PLANMECA

Planmeca Compact™ i Classic v2

EN

user's manual

10032684

The manufacturer, assembler and importer are responsible for the safety, reliability and performance of the unit only if:

- installation, calibration, modification and repairs are carried out by qualified authorised personnel
- electrical installations are carried out according to the appropriate requirements such as IEC 60364
- equipment is used according to the operating instructions.

Planmeca pursues a policy of continual product development. Although every effort is made to produce up-to-date product documentation this publication should not be regarded as an infallible guide to current specifications. We reserve the right to make changes without prior notice.

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1 Introduction

The Planmeca dental unit is an electrically controlled dental device that consists of a patient chair, cuspidor, delivery arm, dental instruments, operating light and a foot control. The Planmeca dental unit is meant to be used for dental treatment by dental care professionals.

This manual describes the Planmeca dental unit and how to use it. Depending on the configuration of your dental unit, this manual may contain parts that do not apply to your dental unit. Please read this manual carefully before using the unit.

NOTE

The use of the Planmeca dental unit is allowed only under the supervision of dental care professionals.

NOTE

This manual is valid for software revision 7.11 or later.

NOTE

In error situations, this manual is the primary source of information.

NOTE

For information on OEM products, please refer to OEM documentation.

CE 0598

This Planmeca dental unit fulfils the requirements of Directives 93/42/EEC (MDD) and 2011/65/EU (RoHS).

All button illustrations indicate that the button on the control panel should be pressed. Pressing a button will either switch a function on or off, depending on the original setting, or change the value.

The settings and values shown in this manual are only examples and should not be interpreted as recommended values unless otherwise stated.

2 Associated documentation

This Planmeca dental unit is delivered with the following manuals and diagrams:

- User’s manual

  For dental care professionals. Describes the dental unit and its different parts as well as instructs how to operate and clean the dental unit.

- Installation manual

  For service personnel. Describes how to install the dental unit.

  NOTE

  Use the installation template (included in delivery) to position the unit correctly.

- Technical manual

  For service personnel. Gives instructions for service situations.

- Wiring diagrams (10030500)
- Pneumatic diagrams (30014222)

Planmeca Romexis software is delivered with the following manuals:

- Planmeca Romexis user’s manual

  For dental care professionals. Describes how to monitor and control the activities as well as gather data related to dental treatments.

- Planmeca Romexis quick installation guide

  For service personnel. Describes how to install Planmeca Romexis software.

- Planmeca Romexis technical manual

  For service personnel. Gives instructions for service situations.

The Planmeca Solanna or Planmeca Solanna Vision operating light is delivered with the following manual:

- User's manual

  For dental care professionals. Describes the operating light and instructs how to operate and clean it.

- Installation and technical manual

  For service personnel. Describes how to install the operating light to the ceiling or wall, and gives instructions for service situations.

  The operating light's installation to the dental unit is described in the dental unit's installation manual.

The intraoral X-ray unit Planmeca ProX can be installed to the Planmeca dental unit. Planmeca ProX is delivered with the following manuals:

- User’s manual

  For dental/health care professionals. Describes the intraoral X-ray unit and its different parts as well as instructs how to operate and clean the X-ray unit.

- Installation manual

  For service personnel. Describes how to install the intraoral X-ray unit.

- Technical manual

For service personnel. Gives instructions for service situations.

The Planmeca intraoral scanner is delivered with the following manual:

- Planmeca FIT user's manual

  For dental care professionals who take digital impressions for dental restorations.

- Planmeca FIT installation manual

  For service personnel. Describes how to install the intraoral scanner.

The Planmeca ProSensor sensor is delivered with the following manuals:

- User's manual

  For dental care professionals. Describes the sensor that is intended to be used for capturing digital intraoral X-ray images and instructs how to use it.

- Installation manual

  For service personnel. Describes how to install the sensor.

Before using surface disinfectants, upholstery disinfectants, dental unit water and waterline disinfectants, or suction disinfectants, read the disinfectant's material safety data sheet and the document *Planmeca approved disinfectants* (30007097). The document can be found in the Planmeca Material bank.

Before using an instrument, read the instrument's user's manual.

For a full list of accessories, refer to the Planmeca product price list.

3 Training

A hands-on user’s training is given in connection with the installation of this device.

4 Registering your product

About this task

Before you start using your Planmeca product, you must register it to activate the warranty.

Navigate to the registration website www.planmeca.com/register/ in your Internet browser and follow the instructions on the website.

5 Annual maintenance

To guarantee the dental unit’s proper operation, the unit must be checked and serviced by a qualified Planmeca service technician according to the maintenance schedule that has been set for your dental unit.

In the annual maintenance, the service technician replaces all parts specified by the maintenance kit. These include, but are not limited to, parts in contact with air, water and suction systems. In addition, the service technician checks and services all dental unit parts suspect to wear and tear in normal use. These include parts in the cuspidor, foot control, instrument console, delivery arms, patient chair, suction arm and operating light. Also, the mechanical stability and electrical safety inspection is performed.

The default maintenance interval is 365 days.

A help message will remind you about the annual maintenance well in advance.

6 Symbols on product labels

Fulfils the requirements of Directive 93/42/EEC.

Certification mark of the Eurasian Customs Union.

Date of manufacture (Standard ISO 7000).

SGS listing marking according to US and Canadian standards (ANSI/AAMI ES60601-1 and CAN/CSA C22.2 No. 60601- 1).

Type B applied part (Standard IEC 60417).

Type BF applied part for specified dental instruments (Standard IEC 60417).

Alternating current (Standard IEC 60417)

On/Off switch (Standard IEC 60417).

Refer to instruction manual/booklet (Standard ISO 7010).

General warning (Standard ISO 7010).

Warning, crushing hazard: hand (Standard ISO 7010).

Warning, hot surface (Standard ISO 7010).

Warning: Electricity (Standard ISO 7010).

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Health hazard (acc. to EC regulation no. 1272/2008).

Do not put fingers inside mechanical parts.

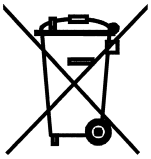
Strong magnet. Remove the tray mounting arm when treating patients who have a cardiac pacemaker. (Standard ISO 7010.)

IPX1

Protected against dripping water (Standard IEC 60529).

Disposable item. Do not reuse (Standard ISO 7000).

Sterilised using steam or dry heat (Standard ISO 7000).



Separate collection for electrical and electronic equipment according to Directive 2002/96/EC (WEEE).

Protective earth (ground) (Standard IEC 60417).

Radio certification label (Japanese Radio Law).

Note that the mains voltage is always present at the mains terminal under the cover, when the unit is switched on. Do NOT open the cover. (Standard IEC 60601-1.)

7 For your safety

7.1 Safety precautions

WARNING

No modification of this dental unit is allowed.

WARNING

Only instruments or equipment approved by Planmeca may be connected to this dental unit.

WARNING

Do not simultaneously touch the patient and the PC.

WARNING

Do not simultaneously touch the patient and the USB ports, or any electrical connectors of external instrument modules.

WARNING

Do not touch the patient when opening the cuspidor door or when the cuspidor door is open.

WARNING

Applies only to Planmeca dental units without a patient chair

Do not lift the patient when the patient is placed under the delivery arm. Risk of trapping!

WARNING

Maintenance procedures shall not be performed while equipment is in use with a patient.

WARNING

The patient must not be in contact with instruments when the patient is resuscitated with a defibrillator.

CAUTION

A faulty or broken dental unit must not be used.

CAUTION

Do not perform other maintenance procedures than those instructed in this manual.

CAUTION

When servicing the unit, always switch the unit off.

CAUTION

Guide the patient to sit on the chair. Make sure no one sits on the legrest, the backrest or any other part of the dental unit.

CAUTION

When the patient is in the chair, ensure that the patient's arms and legs are resting on the chair.

CAUTION

Do not allow the patient to grab the operating light or its arm when getting seated or getting up from the patient chair.

CAUTION

Instrument hoses have a limited lifespan and should be replaced after 5 years of use.

CAUTION

The light source of the operating light may cause retinal injury if viewed upon directly.

Protect the patient's and dental treatment staff's eyes with protective glasses that block high-energy visible light (HEV light), or limit the direct exposure to 10 minutes.

CAUTION

Switch off the unit before using an electrosurgical knife.

CAUTION

The use of the electrosurgical knife may affect the function of an implanted pacemaker or defibrillator. Please refer to the manufacturer's own documentation.

CAUTION

Do not use the scaler or the polymerisation light on patients with cardiac pacemakers. The instrument can cause disturbance on the pacemaker's function.

CAUTION

Electromagnetic interference between the equipment and other devices can occur in very extreme conditions. Do not use the equipment in close conjunction with sensitive devices, or devices creating high electromagnetic disturbances.

CAUTION

Do not use the equipment in close conjunction with anaesthetic gas or in highly oxygenated environments (oxygen content >25%).

CAUTION

Before using the dental unit, ensure that the instruments have been properly flushed and that the suction tubes as well as the dental unit's waterlines have been cleaned as instructed in this manual.

CAUTION

If the drain is blocked, the dental unit might overflow with contaminated water and excessive water could flow onto the floor. Shut down the unit and contact your property's caretaker and your Planmeca dealer.

CAUTION

When a water leak is detected, error E90 is displayed. Turn off the clinic's main water tap and contact your Planmeca dealer.

CAUTION

For surgical procedures, use sterile irrigating solutions, such as sterile water or saline. Appropriate delivery devices should be used to deliver sterile irrigating solutions during surgery. This may include a dedicated surgical irrigation system with components including handpieces that are single-use disposable or compatible with heat sterilisation methods used in outpatient dental settings.

CAUTION

A power cut will shut down the software-controlled backflow prevention system. If you are using a turbine without a built-in backflow prevention system, contaminated water can enter into the turbine and turbine hose in the event of a power cut.

CAUTION

In extreme operating conditions the temperature of the chair lift and backrest motors might rise significantly. DO NOT TOUCH THE MOTORS!

CAUTION

In extreme operating conditions the surface temperature of the seat upholstery may rise to 44°C (111°F). When applying maximum allowed load on the patient chair in hot climate conditions, ensure sufficient time for the seat upholstery to cool down.

NOTE

Before switching on the dental unit, make sure that the main water feed, air pressure and suction motor are turned on.

NOTE

National regulations concerning the quality of dental water and dental air must be followed when using the Planmeca dental unit.

NOTE

The water used by the dental unit instruments and cup fill are to be used for rinsing only. For more information, please contact your Planmeca dealer.

NOTE

The main water feed must be turned off when the dental unit is not in use.

NOTE

If your dental unit is not equipped with an internal water/waterline cleaning system, you must connect the dental unit to an external water/waterline cleaning system.

NOTE

The user must monitor the microbial load of the water used by the dental unit.

NOTE

If using air abrasives, please consult instructions for use given by the air polisher manufacturer. Make sure that adequate flushing of dental unit is performed immediately after using air polishers.

NOTE

The air used by the dental unit instruments must be dry, clean and oil-free.

NOTE

Never place heavy objects or containers of liquid on any part of the unit or hang objects from the unit's arm structures.

NOTE

Care should be taken when other movable equipment is used in conjunction with the dental unit.

NOTE

The dental unit shall only be connected to a trusted private network (and not, for example, the Internet).

NOTE

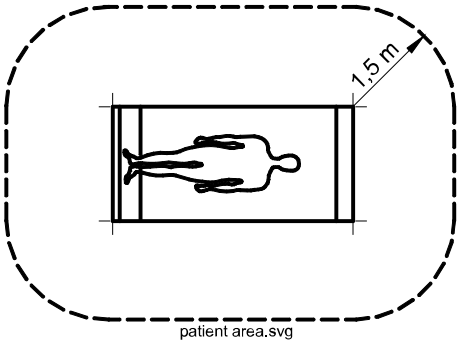
EMC requirements have to be considered, and the equipment must be installed and put into service according to the specific EMC information provided in the accompanying documents.

