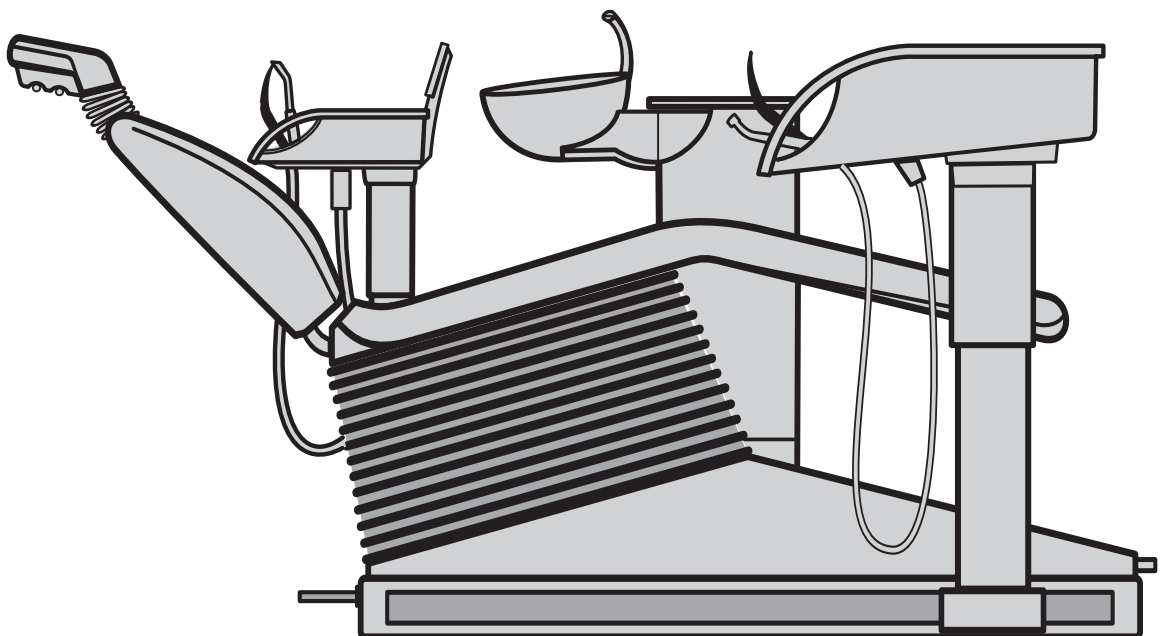


M1⁺

Operating Instructions

English



General information

Dear customer,

Thank you for purchasing your M1⁺ dental treatment center from Sirona.

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 the maximum possible equipment.

For care of your treatment center, please observe the instructions "**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 and the corresponding instructions for care have been attached to all dental instruments, the SIROLUX FANTASTIC, the SIROCAM 3, the tray and the 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 M1⁺ Team



Contents

1	Warning and safety information	7
2	Technical description	11
3	Operating and Functional Elements	12
	3.1 System overview M1 ⁺	12
	3.2 Control panel on the dentist element	13
	3.3 Control panel on the assistant element	17
4	Putting the system into operation	19
5	Foot switch	21
6	Program selection	23
	6.1 Safety	23
	6.2 Program selection	24
	6.3 MOVEMENT STOP!	25
7	Patient positions	26
	7.1 Manual adjustment	26
	7.2 Programming Patient Positions	27
	7.3 MultiMotion headrest	28
8	Dentist element and instrument functions	31
	8.1 Dentist element	31
	8.2 General instrument functions	32
	8.3 Electric motor	33
	8.4 Highspeed handpiece	34
	8.5 SIROSONIC L scaler	34
	8.6 SIROTOM HF electrosurgery	36
	8.7 SPRAYVIT	36
	8.8 Saving the instrument programs	37
	8.9 Depositing treatment instruments	37
	8.10 Surgery with NaCl saline solution (additional equipment)	38
	8.11 Satalec Mini LED curing light	39
9	Operation light, tumbler filling, cuspidor flushing, purge	43
	9.1 Operation light	43
	9.2 Tumbler filling function	43
	9.3 Tumbler filling with automatic sensor control (Special equipment, not available in all countries)	44
	9.4 Cuspidor flushing function	45
	9.5 PPurge / Auto Purge function (purging the water paths)	45

10	Basic treatment center settings in the Mode dialog	49
10.1	Mode Key	49
10.2	Mode: NACL PUMP OFF or ON for instrument holder	49
10.3	Mode: MAINTENANCE	50
10.4	Mode: SERVICE ONLY START - STOP	50
10.5	Mode: FC CONTROL MODE ON/OFF - VARIABLE	50
10.6	Mode: TIME - HOURS :MIN	50
10.7	Mode: DAY : MON : YEAR	51
10.8	Mode: BOWL FLUSH ON S YES - NO	51
10.9	Mode: CUP FILL ON S YES - NO	51
10.10	Mode: WHITE BALANCE (only with an integrated SIROCAM 3)	52
10.11	Instrument settings via Mode dialog: REMOVE INSTRUMENT.	53
10.12	Mode: # FUNCTION TOGGLE - MOMENTARY	54
10.13	Mode: PURGE TIME... SEC	54
10.14	Mode: PRESSURE PSI / BAR	54
10.15	Mode: SPRACHE / LANGUAGE ENG / D / I / F / E	54
10.16	Mode: SIROLUX U - POS. ON – OFF	55
10.17	Mode: NON – SIRONA CAMERA YES – NO	55
10.18	Mode: POLYLUX WITH CFS YES – NO	55
10.19	Mode: SUCTION WITH CFS YES – NO	56
10.20	Mode: WHITESCREEN YES – NO	56
10.21	Mode: MODE SWITCHOVER ON / OFF	56
10.22	Mode: BLOW OUT SPRAY	57
11	Assistant element	58
11.1	Suction handpieces on the assistant element	58
11.2	SPRAYVIT on the assistant element	59
11.3	Satalec Mini LED curing light on the assistant element	59
11.4	Manual travel track	60
12	Water unit	61
12.1	Swiveling the cuspidor	61
12.2	Controlling the water amount for the cuspidor	61
12.3	Amalgam rotor	62
12.4	Disinfection system (optional)	63
13	SIROTOM HF electrosurgery	64
13.1	Safety	64
13.2	Operation	65
13.3	Technical description	66
13.4	Technical data	67
13.5	Safety checks	67

14	SIVISION 3.....	68
14.1	System overview of SIVISION 3	68
14.2	Camera versions.....	70
14.3	SIROCAM 3 intraoral camera (additional equipment)	71
14.4	SIROCAM C intraoral camera (additional equipment).....	73
14.5	Operating modes of SIVISION 3.....	74
14.6	SIROCAM 3 / SIROCAM C integrated in the dentist element (video)	76
14.7	SIROCAM 3 / SIROCAM C – PC mode.....	82
14.8	SIVISION 3–second monitor function without SIROCAM3/SIROCAM C.....	88
15	CEREC Chairline (Option)	89
15.1	CEREC Chairline	89
16	Extra equipment and accessories	90
16.1	Media block on the patient chair	90
16.2	Hygienic headrest protection	91
16.3	Children's headrest.....	91
16.4	Seat cushion C	91
16.5	Folding armrest.....	92
16.6	Hydrocolloid coolant supply	92
16.7	Tray (additional equipment)	93
16.8	X-ray image viewer on the dentist element.....	93
16.9	X-ray image viewer on the lamp support tube	94
16.10	X-ray image view on the tray	94
17	Maintenance.....	95
17.1	Care and cleaning by the practice team	95
17.2	Inspection and maintenance.....	95
17.3	Safety tests	96
17.4	Maintenance Manual	97

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 be performed according to our requirements. Details are described in the document "Preinstallation Instructions".

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 device 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 range, as well as the date, name of organization and signature.

Changes to the unit

Changes to this unit which could impair the safety of the system owner, patients or other persons are prohibited by legislation!

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 devices not approved by Sirona are connected, they must comply with the applicable standards:

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

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.

Combination with other units

Any person who assembles or modifies a medical electrical system complying with the standard IEC 60601-1-1 (Safety requirements for electromedical systems) 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 M1⁺ complies with the requirements of IEC 60601-1-2:2001.

Medical electrical devices are subject to special precautionary measures regarding EMC. They must be installed and operated as specified in the document "Preinstallation Instructions".

Portable and mobile HF communication devices can influence medical electrical equipment. The use of mobile telephones in the practice or hospital area therefore must be prohibited.

For video systems:

Electromagnetic disturbances in the environment of the M1⁺ 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 fades, image data stored in the video camera may be lost. Deposit the camera and repeat the exposure.

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

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.

HF surgery

This dental treatment center is available with a high-frequency surgical device (optional).

Only in the Federal Republic of Germany: The user is obligated to keep a "medical product log" if a HF surgical device is installed! See section 17.3 "Safety tests" on page 96.

Identification 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  **NOTE**,  **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 disinfectants or other similar products into the ventilation slots

Vacuum system

The suction of aluminum and other metal oxides from blasting devices via the automatic separator integrated in the treatment center and the amalgam separator 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, please be 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 rinsed 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)**

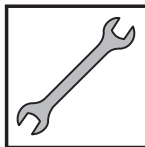
Electric micromotors in dentist element

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 95.

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	M1 ⁺
Power supply connection	230 V~50 Hz, 115 V~50/60 Hz 100 V~50/60 Hz
Nominal current	4.5A at 230V 9.5A at 115V 11.5A at 100V
Main unit fuse	for 230VAC: T 6.3A H , 250VAC, REF 10 77 452 for 100/115V~: T 10A H , 250VAC, 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, SIROTOM, SIROCAM 3 / SIROCAM C: Type BF applied parts
Degree of protection against ingress of water	Ordinary equipment (not protected) The foot switch is protected against dripping water IPX 1.
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 of IEC 60601-1-2: 2001.

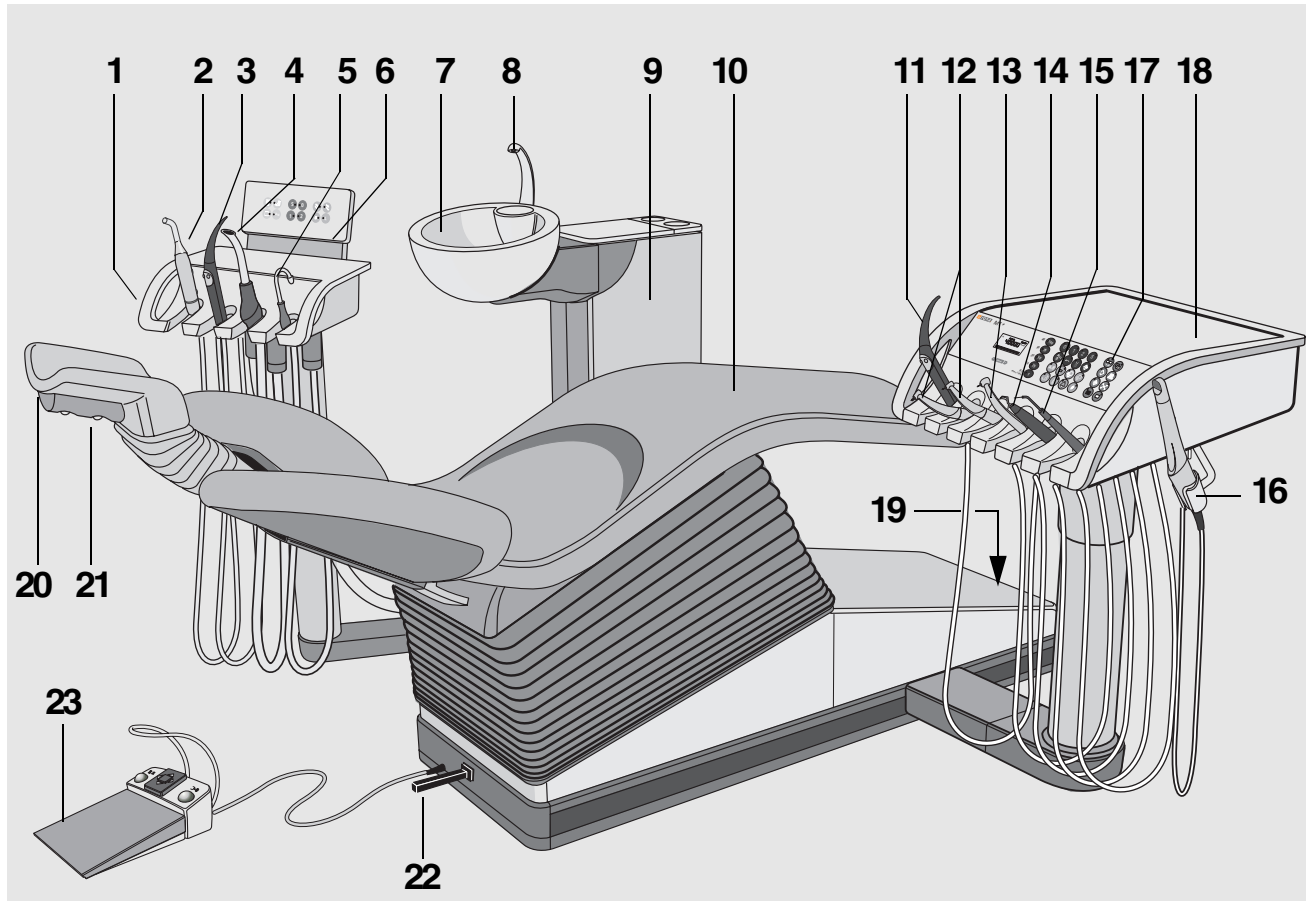


DVGW: This unit complies with the technical rules and requirements on safety and hygiene for connection to the drinking water supply, provided that a disinfection system is installed.

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 Operating and Functional Elements

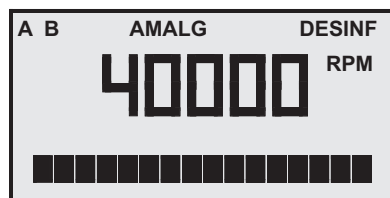
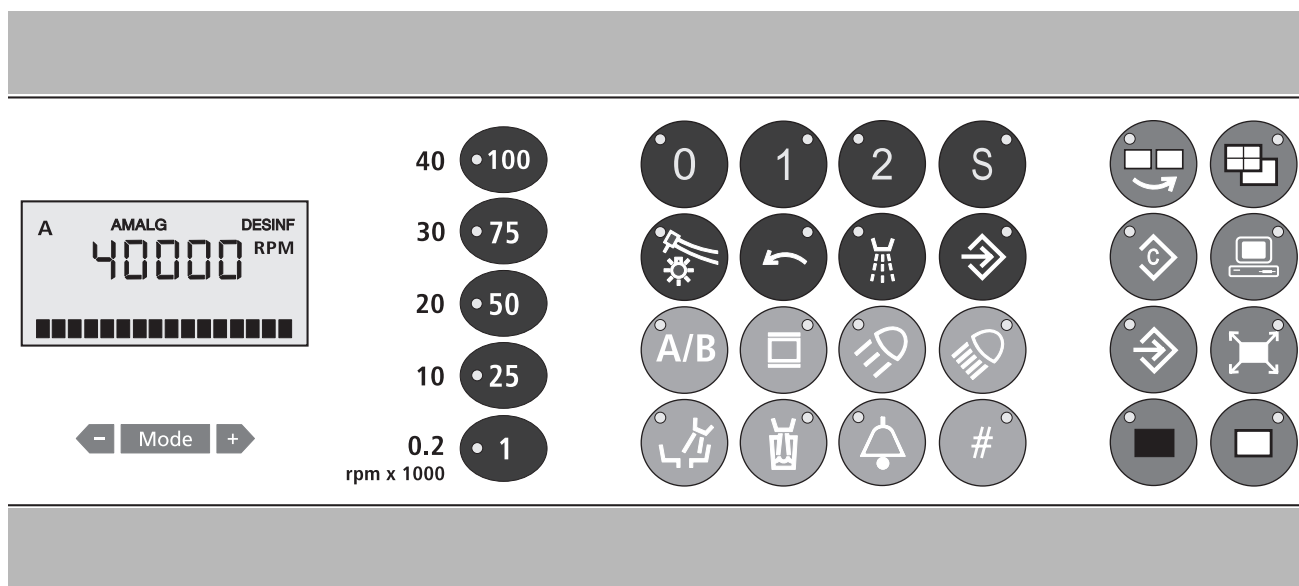
3.1 System overview M1⁺



- | | |
|--|---|
| <p>1 Assistant element</p> <p>2 Holder 1: Polylight Mini LED or 3rd suction hose</p> <p>3 Holder 2: SPRAYVIT in the assistant element</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 Swiveling 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: 3. Electric motor / highspeed handpiece burr drive or SIROSONIC L scaler</p> | <p>14 Holder 5: 4. Burr drive (highspeed handpiece only) or SIROSONIC L or Polylight Mini LED</p> <p>15 Holder 6: SIROSONIC L or HF surgery or SIROCAM 3 / SIROCAM C or Polylight Mini LED</p> <p>16 Additional holder (for SIROCAM 3 / SIROCAM C only)</p> <p>17 Control panel on the dentist element</p> <p>18 Dentist element</p> <p>19 Unit main switch</p> <p>20 Headrest adjustable by motor drive</p> <p>21 Manual switch for chair movements</p> <p>22 4-way foot control of chair</p> <p>23 Unit foot switch</p> |
|--|---|

3.2 Control panel on the dentist element

Control panel



System status indication display and Mode key

AMALG appears if the amalgam rotor needs to be replaced.

DESINF flashes if **DENTOSEPT P** must be refilled.

A appears if user A is selected.

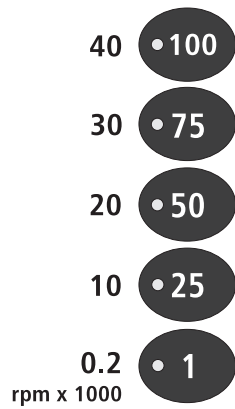
B appears if user B is selected.



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

Apart from the settings in the Mode dialog, it is also possible to make settings with the **+** / **-** keys:

- Intensity of instrument lighting
- Intensity of the operation light
- Tumbler filling time
- Cuspidor flushing time



■ Main functions – dark blue keys

Quick setting keys for instrument intensity and speed

for electric motors, SIROSON L ultrasound scalers and SIROTOM HF electrosurgery.



Save

instrument functions



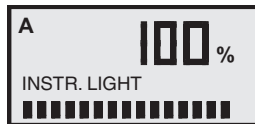
Spray ON / OFF

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)

i NOTE

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



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

for normal light intensity > 24,000 lux

A 100%
OPERATING LIGHT

[illegible]

Pressing this key for a while displays the settings dialog:

Pressing this key for a while displays the settings dialog:



e.g. call key, always functions as button

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



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

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

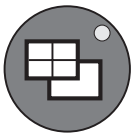
■ Panel keys for video



Frame indexing

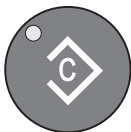
Single image: Switches to the next image storage location

Quad image: Indexes the storage number for image selection



Quad image

Toggles between quad image and single image



Clear memory

Clears all image memories of the camera.
(only with camera removed)



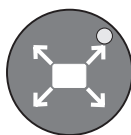
Mode selection

Toggles between PC mode and video mode



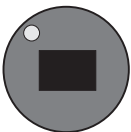
Save image

Saves still image



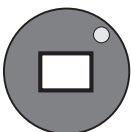
Full frame

Full screen display on PC



Black screen

Toggles between any display and a black screen

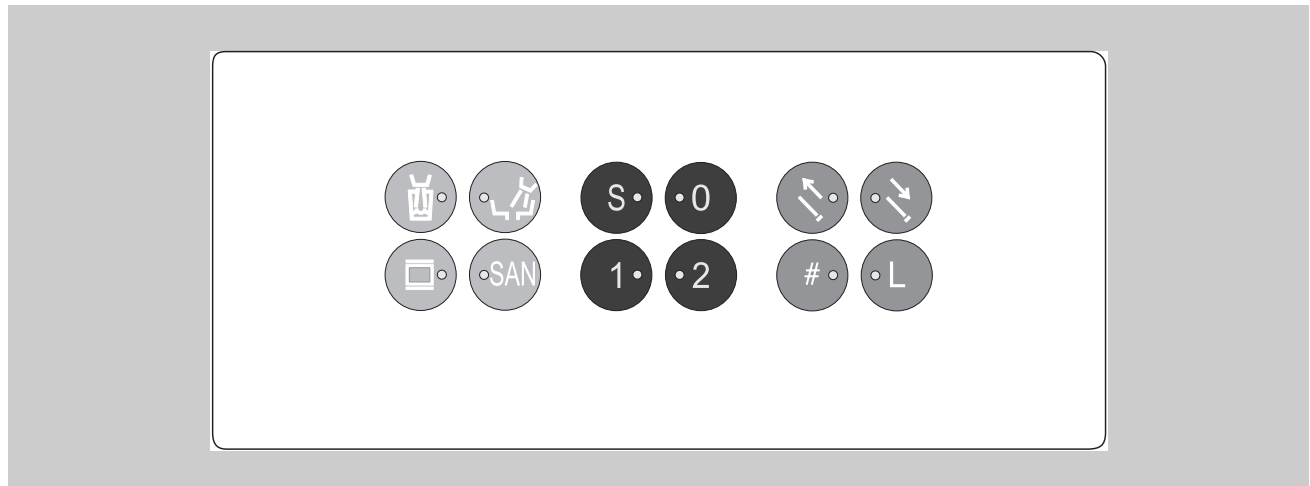


White screen

Switches white screen ON or OFF on SIVISION monitor

3.3 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 NOTE

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

■ Additional functions – light blue keys



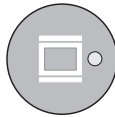
Tumbler filling function

ON / OFF



Cuspidor flushing function

ON / OFF



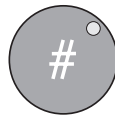
X-ray image viewer ON / OFF

for SIVISION 3 also WHITE SCREEN activation



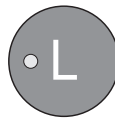
Sanitation of the treatment center

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 preselected in the **Mode dialog** as button or switch.



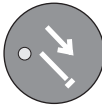
Light ON/OFF

With SPRAYVIT removed:

- **Instrument lighting**

With SPRAYVIT deposited:

- **Operation light**



■ Chair functions – gray keys

Manual adjustment of headrest

Move headrest out/in
(cannot be used with MultiMotion head rest)

4 Putting the system into operation

Initial start-up

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

Prior to initial start-up of your treatment center, **sanitation** must be performed.

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

Sanitation takes approx. 24 hours.

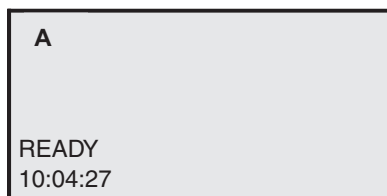
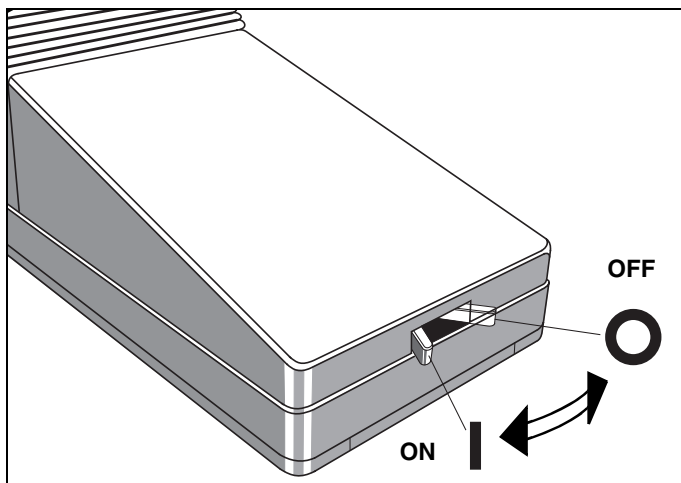
Main switch

Turn the main switch **ON**.

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

CAUTION

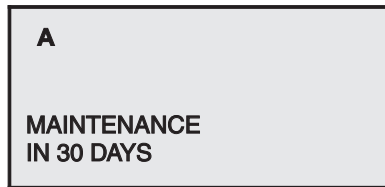
*For safety reasons, always switch the treatment center **OFF (O)** after consulting hours. This cuts off the air and water supply and the line voltage.*



Operational readiness

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

The unit is now ready to operate.



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).

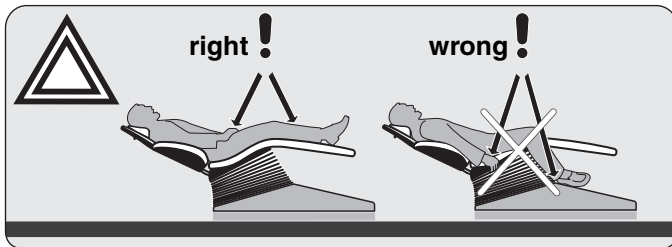
After this date has expired, the following message is displayed:

MAINTENANCE REQUIRED

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

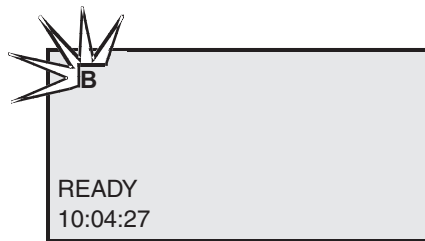
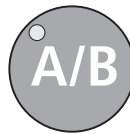
i NOTE

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!



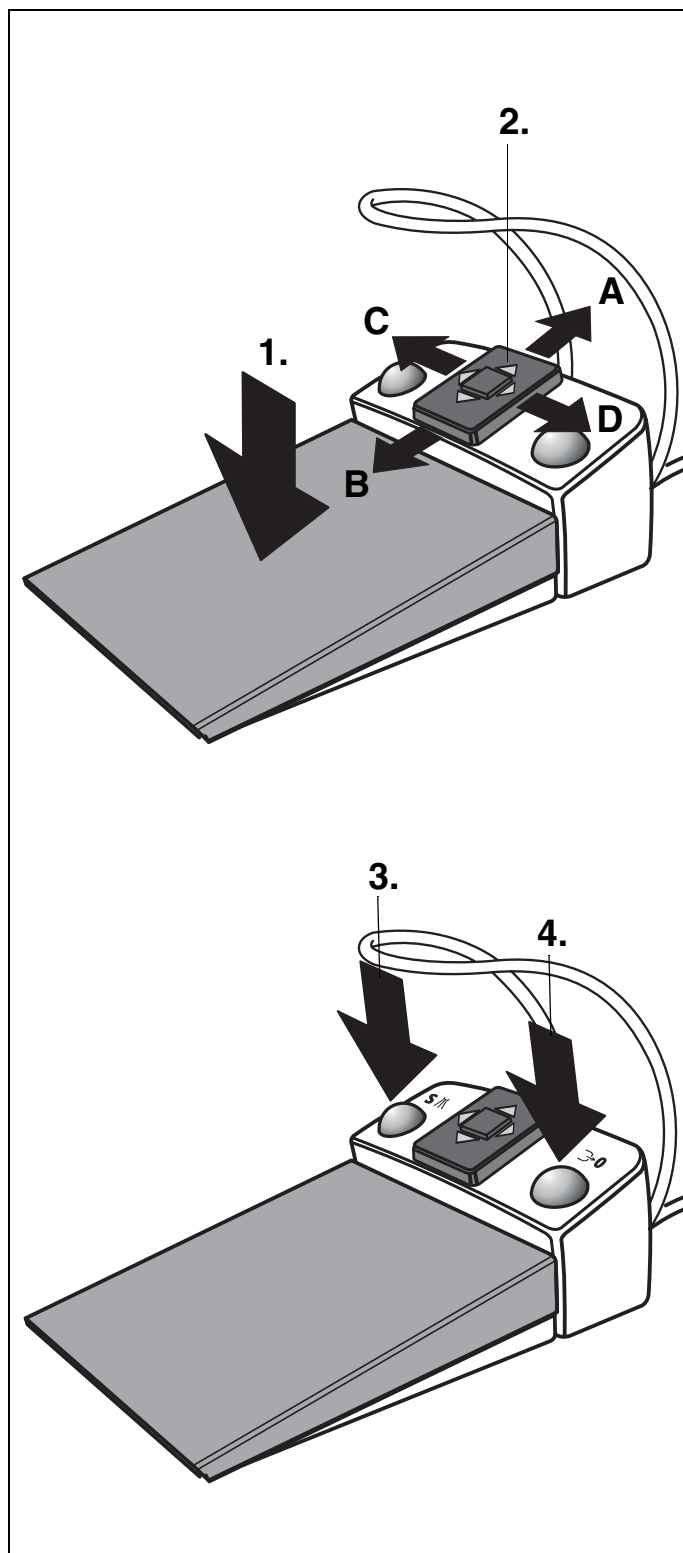
Preselecting the user

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.

5 Foot switch



Functions

1. Step on foot pedal – all instruments in place

The dentist element moves toward the operator as long as the foot switch is actuated (or toward the foot end of the patient if reversed by the service engineer, see page 32).

Step on foot pedal – instrument removed

Activation of the instrument.

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

2. Shift 4-way foot control plate

With the electric motor deposited:

If the switch is actuated toward **A**, **B**, **C** or **D**, the dentist element moves away from the operator as long as the switch is actuated.

With the electric motor removed:

The CW/CCW rotation of the electric motor is activated.

- Foot switch plate to the left – counterclockwise
- Foot switch plate to the right – clockwise

3. Actuate left button – all instruments in place

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

Actuate left button – instrument removed

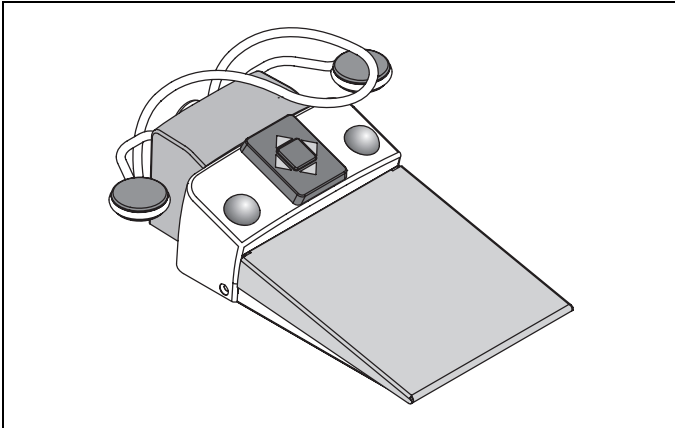
Toggle between spray ON and spray OFF, or SIVISION function.

4. Actuate right button – all instruments in place

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

Actuate right button – instrument removed

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



CEREC Chairline foot switch

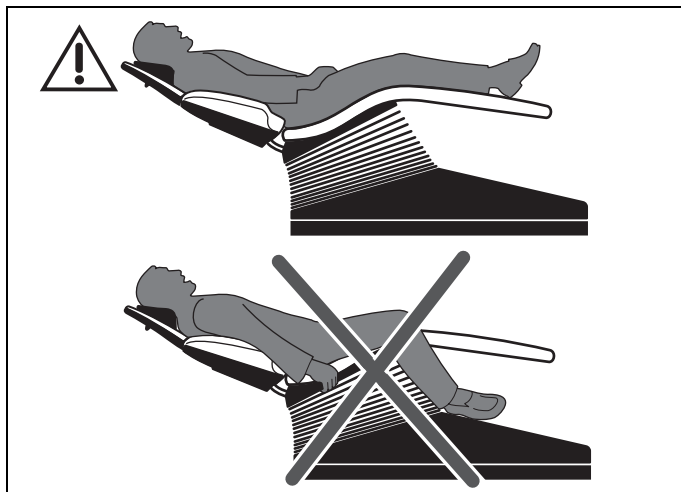
This foot switch includes all of the functions of the C+ foot switch.

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 Program selection

6.1 Safety

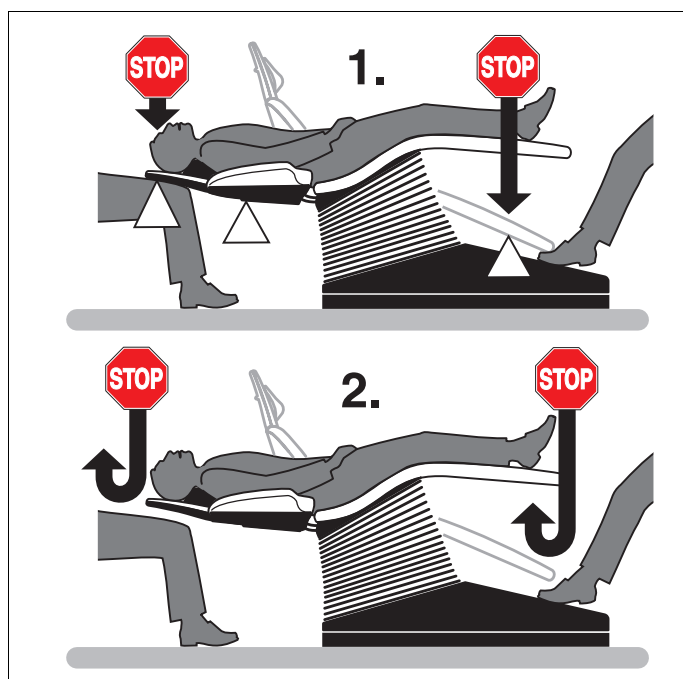


⚠ CAUTION

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.



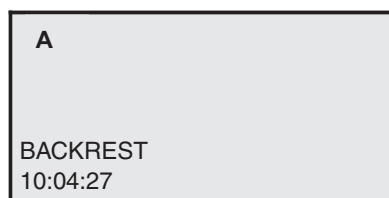
Safety stop

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

- The foot support collides with an obstacle.
- The backrest collides with an obstacle.
- The motorized headrest collides with an obstacle
- The swiveling cuspidor is swiveled in during chair movement .

At the same time, a double-beep warning signal is sounded.

The chair then automatically moves upwards a short distance until the path has been cleared (except for the swiveling cuspidor)

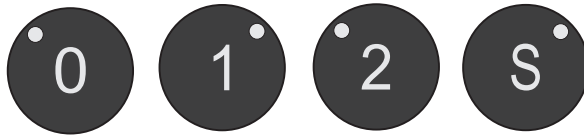


With instruments in place, the last safety switch activated is indicated in plain text on the display:

- TILTING PART for motorized headrest
- BACKREST
- FOOT SUPPORT

The indication "CUSPIDOR" appears after 10 seconds if the automatic return movement of the cuspidor to its position is obstructed.

6.2 Program selection



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

With swivelable cuspidor:

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

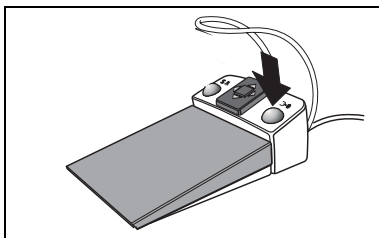
Factory settings:

The operation light switches **OFF** automatically before the chair moves into the entry/exit position **0** or into 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:

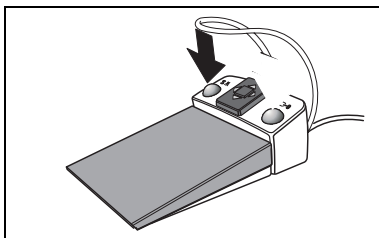
When programming the patient positions you can pre-select whether the operation light should switch OFF or ON in the different chair programs 0, S, 1 or 2 (refer to page 26).



Entry/exit position

Program key **0** is intended for the entry/exit position.

This position can also be selected via the right key of the foot switch with the instruments deposited.



Mouth rinsing position

Program key **S** is intended for the mouth rinsing position.

This position can also be selected via the left key of the foot switch with the instruments deposited.

In the **S** program it is possible to program the **tumbler filling** and / or the **cuspidor flushing** (see Mode dialog 10.8 and 10.9).

If this key is pressed a second time, the treatment center returns to its previous position (last position memory function).

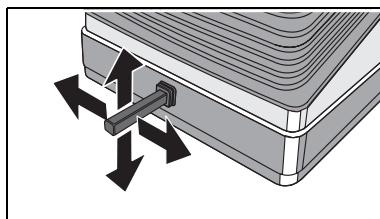
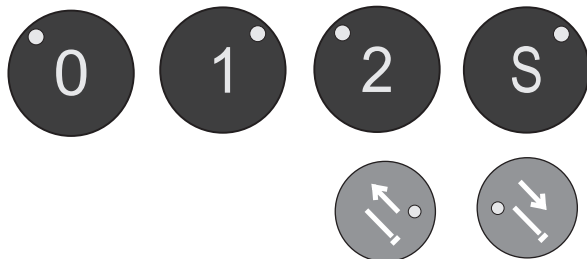
Example: You have programmed this key for the mouth rinsing position. When you press this key then the treatment center moves into the programmed position.

Last position memory function: If you press this key again, the treatment center returns to its previous position.

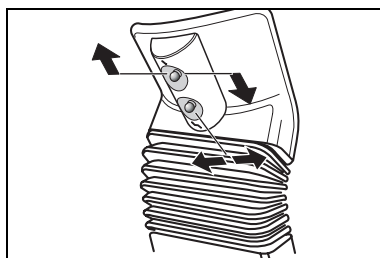
6.3 MOVEMENT STOP!

Movement of the chair into a programmed position can be stopped as follows:

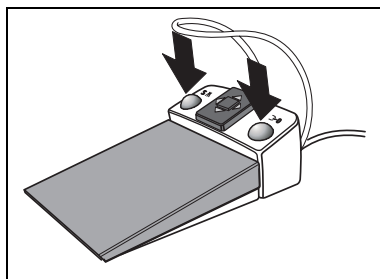
- By pressing one of the chair-related keys located on the dentist and assistant elements.



- By actuating the 4-way foot control.



- By actuating the 4-way switch on a motorized headrest in any direction.



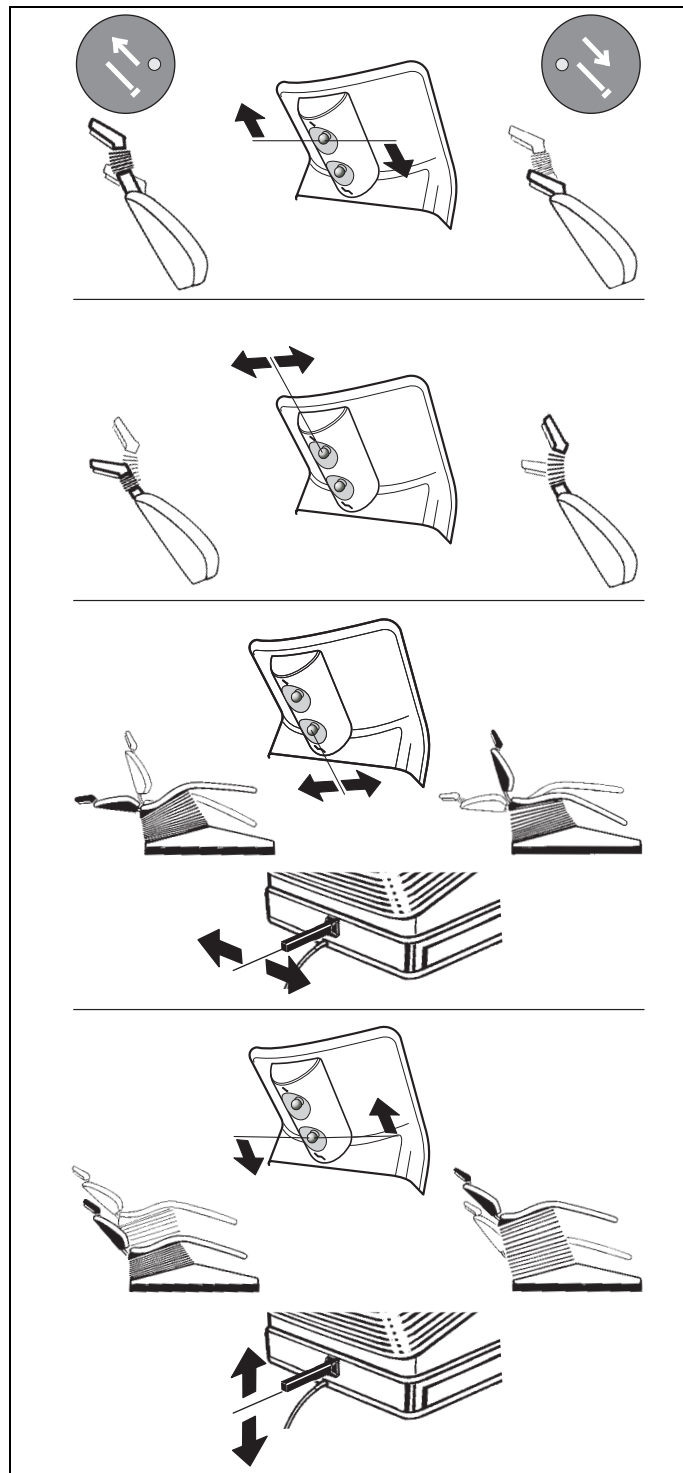
- By actuating the 0 or S key on the foot switch.

All movements of the treatment center are stopped immediately.

Please note that pressing the program key of the program which is just running once again does NOT cause the movement to stop!

7 Patient positions

7.1 Manual adjustment



Moving the headrest out/in

The headrest can also be moved out or in with the two upper keys in the right block on the assistant element control panel and on the upper 4-way switch (up/down) on the headrest.

Headrest tilt

The headrest can be tilted to the back or to the front by actuating the upper 4-way switch on the headrest (left/right).

Headrest functions are also possible with the cuspidor swung in.

Backrest tilt

The backrest can also be tilted with the 4-way foot control on the chair base as well as with the lower 4-way switch on the headrest.

Lever to the left:

Backrest tilts backwards.

Lever to the right:

Backrest tilts forward.

Height adjustment

The height can be adjusted with the 4-way foot control on the chair base as well as with the lower 4-way switch on the headrest.

Lever up:

The chair moves up.

Lever down:

The chair moves down.

Before backrest tilting or up/down movements are started, the swiveled-in cuspidor automatically returns to its starting position.

7.2 Programming Patient Positions



Chair and dentist element

The four factory-set programs can be changed individually by users **A** and **B** (observe the display).

- Programs **1** and **2**
 - Entry/exit program **0**
 - Mouth rinsing program **S**
1. Move the chair into the desired treatment position by pressing the different setting keys (see page 26).
 2. To have 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.
 3. Now move the dentist element to the desired treatment position by hand.



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.

4. To save the program settings, press the desired program key approx. 3 seconds until an acoustic signal sounds.

Programming is completed now.

7.3 MultiMotion headrest



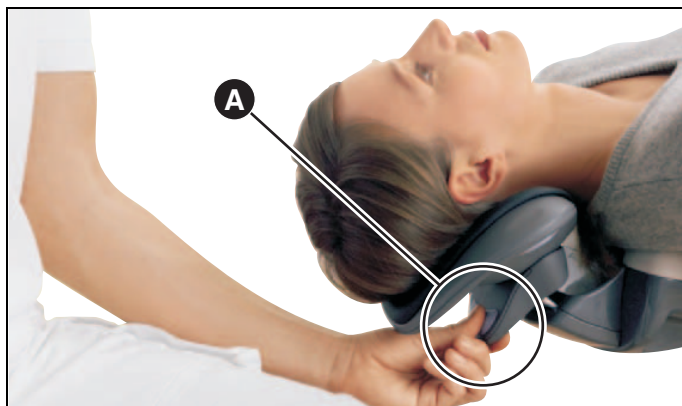
Adjustment to patient's height

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 NOTE

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 NOTE

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.



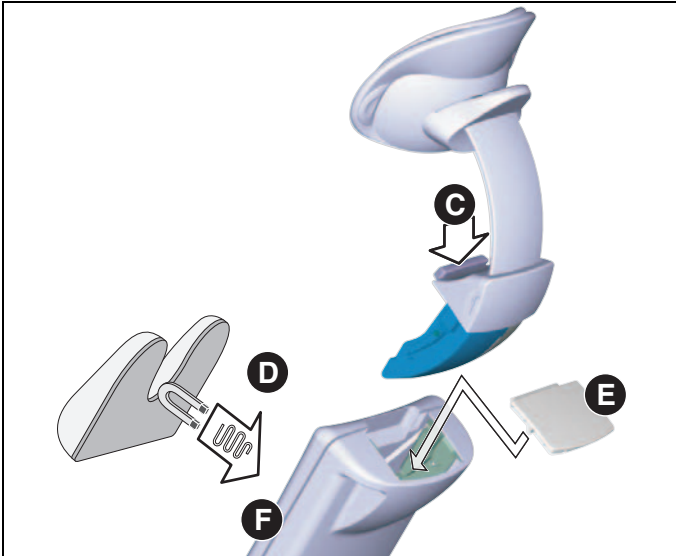
Rotation and tilt

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 NOTE

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

! WARNING

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 NOTE

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:

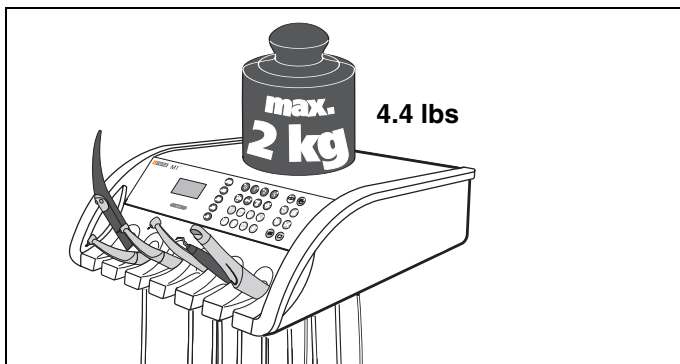
- Check the guide of the removed headrest for contamination. Remove any contamination.
- Remove the cover cap E.

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.

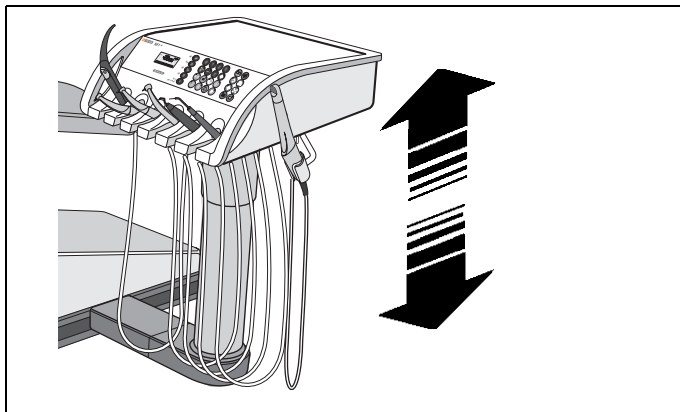
8 Dentist element and instrument functions

8.1 Dentist element



Maximum load capacity

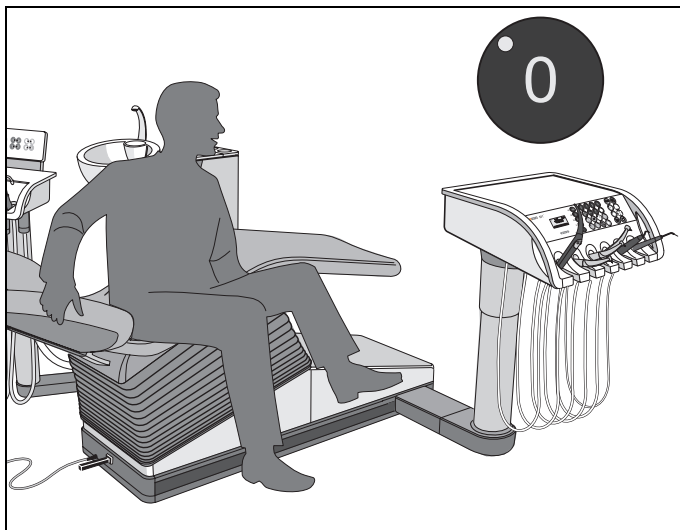
The maximum load of the dentist element is 2 kg (4.4 lbs).



Height adjustment of the dentist element

The height of the dentist and assistant elements can be adjusted.

Please contact your service engineer.



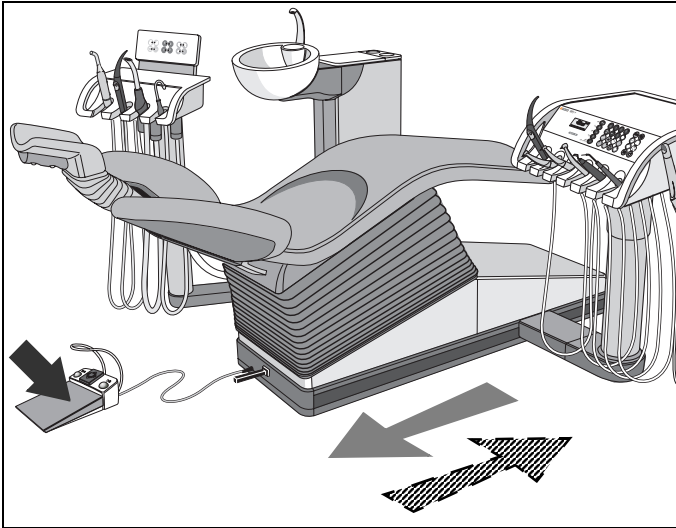
Entry/exit position

When the **0** key (factory setting) is actuated, the dentist element moves to the entry/exit position.



CAUTION

Tripping hazard! Turn the dentist element **outward** before the patient enters or leaves it. This prevents the patient's legs from getting tangled in the instrument hoses.

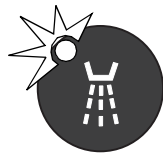
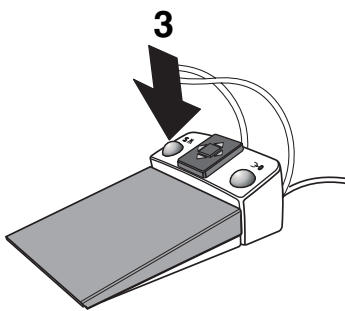


Travel direction of track: Changing the factory setting

In the factory setting, the dentist element moves toward the operator if the foot switch is actuated. The factory setting can be changed by the service engineer at the customer's request.

When the foot switch is actuated, the dentist element moves to the opposite end position.

8.2 General instrument functions

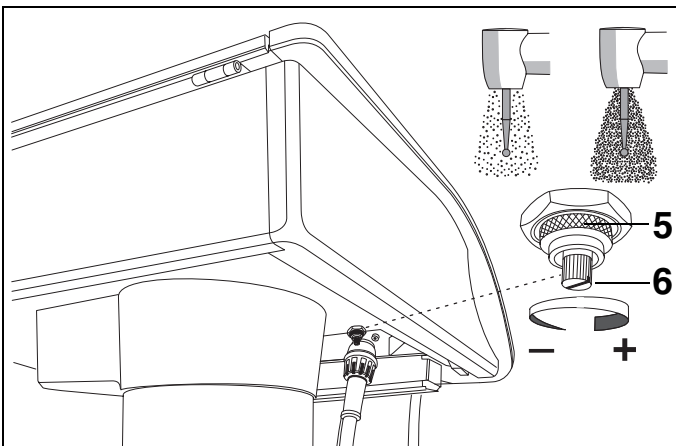


Spray

The spray cooling can be switched ON/OFF by activating the **spray** key on the control panel of the dentist element. If spray is preselected, the green LED in the key lights up.

With the foot switch

the spray can be switched ON/OFF with the instrument removed by pressing the left button (3) on the foot switch.

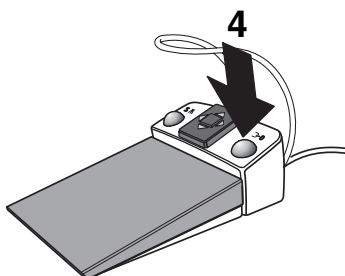


Spray amount

The spray amount is preset at the factory. However, it can be adjusted using 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.

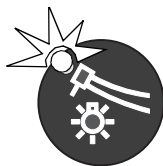
This setting is then valid for all burr drives.



Chip blower

Foot switch

With the foot switch, the **chip blower** is activated with the instrument removed by pressing the right button (4) on the foot switch. As long as the button is pressed, an air jet escapes from the nozzle of the burr instrument.

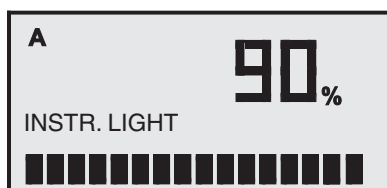


Instrument light ON / OFF

With this key on the control panel of the dentist element, you preselect the **instrument light** for the removed instrument.

If **light ON** is preselected, 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. The light intensity can be set between 60% and 100% here with the **- / +** keys.



i NOTE

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

8.3 Electric motor



Setting the speed

After an **electric motor** is removed, the programmed speed of the motor in **RPM** (revolutions per minute) appears on the display.

The speed is set with the quick setting keys on the left of the control panel of the dentist element.

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

Key	1	–	200rpm
Key	25	–	10,000rpm
Key	50	–	20,000rpm
Key	75	–	30,000rpm
Key	100	–	40,000rpm

The green LED in the corresponding key lights up.

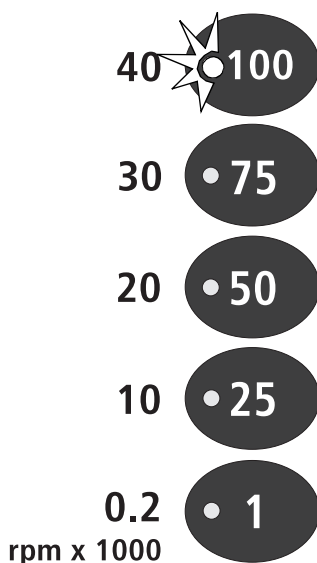
When you **press and hold down** a key for > 0.5s, you adjust the speed in predefined increments:

Increments of	200:	from	200	–	2000rpm
Increments of	400:	from	2000	–	10,000rpm
Increments of	1000:	from	10000	–	40,000rpm

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

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

If intermediate values are set, the green key LED does **not** light up.



Counterclockwise rotation key

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

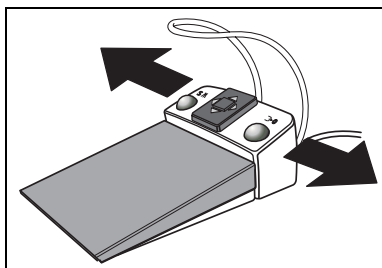
The green LED in the key lights up when this key is activated.

After the electric motor is started with the foot switch, an acoustic warning signal sounds 6 times.

Counterclockwise rotation of the electric motor can also be activated via the foot switch:

- Foot switch plate to the left – counterclockwise
- Foot switch plate to the right – clockwise

In this case the corresponding motor must be removed.



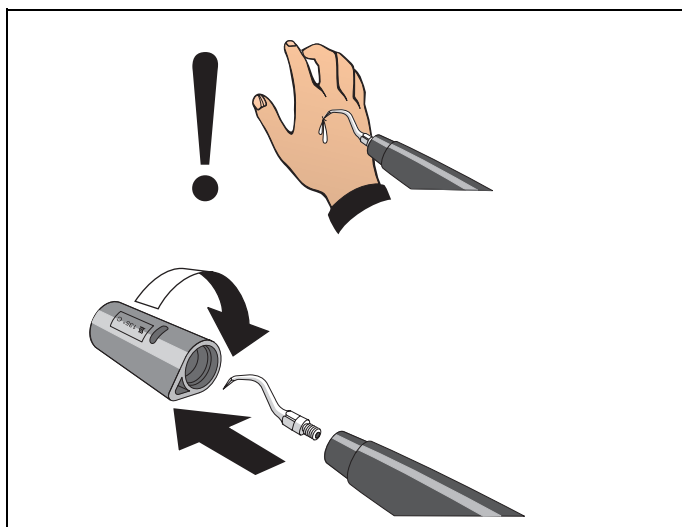
8.4 Highspeed handpiece



Starting the highspeed handpiece

After the highspeed handpiece is removed from its holder, 0 bar or PSI (according to the presetting in mode dialog 10.14) appears on the display. When the high-speed handpiece is started and operated, the current air pressure in bar or PSI always appears on the display.

8.5 SIROSONIC L scaler



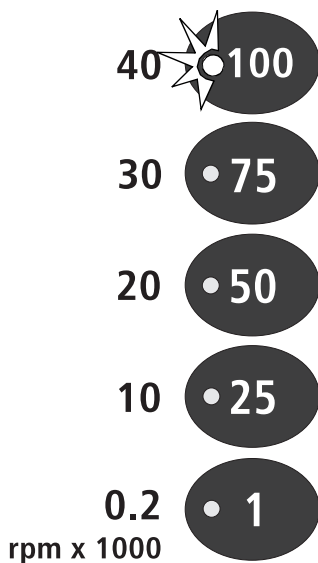
Tip protector

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



CAUTION

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



Intensity setting

After the **SIROSONIC L** handpiece is removed, the programmed intensity value appears on the display.

The intensity is set by briefly (< 0.5s) activating the quick setting keys in increments of 1 / 25 / 50 / 75 / 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

If a key whose value is \geq the value shown on the display is pressed (> 0.5s), the intensity is increased.

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

If intermediate values are set, 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 warning message **ENDO** appears on the display.

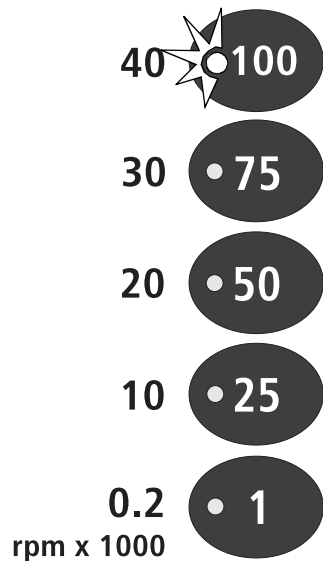
For safety reasons, we recommend that you program the set value for endodontics. Otherwise, the previously programmed value becomes active again if the instrument is deposited in its holder in the meantime.



CAUTION

Temperature damage and needle breakages can occur on exceeding the value of 4 in endodontics therapy.

8.6 SIROTOM HF electrosurgery



After the **SIROTOM** handpiece is removed, the programmed intensity value appears on the display.

The intensity is set in increments of 1 / 25 / 50 / 75 / 100 by briefly pressing (<0.5 s) the quick setting keys.

The green LED in the corresponding key lights up.

If you **press and hold down** a key (>0.5 s), you adjust the intensity in predefined increments:

Steps of 1 from 1 – 10

Steps of 5 from 10 – 100

If a key whose value is \geq the value shown on the display is pressed (> 0.5 s), the intensity is increased.

If a key whose value is less than the value shown in the display is pressed, the intensity is reduced.

If intermediate values are set, the green key LED does **not** light up.

8.7 SPRAYVIT



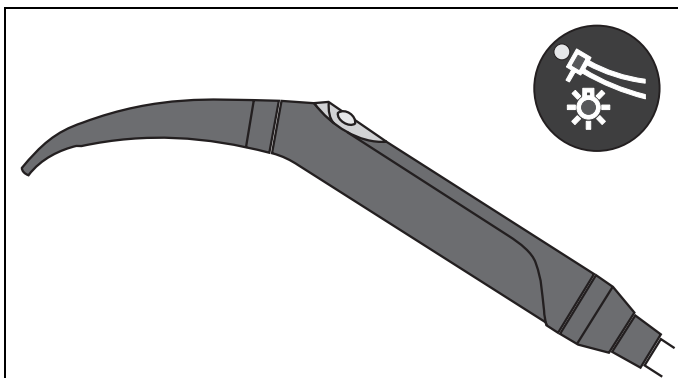
If the SPRAYVIT is the only instrument removed, the instrument light can be switched on or off. The brightness can also be set.

The instrument light switches on when the SPRAYVIT is activated (if preselected).

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

When the SPRAYVIT is deposited in its holder, the instrument light switches off immediately.

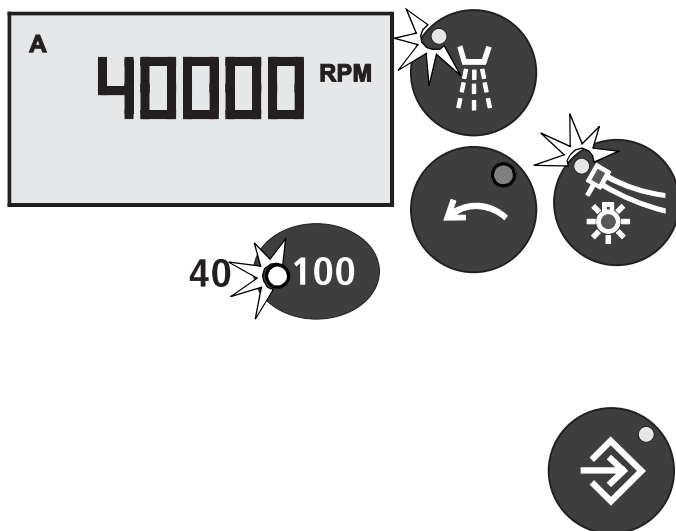
If the SPRAYVIT is activated together with another instrument, then the light of the SPRAYVIT is not switched on.



! WARNING

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

8.8 Saving the instrument programs



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

Select the corresponding user, **A** or **B**, remove an instrument and set it according to your wishes.

Example for electric motor:

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

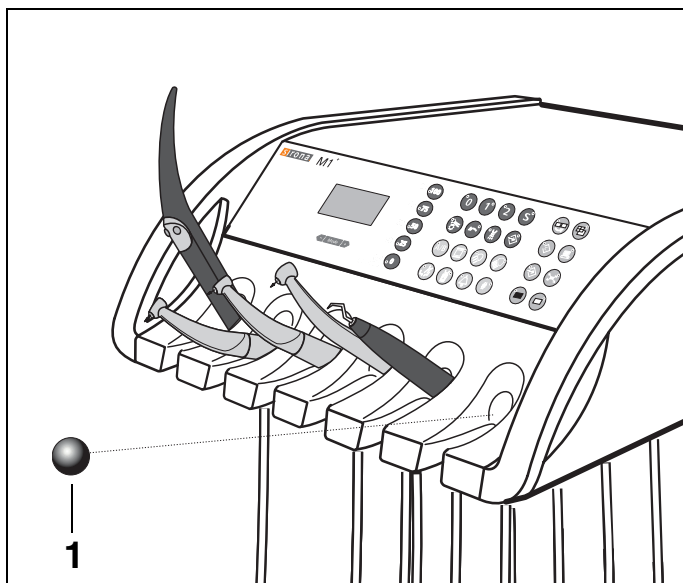
The settings are stored by pressing the **save key** for a longer period of time (approx. 3 s). An acoustic warning signal is issued. These settings are then activated whenever the instrument is removed.

The user cannot be changed with the instrument removed.

i NOTE

If counterclockwise rotation was programmed, the program is reset to clockwise rotation after the treatment center is switched off and back on.

8.9 Depositing treatment instruments

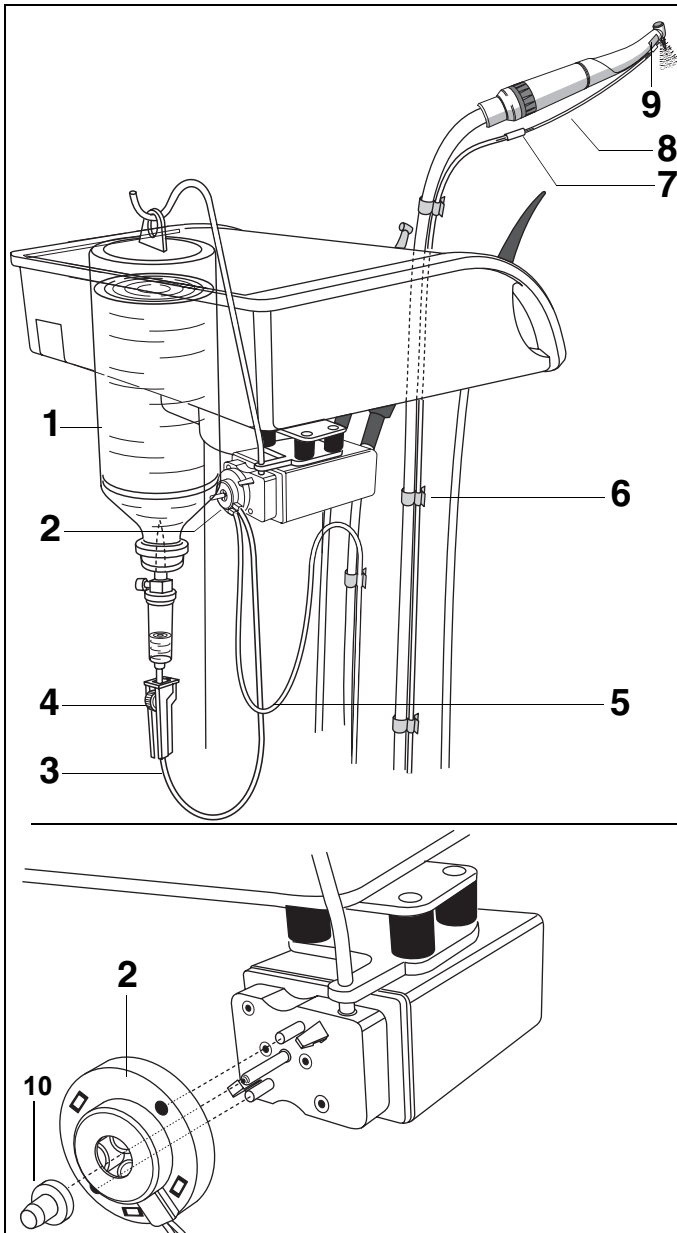


A ball stopper for an unoccupied instrument holder is enclosed with the dentist element.

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

Additional ball stoppers can be ordered (REF 58 99 575) to seal any further unused instrument holders.

8.10 Surgery with NaCl saline solution (additional equipment)



Preparation of the unit

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

i NOTE

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 as consumable material under article number F 58707 directly from the manufacturer in packs of 10 pcs.

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

i NOTE

Holder preselection for the instrument with saline solution is described in Mode dialog 10.2 on page 49.

! 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

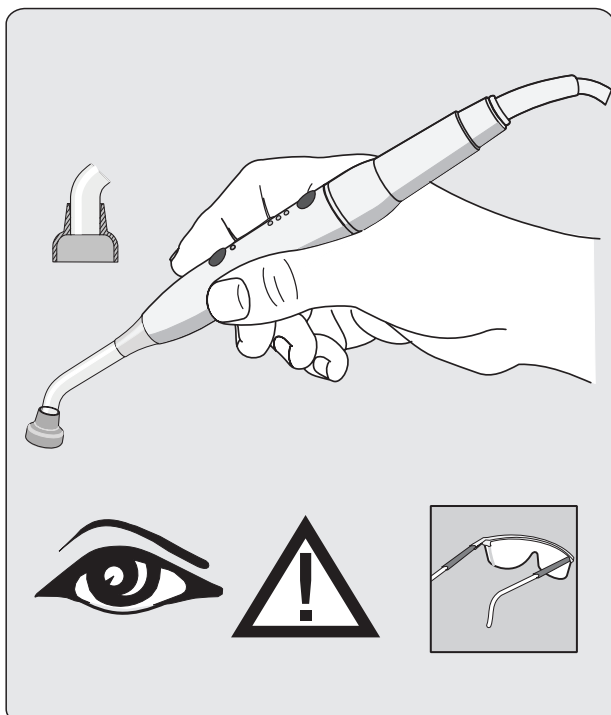
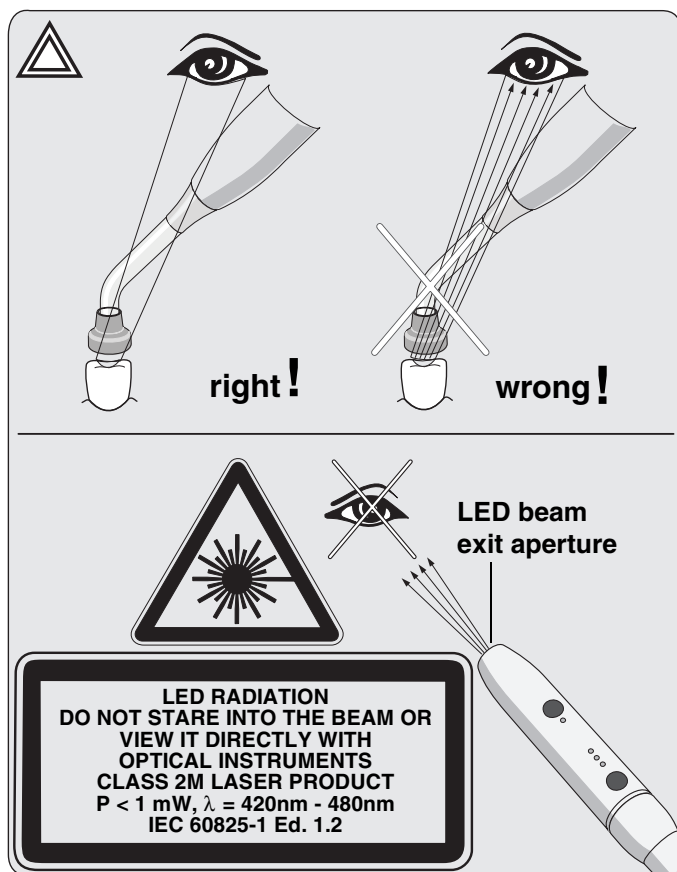
With the handpiece removed, the **NaCl pump can be switched ON/OFF** by activating the **Spray** key (or with the left button on the foot switch).

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

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



8.11 Satalec Mini LED curing light



Safety information

⚠ CAUTION

Use the glare shield!

The light beams emitted by this instrument can be dangerous and must not be aimed directly at anyone's eyes, even if the person concerned is wearing protective goggles. The light may only be directed at the part of the patient's mouth being treated.

⚠ CAUTION

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

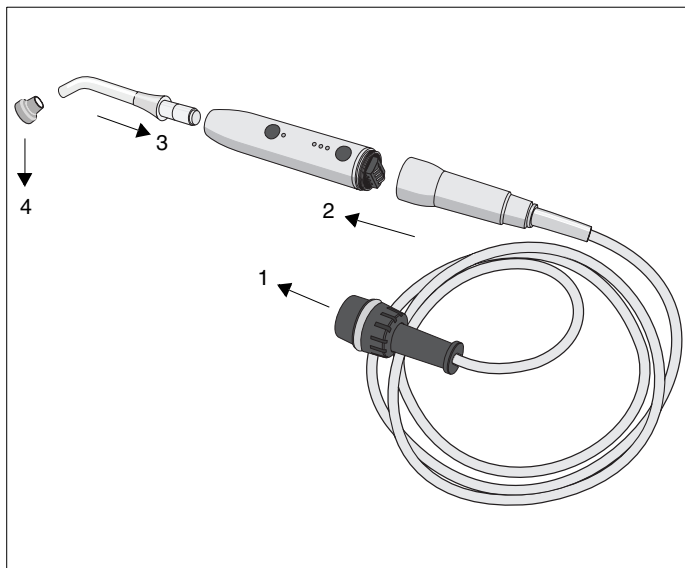
Viewing the LED light exit aperture with certain optical instruments (e.g. a magnifying lens) within a distance of 100mm may constitute an eye hazard.

Additional safety information

Any condensation occurring in the handpiece of the Mini LED may cause impairments (e.g. fogging of the LED). If the handpiece is taken out of a cool environment and placed in a warm room, always wait for it to reach room temperature before putting it into operation.

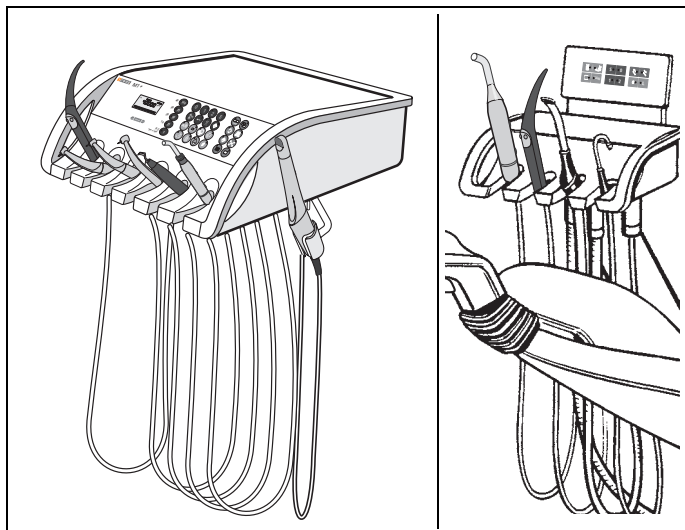
Curing lights must not be used on persons who are suffering from or have in the past been afflicted by photobiological reactions (including solar urticaria and erythropoietic porphyria). Nor should they be used on persons currently being treated with any medicine which increases one's sensitivity to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



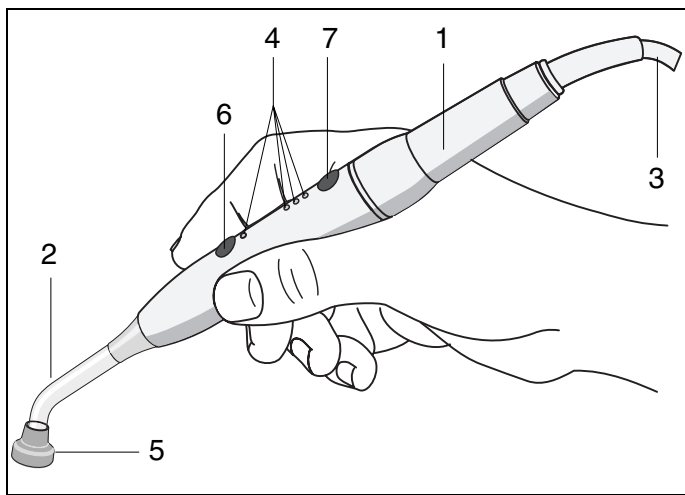
Installation

1. Connect the power cable to the treatment center.
2. Screw on the handpiece.
3. Plug the sterilized light guide into the handpiece. Make sure that the light guide is inserted correctly. The light guide must engage with a "click".
4. Slide the eye protector (glare shield) onto the light guide. It protects your eyes against reflected light.



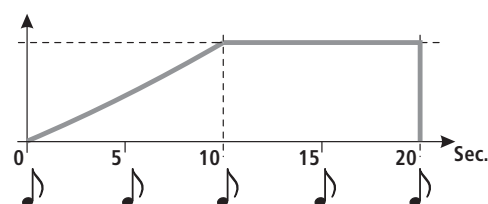
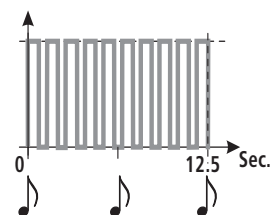
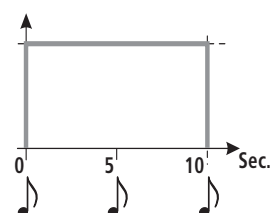
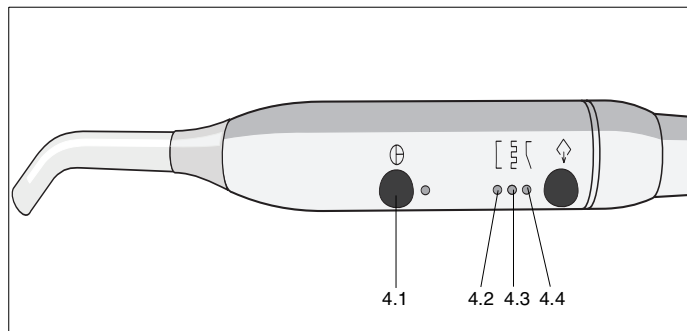
Versions of installation

- in the dentist element, holder 5 or 6
- in the assistant element, holder 1



Handpiece and accessories

- 1 Handpiece
- 2 Light guide
- 3 Power cable
- 4 Status indicator lamps
- 5 Eye protector
- 6 ON/OFF key
- 7 Function key



Operating modes

The **Mini LED** features three different modes. Press the function key to select the desired menu.

4.1 Status indicator lamp

The status indicator lamp displays the following statuses:

Color	Mode
green	Normal operation
flashing red	overheat protection

4.2 Fast curing mode

The **Mini LED** runs at full power for 10 seconds in this mode.

Indicator lamp 4.2 displays your selection.

Roughly the following power output is attained in this mode:

- 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

Selection is made by actuating the function key. The lamp operates at full power in the "pulsed" mode here, emitting the radiation in 10 consecutive 250ms light intervals. Indicator 4.3 displays your selection.

4.4 "Soft start" mode

Selection is made by actuating the function key. The "soft start" mode features:

- A "soft start" in 10 seconds from 0 to 1100 mW/cm² - or from 0 to 2000 mW/cm² with the "booster light guide" (optional) dia. 5.5mm.
- Full power for a period of 10 seconds.

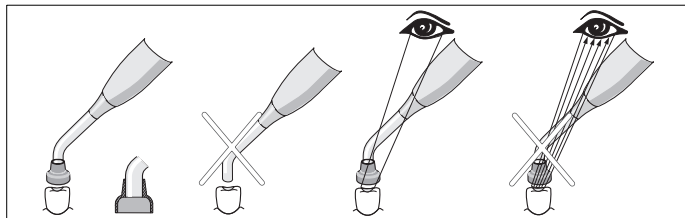
Indicator 4.4 displays your selection.

Handling

After the treatment center is switched on, the **Mini LED** is in its default setting, the fast curing mode (4.2).

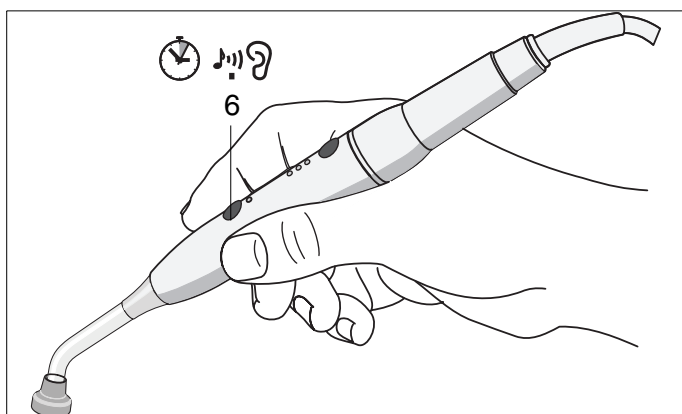
If the operating mode of the **Mini LED** is changed with the treatment center switched on, the mode also remains saved after the **Mini LED** is deposited.

After the mode is selected, the **Mini LED** is ready for use.



Place the light guide as close as possible to the composite material surface to be photopolymerized. Make sure that the light guide does not contact the material being cured, since this could damage the light guide and reduce its effectiveness.

- Never work without the eye protector (5).
- Never look directly into the light reflected by the tooth surface.



Briefly actuate the ON/OFF key (6) to start the curing cycle. This is confirmed by an acoustic signal.

An acoustic signal is sounded every 5 seconds in each mode.

The end of the cycle is also signaled by an acoustic signal. However, you can also interrupt the cycle at any time by gently pressing the ON/OFF key.

Technical data

General technical data

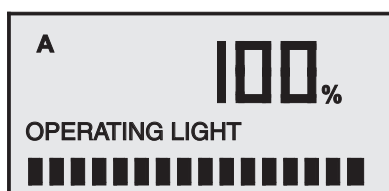
Model:	Mini LED
Weight of handpiece without hose:	105 g
Dimensions:	dia. 23mm x 240mm
Handpiece power supply:	5VDC / 2A
Thermal safety:	overheat protection

Optical specification

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

9 Operation light, tumbler filling, cuspidor flushing, purge

9.1 Operation light



Unit lamp – dentist element control panel

Briefly pressing the SIROLUX key switches the **operation light ON** or **OFF**.

Pressing this key for more than 3 seconds displays the settings dialog for the **OPERATING LIGHT**.

The light intensity can be set between 20% and 100% here 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. With this key you can switch the operation light (< 8000 lux) **ON** or **OFF** with **reduced brightness**.

You can switch over the intensity directly by alternately pressing both keys.

With the light **ON**, the green LED in the corresponding key lights up.

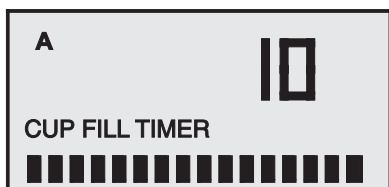


Operation light – assistant element

With the light key **L** you can switch the operation light **ON** or **OFF** in the set **intensity**.

This is possible only when the **SPRAYVIT** is deposited in the assistant element.

9.2 Tumbler filling function



Briefly pressing this key causes the tumbler to be filled with a programmed amount of water.

Pressing the key again during water flow switches the tumbler filling function off.

Only for tumbler filling key of the dentist element:

Pressing this key for > 3 seconds displays the settings dialog

CUP FILL TIMER

The filling time can be set 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,

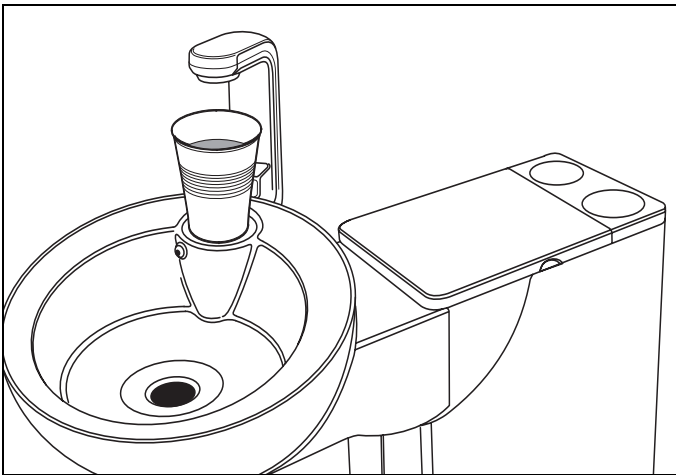
CUP FILL TIMER HYDROCOLLOID appears on the display.

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

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

Starting continuous operation is possible only using the tumbler filling key.

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



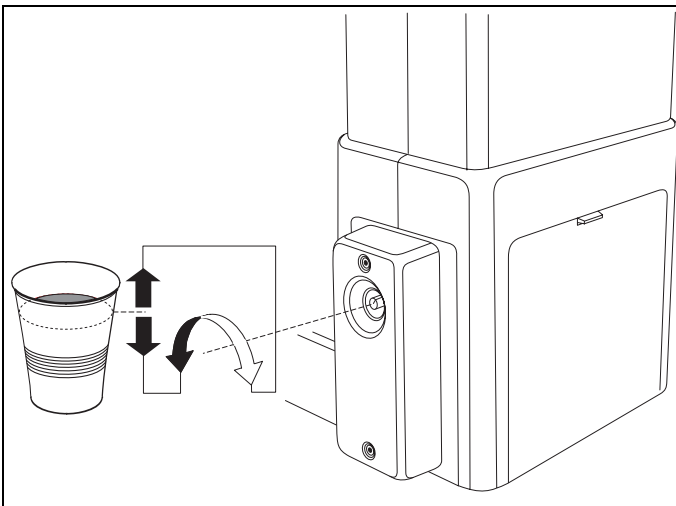
With this tumbler filler, the automatic sensor control recognizes the filling level of the tumbler.

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 is shut off automatically.

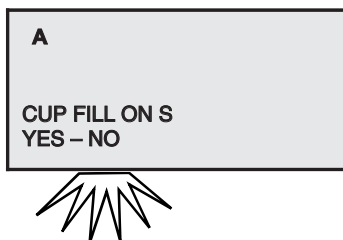
If the tumbler is removed before the preset filling level has been reached, the water flow is shut off immediately.

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



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

Clockwise rotation increases the filling amount.



⚠ CAUTION

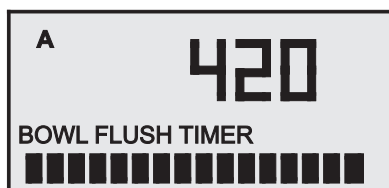
- The tumbler must not be transparent.
- The tumbler must always be placed in the center of the area provided for it.
- If an empty tumbler is standing below the tumbler filler when the treatment center is switched on with the main switch, the tumbler will not be filled automatically. To activate automatic 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.

9.4 Cuspidor flushing function



Briefly pressing this key switches the flushing function ON and causes the cuspidor to be flushed for a preset period of time.

Pressing the key again during flushing switches the flushing function off.



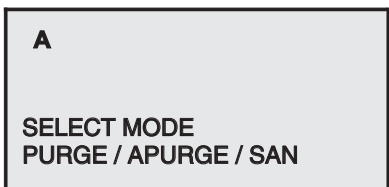
Only for cuspidor flushing key of the dentist element:

Pressing this key for > 3 seconds displays the settings dialog

BOWL FLUSH TIMER

The time can be set in increments of 20 to 420s using the – / + keys.

9.5 PPurge / 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.

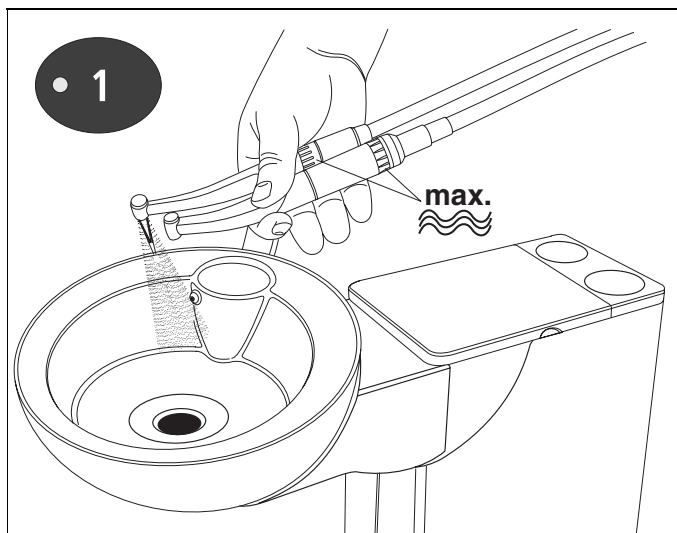
You will be prompted to choose between PURGE/ APURGE and SANITATION¹.

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

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

A

**SELECT ITEMS
FOR PURGING**



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.

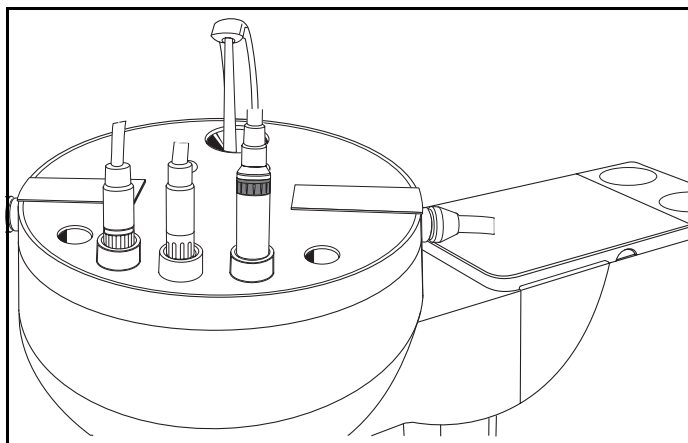
The maximum water flow must be set on the instruments.

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 () runs down for each instrument individually.

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

Finally place the instruments back .



■ 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.

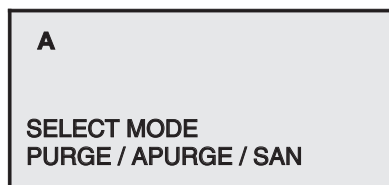
Setting the APURGE function



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.

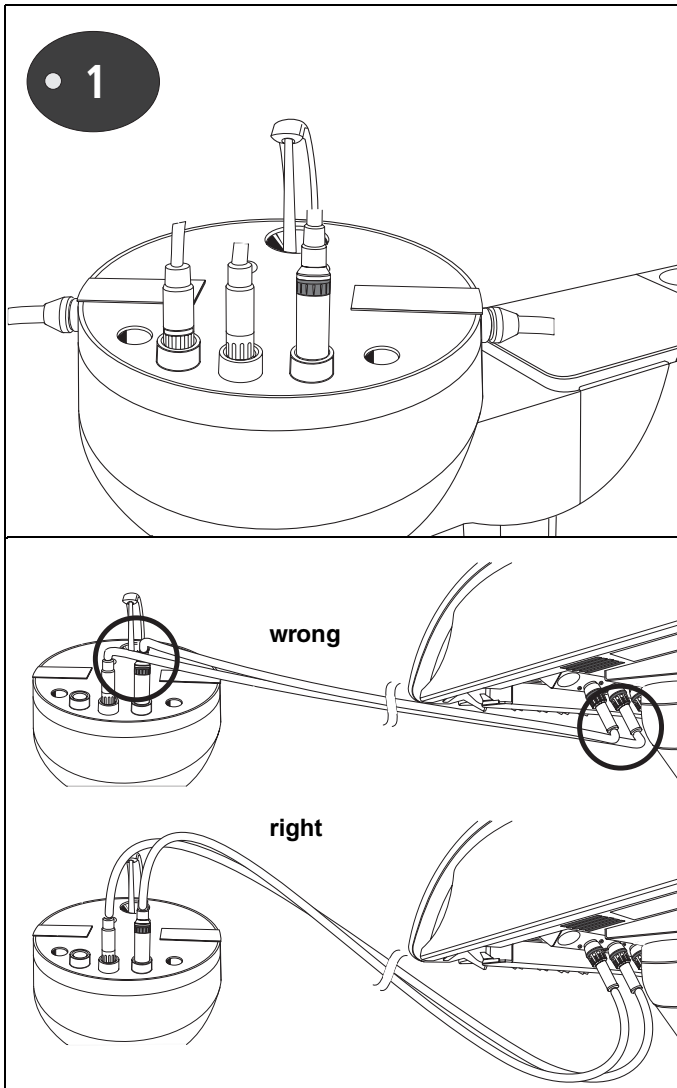
Select APURGE with the – or + key. APURGE must flash.



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

A

**SELECT ITEMS
FOR PURGING**



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 (10.13) 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 NOTE

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

10 Basic treatment center settings in the Mode dialog

10.1 Mode Key



On pressing the **Mode** key, various basic treatment center settings can be called and changed in a certain order.

They usually apply both to user A and to user B.

The corresponding display disappears automatically after approx. 10 seconds. You can also exit the Mode dialog more quickly by pressing the Mode key > 3 seconds.

The flashing text is selected and is saved on exiting the Mode dialog.

The desired setting can be selected by pressing the **-** or **+** key.



Key lock

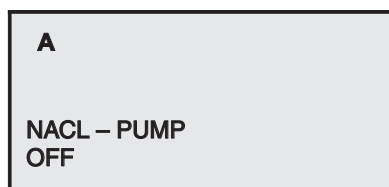
The key lock can be activated and deactivated again by pressing the **-** and **+** keys simultaneously.

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

i NOTE

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

10.2 Mode: NACL PUMP OFF or ON for instrument holder



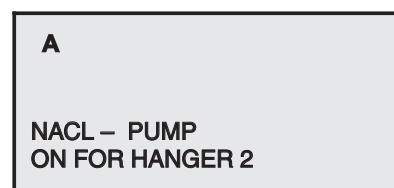
Saline solution for the desired burr instrument or the SIROSONIC L scaler (instrument holder 2 –6)

In this mode, you can preselect the NaCl pump for a specified instrument using the **-** / **+** keys.

For preparation of the NaCl pump, see page 38.

i NOTE

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



10.3 Mode: MAINTENANCE

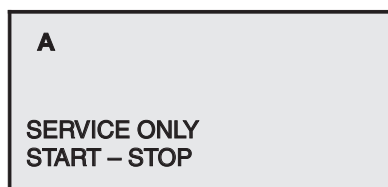


Display of next maintenance date

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).

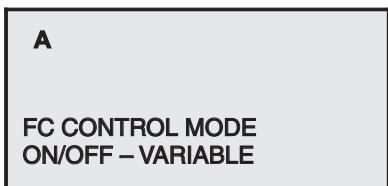
As soon as the time remaining until the next maintenance date is less than 30 days, the message is automatically displayed each time the unit is switched on. The display message then disappears as soon as an instrument is removed from its holder.

10.4 Mode: SERVICE ONLY START –STOP



For service engineers only!

10.5 Mode: FC CONTROL MODE ON/OFF –VARIABLE



Direct starter or speed controller foot switch

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

With **direct starter presetting (ON/OFF)**, the bar display always jumps immediately to the maximum value after actuating the foot switch. You work with the displayed maximum value.

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

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

10.6 Mode: TIME –HOURS :MIN



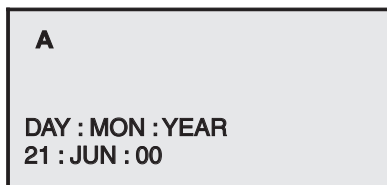
Setting the time

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

The hours display initially flashes, and can be decremented or incremented with the – / + keys.

When the **Mode** key is pressed again, the minute display starts flashing and can be adjusted in the same way.

10.7 Mode: DAY : MON : YEAR



Setting the date

With this display you can set the **year, month and day**.

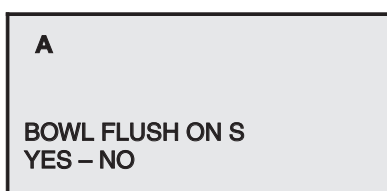
The setting is as for Mode

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.

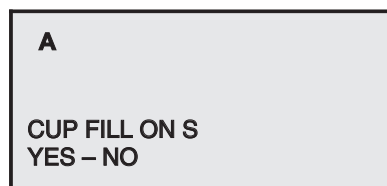
10.8 Mode: BOWL FLUSH ON S YES –NO



Cuspidor flushing for chair program S

In program **S** of the treatment chair, cuspidor flushing switches on.

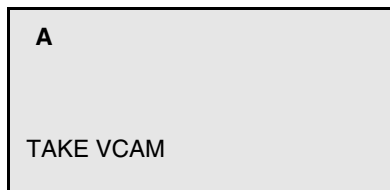
10.9 Mode: CUP FILL ON S YES –NO



Tumbler filling function with chair program S

In program **S** of the treatment chair, the tumbler is filled.

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



White balance for 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.

This makes it possible to use the camera 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 the camera has been removed, the dialog used to perform 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.

The slide switch (2) of the camera must be set to its middle position (overview exposure).

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

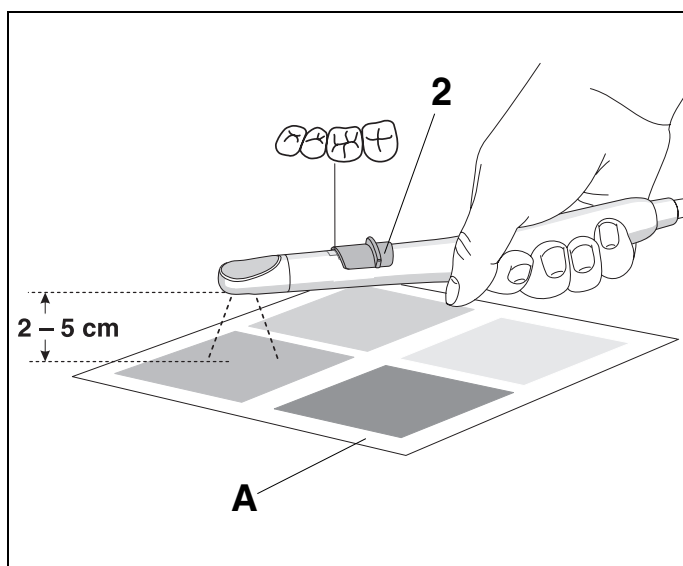
The screen must be **completely** filled by the focussed color area.

- Press the **Mode** key, the white balance is started (takes several seconds).

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

If the white balance is not successful, **USER** will not be displayed in bold type. White balance may be repeated as often as necessary.

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.



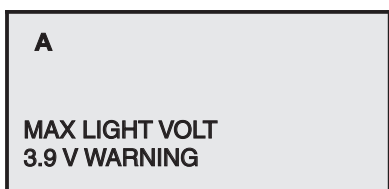
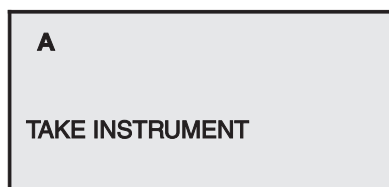
If you want to reset the camera to its factory settings, select **HOME** with the **- / +** keys. When you confirm by pressing the Mode key, **HOME** is displayed in bold type.

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 many times as necessary until you obtain the desired result.

10.11 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.

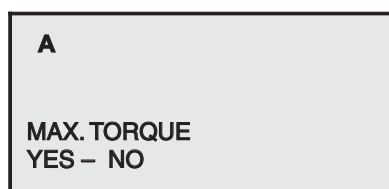
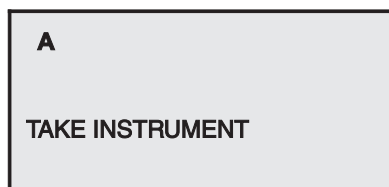
After depositing the instrument, please remove and set the next instrument.

Observe the voltage specified by the instrument manufacturer!



NOTE

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.

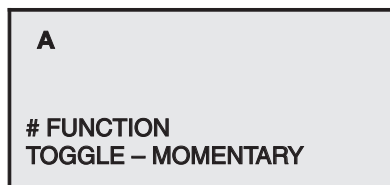
If **No** is flashing:

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

i NOTE

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

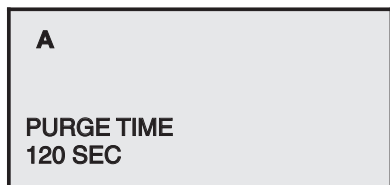
10.12 Mode: # FUNCTION TOGGLE –MOMENTARY



as button or switch

In this mode you preselect whether you want to use the # key as a button or as a switch.

10.13 Mode: PURGE TIME... SEC

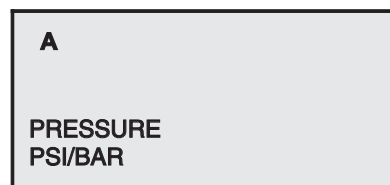


Setting the purge time for purging the water paths

(Only for dentist element)

The purging time per instrument can be preset from 60 to 120 seconds with the – /+ keys for the **purge function** (see page 45).

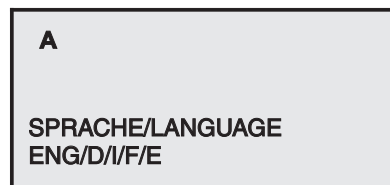
10.14 Mode: PRESSURE PSI / BAR



Indication of pressure in PSI or bar

This mode is used to set the **driving air pressure** display of the highspeed handpiece to your preferred unit of measurement, i.e., **PSI** or **bar**.

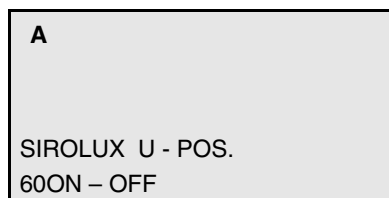
10.15 Mode: SPRACHE / LANGUAGE ENG / D / I / F / E



Language setting

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

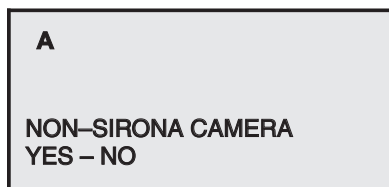
10.16 Mode: SIROLUX U - POS. ON – OFF



SIROLUX in examination position

If **ON** is flashing, the **SIROLUX FANTASTIC** operation light is switched on automatically when you bring up the dentist element with the foot switch (with instruments placed in their holders). (see page 26).

10.17 Mode: NON – SIRONA CAMERA YES – NO



This mode dialog allows you to operate an external camera connected to a PC. This can be any camera that is not integrated in the treatment center. The camera is controlled with the foot control plate.

If **NO** is flashing:

the dentist element can be moved away in any direction by actuating the 4-way switch.

If **YES** is flashing you can:

- move the 4-way switch **to the left** to remove the camera (image becomes visible)
- move the 4-way switch **forward** to switch from live to still image
- move the 4-way switch **to the right** to deposit the camera
- move the 4-way switch **to the rear** to run the dentist element away from the operator

NOTE

In order to operate the camera, the "PC software SIVISION" must be installed

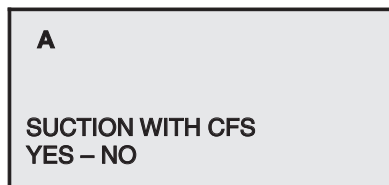
10.18 Mode: POLYLUX WITH CFS YES – NO



This dialog has no function in connection with the Mini LED curing light.

Select **NO**.

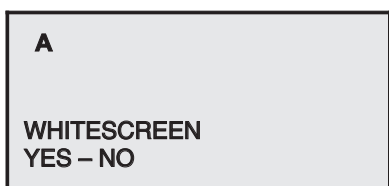
10.19 Mode: SUCTION WITH CFS YES – NO



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

If **YES** is flashing, the **suction flow** of the large suction hose can be interrupted or restarted (not at the saliva ejector hose) by pushing the 4-way foot control on the chair in any direction. After the large suction hose is deposited in the interrupted condition, the suction flow switches back on automatically when it is removed again.

10.20 Mode: WHITESCREEN YES – NO



Preselecting a white screen for the SIVISION monitor

Only for the "X-ray image viewer" key on the assistant panel

If **YES** is flashing –

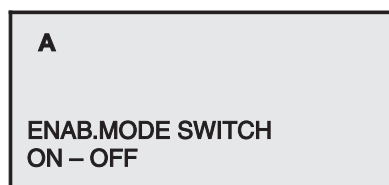
The "**X-ray image viewer**" key is used to switch the X-ray image viewer and a **WHITE SCREEN** on the SIVISION 3 monitor ON and OFF.

If **NO** is flashing –

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

With the X-ray image viewer and SIVISION 3 installed, always select "**NO**".

10.21 Mode: MODE SWITCHOVER 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 "**Mode switchover**" key to toggle between the VIDEO mode and the PC mode when the instrument is deposited or the camera has been removed.

If **OFF** is flashing –

The "**Mode switchover**" key can no longer be used to toggle between the VIDEO mode and the PC mode with the SIVISION 3.

This prevents the selected mode from being changed inadvertently.

10.22 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.

NOTE

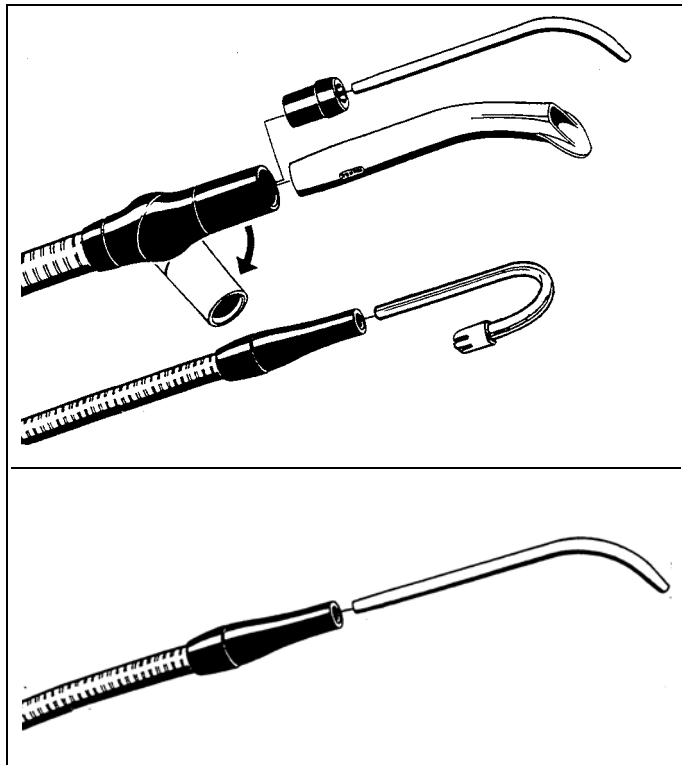
*This function is switched **OFF** in the factory setting.*

NOTE

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

11 Assistant element

11.1 Suction handpieces on the assistant element



The vacuum system is switched on after a suction hose is removed from the holder.

! CAUTION

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

The suction handpiece can be angled by turning it.

! CAUTION

Should the vacuum system switch off unintentionally, 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.

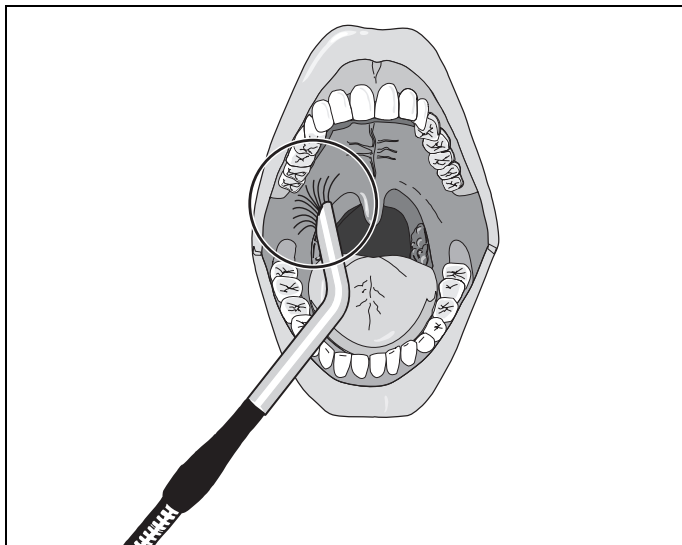
If the unit is equipped with a second saliva ejector hose, the surgical cannula can be inserted directly into the saliva ejector handpiece.

A

**SUCTION WITH CFS
YES – NO**

The **suction flow** of the large suction hose can also be interrupted or restarted by pushing the 4-way foot control on the chair in any direction.

You can preselect this in **Mode 10.19**. After the large suction hose is deposited in the interrupted condition, the suction flow switches back on automatically when it is removed again.



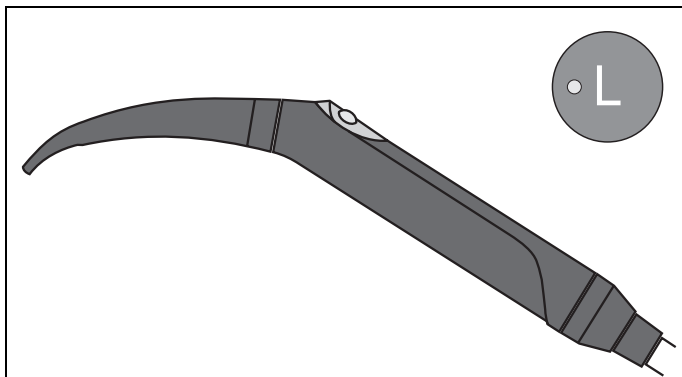
⚠ CAUTION

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 NOTE

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

11.2 SPRAYVIT on the assistant element



If the SPRAYVIT is the only instrument removed, the instrument light can be switched on or off.

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

The instrument light switches on when the SPRAYVIT is activated (if preselected).

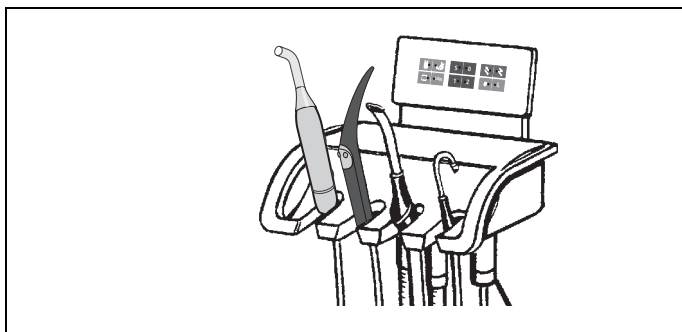
The instrument light is switched off after a time lag of 10s when the SPRAYVIT is no longer activated.

When the SPRAYVIT is deposited in its holder, the instrument light switches off immediately.

⚠ WARNING

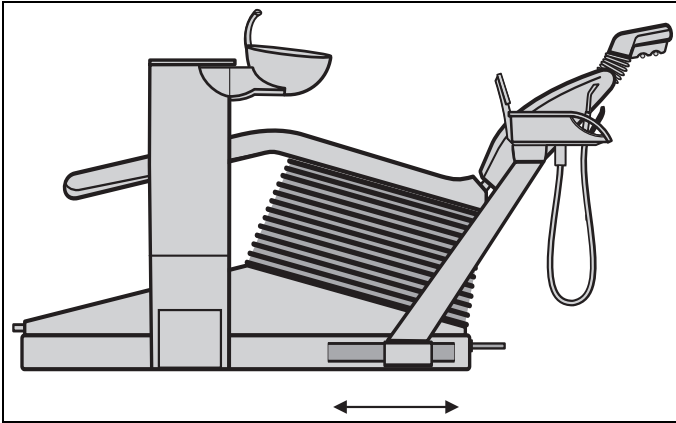
After changing hoses, press the water key of the SPRAYVIT repeatedly until water flows out of it! Only then can you begin treatment.

11.3 Satalec Mini LED curing light on the assistant element



For safety instructions and operation, see pages 39 ff.

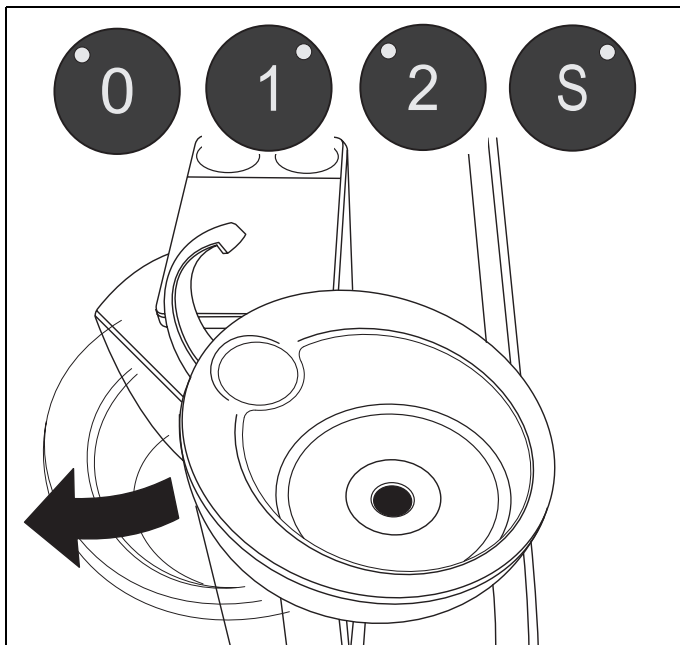
11.4 Manual travel track



You can shift the position of the assistant element.

12 Water unit

12.1 Swiveling the cuspidor



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

Collision protection

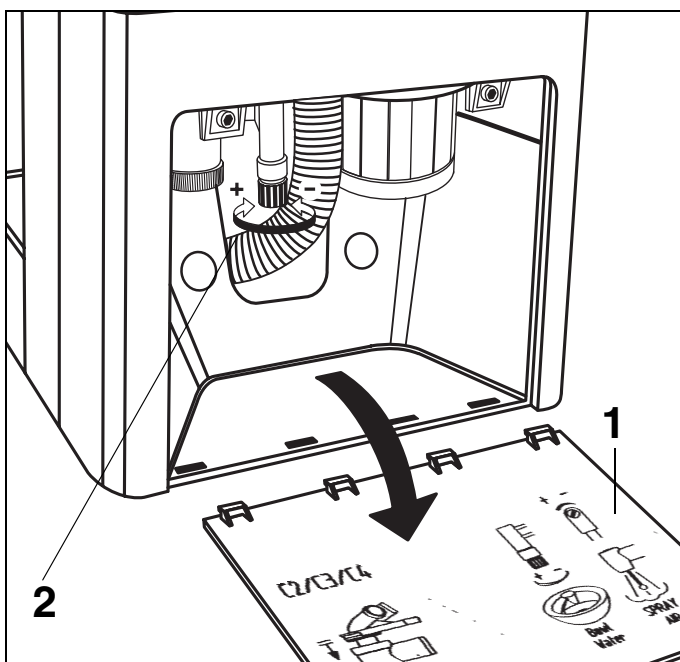
Certain chair movements are locked with the cuspidor swiveled in. If a programmed movement **S**, **0**, **1** or **2** is started, then the cuspidor first moves back into its starting position before the chair moves into the programmed position.

When the 4-way foot control or the 4-way switch on the headrest is actuated, the cuspidor again swivels back first and, if the corresponding key is still pressed, the chair then moves.

You can make individual adjustments of the headrest even with the cuspidor swung in (on the assistant unit).

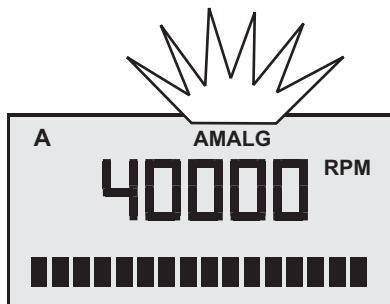
If the cuspidor is swiveled in while the chair is moving, the program is then aborted. This is signaled by a double beep.

12.2 Controlling 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).

12.3 Amalgam rotor



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

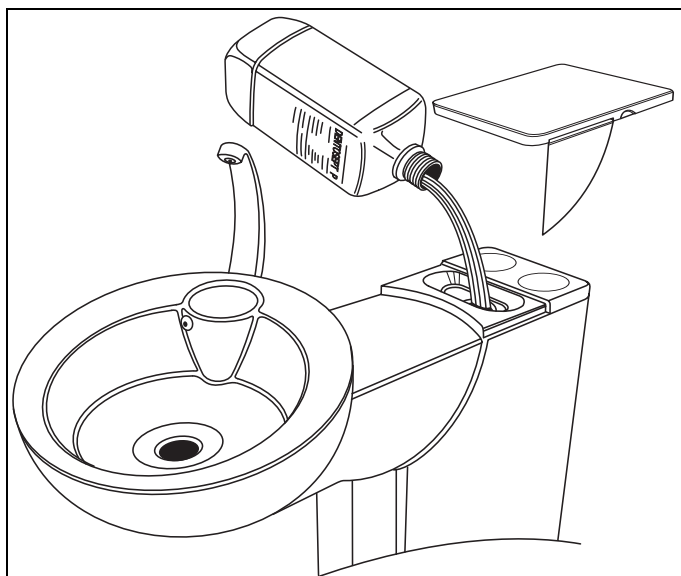
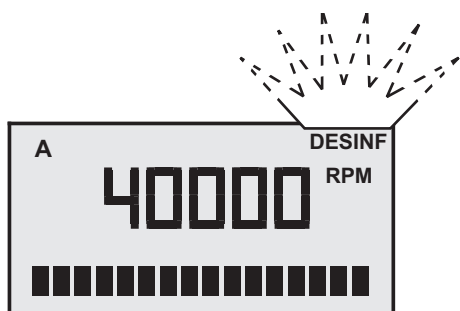
A continuous sound indicates that the rotor is full and no longer functioning properly.

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

i NOTE

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.

12.4 Disinfection system (optional)



If the message **DESINF** starts flashing on the dentist element display during treatment, then 1 liter of **DENTOSEPT P** should be refilled not later than the end of the treatment day.

If the message is flashing, 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!

DENTOSEPT P:

1 carton = 6x1 liter, REF 33 18 156

For Canada only:

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

1 bottle = 1 liter, REF 59 69 543

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**").



CAUTION

In Japan the disinfectant OXYDOL available there must be used instead of DENTOSEPT P.

OXYDOL must be mixed 1:1 with distilled water before it is filled into the disinfection system.

13 SIROTOM HF electrosurgery

13.1 Safety



CAUTION

Incorrect operation and the nonobservance of precautionary measures can cause serious accidents when working with the electrosurgical unit.



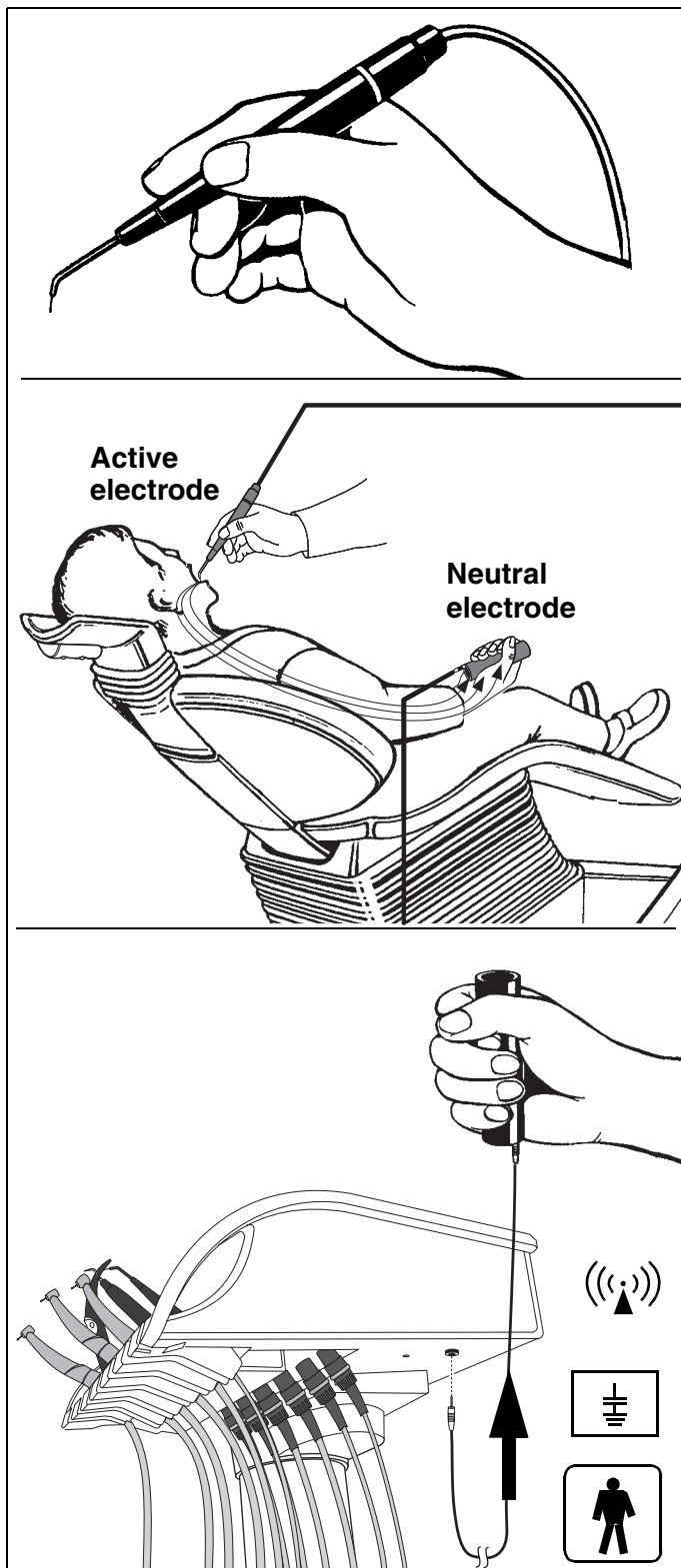
WARNING

In the case of patients with cardiac pacemakers, there is a risk that the pacemaker may be disturbed during treatment with the electrosurgical instrument. We recommend not using the electrosurgical unit for these patients.

Further WARNINGS for working with the surgical unit

- The patient should not come into contact with metallic parts which are grounded or have substantial capacitance to ground.
- The power output should be set to the lowest possible value for the relevant purpose.
- If the surgical unit appears to deliver little power or does not work properly in its normal setting, this may be caused by a poor contact in the supply cable.
- Combustible substances, which are used for instance as cleaning or disinfecting agents, should have evaporated before applying surgery. Cotton wool may ignite. Endogenous gases may ignite.
- Contact between the HF handpiece and metal implants or supraconstructions must be avoided.
- The HF can impair the function of other electronic devices.
- Test the electrode cable regularly for possible damage to the insulation.
- If a line voltage fade occurs, the HF electronics switch off automatically. Deposit the handpiece briefly. Then you can continue working as usual.

13.2 Operation



This handpiece is used for electrotomy (cutting), coagulation and desiccation in biterminal technique.

CAUTION

The patient must always hold the neutral electrode in his hand during this procedure!

The connection socket is located on the bottom side of the dentist element.

The handpiece is started by actuating the foot switch. In this case an interrupted acoustic signal sounds.

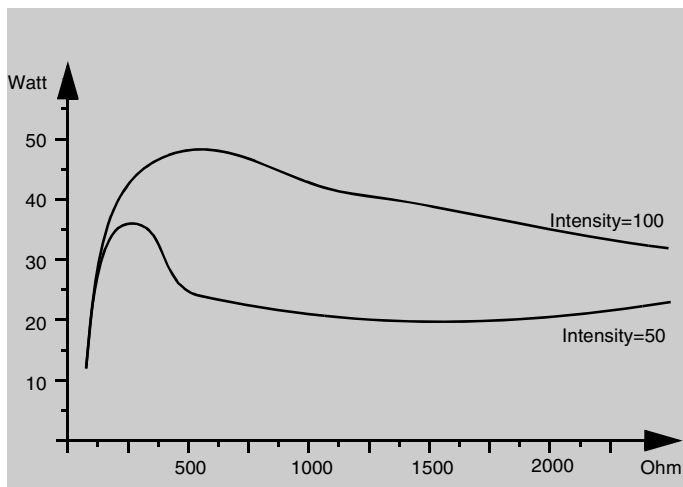
CAUTION

For interference suppression reasons, the handpiece may be used only for a few seconds.

If the foot switch is pressed for more than one minute, the device switches off automatically. The activation must be interrupted.

Let go of the foot switch before depositing the HF instrument in its holder. The programmed values of the previously selected user level appear again the next time the handpiece is removed.

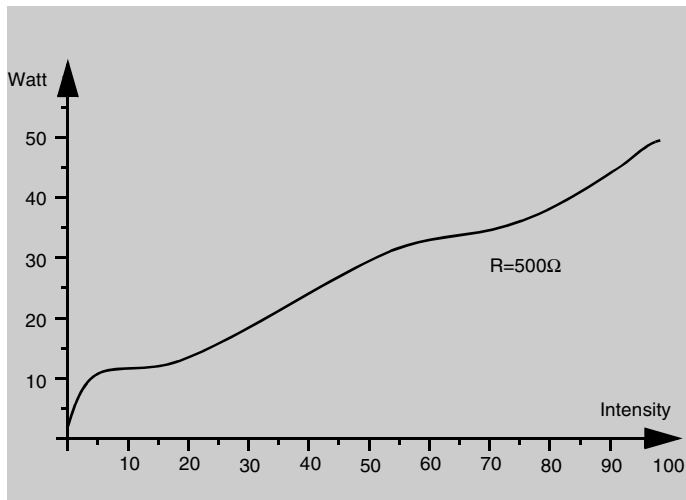
13.3 Technical description



Power characteristic

for cutting and coagulation

Power measured between handpiece and protective ground wire.



Power curve

for cutting and coagulation

Power measured between handpiece and protective ground wire.

13.4 Technical data

Maximum output voltage peak – peak between hand-piece and protective ground wire when cutting: 1500 V

Frequency of operating and alarm tone: 1200Hz

The neutral electrode is connected to the protective ground wire through a capacitor.

Connection for the neutral electrode.



Neutral electrode at high frequency relative to ground.



The SIROTOM handpiece is a type **BF** application part

DAB 25% ED 10s SD 40s
1MHz / 50W / 500Ohm
((⋄))

Intermittent operation 25%

Duty time 10s

Cycle time 40s

HF frequency 1MHz

Output power max. 50W across 500 ohms



Symbol for non-ionizing radiation

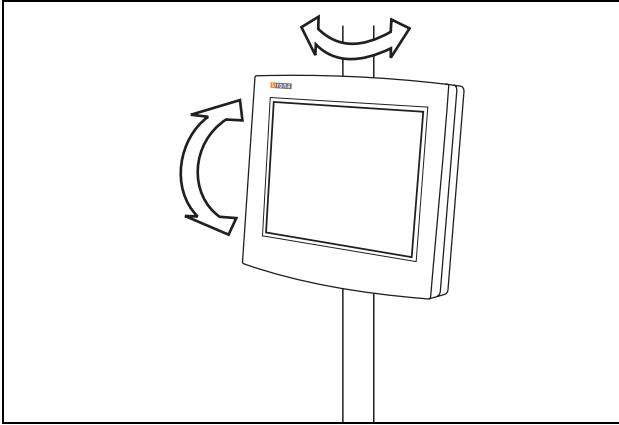
13.5 Safety checks

In Germany, medical devices are subject to the provisions of the Ordinance on the Installation, Operation and Use of Medical Devices (Medizinprodukte-Betreiberverordnung – MPBetreibV). Safety checks must be performed and a medical product log must be kept.

For details please refer to Section 17.3 “Safety tests”.

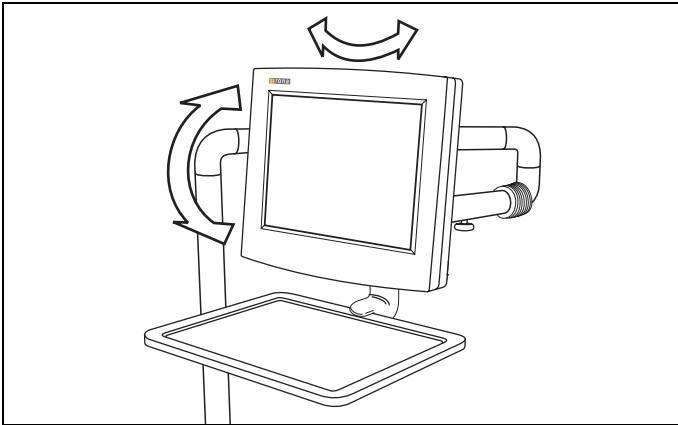
14 SIVISION 3

14.1 System overview of SIVISION 3



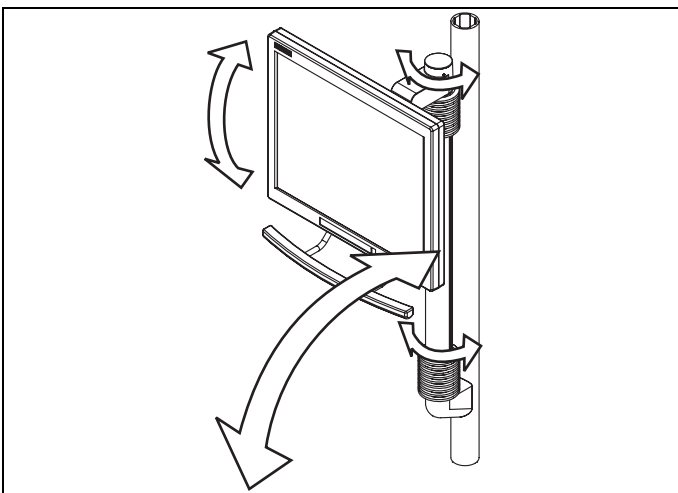
SIVISION on the lamp support tube

- Rotatable
- Swivelable



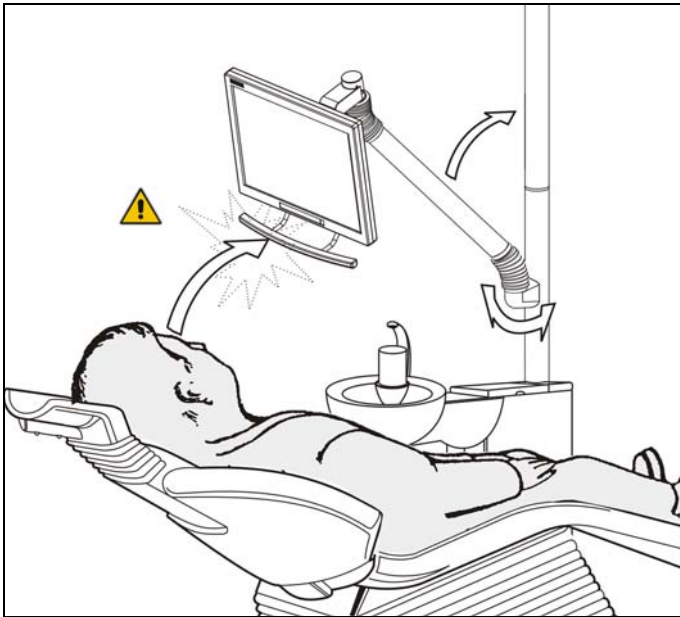
Monitor on tray arm

- Rotatable
- Swivelable



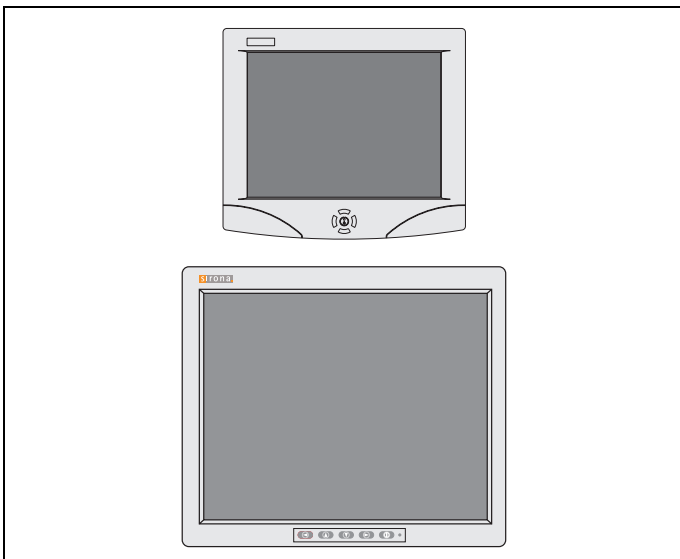
Monitor on swivel arm

- Rotatable
- Swivelable
- Height adjustable



⚠ CAUTION

Make sure that the patient does not collide with the monitor during movements of the dental treatment chair also when using the cuspidor. Swivel the monitor out of the collision area if necessary.



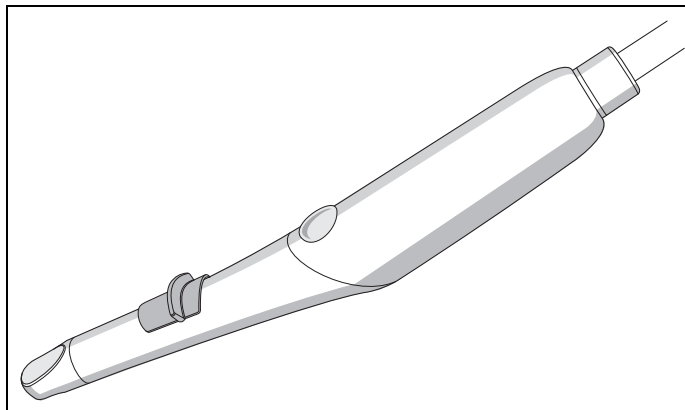
SIVISION 3 monitor versions

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

⚠ CAUTION

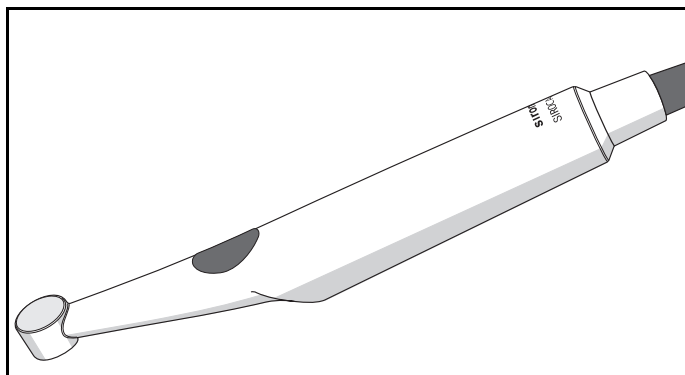
The loudspeaker socket of the monitor may be connected only to a device which complies with IEC 60950 (e.g. PC) or IEC 60601-1, and under no circumstances e.g. to a stereo system etc.

14.2 Camera versions



SIROCAM 3

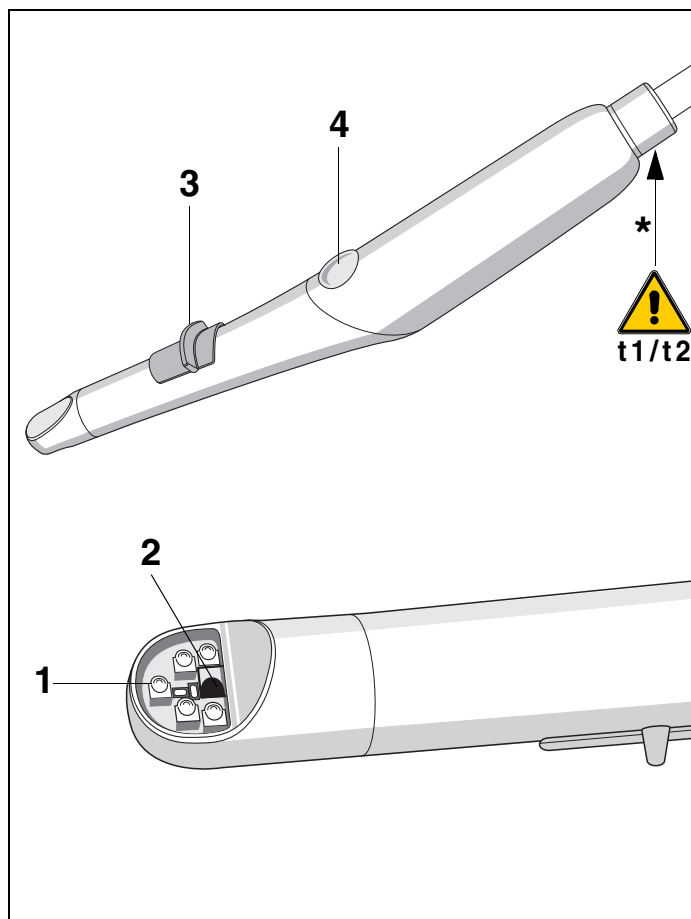
- Integrated 4-view image memory
- 3-fold adjustable focusing range
- Titanium case



SIROCAM C

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

14.3 SIROCAM 3 intraoral camera (additional equipment)



The SIROCAM 3 intraoral camera in conjunction 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 parts of the teeth to be exposed 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 deposited 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.

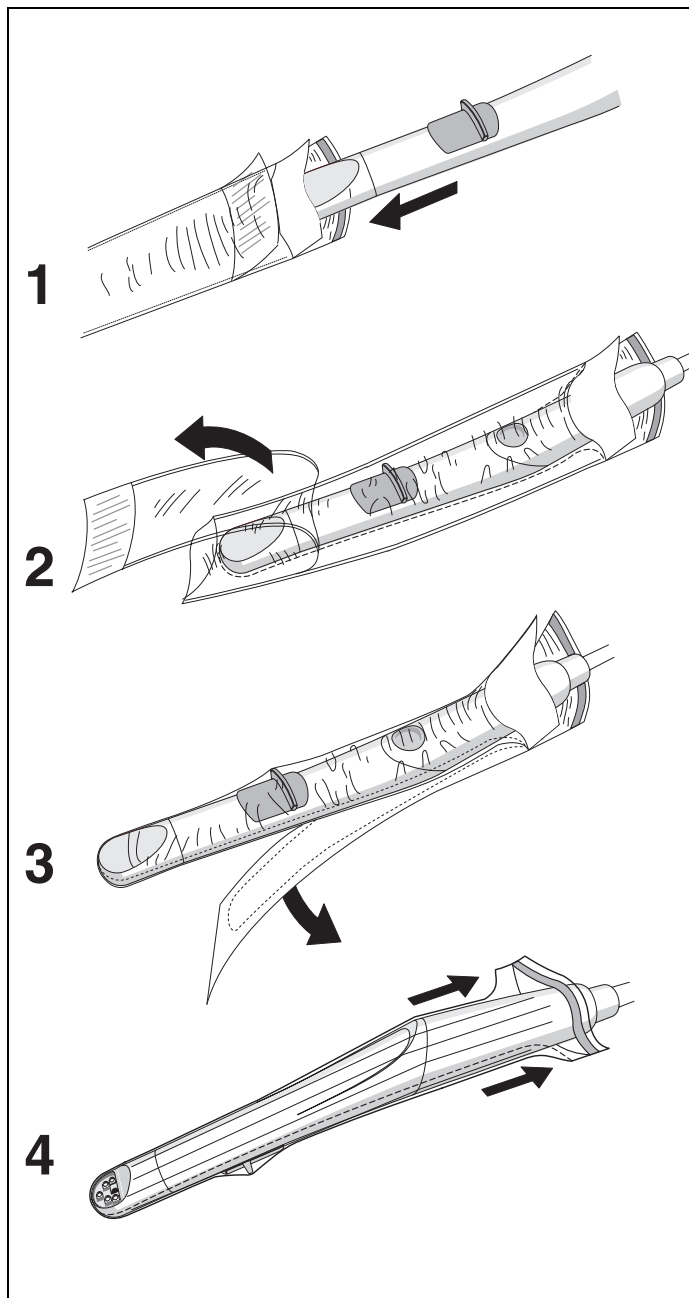
The camera button (4) is intended for controlling different SIVISION 3 functions.

NOTE

For camera operation and further information, please refer to the Operating Instructions for the SIROCAM 3.

NOTE

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. This makes it possible to use the camera 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 10.10).



Hygienic protective covers for SIROCAM 3

Hygienic protective covers are available for the camera. They can be ordered under REF 59 38 654. Packaging unit: 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

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

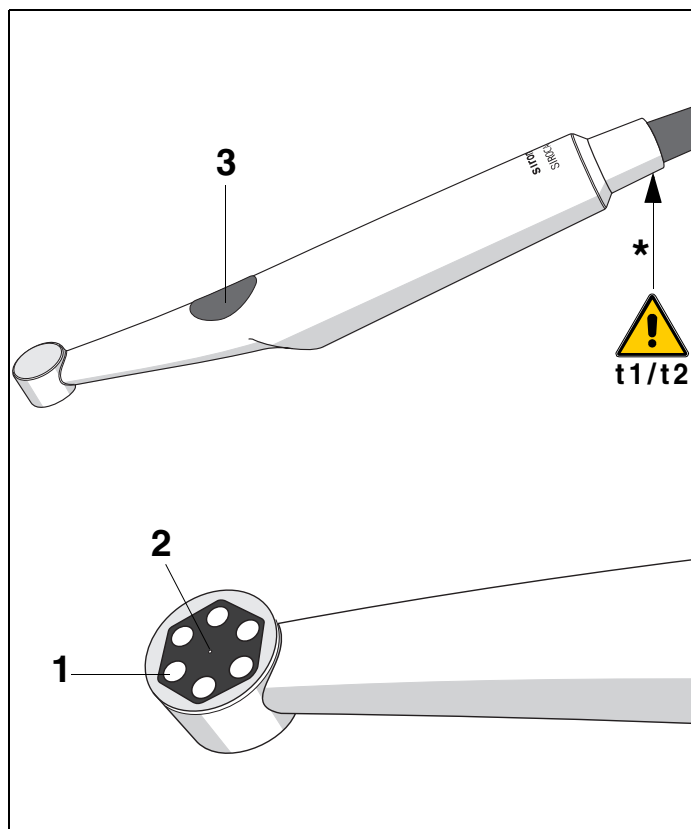


CAUTION

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 (additional equipment)



The SIROCAM C intraoral camera in conjunction 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 parts of the teeth to be exposed 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.

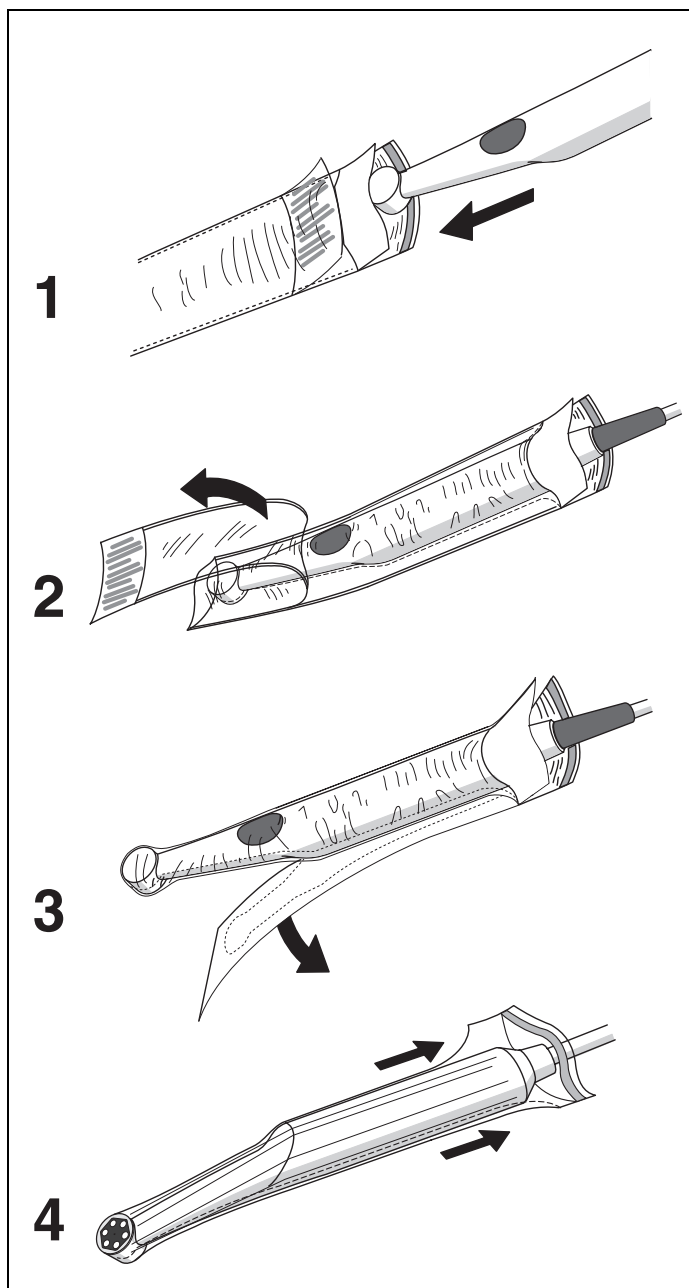
The camera heats up during operation.

To prevent overheating of the camera, the camera must be deposited 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 not pressed – 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. Packaging unit: 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

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



CAUTION

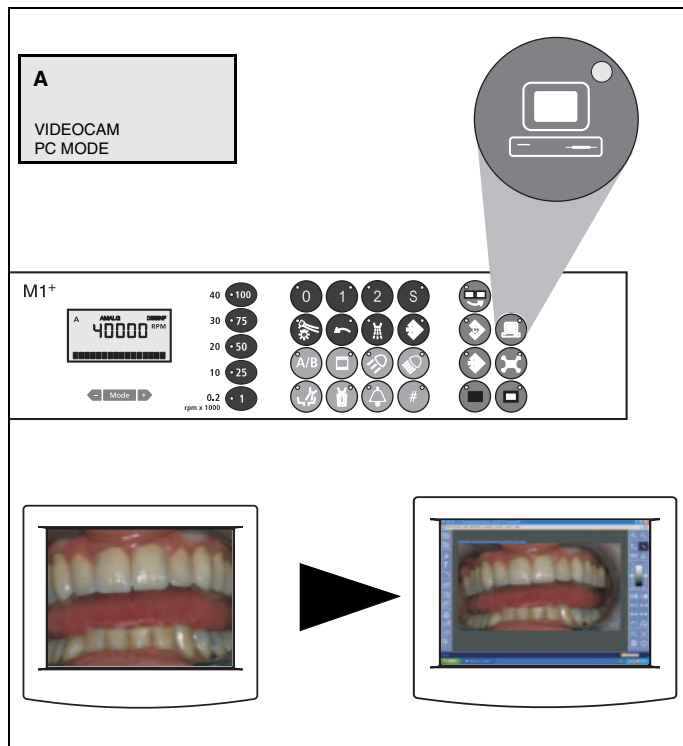
Use only the hygienic protective covers offered by Sirona.

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

Panel key for toggling between PC-MODE and VIDEO-MODE

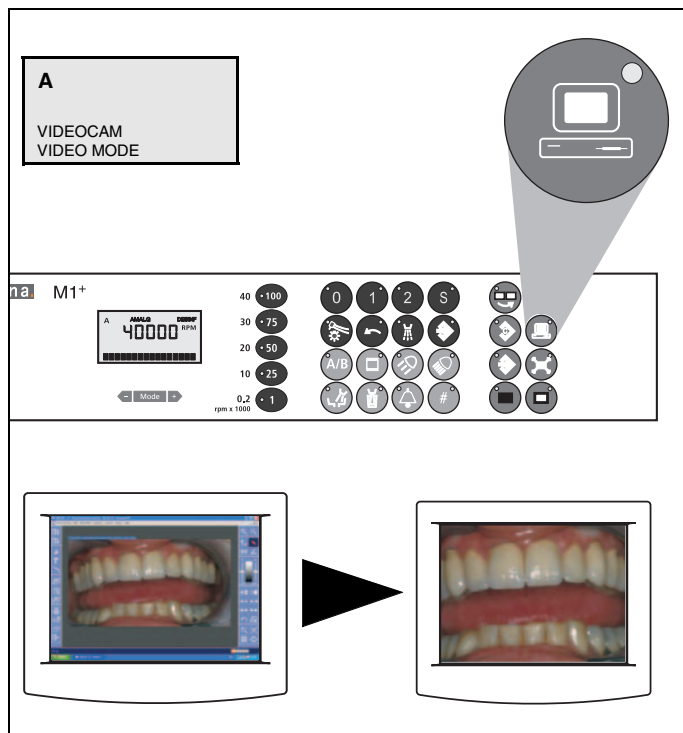
with instruments replaced or camera removed.

The LED in the key lights up.

- ☒ **“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. If the camera is removed, the display switches to the **LIVE IMAGE**.

This mode remains active even if the treatment center is switched OFF and back ON.



SWITCHING TO VIDEO MODE

Panel key for toggling between PC-MODE and VIDEO-MODE

with instruments replaced or camera removed.

The LED in the key switches off.

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

- ☒ With the camera removed, the **SIVISION** monitor displays the camera image.

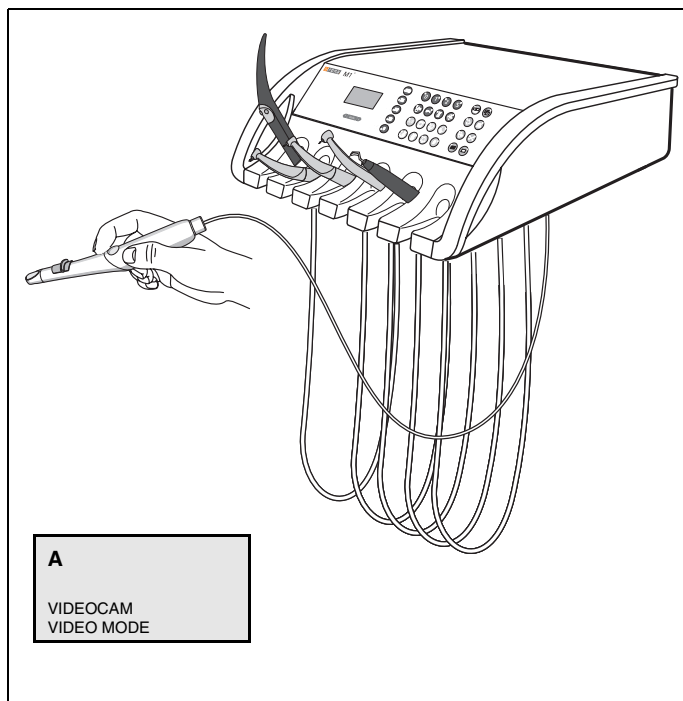
This mode remains active even if the treatment center is switched OFF and back ON.



A
ENAB.MODE SWITCH
ON – OFF

This switchover function of the "Mode switchover" key can be disabled in Mode dialog **10.21 10.21 „MODE SWITCHOVER ON – OFF“** to prevent inadvertent switching.

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

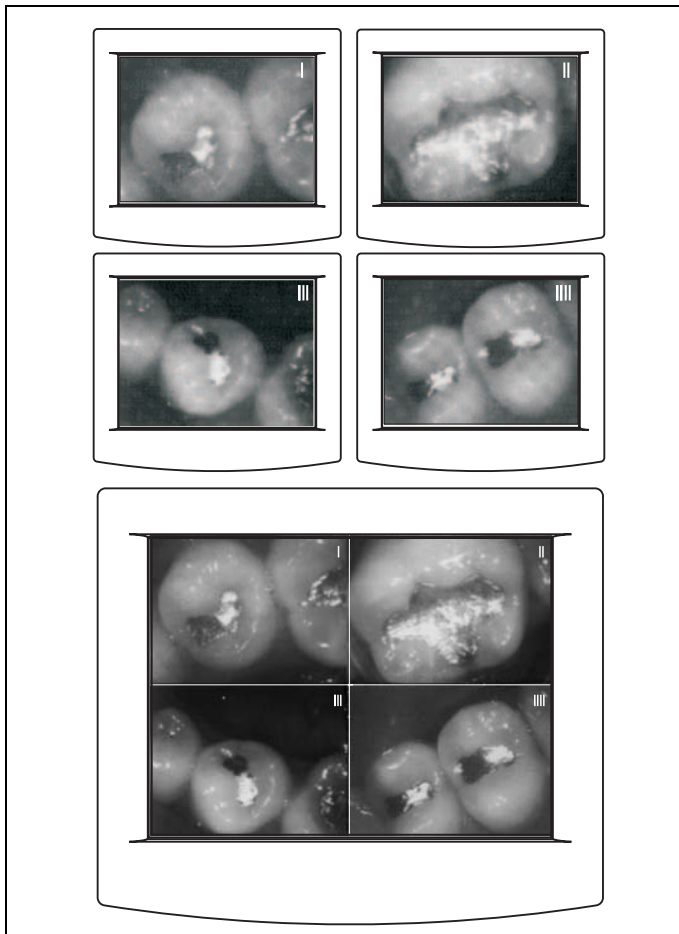


Operation in video mode

In this version the **SIROCAM 3** / SIROCAM C intraoral camera is positioned in **holder 6** of the dentist element or in an **additional holder on the dentist element**.

The camera can be operated by the unit foot switch if no other instrument is active (removed and operable by foot switch) when the camera is removed.

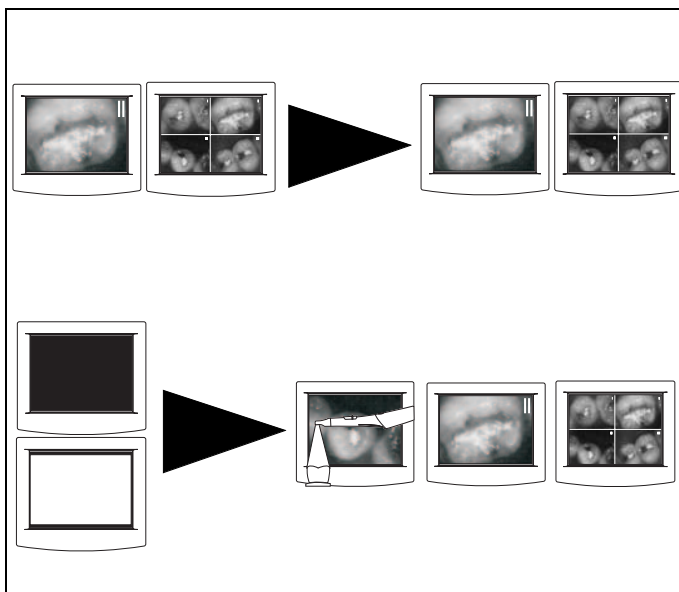
- ☑ If the camera is the active instrument “**VIDEOCAM**” and the operating mode “**VIDEO MODE**” appear on the display.



SAVE IMAGE

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

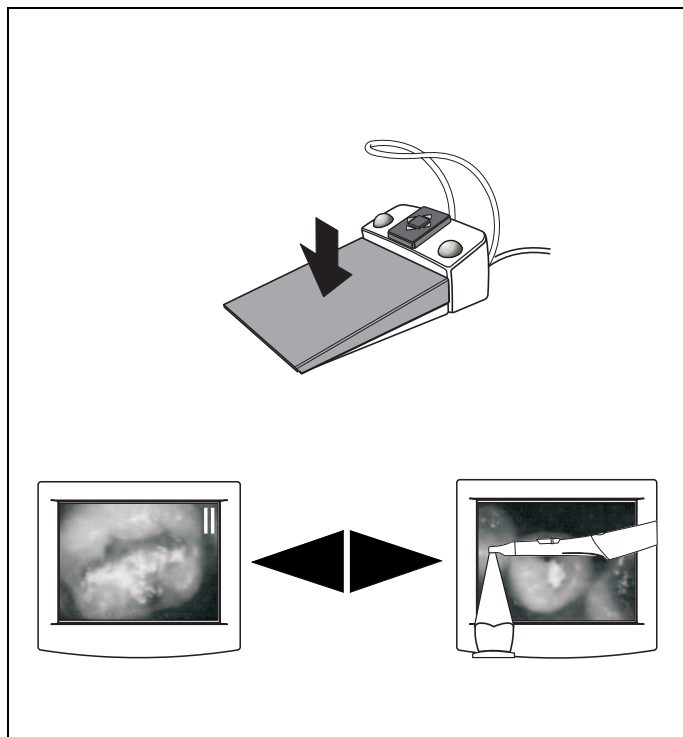
A 5th view shows a **QUAD IMAGE** in which these 4 still images are tiled on the screen.



Remove the camera

If a **STILL IMAGE** or **QUAD IMAGE** was displayed with the camera deposited, this view is retained.

If a **BLACK SCREEN** or a **WHITE SCREEN** was displayed with the camera deposited, the view preceding the **BLACK** or **WHITE SCREEN**, i.e. a **LIVE**, **STILL** or **QUAD IMAGE**, appears.



TOGGLING BETWEEN STILL IMAGE AND LIVE IMAGE

with the camera removed by actuating the foot pedal on the foot switch.

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

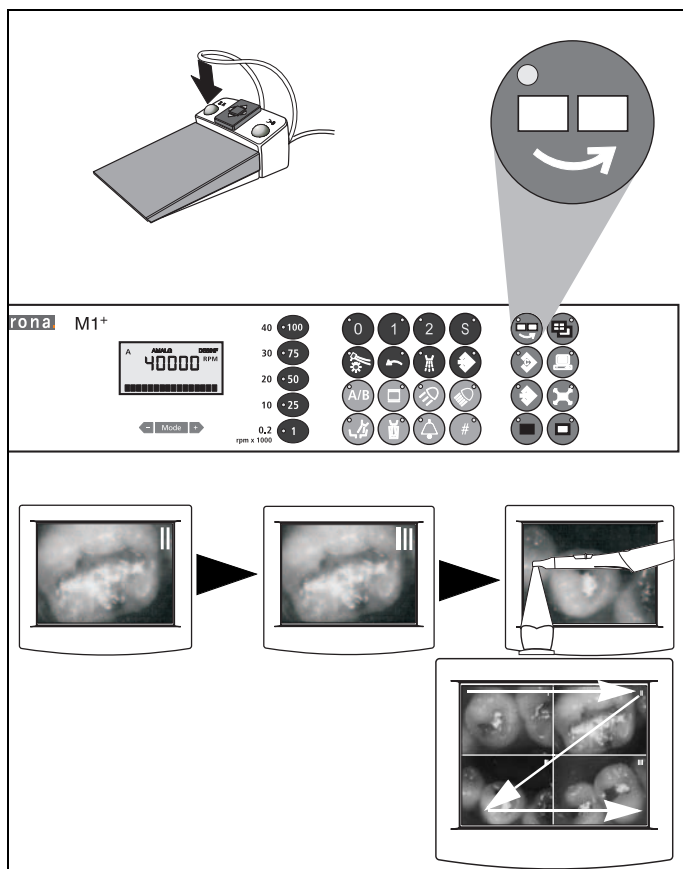


IMAGE SWITCHING

Press the "Frame indexing" key.

With the camera removed, also with the left button on the foot switch.

i NOTE

If the camera is in the LIVE IMAGE mode, the LIVE IMAGE is stored in the current memory location during frame indexing (image switching).

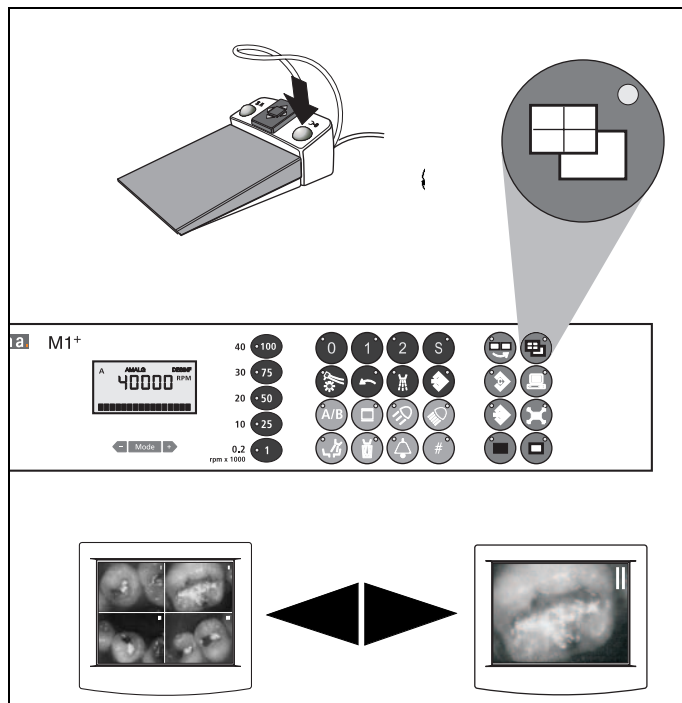
With the camera deposited, a BLACK SCREEN is stored in the current memory location on frame indexing and with empty memory.

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 removed.

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

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



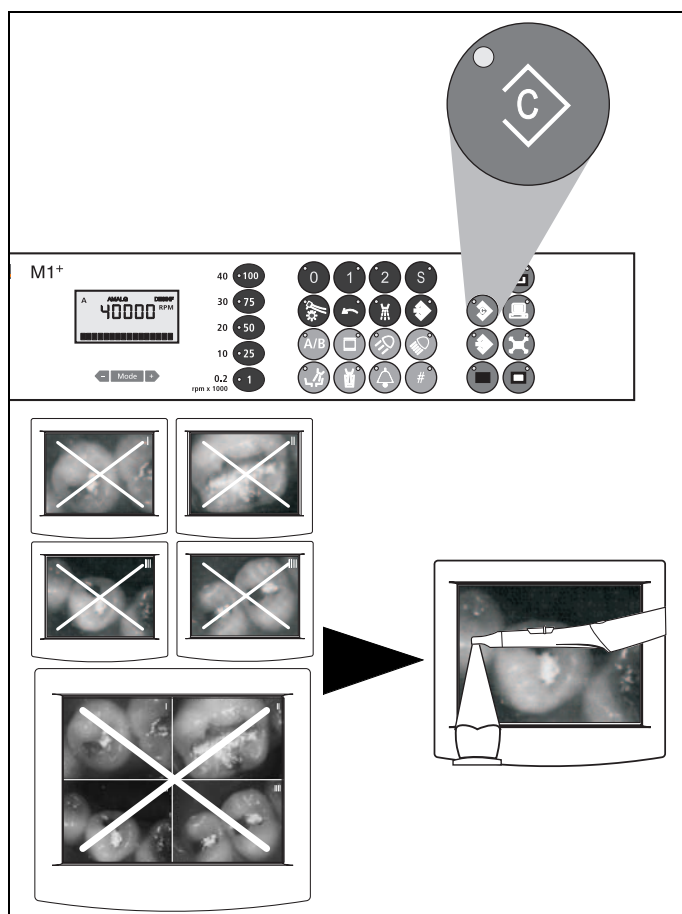
TOGGLING BETWEEN QUAD IMAGE AND SINGLE IMAGE

Press the "Quad image" key.

With the camera removed, also with the left button on the foot switch.

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

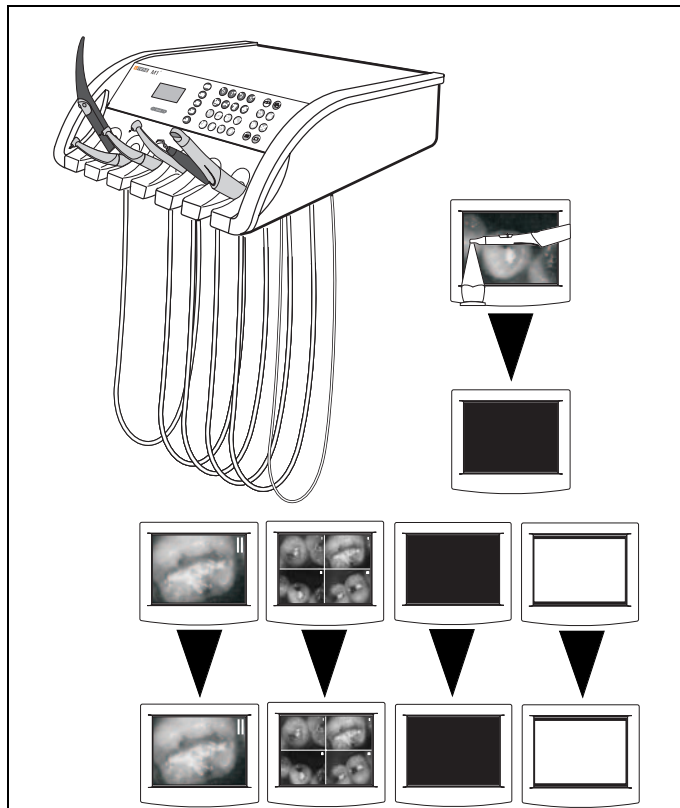
If you switch to **SINGLE IMAGE**, the image previously selected in the **QUAD IMAGE** is displayed.



CLEARING THE MEMORY

with the camera removed, using the key on the control panel.

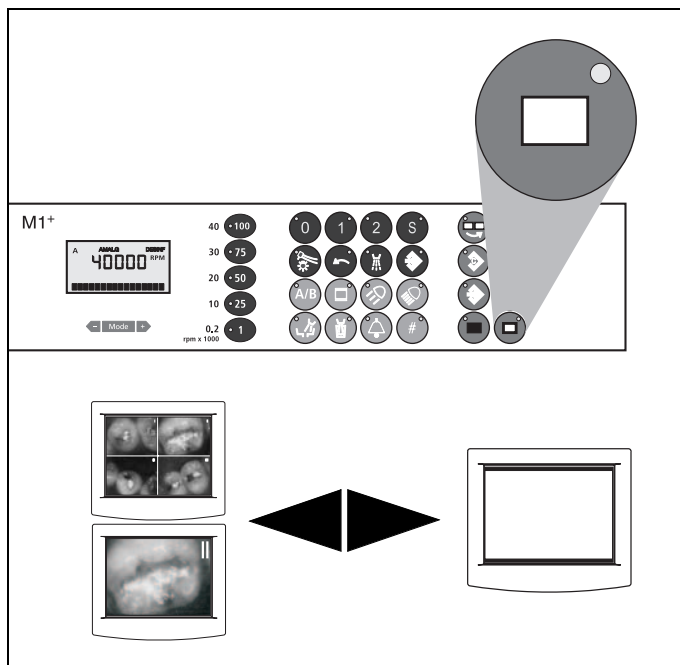
Clears all camera image memories.
The **LIVE IMAGE** for image **I** then appears.



Deposit the camera

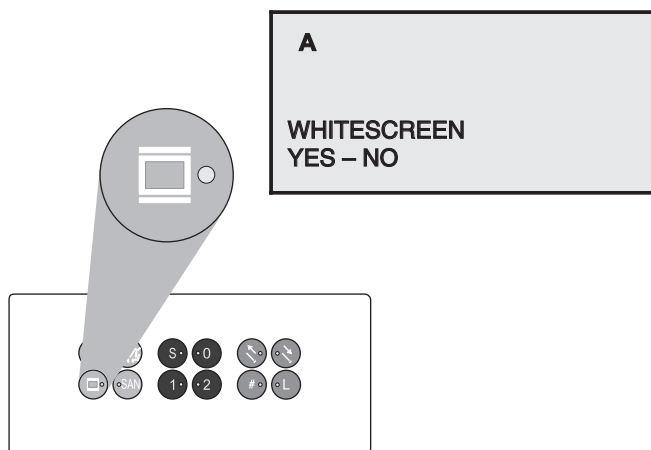
- If a **LIVE IMAGE** was displayed, a **BLACK SCREEN** appears.

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



WHITE SCREEN

- Switches **WHITE SCREEN** ON or OFF on SIVISION monitor.

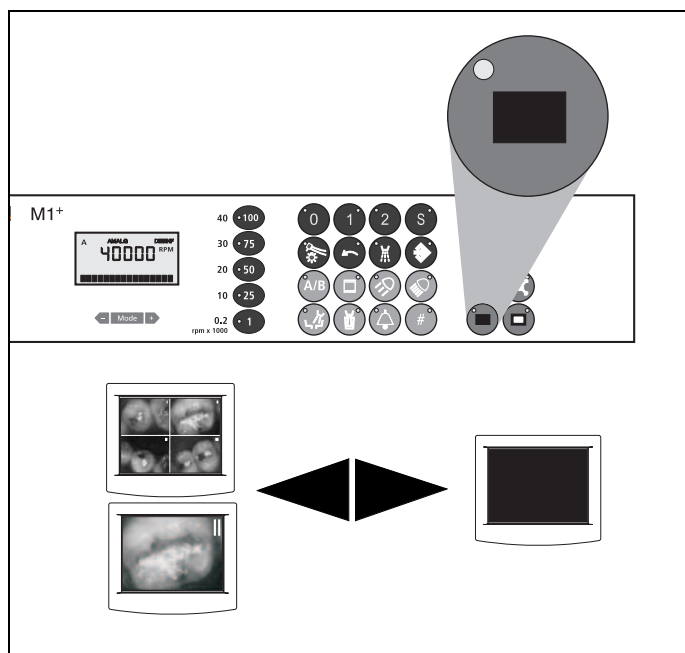


The following presetting is possible in Mode menu **10.20** for the X-ray image viewer key on the control panel of the assistant element:

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

i NOTE

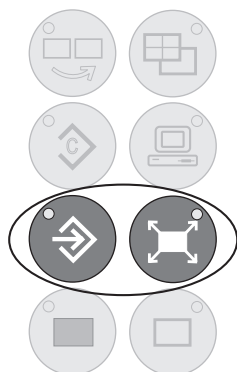
WHITESCREEN - NO should be selected if an X-ray image viewer is installed. If no X-ray image viewer is installed, select WHITESCREEN - YES.



BLACK SCREEN

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

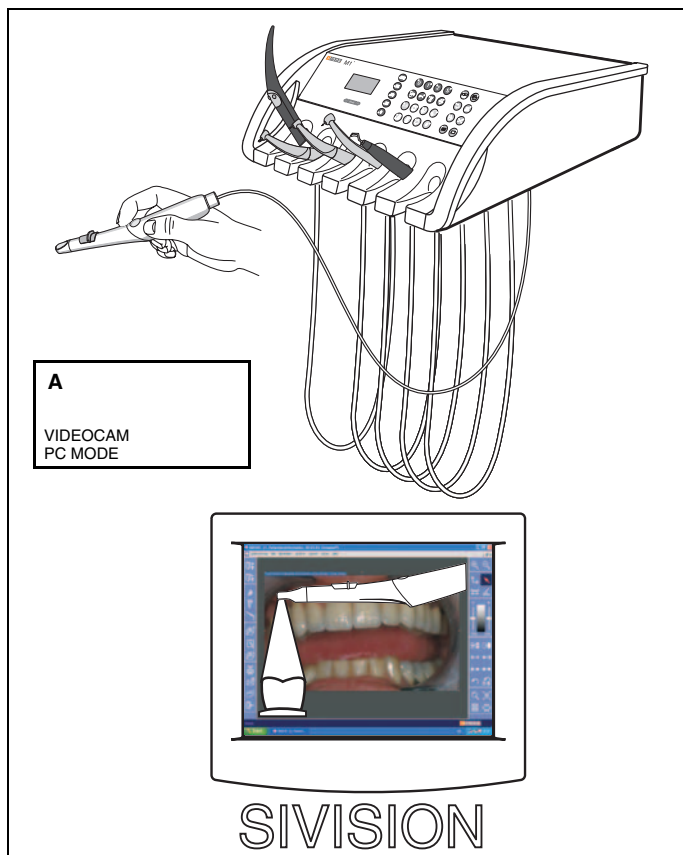
Keys without function



i NOTE

Both of these keys have no function in the video mode.

14.7 SIROCAM 3 / SIROCAM C – PC mode



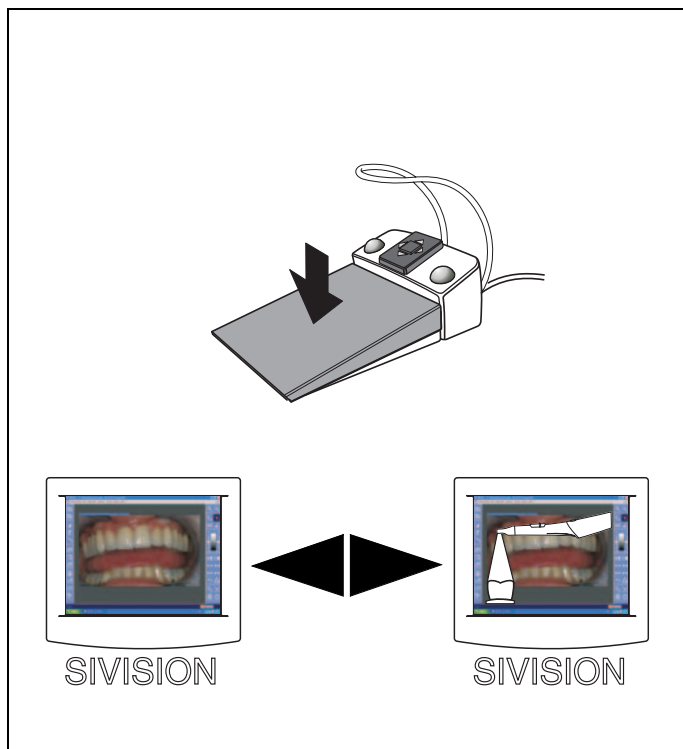
Operation in PC mode using a PC connection and SIDEXIS/VIDEXIS

The monitor at the treatment center 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.

Remove the camera

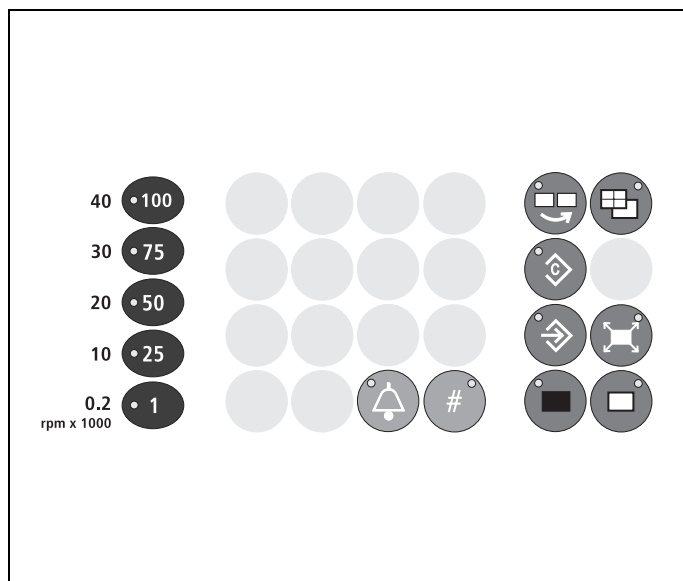
- ☒ The **LIVE IMAGE** window opens.



TOGGLING BETWEEN STILL IMAGE AND LIVE IMAGE

with the camera removed by actuating the foot pedal on the foot switch.

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



USING THE FUNCTION KEYS

Further functions such as the **SIDEXIS/VIDEXIS** functions:

Tile, Next Image, Full Frame, Zoom In, Zoom Out, Rotate Image or other PC controls can be assigned as desired to the following function keys on the panel of the dentist element:

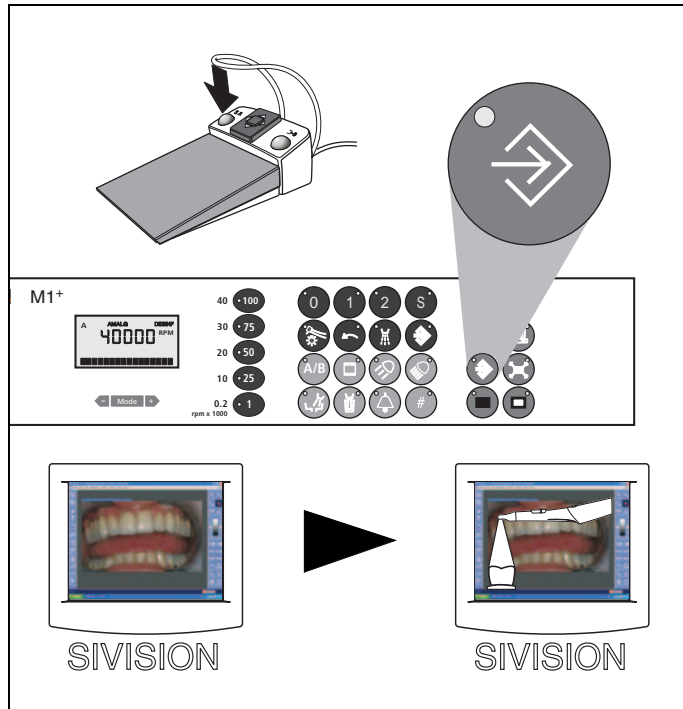
- Frame indexing
- Quad image
- Delete
- Save image
- Full Frame
- Black screen
- White screen
- Call key (if not already used for relay functions)
- # key (if not already used for relay functions)

With instruments deposited or camera removed:

- Quick setting keys 100, 75, 50, 25 and 1

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

The most important functions based on the factory settings are described in the following.



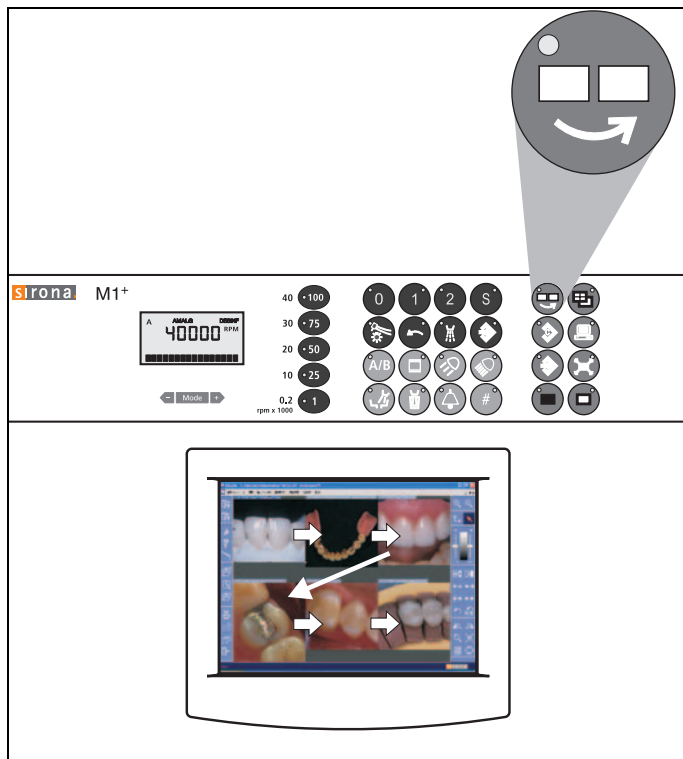
SAVE IMAGE

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

Press the "Save image" key.

With the camera removed, also with the left button on the foot switch.

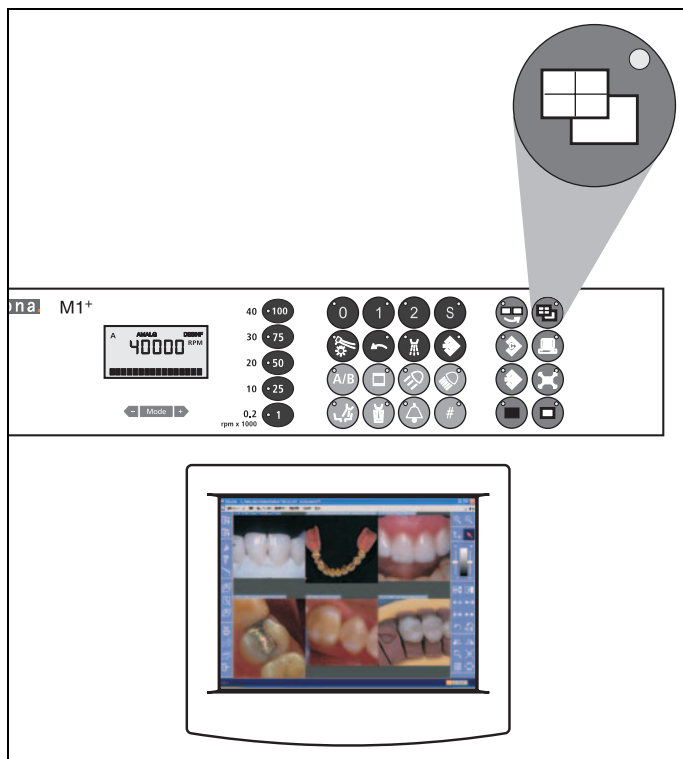
- Save **STILL IMAGE**.
A **LIVE IMAGE** then appears with the camera removed.



Next image

Indexing (switching) of saved images.

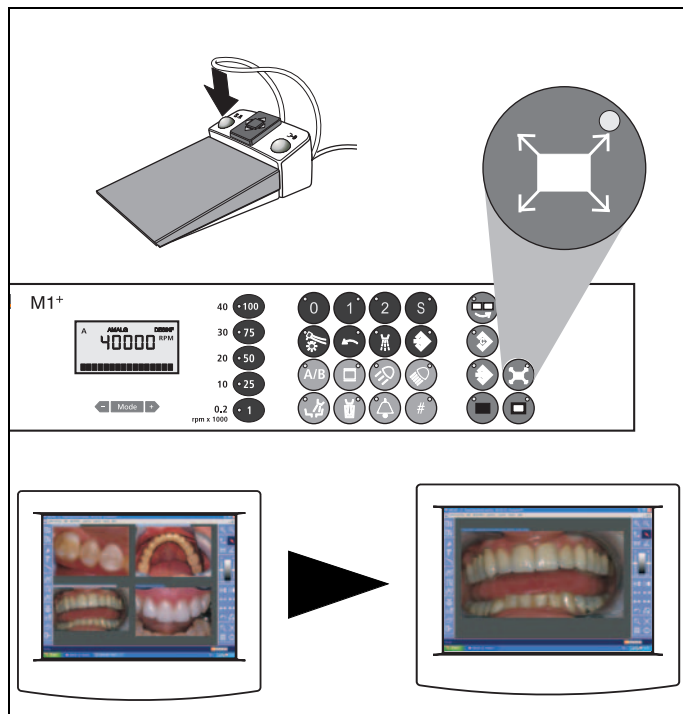
The factory settings and the configuration procedure are described in the “**Installation manual for PC software**”, REF 59 11 719 **Operator’s Manual**.



Tile images

Tiled display of saved images.

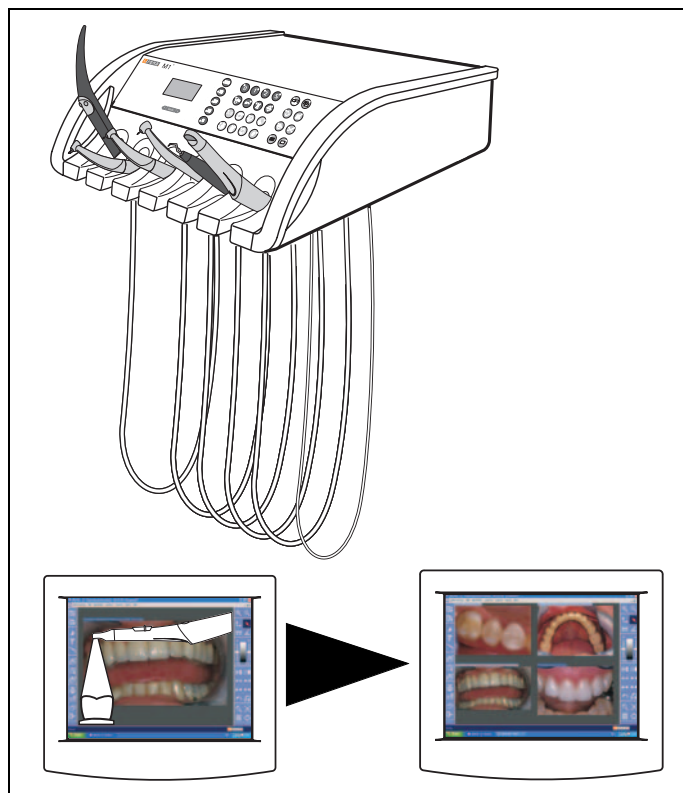
The factory settings and the configuration procedure are described in the “**Installation manual for PC software**”, REF 59 11 719 **Operator’s Manual**.



Full Frame

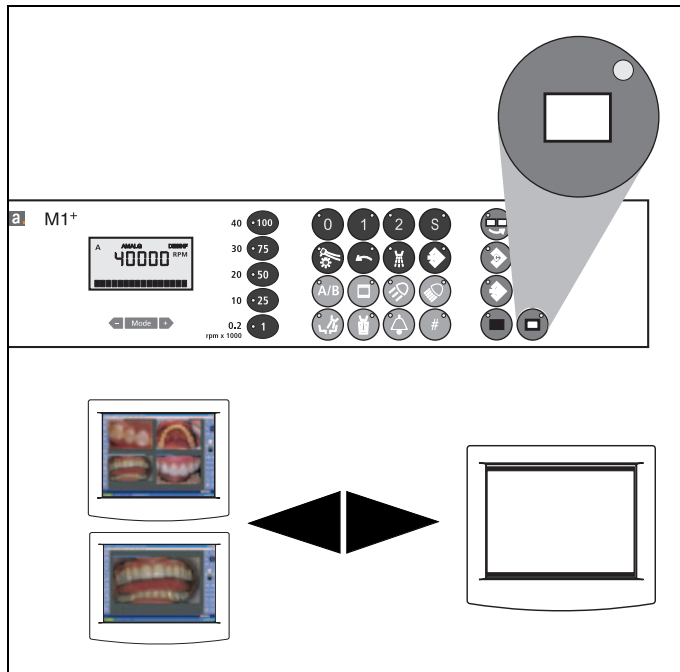
Full frame display on PC monitor screen.

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



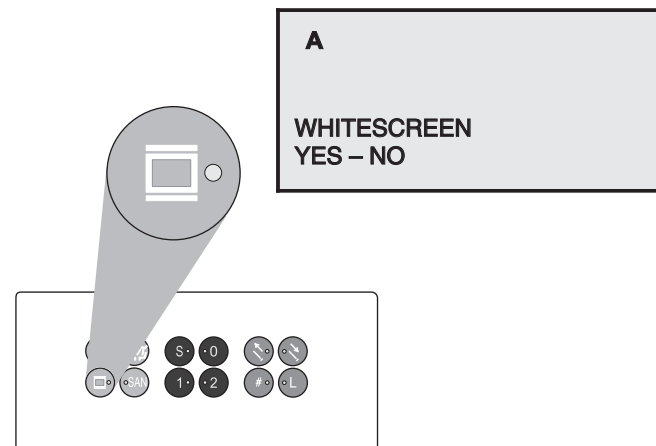
Depositing the camera

- **LIVE IMAGE** window is closed.
Displayed **STILL IMAGE** or saved images remain open.



WHITESCREEN

- Switches **WHITE SCREEN** ON or OFF on SIVISION monitor.

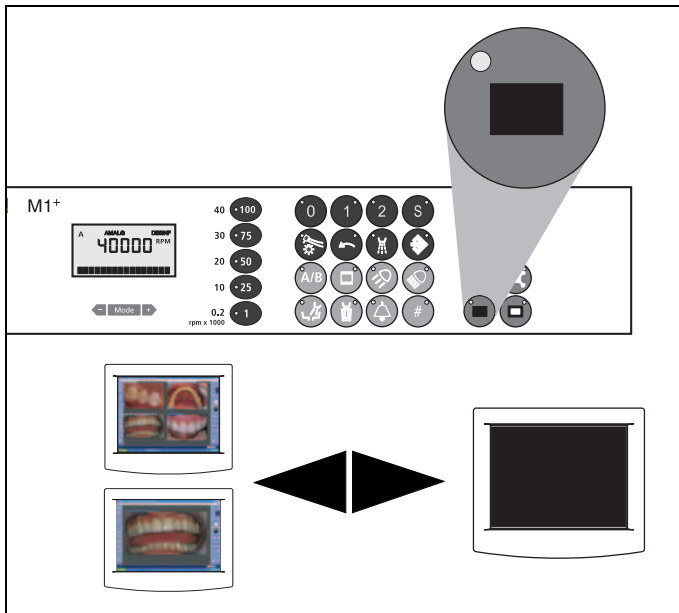


The following presetting is possible in Mode menu **10.20** for the X-ray image viewer key on the control panel of the assistant element:

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

i NOTE

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



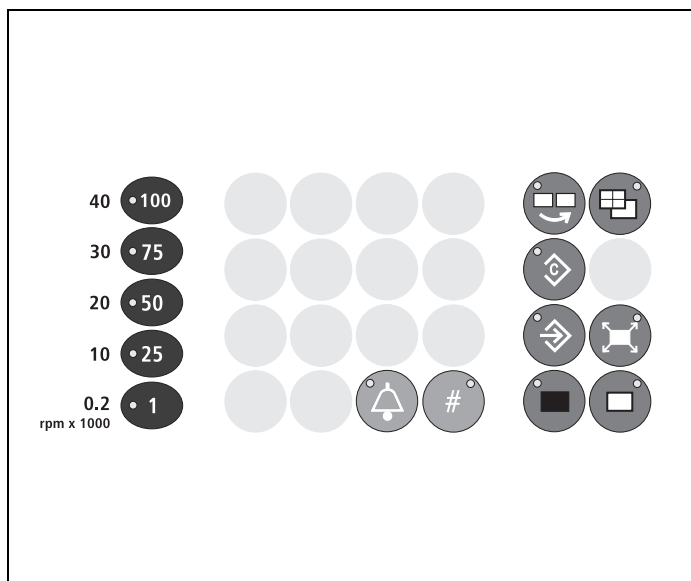
BLACK SCREEN

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

i NOTE

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 SIVISION 3—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, e.g. in connection with an external camera (first you must switch over via the mode dialog 10.17 NON – SIRONA CAMERA , see page 55).

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

With instruments deposited or removed:

- Frame indexing
- Quad image
- Delete
- Save image
- Full Frame
- Black screen
- White screen
- **Call key** (if not already used for relay functions)
- **# key** (if not already used for relay functions)

With instruments deposited:

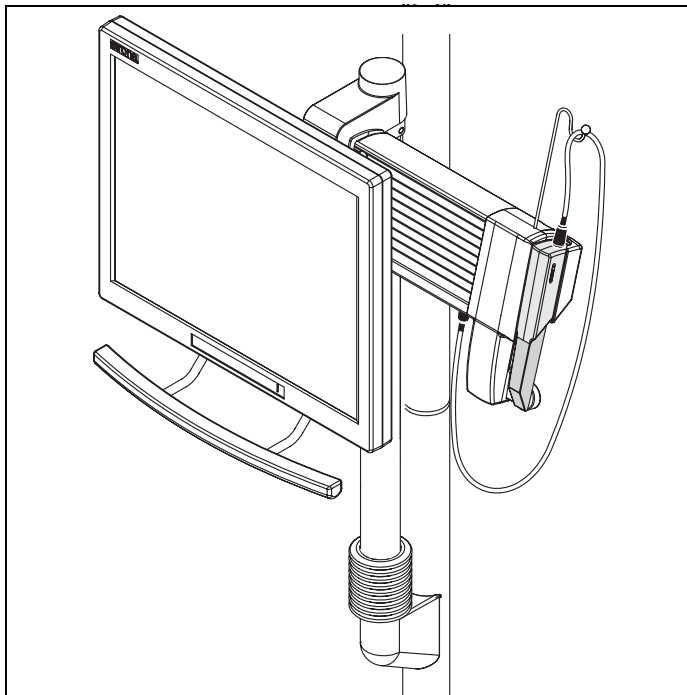
- **All quick setting keys 100, 75, 50, 25 and 1**

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 .

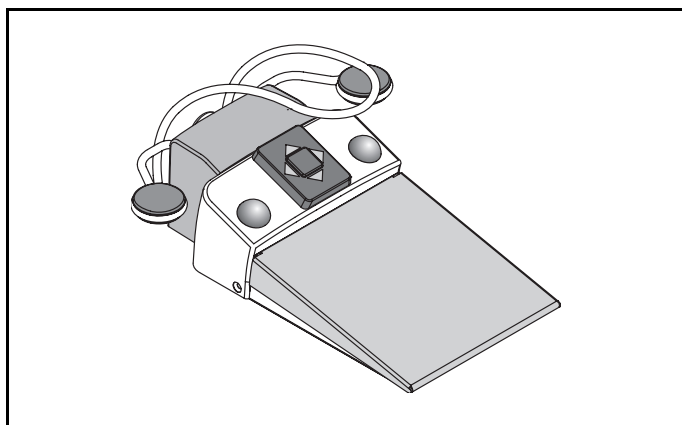
15 CEREC Chairline (Option)

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

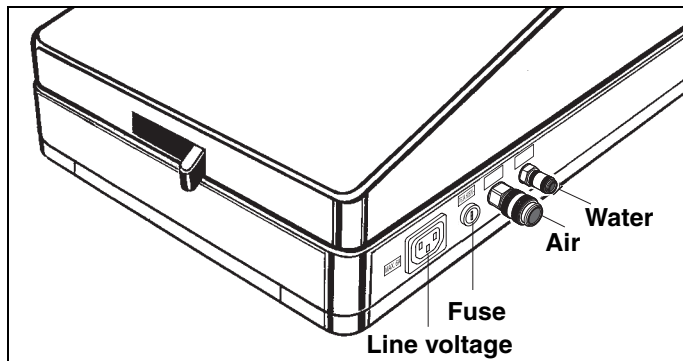
approx. 10m

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



Additional equipment

Only approved additional devices (e.g. supplied by EMS) may be connected to a media block on the base of the lower part of the chair (the manufacturer's instructions must be complied with).

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

For treatment centers with a disinfection unit, the integration of a media block complies with the DVGW approval (EN 1717/ DIN 1988). In this case, the additional devices connected are also compliant with the requirements of EN 1717 / DIN 1988.

Technical data and requirements

- All connected devices must be supplied with disinfected water if a disinfection unit is installed.
0.1‰ -0.2‰ hydrogen peroxide are required for regular operation and 1.4 % for sanitization.



CAUTION

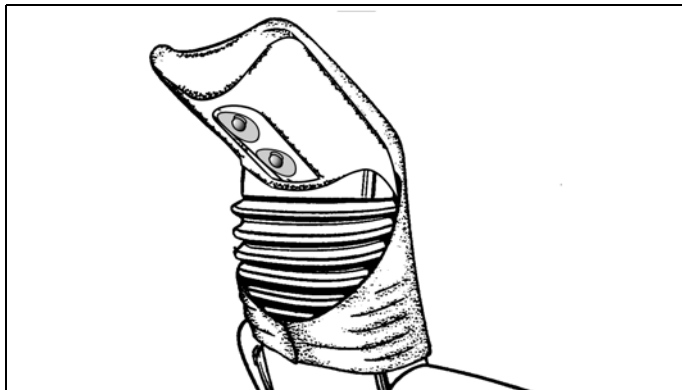
Before connecting any additional devices, first check whether they are suitable for hydrogen peroxide. If these devices are not suitable for the higher concentration used for sanitization, Sirona recommends separating them from the treatment center during sanitization and then sanitizing them separately according to the manufacturer's instructions.

Sirona shall not be held liable for any damage to connected devices!

Pressure and flow rate specifications

	Pressure	Flow rate
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



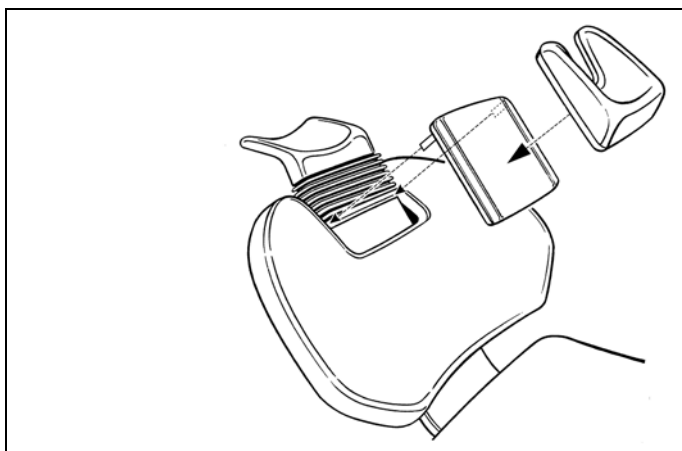
Accessories

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 headrest cover over headrest and fasten it as illustrated.

16.3 Children's headrest



Additional equipment

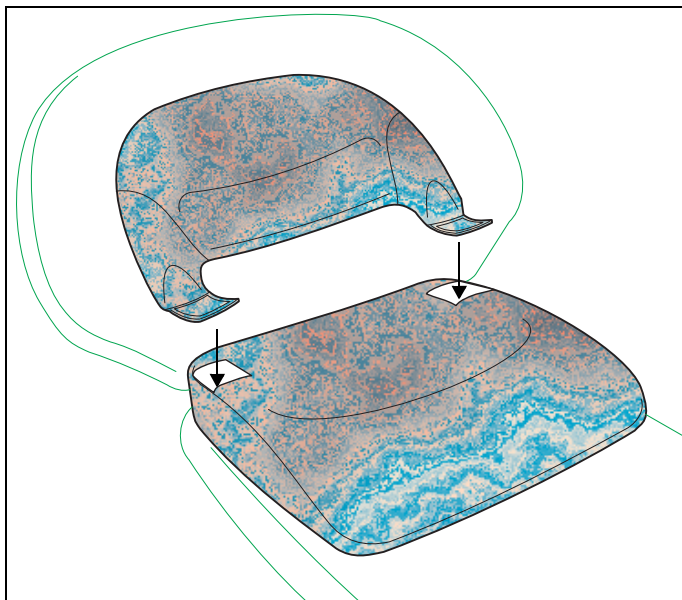
The children's headrest is held magnetically.

To attach it, first insert the two guide pins of the support plate in the bellows of the headrest as shown.

Then attach the children's headrest.

- Children's head pad set for motor-adjustable headrest
REF: 58 94 907

16.4 Seat cushion C



Additional 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).

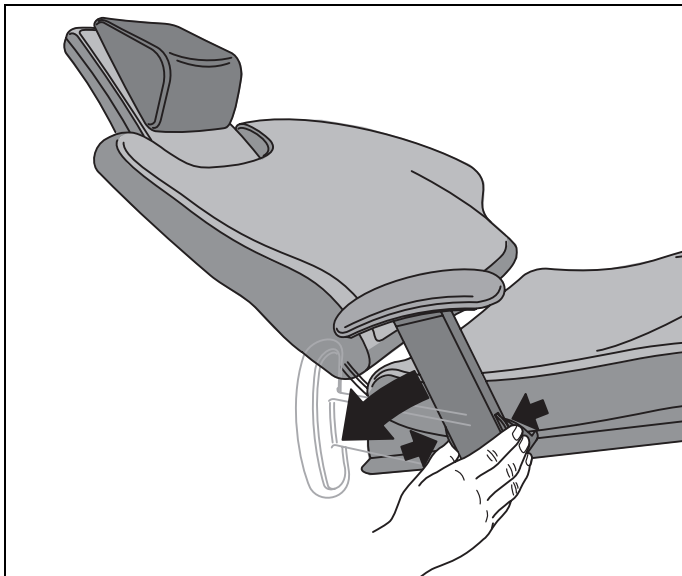


CAUTION

Removing stains with stain remover is not suitable, since this 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.

16.5 Folding armrest

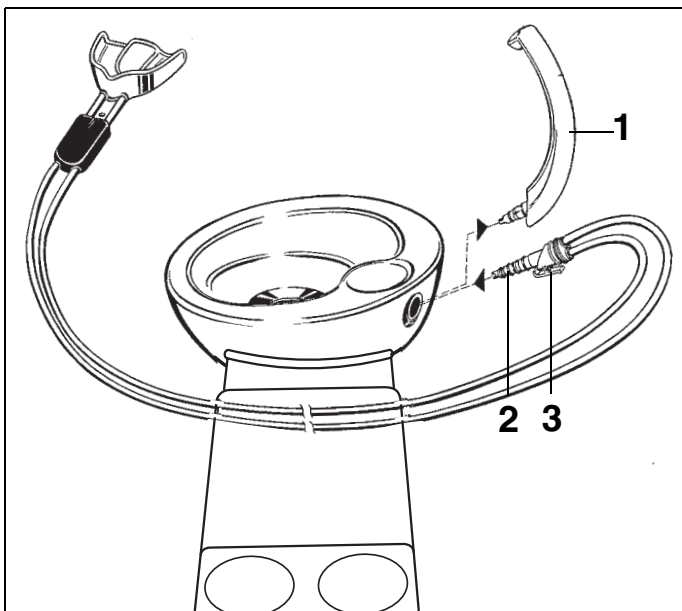


Additional equipment

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

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

16.6 Hydrocolloid coolant supply



Additional 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").

The adapter can be connected to the cuspidor 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 please press the tumbler filling key. The tumbler filling time must be set to unlimited HYDRO-COLLOID operation in this case (see chapter "Tumbler filling" on page 43).

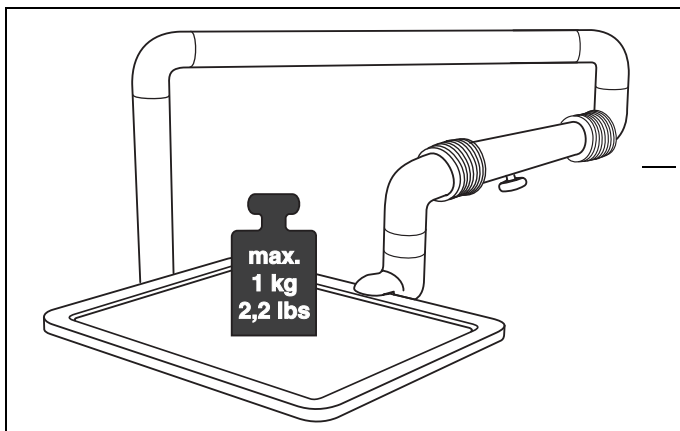


CAUTION

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.

16.7 Tray (additional equipment)

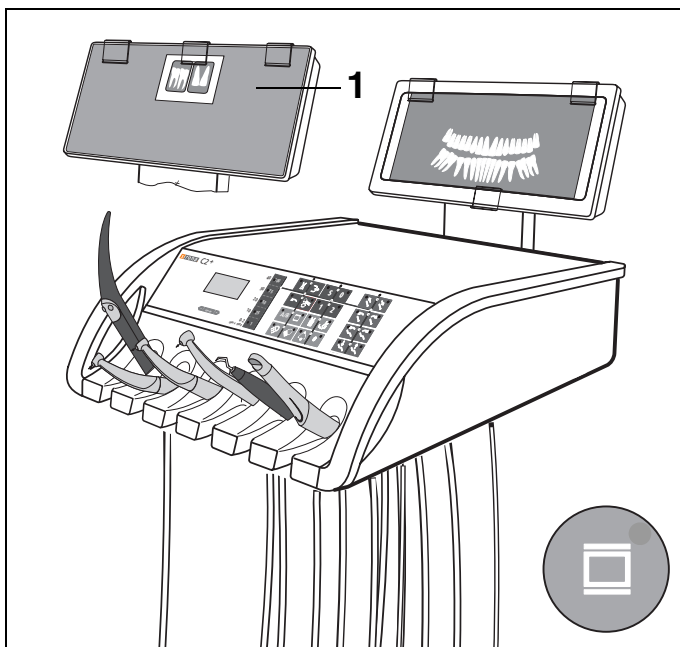


i NOTE

Maximum load: 1 kg

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

16.8 X-ray image viewer on the dentist element

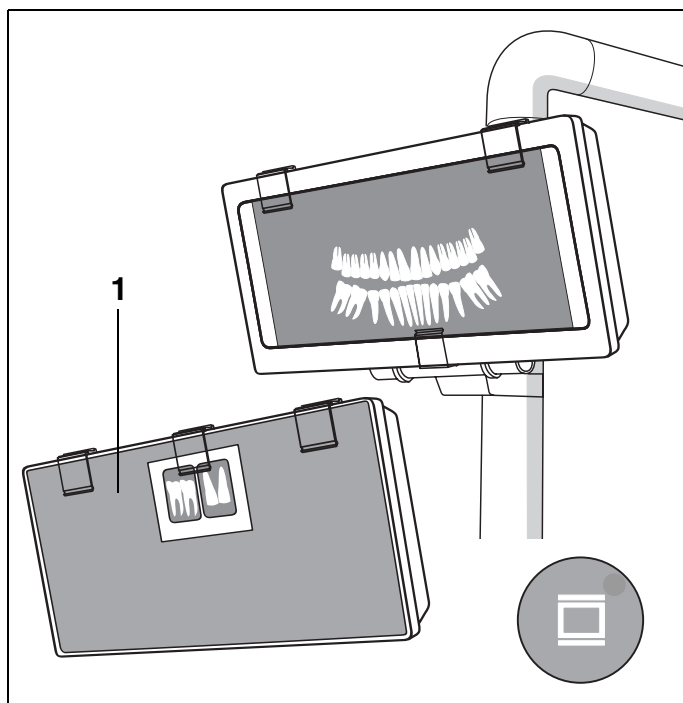


Additional equipment

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

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 lamp support tube

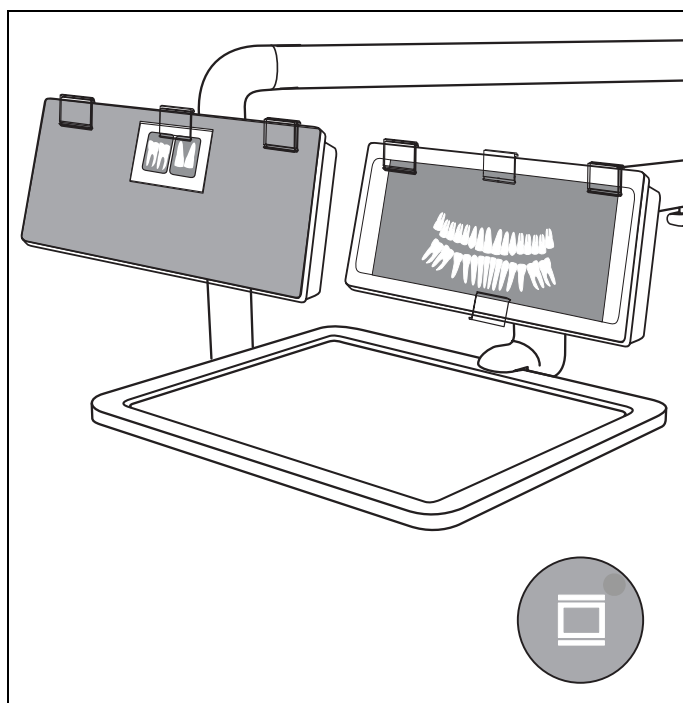


Additional equipment

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

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.

16.10 X-ray image view on the tray



Additional equipment

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

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.

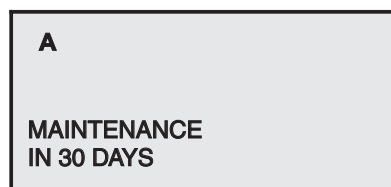
17.1 Care and cleaning by the practice team

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 entered by the service engineer in the “**Installation Report / Warranty Passport**”. This document is part of the “**Maintenance Manual**”.

17.3 Safety tests

Medical products are 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 start-up**, after extensions/upgrades (**conversion**) of your treatment center and after any **repair work** which might affect the electrical safety of the system.

NOTE

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

Safety tests for units with HF surgery equipment:

In Germany, medical devices are subject to the provisions of the Ordinance on the Installation, Operation and Use of Medical Devices (Medizinprodukte-Betreiberverordnung – MPBetreibV) of June 29, 1998.

According to Section 6, safety tests are required for devices with HF surgery equipment.

According to Section 7, a “Medical Product Log” must be kept, in which the measured values as well as the tests conducted must be documented.

These tests for devices with HF surgery equipment are identical to the safety tests described above.

The “Maintenance Manual” is thus at the same time the “Medical Product Log”.

The system owner is obligated to maintain this Medical Product Log.

In order to comply with the provisions of the Ordinance on the Installation, Operation and Use of Medical Devices (MPBetreibV), the following documentation must be maintained for treatment centers with HF surgery equipment in Germany:

- Performance of safety tests

- Personnel who have been trained in the use of HF surgical equipment (§5 MPBetreibV)
- Repair work on the HF module
- Effects of malfunctions and repeated, similar operator errors
- Reporting of incidents to authorities and manufacturers

The Medical Product Log must be safekept for a period of at least 5 years after putting the system out of service.

Upon request, the Medical Product Log must be made available to the competent authority for inspection purposes at any time.



NOTE

As a system user outside of Germany, you must observe the legal requirements of your country.

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.

For units with HF surgery equipment, the consequences of malfunctions and reports to the competent authorities must be documented by the user.

The "Maintenance Manual" is thus at the same time the "Medical Product Log".

We urge the user to 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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