sirona
The Dental Company

# TENEO

Operating Instructions

**English**

# Table of contents

**NOTE:**
For quick navigation within this document, we have provided an index starting from page 193.

# 1 General information

## 1.1 Dear Customer,

We are pleased that you have equipped your practice with the TENEO® treatment center.

Our claim is to recognize our customers' demands in good time and to create innovative solutions. Together with your trade partner, you have configured the unit to suit your individual taste. The new hub of your treatment room is tailored to your personal needs.

With TENEO® you have a treatment center that stands for easy operation, innovative comfort and high quality design. With TENEO® we have enhanced proven functions and turned customer requirements into innovations. In conjunction with the EasyTouch user interface, the reliable travel track concept now makes treatment more pleasant and efficient than ever before.

These Operating Instructions are designed to assist you prior to initial use and whenever you require information later on.

We wish you much success and pleasure with TENEO®.

Your TENEO® Team

## 1.2 Contact data

**Customer Service Center**

Our German and English speaking Product Service staff are ready to answer your technical questions by telephone from 7:30 a.m. to 5:30 p.m. CET. Of course, you can also contact us by fax or e-mail outside of these working hours as well.

Phone: +49 (0) 6251/16-1616
Fax: +49 (0) 6251/16-1818
E-Mail: product.service@sirona.de

To speed up the processing of your letter, be sure to specify "Bereich Behandlungseinheiten" (Treatment Center Division) in the subject line of your e-mail or fax.

**Manufacturer's address**

Sirona Dental Systems GmbH
Fabrikstrasse 31
64625 Bensheim
Germany

Phone: +49 (0) 6251/16-0
Fax: +49 (0) 6251/16-2591
E-Mail: contact@sirona.com

www.sirona.com

## 1.3 Notes on these Operating Instructions

**Observe the Operating Instructions**

Please familiarize yourself with the unit by reading through these Operating Instructions before putting it into operation. It is essential that you comply with the specified warning and safety information.

**Keep documents safe**

Always keep the Operating Instructions handy in case you or another user require(s) information at a later point of time. The technical documentation supplied in a corresponding binder is also part of the product. File any other operating instructions which may be required in this binder as well.

**NOTE: Brief operating instructions**
A manual containing brief operating instructions has been provided to help you look up functions quickly.

In case you sell the unit, make sure that the Operating Instructions and all other technical documents are attached to it so that its new owner can familiarize himself with its functioning and the specified warning and safety information. The technical documents are a component of the product.

**Help**

If you reach an impasse despite having thoroughly studied the Operating Instructions, please contact your dental depot.

## 1.4 Other valid documents

You treatment center can be equipped with additional components that are described in separate sets of operating instructions. The instructions as well as any warning and safety information contained therein also must be observed.

A separate manual of operating instructions exists for each of the following Sirona products:

- Treatment instruments and accessories
- SIROLUX FANTASTIC operating light
- 19" flat-screen monitor
- HUGO dental working stool

## 1.5 Warranty and liability

**Warranty Passport**

To safeguard your warranty claims, please complete the attached "Installation Report / Warranty Passport" together with the service engineer immediately after the installation of your unit.

**Maintenance**

Maintenance must be performed at scheduled intervals to ensure the operational and functional reliability of your product and to protect the safety and health of patients, users and other persons. For more information, please refer to "Maintenance by the service engineer" [🗎 170].

The system owner is responsible for making sure that all maintenance activities are performed.

As manufacturers of medical electrical equipment, we can assume responsibility for the safety properties of the system only if maintenance and repairs on the system are performed either by us or by agencies which we have expressly authorized and if components affecting safe operation of the system are replaced by original spare parts in case of failure.

**Exclusion of liability**

In the event that the system owner fails to fulfill its obligation to perform maintenance activities or ignores error messages, Sirona Dental Systems GmbH and its authorized dealers cannot assume any liability for any damage thus incurred.

## 1.6 Intended use

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

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

Proper use also includes compliance with the present operating instructions and the relevant maintenance instructions.

## 1.7 Formats and symbols used

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

**Instructions for action**

| | |
|---|---|
| ✓ Prerequisite<br>**1.** First action step<br>**2.** Second action step<br>or<br>➢ Alternative action<br>↳ Result, reaction of treatment center | Prompts you to do something. |

**References**

| | |
|---|---|
| See "General information" | Identifies a reference to another text passage. |
| [🗎 11] | Indicates the page being referred to. |

**Lists**

| | |
|---|---|
| ▪ List | Designates a list. |

**Designations, commands, menu items and quotes.**

| | |
|---|---|
| *Designation (in italics)* | Denotes key, button and program designations |
| `"Command/menu item"` | Identifies commands, menu items or quotations. |

# 2 Safety information

## 2.1 Identification of danger levels

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

**WARNING: Warning of bodily injury**
For a possible danger that could result in light to serious bodily injury.

**CAUTION: Caution against damage**
For a possibly harmful situation which could lead to damage of the product or an object in its environment.

**NOTE: Information to make work easier**
For application information and other useful information.

## 2.2 Information on the unit

The following symbol can be found on the unit rating plate:

Observe accompanying documents. They are attached to the unit.

## 2.3 On-site installation

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

## 2.4 Media quality

The air and water supplies must meet the requirements specified in the installation instructions. Use only drinking water and dry, oil-free and hygienically clean air for the water and air supplies of the treatment center.

To ensure compliance with the medical and national legal requirements for water from treatment centers, the treatment center must be equipped with a disinfection system.

**As the owner of the treatment center, you are responsible for the water quality.**

For this reason, you should check the water quality at regular intervals, see "Microbiological inspection of the water" [135]. Please contact your specialized dealer or your relevant dental association for the respective national requirements and measures.

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

## 2.5 Maintenance and repair

**Authorized technical personnel and spare parts**

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, safety-critical system components must always be replaced with original spare parts upon failure.

We suggest that you request a certificate, showing the nature and extent of the work performed, from those who carry out such work, and specify that the certificate show any changes in rated parameters or working ranges, as well as the date, the name of the firm and a signature.

**Maintenance intervals**

Despite the outstanding quality of your treatment center and regular care by the practice team, in the interest of operational safety, it is essential to have preventive maintenance performed at scheduled intervals.

In order to ensure 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 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 more information, please refer to "Maintenance by the service engineer" [🗎 170].

## 2.6 Trouble-free operation

The use of this unit is permissible only when the unit is functioning flawlessly. If failure-free operation of the unit cannot be guaranteed, the unit must be taken out of service. The unit must be checked for faults by authorized technical personnel and repaired if necessary.

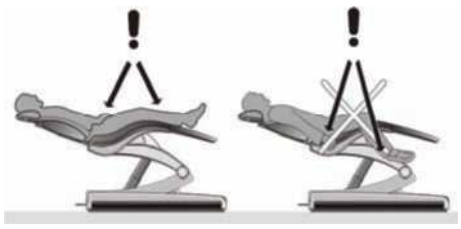
## 2.7 Vacuum system

The suction removal of aluminum and other metal oxides from blasting devices via the automatic separator and the amalgam separator integrated in the treatment center is prohibited! This would cause extreme wear and clogging of the suction and water paths.

A separate vacuum system must be used in connection with metal oxide blasting devices. Treatment centers equipped with a central wet suction system are generally suitable for suction removal of the above material. However, make sure to observe the instructions provided by the manufacturer of your vacuum system.

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

## 2.8 Patient chair



Please observe the maximum load capacity of the patient chair of 165 kg.

The weight distribution complies with ISO 6875. The safety test is performed with multiple safety factor according to
IEC 60601-1.

The maximum permissible weight of accessories mounted on the patient chair is 5 kg.

The patient's arms and legs must be resting on the upholstery of the chair.

## 2.9 Ventilation slots


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

Do not spray liquids such as disinfectants into the ventilation slots. This could cause the unit to malfunction. Use only wipe disinfection in the vicinity of the ventilation slots.

## 2.10 Intermittent operation

The motors of the treatment center and of the treatment instruments are designed for intermittent operation corresponding to the dental mode of treatment.

Drive motors for patient chair and backrest: Max. 6% on-load factor, cycle duration 425 s

Other motors: ≥ 6% on-load factor, cycle duration 250 s

SiroCam digital intraoral camera: 1 min on / 3 min off

## 2.11 Touchscreen

The monitor of the dentist element is equipped with touch-sensitive control technology.

The touchscreen must not be operated with pointed objects such as ball-point pens, pencils, etc. Such objects could damage or scratch its surface. Always operate the touchscreen by pressing it gently with your fingertip.

## 2.12 Care and cleaning agents

Unsuitable care and cleaning agents may corrode the surface of the unit.

Therefore, use only care and cleaning agents which have been approved by Sirona. For more information, please refer to "Care and cleaning agents" [135].

## 2.13 Modifications and extensions of the system

Modifications to this system which might affect the safety of the system owner, patients or other persons are prohibited by law.

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

If any devices not approved by Sirona are connected, they must comply with the applicable standards, e.g.:

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

The treatment center monitor must fulfill the requirements of IEC 60950 and IEC 60601-1.

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

If a system is created during the installation process, the requirements of IEC 60601-1-1 must be fulfilled.

## 2.14 Electromagnetic compatibility

Medical electrical equipment is subject to special precautionary measures regarding electromagnetic compatibility (EMC). It must be installed and operated as specified in the document "Installation Requirements."

Portable and mobile RF communications equipment may interfere with medical electrical equipment. Therefore, the use of such devices (e.g. mobile phones) in practice or hospital environments must be prohibited.

The presence of electromagnetic interference in the vicinity of the treatment center may cause image degradation and interruptions in the data transmission via the USB interface to the PC. In those cases, repeat the image acquisition or other actions.

In the event of heavy interference, it may be necessary to restart the PC. It is therefore not recommended to use the PC for controlling other devices that provide essential performance components.

## 2.15 HF surgery

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

Only in the Federal Republic of Germany: The system owner is obliged to keep a “Medical Product Log” if any HF surgical equipment is installed! For more information, refer to "Safety tests for systems with HF surgical equipment" [171].

## 2.16 Dismantling/Installation

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

# 3 System description

## 3.1 Standards/Approvals

The TENEO® treatment center complies with the following standards:

- IEC 60601-1 (electrical and mechanical safety)
- IEC 60601-1-2 (electromagnetic compatibility)
- IEC 60601-1-4 (software)
- IEC 60601-1-6 (serviceability)
- IEC 60601-2-2 (HF surgery)
- ISO 6875 (Patient chair)
- ISO 9680 (Operating light)
- ISO 11143 (Amalgam separator), see also below
- EN 1717 (Connection to the drinking water system), see also below

Original language: German

CE 0123

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

The treatment center meets the requirements of the Canadian Standards Association (CSA) according to CAN/CSA-C22.2 No. 601.1-M90 (AM 1 + AM 2), provided the CSA mark is attached on the type plate.

SIRONA Dental Systems GmbH 64625 Bensheim Fabrikstrasse 31 Z-64.1-24 adf NF conseille Produit certifié

The amalgam separator achieves a separation efficiency of >98%. It therefore meets the requirements of the standard ISO 11143 and the German Institute for Structural Engineering (DIBT). The amalgam separator bears the Ü mark of the DIBT and the AFNOR mark (of the French Standards Institute).

DVGW

The treatment center complies with the technical rules and requirements on safety and hygiene for connection to the public drinking water supply. The unit is certified according to the requirements of the DVGW (Deutscher Verein für Gas und Wasser = German Gas and Water Association). The unit thus fulfills the requirements of EN 1717.

The current approvals are listed on the rating label of the patient chair.

CE 0682

The wireless modules in the wireless foot control and in the treatment center meet the requirements of the R&TTE directive 1999/5/'EC. Standards:

- EN 60950-1
- EN 301489-1, EN 301489-17, EN 300328

FC

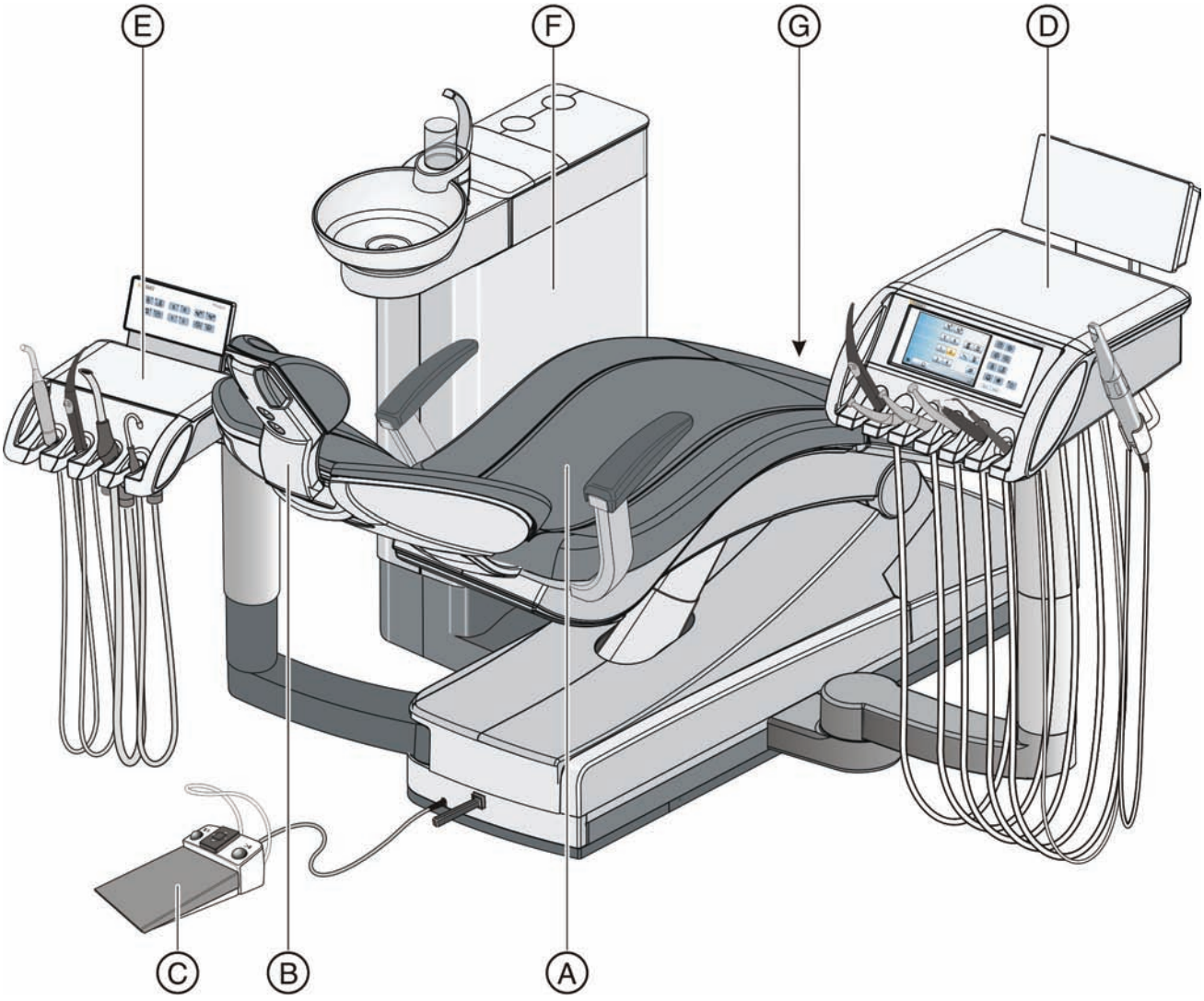
The modules meet the requirements of the Federal Communications Commission (Part 15 of the FCC Rules).

FCC ID: SIFNANOLOCAVR0108

TENEO® is a registered trademark of Sirona Dental Systems GmbH.

## 3.2 System overview

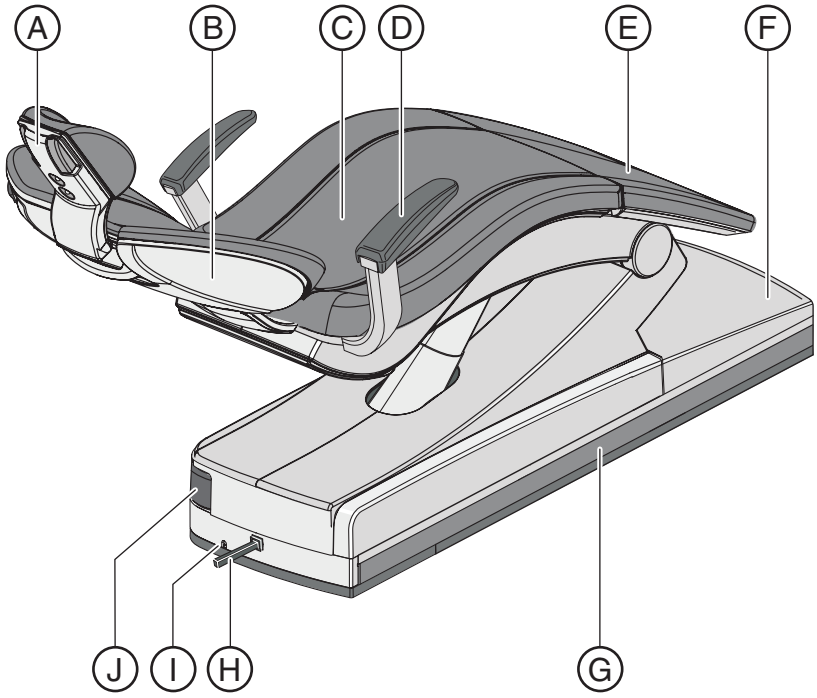
The treatment center comprises the following main components:




| | |
|---|---|
| A | Patient chair [🗎 19] |
| B | Motor-driven headrest [🗎 19] (shown here) or MultiMotion headrest [**2** 20] |
| C | Foot control [🗎 21] (with cable or wireless link) |
| D | Dentist element [🗎 22] |
| E | Assistant element [🗎 27] |
| F | Water unit [🗎 29] |
| G | Media block [🗎 30] and power switch [**2** 32] |

## 3.3 Patient chair

The patient chair features a variety of motor adjustment options to optimally adapt the patient's position to the given treatment.




| | |
|---|---|
| A | Motor-driven headrest (shown here) or MultiMotion headrest |
| B | Backrest |
| C | Seat |
| D | Armrest |
| E | Toeboard |
| F | Chair base |
| G | Travel track for dentist element |
| H | 4-way foot switch |
| I | Foot control cable port |
| J | Rotary joint for assistant element |

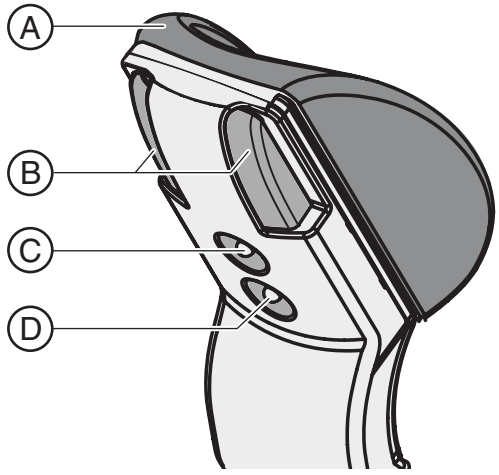
## 3.4 Headrest

### 3.4.1 Motor-driven headrest

The headrest allows for the following adjustment options:

- Motor-driven extension/retraction to adapt to the patient's stature
- Motor-driven tilting for maxillary/mandibular treatment

- Manual tilting via quick mechanical adjustment
- Shifting/rotation of the head support via the magnetic holder



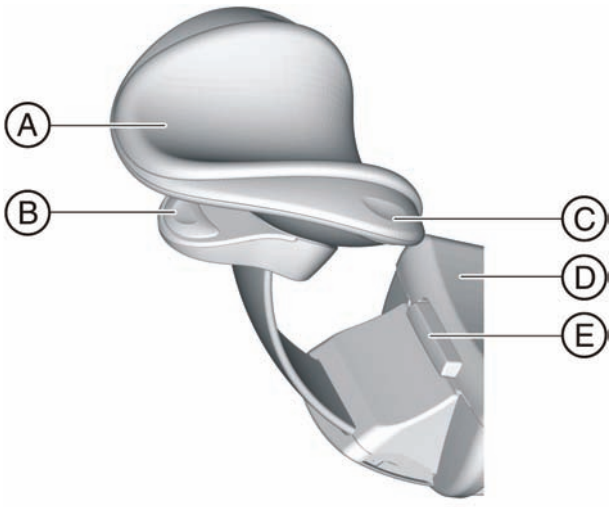

| | |
|---|---|
| A | Removable head pad with magnetic holder |
| B | Quick mechanical adjustment of headrest tilt |
| C | Upper 4-way switch for headrest functions |
| D | Lower 4-way switch for chair functions |

For details, see "Adjusting the motor-driven headrest" [🗎 46].

### 3.4.2 MultiMotion headrest

The MultiMotion headrest enables optimal access to the patient. The following settings are possible:

- Retraction/extension of the headrest extension to adjust the headrest to the patient's stature
- Adjustment of head inclination for maxillary/mandibular treatment
- Rotation of patient's head about the longitudinal axis of his body
- Lateral inclination of the patient's head

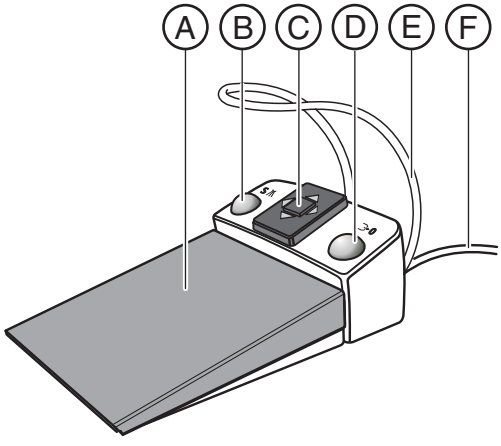



| | |
|---|---|
| A | Removable head pad |
| B | Operating handle for tilt adjustment |
| C | Release button (concealed) for rotation and lateral tilt |
| D | Headrest extension for stature adjustment |
| E | Release button for removing the headrest |

For details, see "Adjusting the MultiMotion headrest" [🗎 47].

## 3.5 Foot control

The foot control enables hand-free control of the treatment instruments. Via the integrated cursor control, virtually all functions of the treatment center can be controlled via the foot control as an alternative to hand control.

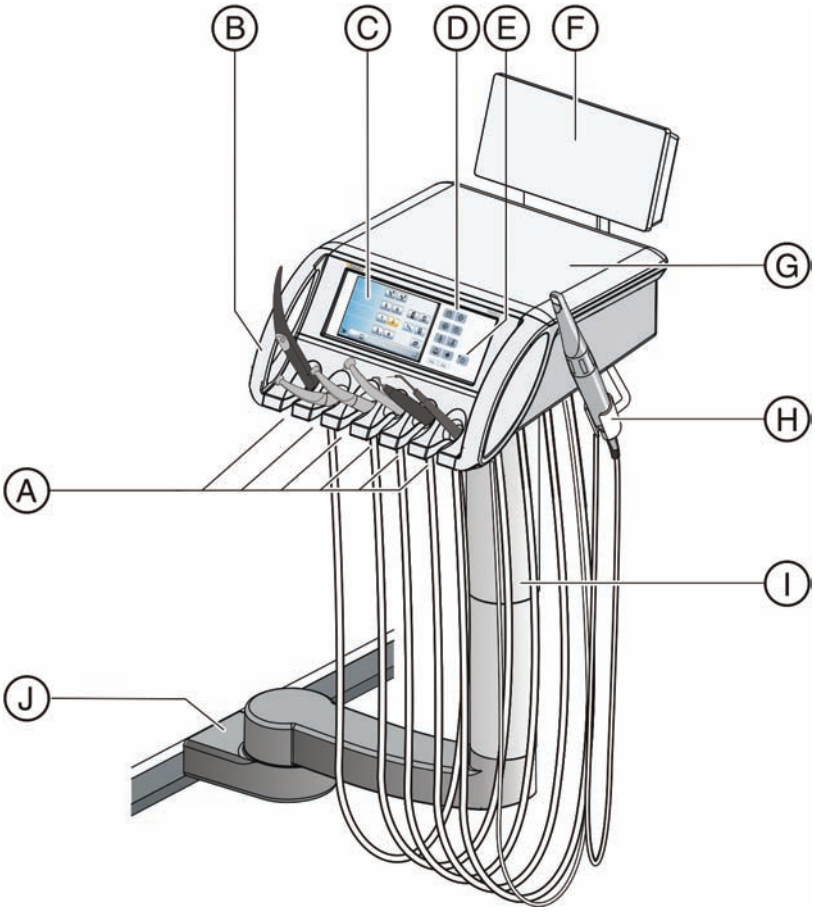


| | |
|---|---|
| A | Foot pedal as speed foot control or direct starter |
| B | Left button (program key S or spray) |
| C | 4-way foot switch plate for cursor control |
| D | Right button (program key 0 or chip blower) |
| E | Positioning bar |
| F | Connecting cable |

The foot control is also available with radio transmission. The connecting cable has been omitted for the wireless foot control. The power supply is provided by a battery.

## 3.6 Dentist element

All functions of the treatment center can be controlled via the EasyTouch control panel on the dentist element. The dentist element is moved via a motor-driven travel track.



| | |
|---|---|
| A | Removable instrument holder (max. 6 instruments) |
| B | Removable handles (left/right) |
| C | Touchscreen for display and operation |
| D | Fixed keys |
| E | Main switch |
| F | X-ray viewer |
| G | Skid-proof silicone mat |
| H | Additional holder for intraoral camera |
| I | Support arm, height-adjustable |
| J | Slide of motor-driven travel track |

### 3.6.1 Instrument positions

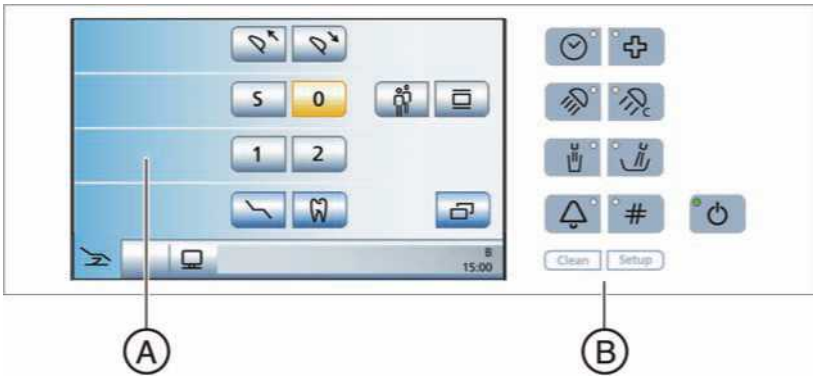
The following instrument position assignments are possible:

| Holder 1 | Holder 2 | Holder 3 | Holder 4 | Holder 5 | Holder 6 | Extra holder |
|---|---|---|---|---|---|---|
| SPRAYVIT L multifunctional syringe | Motor:[1]<br>• SL<br>• BL<br>• BL ISO<br>• BL Implant | Motor:[1]<br>• SL<br>• BL<br>• BL ISO<br>• BL Implant | Motor:[1]<br>• SL<br>• BL<br>• BL ISO<br>• BL Implant | Motor:[1]<br>• SL<br>• BL<br>• BL ISO<br>• BL Implant | SIROSONIC TL[2] scaler | SiroCam digital intraoral camera |
| | Turbine | Turbine | Turbine | Turbine | SIROTOM HF electrosurgical handpiece | |
| | | | | SIROSONIC TL[2] scaler | SiroCam digital intraoral camera | |

[1] The SL motor and the motors from the BL line cannot be combined.

[2] A maximum of one SIROSONIC TL scaler can be connected.

### 3.6.2 EasyTouch user interface



| | |
|---|---|
| A | Touchscreen (pressure-sensitive user interface) |
| B | Fixed keys (membrane keyboard) |

### 3.6.3 Touchscreen

The touchscreen displays virtual function keys according to the program selected. A list of all function keys is provided in the Appendix of this document, see "Overview of all function keys" [🗎 179].

Some programs are divided into a main program and sub-screens. The main programs are briefly introduced below:

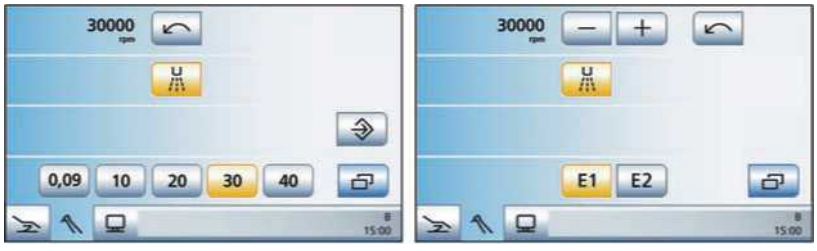
**Start program**

The Start program can be displayed in the *Simple Start program* or *Advanced Start program* operating mode. Details on both operating modes, see "Simple/ Advanced Start program" [🗎 44].


*Simple Start program operating mode (left) and Advanced Start program operating mode (right)*

**Instrument program**

The Instrument program matching the instrument currently removed is displayed. The Instrument programs can be displayed either with the quick setting keys or via the function levels. For details, see "Quick setting keys and function levels" [🗎 62].




*Motor screen with quick setting keys (left) and function levels (right)*

**SIVISION program**

The SIVISION program enables the control of certain computer programs running on the external PC directly from the treatment center. For details, see "External PC" [🗎 119].


*SIVISION program*

### 3.6.4 Fixed keys on the dentist element

**NOTE: Detailed description**
For a more detailed description of the fixed key functions, see "Fixed keys on the dentist element" [🗎 57].

**Main switch**

Switches the treatment center on/off.

To switch off, press and hold the key until an acoustic signal sounds. Then release the key.

**NOTE: Power switch**
The treatment center also features a power switch on the base of the chair that separates the treatment center from the power supply, see "Switching the treatment center on/off" [🗎 32].

**Timer function**

Opens the *Timer Function* screen where any of six preset timers can be activated. The time lapse is displayed in the footer of the touchscreen.

When the *Timer Function* key is pressed (> 2 s), the *Timer Function* settings screen appears.

**Shock positioning**

Immediately moves the patient chair to a position for shock positioning of the patient.

**Operating light**

Switches the operating light on/off.

Light intensity > 24,000 lux at 100%

When the operating light key is pressed (> 2 s), the *Light Intensity* settings screen appears.

**Composite function**

Switches the composite setting for the operating light on/off.

This function is required to prevent premature curing of composite fillings.

Reduced light intensity  < 8,000 lux

**Tumbler filling**

Starts the tumbler filling function.

When the *Tumbler filling* key is pressed (> 2 s), the filling time and water heating settings screen appears.

**Flushing**

Starts the flushing of the cuspidor bowl.

When the *Flushing* key is pressed (> 2 s), the *Flushing Time* settings screen appears.

**Freely selectable function**

e.g. call key

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

This function can be preset as a button or as a switch in the Setup program.

**Freely selectable function**

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

This function can be preset as a button or as a switch in the Setup program.


**Clean key**

Pressing this key deactivates the complete user interface of the dentist element. Pressing it again > 3 s reactivates the control panel.

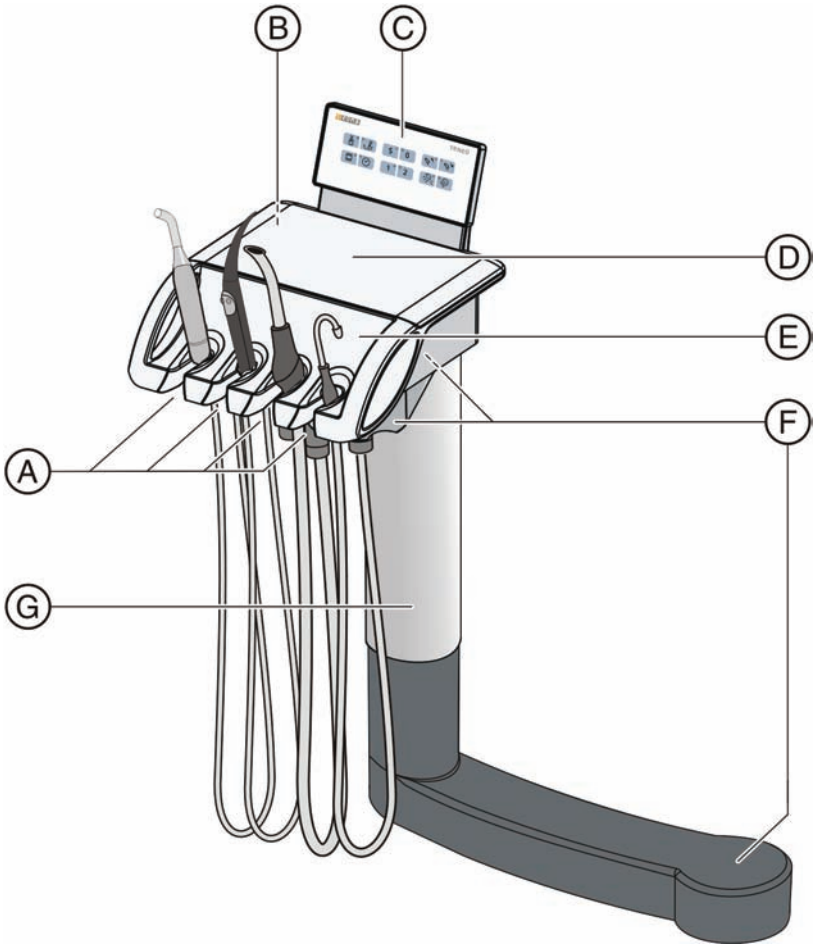
This is used to make sure that no unwanted functions can be accidentally triggered while cleaning the surface.


**Setup key**

Used for individual configuration of the treatment center by the user and for reading out messages by the service engineer, see "Configuration of the treatment center (Setup)" [🗎 123].

## 3.7 Assistant element

The functional scope of the assistant element is adapted to the dental assistant's field of activity. It can, however, also be positioned so as to enable unassisted treatment by the dentist.




| | |
|---|---|
| A | Holders 1 to 4 (from left to right) for instruments |
| B | Position of the hydrocolloid connection (concealed, under the assistant element) |
| C | User interface |
| D | Skid-proof silicone mat |
| E | Removable instrument holder |
| F | 3 rotary joints for flexible positioning (partially concealed) |
| G | Support arm, height adjustable by service engineer |

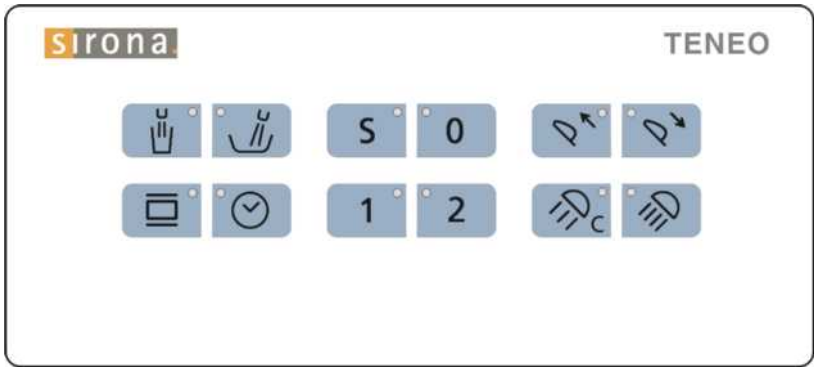
### 3.7.1 Instrument positions

The following instrument position assignments are possible:

| Holder 1 | Holder 2 | Holder 3 | Holder 4 |
|---|---|---|---|
| Mini L.E.D. curing light | SPRAYVIT L multifunctional syringe | Spray aspirator | Saliva ejector |
| Surgical suction device | | | |

If the assistant element is equipped with a hydrocolloid connection, the surgical suction device cannot be installed.

### 3.7.2 User interface




### 3.7.3 Fixed keys on the assistant element

**NOTE: Detailed description**
For a more detailed description of the fixed key functions, see "Fixed keys on the assistant element" [🗎 100].

**Tumbler filling**

on/off

**Flushing of the cuspidor bowl**

on/off

**X-ray viewer**

on/off

This key has no function on the version not equipped with an X-ray viewer.

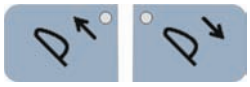
**Timer function**

Triggers the time lapse of the first timer. The timer is set on the dentist element.


**Chair program S**

Mouth rinsing position with memory function (freely programmable)






**Chair program 0**

Entry/exit position (freely programmable)

**Chair programs 1 and 2**

(freely programmable)

**Headrest**

Moves the motor-driven headrest out/in for size adjustment. These keys do not function if a MultiMotion headrest is installed.

**Composite function**

Switches the composite setting for the operating light on/off.

Reduced light intensity < 8,000 lux

**Operating light**

on/off

Light intensity > 24,000 lux at 100%

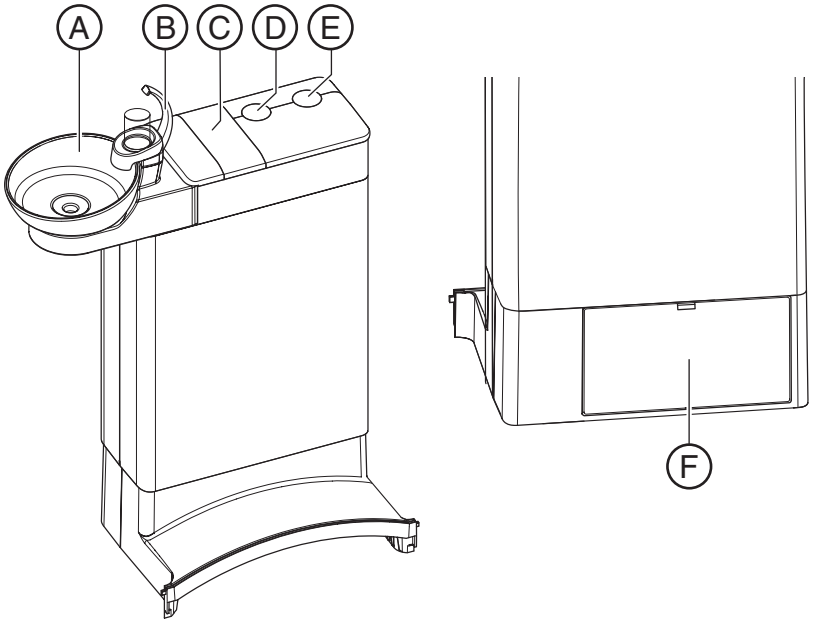
## 3.8 Water unit

The water unit is equipped with a disinfection system. It adds a disinfectant to the water the patient comes in contact with. This reduces the amount of germs in the water lines.

**⚠WARNING: Microorganisms can multiply in the water.**
These microorganisms could increase the risk of damage to one's health.

➢ Never operate the treatment center without disinfectants.

The water unit can be optionally equipped with an automatic separator (separation of suction air and waste water) combined with an amalgam separator/sediment container or with a wet suction device.



| | |
|---|---|
| A | Swiveling cuspidor bowl |
| B | Tumbler filler (depicted) or tumbler filler with automatic sensor control for automatic filling of the tumbler |
| C | Maintenance cover for disinfectant |
| D | Mount for support arm of operating light |
| E | Mount for tray support arm |
| F | Maintenance flap for accessing flushing valve, amalgam separator, sediment container or filter insert for wet suction |

## 3.9 External device connection

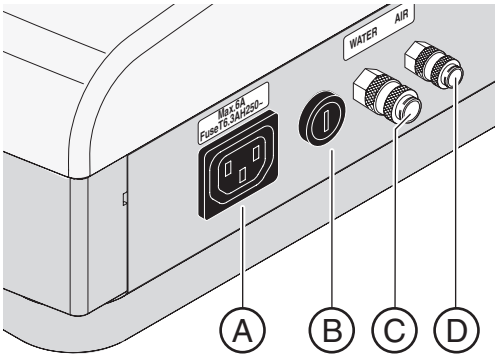
External medical accessories can be connected to the external device connection. They must comply with the requirements of Medical Device Directive 93/42/EEC.

**CAUTION: Additional devices connected to the external device connection are exposed to a hydrogen peroxide concentration of 0.1‰-0.2‰.**
If the additional devices are not suitable for the specified hydrogen peroxide concentration, they may be damaged.

- Before connecting any additional devices, check to make sure that they can be exposed to a hydrogen peroxide concentration. Contact the manufacturer of the relevant additional device, if necessary.
- Additional devices must not be sanitized with the treatment center, see "Sanitizing the treatment center" [🗎 162].

**NOTE: DVGW approval**
Due to the design of the treatment center according to EN 1717/DIN 1988 (DVGW requirements) the connected additional devices fulfill the above standards.

**NOTE: Self-contained power supply**
The inlet connector remains live when the power switch is turned off. The connected external devices must therefore possess their own power switch. However, the air and water connections are switched off.




| | |
|---|---|
| A | Inlet connector with power supply (max. 6 A) |
| B | Fuse for inlet connector (6.3 A slow-blow) |
| C | Quick coupling for water |
| D | Quick coupling for air |

| | Pressure | Flow rate |
|---|---|---|
| Water | 2,2 ± 0,2 bar | max. 300 ml/min |
| Air | 4,4 ± 0,5 bar | max. 70 Nl/min |

# 4 Operation

## 4.1 Starting up the treatment center

### 4.1.1 Initial startup

Sanitation must be performed prior to initial startup of your treatment center.

This is done by filling all water-bearing lines with a concentrated disinfectant to reduce the exposure of the water to bacteria.

If the service engineer skipped the sanitation procedure after installing your treatment center based on an agreement with you or sanitation has not been performed for more than one week, please perform sanitation yourself. Refer to "Sanitizing the treatment center" [162] for more information.

Sanitation takes approx. 24 hours.

### 4.1.2 Switching the treatment center on/off

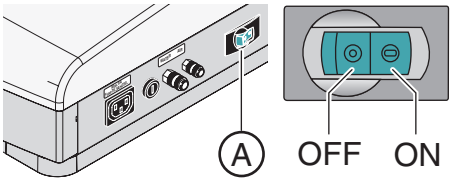
The treatment center is equipped with a standby system for enhanced convenience when switching it on and off.

The treatment center thus features a power switch at the base of the chair and a main switch on the dentist element.

#### 4.1.2.1 Power switch

The power switch connects the treatment center to the power supply. During longer periods of disuse, the treatment center should be disconnected from the power supply. It then no longer consumes any energy.

The power switch contains an automatic device fuse.




**Connecting the treatment center to the power supply**

✓ The treatment center is installed according to the "Installation Instructions" by authorized technical personnel.

➢ Turn on power switch **A**.

↯ The treatment center is connected to the power supply.

**Disconnecting the treatment center from the power supply**

✓ The treatment center is shut down, see "Switching the treatment center off" (below).

➢ Turn power switch **A** off.

↯ The treatment center is disconnected from the power supply.

#### 4.1.2.2 Main switch

**Switching the treatment center on**

The main switch switches the treatment center from the Standby mode to operational readiness.

Following switch-on, the operating system is booted and an automatic self-test is performed.

✓ The power switch is turned on.

➢ Press the main switch on the dentist element.

↳ The LED of the main switch lights up on the dentist element.

↳ The treatment center powers up and establishes operational readiness.

**NOTE: Maintenance deadline**
If the next maintenance call is due in less than 42 days or the maintenance deadline has already been exceeded, a message appears on the touchscreen. For more information, please refer to "Inspection and maintenance" [🗎 170].

**Switching the treatment center to the Standby mode**

On completing your work, you should switch the treatment center off with the main switch on the dentist element both for safety reasons and to reduce its power consumption. Pressing the main switch turns the air and water supply as well as all electronic components off. Only the Standby circuit (power consumption 3 W) is still supplied with voltage.

➢ Press and hold the main switch on the dentist element until an acoustic signal sounds. Then release the key.

↳ The treatment center then shuts down and switches itself to the Standby mode.

↳ The LED of the main switch goes out on the dentist element.

### 4.1.3 Selecting a user profile

The treatment center enables you to manage up to six user profiles. Multiple users can operate the treatment center without having to do without their own individual treatment and operation related settings.

The following is stored in the user profiles:

- Creation of chair programs, see "Creating chair programs and shock positioning" [🗎 55]
- Configurations in the Setup programs, see "Configuration of the treatment center (Setup)" [🗎 123]
- Settings in the start and Instrument programs, see "Saving the instrument settings" [🗎 63]
- Configuration of the SIVISION screen for PC control. The configuration is saved in the PC application SIUCOM plus that is installed on the external PC.

Once the user profile has been selected, the corresponding configurations and settings become available once again.

If any of the user profiles are not required, their number can be limited, see "Preselecting the number of user profiles" [🗎 127].