NOTE

Portable and mobile RF communications equipment can affect the dental unit.

NOTE

External equipment intended for connection to signal input, signal output or other connectors, shall comply with relevant IEC standard (e.g. IEC 60950 for IT equipment and the IEC 60601 series for medical electrical equipment). In addition, all such combinations - systems - shall comply with the IEC 60601-1 standard. Equipment not complying to IEC 60601-1 shall be kept outside the patient area.



patient area.svg

Any person who connects external equipment to signal input, signal output or other connectors has formed a system and is therefore responsible for the system to comply with the requirements of IEC 60601-1. If in doubt, contact a qualified technician or your local representative.

7.2 Safety switches

Care should be taken when driving the patient chair from one position to another. Obstructions in the patient chair's line of movement activate safety switches that stop the motorised movements. The safety switches and their functions are described below.

1. Backrest

   An obstruction between the backrest and the floor when driving down the chair and/or the backrest stops downwards chair and backrest movements. Remove the obstruction to resume normal operation.

2. Chair bottom and lift adapter

   An obstruction between the chair and the floor stops downwards chair and backrest movements. Remove the obstruction to resume normal operation.

3. Legrest

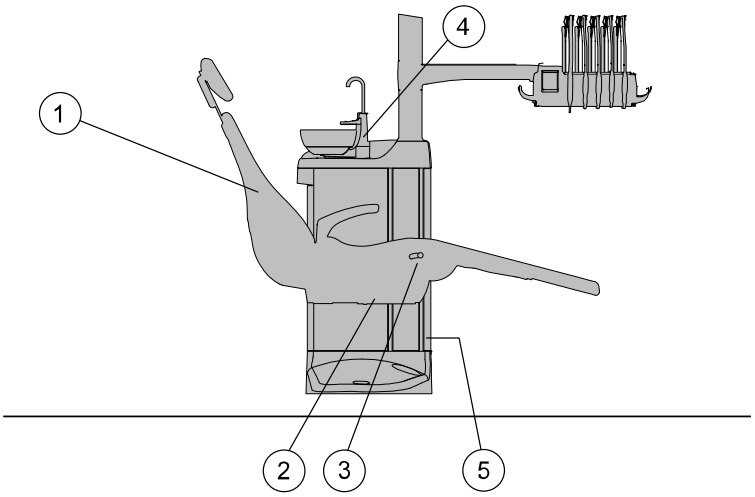
   The position of the legrest is identified as 'locked' or 'unlocked' (= hangs freely). Based on this information, the chair can be driven lower when it is locked.

4. Bowl

   The bowl is above the patient chair and stops upward chair movements. Move the bowl into home position to resume normal operation.

5. Cuspidor door

   The patient chair up/down movement is inhibited when the cuspidor door is open. Also, the operation of instruments is inhibited. Close the door to resume normal operation.



7.3 Stopping chair movements quickly

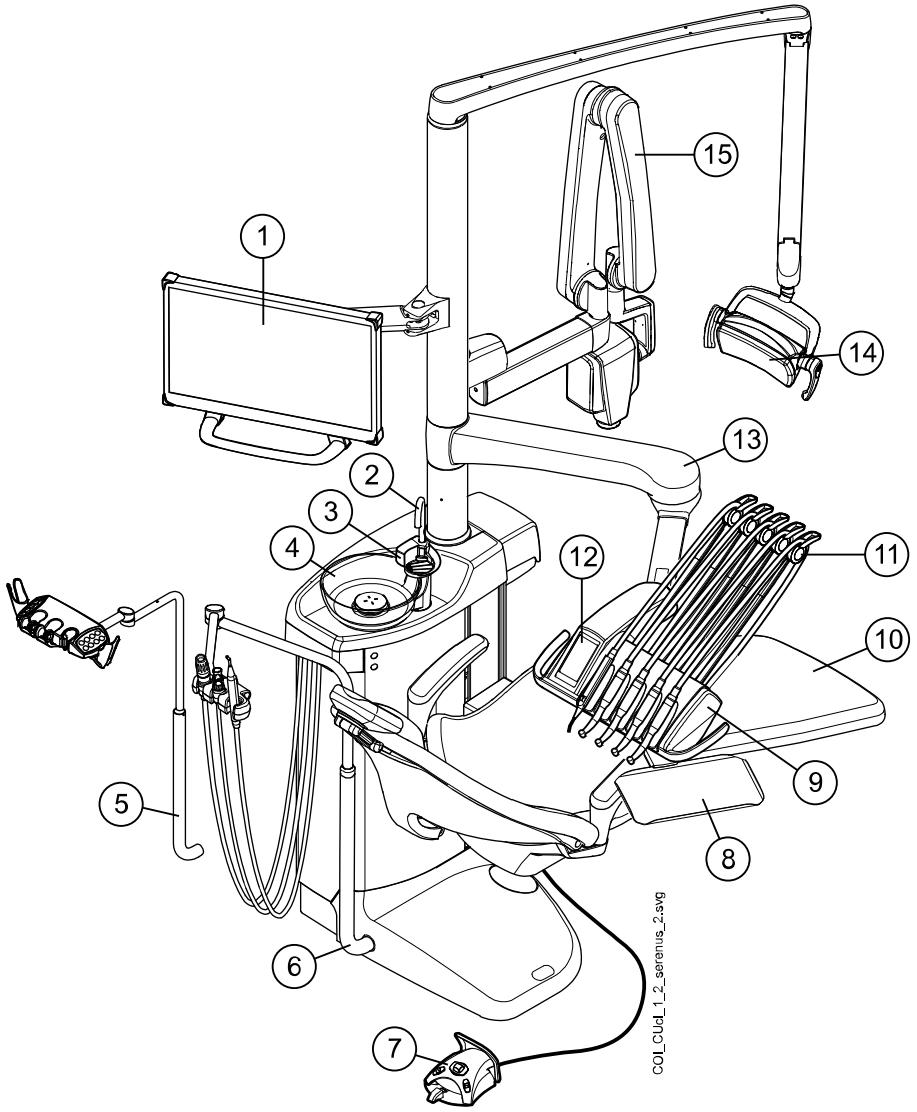
The chair movements can be stopped quickly by:

- touching the chair buttons on the control panel,
- kicking safety switch number 2 on the chair bottom,
- pushing the foot control pedal or the centre knob in any direction, or by
- pressing the handle of the foot control.

8 Planmeca Compact i dental unit

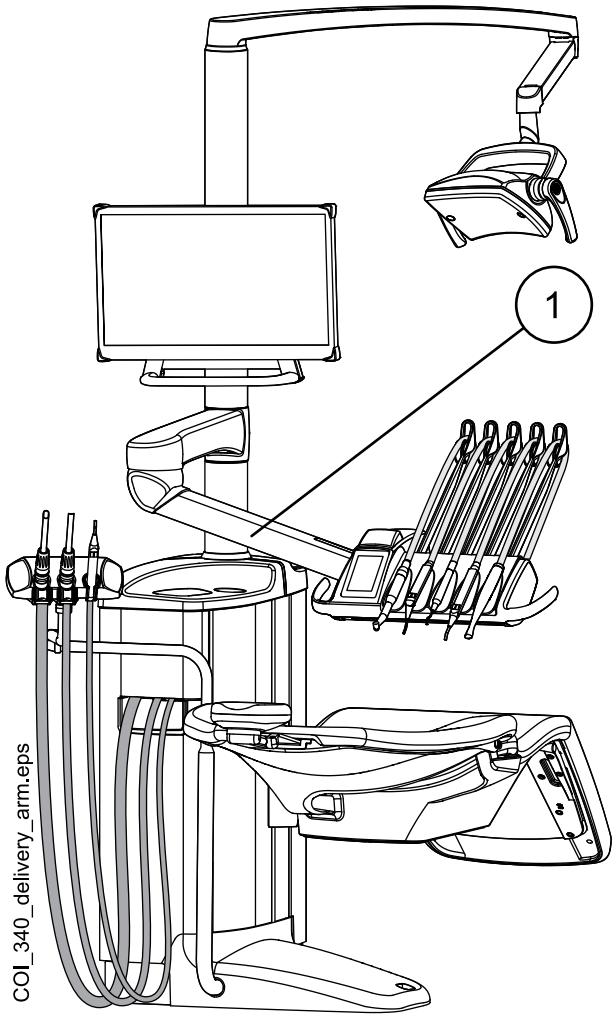
8.1 Unit configuration

8.1.1 Over-the-patient delivery with balanced instrument arms

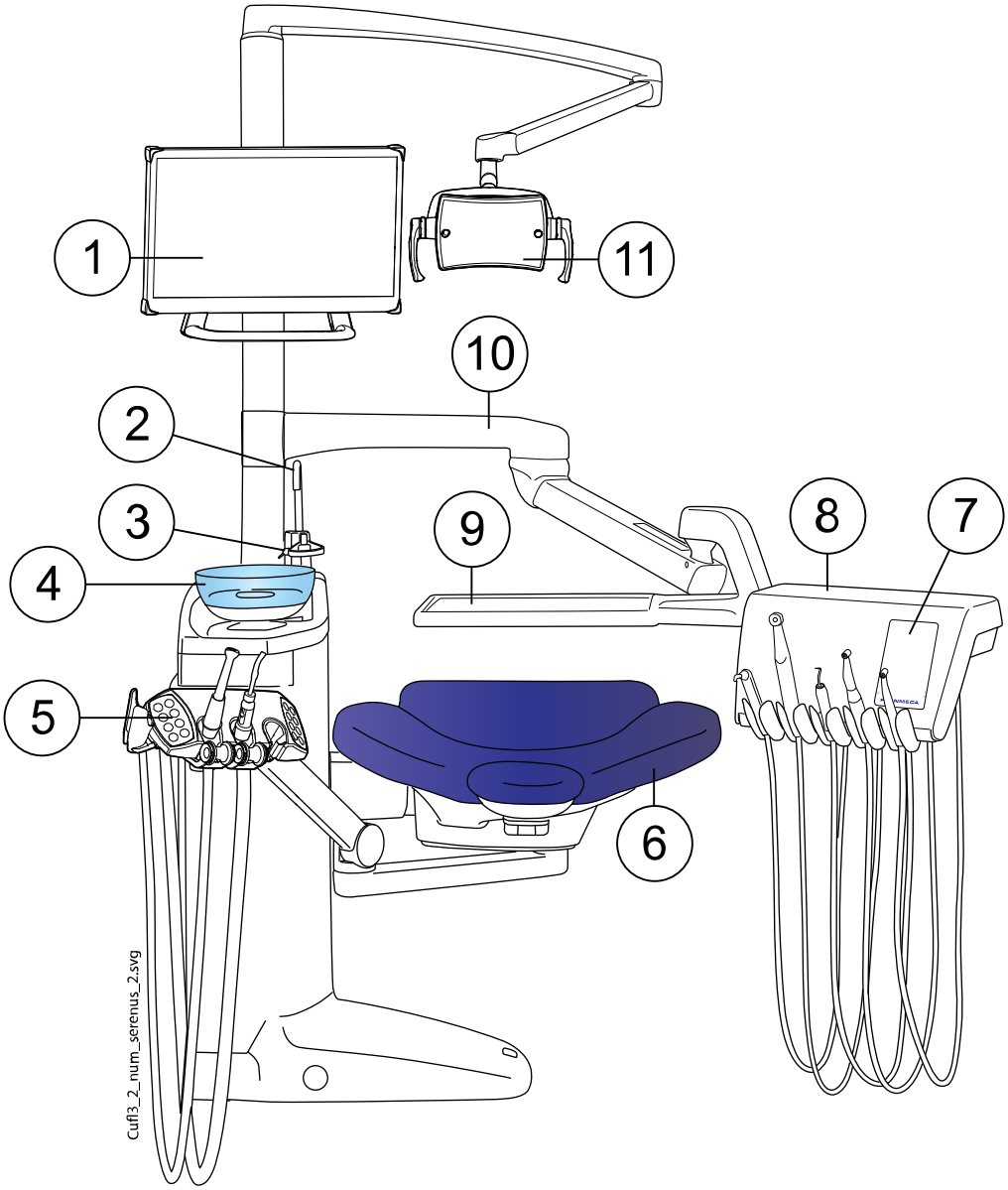


1. Monitor	6. Adjustable suction arm	11. Balanced instrument arms
2. Cup fill tube	7. Foot control	12. Control panel
3. Bowl rinse tube	8. Tray	13. OP delivery arm 520 mm
4. Bowl	9. Instrument console	14. Operating light
5. Adjustable suction arm with Flexy-holder	10. Patient chair	15. ProX X-ray unit

This type of dental unit configuration has the option of a shorter OP delivery arm (340 mm). The shortened console arm (1) allows easy access to the patient chair if the instrument console is placed on the assistant's side during patient change. The shortened console arm is especially well suited for dental units without bowl.


1
COI_340_delivery_arm.eps

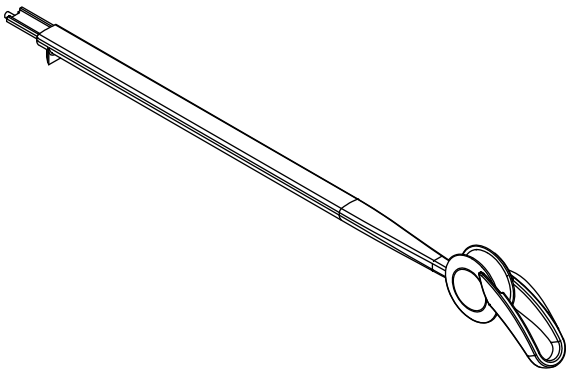
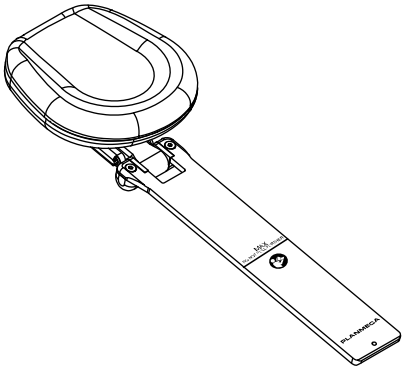
8.1.2 Over-the-patient delivery with hanging-tube instruments



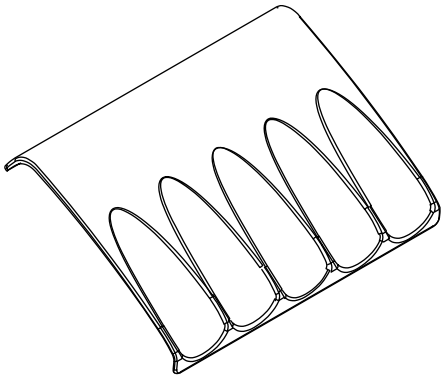
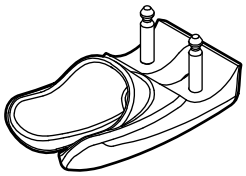
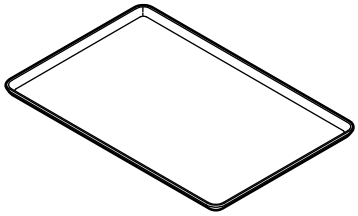
1. Monitor	7. Control panel
2. Cup fill tube	8. Instrument console with hanging-tube (HT) instruments
3. Bowl rinse tube	9. Tray
4. Bowl	10. OP delivery arm
5. Chair-mounted left-right suction arm with Flexy-holder	11. Operating light
6. Patient chair	

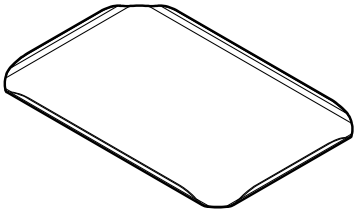
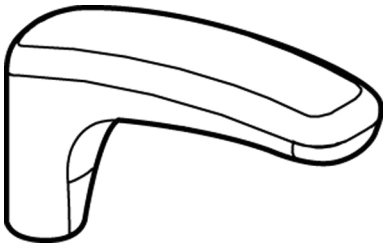
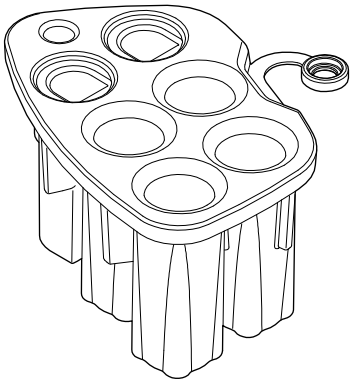
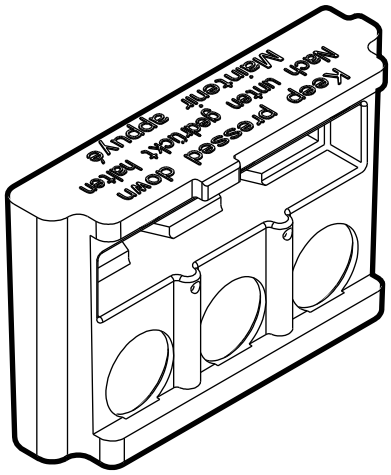
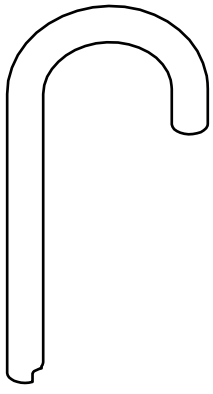
8.2 Detachable parts

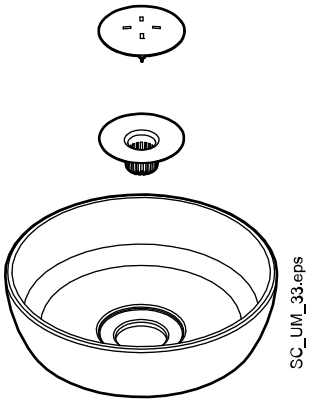
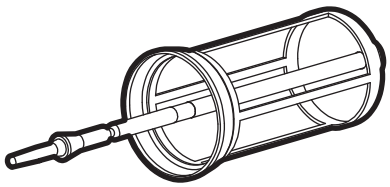
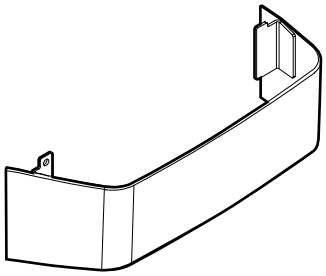
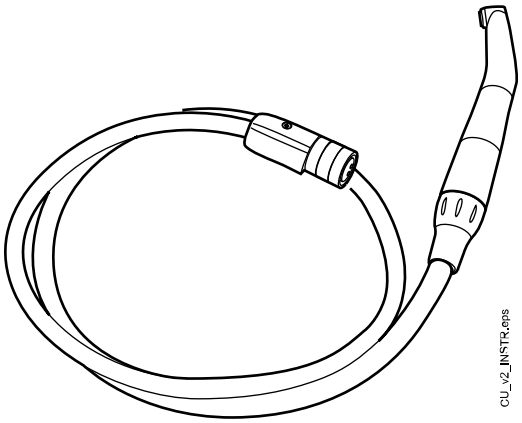
The following detachable components are marked with a manufacturer trademark. Do not perform dental treatment when either or both of these are detached.

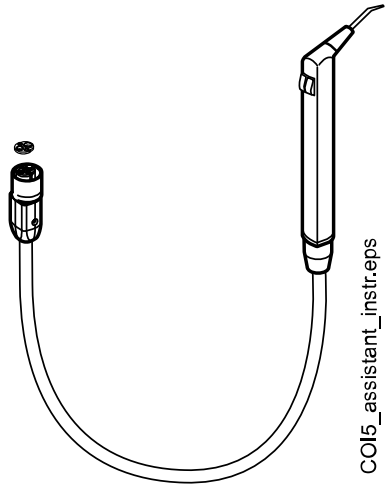
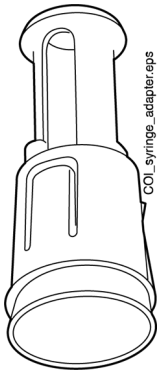
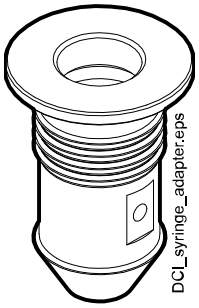
	Balanced instrument arms
	Headrest

The following detachable components are not critical to operation. The user can perform dental treatment even if a wrong, similar part is fitted.

	Hygienic membrane
	HT instrument holder
	Top tray (size 1 and 2)

	Quick connect tray (size 1 and 2)
	Armrests
	Instrument flushing holder
	Suction tube cleaning holder
	Cup fill tube

	Bowl, filter and filter cap
	Disposable filters
	Side cover plate for cuspidor
	Dentist’s instruments and hoses
	Suction tubes

	Assistant’s instruments and hoses
	Adapter for Luzzani Minibright syringe
	Adapter for DCI syringe
	Foot cover

8.3 Applied parts

Applied parts are parts of the dental unit that in normal treatment situations come into contact with the patient.

The applied parts of this dental unit include the instruments, the patient chair with upholstery, and the armrests.

8.4 Bowl

CAUTION

Do not allow the patient to grab the bowl when getting seated or getting up from the patient chair.

NOTE

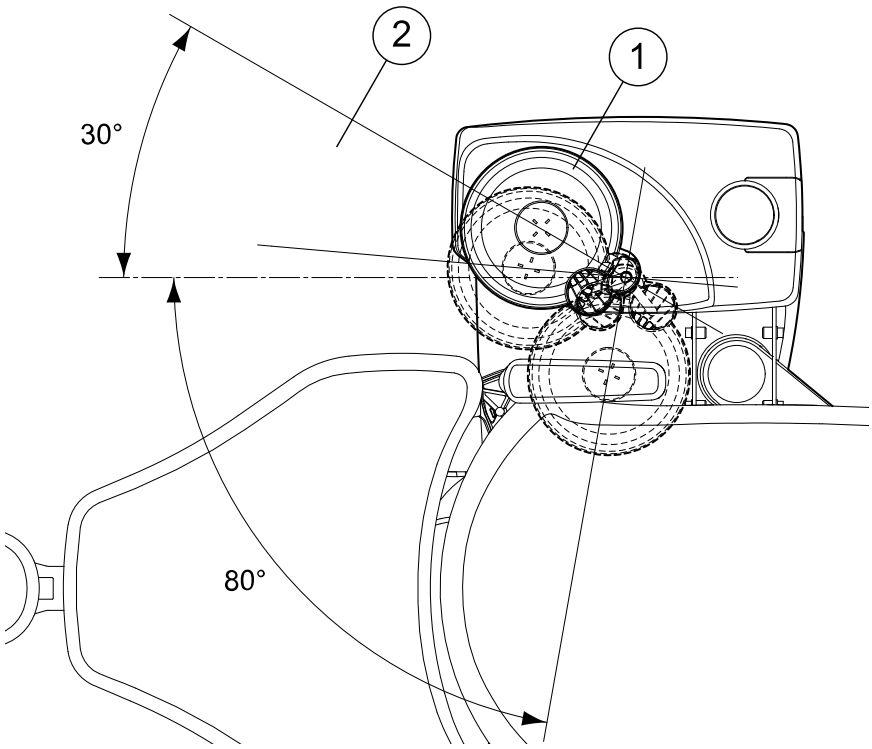
Always place the bowl in home position.

NOTE

Make sure that the bowl is not above the patient chair when you drive the chair upward.

The glass bowl is attached to the top of the cuspidor.

It can be rotated 110° around its axis according to the figure below.



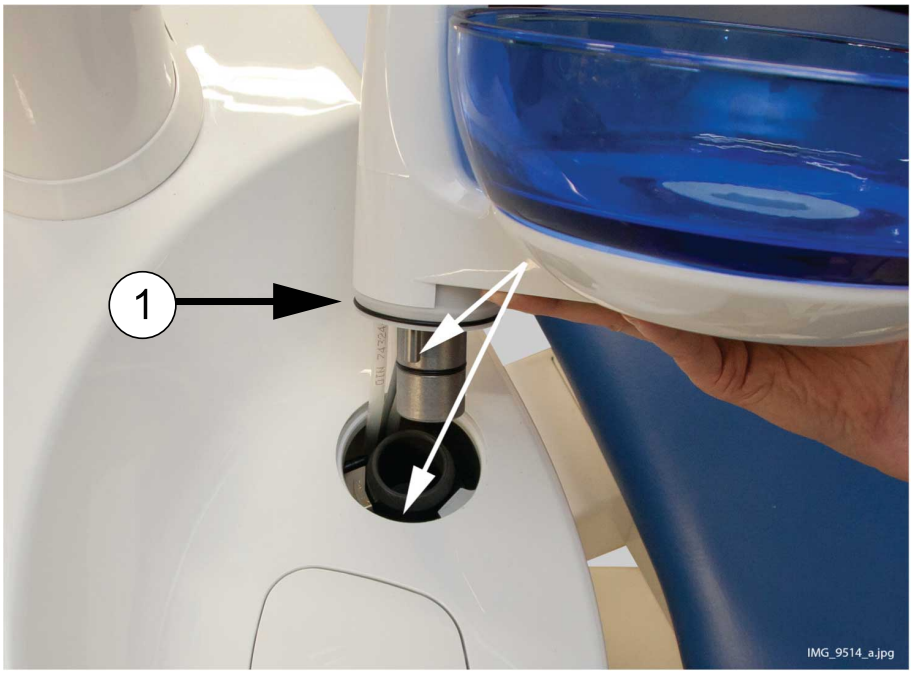
1. Home position
2. To avoid a collision between the patient chair and the bowl when driving the chair upward, position the bowl within this area.

If the bowl assembly for some reason comes off the cuspidor, you can put it back as follows:

1. Place the ring to the underside of the bowl assembly

   This is shown by item 1 in the picture below.

2. Make sure that the peg goes into the slot as shown in the picture below.



3. Push the bowl downwards at the same time making sure that no cables are squeezed.
4. Turn the bowl assembly into place. You will know that it is in place when you hear the clicking sound of the micro switch

8.5 Monitor

The monitor can be moved from its handle.

CAUTION

Do not allow the patient to grab the monitor handle or monitor arm when getting seated or getting up from the patient chair.

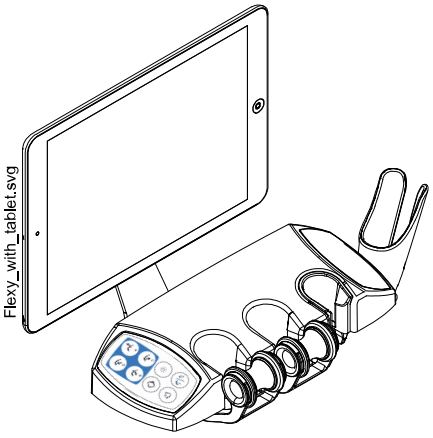
NOTE

Never spray water on the monitor.

For more information, see the monitor's user's manual.

8.6 Tablet holder

A tablet can be attached to the tablet holder on the Flexy-holder.



Before attaching the tablet to the tablet holder, ensure that the round mount interface is glued to the backside of the tablet.

To attach the tablet to the tablet holder, position the mount interface towards its counterpart on the tablet holder slightly askew so that they interlock. Then, turn the tablet 45° to either side to lock the tablet to the tablet holder.

NOTE

Ensure that the tablet is protected from splashes.

NOTE

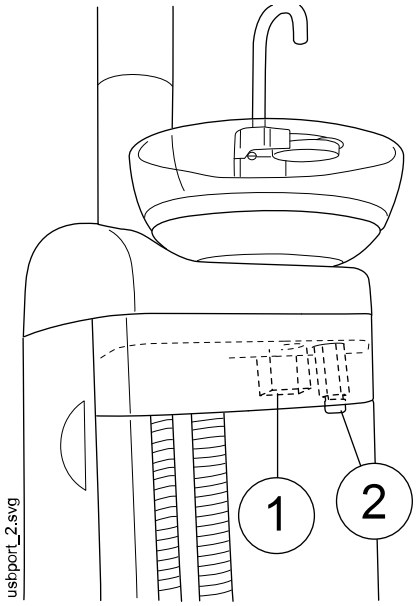
Planmeca is not liable for damages caused to the tablet caused by negligence, including but not limited to dropping the tablet on the floor.

The tablet can be charged from the USB port on the cuspidor, see section "Cuspidor" on page 24.

8.7 USB connectivity

8.7.1 Cuspidor

There are two optional USB ports on the cuspidor.



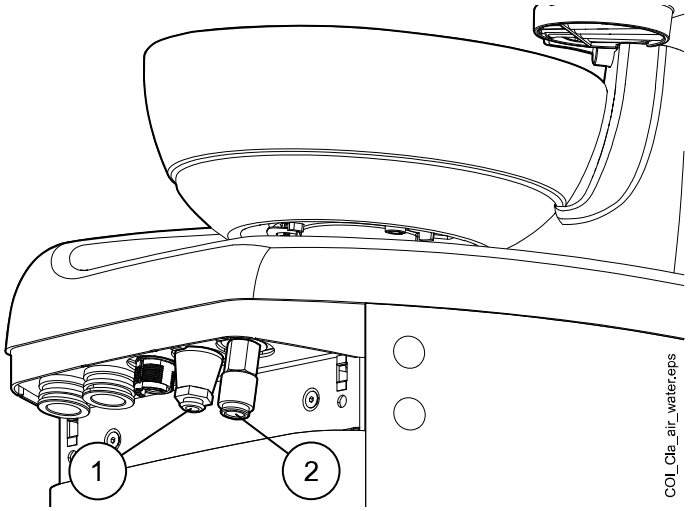
1. USB port for charging the tablet
2. USB port for connecting the intraoral camera.

   Connect only intraoral cameras supplied by Planmeca to the USB port.

8.8 Water and air quick-connectors

The water and air quick-connectors can be used with external devices. When you connect a device to the quick-connector, water/air flows to the device.

The water and air quick-connectors are located on the cuspidor, next to the suction hoses.

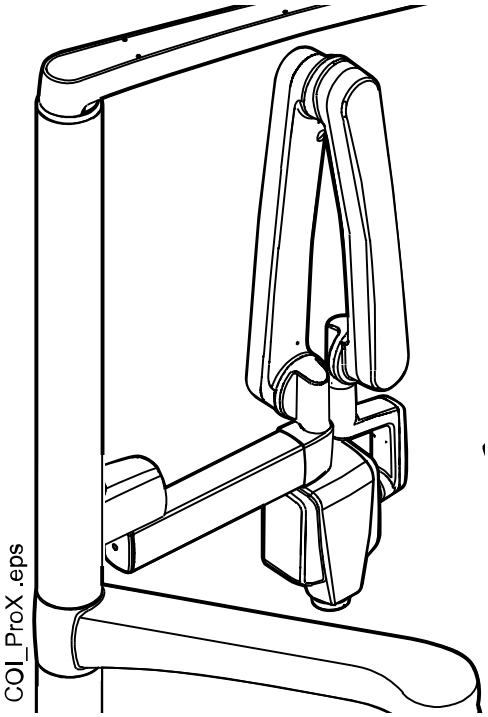


1 Water quick-connector
2 Air quick-connector

To avoid stagnant water inside the dental unit, regularly use enough water with external devices connected to the water quick-connector, as the quick-connector's waterline is not included in the dental unit's flushing and cleaning programs.

8.9 Planmeca ProX X-ray unit

The Planmeca ProX X-ray unit can be mounted to the dental unit pylon.



CAUTION

Drive the chair carefully when positioning the ProX X-ray unit.

CAUTION

Do not drive the chair during the exposure.

CAUTION

Do not touch the external PC and the patient at the same time.

CAUTION

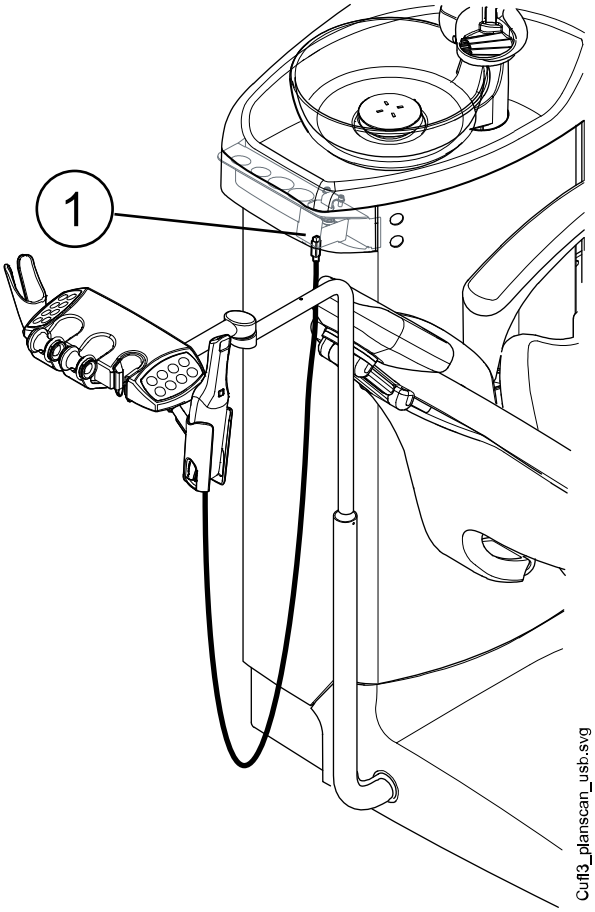
Move the ProX X-ray unit behind the pylon when it is not being used.

For more information about Planmeca ProX, see Planmeca ProX User's Manual.

8.10 Planmeca intraoral scanner

The intraoral scanner can be placed in the Flexy-holder.

Before using the scanner you must connect it to the dental unit. The connector on the scanner must be carefully attached to the port for the scanner on the cuspidor (1).



CAUTION

Make sure that you attach the intraoral scanner connector the right way into the port for the scanner. If the connector is turned the wrong way, it will not go into the port. Use of unnecessary force will break the connector.

NOTE

There are two ports on the cuspidor. One is the port for the intraoral scanner, and the other is a USB port. Make sure you attach the connector to the right port.

NOTE

To avoid splashes on the scanner, remove it from the dental unit after use and place it on the table stand.

For more information about the intraoral scanner, see *Planmeca FIT user's manual.*

9 Planmeca Solanna and Planmeca Solanna Vision operating lights

CAUTION

Do not allow the patient to grab the operating light or its arm when getting seated or getting up from the patient chair.

NOTE

The Planmeca Solanna Vision operating light is not available for the Planmeca Compact i Classic dental unit with a legacy control panel.

You can operate the Planmeca Solanna operating light either from the light itself, or from the dental unit’s control panel or foot control. It also features a “no touch” function, which means that you can operate the light by waving your hand in front of the sensor.

For information on how to operate the operating light, see section "Planmeca Solanna and Planmeca Solanna Vision operating light" on page 70.

For instructions on how to program the operating light, see section "Planmeca Solanna and Planmeca Solanna Vision operating lights" on page 106.

10 Instrument system

10.1 Delivery arms

10.1.1 Over-the-Patient (OP) delivery arm

The OP delivery arm is attached to the top of the dental unit and swings over the chair.

CAUTION

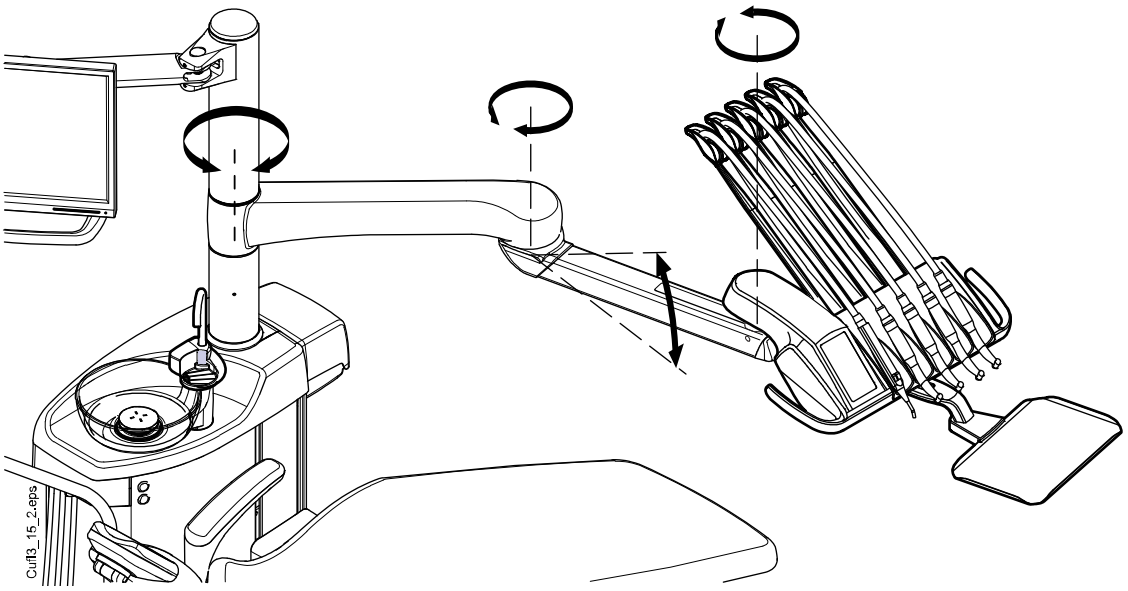
Do not lean on the OP delivery arm.

CAUTION

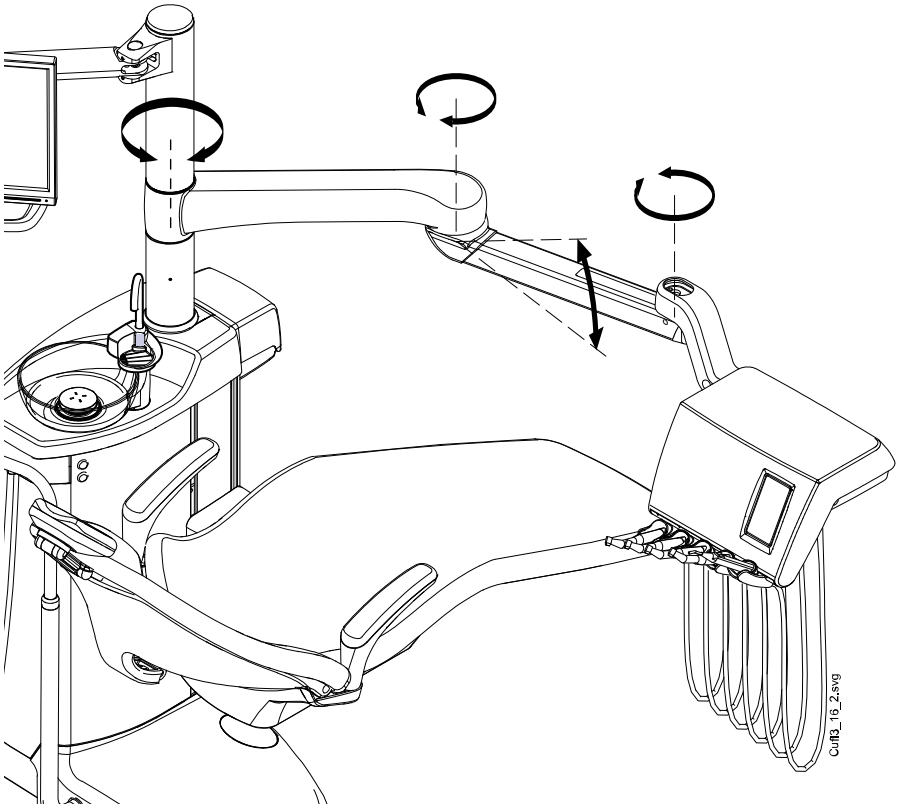
Do not allow the patient to grab the OP delivery arm when getting seated or up from the patient chair.

The instrument console can be positioned using the handles on the console. The rotation area of the delivery arm is presented in the illustrations below. The items do not need to be locked into position.

The following presents the OP delivery arm with balanced instrument arms.



The following presents the OP delivery arm with hanging-tube instruments.

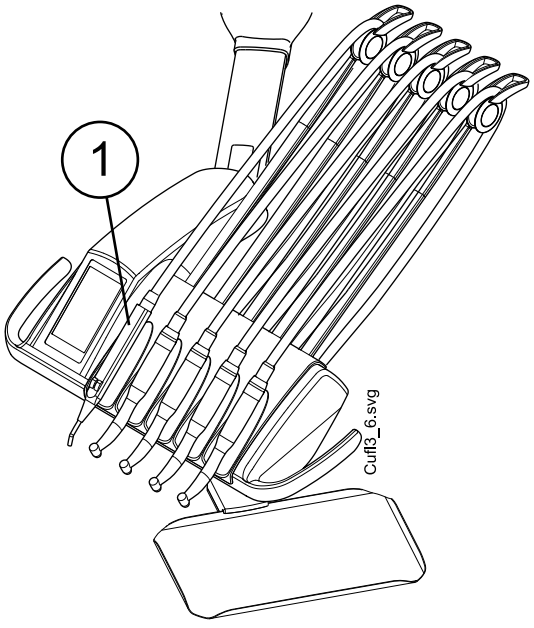


10.2 Instrument console

10.2.1 Instrument console with balanced instrument arms

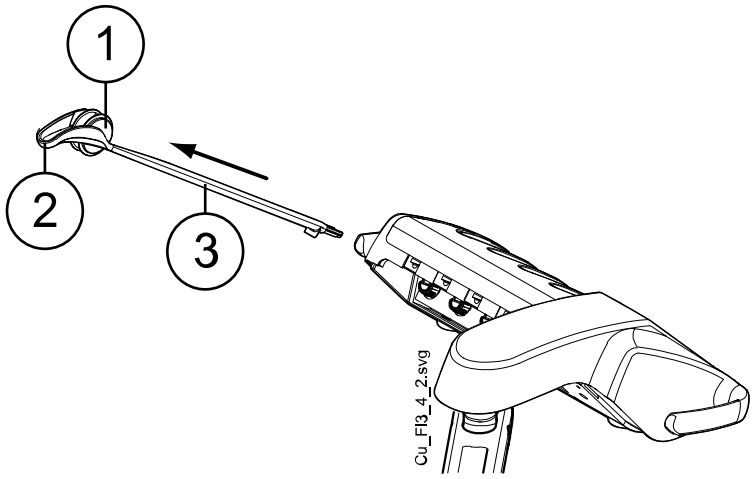
The console can be equipped with up to five instruments.

The leftmost position is reserved for the syringe only. The other instruments can be positioned in any order in the four remaining positions.



1. Syringe

The instrument arms can be removed by pulling them out from their holders, for example for cleaning or for covering with protective sleeves. The arms are replaced simply by pushing them firmly into their places.

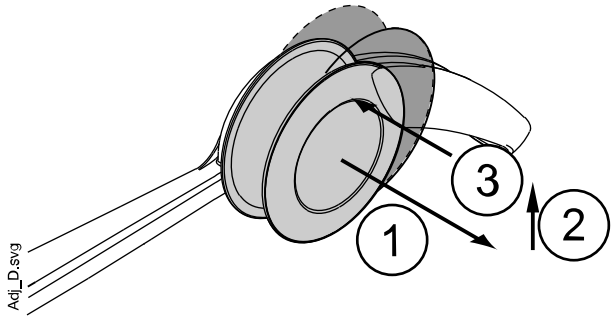


1. Roller
2. Hose guide
3. Instrument arm

When placing the instrument hose back in the roller, bend the hook of the hose guide carefully and pass the hose over the roller.

The balance of the instrument arms can be changed according to the weight of the instrument and personal preferences. Their flexibility can be adjusted as follows:

1. Pull out the roller.
2. Adjust the balance of the instrument arm by moving the roller to a desired position. Note that by positioning the roller higher up, the arm is lighter to bend.
3. Push the roller back in to lock its position

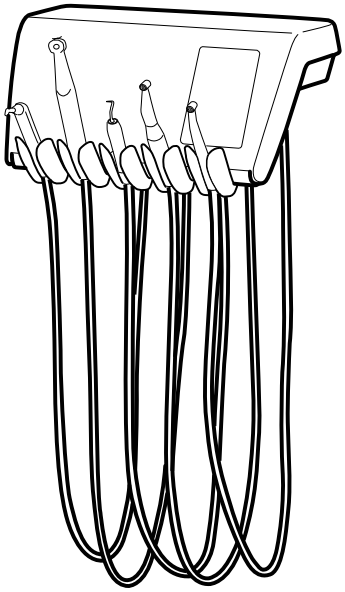


NOTE

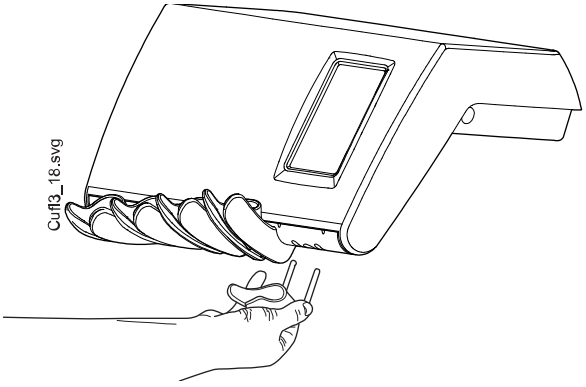
When balancing/adjusting the instrument arms, bear in mind that the instruments shall under no circumstances fall over the patient.

10.2.2 Instrument console with hanging-tube instruments

The console can be equipped with up to five instruments. The leftmost position is reserved for the syringe only. The other instruments can be positioned in any order in the four remaining positions.



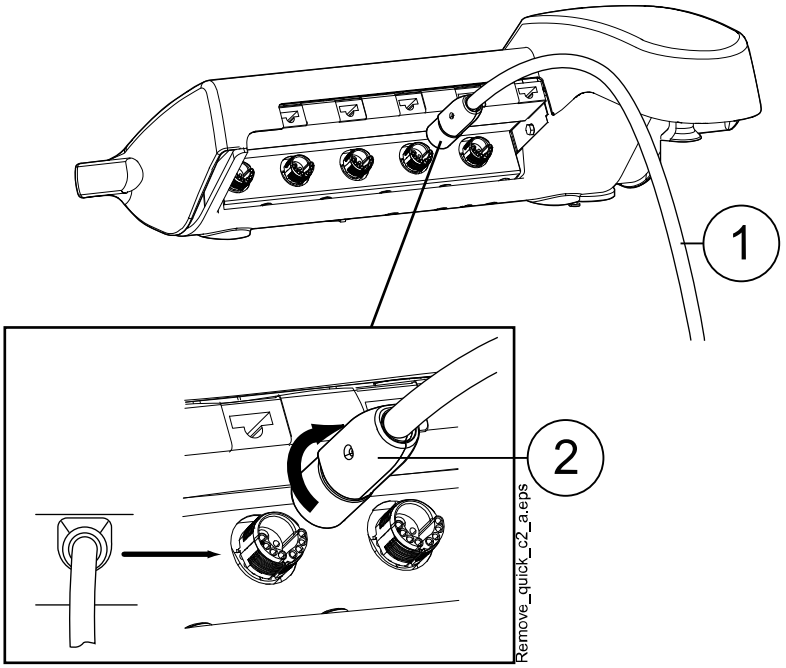
The instrument holders can be removed by pulling them out from their openings, for example for cleaning. The holders are replaced simply by pushing them firmly into their places. The angle of the instrument holder can be slightly adjusted.

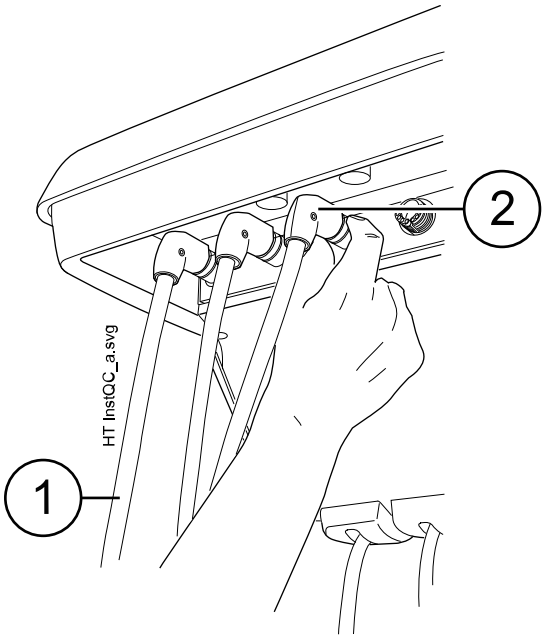


10.3 Quick-connector hoses

The instruments are equipped with quick-connector hoses to be connected to the instrument console. If a syringe and/or a polymerisation light are placed in the Flexy-holder, they are connected to the cuspidor.

The hose is connected into place by turning the connector locker clockwise, and removed by turning the connector counter-clockwise. Make sure that the flat side of the connector is upward when connecting the quick-connector hose to the dental unit.





1. Instrument hose
2. Quick-connector

Switch the unit off before opening the quick-connectors. When disconnecting the syringe, empty the water and air from the hose before opening the connector.

The instrument location on the instrument console can be changed simply by removing the instrument with its hose and reconnecting it to the new place. The old instrument settings will remain the same despite of the new location of the instrument hose.

The instrument selection on the instrument console can also be interchanged. The settings of the eight last used instruments are stored in the memory, and are recalled when the instrument is reconnected.

NOTE

Make sure that the hoses are properly connected to avoid any leakage.

NOTE

Always make sure that the instrument hose is correct for the used instrument. The control system identifies the instrument hose, not the instrument. The control system does not recognise if an instrument has been changed on the instrument hose.

NOTE

If the outer casing of the instrument hose is broken, the entire hose must be replaced, although the hose itself might still be functioning.

NOTE

The instrument sealings must be correct and unbroken, and the instrument must be attached properly to the hose connector. The leakage between the instrument and the connector causes leakage air to drift into the hose lining.

NOTE

A scaler requires additional electronics and the scaler type can not be changed without changing electronics.

10.4 Instrument functions

The instrument console has five instrument positions. You can set each instrument so that the following functions will, where applicable, either be on or off when the instrument is active (i.e. picked up from the instrument console):

- instrument spray
- automatic chip blow
- instrument light
- reverse rotation (micromotors)
- quickstart (air driven instruments)
- RPM limit (Bien-Air MCX micromotors)
- torque limit (Bien-Air MCX micromotors)

The type or magnitude of the following functions can be programmed:

- instrument spray
- automatic chip blow
- instrument light
- instrument speed/power reduction
- torque limit

10.4.1 Instrument spray

The instrument spray can be programmed to be on or off when the instrument is active (i.e. picked up from the instrument console). Also, the type of spray can be programmed.

If the Planmeca Sterile water system is in use, the sterile water mode can be enabled/disabled.

For more information, see sections "Instrument spray" on page 101 and Unknown link target: 'I.1+X0012984.dita#I+X0012984'.

10.4.2 Automatic chip blow

The automatic chip blow can be programmed to be on or off when the instrument is active (i.e. picked up from the instrument console). Also, the type of automatic chip blow can be programmed.

For more information, see section "Automatic chip blow" on page 102.

10.4.3 Instrument light

The instrument light can be programmed so that it will either be on or off when an instrument is active (i.e. picked up from the instrument console). Also, the intensity can be adjusted. For more information, see section "Instrument light" on page 103.

The instrument light can be on only in one instrument at a time, for example, the instrument light of the syringe will switch off, if the light of the active instrument is switched on.

10.4.4 Reverse rotation of micromotor

The direction of the micromotor rotation can be reversed, see section "Reverse rotation" on page 80.

10.4.5 Quickstart of air driven instruments

The turbine can be set to start with maximum speed, see section "Quickstart" on page 84.

10.4.6 RPM limit

The RPM limit for the Bien-Air MCX micromotor can be set to be on or off when the instrument is active (i.e. picked up from the instrument console), see section "RPM" on page 84.

10.4.7 Torque limit

The torque limit for the Bien-Air MCX micromotor can be set to be on or off when the instrument is active (i.e. picked up from the instrument console), see section "Torque" on page 83.

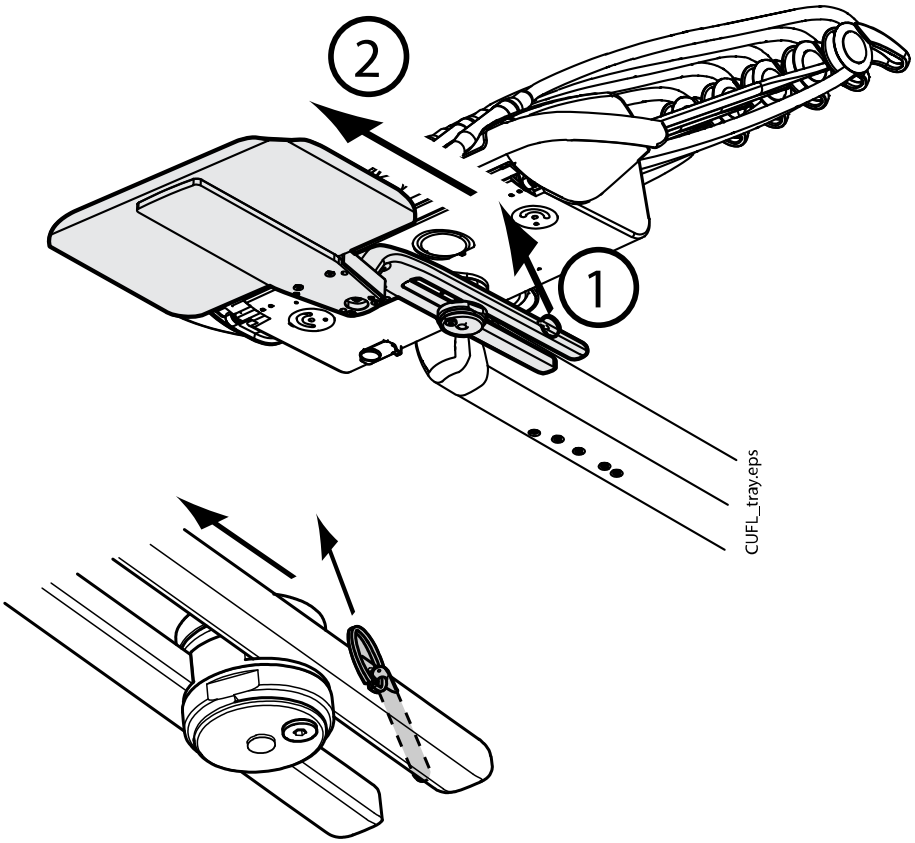
10.5 Trays

10.5.1 Quick-connect tray

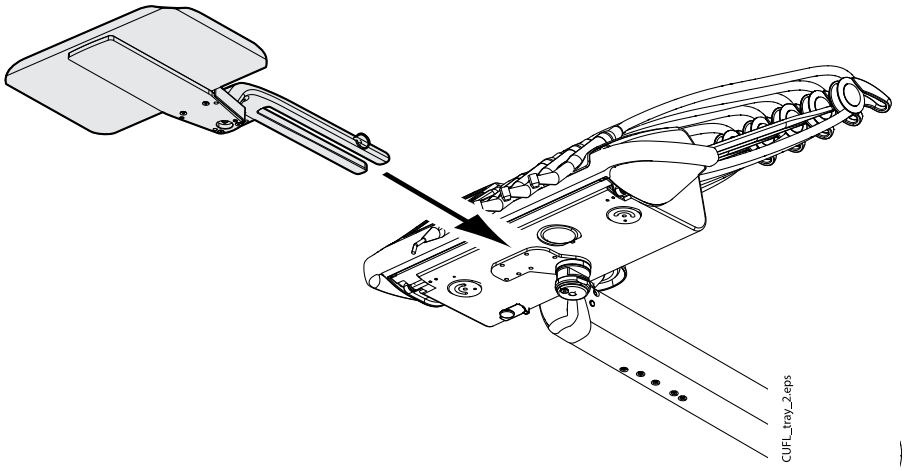
The quick-connect tray is available for the instrument console with balanced instrument arms.

The tray is attached to the mounting arm with a magnetic connector and can easily be attached and detached. You can rotate the tray 360° to the desired position. The maximum load on the quick-connect tray is 2 kilograms (4.4 lbs).

The tray mounting arm is attached to the instrument console with a quick-connector. To remove the tray assembly from the instrument console, pull the ring of the locking mechanism outwards (1) and then pull the tray arm away from its position (2).



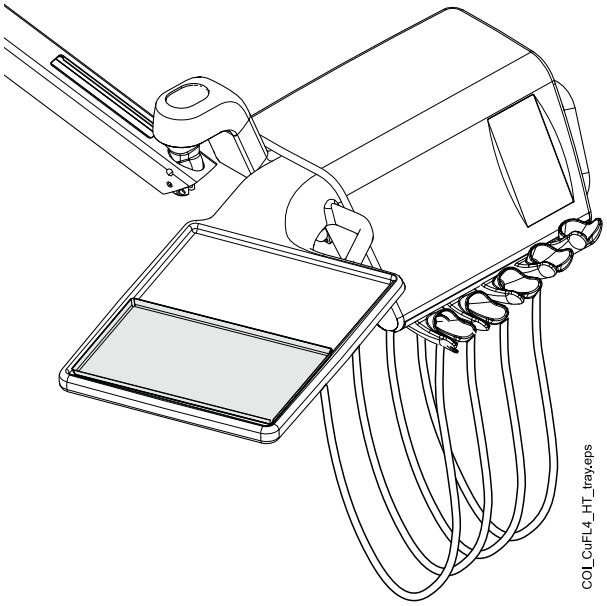
The mounting arm can be attached to the instrument console by pushing it to its position.



10.5.2 Integrated tray

The integrated tray is available for OP-deliveries with hanging-tube instruments. The maximum load on the tray is 2 kilograms (4.4 lbs).

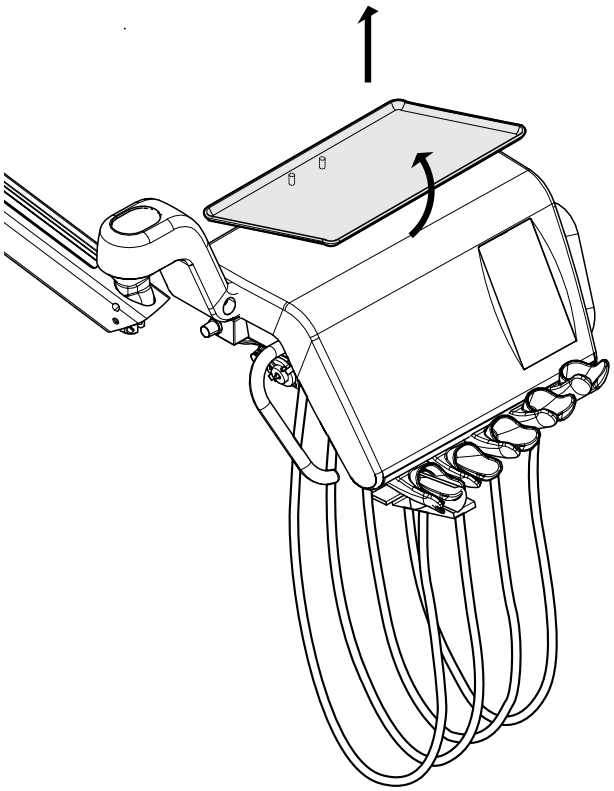
The integrated tray is located on the left side of the instrument console.



10.5.3 Top tray

The top tray is placed on top of the instrument console and is available for OP-deliveries with hanging-tube instruments and for the mobile cart. The maximum load on the top tray is 2 kilograms (4.4 lbs).

The tray is attached to the instrument console with a quick-connector, enabling an easy attachment and detachment of the tray.

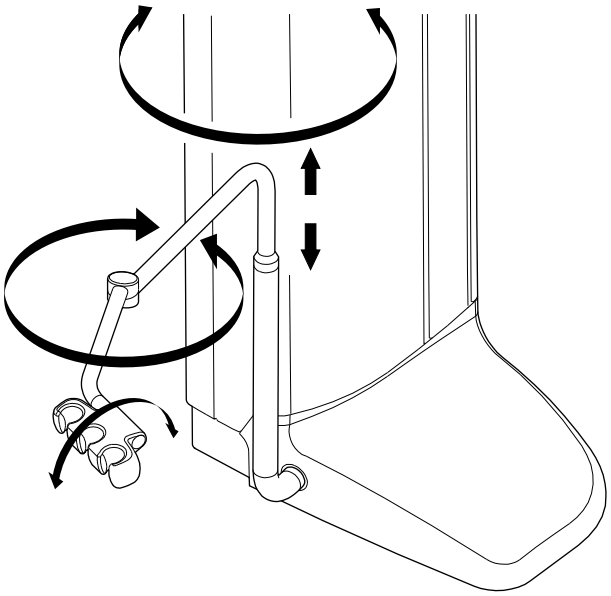


11 Suction system

11.1 Suction arms

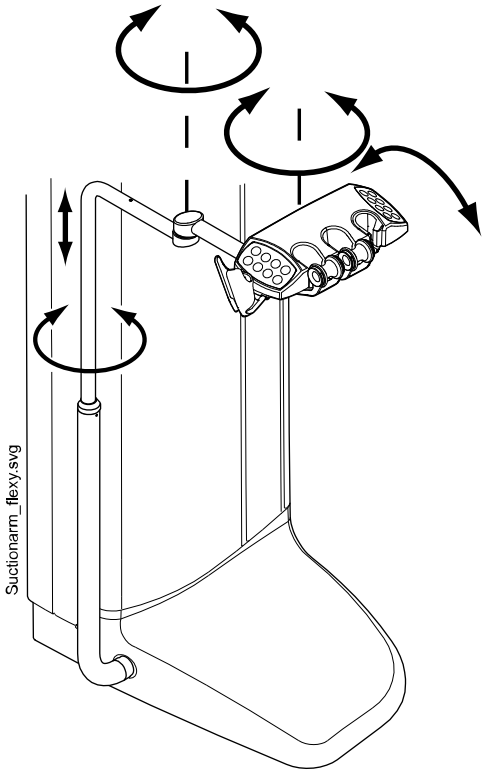
11.1.1 Adjustable suction arm

The adjustable suction arm is attached to the side of the unit base.



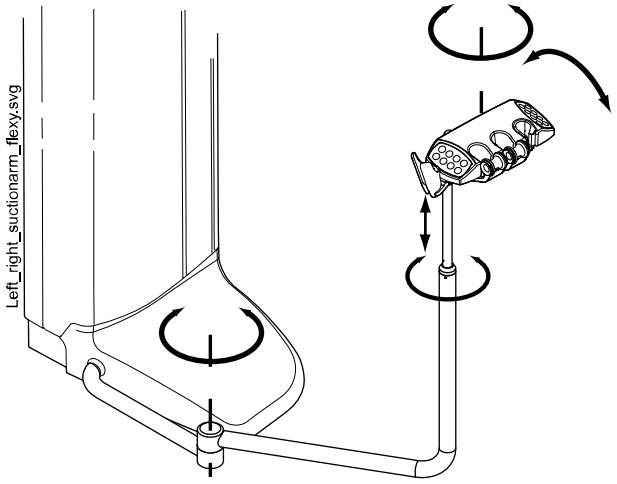
11.1.2 Adjustable suction arm with Flexy-holder

The adjustable suction arm with a Flexy-holder is attached to the side of the unit base.



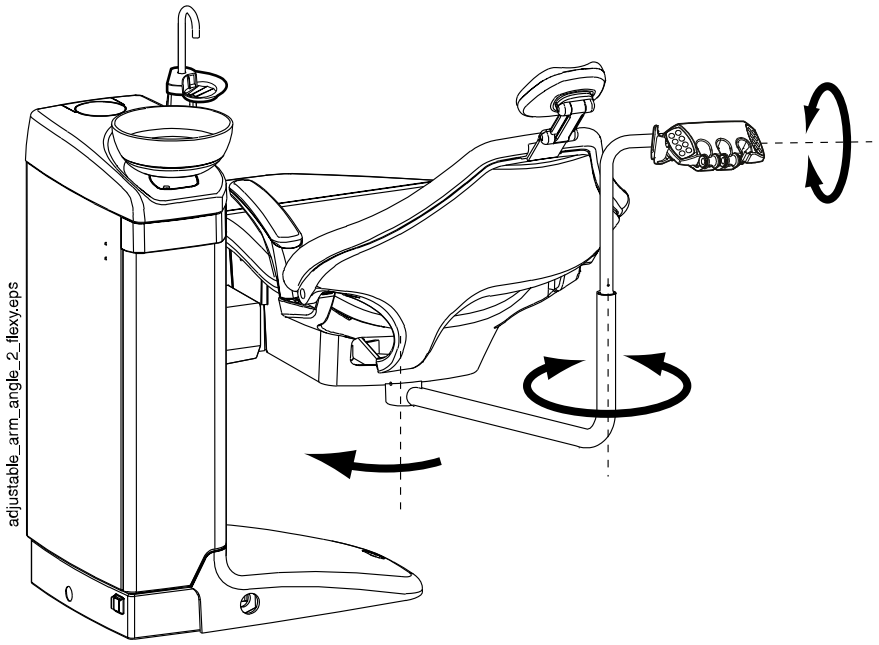
11.1.3 Left/right suction arm with Flexy-holder

The left-right suction arm with a Flexy-holder is attached to the side of the unit base.



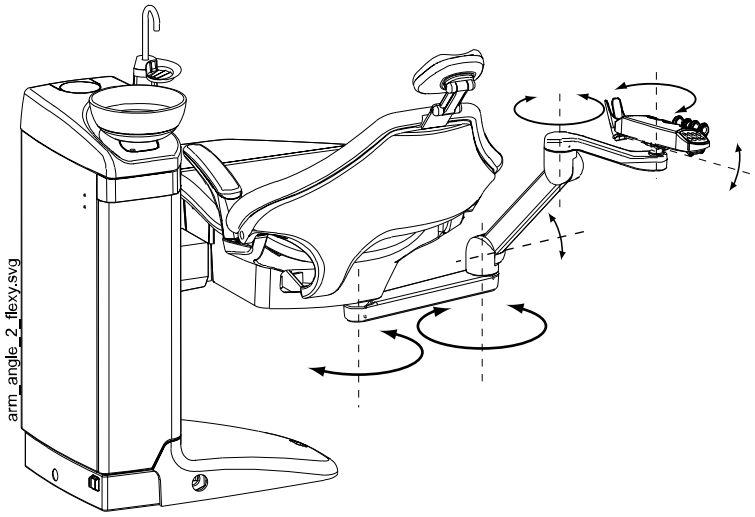
11.1.4 Chair-mounted adjustable suction arm with Flexy-holder

The chair-mounted adjustable suction arm with a Flexy-holder is mounted to the underside of the patient chair.



11.1.5 Chair-mounted left/right suction arm with Flexy-holder

The chair-mounted left/right suction arm with a Flexy-holder is mounted to the underside of the patient chair.



NOTE

If the chair is equipped with a chair-mounted left/right suction arm, make sure that the Flexy-holder does not hit the cuspidor when driving the chair up.

NOTE

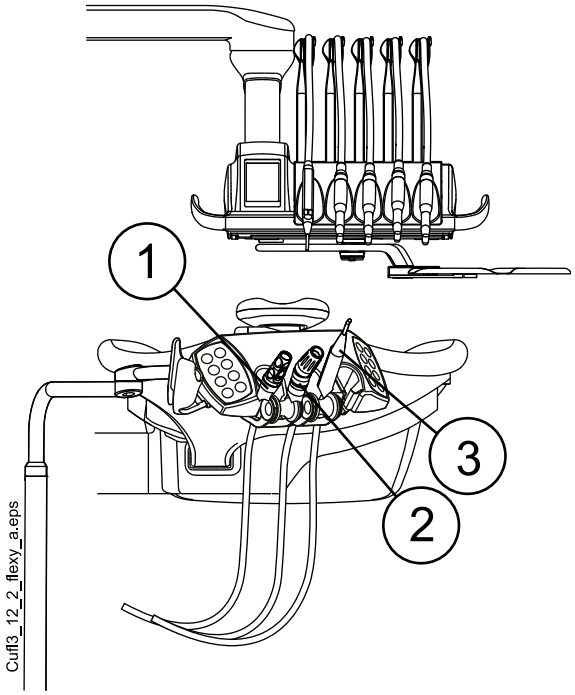
If the chair is equipped with a chair-mounted left/right suction arm, make sure that the Flexy-holder is not above the cuspidor when driving the chair down. If the chair does not move downward and H 03 is displayed, check that the chair-mounted arm is not in the upmost position. This arm position prevents the chair from moving downward.

11.2 Flexy-holder

The suction handpieces are placed in the Flexy-holder.

The Flexy-holder is a suction holder that is attached to the suction arm. Its integrated control panels enable you to control selected functions of the dental unit. For more information on the control panel, see section "Control panel on Flexy-holder" on page 54.

The Flexy-holder has three openings. The two left-most openings can be equipped with suction handpieces and the right-most with the assistant's syringe. In addition, one or two supplementary holders or a holder for the intraoral scanner can be placed on either side of the Flexy-holder. The supplementary holder can be equipped with a USB intraoral camera or a polymerisation light.



1. Saliva suction handpiece
2. High-volume suction handpiece
3. Syringe

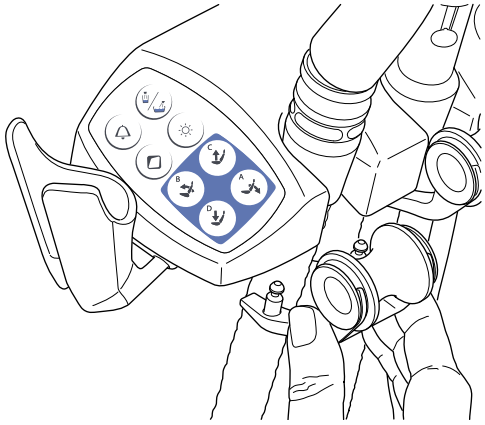
NOTE

The intraoral scanner and the USB intraoral camera can not be simultaneously attached to the Flexy-holder. If the intraoral scanner is placed in the Flexy-holder, the USB intraoral camera can be placed in the instrument console.

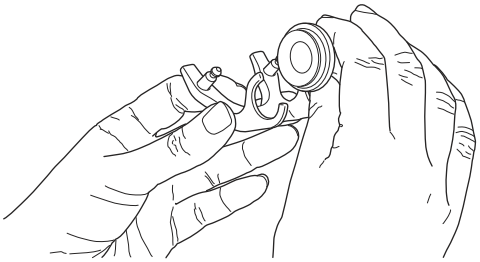
Removing holders

The suction tube, instrument and supplementary holders can be removed from the Flexy-holder, for example for cleaning.

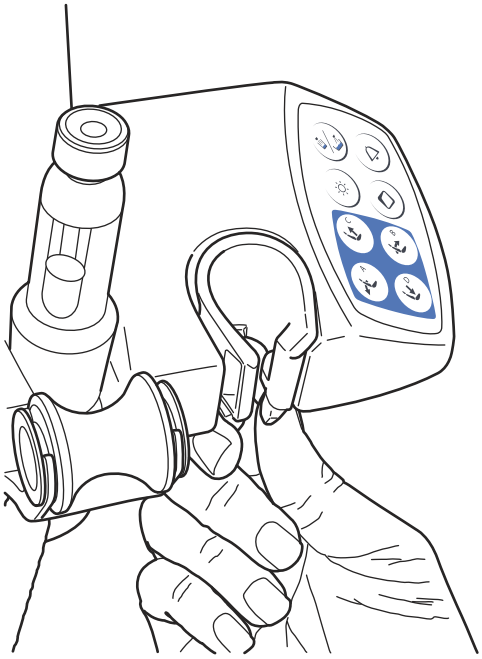
Remove the suction tube holder by pulling it downward from the Flexy-holder. To replace it, push it firmly into its place.



Remove the roller from the suction tube holder by pulling it away from the holder. To replace it, push it firmly into its place.

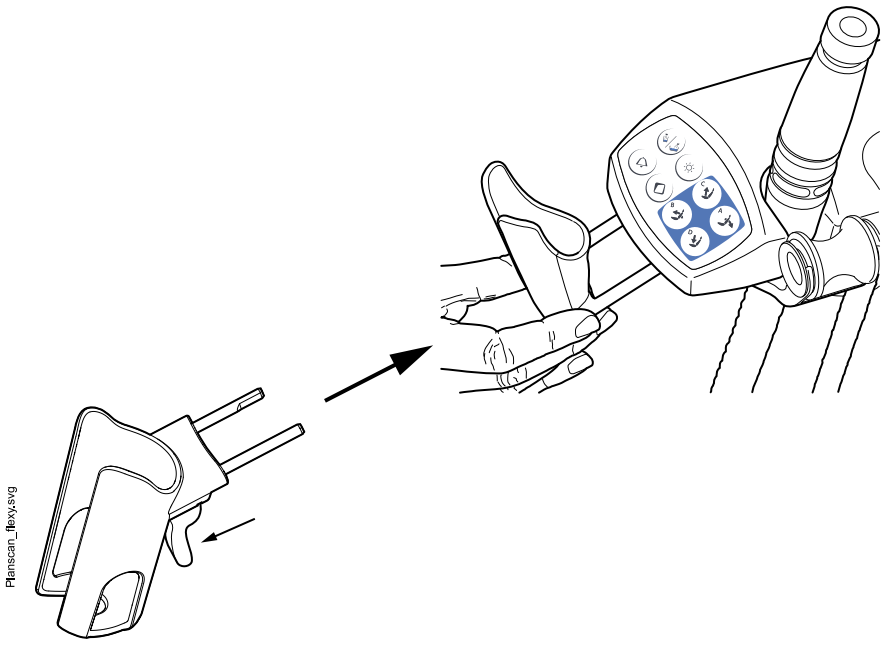


Remove the instrument holder by squeezing it from the bottom and at the same time lifting it upward. To replace it, squeeze the holder and insert it into its place.



Remove the supplementary holder by pulling it out from the Flexy-holder. To replace it, push it firmly into its place.

Remove the holder for the intraoral scanner by pressing the trigger (see arrow in picture) and pulling the holder out from the Flexy-holder. To replace the holder for the intraoral scanner, push it firmly into its place.



11.3 Removing and replacing suction tubes

Steps

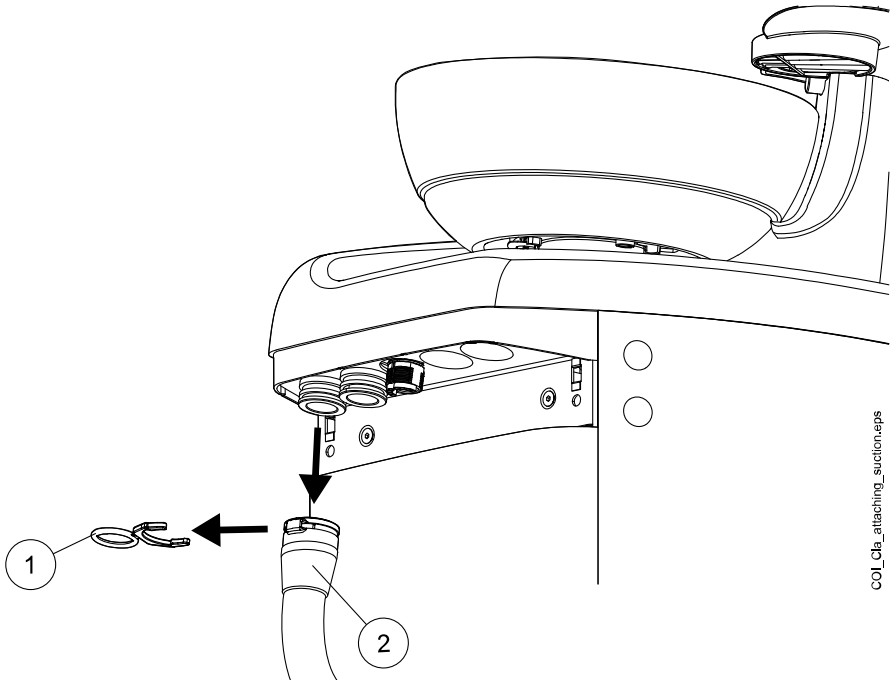
1. To minimise contamination risk, perform suction cleaning.

   For instructions, see section "Suction cleaning" on page 117.
2. Remove the side cover plate by pulling it out from the cuspidor.
3. Detach the securing ring (1) from the suction tube.

NOTE

You can grease the securing ring with non-toxic vaseline to make it easier to remove.

4. Remove the suction tube (2) from the suction tube connector.



5. Replace the suction tubes in the reverse order.

12 Patient chair

CAUTION

Make sure no one sits on the legrest or the backrest.

NOTE

The patient chair can be equipped with a fixed or an automatic legrest.

NOTE

If, for example, the patient feels sick and starts to vomit while lying in the chair, you can raise the backrest quickly by pushing it up by hand from behind the backrest. Note, however, that the backrest does not stay up by itself but must be supported the whole time and lowered in a controlled manner.

NOTE

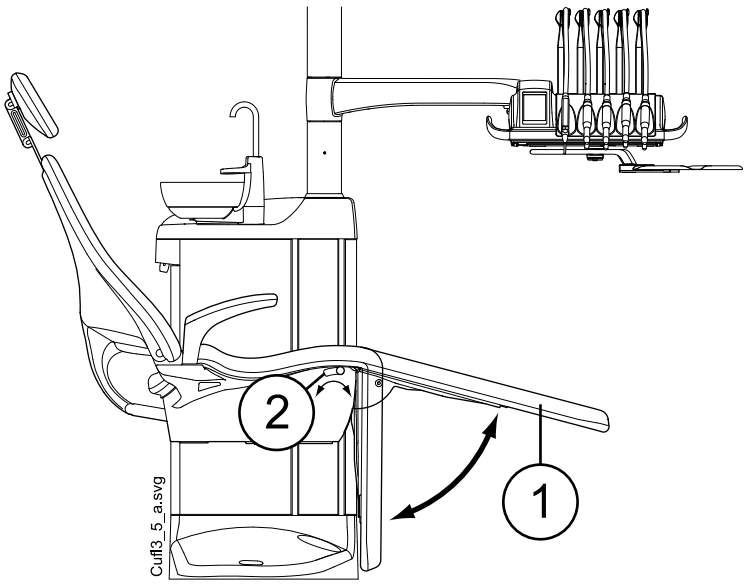
Dark coloured clothes may cause coloured stains on the bright coloured upholstery.

12.1 Patient recognition

A sensor in the patient chair recognises if there is a patient in the chair and forwards information about this to Planmeca Romexis Clinic Management software.

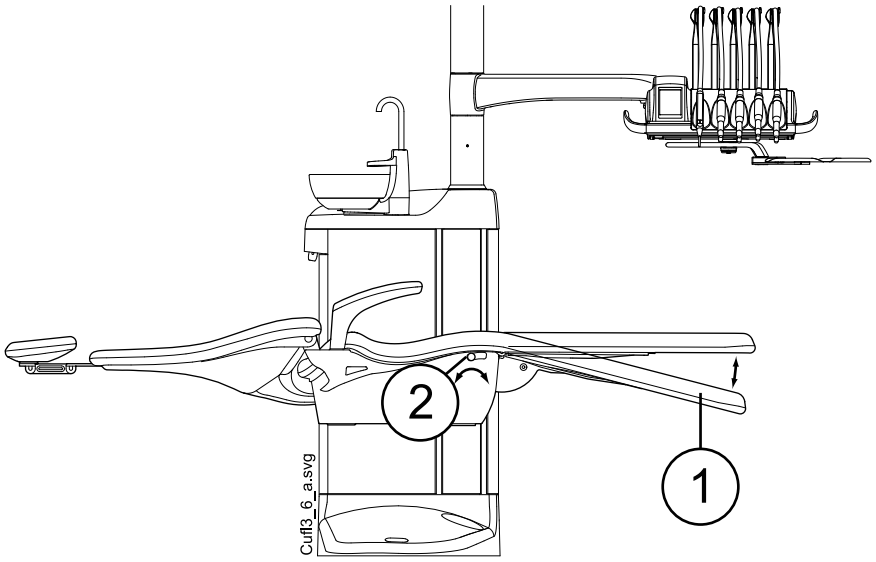
12.2 Automatic legrest

The automatic legrest can be moved synchronously to the movements of the backrest, that is, when you drive the backrest down, the automatic legrest is driven up. