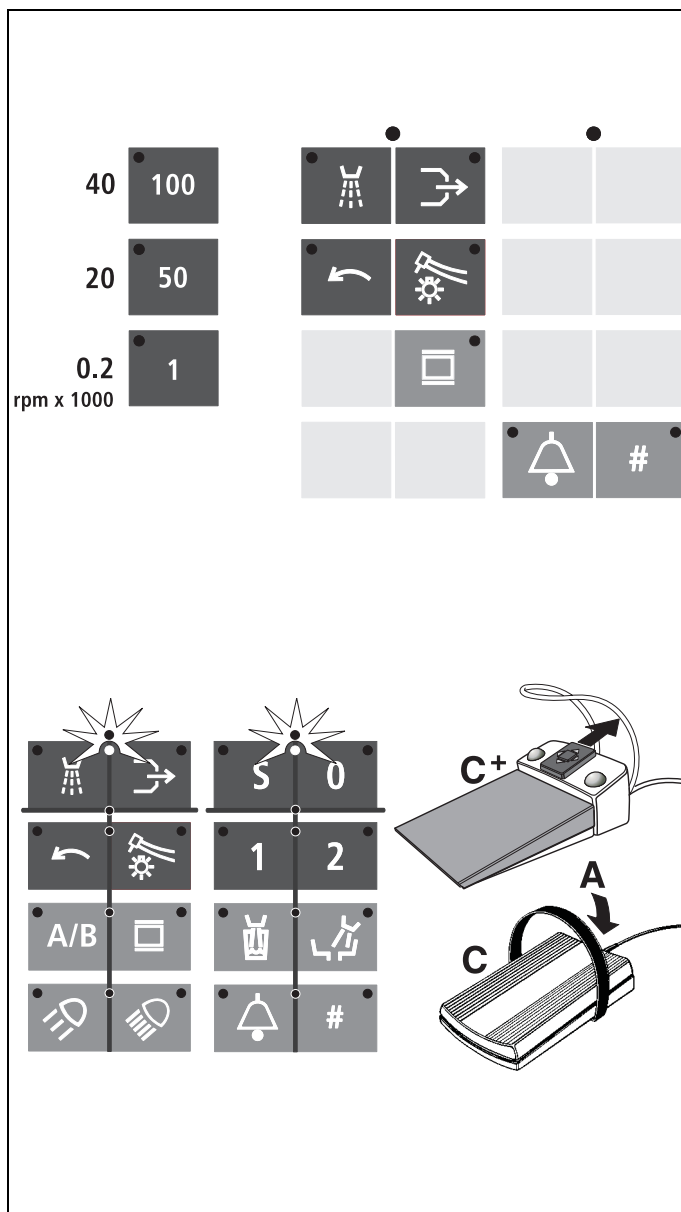
In the **Siucom** popup menu which then opens, click **“PC_MODE_ON”**. Confirm by clicking **OK** in the **„SIROCAM being activated“** message box.

These settings will remain saved even after you switch off the PC.

The **SIVISION** monitor must also be set to **PC mode (Analog Port)**; see monitor operating instructions).

After switching the treatment center or the PC off and on again, it may be necessary to reset the monitor to **PC mode**.

14.11 SIVISION3 – second monitor function without SIROCAM3/SIROCAM C



The monitor integrated in the treatment center serves as primary or secondary monitor for the externally connected PC.

The following function keys of the control panels as well as foot switch functions are available for controlling PC functions:

- **Spray**
- **Chip blower**
- **Electric motor CCW rotation**
- **Instrument light**
- **Call key** (if not already used for relay functions)
- **# key** (if not already used for relay functions)
- **All quick setting keys: 100, 50 and 1**
- **Cursor forward, if the cursor is between the spray and chip blower keys**
- **Cursor forward, if the cursor is between the S and 0 chair program keys**
(With C⁺ foot switch – cursor forward. With C foot switch – Actuate foot switch in direction A – cursor upward.)

All instruments must be in place when you do so!

as well as the function keys:

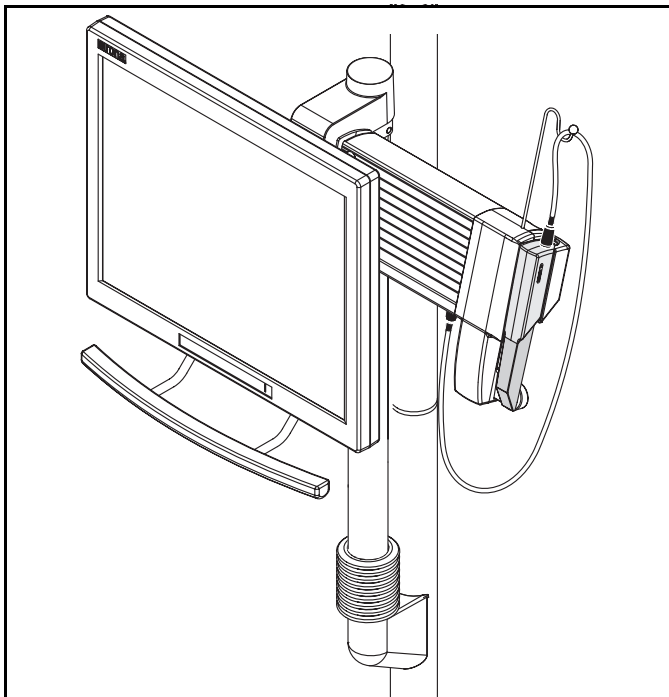
- **X-ray image viewer**

They can be used to control e.g. **SIDEXIS/VIDEXIS** functions such as **Tile, Next Image, Full Frame, Zoom In, Zoom Out, Rotate Image**, but also other PC applications.

The factory settings as well as the configuration procedure are described in the “**Installation manual for PC software**“, REF 59 11 719 Operator's Manual.

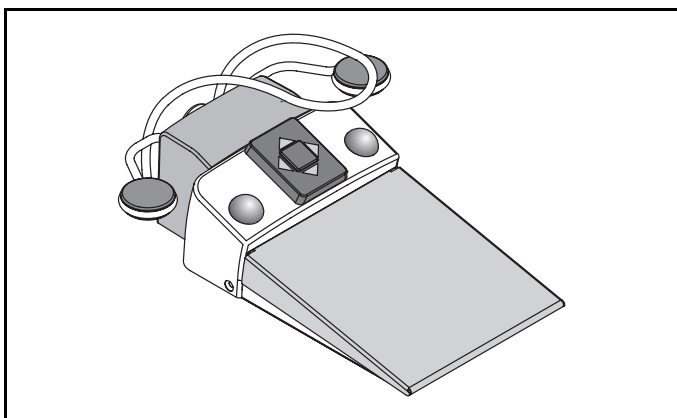
15 CEREC Chairline (Option)

15.1 CEREC Chairline



CEREC Chairline is used for 3-dimensional acquisition of the preparation, the occlusion and the antagonist.

For details on its function and operation, please refer to the CEREC Chairline Operating Instructions (REF 60 46 028) and Operator Manual (REF 59 56 458).



CEREC Chairline foot switch

A Bluetooth radio module for transmitting the CEREC foot switch signal to the CEREC PC is integrated in the CEREC Chairline foot switch.

For details refer to Chapter 5.

Model designation of radio module

Blue RS+I (Stollmann Co.)

Frequency

2.4GHz - 2.4835GHz (ISM band)

Bluetooth class

2

Range

approx. 10m

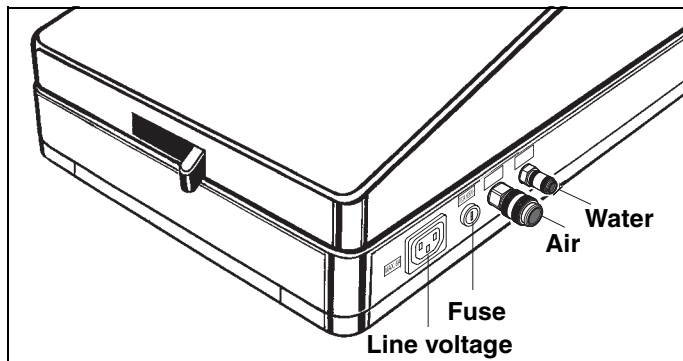
Approvals

CE conformity according to R&TTE Directive (1999/5/EC)

Part 15 of the FCC Rules,
RSS-210 of Industry Canada

16 Extra equipment and accessories

16.1 Media block on the patient chair



Extra equipment

Additional equipment which is approved for dental use (e.g. by EMS) may be connected to a media block on the base of the chair (observe manufacturers' specifications for the additional equipment).

The media block is equipped with quick couplings for air and water and an outlet with a separate fuse (6.3A) for non-heating equipment.

For treatment centers with a disinfection system, the DVGW approval (EN1717/ DIN1988) remains valid also with an integrated media block. In this case, the additional equipment connected to the treatment center also complies with the requirements of EN1717 / DIN1988.

Technical data and requirements

- Connected equipment is treated with disinfected water if a disinfection system is installed. During regular operation, this is 0.1‰ to 0.2‰ hydrogen peroxide, during sanitation 1.4‰.

CAUTION

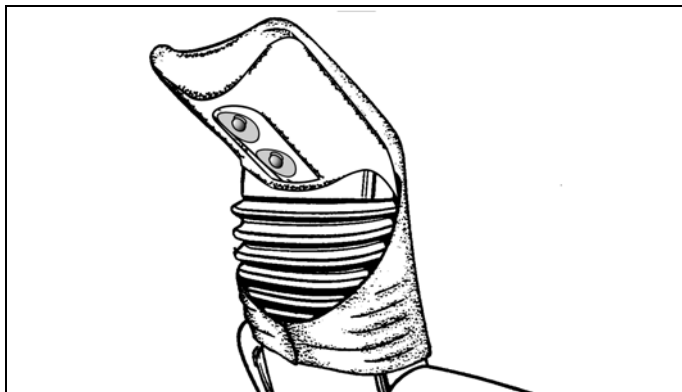
Before connecting any additional equipment, check to make sure that it is suitable for hydrogen peroxide. If the connected equipment is not suitable for the higher sanitation concentration, Sirona recommends to disconnect it from the treatment center during sanitation and to perform a separate sanitation in accordance with the manufacturer's specifications.

Sirona does not assume any liability for possible damage to the connected equipment!

Specification of pressure and flow conditions

	Pressure	Flow
Water	2.2 ± 0.2 bar	max. 300 ml/min
Air	4.4 ± 0.5 bar	max. 70 NI /min

16.2 Hygienic headrest protection (for motorized headrest)



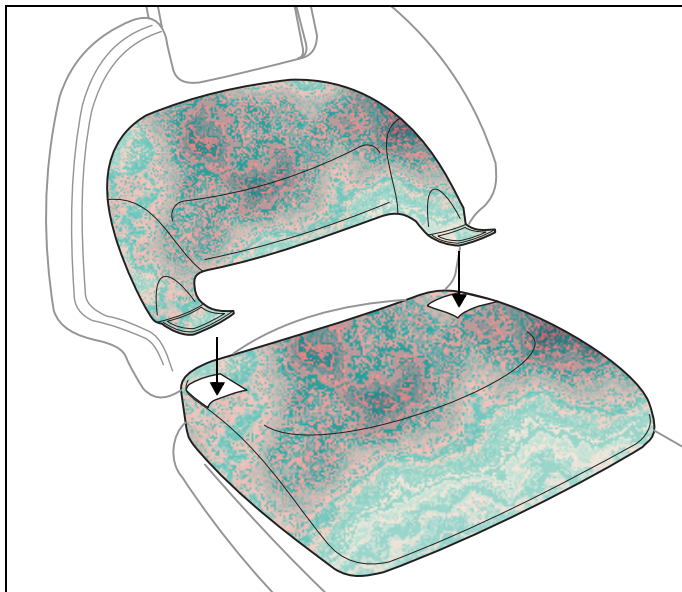
Accessory

Two different hygienic covers are available for the headrest of the patient chair:

- Washable textile headrest cover with Velcro closure and neck pad
REF: 59 05 588 (5 pcs.)
- Disposable headrest cover with a self-adhesive fastening
REF: 58 72 820 (5 pcs.)

Slip the headrest cover over the headrest and fasten it as illustrated.

16.3 Seat cushion C



Extra equipment

The back part is fastened with a Velcro closure and can be removed.

Covering material: 100% cotton.

The covers can be removed after opening the Velcro strap on the back.

The covers are Teflon-coated.

Instructions for care:

The Teflon coating is dirt-repellent and slightly water-repellent; remove any dirt with lukewarm soap suds (fine washing powder).

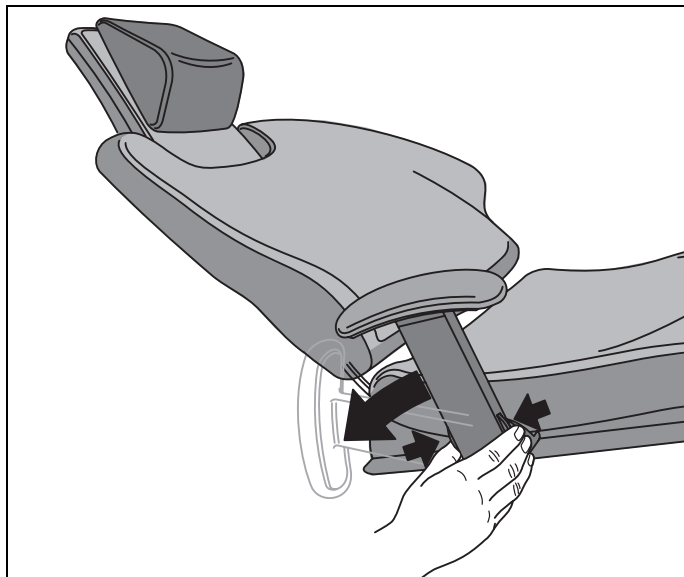


CAUTION

Removing stains with stain remover is not suitable, since it damages the Teflon coating!

This comfortable seat is simply placed on top of the upholstery of the patient chair. Thus it is possible to position the heads even of small patients on the headrest.

16.4 Folding armrest

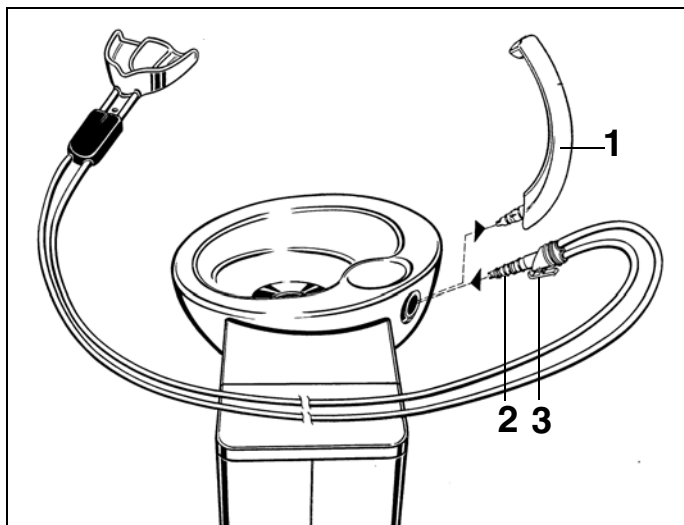


Extra equipment

If a folding armrest is attached to the patient chair, it can be folded up or down by pressing the two buttons on the lower end of the armrest at the same time.

When it is folded up the armrest locks automatically into its position for use.

16.5 Hydrocolloid coolant supply



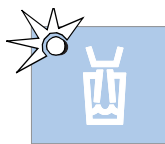
Extra equipment

If you want to work with a hydrocolloid coolant supply, you can obtain an adapter, Order No: 33 15 814, free of charge with the enclosed voucher.

Please state your address and the serial number of the chair (see "Installation Report / Warranty Passport").

To connect the adapter to the cuspidor, proceed as follows:

Pull out the tumbler outlet (1), turning it slightly at the same time, and plug the adapter (2) into the self-closing valve until it snaps into place. Press the locking clip (3) before pulling out the connecting piece.



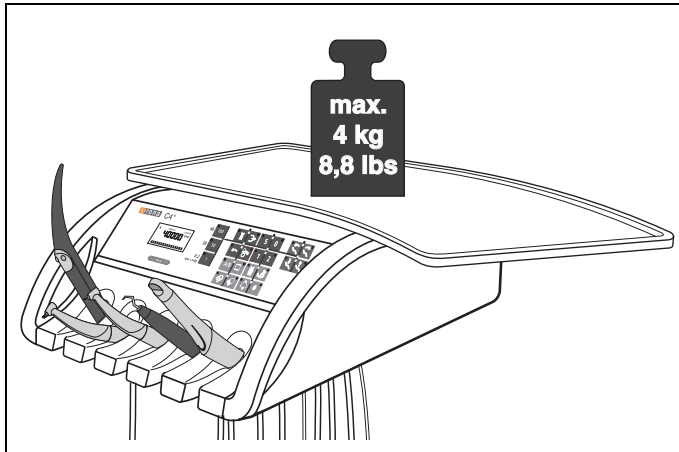
For water cooling, press the tumbler filling key. The tumbler filling time must be set to unlimited HYDROCOLLOID operation for this purpose (see section 10.2 "Tumbler filling" on page 51).

CAUTION

During the hydrocolloid procedure the disinfection of the tumbler water and the instruments is switched off.

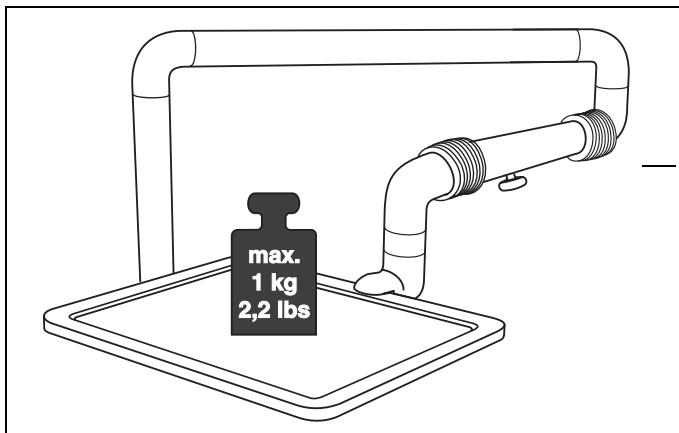
In order to rinse residual non-disinfected water out of the lines, please push the button for TUMBLER FILLING one time before refilling the tumbler.

16.6 Tray (extra equipment)



i NOTICE

Maximum load: 4 kg

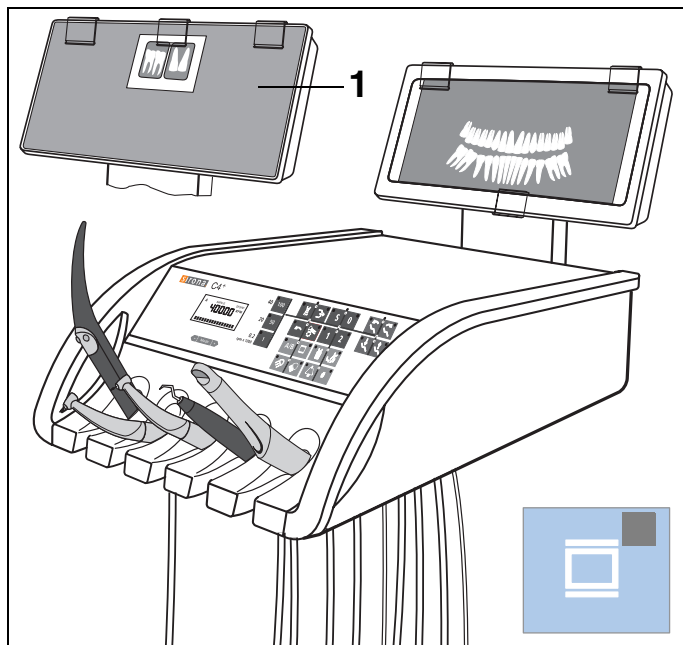


i NOTICE

Maximum load: 1 kg

For further details, please refer to the operating instructions for the tray, REF 33 33 718.

16.7 X-ray image viewer on the dentist element

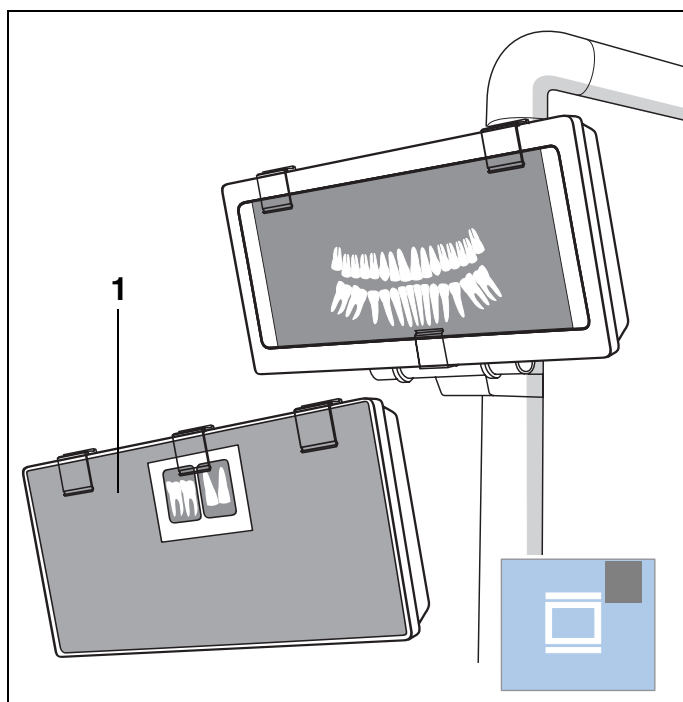


Extra equipment

This X-ray image viewer is switched ON or OFF using the illustrated key on the dentist or assistant element control panel.

To view intraoral dental images the anti-glare film (1) must first be attached with two clips. Then fasten the intraoral dental images with the third clip over the cut-out.

16.8 X-ray image viewer on the lamp support tube

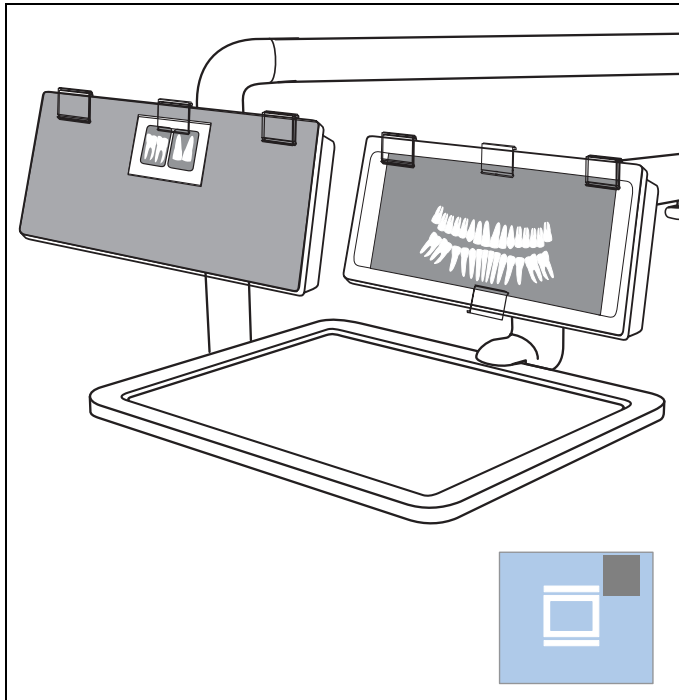


Extra equipment

This X-ray image viewer is switched ON or OFF using the illustrated key on the dentist or assistant element control panel.

To view intraoral dental images the anti-glare film (1) must first be attached with two clips. Then fasten the intraoral dental images with the third clip over the cut-out.

16.9 X-ray image viewer on the tray



Extra equipment

This X-ray image viewer is switched ON or OFF using the illustrated key on the dentist or assistant element control panel.

To view intraoral dental images the anti-glare film (1) must first be attached with two clips. Then fasten the intraoral dental images with the third clip over the cut-out.

17 Maintenance

Despite the outstanding quality of your treatment center, it is necessary to perform inspections and preventive maintenance as well as safety tests at predetermined intervals in order to ensure its operational safety.

These events are documented in the Maintenance Manual.

Care and cleaning is done by the practice team.

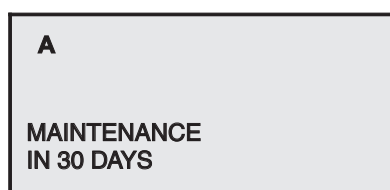
For details please refer to the following sections.

17.1 Care and cleaning by the practice team

The practice team is responsible for regular cleaning and care of the treatment center, with the aim of minimizing the risk of contamination for patients and users.

The work to be performed is specified in the document **“Care and Cleaning by the Practice Team”**.

17.2 Inspection and maintenance



In order to guarantee the operational safety and reliability of your treatment center and to avoid damage due to natural wear, **yearly** inspection and maintenance must be performed on your treatment center. This is done by an authorized service engineer from your dental depot.

As soon as the next maintenance date is less than 30 days away, the maintenance prompt automatically appears on the display each time the unit is switched on.

You should then contact your local dental depot immediately for a maintenance appointment.

After this date has expired, the following message is displayed:

MAINTENANCE REQUIRED

The steps to be performed as well as the parts which must be replaced are specified in the document **“Maintenance Certificate”**.

An overview of the inspection and maintenance work performed is additionally recorded by the service engineer in the **“Installation Report / Warranty Passport”**. This document is part of the **“Maintenance Manual”**.

17.3 Safety checks

Medical equipment is designed in such a way that the first occurrence of a fault does not create a hazard to the safety of patients, users or other persons. Hence it is important to detect such faults before a second fault occurs, which might then lead to safety hazards.

For that reason it is essential to perform safety tests **every 2 years** which aim particularly at detecting electrical faults (e.g. isolation defects). This is done by an authorized service engineer from your dental depot, most practically together with the work to be performed according to section 17.2.

The check includes a visual inspection as well as measurements of the protective ground wire connections and the equivalent leakage currents.

The inspections and measurements to be performed are specified in the “**Maintenance Manual**”. The measured values must be documented there by the service engineer.

Safety tests must also be performed and documented during **initial startup**, after extensions/upgrades (**conversion**) of your treatment center and after **repair work** which might affect the electrical safety of the system.



NOTICE

The treatment center must not be operated if it has failed to pass the safety tests!

17.4 Maintenance Manual

Keep this document near your treatment center.

Any inspection and maintenance work as well as all safety tests are documented by the service engineer in the Maintenance Manual.

We recommend that the user always keep the documentation in the chapter “**Reporting of incidents to authorities / manufacturers**” up-to-date, regardless of any legal requirements.

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

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