The user profiles **(A)** are distinguished with the letters A to F. The active user profile, here B, is displayed in the footer of the touchscreen. The user profile used last is automatically used when the treatment center is switched on.


✓ The *Start program* is displayed on the touchscreen in the *Simple* (shown here) or*Advanced Start program* mode, see "Simple/Advanced Start program operating mode" [🗎 44].

➢ Select the desired user profile. Touch the *User profile* key as often as necessary.

↳ The user profile displayed in the footer is active.

## 4.2 Control concept of touchscreen


The touchscreen displays virtual function keys according to the program selected. Required functions can be triggered either by touching the function keys with your finger or via cursor with the foot control.

The adjacent illustration shows the touchscreen of a treatment center as supplied to the customer and maximally equipped.

**NOTE: Missing function keys**
Function keys for functions which the treatment center is not equipped with are not displayed on the touchscreen. Moreover, the touchscreen user interface can be altered via individual Setup changes, see "Configuration of the treatment center (Setup)" [🗎 123].

**Footer**

The three program change keys on the bottom left edge of the touchscreen can be used to change between the following main programs:

- Start program
- Instrument program
- SIVISION program

The selected program is highlighted blue.

If a symbol of a program change key is hidden, the corresponding main program cannot be selected in the current operating state. It is not possible:

- to change to the Instrument program if no instrument has been withdrawn from its holder
- to change to the SIVISION program if the PC connection has been switched off or is not configured.
  Connection errors involving the external PC are marked by a warning triangle, see below.

In the sub-screens or settings screens (see below), all main programs are shaded gray in the footer. You can change from sub-screens and settings screens to a main program by touching one or the three keys.


A status bar is located on the right. If multiple user profiles **(A)** are preselected, active user profiles A to F are displayed along with the current time underneath.


Status messages are displayed to indicate e.g. failure to communicate with the external PC, the need to change the amalgam separator or add disinfectant, the need to charge the battery of the wireless foot control, error messages, or the number of days left until the next maintenance call or sanitation run.


If the treatment function is switched on, the selected treatment and the assigned burr drive are also displayed here.

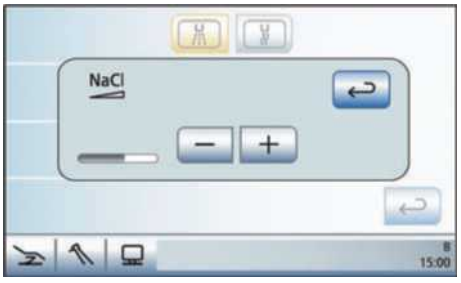
**Sub-screens**

Some programs are divided into a main program and sub-screens.

The function keys for the basic functions are displayed in the main programs. The *Sub-screen* key (two rectangles) leads to further setting possibilities.

Sub-screens are automatically hidden after a certain period has elapsed. The *Return* key (return arrow) closes the opened sub-screen immediately.

**Settings screens**




In many cases, functions not only can be switched on or off, but also can be set. If a function key is pressed and held (> 2 s), the corresponding settings screen appears. This screen is superimposed onto the one lying below it. The screen located in the background has a semitransparent appearance and is temporarily disabled for inputs.

Settings screens are automatically hidden after a certain period has elapsed. The *Return* key (return arrow) closes the opened settings screen immediately.

**Key background colors**


General functions are represented by gray keys. If the corresponding function is switched on or active, the key is displayed orange.

Keys that initiate a program change or lead to sub-screens and settings screens are displayed blue.


As long as a key remains activated, its active state is marked by a bold black border.

## 4.3 Foot control

The treatment center can be operated using a wireless foot control or a foot control with a cable connection.

### 4.3.1 Wireless foot control

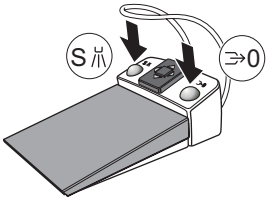
Technical data of the wireless module, see Foot control radio interface" [🗎 177].

#### 4.3.1.1 Setting the wireless foot control on the treatment center

The wireless foot control must be assigned to the treatment center via a registration. This prevents malfunctions caused by neighboring wireless foot controls.

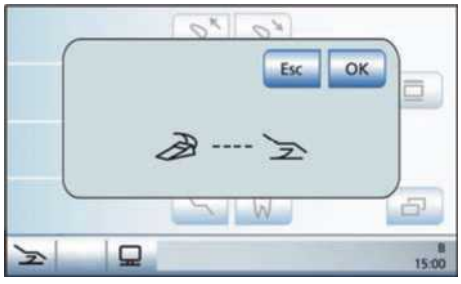
✓ The treatment center and wireless foot control are ready for operation.

✓ All instruments are in place.



**1.** Simultaneously press and hold the left and right buttons of the foot control (> 2 s).

↳ An acoustic signal sounds. The following message appears on the touchscreen:




**2.** Confirm that this wireless foot control is to be used on the treatment center by pressing the *OK* button. The registration process can be interrupted with the *Esc* key.

↳ The message is hidden. The wireless foot control is assigned to the treatment center.

#### 4.3.1.2 Battery voltage message


The wireless foot control is powered by a battery. An almost empty battery is detected by the system and displayed in the footer. The battery should then be replaced within a week to prevent system failure.

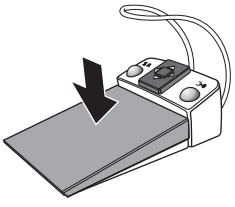
When the battery is completely empty, an error code is output, see "Error messages" [🗎 172]. Then the treatment center can no longer be operated.

The battery can be changed by the user, see "Changing the battery of the wireless foot control" [🗎 168].

### 4.3.2 Operating the foot control

The foot control operating elements are assigned different functions, depending on whether the instruments are all deposited or an instrument is removed from its holder.

**Foot pedal**



✓ All instruments are **in place**.

➢ Step on the foot pedal.

↳ The dentist element moves toward the operator as long as the pedal is actuated

✓ An instrument is **removed**.

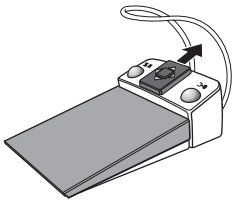
➢ Step on the foot pedal.

↳ The instrument is activated. The intensity is regulated according to the pedal movement if necessary (if the speed foot control is set, see "General instrument functions" [🗎 64]). If the intraoral camera is removed, the display switches to the still or live image.

### 4-way foot switch plate

If the cursor control is **switched on**, it is operated via the 4-way foot switch plate, see "Using the cursor control" [🗎 38].

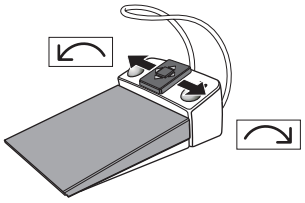
If the cursor control is **switched off**, then:



✓ All instruments are **in place**.

➢ Slide the 4-way foot switch plate upward.

↳ The dentist element moves toward the foot end as long as the pedal is actuated.

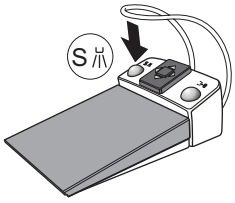


✓ An electric motor is **removed**.

➢ Slide the 4-way foot switch plate to the right or left.

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

### Left button




✓ All instruments are **in place**.

➢ Press the left button.

↳ The chair moves to mouth rinsing position S.

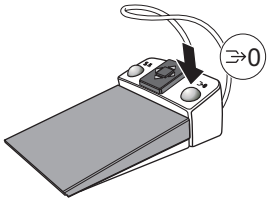
✓ An instrument (motor, turbine, SIROSONIC TL) is **removed**.

➢ Press the left button.

↳ Spray or NaCl is switched on/off. If the intraoral camera is removed, the video still image is saved.

**NOTE: Allocation of additional functions**
Users can allocate additional functions to this key that correspond to the position of the blue cursor, see also "Using the cursor control" [🗎 38].

### Right button




✓ All instruments are **in place**.

➢ Press the right button.

↳ The chair moves to entry/exit position 0.

✓ An instrument (motor, turbine) is **removed**.

➢ Press the right button.

↳ The chip blower remains switched on as long as the button is pressed. If the intraoral camera is removed, the video still image is saved.

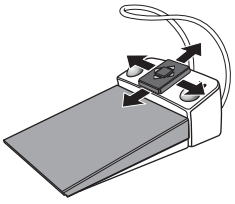
**NOTE: Allocation of additional functions**
Users can allocate additional functions to this key that correspond to the position of the blue cursor, see also "Using the cursor control" [🗎 38].

## 4.3.3 Using the cursor control

### 4.3.3.1 Functionality

**Cursor control as an alternative mode of operation**

The touchscreen and the fixed keys of the dentist element can also be operated hand-free via the foot control. This method of operation optimally supports hygiene, especially in connection with sterile treatment work.



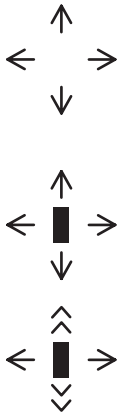
For cursor control, the foot control features a 4-way foot switch plate that can be moved in four directions.

The cursor position is optically displayed on the touchscreen or on the fixed keys.

The cursor control is reserved for the Start and Instrument programs. The SIVISION programs cannot be controlled via the cursor.

**Cursor control setting options**

Note that different settings can be made for the cursor control in the Setup program. The functions assigned to the 4-way foot switch plate vary according to its setting. The adjacent symbols for setting the cursor are used in the Setup program.



- Cursor control switched off:

  The dentist element moves away from the user when the 4-way foot switch plate is pressed upward. Counterclockwise or clockwise motor rotation can be selected by sliding the 4-way foot switch plate to the left or right.
- Cursor control switched on, without program change:

  The cursor can be moved along the cursor path by holding or repeating upward or downward actuation of the 4-way foot switch plate.
- Cursor control switched on, with program change:

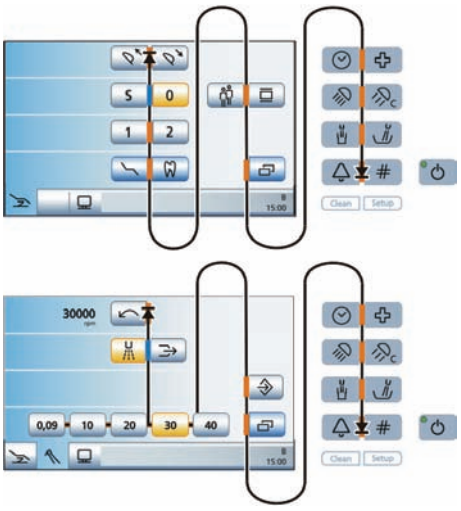
  The cursor can be moved along the cursor path by holding or repeating upward or downward actuation of the 4-way foot switch plate. If the cursor is located at the end of the cursor path, it can be toggled between the Start program and the Instrument program.

Please also note the information on "orange and blue bars," see below.

To set the cursor control to the mode you prefer, refer to "Setting the cursor control" [🗎 126].

**Current cursor position**


If the cursor control is activated, the current position of the cursor is displayed by an orange bar located between the pairs of keys on the touchscreen or between the fixed keys on the EasyTouch control panel.



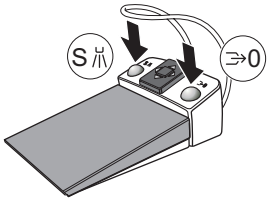
**Cursor path**

The cursor path runs between the pairs of keys, moving from top to bottom and from left to right, usually in multiple loops. The cursor path can be traversed between the starting and end points either in a forward or a reverse direction.

If no further cursor position is available on the touchscreen, the cursor jumps out of the touchscreen. The cursor path is then continued between the fixed keys on the EasyTouch control panel.

In Instrument programs, all quick setting keys are selected simultaneously. This is indicated by a horizontal orange bar located behind the quick setting keys. The speed or intensity is then set by actuating the 4-way foot switch plate to the left or right briefly (values on quick setting keys) or for a longer time (intermediate values), see "Operating the cursor control" [🗎 39].

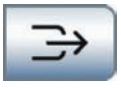
The Clean key, Setup routine and main switch cannot be accessed via the cursor control.



**Orange and blue bars**

A blue bar indicates which functions are assigned with the left or right button of the foot control. For example, the mouth rinsing position (S) and entry/exit position (0) chair programs are assigned in the Start program, while the Spray and Chip blower are assigned in the Instrument program.

If the cursor control **without** program change is activated, the blue bars also can be selected with the cursor. If the cursor control **with** program change is activated, the blue bars are skipped for faster navigation.

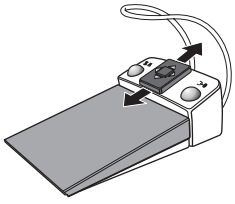


**Chip blower key in the Instrument program**

When the cursor control is activated, the instrument program will display the *Chipblower* key.

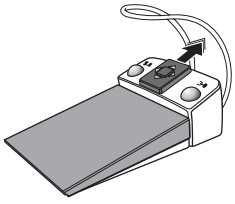
### 4.3.3.2 Operating the cursor control

**Moving the cursor**



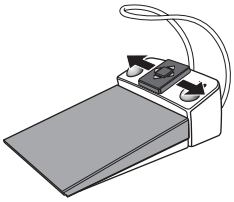
➢ Briefly slide the 4-way foot switch plate upward or downward.

↳ The orange cursor moves forward or back one cursor position.



➢ Hold the 4-way foot switch plate up or down (auto cursor).

↳ The orange cursor slowly moves from one cursor position to another.



**Actuating a function or fixed key**

➢ Press left button: Slide the 4-way foot switch plate to the left.
Press the right button: Slide the 4-way foot switch plate to the right.

↳ The selected key is highlighted orange on the touchscreen (if switched on) resp. gray or blue (if switched off). The LED of the selected fixed key lights up or goes out on the control panel of the dentist element.

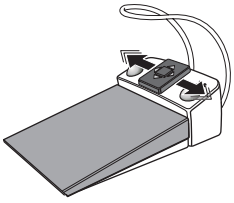
**Activating a quick setting key and setting intermediate values**

Operation of the cursor control for screens with quick setting keys is illustrated based on the example of the motor screen.


✓ The cursor control is switched on.

1. Move the cursor to the quick setting keys.

   ↳ The quick setting keys are highlighted with an orange bar.



2. Setting the values of the quick setting keys: Briefly move the 4-way foot switch plate to the left or right.
   Setting the intermediate values: Move the 4-way foot switch plate to the left or right and hold it in this position.

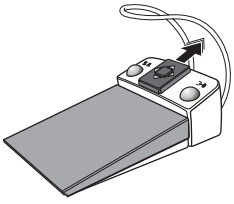
   ↳ The motor speed is displayed in the first line. If the motor is set to a value corresponding to one of the quick setting keys, it is highlighted orange.

**Changing programs**

✓ Cursor control with program change is switched on.

1. Position the cursor at the starting point of the cursor path.
2. Move the cursor past the start position. Hold the 4-way foot switch plate in the upward position.

   ↳ The touchscreen display changes to the start or Instrument program.



## 4.4 Patient chair

### 4.4.1 Safety information

**⚠WARNING: The clearance between the chair upholstery and its base may decrease during chair movements.**
Parts of the patient's or user's body may be pinched or crushed.

➢ Make sure that no limbs protrude into the free space between the upholstery and the base of the chair during chair movements. Also make sure that the patient's arms and legs are resting on the chair's upholstery.

➢ Do not place any objects on the base of the chair.

**WARNING: The maximum load capacity of the patient chair is 165 kg acc. to ISO 6875 (tested with multiple safety acc. to IEC 60601-1).**
If the maximum load capacity is exceeded,a risk of damage to the treatment chair and injury of the patient exists.

- Never allow any persons who weigh more than 160 kg to sit on the patient chair.
- The maximum additional weight of accessories mounted on the patient chair is 5 kg.

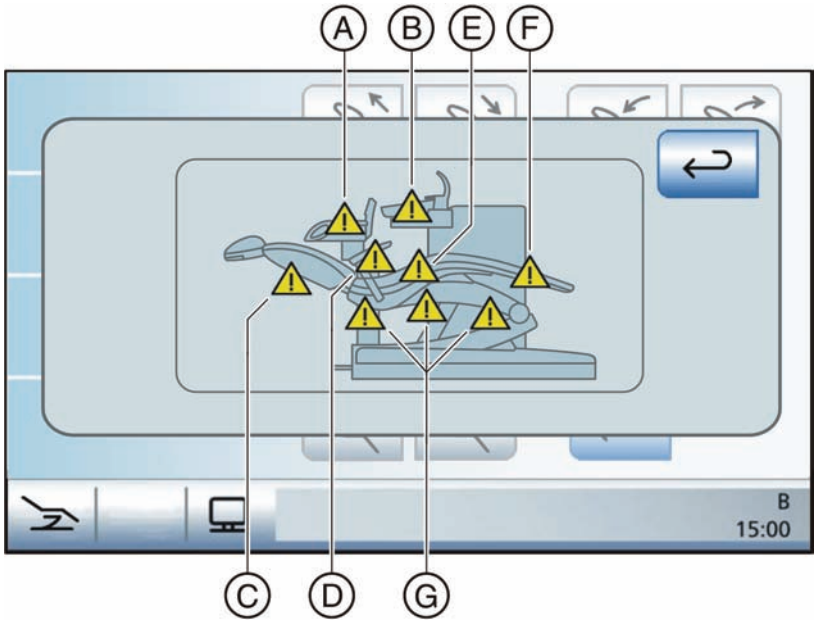
**WARNING: Objects protrude into the movement range of the chair.**
There is a risk of crushing the patient and damaging the objects.

- Make sure that no objects such as e.g. windows, drawers or other devices protrude into the movement range of the treatment center.

**NOTE: Chair interlock**
As long as a treatment instrument is activated, all functions for moving the patient chair are disabled for safety reasons.

### 4.4.2 Safety stop

The treatment center is equipped with various safety stops to prevent crushing. The cutoff trigger points are shown in the following illustration:




*Display of triggered safety switches (all shown on one illustration)*

| | |
|---|---|
| A | Assistant element support arm |
| B | Cuspidor bowl |
| C | Backrest |

| | |
|---|---|
| D | Armrest, right |
| E | Manual switching strip front/rear, right/left |
| F | Toeboard |
| G | Rear housing, rear lift frame, front lift frame<br>right/left in each case.<br>The three safety switches are jointly displayed on the touchscreen. |

The following occurs when one or more safety switches is triggered:

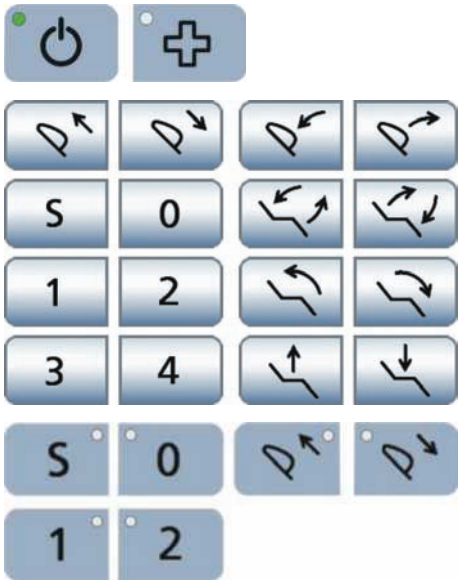
- An acoustic signal sounds (if the movement is interrupted)
- All chair movements stop immediately
- The triggered safety switches are displayed on the touchscreen.
- A correction movement in the opposite direction is executed for approx. 3 seconds for movements of the patient chair (but not for movements of the assistant element or the swiveling cuspidor) insofar as this clearly leads to a reduction of the hazard.

As long as a safety switch is activated, the operation of the treatment center is restricted.

If a safety switch is permanently blocked, please contact your service engineer.

### 4.4.3 Triggering an immediate movement stop

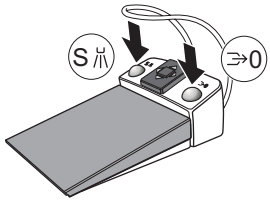
You can stop the movement of the chair to a programmed position as follows:



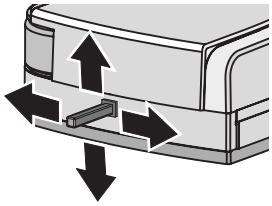

➢ Press the main switch or the *Shock positioning* fixed key on the dentist element.

➢ Touch one of the patient chair keys on the touchscreen.

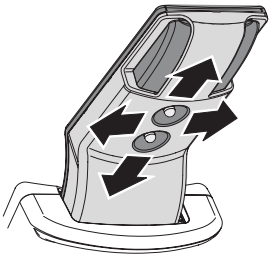
➢ Press one of the patient chair keys on the control panel of the assistant element.




➢ Press the left or right button of the foot switch with all instruments in place.



➢ Actuate the 4-way foot switch in any direction.



➢ Actuate the 4-way switch on the motor-driven headrest in any direction.

↳ All movements of the treatment center are stopped immediately.

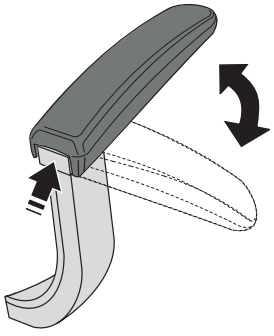
### 4.4.4 Armrests

The patient chair can be equipped with armrests on both sides.

**⚠WARNING: The clearance between the left armrest and the water unit is confined.**
The patient's hand can be caught between the left armrest and the housing of the water unit during chair travel.

➢ Make sure that the patient's hand always remains outside of the collision area.

**Swiveling the armrest**

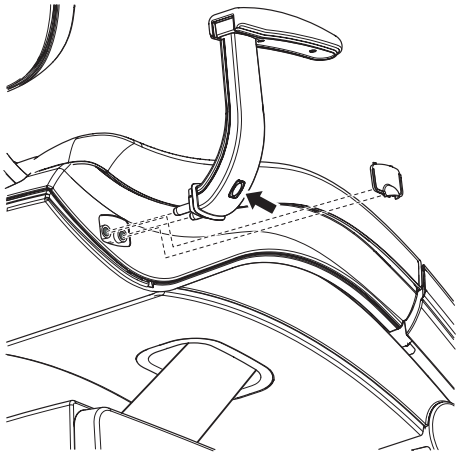


The armrest on the side of the dentist element can be swiveled out 90° for easier entry and exit.

1. Press and hold the locking button behind the armrest.
   ↳ The armrest is unlocked.
2. Swivel the armrest toward the rear or toward the front.
   ↳ The armrest automatically engages in both end positions.

**Removing/attaching the armrest**

The right armrest is equipped with a safety switch that stops chair movement immediately when the armrest is swiveled outward (risk of collision with the dentist element)



If the armrest is removed, the supplied cover must be inserted in the mount on the patient chair instead of the armrest in order to bridge the safety switch. If the safety switch is not bypassed with the cover when the armrest is removed, the treatment center will be disabled by the triggered safety switch, see also "Safety stop" [41].

1. Press and hold the release button on the bottom side of the armrest and pull out the armrest.
2. Insert the cover instead of the armrest.

   ↳ The cover automatically locks in place. The safety switch of the armrest is bypassed.

Proceed in reverse order when installing the armrest. Press the tab of the cover with one finger to release it from the side of the chair.

**⚠CAUTION: A swiveling armrest does not have an end stop that would prevent a collision when fitted in the left-hand position.**
Fitting a swiveling armrest in the left-hand position can lead to collisions with the tumbler during certain chair movements.

➢ Only use the swiveling armrest on the right-hand side of the treatment center.

### 4.4.5 Simple/Advanced Start program operating mode

**Function of the Start programs**

In the *Start program*, you can select functions associated with movement of the patient chair. Furthermore, you also can access additional general functions via the *Start program*.

**Difference between Simple and Advanced Start program modes**

In the *Simple Start program* operating mode, only the chair program function keys and, if present, the *Move headrest in/out* function are displayed in the screen.

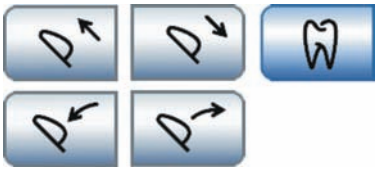

*Simple Start program operating mode*

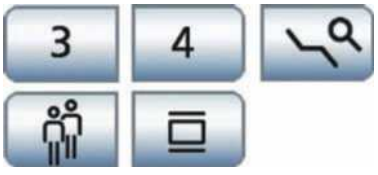
In the *Simple Start program* operating mode, the remaining functions are listed in the separate *Manual Chair Adjustment* screen. This is achieved via the additional *Manual Chair Adjustment* key.

*Manual Chair Adjustment screen (for Simple Start program mode only)*

In the *Advanced Start program* mode, all function keys associated with movement of the patient chair are displayed together in a single screen.


*Advanced Start program operating mode*






**Missing function keys in the Start program**

The screens displayed above show the function keys of a fully equipped treatment center. Function keys for functions which the treatment center is not equipped with are not displayed on the touchscreen. In the *Start program* this includes function keys for the following **equipment options**:

- Motor-driven headrest
- Treatment (endodontics and implantology)

Furthermore, the screens may vary due to individual *Setup settings*. The following configurations may influence the *Start programs*, see:

- "Showing/hiding" chair programs 3 and 4" [🗎 126]
- "Showing/hiding the fine adjustment key" [🗎 126]
- "Preselecting the number of user profiles" [🗎 127]
- "Setting the X-ray image viewer key to white screen on the SIVISION monitor" [🗎 129]

**Using the Simple/Advanced Start program operating mode**

You can select the operating mode you prefer to use; see "Changeover between Simple and Advanced Start program" [🗎 126].

**Opening the Start program**

After the treatment center is switched on the *Start program* automatically appears in the selected operating mode.

If the treatment center is already in operation and the *Start program* is not displayed, proceed as follows:

➢ Touch the *Start program* program change key in the footer of the touchscreen.

↳ The *Start program* is displayed in the selected operating mode.

### 4.4.6 Adjusting the motor-driven headrest

The motor-driven headrest can be adjusted via the touchscreen or directly on the headrest.

**⚠WARNING: Fine objects can enter the mechanism of the motor-driven headrest through the gap.**
Long hair, dangling jewelry or loosely fitting clothing can be pulled in.

➢ Position the patient in such a way that his/her hair and any objects he/she is wearing cannot be pulled in.

#### 4.4.6.1 Moving the headrest in/out

The treatment chair is adjusted to the patient's stature by moving the headrest in or out.

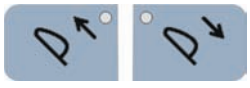
**Via touchscreen**

✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *Headrest in/out* keys.

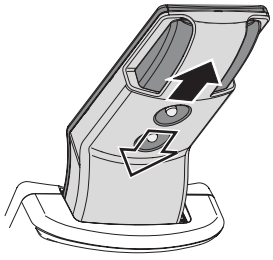
**Via the assistant element**

➢ Press the *Headrest in/out* fixed keys.



**Via the 4-way switch**

➢ Slide the upper 4-way switch upward or downward.



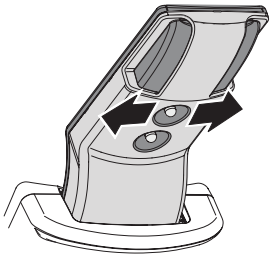
#### 4.4.6.2 Inclining the headrest

The headrest can be tilted either via motor drive or manually (quick mechanical adjustment).

**Via touchscreen**

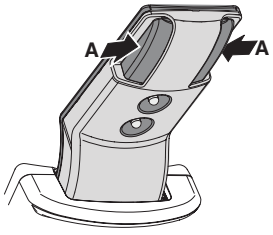
✓ The *Manual Chair Adjustment* screen or the *Start program* is displayed on the touchscreen in the *Advanced Start program* operating mode.

➢ Touch the *Tilt headrest* keys.



**Via the 4-way switch**

➢ Slide the upper 4-way switch to the left or right.




**Via quick mechanical adjustment**

1. Hold the headrest securely in place before unlocking it.
2. Press buttons **A** together.

   ↳ The headrest is thus disconnected from the motor drive and can be tilted manually.

## 4.4.7 Adjusting the MultiMotion headrest

The MultiMotion headrest enables you to adjust the patient's head in a way that optimally supports viewing of hard-to-access areas of the patient's mouth.

### 4.4.7.1 Patient height adjustment

The headrest can be adjusted to the patient's height by pulling out or pushing in the headrest extension.

**NOTE: Treatment without readjustment**
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 headrest considerably, since readjustment to the patient's height can thus be omitted when changing over from mandibular to maxillary treatment.

### 4.4.7.2 Setting the jaw position

The MultiMotion headrest enables you to change between the maxillary and mandibular positions without adjusting the headrest extension. The anatomical movement of the arched extension keeps the patient's head in the support.

1. Raise the headrest slightly by raising the operating handle.
   - ↳ The headrest is unloaded.
2. Press the release on the operating handle.
   - ↳ The lock for vertical adjustment is released.

3. Press and hold the release. Holding the headrest by the operating handle, raise or lower it to the required position.
4. Let go of the the release on the operating handle.
   - ↳ The headrest is locked again.

### 4.4.7.3 Rotating and tilting the headrest


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

1. Press one or both of the lateral releases **(A)** on the headrest.
   - ↳ The lock for rotational and tilt adjustment is released.
2. Press and hold the releases **(A)**. Set the headrest to the desired position.
3. Let go of the releases **(A)**. Make sure that the headrest is indeed locked in place after you let go of the releases!
   - ↳ The headrest is locked again.

### 4.4.7.4 Removing and inserting the headrest

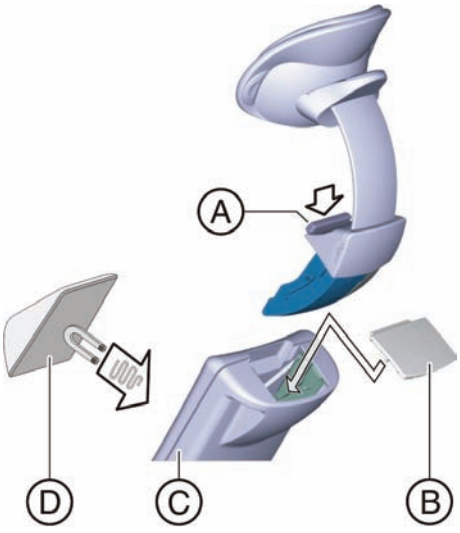
For certain treatments (e.g. of children) it may be expedient to remove the MultiMotion headrest completely in order to obtain better access to the patient. The patient's head is then supported on a head pad. It is magnetically attached to the headrest extension.

The head pad is not included in the scope of supply. It can be ordered from a specialized dealer.

**WARNING: The head pad contains a strong magnet on its bottom side.**
This magnet could affect any cardiac pacemaker located nearby. Furthermore, direct contact of the head pad with magnetic cards can delete data stored on the cards.

- ➢ Therefore, make sure that the magnet is never located in the immediate vicinity of any patients, users or technical personnel wearing a cardiac pacemaker.
- ➢ Make sure that no magnetic cards or any other data storage media are located in the immediate vicinity of the head pad.

**Removing the MultiMotion headrest**




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

   ↳ The head pad is held magnetically.

**NOTE: Storage of the MultiMotion headrest**
Store the MultiMotion in a safe place where it cannot fall onto the floor.

**Inserting the MultiMotion headrest**

1. Check the guide of the removed headrest for contamination and remove any contamination you may find.
2. Remove the cover cap **(B)**.
3. 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.

### 4.4.8 Moving the patient chair via chair programs

The chair programs can be selected via the touchscreen or via the user interface of the assistant element. The entry/exit and mouth rinsing positions can also be selected via the foot control.

You can individually reprogram the factory preset chair programs to suit your own wishes; see "Creating chair programs" [🗎 55].

You can select the chair program during which the dentist element is to approach the treatment center; see "Linking dentist element movement to chair programs" [🗎 128].

**NOTE: The cuspidor bowl automatically swivels back to its starting position**
The cuspidor bowl automatically returns beforehand to ensure that the patient does not collide with it during chair movements. This return travel is dependent on the chair movement and is executed only if a collision hazard exists.

### 4.4.8.1 Moving the patient chair to the entry/exit position

The following functions are triggered for simple patient entry and exit in the entry/exit position:

- The patient chair moves to an upright position
- The dentist element moves to the foot end
- The operating light switches off
- The cuspidor bowl swivels out

The tumbler heater can be set so that it automatically switches off when the entry/exit position (0) chair program is activated; see "Linking the tumbler heater to the entry/exit position" [🗎 128].

**WARNING: The patient's feet may get caught in the instrument hoses of the dentist element when he enters or leaves the patient chair.**
The patient may trip or fall.

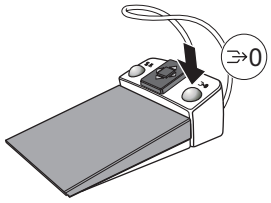
➢ Turn the dentist element outward before the patient enters or leaves it.

**Via touchscreen**


✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *0* key briefly (< 2 s).

**Via foot control**




✓ All instruments are in place.

➢ Press the right button of the foot control.

**Via the assistant element**


➢ Press the *0* key on the assistant element briefly (< 2 s).

### 4.4.8.2 Moving the patient chair to the mouth rinsing position

The following functions are triggered in the mouth rinsing position:

- The operating light switches off
- The chair moves the patient to an upright position

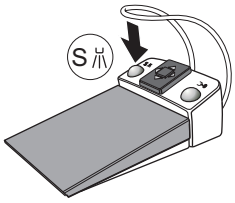
This can be used to set the cuspidor bowl so that it automatically moves inward when the mouth rinsing position (S) chair program is selected; see"Linking the movement of the cuspidor bowl to the mouth rinsing position" [🗎 127].

**Via touchscreen**


✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *S* key briefly (< 2 s).

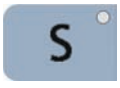
**Via foot control**




✓ All instruments are in place.

➢ Press the left button of the foot control.

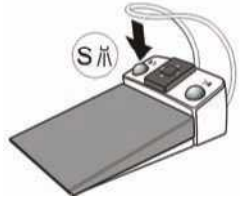
**Via the assistant element**




➢ Press the *S* key on the assistant element briefly (< 2 s).

### 4.4.8.3 Using the last position memory function

The last chair position is stored before the patient chair moves to mouth rinsing position S. When mouth rinsing position key *S* is pressed again, the treatment center returns to the previously set treatment position.


✓ The patient chair is located in any treatment position.

1. Press the *S* key on the touchscreen, or press the *S* key on the user interface of the assistant element, or press the left button of the foot control (with all instruments in place in their holders).

   ↳ The treatment center moves to the mouth rinsing position.

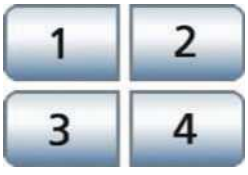
2. Press the *S* key on the touchscreen, or on the user interface of the assistant element, or press the left button of the foot control again.

   ↳ The treatment center automatically returns to the position where the patient chair was located prior to the mouth rinsing position.

### 4.4.8.4 Activating other chair programs

The number of chair programs can be extended to 4 or limited to 2; see "Showing/hiding chair programs 3 and 4" [🗎 126].

**Via touchscreen**




✓ The *Start program* is displayed on the touchscreen.

➢ Touch key *1*, *2* or, if required, *3*, *4* briefly (< 2 s).


**Via the assistant element**

➢ Press key *1* key or *2* on the assistant element briefly (< 2 s).

**NOTE:**
Chair programs 3 and 4 cannot be selected on the assistant element.

## 4.4.9 Moving the chair manually

**NOTE: The cuspidor bowl automatically swivels back to its starting position**
The cuspidor bowl automatically returns beforehand to ensure that the patient does not collide with it during chair movements. This return travel is dependent on the chair movement and is executed only if a collision hazard exists.

### 4.4.9.1 Manual Chair Adjustment screen (for Simple Start program mode only)


✓ The *Start program* is displayed on the touchscreen with the *Simple Start program* operating mode.

**1.** Touch the *Manual Chair Adjustment* key.

↳ The *Manual Chair Adjustment* screen is displayed.

**2.** Perform the settings described in the following sections.

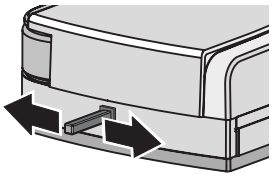

### 4.4.9.2 ErgoMotion – Tilting the patient couch and inclining the backrest

Compensated motion of the seat and backrest without any compression or stretching effects for the patient

**Via touchscreen**

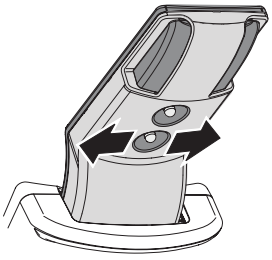
✓ The *Manual Chair Adjustment* screen or the *Start program* is displayed on the touchscreen in the *Advanced Start program operating mode*.

➢ Touch the *ErgoMotion* keys.



**Via the 4-way foot switch**

➢ Slide the 4-way foot switch to the left or right.



**Via the 4-way switch**

➢ Slide the upper 4-way switch to the left or right.

### 4.4.9.3 OrthoMotion – Tilting the patient chair

Tilting motion of the patient chair without changing the angle between the seat and backrest. This movement is particularly suitable for patients with limited mobility.

✓ The *Manual Chair Adjustment* screen or the *Start program* is displayed on the touchscreen in the *Advanced Start program* operating mode.

➢ Touch the *OrthoMotion* keys.

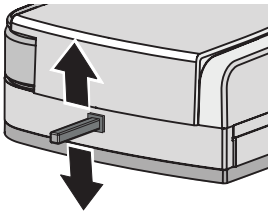
### 4.4.9.4 Adjusting the chair height

**Via touchscreen**

✓ The *Manual Chair Adjustment* screen or the *Start program* is displayed on the touchscreen in the *Advanced Start program* operating mode.

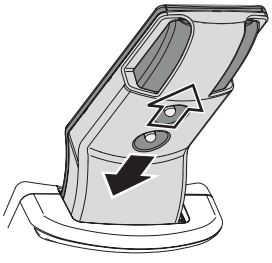
➢ Touch the *Chair height adjustment* keys.

**Via the 4-way foot switch**



➢ Slide the 4-way foot switch upward or downward.

**Via the 4-way switch**



➢ Slide the lower 4-way switch upward or downward.

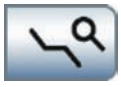
### 4.4.9.5 Moving the patient chair with the fine adjustment

Depending on the type of treatment, it may be necessary to adjust the patient chair more slowly and more precisely (e.g., for tiny corrections in case of treatment under a microscope). In this case, the *Fine Adjustment* key can be displayed in the *Start program*; see "Showing/hiding the fine adjustment key" [126].

**Fine adjustment on/off**

✓ The *Manual Chair Adjustment* screen or the *Start program* is displayed on the touchscreen in the *Advanced Start program* operating mode.

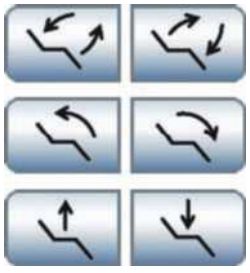
✓ The *Fine Adjustment* key is displayed on the touchscreen.



➢ Touch the *Fine Adjustment* key.

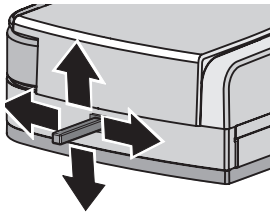
↳ If the key is highlighted orange, the patient chair travels at reduced speed for the following chair movements:

**Movement via touchscreen**



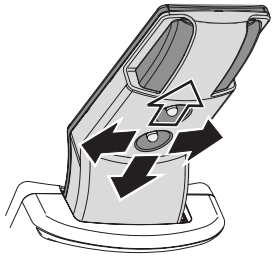
➢ Touch the *ErgoMotion*, *OrthoMotion* or *Chair height adjustment* key.

**Movement via 4-way foot switch**



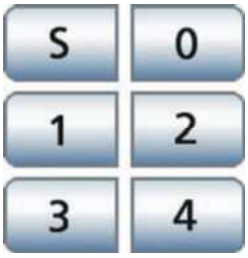
➢ Move the 4-way foot switch to the left or right for the ErgoMotion or up or down to adjust the chair height.

**Movement via 4-way switch**



➢ Move the 4-way switch to the left or right for the ErgoMotion or up or down to adjust the chair height.

## 4.4.10 Creating chair and shock positioning programs




**Chair programs**

The six factory set chair programs:

- Mouth rinsing position S
- Entry/exit position 0
- 1 and 2
- 3 and 4 if selected

can be individually reprogrammed for each of the six user profiles (A to F).

You can determine whether chair programs 3 and 4 will be displayed in the chair screen; see "Showing/hiding chair programs 3 and 4" [🗎 126].

✓ The *Start program* is displayed on the touchscreen.

1. Move the patient chair to the required treatment position; see "Moving the chair manually" [🗎 52].
2. If a motor-driven headrest is installed: Tilt the headrest to the required treatment position; see "Inclining the headrest" [🗎 46].
3. Switch the operating light on or off (to program the desired state), see "Switching the SIROLUX FANTASTIC on/off".
4. Move the dentist element to the required position; see "Moving the dentist element" [🗎 56].

**NOTE: Dentist element movement**
You can select the chair programs during which the dentist element is to move; see "Linking dentist element movement to chair programs" [🗎 128].

5. Press and hold the desired program key (S, 0, 1, 2 or, if applicable, 3, 4) (> 2 s).

   ↳ An audible signal sounds. Your settings are now stored under the desired program key.

**NOTE: Programming on the assistant element**
Chair programs S, 0, 1, 2 can also be programmed on the assistant element side.

**Shock positioning**

When the *Shock positioning* key is pressed, the patient chair immediately moves to a position suitable for shock positioning of the patient.

The shock positioning position preset at the factory can be reprogrammed.

1. Move the patient chair to the desired position.
2. Press and hold the *Shock positioning* key (> 2 s).

## 4.4.11 Setting the Massage/Active lumbar support functions

The patient chair has a gentle massage function and/or an active lumbar support function.

**Opening the sub-screen**

✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *Sub-screen* key.

↳ The *Start* sub-screen is displayed.


**Switching the massage function on/off**

➢ Touch the *Massage Function* key.

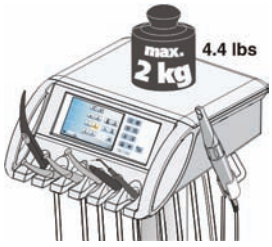
↳ If the key is highlighted orange, the Massage function is activated.

**Setting the active lumbar support**

➢ Adapt the active lumbar support to the patient's spinal curvature. Touch the *Decrease active lumbar support*/*Increase active lumbar support* keys.

## 4.5 Dentist element

### 4.5.1 Maximum load capacity




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

A silicone mat and an NaCl bottle with the corresponding accessories (weighing approx. 1.5 kg or 3.3 lbs) can also be attached; see "Preparing for use of NaCl saline solution" [🗎 67].

### 4.5.2 Height adjustment

The height of the dentist element can be adjusted to achieve an ergonomic instrument height.

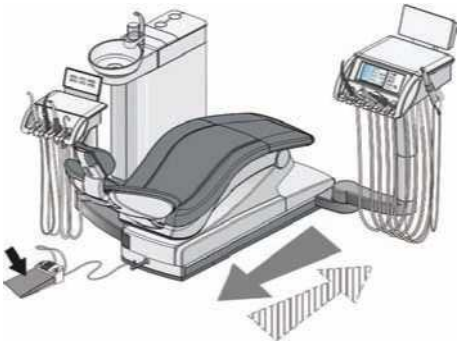
Please contact your service engineer.

### 4.5.3 Motor-driven travel track

The treatment center is equipped with a motor-driven travel track for the dentist element.

**WARNING: The patient's feet may get caught in the instrument hoses of the dentist element when he enters or leaves the patient chair.**
The patient may trip or fall.

➢ Turn the dentist element outward before the patient enters or leaves it.



**Moving the dentist element toward the user**

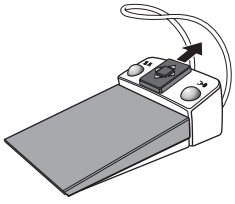
✓ All instruments are in place.

➢ Step on the pedal of the foot control.

↳ The dentist element moves toward the operator as long as the pedal is actuated

**Moving the dentist element toward the foot end**

This function is not available with the cursor control switched on. In this case, the dentist element can be moved to the foot end at the end of treatment by pressing the Entry/exit position (0) key, see "Moving the patient chair to the entry/exit position" [🗎 50].



✓ The cursor control switched off.

✓ All instruments are in place.

➢ Slide the 4-way foot switch plate upward.

↳ The dentist element moves toward the foot end as long as the pedal is actuated.

## 4.5.4 Fixed keys on the dentist element


### 4.5.4.1 Main switch

The treatment center is switched on/off with the main switch.

To switch off, press and hold the key until an acoustic signal sounds. Then release the key.

**NOTE: Power switch**
The treatment center also features a power switch on the base of the chair that separates the treatment center from the power supply, see "Switching the treatment center on/off" [🗎 32].

### 4.5.4.2 Timer function

A set time can be counted down to zero with the timer function. Up to six timers can be preset. A time loop (automatic restart of the countdown) and an acoustic signal (when the set time has expired) can be added to each timer.

**Presetting the timers**

The maximum time setting is 9 minutes and 30 seconds. When making the settings, note that only the timer located at the far left can be triggered with the *Timer* fixed key on the assistant element.

1. Press and hold the *Timer* fixed key on the dentist element (> 2 s).

   ↳ The *Timer Function* settings screen is displayed on the touchscreen.



2. Select one of the six timers to change its presetting. To do this, touch one of the selection keys along the bottom edge of the settings screen.

   ↳ The selected timer is highlighted orange.

3. Use the – and + keys to set the required time.
   Increments:
   From 0:05 to 1:00 = 5 s steps
   From 1:00 to 3:00 = 10 s steps
   From 3:00 to 9:30 = 30 s steps

4. Select whether the time loop and the acoustic signal should be activated/ deactivated for the selected timer. Touch the *Time Loop* and or *Acoustic Signal* key.

   ↳ If a function is switched on, the corresponding key is highlighted orange.

5. Select another timer for adjustment or close the settings screen with the *Return* key.

   ↳ All settings are automatically saved when the screen is closed.

**Starting the timers**

1. Press the *Timer* fixed key briefly.

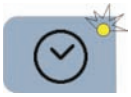
   ↳ The last timer used is started immediately. The set and elapsed time are displayed in the footer. The *Timer function*screen remains visible.


2. If you wish to use a different timer, touch one of the timers at the lower edge of the screen.

   ↳ If the expired time is less than the new setting of the timer, the new time will be shown in the footer. The previously started timer will not be reset to zero.

3. Optionally: You can switch the time loop and/or acoustic signal on/off while the timer is counting down. Touch the *Time Loop* and/or the *Acoustic Signal* key.

   ↳ If a function is switched on, the corresponding key is highlighted orange.



**Stopping/resetting the timer**

When the *Timer function* screen is deactivated, the timer can also be stopped by pressing the *Timer* fixed key. If the screen is activated, the timer will be reset to zero.

### 4.5.4.3 Shock positioning

Immediately moves the patient chair to a position for shock positioning of the patient.

To program the position of the shock positioning function, see "Creating chair programs and shock positioning" [🗎 55]

### 4.5.4.4 Operating light

The light intensity of the operating light is > 24,000 lux.

**Switching the operating light on/off**

The operating light is always switched on at the set brightness level, see "Adjusting the brightness" (below).

➢ Press the *Operating Light* fixed key.

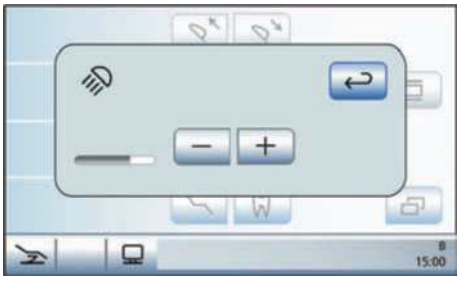
↳ If the operating light is switched on, the LED of the fixed key lights up on the dentist and assistant elements.

**Adjusting the brightness**

The brightness of the operating light can be adjusted on the touchscreen of the treatment center.

1. Press and hold the *Operating Light* fixed key on the dentist element (> 2 s).

   ↳ The Brightness settings screen is displayed on the touchscreen.



2. Use the – and + keys to adjust the brightness of the operating light.

### 4.5.4.5 Composite function

With the composite function, the operating light can be operated at a reduced brightness of < 8,000 lux.

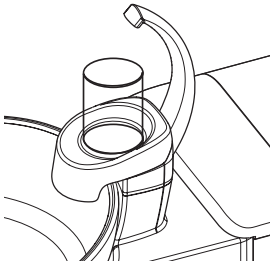
This function is required to prevent premature curing of composite fillings.

➢ Press the *Composite Function* fixed key.

↳ If the composite function is switched on, the LED of the fixed key lights up on the dentist and assistant elements. The light intensity of the operating light is > 8,000 lux.

### 4.5.4.6 Tumbler filling

**Filling the tumbler**



**1.** Place the tumbler under the tumbler filler.

**2.** Press the *Tumbler Filling* fixed key.

↳ The tumbler is filled with water for the preset time.

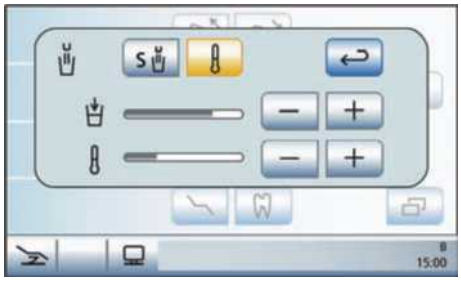
Pressing the *Tumbler Filling* fixed key again stops the filling function immediately.

**NOTE:**
Tumbler filling with automatic sensor control [🗎 109]

**Opening the settings screen**

➢ Press and hold the *Tumbler Filling* fixed key (> 2 s).

↳ The *Tumbler Filling* settings screen is displayed.




**Linking tumbler filling to the mouth rinsing position and setting the filling time**

**1.** Touch the *Link tumbler filling to mouth rinsing position* key.

↳ If the key is marked orange, the tumbler filling function will automatically be switched on for the duration of the preset filling time when the mouth rinsing position chair program (S) is activated.

**2.** Use the – and + keys to set the filling time.

**Setting the water tempering**

1. Switch the tumbler tempering function on/off. Touch the *Water Tempering* key.

   ↳ If the key is highlighted orange, the tumbler tempering function is activated. The water tempering keys are displayed.

2. Use the – and + keys to set the water temperature.

### 4.5.4.7 Flushing of the cuspidor bowl

The flushing function is used for coarse cleaning of the cuspidor bowl during treatment.

**Switching the flushing on/off**

➢ Press the *Flushing* fixed key.

↳ The LED in the key lights up during the flushing function. The flushing function is activated for the preset flushing time.

**Setting the flushing time**


1. Press and hold the *Flushing* key on the dentist element (> 2 s).

   ↳ The *Flushing* settings screen appears on the touchscreen.

2. Set the flushing time with the + and – keys.

**Link flushing to mouth rinsing position S**

➢ Touch the *Link flushing to mouth rinsing position S* key.

↳ If the key is marked orange, flushing is automatically activated for the duration of the flushing time set when approaching the mouth rinsing position S.

### 4.5.4.8 Freely selectable function

**Bell**

e.g. call key

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

This function can be preset as a pushbutton or as a switch in the Setup program, see "Setting the bell/hash key as a pushbutton or as a switch" [🗎 129].

**Hash**

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

This function can be preset as a pushbutton or as a switch in the Setup program, see "Setting the bell/hash key as a pushbutton or as a switch" [🗎 129].

### 4.5.4.9 Clean

Clean

Pressing this key deactivates the complete user interface of the dentist element. Pressing it again > 3 s reactivates the control panel.

This is used to make sure that no unwanted functions can be accidentally triggered while cleaning the surface, see "Disinfecting the EasyTouch" [🗎 137].

### 4.5.4.10 Setup

Setup

Used for individual configuration of the treatment center by the user and for reading out messages by the service engineer, see "Configuration of the treatment center (Setup)" [🗎 123].

## 4.5.5 Quick setting keys and function levels

**Control options**

The treatment center offers you two selectable control options in certain Instrument programs. The instruments can be set either with the quick setting keys or via the function levels. The selected setting applies to each user profile, A to F, for the following Instrument programs:

- Electric motor [🗎 69]
- SIROSONIC TL scaler [🗎 76]
- SIROTOM HF electrosurgical handpiece [🗎 78]

**Difference between quick setting keys and function levels**

If you use the **Quick setting keys**, keys with five predefined motor speed values (0.09...40 x1000 rpm) or intensity values (1...100 %) are displayed.

The values shown on the quick setting keys can be selected by touching them briefly (< 0.5 s).

Intermediate values can be set as follows: If you press and hold a quick setting key (> 0.5 s) whose value is greater than or equal to the speed or intensity value displayed in the first line, the value increases. If you press and hold a quick setting key (> 0.5 s) whose value is less than the speed or intensity value displayed in the first line, the value decreases. The quick setting keys are shaded gray for intermediate values.


*Motor screen (speed) and ultrasonic screen (intensity) with quick setting keys*

When using **function levels**, you have two "storage locations" (E1/E2) at your disposal for saving settings or recalling them at the push of a button. These settings can nevertheless be changed during treatment.

A distinction is made between coarse and fine adjustment of the rpm and intensity settings. If the – or + key is touched briefly (< 0.5 s), the increments correspond to the quick setting keys (speed: 0.09 or 0.2, 10, 20, ...; intensity: 1, 25, 50, ...). If the – or + key is held (> 0.5 s), intermediate values can also be set.


*Motor screen with function levels*

**Using quick setting keys or function levels**

You can select operation via quick setting keys or via function levels in the Setup program; see "Preselecting quick setting keys with SaveMode/with DropMode or function levels" [🗎 130].

**Opening the Instrument program**

When an instrument is removed from its holder, the corresponding Instrument program automatically appears on the touchscreen.

## 4.5.6 Saving instrument settings

**With quick setting keys**

You can determine whether the *Memory* key should be displayed in the Instrument programs with the quick setting keys; see "Preselecting quick setting keys with SaveMode/with DropMode or function levels" [🗎 130].

- SaveMode – The *Memory* key is displayed in the instrument programs:

  The settings made in the Instrument program will be saved after the instrument is placed in its holder only if the *Memory* key was pressed beforehand (> 2 s).

After an instrument is removed, the previously saved settings are preset.

✓ An instrument is removed from its holder.

✓ The Instrument program with quick setting keys is displayed with the *Memory* key.

✓ The desired settings are made; see also "General instrument functions" [🗎 64].

➢ Press and hold the *Memory* key.

↳ An audible signal sounds. The settings in the Instrument program and its sub-screen are saved.

- DropMode – *Memory* key hidden in Instrument programs:

  When the instrument is deposited, the settings made in the Instrument program will automatically be saved.

**With function levels**

The settings which have been made can be saved to and recalled from two function levels
(E1, E2). These settings can nevertheless be changed during treatment.

✓ An instrument is removed from its holder.

✓ The Instrument program with function levels is displayed on the touchscreen.

✓ All settings are made; see also "General instrument functions" [🗎 64].


1. Press and hold key *E1* or *E2* (> 2 s).

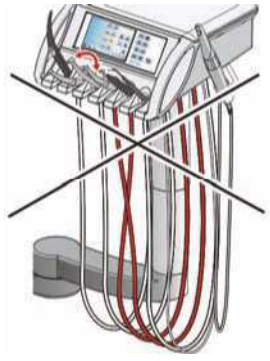
   ↳ An audible signal sounds. The settings in the Instrument program and its sub-screen are saved to the corresponding function level.

2. Repeat this procedure for the second function level.

   ↳ The settings can be recalled by briefly touching the key (< 2 s).

## 4.5.7 Placing the instruments in their holders

**Automatic opening of Instrument programs**

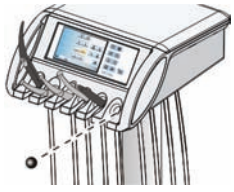


The Instrument program that corresponds to the removed instrument is automatically displayed on the touchscreen.

Therefore, always make sure that all instruments are placed in the correct instrument holders. If any instruments are placed in the wrong holders, the wrong Instrument programs will be opened when they are removed from the holders.

If more than one instrument is removed, the screen of the instrument removed first is displayed.

**Ball stopper**



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

Insert the ball stopper in an unassigned instrument holder. This prevents accidental deposit of an instrument in this holder.

To reorder the ball stopper, see "Spare parts and consumables" [🗎 174].

## 4.5.8 General instrument functions

Settings pertaining to the coolant, instrument light and foot control can be made in the sub-screen of the removed instrument.

The sub-screens vary according to the instrument currently removed. Functions not available for the relevant instrument are not displayed in the sub-screen.

### 4.5.8.1 Opening the sub-screen

✓ An instrument is removed from its holder.

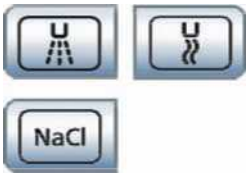
✓ The *Instrument program* of the removed instrument is displayed on the touchscreen.

➢ Touch the *Sub-screen* key.

↳ The sub-screen is displayed.

### 4.5.8.2 Selecting a coolant

Air, spray or NaCl can be preselected as the instrument coolant in the sub-screen. The preselected coolant can then be switched on or off in the Instrument program.

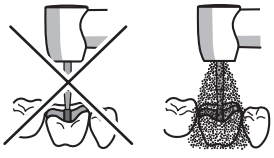



✓ The *Sub-screen* of the removed instrument is displayed on the touchscreen.

➢ Select the coolant required for the removed instrument. Touch the *Spray*, *Air* or *NaCl* key.

↳ The key of the preselected coolant is highlighted orange. The key of the preselected coolant is displaced in the *Instrument program*.

### 4.5.8.3 Switching the preselected coolant on/off



**⚠WARNING: Instrument can be operated without coolant.**
Tooth substance can be damaged by frictional heat.

➢ Always make sure that the treatment area does not overheat whenever you switch the coolant off.

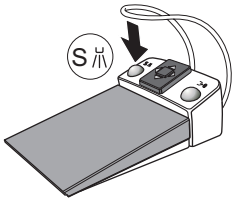
**Via touchscreen**


✓ An instrument is removed from its holder.

➢ Touch the key of the preselected coolant (*Spray*, *Air* or *NaCl*).

↳ If the key of the preselected coolant is highlighted orange, it will be switched on together with the instrument when the foot pedal is actuated. If the key is highlighted gray, the coolant is switched off.

**Via foot control**



✓ An instrument is removed from its holder.

➢ Press the left button of the foot control.

↳ If the key of the preselected coolant (*Spray*, *Air* or *NaCl*) is highlighted orange on the touchscreen, it will be switched on together with the instrument when the foot pedal is actuated.

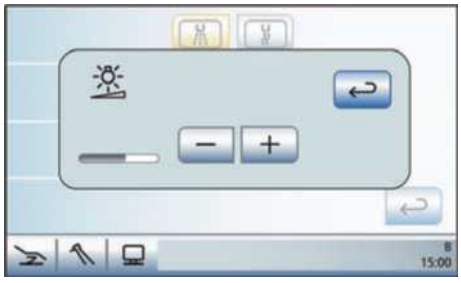
### 4.5.8.4 Instrument light on/off and adjustment

If the instrument is equipped with an instrument light, its brightness can be adjusted.

✓ The *Sub-screen* of the removed instrument is displayed on the touchscreen.

**1.** Press and hold the *Instrument light* key (> 2 s).

↳ The *Instrument Light* settings screen is displayed. The instrument light comes on.



**2.** Use the – and + keys to adjust the brightness of the instrument light.

**3.** Touch the *Return* key.

↳ The *Instrument Light* settings screen is hidden immediately. The settings are saved. If the *Instrument Light* key is highlighted orange, the function is activated.

### 4.5.8.5 Preselecting the instrument light operating voltage

The original Sirona halogen lamp is usually operated at 3.6 V. Voltages over 3.8 V destroy the lamp. The operating voltage can be adjusted for lamps made by other manufacturers.

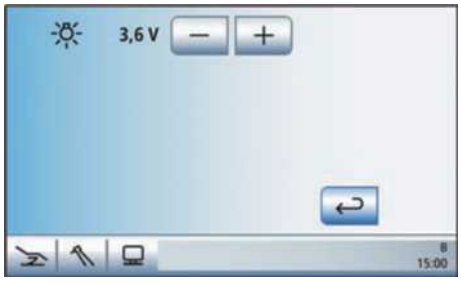
**⚠CAUTION: The operating voltages of different lamps may vary.**
Overvoltages can lead to damage.

➢ When changing lamps, make sure that the operating voltage is properly set for the new lamp.

✓ The *Turbine, Motor* or *Ultrasonic screen* is displayed on the touchscreen.


**1.** Press and hold the *Setup* fixed key (> 2 s).

↳ The Setup program of the corresponding instrument is displayed.




**2.** Use the – and + keys to adjust the maximum operating voltage of the instrument light.

The instrument light voltage of the SPRAYVIT L multifunctional syringe can also be adjusted, see "Setting the media temperature and instrument light" [🗎 74].

### 4.5.8.6 Setting the foot control as a direct starter or speed foot control

The foot control can be set as a direct starter or as a speed foot control in the motor or SIROSONIC TL scaler sub-screen:

- Direct starter

  When the foot control is actuated, the instrument is switched on with the set speed and intensity.

- Speed foot control

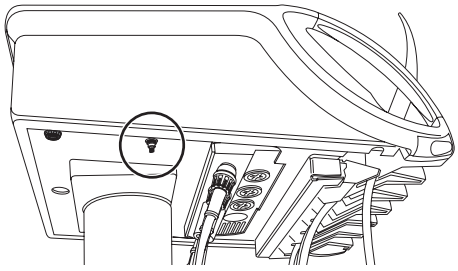
  Used to continuously adjust the instrument up to maximally the set speed and intensity values depending on the setting the foot control pedal.

✓ The *Sub-screen* of the removed instrument is displayed on the touchscreen.

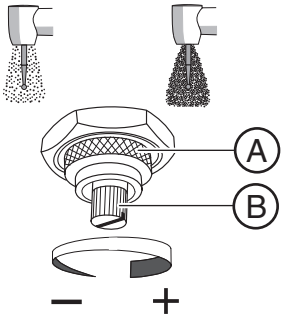
➢ Touch the *Direct Starter/speed foot control* key.

↳ If the key is highlighted gray, the direct starter function is switched on. If the key is highlighted orange, the speed foot control function is switched on.

### 4.5.8.7 Setting the spray amount



The spray amount is preset at the factory. However, it can be adjusted using the control valve at the bottom of the dentist element. This setting is then valid for all burr drives.

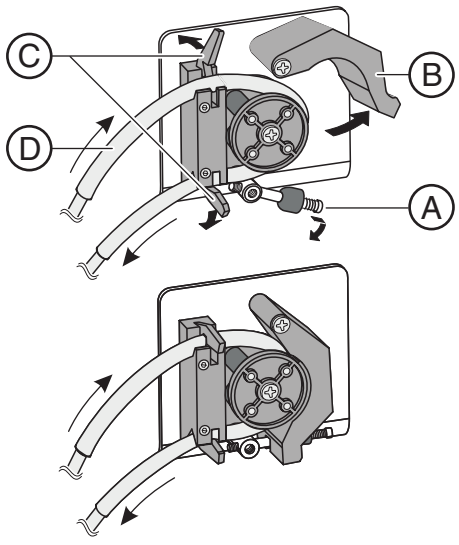



1. Loosen the ring **(A)** counterclockwise.
2. Set the spray amount by turning the screw **(B)**.
3. Check the set spray amount with a burr drive and correct the setting if necessary.
4. Tighten ring **(A)** again.

### 4.5.8.8 Preparing for use of NaCl saline solution

A sterile saline solution instead of spray water is prepared for cooling via the peristalic pump.

The peristaltic pump hose is a disposable item. To reorder it, see "Spare parts and consumables" [🗎 174].




✓ The peristaltic pump drive and a retaining bracket are attached to the dentist element. Please contact your local distributor if necessary.

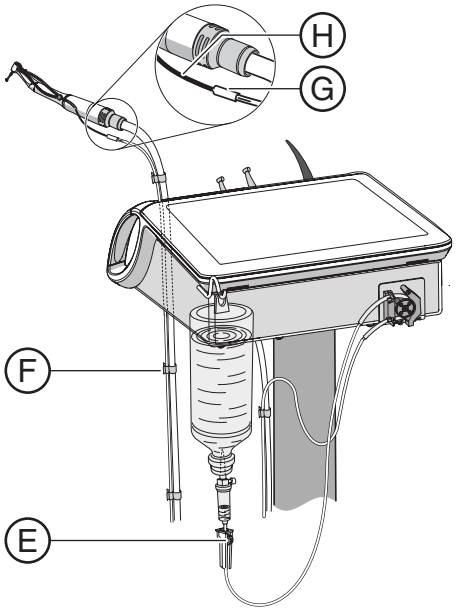
✓ A new peristaltic pump hose is available.

1. Attach the NaCl bottle to the retaining bracket of the dentist element.
2. Undo the locking mechanism **(A)** and fold it down. Swivel the latch fastener **(B)** upward.
3. Open the two hose holders **(C)** upward (at the top) and downward. Lay the silicone hose **(D)** as shown, i.e. with the thickened part wrapped around the pump wheel. Close the hose holders **(C)**.

**NOTE: Direction of flow of the peristaltic pump**
The shorter end of the hose with the cannula must be located **at the top** of the pump; the longer end of the hose leading to the handpiece must be located **at the bottom**. See the adjacent drawing.

4. Swivel the latch fastener **(B)** down onto the hose on the pump wheel. Secure the latch fastener **(B)** with the locking mechanism **(A)**.

   Note: The flow rate is set with the spring on the locking mechanism **(A)**. Do not under any circumstances change the factory setting.




5. Push the short end of the hose with the cannula through the stopper and into the NaCl bottle. The regulator in the hose clip **(E)** must be completely open (regulating wheel in top position).
6. Run the long end of the hose alongside the corresponding motor hose up to the contra-angle handpiece. Fasten the hose with clips **F**.
7. Attach the coupling **(G)** to the hose. Connect the thin silicone hose **(H)** to the coupling **(G)**.
8. Connect the thin silicone hose **H** to the connectors on the contra-angle handpiece. For details, see the Operating Instructions of the contra-angle handpiece.

### 4.5.8.9 Setting the NaCl flow rate

✓ The *Sub-screen* of the removed instrument is displayed on the touchscreen.


1. Press and hold the *NaCl* key (> 2 s).

   ↳ The *NaCl* settings screen is displayed.


2. Use the – and + keys to set the flow rate of the NaCl pump.

3. Touch the *Return* key.

   ↳ The *NaCl* settings screen is hidden immediately. The settings are saved. If the *NaCl* key is highlighted orange, the function is activated.

**CAUTION: Ultrasonic tips of third-party manufacturers in some cases don't offer a sufficient flow rate in conjunction with the NaCl function.**
Use only ultrasonic tips from Sirona.

## 4.5.9 Electric motor

**NOTE:**
Also observe the operating instructions for the different motors.

### 4.5.9.1 Motor and coupling versions

Available electric motors include a collector motor (SL motor or SL motor with ISO adapter), two brushless motors (BL or BL ISO motor), and a special brushless implantology motor (BL Implant motor) for surgical interventions.

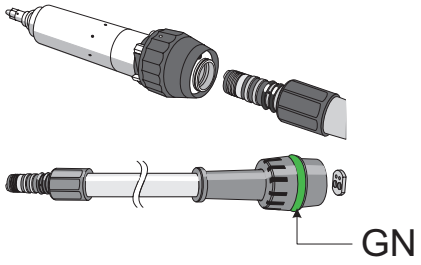
The SL motor and the motors of the BL line all require separate control electronics. It is not possible to combine collector and brushless motors.

**Collector motor**

Collector motors are DC motors in which the voltage supply is realized via carbon brushes. The speed range lies between 200 and approx. 40,000 rpm (revolutions per minute).

**SL motor**

The **green** coded instrument hose (GN) must be used for the SL motor.




The SL motor is designed for direct operation of T1 Classic handpieces. In order to connect e.g. T1 Line and T2 Revo handpieces, an ISO adapter must be used.

**Brushless motors**

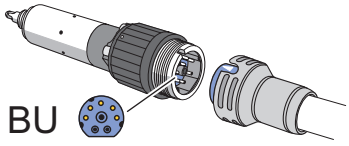
Brushless motors are designed as three-phase motors (without carbon brushes). They are characterized by precise controllability and longevity. Their speed range lies between 90 and 40,000 rpm (revolutions per minute). These motors can be sterilized.

**Hose coding**

Each brushless motor features a special instrument hose with electrical coding. The treatment center uses these codes to detect which motor is connected and configures the control accordingly. The confusion of different variations is ruled out due to the mechanical coding at the hose and motor. Additionally, the motor couplings are color-coded at the motor and hose.

**BL motor**

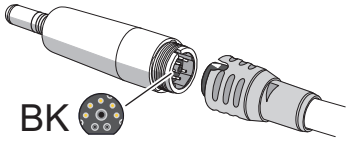
The **blue** coded instrument hose (BU) must be used for the BL motor.




The BL motor is designed for direct operation of T1 Classic handpieces. In order to connect e.g. T1 Line and T2 Revo handpieces, an ISO adapter must be used.

**BL ISO motor**

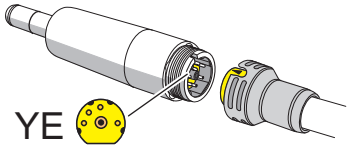
The **black** (BK) coded instrument hose must be used for the BL ISO motor.




The BL ISO motor is directly equipped with an ISO coupling. T1 Line and T2 Revo handpieces can thus be used (without an adapter). In comparison to the SL and BL motors, the BL ISO motor has a higher torque.

**BL Implant motor**

The **yellow** (YE) coded instrument hose must be used for the BL Implant motor.




The BL Implant motor is designed especially for surgical use. The air/water ducts (spray) and instrument light have therefore been omitted. It features a very high torque.

### 4.5.9.2 Setting the speed

**Selecting the speed with the quick setting keys**


✓ The electric motor is removed from its holder.

✓ The *Motor screen* is displayed on the touchscreen.

➢ Touch one of the quick setting keys in the bottom line key briefly (< 0.5 s).

↳ The quick setting key is highlighted orange. The selected speed is displayed in the first line in rpm (revolutions per minute).

**NOTE: Rpm values of quick setting keys**

The speed of the motor in rpm equals 1,000x the speed value shown on the key times.

The 0.09 key = 90 rpm (for brushless motors)
The 0.20 key = 200 rpm (for collector motors)
The 10 key = 10,000 rpm
The 20 key = 20,000 rpm
The 30 key = 30,000 rpm
The 40 key = 40,000 rpm

Please note that the speed of the burr depends on the selected straight or contra-angle handpiece.

**Selecting intermediate speed values with quick setting keys**


✓ An electric motor is removed from its holder.

✓ The *Motor screen* is displayed on the touchscreen.

➢ Increasing the speed: Press and hold a quick setting key whose speed value is greater than or equal to the value displayed in the first line (> 0.5 s).
Reducing the speed: Press and hold a quick setting key whose speed value is less than the value displayed in the first line (> 0.5 s).

↳ The selected speed is displayed in the first line in rpm (revolutions per minute). The quick setting keys are shaded gray for intermediate values.

**NOTE: Increments**

The size of the increments depends on the speed range setting.

For brushless motors:
From 90 to 400 rpm = 10 rpm increments
From 400 to 5,000 rpm = 200 rpm increments
From 5,000 to 40,000 rpm = 1,000 rpm increments

For collector motors:
From 200 to 2,000 rpm = 200 rpm increments
From 2,000 to 10.000 rpm = 400 rpm increments
From 10,000 to 40,000 rpm = 1,000 rpm increments

Please note that the speed of the burr depends on the selected straight or contra-angle handpiece.


**Setting the speed with function levels**

✓ The electric motor is removed from its holder.

✓ The *Motor screen* is displayed on the touchscreen.

➢ Set the speed using the – and + keys.
< 0.5 s coarse adjustment, > 0.5 s fine adjustment

↳ The selected speed is displayed in the first line in rpm (revolutions per minute).

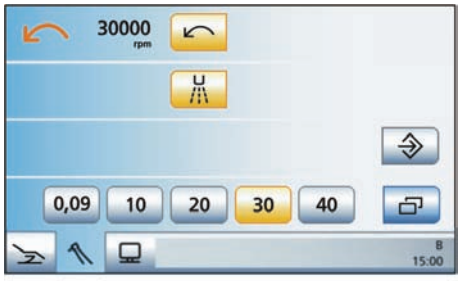
Increments for coarse adjustment, see "Selecting the speed with the quick setting keys" (above).

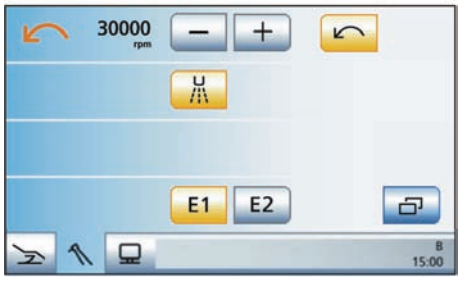
Increments for fine adjustment, see "Selecting intermediate speed values with the quick setting keys" (above).

### 4.5.9.3 Setting the direction of rotation

The direction of rotation can be changed only with the motor stopped.

**Via touchscreen**




✓ An electric motor is removed from its holder.

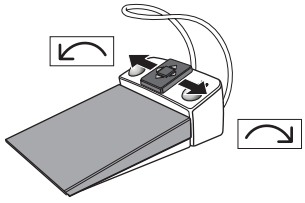
✓ The *Motor screen* is displayed on the touchscreen.

➢ Touch the *CCW Rotation* key on the touchscreen.

↳ For counterclockwise rotation: The key is highlighted orange and an orange CCW arrow appears.
For clockwise rotation: The key is displayed gray and the orange CCW arrow disappears.

**Via foot control**

When the cursor control is switched off, the rotational direction of the motor can also be set via the 4-way foot switch plate of the foot control.



✓ An electric motor is removed from its holder.

✓ The *Motor screen* is displayed on the touchscreen.

➢ For counterclockwise rotation: Slide the 4-way foot switch plate to the left.
For clockwise rotation: Move the 4-way foot switch plate to the right.

↳ For counterclockwise rotation: The *CCW Rotation* key is highlighted orange and an orange CCW arrow appears.
For clockwise rotation: The *CCW Rotation* key is displayed gray and the orange CCW arrow disappears.

**NOTE: Audible warning signal during CCW rotation**
After you start the electric motor with the foot control, an audible warning signal sounds 6 times if counterclockwise rotation is activated.

#### 4.5.9.4 Implantology/endodontics treatments with motor

If your treatment center is equipped with the Implantology/endodontics software option, please observe the instructions provided in the Chapter "Implantological and endodontic treatments" [🗎 84]. If you do not have this option, please note that you have no possibility for setting the electronic torque.

**WARNING: No electronic torque limitation is available in the motor screen.**
Endodontic files can easily break during operation without torque limitation.

➢ Never perform endodontic treatments without torque limitation. Use an endodontic handpiece with mechanical torque limitation, e.g. SIRONiTi from Sirona.

### 4.5.10 Turbine

**NOTE:**
Also observe the operating instructions for the different turbines.

The turbine hose is equipped with a standardized coupling according to ISO 9168.

The coolant, i.e. spray or air, and the instrument light can be set in the turbine sub-screen; see "General instrument functions" [🗎 64].

### 4.5.11 SPRAYVIT L multifunctional syringe

The multifunctional syringe is used to clean the treatment areas and blow them dry. It supplies preheated air and water media. The heating cartridge is located in the handpiece.

**NOTE:**
Also observe the operating instructions of the SPRAYVIT L.

#### 4.5.11.1 Safety information

The SPRAYVIT is equipped with extensive safety monitoring functions. However, please observe the following information.

**WARNING: After changing the SPRAYVIT hose, no cooling water for the SPRAYVIT heating cartridge flows until the hose is completely filled.**
The patient may be scalded by the emission of hot steam. The heating cartridge can overheat and be destroyed.

- After changing the hose of the SPRAYVIT L multifunctional syringe, press the *Water* key **briefly** repeatedly until there is an ample supply of water in the hose before treating the patient.

**NOTE: Heating cartridge switch-on delay**
To minimize the risk of scalding, the SPRAYVIT water heater is not activated for several seconds after the treatment center is switched on and after a hose change when the *Water* key is initially pressed.

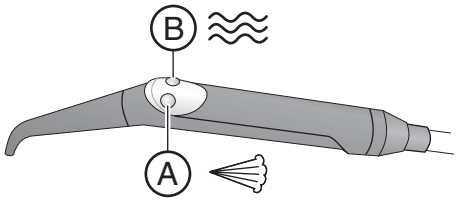
**WARNING: If the flow rate is insufficient, hot water may be emitted by the SPRAYVIT.**
The patient could thus be scalded.

- Check the water flow rate prior to use.
- Check the flow rate at least once a month and whenever you suspect that it may be insufficient as described in the section "Checking the flow rate of the SPRAYVIT L multifunctional syringe" [149]. Clean the nozzle according to the SPRAYVIT Operating Instructions.

**NOTE: Electronic flow monitoring**
If the electronic flow monitoring system detects low flow, the water heater will be deactivated and the system displays the corresponding error message, see also "Error messages" [172].

### 4.5.11.2 Operating the SPRAYVIT L multifunctional syringe

The following instructions apply to the standard version of the SPRAYVIT L multifunctional syringe (water on the right). A SPRAYVIT with inverted keys (water on the left) is available as an option.




- Press the *Air* key **(A)**.
  - Air flows out of the instrument tip.
- Press the *Water* key **(B)**.
  - Water flows out of the instrument tip.
- Press the *Air* key **(A)** and the *Water* key **(B)** simultaneously.
  - Spray flows out of the instrument tip.

For more information on operation and care, please refer to the Operating Instructions of the SPRAYVIT.

### 4.5.11.3 Setting the media temperature and the instrument light

The media temperature and instrument light of the two SPRAYVIT L multifunction syringes on the dentist and assistant elements can be set separately.

Settings made in the *SPRAYVIT* setup program always refer to the multifunctional syringe currently removed from the dentist or the assistant element. If both SPRAYVIT L multifunctional syringes are removed from their holders, the settings apply only to the multifunctional syringe of the dentist element.

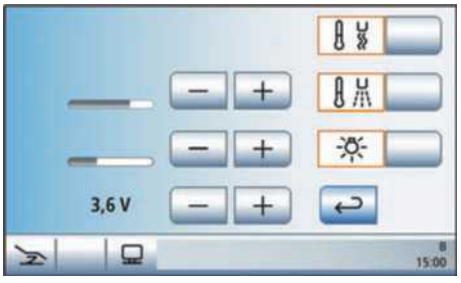
### Opening the setup program

In order to prevent interference with the treatment process, the corresponding screen does not automatically appear on the touchscreen when the SPRAYVIT is removed from its holder. It must be opened with the *Setup* key.

✓ The SPRAYVIT L multifunctional syringe has been removed from its holder on the dentist or assistant element.


➢ Press and hold the *Setup* fixed key (> 2 s).

↳ The *SPRAYVIT* setup program is displayed.




### Switching the air tempering on/off

The air tempering can be switched off, e.g. to check the sensitivity of the patient's teeth with cold air.

➢ Touch the *Air Temperature* key.

↳ If the key is highlighted orange, the air tempering function is activated.

**NOTE: Automatic cutoff of air heating**
If the air heating is operated continuously for more than 60 s, the heating function automatically switches off for safety reasons. Briefly set down the SPRAYVIT unit to reactivate the heating.

### Activating/deactivating and setting the water tempering

The heating power of the water heater of the SPRAYVIT L multifunctional syringe is adjustable. Changes in the inlet temperature of the water supply (e.g. summer/winter) can thus be compensated for. The setting range is roughly 8° C.

**WARNING: The heating power can be set too high.**
The patient then feels that the water is too warm.

➢ Adapt the heating power of the water heating to the inlet temperature of the water.

➢ Before using the SPRAYVIT L multifunctional syringe, check the water temperature, e.g. with the back of your hand.

**1.** Touch the *Spray Tempering* key.

↳ If the key is highlighted orange, the water tempering function is activated.

2. Use the – and + keys to set the water temperature.

**Switching the instrument light on/off and adjusting the brightness**

1. Touch the *Instrument Light* key.

   ↳ If the key is highlighted orange, the instrument light on the SPRAYVIT L multifunctional syringe is switched on, provided that it is the only instrument removed from its holder.
   If the SPRAYVIT L is not operated for 10 s, the instrument light automatically switches off.

2. Use the – and + keys to set the brightness.

**Preselecting the instrument light operating voltage**

The original Sirona halogen lamp is operated at 3.6 V. The operating voltage can be set to max. 5 V in order to adapt it to different lamps.

**CAUTION: The operating voltages of different lamps may vary.**
Overvoltages can lead to damage.

➢ When changing lamps, make sure that the operating voltage is properly set for the new lamp.


➢ Use the – and + keys to adjust the operating voltage of the instrument light.

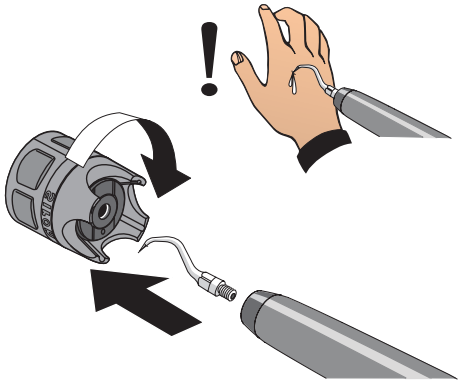
## 4.5.12 SIROSONIC TL scaler

The SIROSONIC TL scaler is used to remove plaque and for endodontic treatment.

**NOTE:**
Also observe the operating instructions of the SIROSONIC TL.

### 4.5.12.1 Safety information

The torque wrench is used as a tool for screwing in instrument tips and, at the same time, to protect against injury.



**WARNING: Ultrasonic tips are sharply pointed.**
There is a risk of injuring one's hand on the deposited scaler.

➢ Always attach the torque wrench to the scaler for protection as soon as you deposit the handpiece.

**WARNING: In some cases, ultrasonic tips from other manufacturers do not guarantee safe operation.**
Use only ultrasonic tips from Sirona.


The *Laser Radiation* warning symbol is displayed in the upper left-hand corner of the touchscreen in the *Ultrasonic* screen.

The instrument light is generated by a powerful LED located at the instrument end of the hose. The light is fed through the instrument via a light guide.

**⚠WARNING: The ultrasonic hose contains an LED that falls under laser class 2.**
If the ultrasonic handpiece is switched on with the instrument hose removed, there is a risk of eye damage.

- ➢ Do not switch the scaler on when the ultrasonic handpiece is removed from the instrument hose.
- ➢ Do not stare into the LED at the end of the hose.

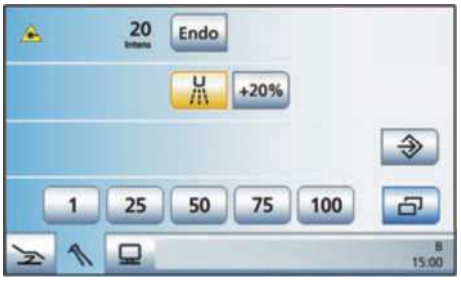
### 4.5.12.2 Setting the intensity

**Selecting the intensity with the quick setting keys**


- ✓ The SIROSONIC TL scaler is removed from its holder.
- ✓ The *Ultrasonic screen* is displayed on the touchscreen.
- ➢ Touch one of the quick setting keys in the bottom line key briefly (< 0.5 s).

  ↳ The quick setting key is highlighted orange. The selected intensity is displayed in percent in the first line.

**Setting intermediate intensity values with quick setting keys**




- ✓ The SIROSONIC TL scaler is removed from its holder.
- ✓ The *Ultrasonic screen* is displayed on the touchscreen.
- ➢ Increasing the intensity: Press and hold a quick setting key whose intensity value is greater than or equal to the value displayed in the first line (> 0.5 s).
  Reducing the intensity: Press and hold a quick setting key whose intensity value is less than the value displayed in the first line (> 0.5 s).

  ↳ The selected intensity is displayed in percent in the first line. The intensity changes in increments of 1. The quick setting keys are shaded gray for intermediate values.


**Setting the intensity with function levels**

✓ The SIROSONIC TL scaler is removed from its holder.

✓ The *Ultrasonic screen* is displayed on the touchscreen.

➢ Set the intensity using the – and + keys.
< 0.5s coarse adjustment, > 0.5s fine adjustment

↳ The selected intensity is displayed in percent in the first line.

**NOTE: Increments**
The coarse adjustment increments are 1, 25, 50, 75, 100.
For fine adjustment, the intensity changes in increments of 1.

**20% intensity increase (boost function)**

The boost function allows for a 20% increase of the intensity during treatment in relation to the final value. With an intensity of 80%, only the maximum value of 100% can be selected.

✓ The SIROSONIC TL scaler is removed from its holder.

✓ The *Ultrasonic screen* is displayed on the touchscreen.


➢ Touch the *20%* key on the touchscreen.

↳ The key is highlighted orange. The Boost function is activated.

**Switching on the endodontics function**


The intensity of the endodontics function is limited for safety reasons, e.g. in order to prevent broken needles.

**NOTE: Endo intensity values**
The intensity can be adjusted from 1e to 5e. Please note that the endodontics intensity values of 1e to 5e do not agree with the values of 1 to 5 in the calculus removal mode.
Always use the endo function for endodontics!

If instrument programs with quick setting keys are used, values 1e to 5e will be assigned to the quick setting keys when the endo function is activated.

✓ The SIROSONIC TL scaler is removed from its holder.

✓ The *Ultrasonic screen* is displayed on the touchscreen.


➢ Touch the *Endo* key.

↳ The key is highlighted orange. The ultrasonic intensity values are replaced by the endodontic intensity values (1e to 5e) on the touchscreen.

## 4.5.13 SIROTOM HF electrosurgical handpiece

During high frequency surgery, currents with a frequency of 1 MHz are conducted through the patient's body.

**NOTE:**
Also observe the operating instructions of the SIROTOM.

### 4.5.13.1 Safety information

Improper operation and failure to observe precautions can cause serious accidents when working with the electrosurgical unit.

**⚠WARNING: High frequency currents and fields may influence cardiac pacemakers.**
The function and operating mode of the cardiac pacemaker may be disturbed.

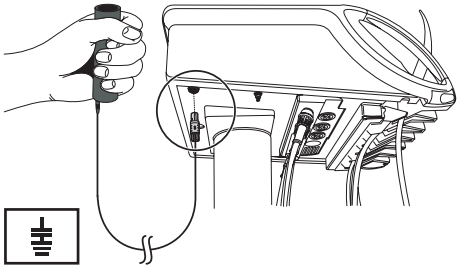
➢ We recommend not using the electrosurgical unit for patients with cardiac pacemakers.

Further warnings concerning treatment with the electrosurgical 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 supply little power or does not work properly in its normal setting, this may be caused by a poor contact in the supply cable (connector).
- Combustible substances, which are used for instance as cleaning or disinfecting agents, should have evaporated before applying surgery. Cotton wool can be ignited. Endogenous gases can be ignited.
- Contact between the HF handpiece and metal implants or supraconstructions must be avoided.
- The active electrosurgical function can impair the function of other electronic devices.
- Check 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.
- Also refer to the chapter "Safety tests for systems with HF surgical equipment" [🗎 171].

### 4.5.13.2 Connecting the neutral electrode

The neutral electrode should always be used during treatment with the electrosurgical unit. It connects the patient to ground via a defined capacitance (capacitor). Reproducible high frequency currents are thus ensured.

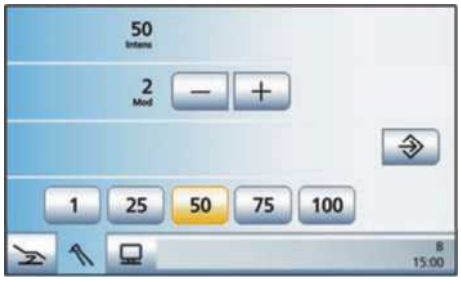


➢ Plug in the connector of the neutral electrode on the bottom of the dentist element.

**⚠WARNING:**
**The patient must always hold the neutral electrode in his hand during treatment.**

### 4.5.13.3 Setting the intensity

**Selecting the intensity with the quick setting keys**



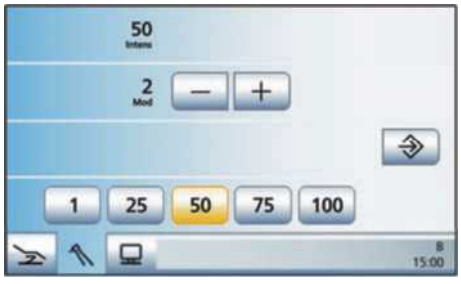

✓ The SIROTOM HF electrosurgical handpiece is removed from its holder.

✓ The *Electrosurgery screen* is displayed on the touchscreen.

➢ Touch one of the quick setting keys in the bottom line key briefly (< 0.5 s).

↳ The quick setting key is highlighted orange. The selected intensity is displayed in percent in the first line (Intens).

**Setting intermediate intensity values with quick setting keys**




✓ The SIROTOM HF electrosurgical handpiece is removed from its holder.

✓ The *Electrosurgery screen* is displayed on the touchscreen.

➢ Increasing the intensity: Press and hold a quick setting key whose intensity value is greater than or equal to the value displayed in the first line (> 0.5 s).
Reducing the intensity: Press and hold a quick setting key whose intensity value is less than the value displayed in the first line (> 0.5 s).

↳ The selected intensity is displayed in percent in the first line (Intens). The quick setting keys are shaded gray for intermediate values.

**NOTE: Increments**
The size of the increments depends on the intensity range setting.
From 1 to 10: Increments of 1
From 10 to 100: increments of 5

**Selecting the intensity with function levels**


✓ The SIROTOM HF electrosurgical handpiece is removed from its holder.

✓ The *Electrosurgery screen* is displayed on the touchscreen.

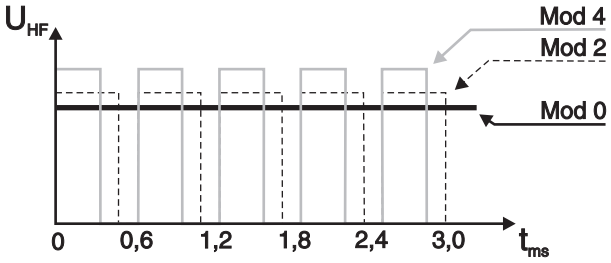
➢ Set the intensity using the – and + keys.
< 0.5s coarse adjustment, > 0.5s fine adjustment

↳ The selected intensity is displayed in percent in the first line (Intens).

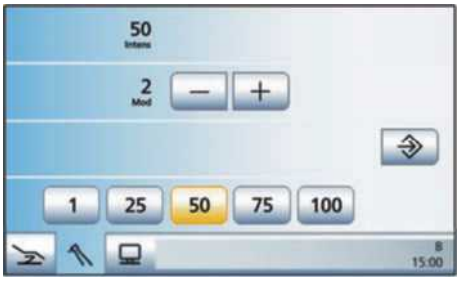
**NOTE: Increments**
The coarse adjustment increments are 1, 25, 50, 75, 100.
The size of the increments for fine adjustment depends on the intensity range setting.
From 1 to 10: Increments of 1
From 10 to 100: increments of 5

### 4.5.13.4 Setting the modulation type

In modulation type 0 (Mod 0), the HF output voltage ($U_{HF}$) is constant. In Mod 1 to Mod 4 the output voltage is increased further and pulsed. The maximum output power remains limited to 50 W for all modulation types.




**NOTE: Selection of modulation type**
Always select Mod 0 for electrotomy!
For coagulation, select modulated current type Mod 1 to 4 for the depth of crust based on experience.




✓ The SIROTOM HF electrosurgical handpiece is removed from its holder.

✓ The *Electrosurgery screen* (illustration with quick setting keys) is displayed on the touchscreen.

➢ Use the – and + keys to set the modulation type of the HF current to (Mod) 0 to 4.

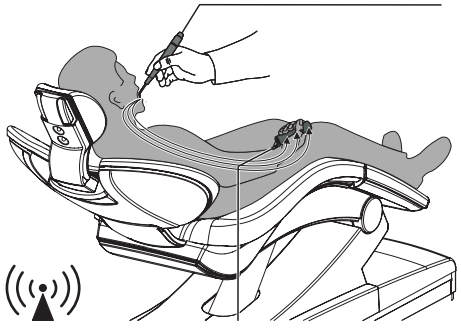
↳ The selected modulation type is displayed in the second line (Mod).

### 4.5.13.5 Operating the SIROTOM HF electrosurgical handpiece

The electrosurgical handpiece is used for electrotomy (cutting), coagulation and desiccation in biterminal technique. Different electrodes are available for this purpose.

The SIROTOM handpiece is a type BF applied part

✓ The neutral electrode is plugged into the connection socket on the bottom side of the dentist element.

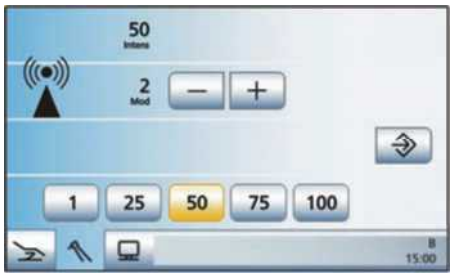


1. Instruct the patient to hold the neutral electrode firmly in one hand throughout the treatment.
2. Remove the electrosurgical handpiece from its holder.

↳ The *Electrosurgery screen* is displayed on the touchscreen.

**NOTE: Automatic cutoff of the SIVISION monitor**
The monitor switches off as soon as the HF handpiece is removed.

3. Select the intensity.
4. Select the modulation type based on your experience.




5. Actuate the foot control.

   ↳ The HF electrosurgical handpiece is switched on. The symbol for nonionizing electromagnetic radiation is displayed on the left side of the touchscreen (illustration with quick setting keys). A continuous acoustic signal sounds (the volume can be adjusted by the service engineer).

**NOTE: Unit switches off automatically**
For interference suppression reasons, the handpiece may be used only for a few seconds.
If the foot control is pressed for more than one minute, the HF power is interrupted. Step on the foot pedal again to switch it back on.

6. Carry out treatment.
7. Release the foot control.

   ↳ The power of the electrosurgical handpiece is switched off.

Release the foot control before you deposit the HF instrument. The programmed values of the previously selected user level appear again the next time the handpiece is removed.

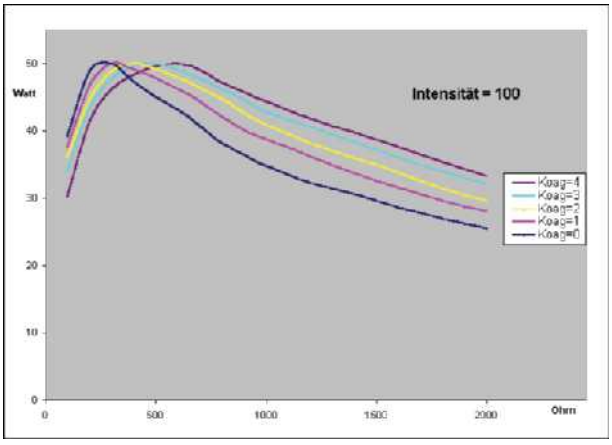
### 4.5.13.6 Technical data

**Power characteristics**

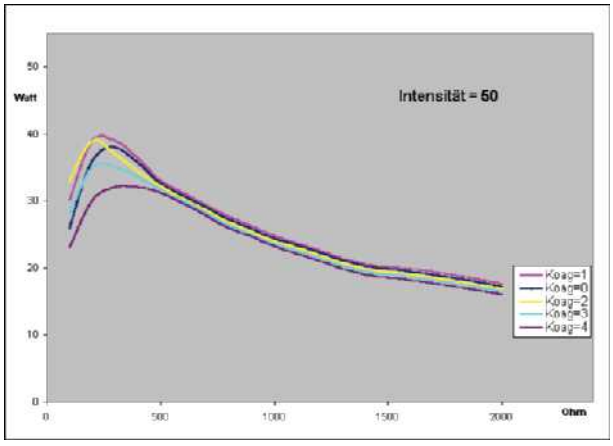
for cutting and coagulation

Power measured between handpiece and protective ground wire.

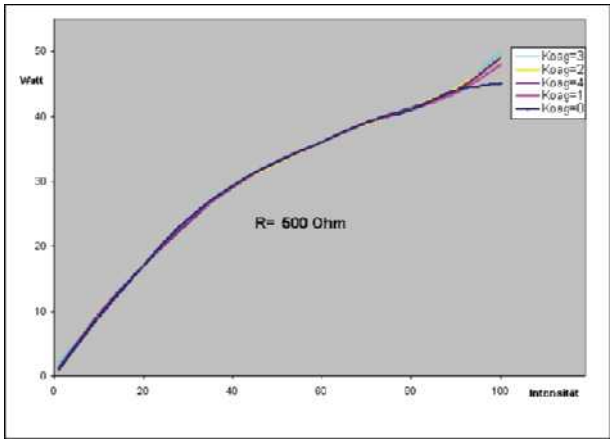
**Intensity = 100**



**Intensity = 50**




**Power curve**

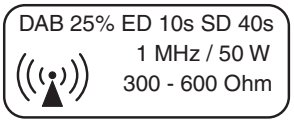



**Technical information**

| | |
|---|---|
| Maximum output voltage peak – peak between handpiece and protective ground wire | |
| When cutting: | 1400 V |
| At max. coagulation: | 1600 V |
| Modulation frequency: | 1667 Hz |
| Frequency of operating and alarm tone: | 1200 Hz |
| Output power max. 50W across | 300 ohms at Coag 0<br>350 ohms at Coag 1<br>400 ohms at Coag 2<br>500 ohms at Coag 3<br>600 ohms at Coag 4 |

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

**Explanation of the symbols and labels used**

| | |
|---|---|
|  | Neutral electrode connection<br>Neutral electrode with high frequency referenced to earth |
|  | SIROTOM HF electrosurgical handpiece, type BF applied part |
|  | Intermittent operation 25%<br>Duty time 10s<br>Cycle time 40s<br>HF frequency 1MHz |
|  | Symbol for non-ionizing radiation |

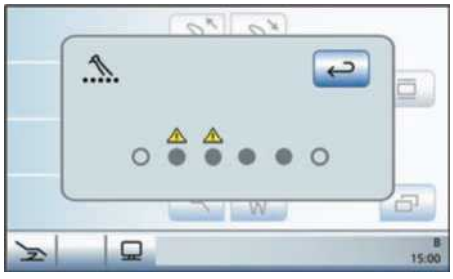
### 4.5.13.7 Safety checks

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 more information, refer to "Safety tests for systems with HF surgical equipment" [🗎 171].

## 4.5.14 Implantological and endodontic treatments

The Treatment functions support implantological and endodontic treatments. The speed and torque of the instrument tip can be precisely adjusted and saved for later reference if desired. This is possible for every work step for implantology treatments. A selection of the most popular file systems with the speed and torque values recommended by the manufacturer is available for endodontic treatments. The file assortment and sequence can be set by the user.
The treatment center allows for the management of two implantological and up to five endodontic treatments with individual settings for each user profile.



The therapy functions can only be used in conjunction with the precisely adjustable brushless motors. If the adjacent display appears when the Treatment function is switched on (see below), the software has detected that the burr drives marked with a warning triangle are not suitable for treatment purposes. In this case, please contact your dental depot.

In order to supply the burr drive with a sterile saline solution during implantological treatments, a peristaltic pump must be attached to the dentist element; see "Preparing for use of NaCl saline solution" [🗎 67].

### 4.5.14.1 Treatment selection

**Switching the function on and selecting the treatment**

When the Treatment function is switched on, the treatment types "Endodontics" and "Implantology" are specified in two separate lists. The required treatment is selected from these lists.

**NOTE: Pencil symbol**
Endodontic treatments that were created or edited by the user are marked with a pencil symbol. Please note that changes can be made in the file system for these treatments, e.g. outside files can be added and files can be deleted; see "Inserting a file in the sequence" [🗎 92].

✓ The *Start program* is displayed on the touchscreen.

**1.** Touch the *Treatment* key.

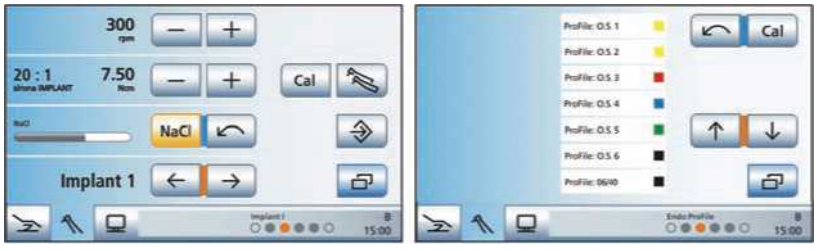
↳ The *Treatment selection* screen is displayed.

**2.** Touch the button for the desired endodontic (left) or implantological (right) treatment.

↳ The Simple/Advanced Start Program is displayed. The *Treatment* key is marked orange. In the footer an orange dot indicates which burr drive is assigned to the treatment. Please refer to the following section "Assigning burr drives" for information on the significance of the empty or filled dots.

**3.** Take the burr drive from the instrument holder which is marked with an orange dot in the footer.

↳ Depending on the type of treatment selected, the *Implantology Program* or the *Simple Endodontics Program* is displayed on the touchscreen.




*Implantology program (left) and Simple Endodontics program (right)*

**NOTE: Display of the blue and orange cursor**
In the *Implantology* and *Endodontics* Treatment Programs, the key assignment of the foot control is indicated by blue and orange cursor bars even when cursor control is switched off. The orange cursor can only be moved with the 4-way foot switch plate when cursor control is switched on. For more information on the cursor control, please refer to "Using the cursor control" [🗎 38].

**Assigning the burr drive**

A specific burr drive must be assigned to each treatment type, i.e. endodontics and implantology.

The *Treatment Selection* screen indicates which burr drive is assigned to the treatment type and which one could be used alternatively:

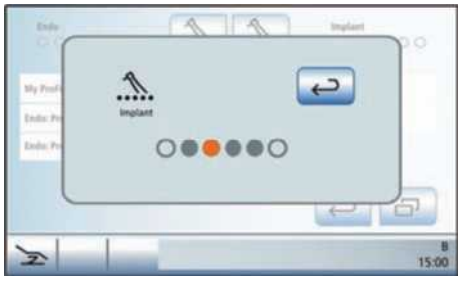
- Empty, gray circle
  Instrument cannot be used for the selected treatment type
- Solid gray circle
  Burr drive can be assigned to the selected treatment type
- Solid orange circle
  Burr drive is assigned to the selected treatment type

If you would like to use a different burr drive for the selected treatment, you can change this setting.

✓ The *Treatment selection* screen is displayed on the touchscreen.

**1.** Before selecting the treatment, touch the left-hand or right-hand *Assign burr drive* key.
Left-hand key: endodontic treatments
Right key: implantological treatments

↳ The *Assign burr drive* display appears.



**2.** Remove the burr drive you would like to use for the treatment type from its holder.

↳ The *Assign burr drive* display automatically disappears. The selected burr drive is marked by an orange circle in the *Treatment selection* screen.

**Switching the Treatment function off**

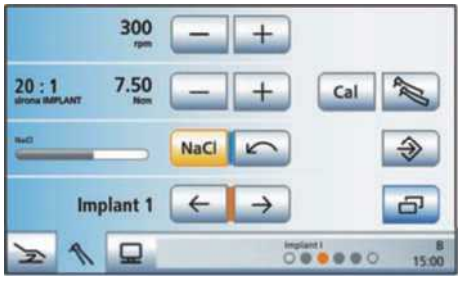
If the Treatment function is activated, the *Implantology program* or the *Endodontics program* will be displayed on the touchscreen instead of the *Motor screen* when the burr drive assigned to the selected treatment is removed from its holder. In order for the *Motor screen* to be displayed again the next time the burr drive is removed, the Treatment function must be switched off beforehand.

➢ Touch the *Treatment* key again.

↳ If the key is highlighted blue, the Treatment function is deactivated. The *Motor screen* opens when the burr drives are removed.

## 4.5.14.2 Implantology

### 4.5.14.2.1 Setting the gear reduction of the contra-angle handpiece




✓ The *Implantology program* is displayed on the touchscreen.

➢ The *Contra-angle handpiece* key is used to set the reduction ratio. The only available reduction rate at the moment is 20:1.

**WARNING: Only the Sirona contra-angle handpiece IMPLANT 20:1 may be used for the Implantology function.**
Instruments from other manufacturers can lead to malfunctions. Outside instruments may be improperly calibrated for implantology.

➢ Use only the IMPLANT 20:1 contra-angle handpiece from Sirona for implantology.

➢ Check whether the reduction ratio on the touchscreen agrees with the value specified on the contra-angle handpiece being used.

#### 4.5.14.2.2 Calibrating the burr drive

A calibration must be performed at the start of treatment as well as each time you change or lubricate the contra-angle handpiece.

The contra-angle handpiece is automatically checked during calibration. This includes a measurement of motor current at different speeds to assess the properties of the system.

**NOTE:**
Use only Sirona instruments to guarantee correct calibration.

✓ The *Implantology program* is displayed on the touchscreen.

1. Attach the contra-angle handpiece that you would like to use for the implantology treatment to the electric motor.
2. Insert the tool in the contra-angle handpiece. This ensures that the tool is taken into account in the measurement.
3. Touch the *Cal* key on the touchscreen.


↳ The button flashes orange.

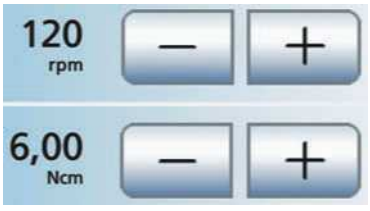
4. Hold down the foot pedal throughout the duration of the calibration.

↳ The *Cal* key continues to flash. If the burr drive is calibrated, the key permanently remains highlighted orange. The calibration is then completed.

#### 4.5.14.2.3 Setting the speed and torque

In the Implantology function, the speed and torque values of the contra-angle handpiece, and not those of the motor, are specified. The control electronics of the burr drive calculate the motor control based on the specified gear reduction and the speed and torque settings.

✓ The *Implantology program* is displayed on the touchscreen.




➢ Set the speed and torque of the contra-angle handpiece using the – and + keys.
< 0.5 s coarse adjustment, > 0.5 s fine adjustment

↳ The selected speed is displayed in the first line in rpm (revolutions per minute). The torque is displayed in the second line in Ncm (Newton centimeter).

**NOTE: Torque adjustment**
The maximum adjustable torque depends on the system motor and the speed settings.

**WARNING: Improperly selected speeds and torque values endanger the patient.**
Treatment errors, e.g. jaw damage, may result from incorrect settings.

➢ Observe the manufacturer's instructions regarding tools and implants.

#### 4.5.14.2.4 Setting the direction of rotation

The direction of rotation can be changed only with the motor stopped.

Counterclockwise rotation is performed without torque limitation. The torque setting keys are hidden when counterclockwise rotation is selected.

✓ The *Implantology program* is displayed on the touchscreen.

➢ Touch the *CCW Rotation* key on the touchscreen.

or

➢ Press the right button of the foot control.

↳ For counterclockwise rotation: The *CCW Rotation* key is highlighted orange and an orange CCW arrow appears.
For clockwise rotation: The *CCW Rotation* key is displayed gray and the orange CCW arrow disappears.

**NOTE: Audible warning signal during CCW rotation**
After you start the electric motor with the foot control, an audible warning signal sounds 6 times if counterclockwise rotation is activated.

#### 4.5.14.2.5 Activating/deactivating and setting the NaCl flow

In order to supply the burr drive with a sterile saline solution during implantological treatments, a peristaltic pump must be attached to the dentist element; see "Preparing for use of NaCl saline solution" [🗎 67].


The peristaltic pump can be switched on/off by touching the *NaCl* key. If the key is highlighted orange, the pump can be activated by stepping on the foot pedal.


The NaCl flow rate set of the peristaltic pump is permanently displayed by a bar in the third line of the touchscreen in the *Implantology*program.

The flow rate can be set by pressing and holding the *NaCl* key (for more than 2 seconds). For details, see "Setting the NaCl flow rate" [🗎 68].

#### 4.5.14.2.6 Selecting a work step

Individual settings can be made and saved for each implantology work step, e.g. predrilling, final drilling, tapping, etc., see "Saving settings" [🗎 89]. At the end of each work step, the required settings can be accessed immediately by selecting the next step.

The number of work steps can be set; see "Setting the number of work steps" [🗎 90].


✓ The *Implantology program* is displayed on the touchscreen.

➢ Select the required implantology work step. Touch the *previous* or *next work step* key.

↳ The selected work step is displayed on the touchscreen. The settings saved in the work step are preset.


If NaCl rinsing was selected in the *Implantology* sub-screen, the *CCW Rotation* key is displayed instead of the *previous work step* key. The implantology steps can be run through only in a forward loop. See "Preselecting NaCl rinsing, setting the flow rate, and activating the rinse function" [🗎 90].

### 4.5.14.2.7 Saving settings

The following settings can be saved for the selected work step in the *Implantology program*:

- For speed and torque values, see "Setting the speed and torque" [🗎 87].
- NaCl flow rate, see "Activating/deactivating and setting the NaCl flow" [🗎 88]

✓ The *Implantology program* is displayed to select the desired work step.

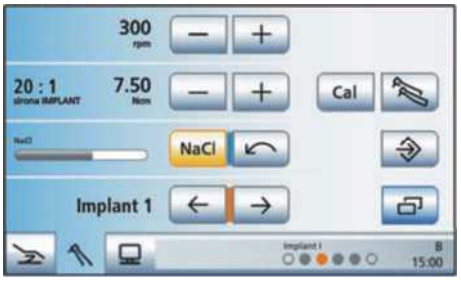
✓ The corresponding settings are made.

➢ Press and hold the *Memory* key (> 2 s).

↳ An audible signal sounds. Your settings for the selected work step are now saved.

### 4.5.14.2.8 Sub-screen functions

**Opening the implantology sub-screen**




✓ The *Implantology program* is displayed on the touchscreen.

➢ Touch the *Sub-screen* key.

↳ The *Implantology* sub-screen is displayed.

### Preselecting NaCl rinsing, setting the flow rate, and activating the rinse function

The NaCl rinsing function can be used to activate an NaCl jet to rinse the treatment area whenever the burr instrument is not running.

#### Preselect NaCl rinsing key



A setting can be made to show or hide the *NaCl Rinsing* key in the *Implantology program*. If the show function is selected, the *NaCl*, *NaCl Rinsing* and *CCW Rotation* keys are all displayed adjacent to one other. The implantology steps can be run through only in a forward loop.

✓ The *Implantology* sub-screen is displayed on the touchscreen.

➢ Touch the *Preselect NaCl rinsing* key.

↳ If the key is highlighted orange, the NaCl rinsing keys are shown in the sub-screen and the *NaCl rinsing* is displayed in the *Implantology program*.

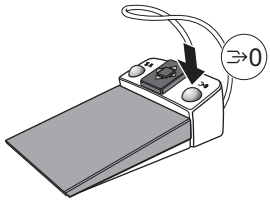
#### Setting the flow rate for NaCl rinsing


The flow rate of the peristaltic pump for NaCl rinsing can be set separately.

✓ The *Preselect NaCl rinsing* key is marked orange in the sub-screen. The setting keys for the NaCl rinsing are now displayed.

➢ Use the – and + keys to set the flow rate for NaCl rinsing.

#### Activating NaCl rinsing via button on foot control



✓ The *NaCl rinsing* key is displayed in the *Implantology program*.

➢ Press the right button of the foot control.

↳ The NaCl rinsing function remains active as long as the key is pressed.

### Switching the torque signal on/off

This can be used to set the acoustic signal that sounds whenever 75% of the currently set torque value is exceeded.

➢ Touch the *Acoustic Signal* key.

↳ If the key is highlighted orange, the torque acoustic signal is activated.

### Setting the foot control as a direct starter or speed foot control

The foot control can be set as a direct starter (key highlighted gray) or as a speed (key highlighted orange) foot control.

For details, see "Setting the foot control as a direct starter or speed foot control" [🗎 66].

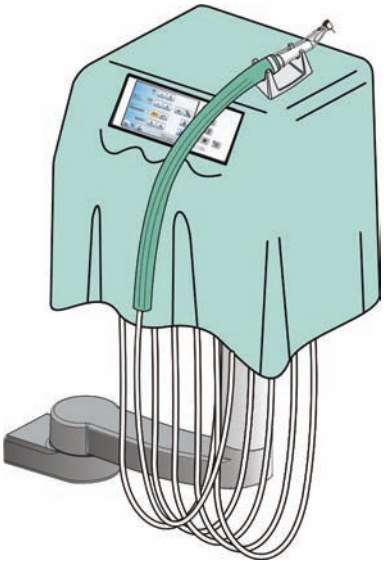
### Setting the number of work steps

The number of implantology treatment work steps, e.g. predrilling, final drilling, tapping, etc. can be set. Up to eight work steps can be preset.


➢ Use the – and + keys to set the number of work steps.

↳ The number of work steps is displayed on the left side: Implant 1... X.

#### 4.5.14.2.9 Preparing the treatment center for sterile operation



The requirements for sterile operation must be fulfilled for surgical interventions. It is recommended to work exclusively with the cursor control to avoid touching the user interface.

**Covering the dentist element with a sterile drape**

The dentist element can be covered with a sterile drape for sterile operation. A rectangle must be cut out of the drape to allow for operation and visibility of the EasyTouch.

**Use of separate motor holder**

Since the instrument holder of the dentist element is inaccessible due to the sterile drape, the burr drive being used can be deposited in a separate motor holder. This separate holder can be placed on top of the dentist element.

The motor holder can be sterilized.

To reorder the motor holder, see "Spare parts and consumables" [🗎 174].

The Implant motor becomes the active instrument as soon as the hose of the implantology instrument is connected to the dentist element.

**Attaching the instrument hose cover**

The instrument hose of the burr drive used can be covered with a sterile paper sleeve. The instrument hose sleeves can be ordered from a specialized dealer.

### 4.5.14.3 Endodontics

#### 4.5.14.3.1 File selection


**In the Simple Endodontics program**

A list of the files available for this endodontic treatment is displayed over the full height of the touchscreen in the *Simple Endodontics program*. Seven files can thus be displayed simultaneously.

The speed and torque values preset or set for the selected files are automatically used.

✓ An endodontic treatment is selected.

✓ The *Simple Endodontics program* is displayed on the touchscreen.

➢ Use the ↑ and ↓keys to select the file that you would like to use.

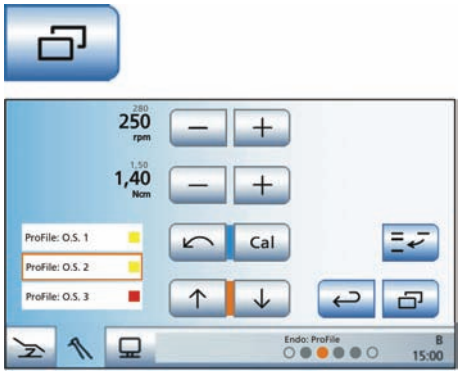
↳ The selected file is highlighted orange.

**In the Advanced Endodontics program**

A maximum of three files is displayed in the *Advanced Endodontics program*.

Speed and torque values can be modified individually, see "Setting the speed and torque" [🗎 94].

✓ The *Simple Endodontics program* is displayed on the touchscreen.



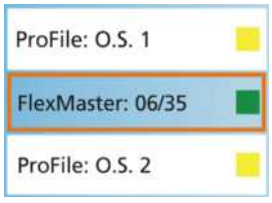

1. Touch the *Sub-screen* key.

   ↳ The *Advanced Endodontics program* is displayed.

2. Use the ↑ and ↓ keys to select the file that you would like to use.

   ↳ The selected file is highlighted orange. The recommended maximum values of the selected file are displayed above the speed and torque values in fine gray print.

**NOTE: Cursor control**
The four keys that are marked with cursor positions (blue/orange) can also be operated with the foot control.




**NOTE: Background shading of files**
Files are displayed on the touchscreen with or without a white background. Files subsequently inserted in the file sequence by the user are marked with a transparent background. To insert files in the sequence, see "Inserting a file in the sequence" [🗎 92].

**WARNING: Endodontic files are subject to material fatigue.**
Fatigued files may break during treatment.

➢ Use files only for the service life specified by the manufacturer.

### 4.5.14.3.2 Inserting a file in the sequence

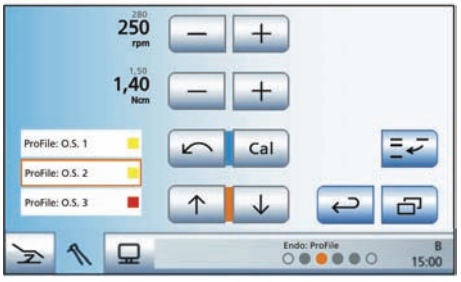
Individual files from other popular file systems can be inserted in a file system for endodontic treatment. These files are then inserted in the list of the file sequence at the desired position.

Individual files can also be removed from the endodontic treatment; see "Removing a file from the sequence" [🗎 96].

**NOTE: Automatic file system reset**
On completion of the Treatment function, the files that were inserted in the existing file system are reset. The added files are thus removed from the sequence.

Changes can only be made to user-created treatments that are marked with a pencil symbol in the *Treatment selection* program. These changes will be saved after the treatment is completed. See also "Creating a new endodontic treatment" [🗎 98].

✓ The *Simple Endodontics program* is displayed on the touchscreen.




1. Touch the *Sub-screen* key.

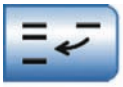
   ↳ The *Advanced Endodontics program* is displayed.

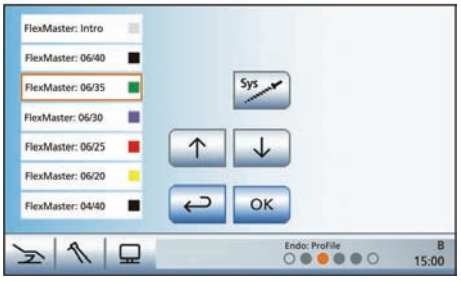
2. Select the position in the file sequence where an additional file should be inserted. Touch the ↑ and ↓keys.

   or

   ➢ Touch the position of the file in the file list.

   ↳ The selected position is highlighted orange.






3. Touch the *Insert file* key.

   ↳ The *Insert File* screen is displayed.


4. Select the file system from which you would like to insert a file in the file sequence. Touch the *File System* key.

   ↳ Each time the key is touched, the next file system is displayed on the left side of the touchscreen.


5. Select the file you would like to insert at the previously specified position from the list. Touch the ↑ and ↓keys. Then confirm with the *OK* key.

   or

   ➢ Touch the file in the file list.

   ↳ The *Insert File* screen is hidden. The selected file was inserted at the desired position.

### 4.5.14.3.3 Calibrating the burr drive

A calibration must be performed at the start of treatment as well as each time you change or lubricate the contra-angle handpiece. A re-calibration is not necessary after changing a file.

The contra-angle handpiece is automatically checked during calibration. This includes a measurement of motor current at different speeds to assess the properties of the system.

**NOTE:**
Use only Sirona instruments to guarantee correct calibration.



✓ The *Simple Endodontics program* (shown here) or the *Advanced Endodontics program* is displayed on the touchscreen. The *Advanced Endodontics program* can be opened by touching the *Sub-screen* key (two cascaded rectangles).

1. Attach the contra-angle handpiece that you would like to use for the treatment to the electric motor.
2. Insert a file in the contra-angle handpiece. This ensures that the file is taken into account in the measurement.
3. Touch the *Cal* key on the touchscreen.

   or

   ➢ Press the right button of the foot control.

   ↳ The button flashes orange.
4. Hold down the foot pedal throughout the duration of the calibration.

   ↳ The *Cal* key continues to flash. If the burr drive is calibrated, the key permanently remains highlighted orange. The calibration is then completed.

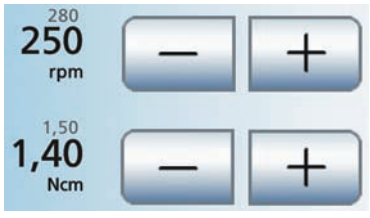
### 4.5.14.3.4 Setting the speed and torque

You can modify the parameters of the file if you don't want to use the default file settings.

In the Endodontics function, the speed and torque values of the contra-angle handpiece, and not those of the motor, are specified. The control electronics of the burr drive calculate the motor control based on the specified gear reduction and the speed and torque settings.

✓ The *Advanced Endodontics program* is displayed on the touchscreen.

✓ A file is selected.




➢ Set the speed and torque of the contra-angle handpiece using the – and + keys.
< 0.5 s coarse adjustment, > 0.5 s fine adjustment

↳ The selected speed is displayed in the first line in rpm (revolutions per minute). The torque is displayed in the second line in Ncm (Newton centimeter).

For endodontics, the maximum values recommended by the file manufacturer are displayed above the speed and torque values in fine gray print. They serve as an orientation when setting.

**NOTE: Torque adjustment**
The maximum adjustable torque depends on the system motor and the speed settings.

**WARNING: Improperly selected speeds and torque values endanger the patient.**
Treatment errors, e.g. breaking of a file, may result from incorrect settings.

➢ Observe the manufacturer's instructions regarding file systems.

### 4.5.14.3.5 Setting the direction of rotation

The direction of rotation can be changed only with the motor stopped.

Counterclockwise rotation is performed without torque limitation. The torque setting keys are hidden when counterclockwise rotation is selected.

✓ The *Simple/Advanced Endodontics program* is displayed on the touchscreen.

➢ Touch the *CCW Rotation* key on the touchscreen.

or

➢ Press the left button of the foot control.

↳ For counterclockwise rotation: The *CCW Rotation* key is highlighted orange and an orange CCW arrow appears.
For clockwise rotation: The *CCW Rotation* key is displayed gray and the orange CCW arrow disappears.

**NOTE: Audible warning signal during CCW rotation**
After you start the electric motor with the foot control, an audible warning signal sounds 6 times if counterclockwise rotation is activated.

### 4.5.14.3.6 Sub-screen functions

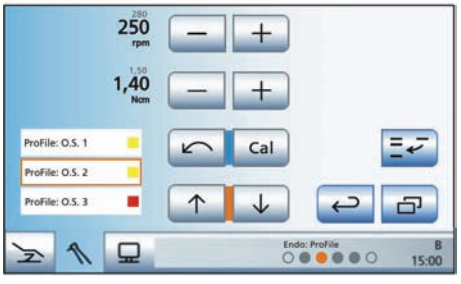
**Opening the endodontics sub-screen**

**NOTE: Simple/Advanced Endodontics program display**
After the start of a treatment, the *Simple Endodontics program* is shown by default. After setting down the instruments and retrieving them again, the last active program, i.e., the *Simple* or the *Advanced Endodontics* program is displayed.


✓ The *Simple Endodontics program* is displayed on the touchscreen.

**1.** Touch the *Sub-screen* key.

↳ The *Advanced Endodontics program* is displayed.



2. Touch the *Sub-screen* key again.

   ↳ The *Endodontics* sub-screen is displayed.


For endodontic treatments, the settings are made individually for each file.

1. Use the ↑ and ↓keys to select the file for which you would like to change the settings.

   ↳ The selected file is highlighted orange.

2. Perform the settings as described in the following sections. Confirm your settings with the *Memory* key.

   ↳ The settings you have made will be saved for the selected file.

**NOTE: *Memory* key hidden**

Please note that the factory-preset endodontics treatment settings cannot be changed. The *Memory* key is therefore hidden in the sub-screen for these treatments.

In order to change the settings of a factory-preset endodontic treatment despite this restriction, the treatment must be copied first; see "Copying an existing endodontic treatment" [🖹 98].

### Setting the gear reduction of the contra-angle handpiece

The *Contra-angle handpiece* key is used to set the reduction ratio. The only available reduction rate at the moment is 6:1.

### Switching the auto reverse function on/off

A setting can be made so that the burr drive automatically switches to counterclockwise rotation when the preset torque value is reached. If the foot pedal is pressed again, the burr drive switches back to clockwise rotation.


➢ Touch the *AutoRev* key.

↳ If the key is highlighted orange, the auto-reverse function is activated.

### Switching the torque signal on/off

This can be used to set the acoustic signal that sounds whenever 75% of the currently set torque value is exceeded.

➢ Touch the *Acoustic Signal* key.

↳ If the key is highlighted orange, the torque acoustic signal is activated.

### Remove file from sequence

Individual files can be removed from the sequence.

**NOTE: Automatic file system reset**
On completion of the Treatment function, the files that have been removed from the file system are reinserted.

Changes made in the file system remain effective after the Treatment function has been completed only for customized endodontic treatments marked with a pencil symbol in the *Treatment selection* screen; see "Creating a new endodontic treatment" [98].

1. Select the file that you would like to remove from the sequence from the list. Touch the ↑ and ↓keys.

   or

   ➢ Touch the file in the file list.

   ↳ The selected position is highlighted orange.

2. Touch and hold down the *Delete* key for more than 2 seconds.

   ↳ The selected file is removed from the sequence.

### 4.5.14.3.7 Endodontic treatment administration

Up to five endodontic treatments can be added to the left treatment list of the *Treatment selection* screen. The following functions are used to administer the endodontic treatment list:

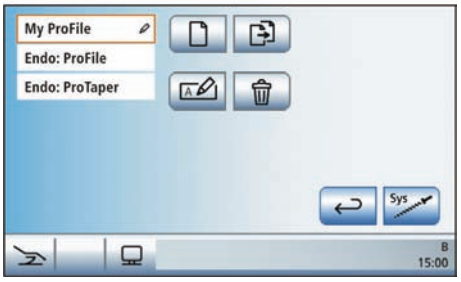
- Create, copy, rename and, if necessary, delete endodontic treatments
- Add specified file systems to the endodontic treatment list

**Opening the sub-screen**


✓ The *Start program* is displayed on the touchscreen.

1. Touch the *Treatment* key.

   ↳ The *Treatment selection* screen is displayed.




2. Touch the *Sub-screen* key.

   ↳ The *Endodontics administration* sub-screen is displayed on the touchscreen.

### Creating a new endodontic treatment

The treatment center enables you to create up to five endodontic treatments.

1. Touch the *Create new endodontic treatment* key.

   ↳ A keyboard then appears. The text box is empty.

2. Enter the designation of the endodontic treatment you would like to create. Confirm your entry with the *OK* key.

   ↳ The keyboard is hidden. The new endodontic treatment is displayed in the treatment list with the designation you entered.

### Copying an existing endodontic treatment

To reduce the amount of setting work required, you can copy a similar treatment and resave it in the treatment list under a different name instead of creating a new endodontic treatment. Then the settings can be changed.

This procedure allows for making changes to factory-preset endodontic treatments (without a pencil symbol).


1. Touch the button of an endodontic treatment that you would like to copy.

   ↳ The selected button is highlighted orange.

2. Touch the *Copy endodontic treatment* key.

   ↳ A keyboard is displayed. The name of the endodontic treatment to be copied is displayed in the text box.


3. Rename the endodontic treatment. Confirm your entry with the *OK* key.

   ↳ The keyboard is hidden. The new endodontic treatment is displayed in the treatment list with the designation you entered.

### Rename endodontic treatment

When creating and copying endodontic treatments, the user must name them accordingly. They also can be renamed later on to facilitate corrections and editing.

**NOTE:**
Factory specified endodontic treatments cannot be renamed. If an endodontic treatment without a pencil symbol is selected, the *Rename endodontic treatment* key is hidden.


1. Touch the button of an endodontic treatment that you would like to rename.

   ↳ The selected button is highlighted orange.

2. Touch the *Rename endodontic treatment* key.

   ↳ A keyboard is displayed. The designation to be changed is displayed in the text box.


3. Rename the endodontic treatment. Confirm your entry with the *OK* key.

   ↳ The keyboard is hidden. The designation of the endodontic treatment is changed in the treatment list.

**Deleting an endodontic treatment from the list**

If endodontic treatments are no longer required or must be replaced, they can be deleted from the treatment list.


1. Touch the button of an endodontic treatment that you would like to delete.

   ↳ The selected button is highlighted orange.

2. Touch the *Delete endodontic treatment* key for more than 2 seconds.

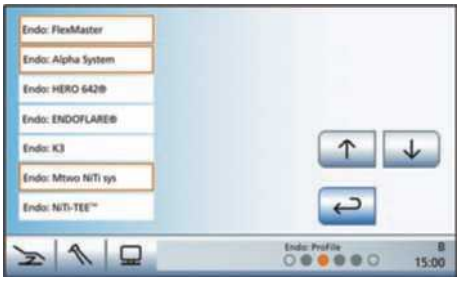
   ↳ The selected endodontic treatment is deleted. It is no longer displayed in the treatment list.

**Adding a file system to the treatment list**

The parameters of the most popular endodontic file systems, the sequence of the corresponding files, and their permissible speed and torque values are stored in the treatment center software. The required file systems can be added to the endodontic treatment list via a pick list.


1. Touch the *Add file system* key.

   ↳ A list of the most popular file systems is displayed.




2. Select the file system that you would like to add to the endodontic treatment list. You can browse the list with the ↑ and ↓keys. Touch the button of the desired file system (multiple file systems can also be selected).

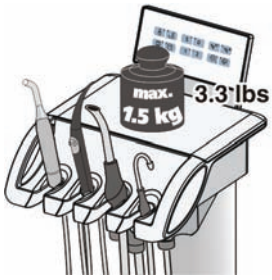
   ↳ The selected buttons are highlighted orange.

3. Touch the *Return* key.

↳ The *Treatment administration* screen is displayed. The selected file systems are displayed in the endodontic treatment list of the *Treatment selection* screen.

## 4.6 Assistant element

### 4.6.1 Maximum load capacity




The maximum load of the assistant element is 1.5 kg (3.3 lbs). Additionally, a skid-proof silicone mat can be placed on top of it.

**WARNING:**
To prevent injuries caused by falling objects, never place anything on the support arm of the assistant element.

### 4.6.2 Height adjustment

The height of the assistant element can be adjusted to achieve an ergonomic instrument height.

Please contact your service engineer.

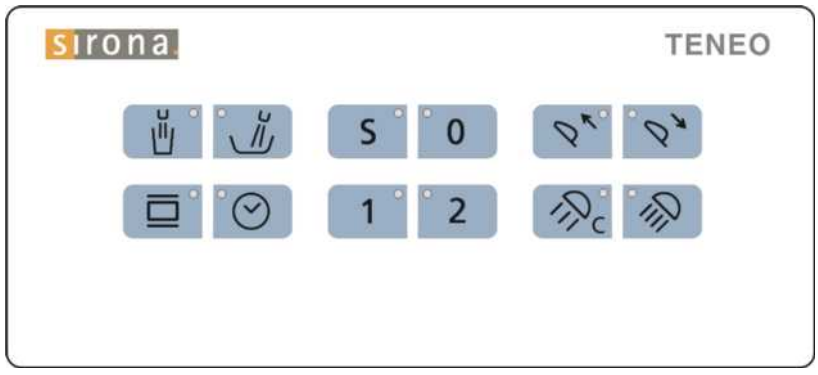
### 4.6.3 Positionability

**WARNING: The assistant element can be positioned above or below the patient chair.**
The patient could be pinched during chair movements or the chair could be damaged.

➢ Move the assistant element out of the collision zone before moving the patient chair.

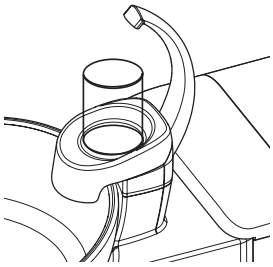
**NOTE: Safety stop**
In case of collision, a safety system in the support arm stops the chair movement.

### 4.6.4 Fixed keys on the assistant element



The functions assigned to the keys can be switched on/off on the assistant element. The settings screens can be opened only on the touchscreen of the dentist element. To make settings, see "Fixed keys on the dentist element" [🗎 57].

### 4.6.4.1 Tumbler filling



1. Place the tumbler under the tumbler filler.

2. Press the *Tumbler Filling* fixed key.

   ↳ The tumbler is filled with water for the preset time.

Pressing the *Tumbler Filling* fixed key again stops the filling function immediately.

**NOTE:**
Tumbler filling with automatic sensor control [🗎 109]

### 4.6.4.2 Flushing of the cuspidor bowl

The flushing function is used for coarse cleaning of the cuspidor bowl during treatment.

➢ Press the *Flushing* fixed key.

↳ The LED in the key lights up during the flushing function. The flushing function is activated for the preset flushing time.

### 4.6.4.3 X-ray viewer

This key has no function on the version not equipped with an X-ray viewer.

➢ Press the *X-ray viewer* key.

↳ If the LED on the key lights up, the X-ray viewer is switched on.

### 4.6.4.4 Timer function

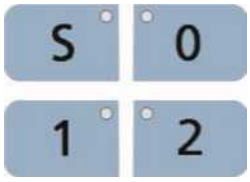
The treatment center features six timers which can be preset on the dentist element; see "Timer function" [🗎 58]. Only the first timer can be triggered on the assistant element.

1. Press the *Timer* fixed key on the assistant element.

   ↳ Timer 1 is started. The preset and elapsed time time are displayed in the footer on the touchscreen.


2. Press the *Timer* fixed key again.

   ↳ The previously timer stops and is reset to zero.



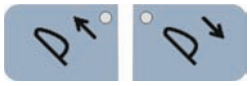

### 4.6.4.5 Chair programs

The following chair programs can be selected and programmed on the assistant element:

- Mouth rinsing position (S)
- Entry/exit position (0)
- Chair programs 1 and 2

For details, see "Moving the patient chair via chair programs" [🗎 49].

Chair programs can also be programmed from the assistant element side; see "Programming chair programs and shock positioning" [🗎 55].



### 4.6.4.6 Headrest

The treatment chair is adjusted to the patient's stature by moving the headrest in or out.

### 4.6.4.7 Composite function

With the composite function, the operating light can be operated at a reduced brightness of < 8,000 lux.

This function is required to prevent premature curing of composite fillings.

➢ Press the *Composite Function* fixed key.

↳ If the composite function is switched on, the LED on the fixed key lights up on the assistant and dentist elements. The light intensity of the operating light is > 8,000 lux.

### 4.6.4.8 Operating light

The light intensity of the operating light is > 24,000 lux.

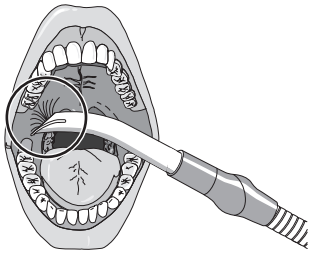
The operating light is always switched on at the set brightness level.

➢ Press the *Operating Light* fixed key.

↳ If the operating light is switched on, the LED on the fixed key lights up on the dentist and assistant elements.

## 4.6.5 Suction handpieces

The assistant element can be equipped with a maximum of three suction handpieces.



**⚠WARNING: The cannula attaches itself to the oral mucosa.**
The patient's oral mucosa is irritated by the vacuum.

➢ 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. Sirona recommends using spray aspirator cannulae with ventilation holes "see Spare parts, Consumables [🗎 174].

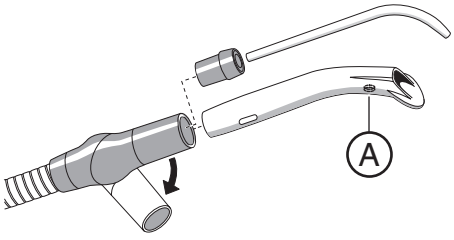
**⚠WARNING: The spray aspirator can be switched off with the 4-way foot switch.**
Due to the lack of suction flow, fluid may run back out of the spray aspirator and into the patient's mouth.

➢ Always remove the spray aspirator from the patient's mouth before switching it off.

**⚠CAUTION: Suction removal of metal oxides from blasting devices**
Observe the warning and safety information on the "Vacuum system" [🗎 13].

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

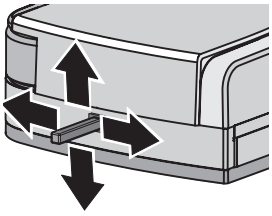
**Spray aspirator**




You can angle the suction handpiece by turning it.

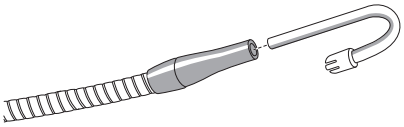
The spray aspirator cannula from Sirona has a ventilation hole to ensure that the suction flow is not fully interrupted if it attaches itself to the oral mucosa **A**. This prevents backflow from the hose into the oral cavity if the cannula attaches itself.

If the system has no second saliva ejector hose for the surgical cannula, the thick suction hose must be used for the surgical suction device. To insert a surgical cannula, please attach the adapter supplied.



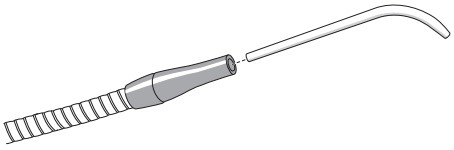
It can be adjusted so that the suction flow of the spray aspirator can be interrupted or reactivated by pressing the 4-way foot switch at the base of the chair in any direction; see"Linking the spray aspirator to the 4-way foot switch" [🗎 128].

**Saliva ejector**



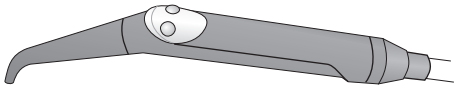
A curved cannula that can be lodged in the corners of the mouth is provided for saliva ejection.

**Surgical suction device**



If the unit is not equipped with a second saliva ejector hose, the surgical cannula can be inserted directly into the saliva ejector handpiece.

## 4.6.6 SPRAYVIT L multifunctional syringe

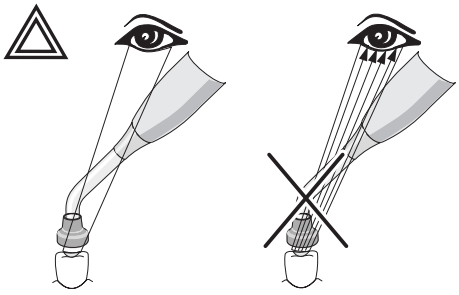


The functionality is described in the chapter on the dentist element, see "SPRAYVIT L multifunctional syringe" [🗎 73].

## 4.6.7 Mini L.E.D. curing light

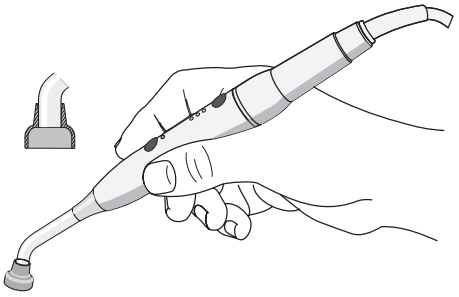
The curing light is used to cure composite fillings with short-wave light.

### 4.6.7.1 Safety information

**⚠WARNING: The device contains an LED that falls under laser class 2M.**
Viewing the LED beam exit aperture with certain optical instruments (e.g. a magnifying lens within a distance of 100mm) can cause eye damage.

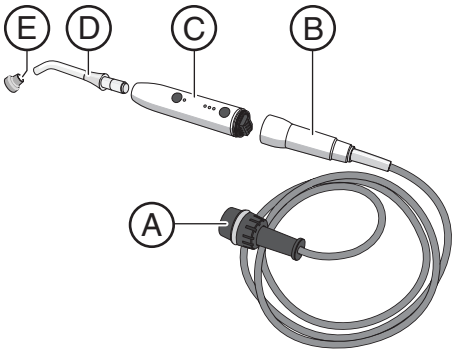
- Do not under any circumstances stare into the beam path when the glass rod is removed.
- Never aim the laser beam at anyone's eyes, even if he or she is wearing protective goggles.
- Never work without the glare shield.
- Never look into the light reflected by the tooth surface.
- Aim the light only at the treatment area in the oral cavity.



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

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

Any persons who have in the past suffered from retinal or eye lens disorders or have undergone eye surgery, especially for gray cataracts, must consult their medical eye specialist before using the light or undergoing treatment with the Mini L.E.D. Caution is advisable even if the patient gives his or her consent, since the light intensity can cause accidents. It is especially advisable to always wear appropriate protective goggles. For the frequency range of the light, refer to "Technical data" [🗎 107].




### 4.6.7.2 Connecting the Mini L.E.D.

The Mini L.E.D. is connected to the assistant element in holder 1.

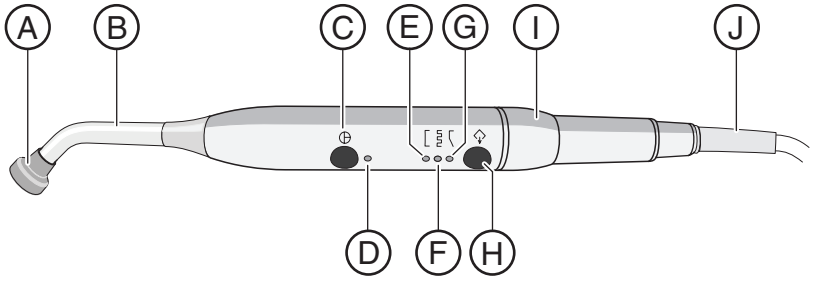
1. Connect the supply cable **(A)** to the treatment center.
2. Screw the hose coupling **(B)** onto the Mini L.E.D. **(C)**.
3. Screw the sterilized light guide **(B)** onto the Mini L.E.D. **(C)**. Make sure to insert the light guide correctly.

   ↳ The light guide engages with an audible click.
4. Slip the glare shield **(E)** onto the light guide **(D)**.

   ↳ The glare shield protects your eyes against reflecting curing light

### 4.6.7.3 Functional description

**Controls**



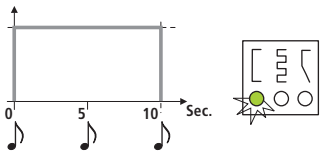

| | | | |
|---|---|---|---|
| A | Glare shield | F | Pulse curing mode lamp |
| B | Light guide | G | "Soft start" mode lamp |
| C | On/off button | H | Mode button |
| D | Status control lamp | I | Handpiece |
| E | Quick curing mode lamp | J | Supply cable |

**Status control lamp**

The status control lamp **(D)** signals the following states:

| Status control lamp | Mode |
|---|---|
| off | Instrument deposited |
| green | Normal operation |
| red, flashing | Overheat protection |

The Mini L.E.D. features three operating modes you can select with the *Mode* button **H**:

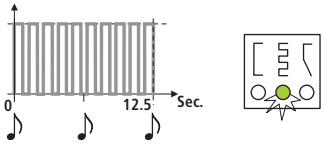



**Quick curing mode**

In the quick curing mode, the Mini L.E.D. operates at full power for 10 seconds.

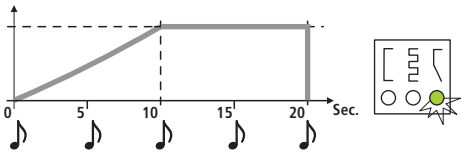
In this mode, the light intensity output is as follows:

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




**Pulse curing mode**

In the pulse curing mode, the Mini L.E.D. emits radiation in 10 consecutive light pulses of 1s each. There is a 250 ms break between the individual pulses.




**"Soft start" mode**

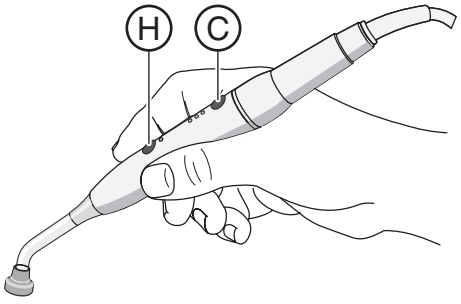
The “soft start” mode provides:

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

### 4.6.7.4 Operating the Mini L.E.D.

**NOTE: Contact with the material to be cured**
Make sure that the light guide never touches the material to be cured, as this may cause damage to the light guide and reduce its effectiveness.

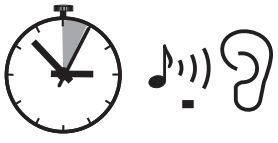
When the Mini L.E.D. is removed from its holder, the operating mode last used before it was deposited is selected.




1. Use the *Mode* key **H** to select the quick curing, pulse curing or "soft start" mode.

   ↳ The corresponding lamp shows which mode is selected. The Mini L.E.D. is ready for operation.

2. Hold the light guide as close as possible to the composite material surface you want to photopolymerize.



3. Start the curing cycle. Press the on/off button **(C)** briefly.

↳ An acoustic signal sounds. The curing cycle is started.

↳ The acoustic signal sounds every 5 seconds.

↳ The end of the curing cycle is also indicated by an audible signal.

You can interrupt the curing cycle immediately by pressing the on/off button **(C)**.

For care and cleaning, see "Disinfecting and sterilizing the Mini L.E.D. curing light" [🗎 149].

#### 4.6.7.5 Technical data

**General Technical Data on Mini L.E.D.**

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

**Optical specification of Mini L.E.D.**

| | |
|---|---|
| Wavelength: | 420 nm – 480 nm |
| Light power dia. 7.5 mm (standard version): | 1100 mW/cm$^2$ |
| Light power dia. 5.5 mm (available from Satelec): | 2000 mW/cm$^2$ |
| Light power: | 450 mW – 500 mW |
| Laser power: | < 1 mW |

### 4.6.8 Hydrocolloid

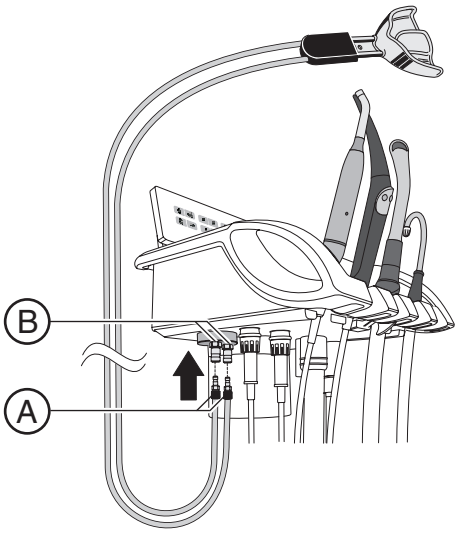
Hydrocolloid impressions of the upper and lower jaw can be made using the coolable impression tray. The molding compound hardens quickly due to the cooling.

#### 4.6.8.1 Connecting/removing the hydrocolloid

Two quick couplings with hoses (4 mm diameter) are included in the scope of supply. The impression tray can be ordered from a specialized dealer and connected to the hoses.

**Connecting the hydrocolloid**

The hydrocolloid is connected to the bottom of the assistant element with two quick couplings.

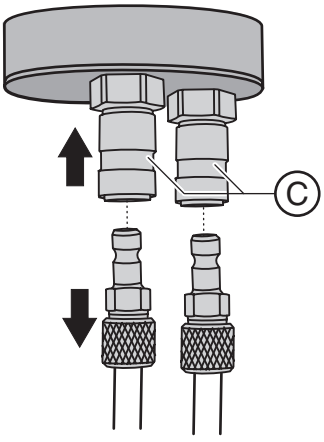



✓ The assistant element is equipped with a hydrocolloid connection.

➢ Plug the two fast couplings **(A)** of the impression tray into the sockets **(B)** on the bottom of the assistant element in any order.

↳ Both quick couplings are engaged in the sockets.

**Removing the hydrocolloid**




➢ Hold the hose with one hand while you slide the snap-on ring **C** upward with the other.

↳ The hose is released and can be removed downward.

### 4.6.8.2 Setting the hydrocolloid and switching it on/off

**Opening the sub-screen**

✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *Sub-screen* key.

↳ The *Start* sub-screen is displayed.


**Setting the water flow time**

Different cooling times are required, depending on the molding compound.


✓ Both hydrocolloid connections are plugged into the bottom of the assistant element.

1. Press and hold the *Hydro* key (> 2 s).

   ↳ The *Hydrocolloid* settings screen is displayed.


2. Use the – and + keys to set the flow time.

3. Touch the *Return* key.

   ↳ The *Hydrocolloid* settings screen is hidden immediately.

**Switching the hydrocolloid on/off**

✓ Both hydrocolloid connections are plugged into the bottom of the assistant element.


➢ Touch the *Hydro* key briefly (< 2 s).

↳ If the key is highlighted orange, the impression tray water cooling is activated. When the set flow time has elapsed, an acoustic signal sounds and the water flow stops.

## 4.7 Water unit

### 4.7.1 Swiveling the cuspidor bowl

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

A setting can be made that causes the cuspidor bowl to automatically move inward when the mouth rinsing position chair program (S) is selected; see"Linking the movement of the cuspidor bowl to the mouth rinsing position" [🗎 127].

The cuspidor bowl automatically swivels away from the patient chair beforehand to ensure that the patient does not collide with it during chair movements. The swivel-out movement depends on the chair movement and whether a critical height has been reached.

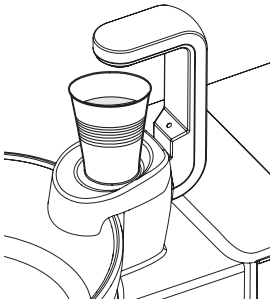
### 4.7.2 Tumbler filling with automatic sensor control

The automatic sensor control is not available in all countries.

**Description of the automatic sensor control**

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

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



**Filling the tumbler**

✓ The tumbler must not be transparent.

✓ The tumbler must always be placed in the center of the area provided for it.

➢ Place the tumbler under the tumbler filler.

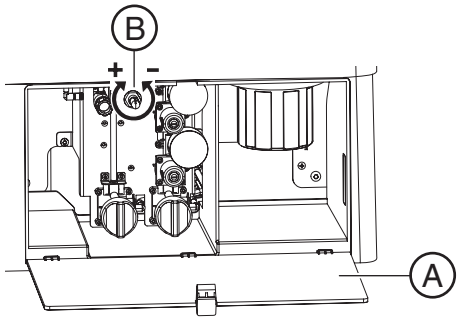
↳ The tumbler is filled automatically.

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

If required, the tumbler can be refilled manually by pressing the corresponding *Tumbler filling* key; see "Setting the tumbler filling function" [60].

**NOTE: Tumbler filling after switch-on**
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.

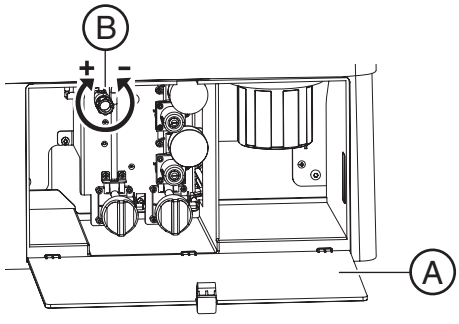
**Setting the filling level**




The tumbler filling level can be preset.

1. Open the maintenance flap **(A)** on the base of the water unit.
2. Set the filling level with the potentiometer **B**.

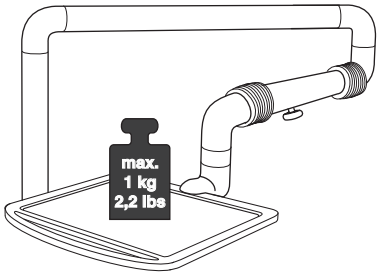
## 4.7.3 Adjusting the water amount for flushing




The water amount and water pressure for flushing can be adjusted with a valve.

1. Open the maintenance flap **(A)** on the base of the water unit.
2. Adjust the water amount with the valve **(B)**.

## 4.8 Tray




**Maximum load capacity**

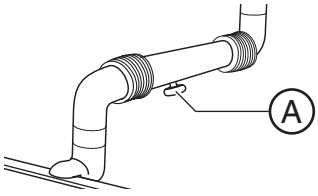
The maximum load is 1 kg (2.2 lbs).

**Adjusting the height with the locking brake**

The tray is supported to rotate on a height-adjustable support arm.

**CAUTION: A locking brake blocks the height adjustment.**
The support arm may be damaged if you adjust the height with the locking brake applied.

➢ Never, under any circumstances, try to adjust the support arm with the locking brake securely tightened. Release the locking brake first.




1. Loosen the brake knob slightly.
2. Set the tray to the desired position.
3. Retighten the brake knob slightly.

   ↳ The tray can thus be subjected to different loads within limits without lowering its position.

**Removing the instrument tray**

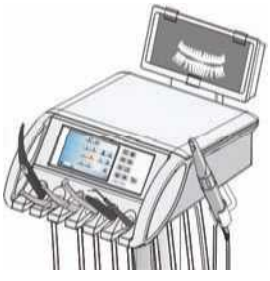
See "Disinfecting the instrument tray" [🗎 138].

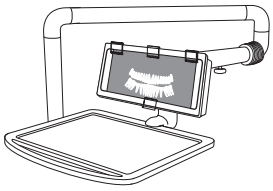
## 4.9 X-ray viewer

### 4.9.1 Attachment versions

The X-ray viewer can be attached to various locations of the treatment center.

X-ray viewer on the dentist element





X-ray viewer on the tray support arm

## 4.9.2 Switching the X-ray viewer on/off

If the treatment center has no X-ray viewer, however, is equipped with a SIVISION monitor, the *X-ray viewer* key can be used to set the SIVISION monitor to the white screen mode; see "Changing over the X-ray viewer key to white screen on the SIVISION monitor" [🗎 129]. The white screen function can be operated only from the dentist element.

**Via touchscreen**

✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *X-ray viewer* key.

↳ If the key is highlighted orange, the X-ray viewer is switched on or the SIVISION monitor is switched to white screen.

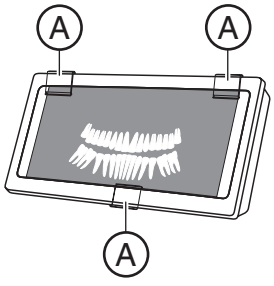
**Via the assistant element**

➢ Press the *X-ray viewer* key.

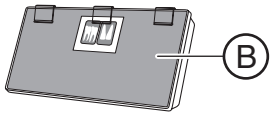
↳ If the LED on the key lights up, the X-ray viewer is switched on.

## 4.9.3 Attaching the anti-glare film

An anti-glare film is supplied with the X-ray viewer for viewing intraoral dental images



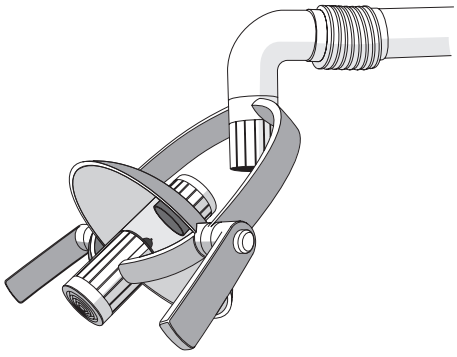

**1.** Remove the three retaining clips **(A)**.




**2.** Use two of the retaining clips to clamp the anti-glare film **(B)** to the upper edge of the X-ray viewer on the left and right.

**3.** Use the third retaining clip to clamp the intraoral dental image to the upper edge of the X-ray viewer in the center.

# 4.10 SIROLUX FANTASTIC operating light



The operating light is attached to a height-adjustable support arm. It can be easily adjusted with the handgrips to illuminate the treatment area. Brakes in the support arm hold the operating light in the position to which it has been adjusted.

The clearly restricted light field illuminates the treatment area without blinding the eyes of the patient.

The halogen lamp is cooled by a fan.

## 4.10.1 Switching the operating light on/off and adjusting it

The light intensity of the operating light is > 24,000 lux.

**Switching the operating light on/off**

The operating light is always switched on at the set brightness level, see "Adjusting the brightness" (below).

➢ Press the *Operating Light* fixed key.

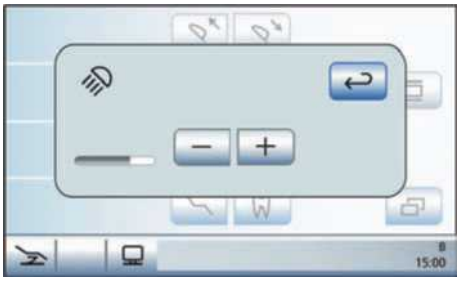
↳ If the operating light is switched on, the LED of the fixed key lights up on the dentist and assistant elements.

**Adjusting the brightness**

The brightness of the operating light can be adjusted on the touchscreen of the treatment center.

1. Press and hold the *Operating Light* fixed key on the dentist element (> 2 s).

   ↳ The Brightness settings screen is displayed on the touchscreen.



2. Use the – and + keys to adjust the brightness of the operating light.

## 4.10.2 Switching the composite function on/off

With the composite function, the operating light can be operated at a reduced brightness of < 8,000 lux.

This function is required to prevent premature curing of composite fillings.

➢ Press the *Composite Function* fixed key.

↳ If the composite function is switched on, the LED of the fixed key lights up on the dentist and assistant elements. The light intensity of the operating light is > 8,000 lux.

## 4.11 SIVISION digital video system

The SIVISION digital video system enables the acquisition of intraoral and extraoral images. The SiroCam digital intraoral camera generates digital image data which can be transmitted via a USB (universal serial bus) port to a connected PC and stored there. This PC can then display the images on the SIVISION monitor of the treatment center.

The video images represent an outstanding possibility for improving patient communication.

**⚠WARNING:**
**The video images are not suitable for diagnosis.**

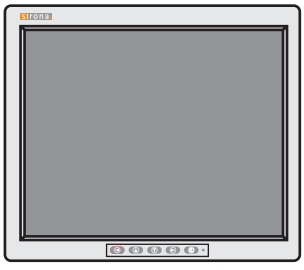
In order to display the images, an image display program must be installed on the external PC, see "SIDEXIS User Manual".

Furthermore, the SIUCOM plus PC application must be installed to control the image arrangement from the treatment center. For details, refer to the manual "Installation and Configuration of SIUCOM plus".

### 4.11.1 SIVISION monitor

**19" monitor**

The monitor is equipped with loudspeakers and a glass screen to facilitate cleaning. For further details, see "Operating Instructions for the 19" flat-screen monitor".



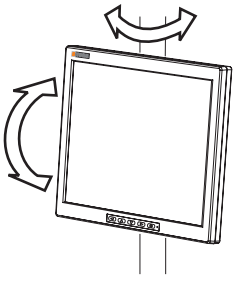
**⚠WARNING: Monitors without medical approval must not be connected.**
They endanger the product safety of the treatment center.

➢ Use only monitors that are approved according to IEC 60950 (office equipment) and IEC 60601-1 (medical devices).

**⚠CAUTION: Unsuitable devices can be connected to the loudspeaker port of the monitor.**
The connection of unsuitable devices endangers the product safety of the treatment center.

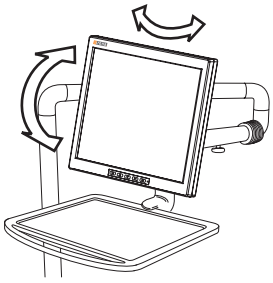
➢ The loudspeaker port of the monitor may be connected only to a device that complies with IEC 60950 (office equipment such as PCs) or IEC 60601-1 (medical devices). Under no circumstances should it be connected e.g. to a stereo system, etc.

**Attachment versions**



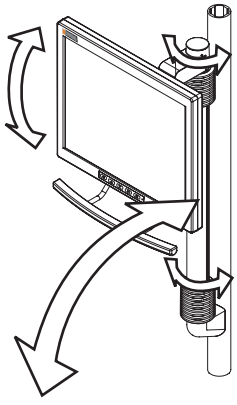
Monitor on lamp support tube

The monitor can be rotated and swiveled.



Monitor on tray arm

The monitor can be rotated and swiveled.



Monitor on support arm

The monitor can be rotated, swiveled and adjusted in height.

**⚠WARNING: The patient can collide with the monitor.**
The patient's head could collide with the monitor during movement of the treatment chair or during use of the cuspidor bowl.

➢ Make sure that the patient does not collide with the monitor. Swivel the monitor out of the collision zone as soon as it is no longer required.

## 4.11.2 SiroCam digital intraoral camera

### 4.11.2.1 Safety information

The SiroCam digital intraoral camera is a sensitive optical instrument and must always be handled with care.

**⚠CAUTION: The lens window is sensitive to scratches.**
The lens window can be damaged by hard objects. Deep scratches in the lens window impair image quality.

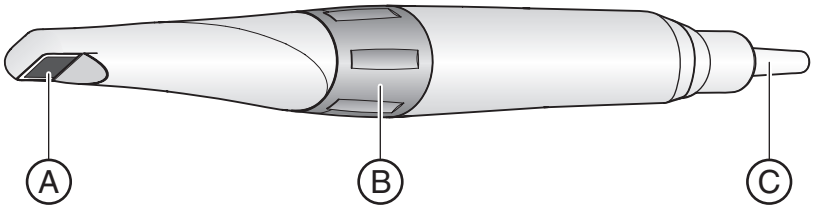
➢ Always place the intraoral camera in the designated holder and clean the lens window with a soft cloth.


**CAUTION: The intraoral camera is designed for intermittent operation in dental offices.**
In continuous operation, the intraoral camera may become too hot for patients or users.

➢ To prevent high temperatures, the camera must be deposited in its holder for a period of t2=3 min following an operating time of t1=1 min.

### 4.11.2.2 Functional description

The camera generates digital image data with the help of a CCD sensor. The camera allows for the acquisition of intraoral and extraoral images.

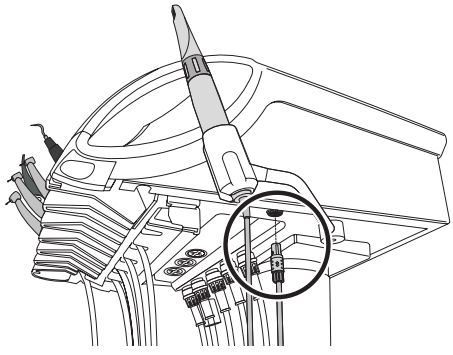



| | |
|---|---|
| A | Lens window |
| B | Adjustment ring for focusing the image section (detail, overview and whole-face image) |
| C | Connecting cable |

### 4.11.2.3 Connecting the SiroCam digital intraoral camera

**Connecting the intraoral camera**

The intraoral camera is connected on the bottom side of the dentist element.

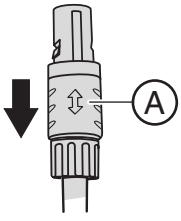


➢ Plug the connector of the intraoral camera into the correspondingly marked sockets on the dentist element.

↳ The plug locks in place.

**Removing the intraoral camera**

The plug of the intraoral camera is secured against falling out.




➢ Grasp the plug by its locking devices **A** and pull it downward.

## 4.11.2.4 Operation of the SiroCam digital intraoral camera

The treatment center must be connected to an external PC for the display of video images of the SiroCam digital intraoral camera on the SIVISION monitor. Still images of the intraoral camera can be saved on the external PC.

For details please refer to chapter“External PC” [🗎 119].


**Switching the SiroCam digital intraoral camera**

✓ The external PC is in operation and the SIUCOM plus and SIDEXIS PC applications have been started.

➢ Remove the SiroCam digital intraoral camera from its holder.

↳ The *SIVISION program* is displayed on the touchscreen. The live image appears on the SIVISION monitor.

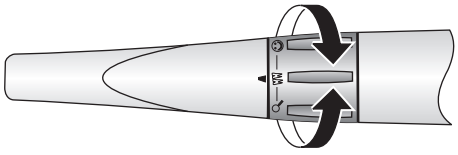
The SIVISION dialog offers the option to control the functions of the SIDEXIS PC application over the user interface of the treatment center. For details, see "Communicating with SIDEXIS" [🗎 120].

When the intraoral camera is set down, the live image window closes. SIDEXIS remains active on the external PC.

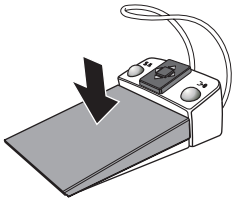
**Focusing the intraoral camera**

The SiroCam digital intraoral camera features three focus settings:

- Detail image– Details of a tooth, images of a single tooth
- Overview image –Images of quadrants and the smile line
- Whole-face image – Image of the patient's face



➢ Rotate the setting ring to detail, overview or whole-face image.



**Generating a still image**

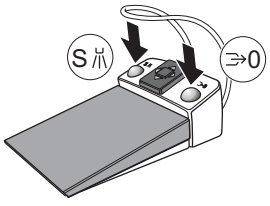
✓ The live image is displayed on the SIVISION monitor.

1. Step on the foot pedal.

↳ The display switches from live to still image.

2. Step on the foot pedal again.

↳ The live image is once again displayed on the SIVISION monitor.



**Save image**

Still images are saved on the external PC in the SIDEXIS patient database.

✓ The patient must be registered in SIDEXIS.

✓ The still image to be saved is displayed on the SIVISION monitor.

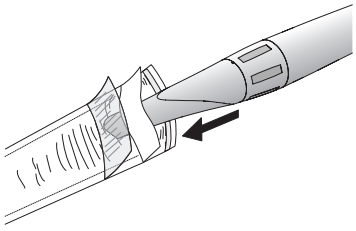
➢ Press the left-hand or right-hand button of the foot control.

↳ An audible signal sounds. The still image is displayed in an additional SIDEXIS window and saved in the patient database.

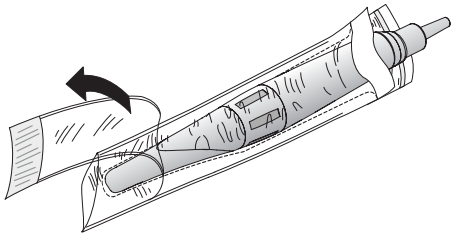
### 4.11.2.5 Using hygienic protective sleeves

Special hygienic protective sleeves (disposable) are available for the SiroCam digital intraoral camera. Prior to each application on a new patient, the intraoral camera must be covered with a new hygienic protective sleeve.

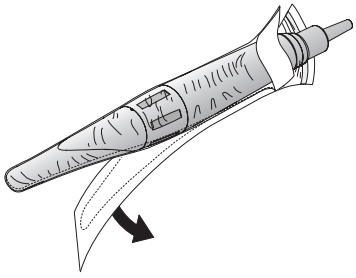
To reorder the hygienic protective sleeves, see "Spare parts and consumables" [🗎 174].



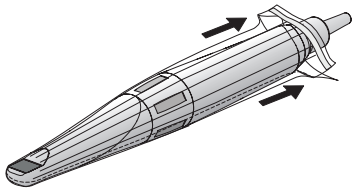
**1.** Hold the hygienic protective sleeve with the backing paper pointing down. Insert the intraoral camera into the hygienic protective sleeve with the lens window pointing down.



**2.** Pull off the upper protective foil at the blue stripe.



**3.** Then pull off the backing paper.



**4.** For optimal image quality, slightly stretch the hygienic protective sleeve toward the back to make sure it does not form any wrinkles at the lens window.

### 4.11.2.6 Technical data

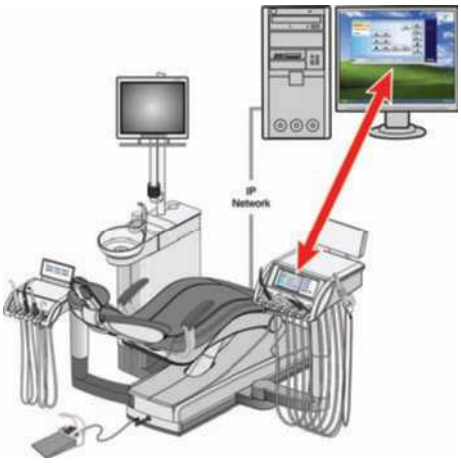
**General technical data**

| | |
|---|---|
| Model: | SiroCam digital intraoral camera |
| Weight of handpiece without cable: | approx. 66 g |
| Dimensions: | dia. 27.5 x 207 mm |
| Working temperature: | +10 to +40°C |
| Power supply and signal output: | 5 V via USB 2.0 interface (modified plug-in connection) |

**Characteristics of the image acquisition**

| | |
|---|---|
| Lighting: | 6 white light LEDs with light collector lens |
| Image sensor: | 1/4“ Color Interline Transfer CCD |
| PAL pixels: | 470.000 |
| Effective pixels (PC) YUV: | 720 x 576 |
| White balance: | fixed, set to 3400 K |

## 4.12 External PC




The treatment center can be connected to an external PC via an Ethernet cable. Communication between the treatment center and the external PC is enabled by means of the SIUCOM PC application. The external PC can thus be operated directly on the touchscreen or via the foot control of the treatment center.

For details, please refer to the manual "Installation and Configuration of SIUCOM plus".

### 4.12.1 SIVISION program

Various PC applications of the external PC can be started and operated in the SIVISION program. Communication can be established with the following PC applications:

- SIDEXIS
- Microsoft® PowerPoint®
- Windows Media Player

The network connection of the treatment center must be configured in the setup program before using the SIVISION program, see "Configuring the network connection" [131].

The keys shown on the touchscreen and their arrangement can be changed individually, see the manual "Installation and Configuration of SIUCOM plus".

#### 4.12.1.1 Starting PC communication

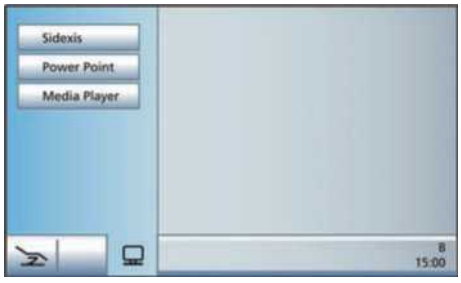
✓ The external PC is in operation and the SIUCOM plus PC application is started, for instance with auto-start.

**1.** Touch the *SIVISION program* screen change key.

or

➢ Or, if intraoral exposures are desired: Remove the SiroCam digital intraoral camera from its holder. The SIDEXIS PC application can be started immediately.

↳ The *SIVISION program* is displayed on the touchscreen.




2. Select the desired PC application from the left side of the touchscreen.

   ↳ The key of the selected PC application is highlighted orange and the corresponding control keys are displayed on the right side of the touchscreen; see the following sections. The PC application is automatically started on the external PC.


3. The *File Selection* screen opens for PC applications that can access files of the external PC. Select the desired file by touching it.

   ↳ The control keys of the relevant PC application are displayed on the touchscreen.


An orange square in front of the respective PC application indicates whether it has been started and is ready for operation on the external PC. As long as the orange square is displayed, communication with the PC application is not yet possible.

### 4.12.1.2 Communication with SIDEXIS


The SIDEXIS PC application enables you e.g. to display X-ray and intraoral camera images and transmit them to the SIVISION monitor. The live image of the SiroCam digital intraoral camera is displayed in SIDEXIS and can be saved as a still image in the patient database. The following SIDEXIS functions can be controlled from the treatment center to enable viewing of the stored images on the SIVISION monitor:

For details, see SIDEXIS XG Operator Manual.

**Next image**

The next image window is activated.

**Tiled layout**

All open image windows are scaled to a uniform size in the display area and arranged without overlapping.

**Full frame**

The active image window is enlarged so that it covers the entire display area. The control elements of the SIDEXIS user interface are not concealed in the process.

**Zoom in/out**

This magnifies and decreases the active image window and the size of the image displayed in it on the SIVISION monitor.

**Rotate image**

Rotates the image 90° counterclockwise or clockwise.

**Contrast optimization filter**

This image filter analyses and optimizes the current grayscale distribution of an image. In this way, for instance, details within a very low-contrast, “faint” image can be made visible.

**Relief display filter**

Image details with high contrast are displayed brighter or darker. Thus edges or contours within the image are clearly accentuated. The result is a relief-like image distortion.


**Cancel/confirm entry**

**Opening the sub-screen**

Used to access additional functions; see the following keys:

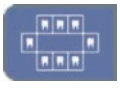

**NOTE:**
Use the PC application SIUCOM plus to configure the layout of the keys.

**Overview layout**

The opened image windows are scaled in the display area so that no scroll bars or as few scroll bars as possible must be displayed. The image windows are arranged without overlapping.

**Cascaded layout**

The opened windows are "cascaded", i.e. arranged slightly displaced behind one another. All image window titles are thus visible.



**Status overview layout**

The opened image windows are arranged according to their anatomical position if the number of the displayed tooth was specified. Unassigned exposures are displayed in the center of the display area. The size of the windows is adapted so that the complete exposures are visible.

**Invert image**

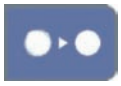
This function inverts the brightness values of the image pixels, thus enabling a positive or negative display of the image. The inversion can be canceled by pressing the key once again.

**Display image in pseudocolors**

To enable better distinction of image details, an image can be displayed in a so-called pseudo color mode. The grayscale values of the image are replaced by colors which the human eye can distinguish better from one another than the corresponding gray levels.

**Smooth image**

To mitigate high-contrast or high-interference effects in images, the contrast between neighboring pixels is reduced or averaged. The overall definition of the image is reduced.



**Sharpen image**

Contrasts between neighboring pixels are increased. This function helps to accentuate edges or contours. The impression of a sharper image is created.

**Filter black dots**

Individual pixel errors may occur when taking digital X-rays. These pixel errors appear as individual black dots when the optimum resolution (100%) is selected. They are removed by SIDEXIS.

**Reduce noise**

Individual scattered pixels and minor disturbing information which lead to a noisy image are eliminated without reducing the overall definition of the image.

**Undo**

The effect of the last filter operation is undone.

**Restore original image**

The changes previously made, e.g. via filters, are canceled. The most recently saved version of the image is restored.

### 4.12.1.3 Communication with PowerPoint


For effective patient communication, Microsoft® PowerPoint® presentations stored on the external PC can be displayed on the SIVISION monitor. The selection of presentations from the file system and control of the presentation slides can be performed from the treatment center.

**Previous/next slide**

### 4.12.1.4 Communication with Media Player


The treatment center offers the possibility of playing back multimedia files stored on the external PC using the Windows Media Player. The selection of audio or video files from the file system and control of the Media Player can be performed from the treatment center. Video images can be viewed on the SIVISION monitor.

**Title shuffle**

**Repeat title**

**Fast forward/Rewind**

**Previous/next title**

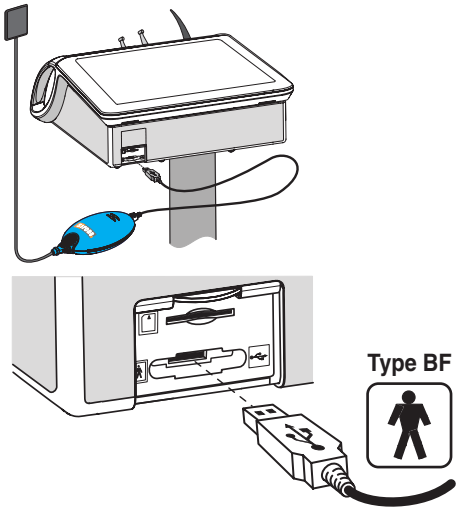
**Stop playback**

**Start/interrupt playback**

**Mute**

**Adjust volume**

### 4.12.2 Open USB port




An open USB port is located at the back of the dentist element. The upper slot is without function.

**⚠WARNING:**
**Only type BF medical devices according to IEC 6060-1, e.g. the Sirona XIOS USB intraoral X-ray system, may be connected to the USB port.**

**⚠WARNING: USB devices with their own voltage supply (e.g., via a power supply unit) may increase the working current.**
This endangers the safety of patients and users.

➢ Only connect USB devices that use the USB connection as their exclusive power source.

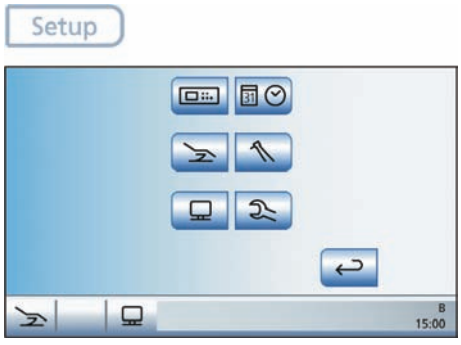
## 4.13 Configuration of the treatment center (setup)

Various treatment center functions can be individually configured via the Setup settings. The treatment center can thus be adapted to match each user's personal method of treatment.

### 4.13.1 Opening the setup programs

✓ All instruments are in place.

✓ The required user profile is active.



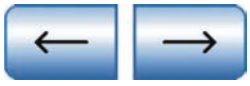

➢ Press and hold the *Setup* fixed key (> 2 s).

↳ Six setup programs are offered for selection.

Key symbols of the six setup programs line by line from left to right:

- EasyTouch user interface
- Date and time
- Control options
- Instruments
- Network connection
- Service domain (for service engineers only)

➢ Touch the corresponding key to open the setup programs.



Some of the setup programs comprise several pages. Navigation can then be performed via the *Scroll forward/back* keys.

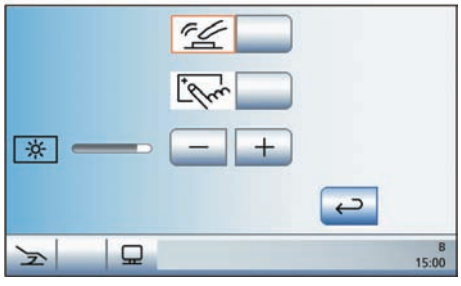
All of the settings you have made will be accepted when you leave the setup program.

**NOTE:**
The setup program closes automatically if no key is activated in 25 seconds.

## 4.13.2 Configuring the EasyTouch user interface

➢ Touch the *EasyTouch user interface* key in the setup program.

↳ The sub-screen opens.




### 4.13.2.1 Switching the key tone on/off

A setting can be made to activate or deactivate an acoustic signal that sounds when the operator touches a key on the touchscreen.

➢ Touch the *Key tone* key.

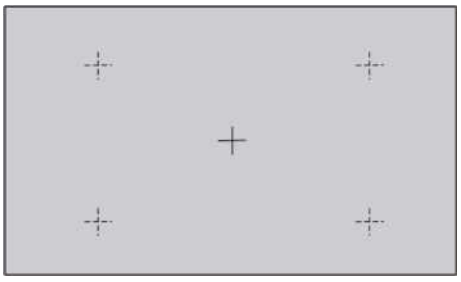
↳ If the key is highlighted orange, the key tone is activated.

### 4.13.2.2 Calibrating the touchscreen

If the touchscreen is no longer able to precisely locate the position of a contact, it must be recalibrated.

1. Touch the *Touchscreen* key.

↳ A calibration field is displayed.



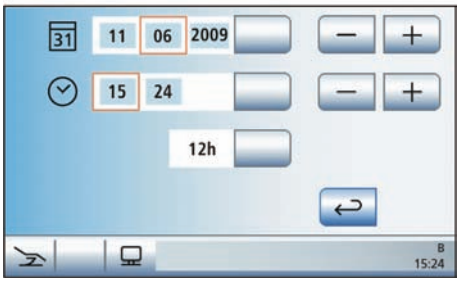
2. Touch the small cross on the touchscreen with a blunt pen.
   ↳ The cross is displayed at another location on the touchscreen.
3. Repeat this procedure until the cross no longer appears.
4. Touch the empty touchscreen again.
   ↳ The touchscreen is now calibrated. The *User interface* setup program is displayed again.

### 4.13.2.3 Adjusting the touchscreen brightness

➢ Use the – and + keys to set the brightness of the touchscreen.

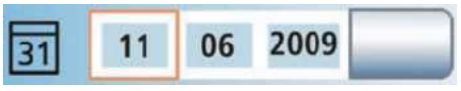
## 4.13.3 Setting the date and time

➢ Touch the *Date and time* key in the setup program.
   ↳ The sub-screen opens.




**Setting the date**

The date is displayed in the format day/month/year.




1. Use the – and + keys to set the day.
2. Touch the *Date* key.
   ↳ The month field is highlighted orange.
3. Repeat this procedure for the month and year.

**Setting the time**

When setting the time, note the summer/winter time setting and the 12/24 hour display option; see below.

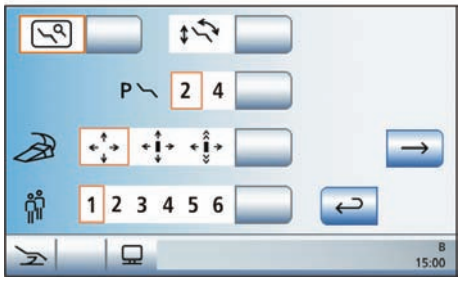

1. Use the – and + keys to set the hour.
2. Touch the *Time* key.
   ↳ The minutes field is highlighted orange.
3. Use the – and + keys to set the minutes.

**12/24 hour display changeover**


➢ Touch the *12/24 hour display* key.
   ↳ If the field is highlighted orange, the 12-hour display is set.

## 4.13.4 Configuring control options

This program allows for the configuration of the entire treatment center operation.




➢ Touch the *Control options* key in the setup program.

↳ The sub-screen opens.

### 4.13.4.1 Showing/hiding the fine adjustment key

Depending on the type of treatment, it may be necessary to adjust the patient chair more slowly and more precisely (e.g., for tiny corrections in case of treatment under a microscope). In this case, the *Fine Adjustment* key can be displayed in the *Start program*. If this function is switched on there, the patient chair travels at reduced speed during the following chair movements:

- OrthoMotion – Tilting the patient chair
- ErgoMotion – Tilting the patient couch and inclining the backrest
- Adjusting the chair height

Chair program travel movements are always executed at maximum speed.

➢ Touch the *Fine Adjustment* key.

↳ If the key is highlighted orange, the *Fine Adjustment* key is displayed in the *Advanced Start program* and in the *Manual Chair Adjustment* screen.

### 4.13.4.2 Changeover between the Simple and Advanced Start program operating modes

The treatment center can be set to the *Simple Start program* or the *Advanced Start program* operating mode; see also "Simple/Advanced Start program operating mode" [44].

➢ Touch the *Operating mode* key.

↳ If the key is highlighted orange, the *Advanced Start program operating mode* is selected.

### 4.13.4.3 "Showing/hiding" chair programs 3 and 4"

In addition to the mouth rinsing position (S) and entry/exit position (0) chair programs, the number of chair programs can be extended to 4 or limited to 2. This setting is effective in both operating modes *(Simple/Advanced Start program)*.


➢ Touch the *Chair programs* key.

↳ The selected field is highlighted orange.

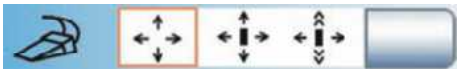
### 4.13.4.4 Setting the cursor control

The cursor control can be set as follows:

- Field 1: Cursor control switched off
- Field 2: Cursor control switched on, without screen change
- Field 3: Cursor control switched on, with program change

For more information, please refer to "Using the cursor control" [🗎 38].

✓ A cable foot control is connected to the treatment center or a wireless foot control is registered on the treatment center; see "Setting the wireless foot control on the treatment center" [🗎 36].



➢ Touch the *Cursor control* key.

↳ The selected field is highlighted orange.

### 4.13.4.5 Preselecting the number of user profiles

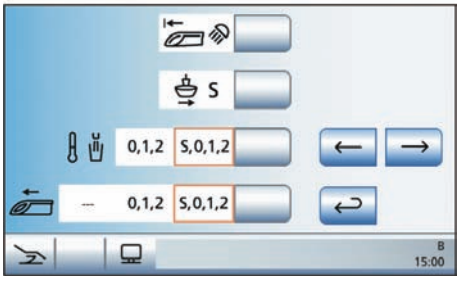
If fewer user profiles are required, their number can be limited so that only the specified users can be selected after the treatment center is switched on.


➢ Touch the *User profiles* key.

↳ The selected field is highlighted orange. The number of user profiles is limited to the set value.

If the number of user profiles is limited to one, the *User profiles* key is hidden in the Start program.

➢ Change to the next setup program page.




### 4.13.4.6 Linking the operating light to the dentist element movement

➢ Touch the *Operating light* key.

↳ If the key is highlighted orange, the operating light is automatically switched on when the dentist element approaches and switched off when it moves away.

### 4.13.4.7 Linking the movement of the cuspidor bowl to the mouth rinsing position

This can be used to set the cuspidor bowl so that it automatically moves inward when the mouth rinsing position (S) chair program is selected.


➢ Touch the *Cuspidor bowl movement* key.

↳ If the key is highlighted orange, the cuspidor bowl automatically moves inward as soon as the mouth rinsing position has been reached.

### 4.13.4.8 Linking the tumbler heater to the chair program

A setting can be made so that the tumbler heater automatically switches off when the entry/exit position (0) chair program is activated. The tumbler heater switches back on as soon as the patient chair leaves the entry/exit position. This makes it possible for the patient to drink cold water during waiting periods and to save energy.

- Field 1: The tumbler heater is switched off in the chair program entry/exit position (0).
- Field 2: The tumbler heater remains switched on in every chair program.

Chair programs 3 and 4 are not displayed on the touchscreen to save space.


➢ Touch the *Tumbler heater* key.

↳ The selected field is highlighted orange.

### 4.13.4.9 Linking the dentist element movement to chair programs

A setting can be made to designate the chair programs for which the position of the dentist element can be additionally programmed.

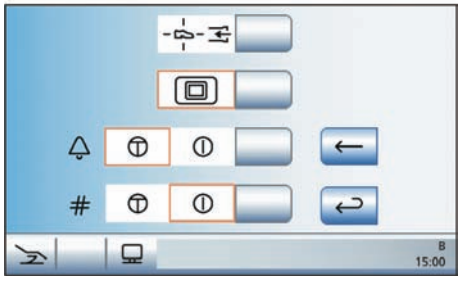
- Field 1: The position of the dentist element is not added to any chair program.
- Field 2: The position of the dentist element is not added to any chair program except for the mouth rinsing position (S).
- Field 3: The position of the dentist element is added to every chair program.

Chair programs 3 and 4 are not displayed on the touchscreen to save space.


➢ Touch the *Dentist element position* key.

↳ The selected field is highlighted orange.

➢ Change to the next setup program page.




### 4.13.4.10 Linking the spray aspirator to the 4-way foot switch

A setting can be made to enable interruption and/or reactivation of the suction flow of the spray aspirator by pressing the 4-way foot switch on the base of the chair in any direction. This function cannot be used on the saliva ejector or on the surgical suction device. Also observe the safety information, see "Suction handpieces" [🗎 102].

If you deposit the spray aspirator in its holder while the suction flow is interrupted, the suction flow is automatically restarted when you pick it up again.

➢ Touch the *Spray aspirator* key.

↳ If the key is highlighted orange, the removed spray aspirator can be switched on/off with the 4-way foot switch.

### 4.13.4.11 Changing the X-ray viewer key to white screen on the SIVISION monitor

If the treatment center has no X-ray viewer, however, is equipped with a SIVISION monitor, the *X-ray viewer* key can change the SIVISION monitor to the white screen mode. This function can be controlled only on the dentist element.

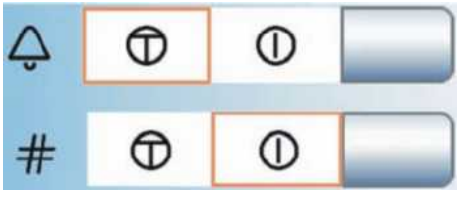
➢ Touch the *White screen* key.

↳ If the key is highlighted orange, the *X-ray viewer* key is changed to white screen on the SIVISION monitor.

In the *Start program* the *X-ray viewer* key is hidden if the treatment center is not equipped with an X-ray viewer and any possibly installed SIVISION monitor has not been changed over to white screen.

### 4.13.4.12 Setting the bell/hash fixed key as a pushbutton or as a switch

The relays assigned to the the bell and hash (#) keys can be operated as pushbuttons or as switches.



- Field 1: Pushbutton
- Field 2: Switch

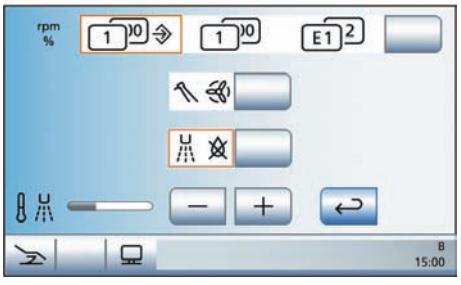
➢ Touch the *Bell* and/or *Hash* key.

↳ The selected field is highlighted orange.

## 4.13.5 Configure instruments

➢ Touch the *Instruments* key in the setup program.

↳ The sub-screen opens.



### 4.13.5.1 Preselecting quick setting keys with SaveMode/ with DropMode or function levels

Settings can be made in the instrument programs using either the quick adjustment keys (1...100) or two freely programmable function levels (E1, E2). For more information, please refer to "Quick setting keys and function levels" [62].

When using the quick adjustment keys, you can choose one of two options for saving the settings you made in the instrument program:

- SaveMode – The *Memory* key is displayed in the instrument programs:

  The settings made in the instrument program will be saved after the instrument is placed in its holder only if the Memory key was pressed and held beforehand (> 2 s).
- DropMode – *Memory* key hidden in Instrument programs:

  When the instrument is deposited, the settings made in the Instrument program will automatically be saved.

One of the following presettings can be selected:

- Field 1: Quick setting keys with SaveMode
- Field 2: Quick setting keys with DropMode
- Field 3: Function levels


➢ Touch the *Select memory type* key.

↳ The selected field is highlighted orange.

### 4.13.5.2 Switching the motor aftercooling on/off

After the burr drive is deposited in its holder, the motor can be automatically aftercooled.

➢ Touch the *Motor aftercooling* key.

↳ If the key is highlighted orange, the motor aftercooling is activated.

### 4.13.5.3 Switching afterblow on/off

After an instrument is deposited in its holder, the cooling spray remaining in the instrument head or in the tip of the instrument is automatically blown out by a brief activation of the chip blower (air puff).

➢ Touch the *Afterblow* key.

↳ If the key is highlighted orange, the afterblow function is activated.

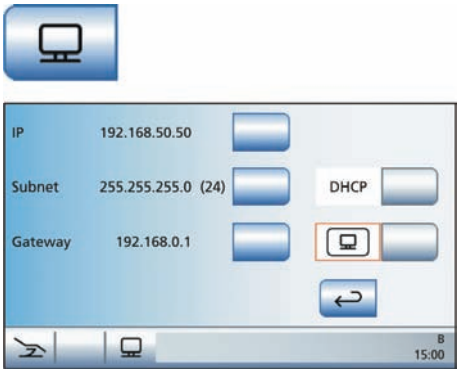
### 4.13.5.4 Setting the spray temperature

The spray temperature of all instruments on the dentist element except for the SPRAYVIT multifunctional syringe can be adjusted.

The spray temperature of the SPRAYVIT L multifunctional syringe can be adjusted separately, see "Setting the media temperature and instrument light" [74].

➢ Use the – and + keys to set the spray temperature.

## 4.13.6 Configuring the network connection




➢ Touch the *Network connection* key in the setup program.

↳ The sub-screen *Network connection* opens. It shows the current network configuration.

The network connection must be configured to allow for the communication between the treatment center and the external PC. The IP address (Internet protocol address), the subnet mask and the gateway (transition point to other networks) can be configured at the treatment center.

The treatment center supports the following network configuration options:

- Static configuration

  Data such as the IP address, subnet mask and gateway are entered only once at the treatment center and used permanently for the network connection.
- Dynamic configuration

  The network configuration is automatically assigned to the treatment center by a DHCP (dynamic host configuration protocol) server. This technology is often available for larger networks, e.g. in hospital environments.

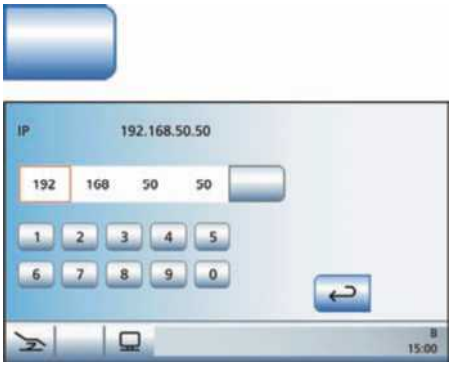
Both configuration types can be set up in the treatment center. When the dynamic network connection is used, the static configuration remains saved as an alternative. You can toggle between the two configurations by switching the dynamic network configuration on and off; see also "Switching the dynamic network configuration on/off."

Call in your data processing specialist for network configuration if necessary.

### 4.13.6.1 Setting up the static network configuration

**Entering the IP address**

An IP address is required for unique identification of computers and other devices in an IP network. We recommend altering the last value of the default IP address 192.168.50.*50* by incrementing it (51, 52, ...). Multiple treatment centers cannot use the same IP address.




✓ The *Network connection* sub-screen is displayed on the touchscreen.

1. Touch the key at the end of the *IP* line.

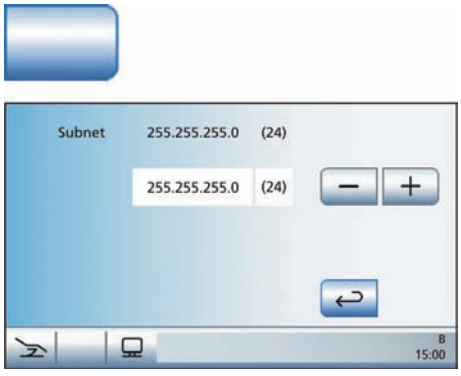
   ↳ The *IP address* screen is displayed.
2. Use keys 0 to 9 to set the first value (octet).
3. Touch the key just to the right of the four values.

   ↳ The field of the second value is highlighted orange.
4. Repeat this procedure for the remaining fields.
5. Touch the *Enter* key to confirm the entry.

   ↳ The entered IP address is used for the network configuration. It is shown in the *Network connection* program in the line *IP*.

**Entering a subnet mask**

The subnet mask limits the number of subnets and hosts in the network. The treatment center contains valid subnet masks to make the entry easier. These are available for selection. The CIDR (Classless Inter-Domain Routing) notation is shown next to the subnet mask.




✓ The *Network connection* sub-screen is displayed on the touchscreen.

1. Touch the key at the end of the *Subnet* line.

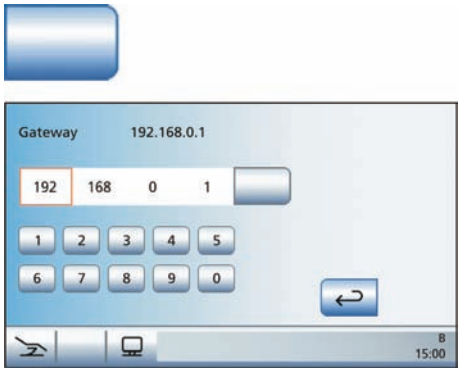
   ↳ The *Subnet mask* screen is displayed.

2. Use the – and + keys to adjust the last value (octet).
3. Touch the *Enter* key to confirm the entry.

   ↳ The entered IP address is used for the network configuration. It is shown in the *Network connection* program in the line *Subnet*.

**Entering the gateway**

If the external PC is located in a different network than the treatment center, it is necessary to specify the gateway through which the external PC can be reached. If this is not the case, the gateway can be entered as 0.0.0.0.




✓ The *Network connection* sub-screen is displayed on the touchscreen.

1. Touch the key at the end of the *Gateway* line.

   ↳ The *Gateway* screen is displayed.

2. Use keys 0 to 9 to set the first value (octet).
3. Touch the key just to the right of the four values.

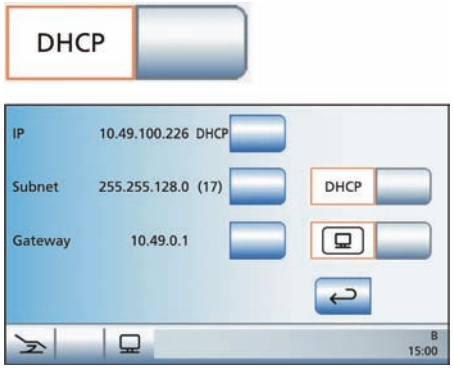
   ↳ The field of the second value is highlighted orange.

4. Repeat this procedure for the remaining fields.
5. Touch the *Enter* key to confirm the entry.

   ↳ The entered IP address of the gateway is used for the network configuration. It is shown in the *Network connection* program in the line *Gateway*.

### 4.13.6.2 Switching the dynamic network configuration on/off

To use the DHCP technology, a DHCP server must be set up in the network. The server will automatically assign a network configuration to the treatment center.




➢ Touch the *DHCP* key.

↳ If the key is marked orange, the treatment center is using the automatically assigned network configuration. It is shown in the *Network connection* program in the line *IP* with the addition "DHCP."

### 4.13.6.3 Switching the PC control on/off

The treatment center control of the external PC can be switched on/off. This does not affect the network connection. When PC control is switched off, the SIVISION symbol is hidden on the program change key. The SIVISION program can no longer be opened.

➢ Touch the *PC control on/off* key.

↳ If the key is highlighted orange, the network connection is switched on. The SIVISION symbol is displayed on the program change key.

### 4.13.6.4 Error message

If a warning sign appears above the SIVISION symbol of the program change key, the system failed to connect to the external PC.

➢ Additional settings must be made at the PC end. For details, please refer to the manual "Installation and Configuration of SIUCOM plus".

## 4.13.7 Opening the Service domain

The Service domain is intended for service engineers only, see "Service Manual".

**⚠WARNING:**
**A user operating error may cause malfunctions and hazards.**

➢ Please contact your service engineer or your dental depot.

# 5 Care and cleaning instructions for the practice team

## 5.1 Basics

### 5.1.1 Intervals

To maintain the value and safe functioning of your treatment center, it is necessary to have it cared for, cleaned and disinfected by the practice team regularly. This will minimize the risk of contamination for patients and users and ensure proper functioning.

The national requirements and recommendations for hygiene and disinfection must be observed, e.g. Robert Koch-Institut (RKI), American Dental Association (ADA), Centers for Disease Control and Prevention (CDC), etc.

**NOTE: Care and cleaning intervals**
The time intervals specified for disinfection, care and cleaning are reference values.
Please adapt the time intervals to suit your personal method of working and your national requirements.

**After each patient**

Cleaning/disinfecting surfaces [🗎 136]

- Disinfecting the upholstery [🗎 139]
- Disinfect the EasyTouch [🗎 137]
- Care for, disinfect and sterilize the treatment instruments [🗎 148]
- Disinfect all handles [🗎 137]
- Disinfecting the tray [🗎 138]
- Care for and clean the operating light
- Clean and disinfect the cuspidor bowl [🗎 155]

Clean the gold trap [🗎 155]

Purge the vacuum system. [🗎 150]

Sterilize and disinfect the suction handpieces [🗎 150]

Purge water lines (purge function) [🗎 142]

**Daily**

Automatically purge water lines (autopurge function) [🗎 144]

Rinsing water lines [🗎 141]

Disinfect the vacuum system [🗎 151]

Clean and thermally disinfect the suction hoses [🗎 153]

Thermally disinfect the instrument holder of the dentist element [🗎 140]

Thermally disinfect the instrument holder of the assistant element [🗎 141]

**Weekly**

Clean and care for upholstery [🗎 139]

Clean the foot control [🗎 141]

Change the cotton wool roll [🗎 150]

**Monthly or as required**

Check the flow rate on the SPRAYVIT L multifunctional syringe [🗎 149]

Change the water and air filters [🗎 157]

Microbiological water test [🗎 135]

Sanitize the treatment center [🗎 162]

Change the amalgam rotor [🗎 157] or
empty the sediment container [**2** 159] or
clean the filter insert of the wet suction device [**2** 160]

For a quick overview of the required work, see "Care and cleaning plan for the TENEO® treatment center".

### 5.1.2 Care and cleaning agents

**CAUTION: Approved Care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona!

You will find a list of all agents approved at the time of delivery in the documentation folder supplied with your treatment center.

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

If you do not have any access to the Internet, you can order the list in one of the following two ways:

- Order from your local dental depot
- Order from Sirona:
  Tel: ++49 (0) 62 51 / 16-16 16
  Fax: ++49 (0) 62 51 / 16-18 18

Order No.: **59 70 905**

### 5.1.3 Microbiological water test

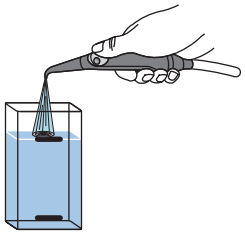
Perform the microbiological water test at regular intervals and after longer periods of disuse > 1 week; see also "Media quality" [🗎 12]. Start the checkups in intervals of no more than two weeks and adjust the time intervals depending on the results. In addition to running laboratory tests, you also can use the "total count tester" as a simple means of performing this test.

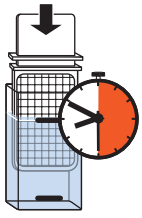
The first three testers will be supplied free of charge if you return the attached voucher. Please state your address and the serial number of the treatment center, see "Installation Report / Warranty Passport", or specify the serial number on the rating plate affixed to the base of the chair.

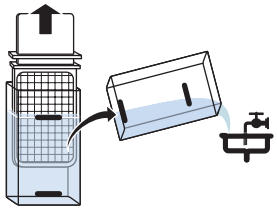
To reorder the motor total count tester, see "Spare parts and consumables" [🗎 174].

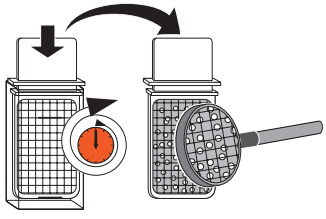
**NOTE: Shelf life of the total count tester**
The maximum shelf life of the total count tester is 1 year after the date of receipt.

The cardboard disk contains a dehydrated nutrient medium. It is activated by the sample and serves as culture medium for a number of bacteria. The number of germs provides information on the hygienic condition of the water.









48 h – 20° C / 68° F
24 h – 35° C / 95° F

Be careful not to touch the inside of the test container or the part of the tester to be immersed (with nutrient medium) prior to incubation.

1. Allow water to run out of the SPRAYVIT syringe and into the cuspidor bowl for about 1 minute.
2. Use the SPRAYVIT multifunctional syringe to fill the test container up to its upper mark.
3. To neutralize the disinfecting agent of the water sample, add approx. 1.5 g of fixing salt (sodium thiosulfate). Fixing salt can be obtained in pharmacies or from chemical dealers.
4. Immerse the tester in the filled container for 30 seconds.

   ↳ The cardboard disk with the nutrient medium will now absorb 1 ml of the water sample.
5. Remove the tester from the container. Shake out any excess water. Empty the tank.
6. Place the tester in the container for incubation either for two days at 20° C / 68° F or for 24 hours at a temperature of 35 °C / 95° F.
7. Count all germs found on the surface of the tester.

↳ If the number of germs significantly exceeds 100, then sanitation is required; see "Sanitizing the treatment center" [🗎 162].

## 5.2 Surfaces

### 5.2.1 Cleaning/disinfecting surfaces

Surfaces can be spray and wipe disinfected with surface disinfectants.

**⚠CAUTION: Medicaments chemically react with the surface of the unit.**
Due to their high concentrations and the substances they contain, many medicaments can dissolve, etch, bleach or discolor surfaces.

➢ Clean any medicament residues off of the unit immediately with a moist cloth!

**⚠CAUTION: Liquids can enter the unit during cleaning or disinfection.**
Electrical components of the treatment center can be destroyed by liquids.

- ➢ Do not spray any liquids into the unit.
- ➢ To clean near openings, first spray the liquid onto a cleaning cloth. Then wipe over the unit with the cleaning cloth.

**⚠CAUTION: Disinfectants can dissolve dyes in cleaning clothes.**
The outer surface of the unit may then be discolored by the dye.

- ➢ Do not clean or disinfect the unit with colored cleaning cloths.

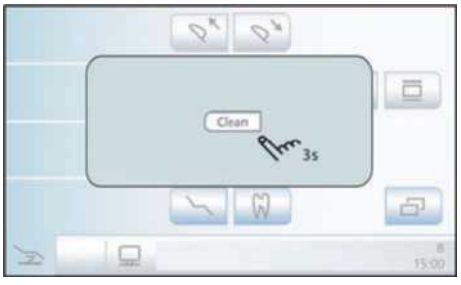
- ➢ Remove any dirt and disinfectant residues regularly using a mild commercial cleaning agent.

### 5.2.2 Disinfect the EasyTouch

The touchscreen and fixed keys of the dentist element can be deactivated for disinfection. This prevents accidental triggering of unwanted functions.

**⚠CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).

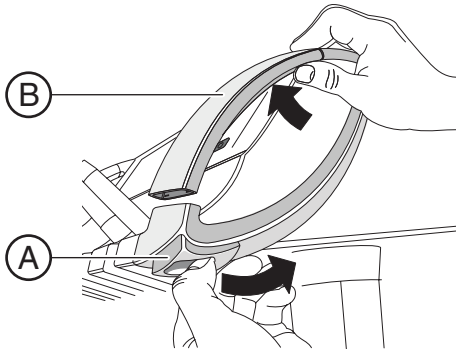

1. Press and hold the *Clean* fixed key on the dentist element.
   ↳ A display stating that the touchscreen and fixed keys are deactivated appears on the touchscreen.




2. Disinfect the EasyTouch user interface by means of wipe disinfection.
3. Press and hold the *Clean* fixed key on the dentist element (> 3 s).
   ↳ The touchscreen and fixed keys are now reactivated.

### 5.2.3 Disinfecting handles

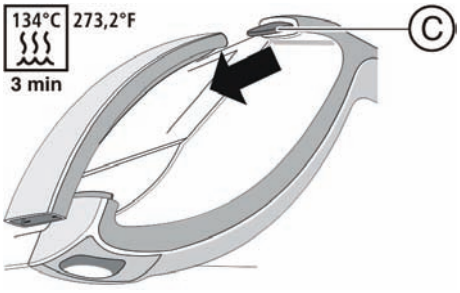
**⚠CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).




**Dentist element**

The handles on the dentist element can be sprayed, wiped and thermally disinfected or sterilized. They are removable.

1. Press the locking rocker switch **(A)** toward the rear with your thumb.
   ↳ The handle **(B)** unlatches.
2. Raise the handle **(B)** slightly.




3. Remove the handle from the upper guide tab **(C)**.
4. Repeat this procedure for the opposite handle.

Proceed in reverse order when reattaching the handle. The locking rocker switch **(A)** engages automatically.

**Assistant element**

The handles on the instrument holder of the dentist element can be sprayed, wiped and thermally disinfected. See also "Thermally disinfect the instrument holder of the assistant element" [🗎 141].

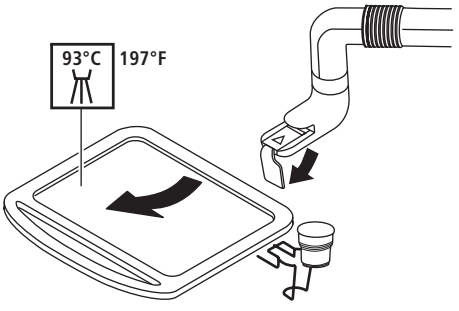
## 5.2.4 Disinfecting the tray

The tray can be removed to facilitate cleaning or thermal disinfection.

**⚠WARNING: The tray receptacle snaps shut automatically.**
Fingers can be crushed.

➢ Never place your fingers into the open receptacle of the tray.

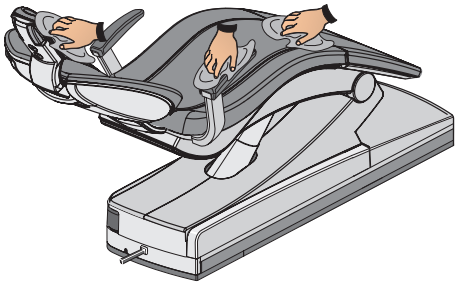
**⚠CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).

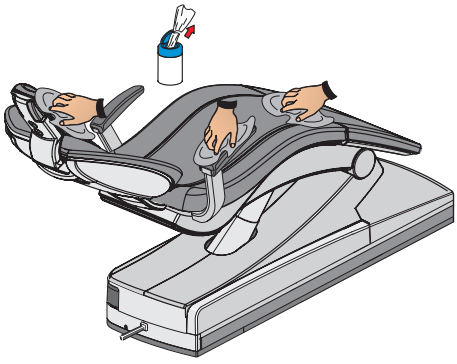



1. Hold the tray tightly.
2. Open the lock by swiveling the lever downwards.
3. Pull the tray off to the front.
4. Bring the lever back into its starting position.

To insert the tray, simply guide it into the receptacle. The lock snaps shut automatically.

## 5.2.5 Disinfect, clean and care for the upholstery





**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona for the upholstery; see "Care and cleaning agents".

**Disinfection:**

The upholstery, including the head support of the headrest, can be spray and wipe disinfected.

**Cleaning and care:**

The artificial leather upholstery must be cared for and cleaned regularly (at least 1x/week), especially light colored upholstery. The cleaning cloths also provide care for the material.

**NOTE: HUGO dental working stool**
The upholstery of the HUGO dental working stool is identical with that of the patient chair. Therefore, it also can be cleaned in the same way; refer to "HUGO Operating Instructions".

## 5.2.6 Disinfecting the MultiMotion headrest

**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).

**Disinfecting the head support**

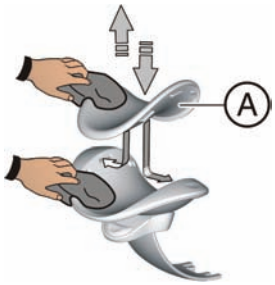
The head support and other parts of the MultiMotion headrest can be spray and wipe disinfected with surface disinfectants.

**Removing the head support of the MultiMotion headrest**

The contact surface of the MultiMotion headrest can be removed to facilitate intensive cleaning and disinfecting if necessary.

**CAUTION: The head support of the headrest is held by latching noses.**
Fast and frequent removal of the head pad from the front or rear can damage the latching noses. The head support is then no longer optimally held in its mounting.

➢ Gently press the head support together inward from the outside and remove it.




➢ Press one side of the head pad **(A)** inward from the outside (to unlock it) and remove it.

The head pad can be snapped back into the headrest by applying slight lateral pressure.

**⚠WARNING: Deep scratches or damage hinder the cleaning and disinfection of surfaces.**
The health of patients may thus be endangered.

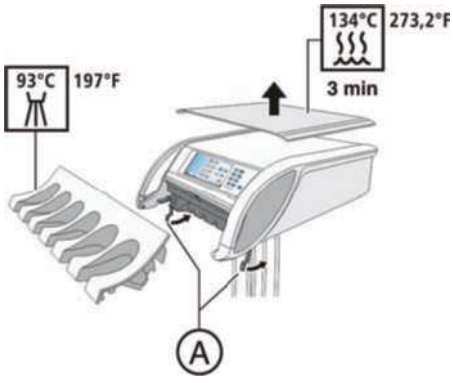
➢ Replace the head support if it is heavily scratched or damaged.

To reorder the head support, see "Spare parts and consumables" [🗎 174].

### 5.2.7 Thermally disinfect the instrument holder of the dentist element

The instrument holder can be removed for easier cleaning or thermal disinfection.

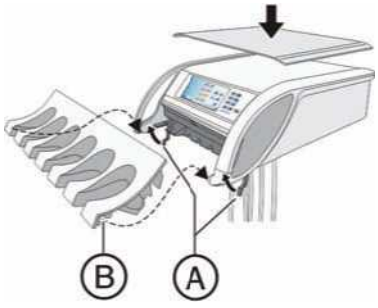
**Removing the instrument holder**




1. Remove all instruments from the holder.
2. Swivel both of the levers **(A)** below the instrument holder to the rear.
   ↳ The latch of the instrument holder is released.
3. Grasp underneath the instrument holder and raise it at the rear.
   ↳ The instrument holder tilts to the front slightly and can be removed from the dentist element in an upward direction.

The removable silicone mat on the dentist element can be sterilized.

**Inserting the instrument holder**

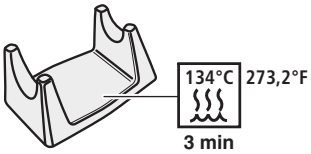



✓ The levers **(A)** are swiveled to the rear.

1. Fit the front recesses **(B)** of the instrument holder onto the bolts in the dentist element.
2. Gently press the instrument holder into the dentist element.
3. Hold the instrument holder firmly and swivel both levers **(A)** toward the front.
   ↳ The instrument holder is locked into the dentist element.

**Ball stopper**


If a ball stopper is inserted in an unused instrument holder, it can be pushed out of the holder from the rear to facilitate cleaning or thermal disinfection.



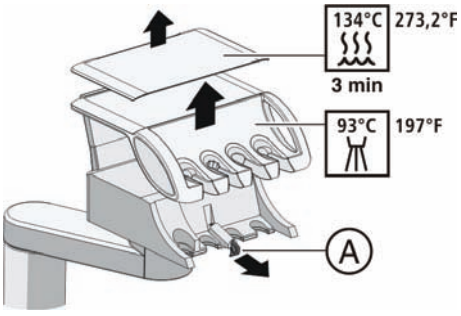

**Motor holder**

A sterilizable motor holder is available for surgical procedures; see also "Preparing the treatment center for sterile operation" [🗎 91].

### 5.2.8 Thermally disinfect the instrument holder of the assistant element

The instrument holders can be removed for easier cleaning or thermal disinfection.

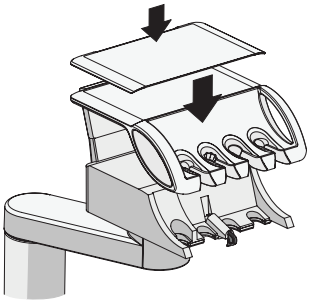
**Removing the instrument holder**




1. Remove all instruments from the instrument holder.
2. Pull the latch **(A)** underneath the assistant element.
   ↳ The latch of the instrument holder is released.
3. Remove the instrument holder.

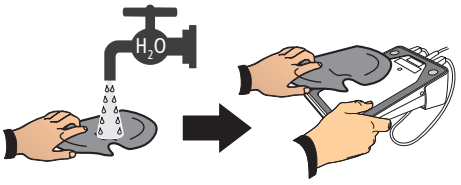
The removable silicone mat on the assistant element can be sterilized.

**Inserting the instrument holder**



➢ First insert the instrument holder in the groove underneath the user interface. Then push the holder forward and downward until it locks in place.
   ↳ The instrument holder is locked into the dentist element.

### 5.2.9 Clean the foot control




Cleaning the foot control regularly improves its stability.

➢ Clean the bottom plate of the foot control with a moist cloth (water).

## 5.3 Instruments and instrument hoses

### 5.3.1 Rinsing water lines

Microorganisms can grow in the water lines of the treatment center. Use a large amount of water for rinsing the lines prior to starting patient appointments.

➢ Activate the cuspidor flushing of the cuspidor bowl for at least one minute.

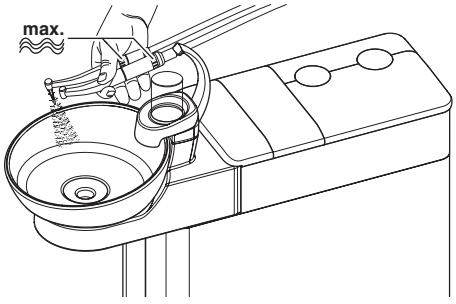
## 5.3.2 Purge water lines (purge function)

To reduce the amount of germs, the water lines of the water carrying instruments of the dentist element and the SPRAYVIT multifunctional syringe of the assistant element are purged with water.

For the purge function, individual instruments are removed from their holders and held over the cuspidor bowl for purging. The water lines of all removed instruments are then purged simultaneously.

It is also possible to purge the water lines automatically, see "Purging the water lines automatically (autopurge function)" [🗎 144].

### Preparation




The following preparations should be made before you begin to purge the water lines.

1. Set all of the instruments to be purged to their maximum water flow rate.
2. Place all instruments in their instrument holders.

### Opening the Purge screen

✓ The *Start program* is displayed on the touchscreen.

1. Touch the *Sub-screen* key.

   ↳ The *Sub-screen* is displayed.


2. Touch the *Purge function* key.

   ↳ The *Purge* screen is displayed on the touchscreen.

**Setting the purge time and starting the purge function**

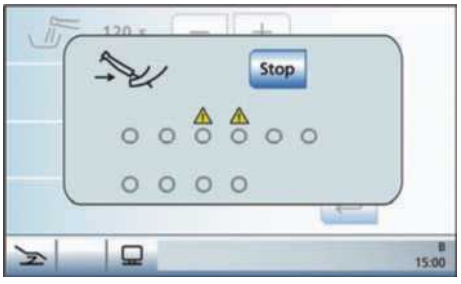
The purge time of the removed instruments can be set between 20 and 120 seconds.

✓ The *Purge* screen is displayed on the touchscreen.

**1.** Use the – and + keys to set the purge time.

**2.** Touch the *Start* key.

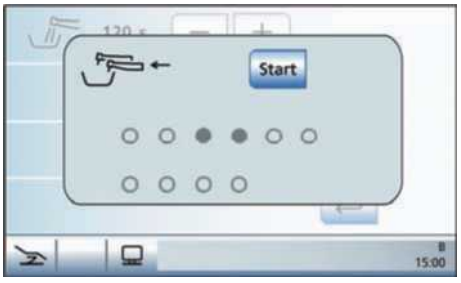

**Error message: Deposit instruments in instrument holders**




If the *Deposit instruments* display appears after the purge function has been started, the treatment center has detected that not all of the instruments have been placed in their holders.

➢ Check the seating of the instruments in the holders marked with a warning triangle on the touchscreen.

↳ When all of the instruments have been deposited, the purge program continues.



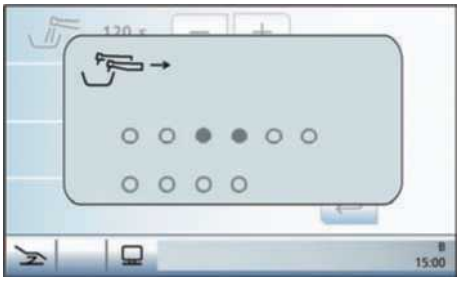

✓ The *Remove instruments* display appears on the touchscreen.

**1.** Remove the instruments to be purged from the holder.

↳ If an instrument has been removed, this is displayed by a solid gray circle on the touchscreen.


**2.** Hold the instruments over the cuspidor bowl and press the *Start* key on the dentist element. The valve body must be removed from the SPRAYVIT first.

↳ The removed instruments are purged with water for the duration of the set purge time. The elapsed purge time is displayed by a progress bar on the touchscreen.
When the purge time has elapsed, the *Set instrument down* display appears.


**3.** Place the removed instruments back in their holders. All instruments not deposited are marked with a warning triangle on the touchscreen.

↳ When all of the instruments have been deposited, the *Deposit instruments* display disappears.

↳ The water line purging procedure is finished. The treatment center is again ready for operation.


**Canceling the purge function**

In case of an error message, deposit the instruments in their holders or, during purging, the purge function can be canceled.

➢ Touch the *Stop* key on the touchscreen.

## 5.3.3 Automatically purge water lines (autopurge function)

The autopurge function enables automatic purging of all water carrying instruments in the dentist element, of the SPRAYVIT multifunctional syringe in the dentist and assistant elements and of the tumbler filling unit.

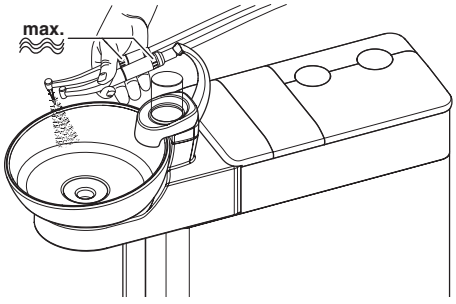
All of the instruments inserted in the sanitation bowl will be purged when the autopurge function is activated. If the instruments remain in the sanitation bowl after the treatment center is switched off, the purging process will automatically be started again the next time the treatment center is switched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

Execute the autopurge function:

- before starting work
- at the end of the work day

It is also possible to purge individual instruments; see "Purging water lines (purge function)" [🗎 142].

**Preparation**




The following preparations must be made before you start purging the water lines.

1. Set all burr drives and the SIROSONIC TL scaler to the maximum water flow rate.
2. Place all instruments in their instrument holders.

**Opening the Autopurge screen**

✓ The *Start program* is displayed on the touchscreen.

1. Touch the *Sub-screen* key.


↳ The sub-screen is displayed.



2. Touch the *Autopurge function* key.

   ↳ The *Autopurge* screen is displayed on the touchscreen.

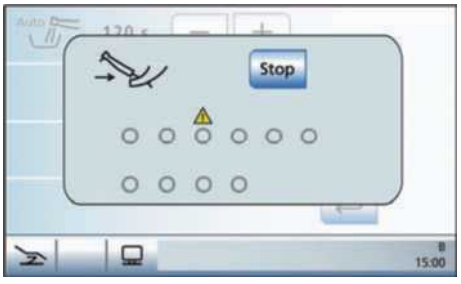
**Setting the purge time and starting the autopurge function**

The purge time of the instruments may be set between 60 and 180 seconds.

✓ The *Autopurge* screen is displayed on the touchscreen.

1. Use the – and + keys to set the purge time.
2. Touch the *Start* key.


**Error message: Deposit instruments in instrument holders**



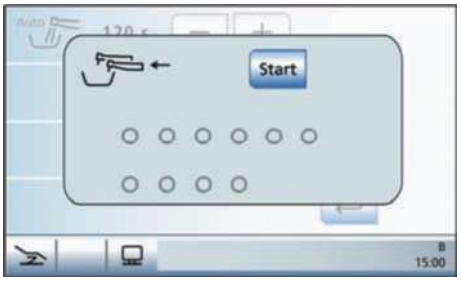

If the *Deposit instruments* display appears after the autopurge function has been started, the treatment center has detected that not all of the instruments have been placed in their holders.

➢ Check the seating of the instruments in the holders marked with a warning triangle on the touchscreen.

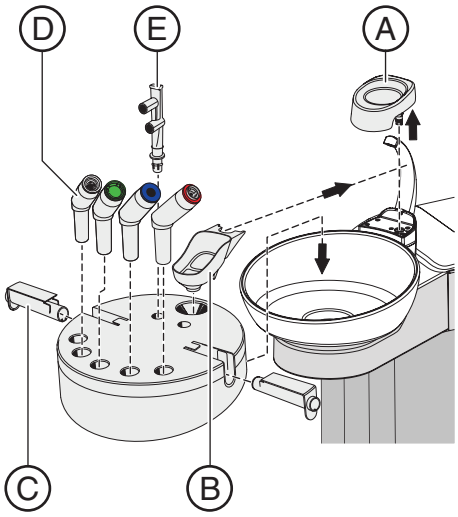
↳ When all of the instruments have been deposited, the autopurge program continues.

**Insert instruments in sanitation bowl**

All water carrying instruments and the spray aspirator are inserted in the sanitation bowl with various adapters. The water flowing over the instruments is removed from the sanitation bowl by the spray aspirator.




✓ The *Insert instruments in sanitation bowl* display appears on the touchscreen.




1. Pull the tumbler holder **(A)** off of the water unit.
2. Place the sanitation bowl with cover onto the cuspidor bowl. Make sure that the sanitation bowl is not contaminated.
3. Plug the water guide **(B)** of the tumbler filler onto the cover of the sanitation bowl.
4. Insert the adapter for the SPRAYVIT valve body **(C)**, the instrument couplings **(D)** and the suction hose adapter **(E)** in the sanitation bowl as far as they will go.

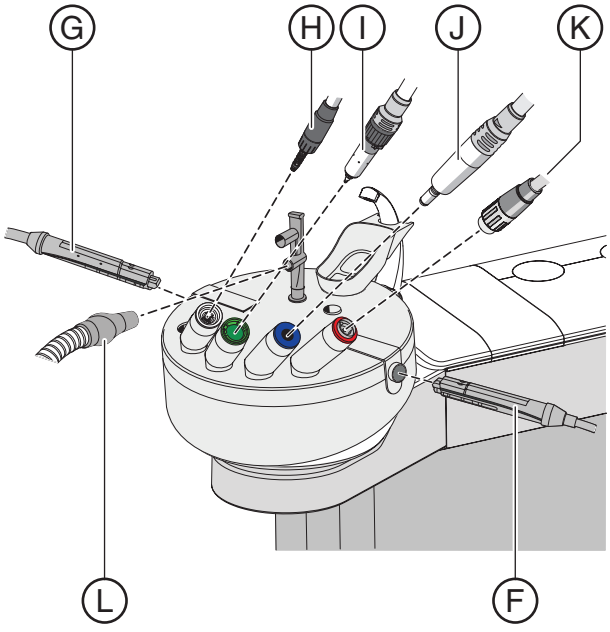
**NOTE: Arrangement of adapters**

The adapters for the instrument couplings are color coded:

white = turbine
green = SL and BL motors
blue = BL ISO motor (ISO 3964 interface)
red = SIROSONIC TL scaler

To prevent the hoses from twisting and stretching, the arrangement of the adapters from left to right must correspond to the arrangement of the instruments on the dentist element.

5. Remove the SPRAYVIT sleeves from the valve bodies, the straight and contra-angle handpieces from the water carrying instruments, and the suction cannula from the spray aspirator.




6. Insert the SPRAYVIT valve body of the dentist element **(F)** in the right adapter and the SPRAYVIT valve body of the assistant element **(G)** in the left adapter as far as they will go (with valve lever pointing up and locking button pointing down).

7. Insert the couplings of the treatment instruments as far as they will go or until they snap into the adapter.
   - white = turbine **H**
   - green = SL or BL motor **I**
   - blue = BL ISO motor **J**
   - red = ultrasonic hose **K**

**NOTE: Pinching of the instrument hoses**
Be careful not to pinch the instrument hoses when inserting the instruments. If the hoses are pinched, the water flow will be obstructed during purging.

8. Attach the suction hose **(L)** laterally to the suction hose adapter **(E)**.

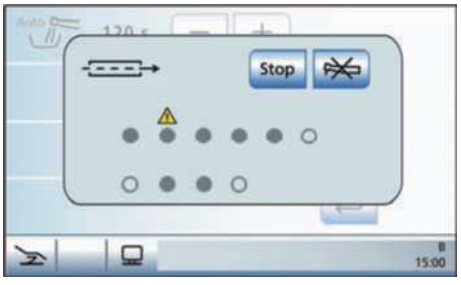
   ↳ The sanitation bowl is completely fitted.


9. Touch the *Start* key on the touchscreen.

   ↳ First the treatment center checks whether there is water flow through the instruments. This takes several minutes.

**Error message: No water flow**

If the treatment center detects no water flow through an instrument, you can try to restore water flow through the relevant instrument. If this is not possible, the instrument concerned can be excluded from the purging process.




1. Check the water flow through the instruments in the holders marked with a warning triangle on the touchscreen. Set to maximum water flow on the instruments. Leave all instruments plugged into their adapters.

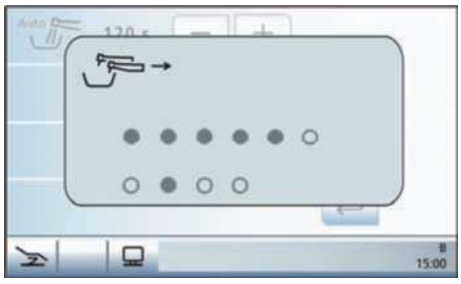
   ↳ If the treatment center detects the water flow, the warning triangle will disappear. If water flow is detected for all instruments, the autopurge program automatically continues.

2. If you want to exclude the instruments concerned from purging, touch the *Exclude instrument* key.

   ↳ The autopurge program continues. The water lines you excluded are not included in the purging process.

**Purge water paths**

The removed instruments are purged with water for the duration of the set autopurge time. The elapsed purge time is displayed by a progress bar on the touchscreen.

When the purge time has elapsed, the *Set instrument down* display appears.

You now can now continue in one of two ways:

- **Leave the instruments in the sanitation bowl**

  The Autopurge function remains activated.

  The instruments remain in the sanitation bowl and the treatment center can be switched off. On the next day, the autopurge 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.

  If the treatment center is out of operation over a prolonged period of time, you can briefly switch it on every day and then switch it off again when the purging process is finished. This ensures that number of microorganisms in the water lines will not increase excessively.

- **Deposit instruments in instrument holders**

  The autopurge function is completed.

➢ Remove the instruments from the sanitation bowl and place them back in their holders. All instruments not deposited are marked with a warning triangle on the touchscreen.

↳ When all of the instruments have been deposited, the *Deposit instruments* display disappears.

↳ The water line purging procedure is finished. The treatment center is again ready for operation and can be prepared for the practice day.

**Canceling the autopurge function**


If the error message *Deposit instruments in instrument holders* appears at the end of the flow rate check or during purging, the autopurge function can be canceled.

➢ Touch the *Stop* key on the touchscreen.

## 5.3.4 Care for, disinfect and sterilize the treatment instruments

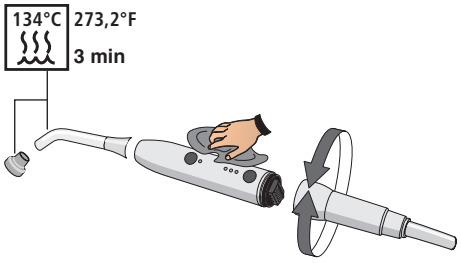
### 5.3.4.1 Treatment instruments

The procedures required for the following treatment instruments are described in the separate pertaining operating instructions:

- SL motor
- BL motor
- BL ISO motor
- BL Implant motor
- Straight and contra-angle handpieces in various versions
- Turbines
- SPRAYVIT L multifunctional syringe
- SIROSONIC TL scaler
- SIROTOM HF electrosurgical handpiece

### 5.3.4.2 Disinfecting/sterilizing the Mini L.E.D. curing light

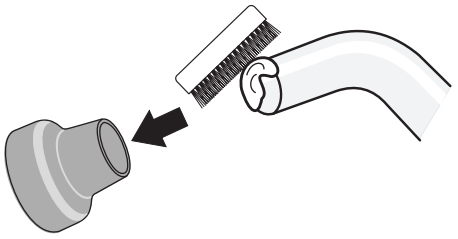
**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).



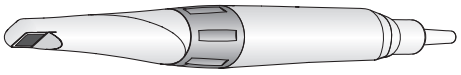

1. Remove the connecting cable of the Mini L.E.D. by rotating the handpiece.
2. Pull out the light guide and remove the glare shield.
3. Sterilize the light guide and the glare shield at 135° C, 2 bar for 3 min.
4. Disinfect the handpiece of the Mini L.E.D.
5. Screw the sterilized light guide and glare shield back onto the Mini L.E.D.
6. Reconnect the handpiece of the Mini L.E.D. to the connecting cable.

The following points should also be observed when operating the Mini L.E.D.:

- Always use the glare shield to protect your eyes.
- Check the light guide after each use. Make sure that the light guide is in perfect condition.
- No composite material residues may be present on the light guide. Immediately remove any residue.
- If you find any damage, replace the light guide, since damage will impair its performance considerably.



### 5.3.4.3 Cleaning/disinfecting the SiroCam intraoral digital camera



Due to its shape, the SiroCam digital intraoral camera takes hygienic requirements into account and therefore has no spots that are difficult to reach. It can be wiped with surface disinfectants.

**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).

**CAUTION: The lens window is sensitive to scratches.**
Deep scratches in the lens window impair image quality.

➢ Protect the lens window against scratching. Disinfect it with a soft, lint-free cloth.

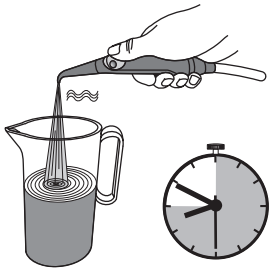
For intraoral use of the camera, hygienic protective covers should be used, see "Use of hygienic protective covers".

### 5.3.4.4 Check the flow rate on the SPRAYVIT L multifunctional syringe

If the flow rate is less than 135 ml/min with the water button fully actuated, there is a risk of excessively hot water being emitted.

**⚠WARNING: If the flow rate is insufficient, hot water may be emitted by the SPRAYVIT.**
The patient could thus be scalded.

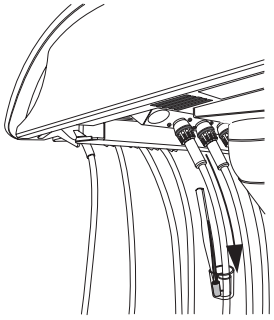
- ➢ Check the water flow rate prior to use.
- ➢ Clean the nozzle according to the SPRAYVIT Operating Instructions or have the treatment center checked by a service engineer.




Perform the following measurement to exclude a patient risk.

- ➢ Fill a measuring cup up to the 100 ml mark with the water button fully actuated while measuring the required filling time.
  - ↳ The filling time must not exceed 45 seconds.

### 5.3.5 Changing the cotton wool roll on the turbine hose

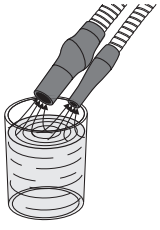


Return air containing a small amount of turbine oil is emitted at the unit end of the turbine hose. This oil is absorbed by the cotton wool roll in the transparent collecting cup.

1. Push the cup down and remove the cotton wool roll.
2. Insert a new cotton wool roll.
3. Push the cup up again.

## 5.4 Vacuum system

### 5.4.1 Purge the vacuum system.



To ensure that the vacuum system is always ready for use, you must aspirate a large glass of clear, cold water through the suction hoses used after each patient, especially after each intervention during which the patient loses blood.

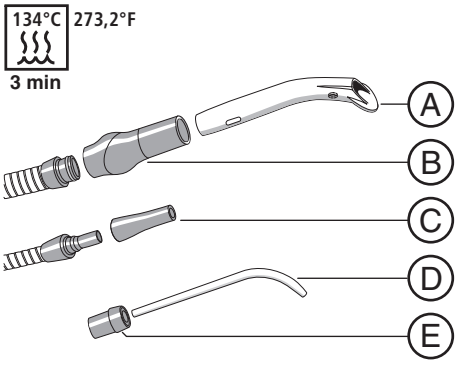
During prolonged treatments, you must aspirate a glass of water at least every 60 minutes.

### 5.4.2 Sterilize and disinfect the suction handpieces

**Sterilization/disinfection**

All parts of suction handpieces can be sterilized and thermally disinfected.

**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).



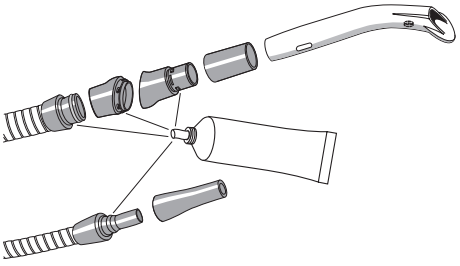

| | |
|---|---|
| A | Suction cannula |
| B | Suction handpiece |
| C | Handpiece of saliva ejector |
| D | Surgical suction cannula |
| E | Intermediate piece |

**Greasing suction handpieces**

The disconnection points of the suction handpieces should be greased following each thermal disinfection or sterilization process and once a week.

**WARNING: Unsuitable greases**
Greases that are not food safe may endanger the patient's health Rubber materials such as e.g. O-rings are corroded by unsuitable greases.

- ➢ Do not under any circumstances use vaseline or silicone greases.
- ➢ Use only greases approved by Sirona.



1. Pull the handpiece of the spray aspirator, the saliva ejector and, if installed, the surgical suction device off of their suction hoses.
2. Take apart the handpiece of the spray aspirator at its joints.
3. Regrease the disconnection points and O-rings of the handpieces.

### 5.4.3 Cleaning and disinfecting the vacuum system

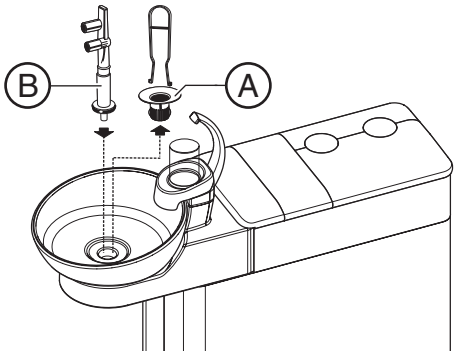
The vacuum system is subjected to septic secretions, saliva and blood daily. Disinfection at regular intervals is therefore absolutely mandatory for hygienic reasons.

**CAUTION: Approved care and cleaning agents**
Use only care and cleaning agents which have been approved by Sirona (see "Care and cleaning agents" [🗎 135]).

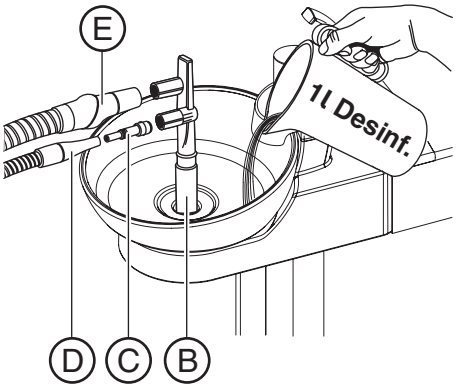
**CAUTION: Domestic cleaning agents foam up.**
Foaming cleaning agents often cause foam and water to be sucked into the dry suction system. This can cause damage to the suction machine.

➢ Use only care and cleaning agents which have been approved by Sirona, see "Care and cleaning agents" [🗎 135].

**Preparation for cleaning**




1. Prepare 1 liter of cleaning and disinfectant solution in a separate container according to the manufacturer's instructions and mix it thoroughly.
2. Remove the gold trap **(A)**.
3. Clean the cuspidor bowl.
4. Insert the cleaning adapter **(B)** as far as it will go.

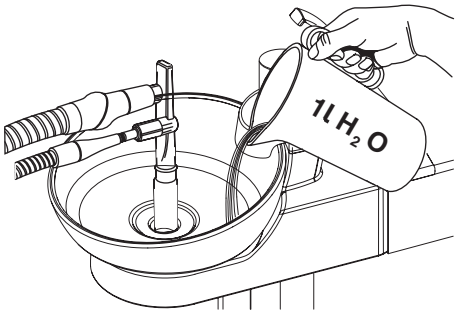



5. Plug the saliva ejector hose **(D)** onto the adapter **(C)** and insert the adapter in the cleaning adapter **(B)**.

**Cleaning procedure**

1. Pour 1 liter of cleaning and disinfectant solution into the cuspidor bowl.
2. Remove suction hoses **D** and **E** from their holders and attach them to the side of the cleaning adapter **(B)** as simultaneously as possible.

   ↳ The cleaning and disinfectant solution is aspirated.
3. Wait for a while to let the cleaning and disinfectant solution react. Observe the reaction time specified for the cleaning and disinfectant solution by the manufacturer.




**Rinsing out the cleaning agent and disinfectant**

1. Following the cleaning process, pour at least 1 liter of water into the cuspidor bowl.

   ↳ The water is aspirated, thus preventing any disinfectant residues from remaining in the suction hoses.
2. When the aspiration process has been completed, pull off the hoses. Place the suction hoses in their holders.
3. Remove the cleaning adapter **(B)** and insert the gold trap **(A)**.

If the treatment center is equipped with a third suction hose, repeat the above procedure.

If the water unit is equipped with a wet suction device, the filter insert of the wet suction device should be cleaned once a month after disinfecting the vacuum system; see "Cleaning the filter insert of the wet suction device".

### 5.4.4 Cleaning and disinfecting the suction hoses

The hoses of the spray aspirator, the saliva ejector and the surgical suction device as well as the connection hose to the water unit can be pulled off for rinsing under running water.

Filter inserts are inserted between the suction hoses and the assistant element to filter out solid particles. Depending on the treatment involved, it may also periodically be necessary to remove the trapped solid particles (e.g. amalgam) from the collector due to a decrease in the suction power.

**CAUTION: Amalgam residues must not enter the public sewage system.**
Amalgam is a mercury compound that is hazardous to water.

- ➢ Do not dispose of amalgam residues in a sink.
- ➢ Collect amalgam residues e.g. in a closed container with water. Dispose of amalgam residues, e.g. when replacing the amalgam rotor by filling the amalgam residues into the amalgam rotor or when emptying the sediment container.

The outside of the suction hoses can be disinfected by spraying or wiping.

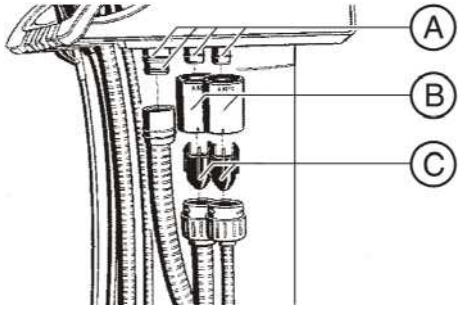
**NOTE: Powdering suction hoses with talcum**
If the surfaces of the hoses have become sticky from disinfectants, clean them with a commercially available dishwashing liquid and then powder them with a light coat of talcum if necessary.

Thermodisinfectable hoses are available as special equipment; see Thermodisinfection of suction hoses [🗎 154].

**NOTE:**
Wear gloves when performing the following work.

If the treatment center is equipped with a third suction hose, the following instructions must be performed analogously.

1. Switch the treatment center off at the main switch.



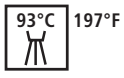

2. Pull the filter housings **(B)** off of the connectors on the assistant element.
3. Disconnect the suction hoses from the filter housings **(B)**.

4. Take the collectors **(C)** out of the suction hoses. Collect the amalgam residues in a glass filled with water.
5. Take off the suction cannulae and rinse out the suction hoses with clean water.

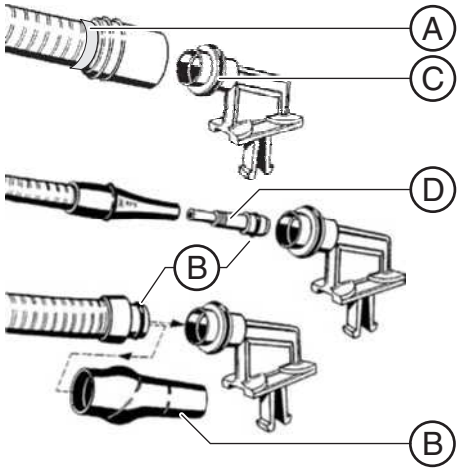
If the treatment center is equipped with thermodisinfectable suction hoses, thermal disinfection can be performed after cleaning, see "Thermodisinfecting the suction hoses" [🗎 154].

Assembly is performed in reverse order. Grease the O-rings **(A)** before reconnecting the suction hoses. For grease, see "Care and cleaning agents". Make sure that the suction hoses snap into place.

### 5.4.5 Thermodisinfecting suction hoses



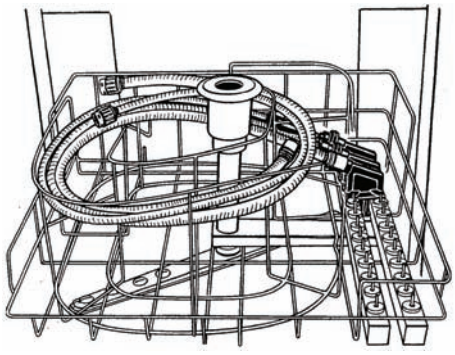

The hoses the treatment center is equipped with as a standard feature cannot be thermally disinfected. Thermally disinfectable suction hoses are available as special accessories. They are marked with a turquoise ring, see item **A** in the drawing below.




Before thermally disinfecting the suction hoses, you must remove them from the assistant element and clean the filter inserts; see "Cleaning the suction hoses" [🗎 153].

✓ The suction hoses are removed and cleaned.

1. Pull the handpiece **(B)** off of the spray aspirator hose.
2. Grease the O-rings **(C)**. For greases, see "Care and cleaning agents" [🗎 135].
3. Plug the ends of the handpiece suction hoses onto the hose holders. Use the adapter **(D)** for the saliva ejector hose.



4. Plug the hose holders onto the rails in the (Miele) thermodisinfector and place the suction hoses on the wire basket provided for that purpose.
5. Thermally disinfect the suction hoses, filter housings and collectors at max. 93° C.

To reorder the hose holders for the Miele thermodisinfector, see "Spare parts and consumables" [🗎 174].

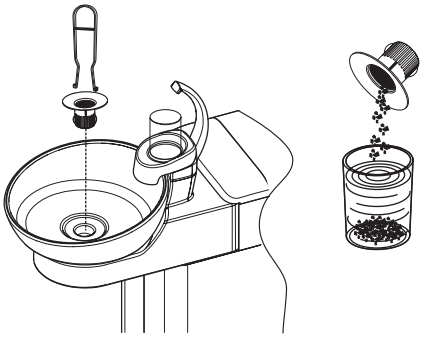
## 5.5 Components of the water unit

### 5.5.1 Clean the gold trap

The gold trap retains larger solid particles to prevent them from being washed down the drain in the cuspidor bowl. In this way, the amalgam rotor must be replaced and the sediment container must be emptied less often.

**⚠CAUTION: Amalgam residues must not enter the public sewage system.**
Amalgam is a mercury compound that is hazardous to water.

- ➢ Do not dispose of amalgam residues in a sink.
- ➢ Collect amalgam residues e.g. in a closed container with water. Dispose of amalgam residues, e.g. when replacing the amalgam rotor by filling the amalgam residues into the amalgam rotor or when emptying the sediment container.



1. Remove the gold trap from the drain of the cuspidor bowl.
2. Remove the amalgam residues from the gold trap. Amalgam residues must be disposed of separately.
3. Clean the gold trap.
4. Reinsert the gold trap.

### 5.5.2 Clean and disinfect the cuspidor bowl

The cuspidor bowl, the tumbler holder **(A)** and the tumbler outlet **(B)** can be sprayed and wiped with surface disinfectants.

Clean and disinfect the cuspidor bowl with a special cleaning agent. This agent will also care for the drain lines of the cuspidor bowl.

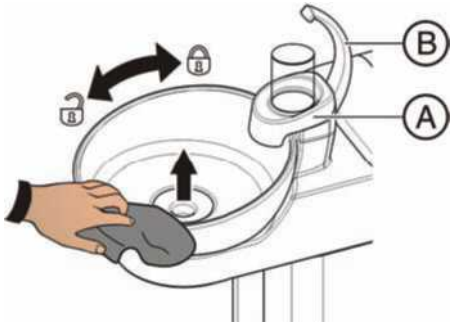
**CAUTION: Domestic cleaning agents foam up.**
Foaming cleaning agents often cause foam and water to be sucked into the dry suction system. This can cause damage to the suction machine.

➢ Use only care and cleaning agents which have been approved by Sirona, see "Care and cleaning agents" [🗎 135].

The cuspidor bowl is attached to the water unit via a bayonet catch and can be removed for thorough cleaning. The tumbler holder **(A)** can be left attached when doing this.

**CAUTION: If the treatment center is switched on, the flushing and tumbler filling functions can be activated even with the cuspidor bowl removed.**
In this case, water would run onto the floor and could enter the treatment center.

➢ Switch the treatment center off at the main switch before removing the cuspidor bowl.




1. Remove the gold trap.
2. Hold the cuspidor bowl firmly with both hands. Loosen the bayonet catch by twisting the cuspidor bowl counterclockwise.

A rubber gasket is attached to the bayonet catch of the water unit to seal its closure. Grease this gasket before reinserting the cuspidor bowl. For greases, see "Care and cleaning agents" [🗎 151].

Make sure that the bayonet catch snaps into place when you reinsert it.

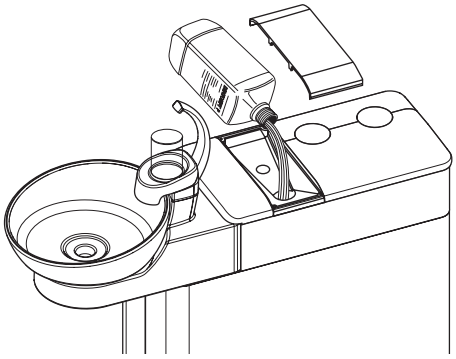
### 5.5.3 Adding disinfectant for water

The water unit is equipped with a disinfection system. It adds a disinfectant to the water the patient comes in contact with. This reduces the amount of microorganisms in the water lines.

**WARNING: Microorganisms can multiply in the water.**
These microorganisms could increase the risk of damage to one's health.

➢ Never operate the treatment center without disinfectants.


When the supply of disinfectant in the reservoir begins to run short, the *Desinf* display appears in the footer of the touchscreen.



1. Open the maintenance cover for disinfectant.
2. Add 1 liter of disinfectant.

   ↳ The *Desinf* display switches off.

To reorder disinfectant for the water lines, see "Spare parts and consumables" [🗎 174].

**⚠CAUTION: Approved care and cleaning agents**
Use only disinfectants which have been approved for water lines by Sirona for the disinfection system; see "Care and cleaning agents" [🗎 135]!

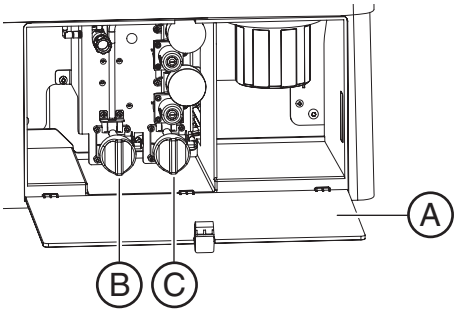
## 5.5.4 Change the water and air filters

If you notice any changes in media flows, check the water and air filters for permeability. The filters must be changed if necessary.

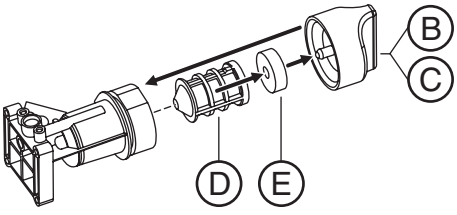
To reorder the filters, see "Spare parts and consumables" [🗎 174].

1. Switch the treatment center off at the main switch.

   ↳ The water and air supply are switched off.




2. Open the maintenance flap **(A)**.
3. Any remaining water flows out of the water filter when it is opened. You should therefore place an absorbent cloth underneath the filter. Then unscrew and remove the screw-on cap of the water filter **(B)** and/or the air filter **(C)**.
4. Check the filters and replace them if necessary.




5. Reinsert the rubber ring **(E)** in the screw-on cap **(B)**, **(C)**. Then plug on the filter **(D)** as shown in the drawing.

   ↳ The filter **(D)** engages in the screw-on cap **(B)**, **(C)**.
6. Screw the screw-on cap(s) **B**, **C** back into the water unit tight.

## 5.5.5 Changing the amalgam rotor

Amalgam residues and other solid particles are trapped in the amalgam rotor according to the centrifugal principle.


When the *Amalg* display appears in the footer of the touchscreen, the amalgam rotor is almost full and must be replaced as soon as possible. An acoustic signal sounds when the rotor is completely filled. In this case, a safety shutoff function ensures that the rotor is exchanged before the treatment center can be used again.

Regardless of whether or not the *Amalg* display lights up, the amalgam rotor must be replaced **at least once a year**.

**CAUTION: Amalgam residues must not enter the public sewage system.**
Amalgam is a mercury compound that is hazardous to water.

- Do not dispose of amalgam residues in a sink.
- Collect amalgam residues, e.g. from the gold trap of the cuspidor bowl, in a closed container with water. Dispose of amalgam residues when replacing the amalgam rotor by filling the amalgam residues into the amalgam rotor.

**NOTE: Disposal of the amalgam rotor**
When a replacement rotor is supplied, a package for the return shipment of the filled amalgam rotor is attached.
Authorize only certified waste management companies to dispose of rotors.

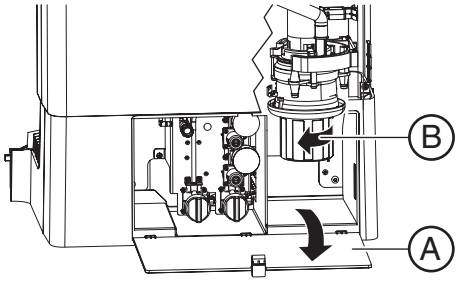
**NOTE:**
Wear gloves when performing the following work.

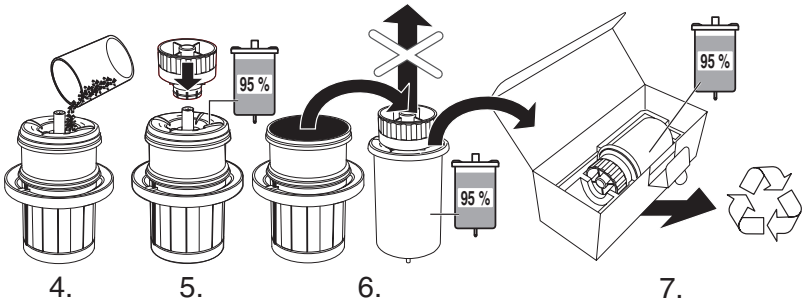
**Removal and disposal of the amalgam rotor**

✓ The treatment center is switched on.

1. Disinfect the vacuum system, see "Cleaning and disinfecting the vacuum system" [🗎 151].
2. Open the flap **(A)** on the base of the water unit.
3. Loosen the bayonet catch by turning the lower part of the amalgam separator **(B)** counterclockwise. Remove the lower part of the amalgam separator along with the amalgam rotor located inside it.

   ↳ The message "Amalg" appears on the touchscreen and an acoustic signal sounds.



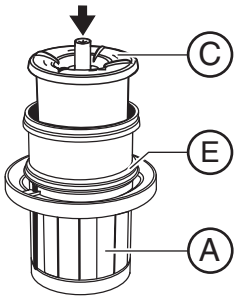




4. Dispose of the collected amalgam residues from the cuspidor bowl and from the suction hoses in the amalgam rotor; see "Cleaning the gold trap" [🗎 155] and "Cleaning and disinfecting the suction hoses" [**2** 153]. Fill the amalgam residues into the amalgam rotor.
5. Hold the lower part of the amalgam separator upright. Attach the transport cap to the amalgam rotor.

   ↳ The transport cap locks in place. A bonding agent is released on attachment. Therefore, please note that the transport cap cannot be removed again once it has been closed.

6. Remove the amalgam rotor with the transport cap from the lower part of the amalgam separator.
7. Place the container in the special packaging and ship it for disposal or authorize a certified waste management company.

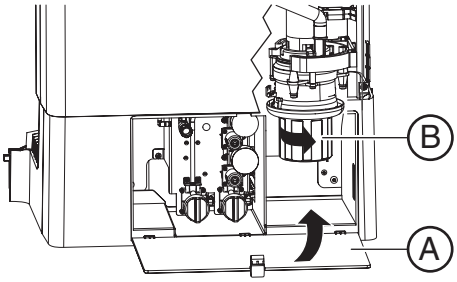
**Installing the amalgam rotor**




Use only original Sirona accessories. Never use a used or recycled amalgam rotor.

To reorder the amalgam rotor, see "Spare parts and consumables" [🗎 174].

1. Grease the O-ring **(E)** on the lower part of the amalgam separator. For greases, see "Care and cleaning agents" [🗎 135].
2. Insert the new amalgam rotor **(C)** in the lower part of the amalgam separator **(B)**.




3. Hold the lower part of the amalgam separator **(B)** so that the latching noses of the bayonet catch are positioned transverse to the water unit. Screw the lower part of the amalgam separator **(B)** onto its upper part by rotating it clockwise.

**NOTE: Amalgam separator message**
If the message *Amalg* is still displayed on the touchscreen and the acoustic signal persists after the amalgam rotor has been inserted, the lower part of the amalgam separator is not properly locked.

4. Close the flap **(A)**.
5. In Germany: Document replacement of the amalgam rotor in the "Amalgam separator operator's log" (D3521).
   Worldwide: Perform documentation according to the relevant national regulations.

**Amalgam separator operator's log**

In Germany, users are obligated by law to keep a system log for the amalgam separator. This log is included with the treatment center. Please note the user duties as described in the operations log:

- Document the replacement of the amalgam rotor
- Check the function of the amalgam separator system annually
- Arrange for a 5-year inspection

## 5.5.6 Emptying the sediment container

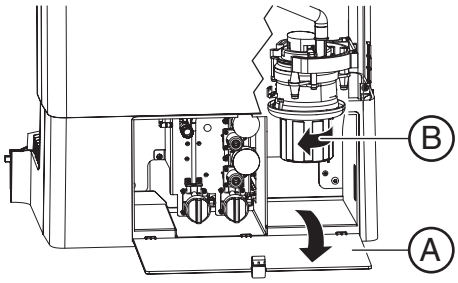
In addition to other solid particles, a large portion of the amalgam residues are trapped in the sediment container by gravitational force.

Empty the sediment container in cycles that are appropriate for your work method, but at least every 4 weeks.

The sediment container is installed only if neither an amalgam separator nor a wet suction device is installed.

**NOTE:**
Wear gloves when performing the following work.

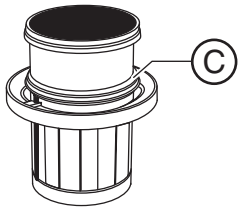
**Removing and emptying the sediment container**



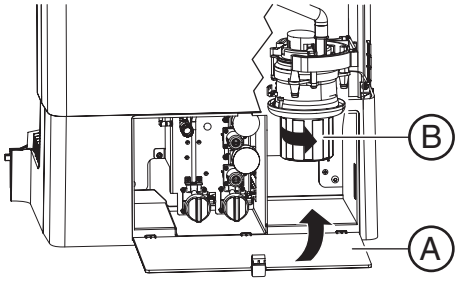

1. Disinfect the vacuum system, see "Cleaning and disinfecting the vacuum system" [🗎 151].
2. Open the flap **(A)** on the base of the water unit.
3. Loosen the bayonet catch by turning the sediment container **(B)** counterclockwise.

4. Pour the excess water out of the sediment container and collect the amalgam residues. Dispose of these properly together with the amalgam residues collected from the cuspidor bowl and from the suction hoses; see "Cleaning the gold trap" [🗎 155] and "Cleaning and disinfecting the suction hoses" [**2** 153]. Authorize a certified waste management company for this purpose.

**Installing the sediment container**




1. Grease the O-ring **(C)** on the sediment container. For greases, see "Care and cleaning agents" [🗎 135].




2. Hold the sediment container **(B)** so that the latching noses of the bayonet catch are positioned transverse to the water unit. Rotate the sediment container **(B)** clockwise.

   ↳ The sediment container is locked in place.
3. Close the flap **(A)**.

## 5.5.7 Cleaning the filter insert of the wet suction device

The automatic separator and amalgam separator or sediment container are not installed in the water unit for wet suction. The separation of air and water and amalgam separation are performed centrally in this case.

In order to ensure that larger solid particles nevertheless cannot enter the separating unit, the vacuum line in the water unit is equipped with a filter. The filter insert must be cleaned when the suction power decreases.

As long as the treatment center is switched on, water mains in the vacuum line for technical reasons. Therefore, in order to clean the filter insert this water must be completely extracted beforehand. Otherwise the remaining water will flow out when the filter housing is opened. When the treatment center is switched off at its main switch, the remaining water is automatically extracted.

**NOTE:**
Wear gloves when performing the following work.

### Disinfect the vacuum system

The vacuum system should be disinfected before cleaning the filter insert of the wet suction device; see "Cleaning and disinfecting the vacuum system" [151].

### Opening the sub-screen

✓ The *Start program* is displayed on the touchscreen.

➢ Touch the *Sub-screen* key.

↳ The *Start* sub-screen is displayed.


### Extracting residual water

➢ Touch the *Extract residual water* key.

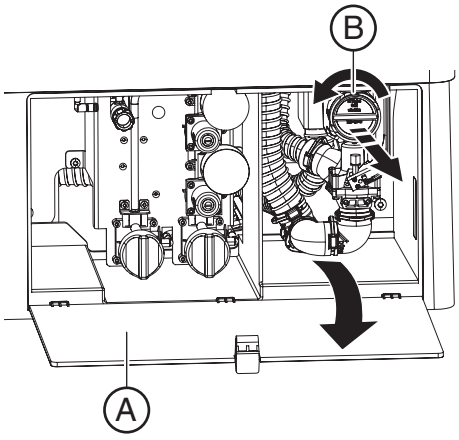
↳ As long as the key is flashing orange, water is being extracted from the water unit. A slurping noise indicates that the water unit is completely empty. When the key turns gray the extraction process is finished.

### Removing and cleaning the filter insert

**CAUTION: The flushing and tumbler filling functions can be activated when the filter housing is open.**
Water then escapes from the open filter housing.

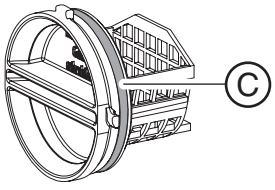
➢ Do not switch the flushing and tumbler filling functions on whenever the filter housing is open.

✓ Water completely extracted from the water unit.

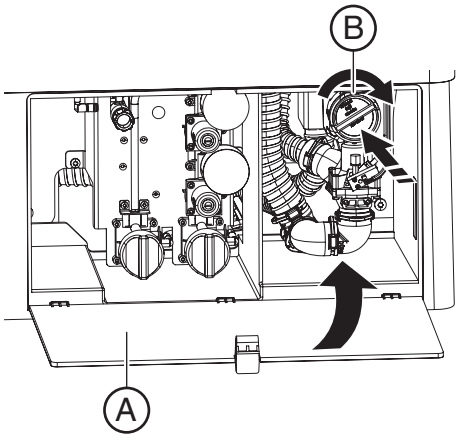



1. Open the flap **(A)** on the base of the water unit.
2. Loosen the bayonet catch of the filter insert **(B)**. Unscrew the filter insert from the filter housing of the wet suction device counterclockwise.

3. Properly dispose of the amalgam residues together with the amalgam residues collected from the cuspidor bowl and from the suction hoses. Then clean the filter insert under running water in a sink (not in the cuspidor bowl!).




4. Grease the O-ring **(C)** of the filter insert. For greases, see "Care and cleaning agents" [🗎 135].




5. Reinsert the filter insert in the filter housing. Rotate the filter insert **(B)** clockwise.
6. Close the flap **(A)**.

   ↳ The treatment center is again ready for operation.

## 5.6 Sanitize the treatment center

Sanitation effectively combats the reproduction of microorganisms in the water lines.

Sanitation must be performed:


- regularly every 4 weeks when the display *days until next sanitation* has elapsed (1d = days to next sanitation)
- after longer periods of disuse (> one week)
- if the germination index exceeds 100 germs per milliliter "Microbiological water test" [🗎 135].

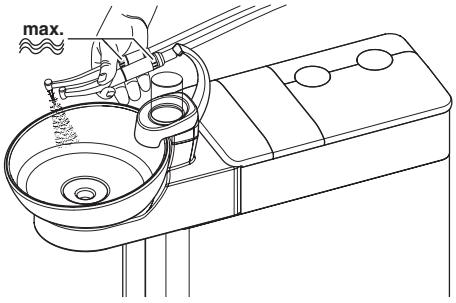
Sanitation comprises several phases and takes at least 24 hours.

**CAUTION: Additional devices connected to the external device connection must not be sanitized with the treatment center.**
Additional devices can be damaged. Disinfectant residues can remain in the additional devices.

➢ Disconnect any additional devices from the treatment center prior to sanitation.

### Preparation

The following preparations should be made prior to beginning sanitation.




1. Set all burr drives and the SIROSONIC TL scaler to the maximum water flow rate.
2. Place all instruments and suction hoses in the instrument holders.

### Opening the sanitation screen via touchscreen

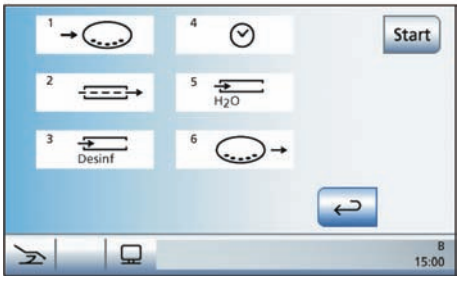
✓ The *Start program* is displayed on the touchscreen.

1. Touch the *Sub-screen* key.

↳ The *Start* sub-screen is displayed.


2. Touch the *San* key.


↳ The *Sanitation* screen is displayed on the touchscreen.




Symbols 1 to 6 stand for the individual sanitation phases as described in the following. The current sanitation phase is highlighted by an orange rectangle.

### Symbol legend

The status of the individual instruments is represented by symbols on the touchscreen as operational help and for support in case of an error. These symbols have the following meaning:

- Empty gray circle
  Instrument cannot be sanitized
- Solid gray circle
  Instrument not yet sanitized
- Solid orange circle
  Instrument sanitized
- Crossed-out solid gray circle
  Instrument excluded from sanitation (after failing flow rate check)
- Warning triangle
  Check instrument

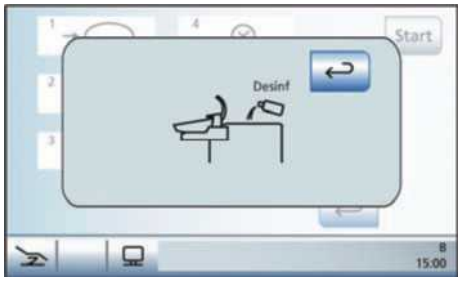
The top row of symbols indicates the instrument positions in the dentist element, while the bottom row indicates the instrument positions in the assistant element.

### Starting sanitation


➢ Touch the *Start* key.

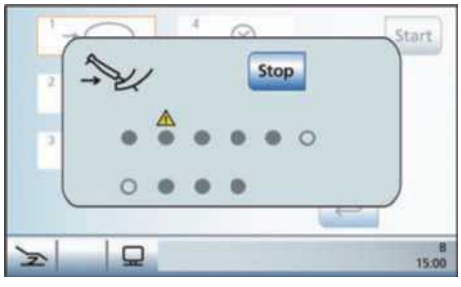
↳ The sanitation process starts.

### Error message: Refilling disinfectant




If the *Desinf* display appears after the sanitation process is started, the supply of disinfectant in the reservoir of the water unit is not sufficient to sanitize the treatment center. Sanitation cannot be started with insufficient disinfectant; see "Refilling disinfectant" [🗎 156].

### Error message: Deposit instruments in instrument holders



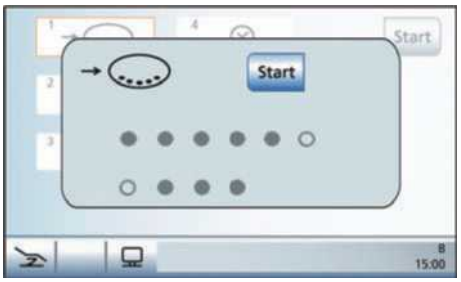

If the *Deposit instruments* display appears after sanitation has been started, the treatment center has detected that not all of the instruments have been placed in their holders.

➢ Check the seating of the instruments in the holders marked with a warning triangle on the touchscreen.

↳ When all of the instruments have been deposited, sanitation phase 1 begins automatically.

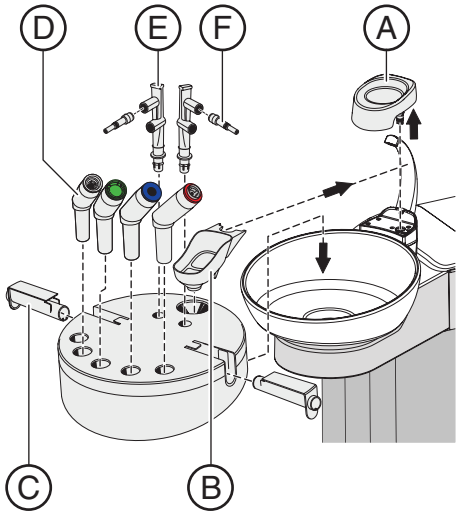
### Sanitation phase 1 – Inserting instruments and suction hoses in the sanitation bowl

A sanitation bowl has been provided to make it possible for all instruments and suction hoses to be simultaneously treated with the increased sanitizing concentration and then rinsed with water. It is mounted on top of the cuspidor bowl. All sanitizable instruments and suction hoses are inserted in the sanitation bowl with various adapters.




✓ Sanitation phase 1 is highlighted on the touchscreen.

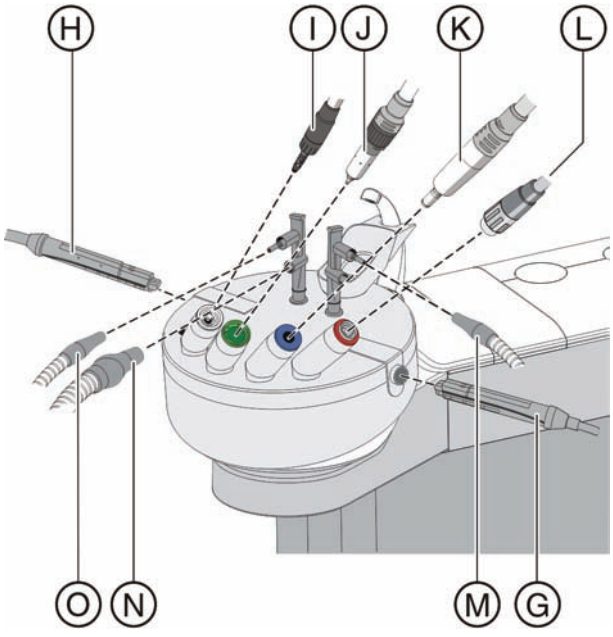
✓ The *Insert instruments in sanitation bowl* display appears on the touchscreen.




1. Pull the tumbler holder **(A)** off of the water unit.
2. Place the sanitation bowl with cover onto the cuspidor bowl. Make sure that the sanitation bowl is not contaminated.
3. Plug the water guide **(B)** of the tumbler filler onto the cover of the sanitation bowl.
4. Insert the adapter for the SPRAYVIT valve body **(C)**, the instrument couplings **(D)** and the suction hoses **(E)** in the sanitation bowl as far as they will go.

**NOTE: Arrangement of adapters**
The adapters for the instrument couplings are color coded:
white = turbine
green = SL and BL motors
blue = BL ISO motor (ISO 3964 interface)
red = SIROSONIC TL scaler
To prevent the hoses from twisting and stretching, the arrangement of the adapters from left to right must correspond to the arrangement of the instruments on the dentist element.

5. Insert the adapter for the saliva ejector hose **(F)** in the adapter of the suction hoses **(E)**.
6. Remove the SPRAYVIT sleeves from the valve bodies, the straight and contra-angle handpieces from the sanitizable instruments, and the suction cannulae from the suction hoses.



7. Insert the SPRAYVIT valve body of the dentist element **(G)** in the right adapter and the SPRAYVIT valve body of the assistant element **(H)** in the left adapter as far as they will go (with valve lever pointing up and locking button pointing down).
8. Insert the couplings of the treatment instruments as far as they will go or until they snap into the adapter.
   - white = turbine **I**
   - green = SL and BL motors **J**
   - blue = BL ISO motor **K**
   - red = ultrasonic hose **L**

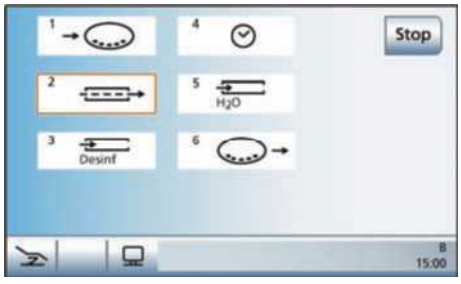
**NOTE: Pinching of the instrument hoses**
Be careful not to pinch the instrument hoses when inserting the instruments. If the hoses are pinched, the water flow will be obstructed during purging.

9. Attach the suction hose **N** and saliva ejector hose **O** (and the surgical suction device **M** if installed) to the cleaning adapter laterally.

   ↳ The sanitation bowl is completely fitted.


10. Touch the *Start* key on the touchscreen.

**Sanitation phase 2 – Checking the water flow**




First the treatment center checks whether there is water flow through the instruments.

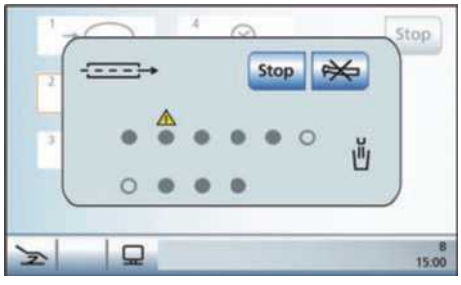
✓ Sanitation phase 2 is highlighted on the touchscreen.

➢ Wait briefly until the water flow has been checked.

↳ If sufficient water flow is present, the treatment center continues with sanitation phase 3.

**Error message: No water flow**

If the treatment center detects no water flow through an instrument or through the tumbler filler, you can try to restore water flow at the location concerned. If this is not possible, the instrument concerned can be excluded from the sanitation process.

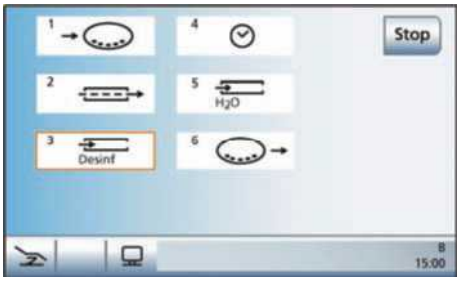



1. Check the water flow through the instruments in the holders marked with a warning triangle on the touchscreen. Set to maximum water flow on the instruments. Leave all instruments plugged into their adapters.

   ↳ If the treatment center detects the water flow, the warning triangle will disappear. If there is sufficient water flow through all instruments, sanitation phase 3 automatically continues.

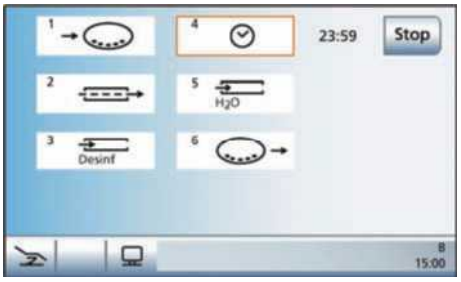
2. If you want to exclude the instruments concerned from sanitation, touch the *Exclude instrument* key.

   ↳ The treatment center then continues with sanitation phase 3. The water lines you excluded are not included in the sanitation process.




### Sanitation phase 3 – Treating water lines with disinfectant

The water is pumped out of the water tank of the water unit via the tumbler filler. Then the water tank is automatically filled with DENTOSEPT P. This activates flushing of the instrument hoses, the SPRAYVIT hoses and the tumbler filler with the disinfectant.




### Sanitation phase 4 – Allow 24 hours reaction time

In order to effectively combat germs, you must let the disinfectant react for at least 24 hours and not longer than 3 days (maximum sanitation time).

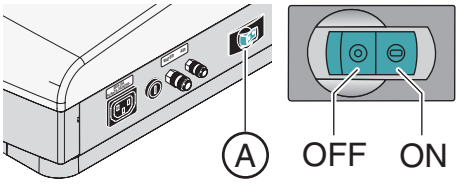
✓ Sanitation phase 4 is highlighted on the touchscreen.

✓ The treatment center displays the remaining reaction time on the touchscreen next to the sanitation phase 4 field, starting from 24 hours.

✓ The treatment center has automatically switched to the Standby mode

**1.** Leave all instruments plugged into their adapters.

**2.** Make sure that the treatment center is switched off for at least 24 hours, but not longer than 3 days (maximum sanitation time). If necessary, you can also switch off the power switch on the base of the treatment center patient chair.



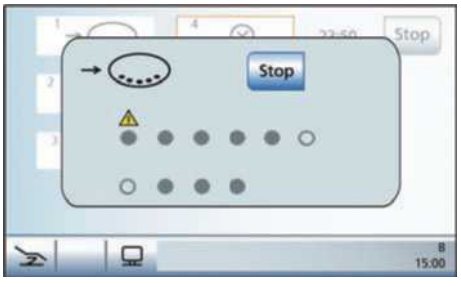

**NOTE: Switched-off water and air supplies**

If the treatment center is switched on again after 24 hours, the sanitation process automatically continues with sanitation phase 5. However, if the water and air supplies are switched off, the disinfectant cannot be rinsed out of the water lines.

If you switch the treatment center back on after 24 hours have expired, first check to make sure that the water and air supply lines are open.

**3.** Switch the treatment center on again after 24 hours and before 3 days have elapsed.

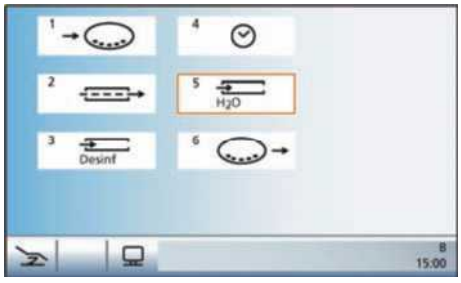
### Error message: Insert instruments in sanitation bowl




If an instrument is accidentally deposited in its holder during the reaction time, the message *Insert instruments in sanitation bowl* is displayed on the touchscreen after the treatment center is switched on. The sanitation program is then completed anyway.

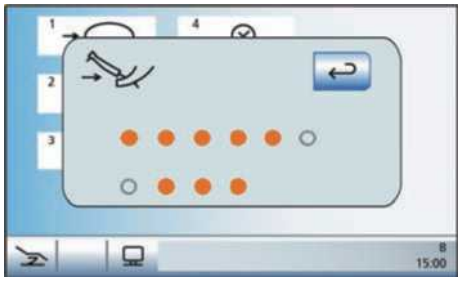
➢ Remove the accidentally removed instrument from its holder and place it back in the sanitation bowl so that it can be rinsed in sanitation phase 5.

**Sanitation phase 5 – Rinsing water lines with water**




The disinfectant is rinsed out of the SPRAYVIT hoses, instrument hoses and tumbler filling unit with water. This takes several minutes.

**Sanitation phase 6 – Returning the instruments to their holders**




After the water lines have been rinsed, the instruments and suction hoses can be removed from the sanitation bowl and deposited in their holders again.

✓ The *Return instruments to their holders* display appears on the touchscreen.

1. Place the SPRAYVIT sleeves, straight and contra-angle handpieces and suction cannulae back on the instruments and suction hoses. Redeposit all instruments and suction hoses in the instrument holders.
2. Remove the sanitation bowl and adapter from the cuspidor bowl.

↳ The sanitation process is finished. The treatment center is again ready for operation.

**Aborting the sanitation process**

Sanitation can be canceled during some sanitation phases, e.g. if the treatment center urgently must be switched back on before the 24 hours have expired. The *Stop* key shows whether cancellation is possible.

✓ The sanitation process must have been started.


➢ Touch the *Stop* key on the touchscreen.

↳ The sanitation procedure is canceled. If the water lines have not yet been treated with disinfectant (sanitation phase 3), the treatment center automatically proceeds directly to sanitation phase 6. If the sanitation process is canceled during the reaction time, the water lines are initially rinsed with water (sanitation phase 5).

# 5.7 Foot control and connection box

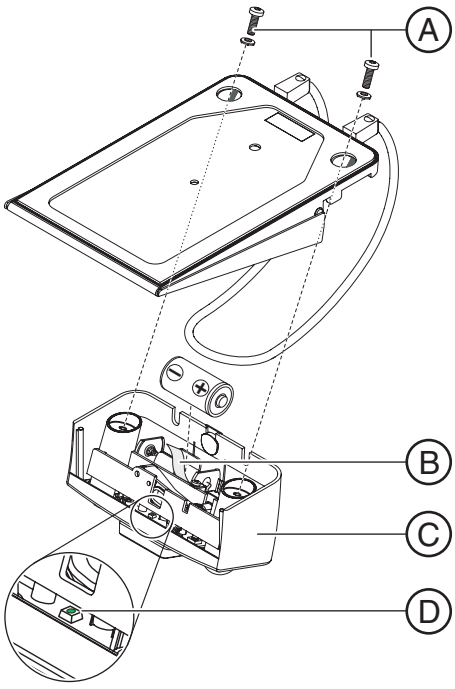
## 5.7.1 Changing the battery of the wireless foot control


The wireless foot control is powered by a battery. An empty battery is detected and displayed by the system. The battery can be changed by the user.

For the battery type, see "Spare parts and consumables" [🗎 174].

The housing of the wireless foot control must be opened to change the battery. Touch a grounded metal part before opening the housing to prevent damage to the PC board due to electrostatic discharge.

➢ Prior to changing the battery, switch the treatment center off at the main switch. This prevents accidental triggering of unwanted functions.




**Removing and replacing the battery**

1. Remove the screws **(A)** from the bottom of the foot control.
2. Remove the switch part **(C)** from the foot control.
3. Pull the battery out of the battery compartment by pulling the cloth strap **(B)** and replace it with a new one. Be careful to insert it with the correct polarity (minus pole facing spring). The cloth strap **(B)** must again lie underneath the battery.

**Checking the condition of the battery**

The condition of the battery is indicated by the green LED **(D)** in the switch part.

- LED lights up for approx. 10 s after battery is inserted – Battery OK
- LED flashes after battery is inserted – Battery too weak, must be replaced
- LED doesn't light up – Battery empty, must be replaced

**Assembling the foot control**

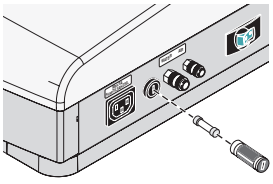
1. Mount the switch part **(C)** on the foot control.
2. Remove the screws **(A)** from the bottom of the foot control.

**NOTE: Putting the wireless foot control back into operation**
After changing the battery, start the treatment center and check the complete functionality of the foot control.
It is **not** necessary to register the foot control again at the treatment center after changing batteries.

## 5.7.2 Changing the fuse of the external device connection

The inlet connector remains live even when the power switch is turned off. The fuse can nevertheless be changed.

To reorder the fuse, see "Spare parts and consumables" [🗎 174].



✓ The inlet connector is not supplying any power.

1. Pull the plug of the connected device out of the inlet connector.
2. Use a screwdriver to unscrew the fuse sleeve.
3. Replace the fuse (T 6.3 A, 250 VAC) and screw the fuse sleeve back in.
4. Reconnect the external device to the inlet connector.

↳ If the inlet connect still is not supplying any power, contact the manufacturer of the connected device or your local distributor.

# 6 Maintenance by the service engineer

## 6.1 Inspection and maintenance

In order to ensure the operational safety and reliability of your treatment center and to avoid damage due to natural wear, **annual** 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 call is due in less than 42 days, a wrench symbol appears in the status line of the touchscreen after switch-on. Below this symbol, the number of days until the maintenance deadline are counted down (e.g. 13 d = 13 days). You should now contact your dental depot and make an appointment.

The work steps to be performed as well as the parts which must be replaced are specified in the document "Maintenance Certificate".

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

## 6.2 Safety checks

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

For that reason it is essential to perform safety tests **every 2 years** which aim particularly at detecting electrical faults (e.g. isolation defects). This is done by an authorized service engineer from your dental depot, most practically together with the work to be performed according to "Inspection and maintenance" [170].

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

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

The safety checks 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.

## 6.3 Safety tests for systems with HF surgical equipment

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

- According to Section 6, safety tests are required for systems with HF surgical 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 systems with HF surgical equipment are identical to the safety tests described in "Safety tests" [170].

The "Maintenance Manual" contains the "Medical Product Log". The system owner is obliged to keep 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 surgical 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 kept in storage 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.

## 6.4 Maintenance Manual

Keep this Maintenance Manual near your treatment center.

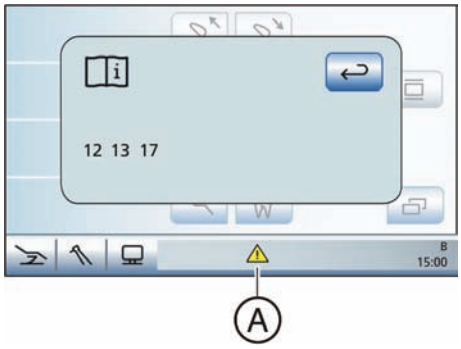
Any inspection and maintenance work as well as all safety tests are documented by the service engineer in the Maintenance Manual. For systems with HF surgical equipment, the consequences of malfunctions and reports to the competent authorities must be documented by the user.

The "Maintenance Manual" contains the "Medical Product Log".

We recommend always keeping the documentation in the chapter "Reporting of incidents to authorities / manufacturers" up to date, regardless of legal requirements.

# 7 Malfunctions

## 7.1 Error messages




Any error states of the treatment center that cannot be immediately recognized by the user and must nevertheless be corrected are displayed on the touchscreen. If an error state exists, this is indicated by a warning triangle **(A)** in the status line of the touchscreen.

➢ Touch the warning triangle **A** in the footer of the touchscreen (for more than 2 s).

↳ The error code(s) is(/are) displayed.

The error codes have the following meaning:

| Code | Error | Description | Actions required |
|---|---|---|---|
| 10 | Flow rate of SPRAYVIT on dentist element too low | The water flow rate is below the limit value. The heater of the SPRAYVIT is no longer heated to prevent scalding by overheated water. | Clean the outlet nozzle of the Sprayvit, see the "SPRAYVIT L Operating Instructions" and perform the flow test, see "Checking the flow rate on the SPRAYVIT L multifunctional syringe" [🗎 149]. |
| 11 | Flow rate of SPRAYVIT on dentist element too low | | |
| 12 | Tumbler temperature fuse defective | The temperature fuse was blown by overheating. The water in the tumbler filling unit is no longer heated. | Inform your service engineer. |
| 13 | Battery of wireless foot control empty | Operation of the treatment center no longer possible due to fully depleted battery. | See "Changing the battery of the wireless foot control" [🗎 168]. |
| 14 | Disinfectant consumption too low | The disinfectant tank was not emptied since its last filling even though many disinfection cycles were performed. | Inform your service engineer. |
| 15 | Water feed too low | The maximum filling time for the mixing tank is exceeded. | Change the water filter, see "Changing the water and air filters" [🗎 157].<br>Check the water pressure of the drinking water network. |
| 16 | Hydrocolloid flow rate | It was detected via the water pump that the flow rate of the hydrocolloid is too low. | Check the hydrocolloid hoses for clogging. |
| 17 | Emergency pump operation | Malfunctioning of pump sensors in the water unit. | Inform your service engineer. |
| 18 | Chair movement outside of the permissible movement limits or chair drive position not plausible | If the chair is located outside of the permissible movement limits or the position is not plausible, the chair stops moving. | Inform your service engineer. |
| 19 | Injection valve for disinfectant defective | No disinfectant is added if the injection valve is defective. | Inform your service engineer. |

The warning triangle automatically disappears as soon as the error state has been eliminated. If it does not disappear, please inform your service engineer.

## 7.2 Remote maintenance

**Functional description**

With remote maintenance, you enable the staff of your dental depot or our Customer Service Center, see "Contact data" [🗎 9], to connect to the PC of your treatment center. The contents of your PC monitor are then transmitted to the computer of the service specialist and remote access to your PC is enabled.

**Advantages**

This offers you the following advantages:

- Fast support through remote access
- Remote diagnosis via readout of error codes
- Effective help during the application
- Fewer service calls by service engineers due to remote diagnosis
- Shorter downtimes

**Requirements**

In order to utilize remote maintenance, your treatment center must be connected to an external PC. In addition, the external PC must have internet access.

Remote access to your external PC is established via remote access software, which must be installed on your PC. Various different software applications can be used for remote access. Please contact your service engineer for more information. The exact procedure for establishing a remove access connection is described in the user's manual pertaining to your remote access software.

**Safety aspects**

During a remote access session, you as the customer can cancel the service specialist's remote control rights at any time, thus blocking further remote access. You thus always remain in control during remote access.

Extensive security and access protection functions protect your PC against alterations, spying and manipulations. These options will vary depending on the remote access software involved. In general, remote controlled access can be monitored directly by the customer. By setting the access rights, you as the customer can determine which activities service specialists will be allowed to perform via remote access. All other functions which have not been approved by you remain disabled for the service specialist.

If you have any further questions, please contact your dental depot or our Customer Service Center; see "Contact data" [🗎 9].

# 8 Spare parts and consumables

Use only original accessories from Sirona!

Please order the materials specified below from a specialized dental dealer.

## Cleaning and care

### Care and cleaning agents

You will find a list of all agents approved at the time of delivery in the documentation folder supplied with your treatment center.

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

If you do not have any access to the Internet, you can order the list in one of the following two ways:

- Order from your local dental depot
- Order from Sirona:
  Tel: ++49 (0) 62 51 / 16-16 16
  Fax: ++49 (0) 62 51 / 16-18 18

### Disinfectants for water lines

Order No.: 33 18 156 (1 carton = 6 x 1 liter)

For Canada/Japan only:
Order No.: 59 69 535 (1 carton = 6 x 1 liter)

### Total count tester

Order No.: 58 53 775

### Suction tube with hole for the spray aspirator

Order No.: 62 05 285

### Air and water filters

Order No.: 14 43 436

### Amalgam rotor

Order No.: 14 34 138

### Head support of MultiMotion headrest

Order No.: 61 82 047

### Hose holder for Miele thermodisinfector

Order No.: 89 18 757

### Peristaltic pump hose set

Order No.: 62 25 903 (5 pcs.)

**Hygienic protective covers for SiroCam digital intraoral camera**

The hygienic protective covers are sold by specialized dealers.

Dürr Dental GmbH & Co. KG – Postfach 1264 – D-74302 Bietigheim-Bissingen

Order No.: 2106-010-50 (500 pcs), 2106-010-51 (20 pcs)

## Fuses

**Fuse for the external device connection**

100 V – 230 V~ (T 6.3 A, 250 V~)
Order No.: 10 77 452

## Miscellaneous

**Ball stopper**

Order No.: 58 99 575

**Separate motor holder**

Order No.: 59 99 821

**Battery for wireless foot control**

1x type alkaline baby (C or LR14) with 1.5 V
(commercially available)

# 9 Technical data

| | |
|---|---|
| Model designation: | TENEO |
| Power connection: | 100 - 230 V AC ± 10%<br>50/60 Hz |
| Rated current: | 4.8 A at 230 V<br>9.6 A at 115 V<br>11 A at 100 V |
| Average power consumption (for dimensioning an air conditioning system): | 0.35 kW |
| Power consumption in the Standby mode: | 3 W |
| Main building fuse: | 100 - 115 V AC: 20 A slow-blow<br>230 V AC: 16 A slow blow |
| Protection class: | Class **I** equipment |
| Degree of protection against electrical shock: |  Type **B** applied parts<br>Except for the SIROTOM electrosurgical handpiece and the SiroCam digital intraoral camera. These are:<br>  Type **BF** applied parts |
| Degree of protection against ingress of water: | Ordinary equipment (without protection against ingress of water)<br>The foot control has an IPX1 degree of protection against liquids (drip-proof). |

| | |
|---|---|
| Operating mode: | Continuous operation with intermittent loading corresponding to the dental mode of working.<br>Permanently connected unit. |
| Transport and storage conditions: | Temperature: -40° C – +70° C (-40° F – 158° F)<br>Relative humidity: 10% – 95%<br>Barometric pressure: 500 hPa – 1060 hPa |
| Operating conditions: | Ambient temperature: 10° C – 40° C (50° F – 104° F)<br>Relative humidity: 30% – 85% no condensation<br>Barometric pressure: 700 hPa – 1060 hPa |
| Tests/Approvals: | See "Standards/Approvals“ [🗎 17]. |
| Year of manufacture: |  **20XX** (on the rating plate) |

**Foot control wireless interface**

| | |
|---|---|
| Model designation: | nanoLOC AVR |
| Frequency: | 2.4 GHz – 2.4835 GHz (ISM band) |
| Transmitting power: | < 2 mW (short-range device) |
| Modulation type: | MDMA |
| Range: | approx. 10 m |
| Approval: | See "Standards/Approvals“ [🗎 17]. |

**NOTE: Minimum requirements for the external PC**
See "Installation Instructions and System Requirements for PC Configuration" (Order No.: 61 94 075) SIVISION digital for TENEO.

# 10 Disposal

Please observe the disposal regulations applicable in your country.

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

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

When disposing of equipment permanently, please proceed as follows:

**In Germany:**

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


1. You can find a form for placing a disposal order on the company's homepage at www.enretec.de under the menu item "Entsorgung elektrischer und elektronischer Geräte" (Disposal of electric and electronic devices). The form can either be downloaded or filled out online.
2. Fill out the form with the corresponding details and send it either as an online order or fax it to enretec GmbH at +49(0)3304 3919 590.
   You can also get in touch with the following contacts for disposal orders and any questions relating to this you may have:
   Tel: +49(0)3304 3919 500;
   E-mail: pickup@eomRECYCLING.com
   Post: enretec GmbH, Geschäftsbereich eomRECYCLING
   Kanalstraße 17, 16727 Velten

- Any fixed installation equipment will be collected from its installation location in the practice, while loose equipment will be collected at the street curb at your address at the agreed time and date.

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

**Worldwide** (outside Germany):

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

# 11 Overview of all function keys

The following contains a brief description of the fixed keys on the dentist and assistant elements and the function keys on the touchscreen and to provide the reader with a quick overview of the significance of the symbols on the keys. Detailed descriptions can be found in the corresponding sections of this document.

## 11.1 Fixed keys

### 11.1.1 Dentist element

**Main switch**

Switches the treatment center on/off.

To switch off, press and hold the key until an acoustic signal sounds. Then release the key.

**NOTE: Power switch**
The treatment center also features a power switch on the base of the chair that separates the treatment center from the power supply, see "Switching the treatment center on/off" [32].

**Timer function**

Opens the *Timer Function* screen where any of six preset timers can be activated. The time lapse is displayed in the footer of the touchscreen.

When the *Timer Function* key is pressed (> 2 s), the *Timer Function* settings screen appears.

**Shock positioning**

Immediately moves the patient chair to a position for shock positioning of the patient.

**Operating light**

Switches the operating light on/off.

Light intensity > 24,000 lux at 100%

When the operating light key is pressed (> 2 s), the *Light Intensity* settings screen appears.

**Composite function**

Switches the composite setting for the operating light on/off.

This function is required to prevent premature curing of composite fillings.

Reduced light intensity  < 8,000 lux

**Tumbler filling**

Starts the tumbler filling function.

When the *Tumbler filling* key is pressed (> 2 s), the filling time and water heating settings screen appears.

**Flushing**

Starts the flushing of the cuspidor bowl.

When the *Flushing* key is pressed (> 2 s), the *Flushing Time* settings screen appears.

**Freely selectable function**

e.g. call key

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

This function can be preset as a button or as a switch in the Setup program.

**Freely selectable function**

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

This function can be preset as a button or as a switch in the Setup program.


**Clean key**

Pressing this key deactivates the complete user interface of the dentist element. Pressing it again > 3 s reactivates the control panel.

This is used to make sure that no unwanted functions can be accidentally triggered while cleaning the surface.


**Setup key**

Used for individual configuration of the treatment center by the user and for reading out messages by the service engineer, see "Configuration of the treatment center (Setup)" [🗎 123].

### 11.1.2 Assistant element

**Tumbler filling**

on/off

**Flushing of the cuspidor bowl**

on/off

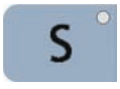
**X-ray viewer**

on/off

This key has no function on the version not equipped with an X-ray viewer.

**Timer function**

Triggers the time lapse of the first timer. The timer is set on the dentist element.




**Chair program S**

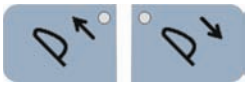
Mouth rinsing position with memory function (freely programmable)


**Chair program 0**

Entry/exit position (freely programmable)


**Chair programs 1 and 2**

(freely programmable)



**Headrest**

Moves the motor-driven headrest out/in for size adjustment. These keys do not function if a MultiMotion headrest is installed.

**Composite function**

Switches the composite setting for the operating light on/off.

Reduced light intensity < 8,000 lux

**Operating light**

on/off

Light intensity > 24,000 lux at 100%

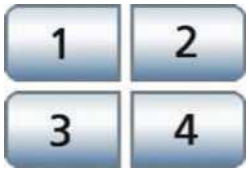
## 11.2 Start program

**Chair program S**

Mouth rinsing position with memory function (freely programmable)

**Chair program 0**

Entry/exit position (freely programmable)



**Chair programs 1, 2 and, if required, 3, 4**

(freely programmable)

Display of chair programs 3 and 4 adjustable

**Moving the headrest in/out**

if a motor-driven headrest is installed

**Inclining the headrest**

if a motor-driven headrest is installed

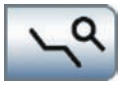
**ErgoMotion – Tilting the patient couch and inclining the backrest**

Compensated motion of the seat and backrest without any compression or stretching effects for the patient

**OrthoMotion – Tilting the patient chair**

Tilting motion of the patient chair without changing the angle between the seat and backrest. This movement is particularly suitable for patients with limited mobility.

**Adjusting the chair height**



**Fine adjustment**

The patient chair moves at reduced speed during ErgoMotion, OrthoMotion and adjustment of the chair height.

**Selecting a user profile**

A stored user profile can be selected for up to six different users (A to F).

**X-ray viewer**

Also white screen on SIVISION monitor for SIVISION digital

**Open manual chair setting screen**

For the *Simple Start Program* operating mode only

**Treatment function**

Activation of the implantology and endodontics functions

**Opening the sub-screen**

Used to access additional subordinate functions; see the following function keys:

**Purge water paths**

Starts the purge function


**Purge water paths automatically**

Starts the autopurge function


**Sanitation**

Starts the treatment center sanitation program

**Extract residual water**

Extraction of residual water by wet suction before cleaning the filter


**Hydrocolloid**

Activation and adjustment of cooling water flow for the cooling spoon

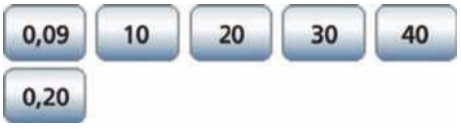
**Massage function**

Soft back massage

**Active lumbar support**

Adjustment of active lumbar support

## 11.3 Instrument program




**Speed quick setting keys**

Used to select preset or intermediate rotational speed settings

For brushless motors: min. 90 rpm, max. 40,000 rpm
For brushless motors: min. 200 rpm, max. 40,000 rpm


**Intensity quick setting keys**

Used to select preset or intermediate intensity settings for the SIROSONIC TL scaler and the SIROTOM electrosurgical handpiece

**Memory key**

Used to save instrument settings

This key is displayed only in the Save mode. Storage occurs automatically when the instrument is deposited in the Drop mode.


**Function levels**

Storage and selection of instrument settings at two levels

**Direction of rotation**

Switches counterclockwise rotation ON/OFF


**Boost function**

Increases the intensity setting of the SIROSONIC TL scaler in steps of 20% referenced to the final value during treatment. With an intensity of 80%, only the maximum value of 100% can be selected.


**Endodontics function**

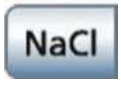
Activation of the endodontics function for the SIROSONIC TL scaler (power limitation)

**Chip blower**

Used to dry treatment areas or blow off drilling chips by emitting air blasts from the treatment instrument

This key is displayed only when cursor control is activated






**Activate preselected coolant**

The coolants to be available for selection in the instrument program can be set in the sub-screen of each individual instrument, see below.

**Sub-screen**

Used to access additional subordinate functions; see the following function keys:

**Preselect spray coolant**

Used to cool and rinse treatment areas

**Preselect air coolant**

Used to cool and blow clean treatment areas


**Preselect NaCl coolant**

Used to cool or rinse treatment areas with a sterile saline solution

**Instrument light**

Activates and sets the instrument light

**Direct starter/speed foot control**

Direct starter (marked gray): Switches the instrument on with the set speed or intensity
speed foot control (marked orange): Used to adjust the instrument up to maximally the set speed and intensity after setting the foot control pedal.

## 11.4 Treatment program

### 11.4.1 Treatment selection

**Assigning the burr drive**

A burr drive must be assigned to each treatment type, i.e. endodontics (left key) and implantology (right key).

**Display of assigned burr drive**

The assigned burr drive is marked with an orange circle. Any position marked with a gray circle also can be assigned.

**Open endodontics administration**

Used to access additional subordinate functions for endodontic treatments; see "Endodontic administration" [🗎 185].

## 11.4.2 Implantology

**Setting the gear reduction of the contra-angle handpiece**

Adjusts the gear ratio to match the contra-angle handpiece being used.


**Calibrating the burr drive**

A calibration must be performed each time you change or lubricate the contra-angle handpiece.

The contra-angle handpiece is automatically checked during calibration. This includes a measurement of motor current at different speeds to assess the properties of the system.

**Direction of rotation**

Switches counterclockwise rotation ON/OFF


**Activating/deactivating the NaCl flow**

The flow volume settings are permanently shown in the *Implantology* program on the touchscreen.


**Activating NaCl rinsing**

Rinses treatment areas with a sterile saline solution whenever the burr instrument stops as long as key is actuated


**Selecting a work step**

Used to select the previous/next implantology work step

**Memory key**

Stores the settings of the implantology work step

**Opening the sub-screen**

Used to access additional subordinate functions; see the following function keys:


**Preselecting NaCl rinsing and setting the flow rate**

Preselection of the NaCl rinse to display the key in the Implantology program. When the function is activated, the setting keys of the NaCl rinse are shown in the sub-screen.

**Torque acoustic signal**

This can be used to set the acoustic signal that sounds whenever 75% of the currently set torque value is exceeded.

**Direct starter/speed foot control**

Direct starter (marked gray): Switches the instrument on with the set speed or intensity

Speed foot control (marked orange): Used to adjust the instrument up to maximally the set speed and intensity after setting the foot control pedal.


**Setting the number of work steps**

Up to eight implantology work steps can be saved.

## 11.4.3 Endodontics

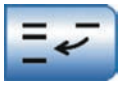

**Calibrating the burr drive**

A calibration must be performed each time you change or lubricate the contra-angle handpiece.

The contra-angle handpiece is automatically checked during calibration. This includes a measurement of motor current at different speeds to assess the properties of the system.

**Direction of rotation**

Switches counterclockwise rotation ON/OFF



**Insert file**

Opens a screen in which individual files, even from other file systems, can be inserted in the existing sequence.


**Select file system**

Each time the key is pressed, the next file system in the list is displayed on the left side of the touchscreen.

**Opening the sub-screen**

Used to access additional subordinate functions; see the following function keys:

**Setting the gear reduction of the contra-angle handpiece**

Adjusts the gear ratio to match the contra-angle handpiece being used.


**Auto reverse function**

When the set torque value is reached, the burr drive automatically switches to counterclockwise.

**Torque acoustic signal**

This can be used to set the acoustic signal that sounds whenever 75% of the currently set torque value is exceeded.

**Direct starter/speed foot control**

Direct starter (marked gray): Switches the instrument on with the set speed or intensity

Speed foot control (marked orange): Used to adjust the instrument up to maximally the set speed and intensity after setting the foot control pedal.

**Remove file from sequence**

Deletes the selected files from the sequence.

**Memory key**

Stores file settings

## 11.4.4 Endodontics administration

**Opening the sub-screen**

Access from the *Treatment selection* program. See the following function keys:

**Creating a new endodontic treatment**

Up to five endodontic treatments can be saved.

**Copy endodontic treatment**

To reduce the amount of setting work required, you can copy an endodontic treatment and resave it under a different name. Then the settings can be changed.

**Rename endodontic treatment**

Endodontic treatments can be renamed to facilitate corrections and editing.

**Delete endodontic treatment**

Removes individual endodontic treatments from the treatment list.


**Adding a file system**

For importing stored file systems to the endodontic treatment list.

# 11.5 Other dialogs

## 11.5.1 Timer screen


**Timer keys**

Up to six timers can be set. The maximum time setting is 9 minutes and 30 seconds.

**Time loop**

If the key is highlighted orange, the countdown will automatically be restarted when the set time has expired.

**Acoustic signal**

If the key is highlighted orange, an acoustic signal will sound when the set time has expired.

## 11.5.2 SPRAYVIT program

**Switching the air tempering on/off**

**Water tempering on/off**

**Instrument light on/off and adjustment**


**Instrument light operating voltage**

Used to preselect the operating voltage of the illuminant used

## 11.5.3 Tumbler filling settings screen

**Link tumbler filling to mouth rinsing position**

If the key is highlighted orange, the tumbler filling function will automatically be switched on for the duration of the preset filling time when the mouth rinsing position chair program (S) is activated.

**Water tempering on/off**

**Set filling time**

**Setting the water tempering**

### 11.5.4 Flushing settings screen

**Link flushing to mouth rinsing position S**

Following movement to mouth rinsing position S, the flushing function automatically switches on for the duration of the set flushing time.

## 11.6 SIVISION program

### 11.6.1 SIDEXIS


**Start SIDEXIS**

SIDEXIS is started on the external PC. The keys corresponding to the SIDEXIS PC application are displayed on the right side of the touchscreen or in a further subprogram:

**Next image**

The next image window is activated.

**Tiled layout**

All open image windows are scaled to a uniform size in the display area and arranged without overlapping.

**Full frame**

The active image window is enlarged so that it covers the entire display area. The control elements of the SIDEXIS user interface are not concealed in the process.

**Zoom in/out**

This magnifies and decreases the active image window and the size of the image displayed in it on the SIVISION monitor.

**Rotate image**

Rotates the image 90° counterclockwise or clockwise.

**Contrast optimization filter**

This image filter analyses and optimizes the current grayscale distribution of an image. In this way, for instance, details within a very low-contrast, “faint” image can be made visible.

**Relief display filter**

Image details with high contrast are displayed brighter or darker. Thus edges or contours within the image are clearly accentuated. The result is a relief-like image distortion.


**Cancel/confirm entry**

**Opening the sub-screen**

Used to access additional functions; see the following keys:

**Overview layout**

The opened image windows are scaled in the display area so that no scroll bars or as few scroll bars as possible must be displayed. The image windows are arranged without overlapping.

**Cascaded layout**

The opened windows are "cascaded", i.e. arranged slightly displaced behind one another. All image window titles are thus visible.

**Status overview layout**

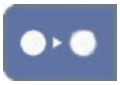
The opened image windows are arranged according to their anatomical position if the number of the displayed tooth was specified. Unassigned exposures are displayed in the center of the display area. The size of the windows is adapted so that the complete exposures are visible.

**Invert image**

This function inverts the brightness values of the image pixels, thus enabling a positive or negative display of the image. The inversion can be canceled by pressing the key once again.

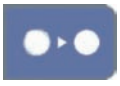
**Display image in pseudocolors**

To enable better distinction of image details, an image can be displayed in a so-called pseudo color mode. The grayscale values of the image are replaced by colors which the human eye can distinguish better from one another than the corresponding gray levels.



**Smooth image**

To mitigate high-contrast or high-interference effects in images, the contrast between neighboring pixels is reduced or averaged. The overall definition of the image is reduced.



**Sharpen image**

Contrasts between neighboring pixels are increased. This function helps to accentuate edges or contours. The impression of a sharper image is created.

**Filter black dots**

Individual pixel errors may occur when taking digital X-rays. These pixel errors appear as individual black dots when the optimum resolution (100%) is selected. They are removed by SIDEXIS.

**Reduce noise**

Individual scattered pixels and minor disturbing information which lead to a noisy image are eliminated without reducing the overall definition of the image.

**Undo**

The effect of the last filter operation is undone.

**Restore original image**

The changes previously made, e.g. via filters, are canceled. The most recently saved version of the image is restored.

### 11.6.2 PowerPoint


**Start PowerPoint**

PowerPoint is started on the external PC. The keys corresponding to the PowerPoint PC application are displayed on the right side of the touchscreen after a file is selected:

**Previous/next slide**

### 11.6.3 Media Player


**Start Media Player**

Media Player is started on the external PC. The keys corresponding to the Media Player PC application are displayed on the right side of the touchscreen after a file is selected:

**Title shuffle**

**Repeat title**

**Fast forward/Rewind**

**Previous/next title**

**Stop playback**

**Start/interrupt playback**

**Mute**

**Adjust volume**

## 11.7 Setup program

### 11.7.1 User interface

**Configure user interface**

Opens the *User Interface* setup program.

**Key tone**

A setting can be made to activate or deactivate an acoustic signal that sounds when the operator touches a key on the touchscreen.

**Calibrating the touchscreen**

If the touchscreen is no longer able to precisely locate the position of a contact, it must be recalibrated.

**Touchscreen brightness**

## 11.7.2 Date and time

**Date and time**

Opens the *Date and Time* setup program.


**Date**


**Time**


**12/24 hour display**

## 11.7.3 Control options

**Configuring control options**

Opens the *Control Options* setup program.

**Fine adjustment**

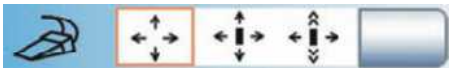
Displays the *Fine Adjustment* key in the *Start program*. If this function is activated, the patient chair moves more slowly when adjusted manually. Chair program travel movements are always executed at maximum speed.

**Simple/Advanced Start program operating mode**

If the key is highlighted orange, the Advanced Start program mode is selected.


**Number of chair programs**

In addition to the mouth rinsing position (S) and entry/exit position (0) chair programs, the number of chair programs can be extended to 4 or limited to 2. This setting is effective in both operating modes *(Simple/Advanced Start Program)*.



**Cursor control**

The cursor control can be set as follows:

- Field 1: Cursor control switched off
- Field 2: Cursor control switched on, without screen change
- Field 3: Cursor control switched on, with program change


**Number of user profiles**

If fewer user profiles are required, their number can be limited so that only the specified users can be selected after the treatment center is switched on.

**Open next program page**

**Operating light**

The operating light is automatically switched on when the dentist element approaches and switched off when it moves away.


**Cuspidor bowl movement**

This can be used to set the cuspidor bowl so that it automatically moves inward when the mouth rinsing position (S) chair program is selected.


**Tumbler heater**

A setting can be made so that the tumbler heater automatically switches off when the entry/exit position (0) chair program is activated. The tumbler heater switches back on as soon as the patient chair leaves the entry/exit position.


**Dentist element movement**

A setting can be made to designate the chair programs for which a dentist element movement can be additionally programmed:

- Field 1: The position of the dentist element is not added to any chair program.
- Field 2: The position of the dentist element is not added to any chair program except for the mouth rinsing position (S).
- Field 3: The position of the dentist element is added to every chair program.

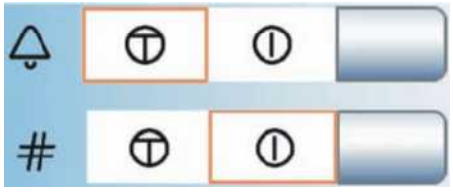
**Open next program page**

**Spray aspirator**

Enables interruption and/or activation of the suction flow of the spray aspirator via the 4-way foot switch on the base of the chair in any direction.

**White screen**

If the treatment center has no X-ray image viewer, however, is equipped with a SIVISION monitor, the X-ray image viewer key can set the SIVISION monitor to the white screen mode.



**Bell/hash (#) relay**

The relay of the bell and hash (#) key can be actuated as a pushbutton or as a switch.

- Field 1: Pushbutton
- Field 2: Switch

## 11.7.4 Instruments

**Configure instruments**

Opens the *Instruments* setup program.


**Quick setting keys/Function levels**

Settings can be made in the *Instrument programs* using either the quick setting keys (1...100) or two freely programmable function levels (E1, E2).

When using the quick adjustment keys, you can choose one of two options for saving the settings you made in the instrument program:

- SaveMode – The *Memory* key is displayed in the instrument programs:
  The settings made in the instrument program will be saved after the instrument is placed in its holder only if the Memory key was pressed and held beforehand (> 2 s).
- DropMode – *Memory* key hidden in Instrument programs:
  When the instrument is deposited, the settings made in the Instrument program will automatically be saved.

One of the following presettings can be selected:

- Field 1: Quick setting keys with SaveMode
- Field 2: Quick setting keys with DropMode
- Field 3: Function levels

**Aftercooling**

After the drive is deposited in its holder, the motor can be automatically aftercooled.

**Afterblow**

After an instrument is deposited in its holder, the cooling spray remaining in the instrument head or in the tip of the instrument is automatically blown out by a brief activation of the chip blower (air puff).

**Spray temperature**

The spray temperature of all instruments on the dentist element is adjustable. The SPRAYVIT tool is adjusted separately.

The spray temperature of the SPRAYVIT L multifunctional syringe must be adjusted separately, see "SPRAYVIT screen" [🗎 186].

## 11.7.5 Network connection

**Configure IP address setup program**

Opens the *IP Address* setup program.

**Enter the IP address, subnet mask, and gateway**

To configure a static network connection


**DHCP**

Activating the dynamic network configuration with DHCP (Dynamic Host Configuration Protocol)

**Switching the PC control on/off**

The treatment center control of the external PC can be switched on/off. This does not affect the network connection.

## 11.7.6 Service domain

**Opening the Service domain**

The Service domain is intended to be used only by service engineers. Please contact your service engineer or your dental depot.

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


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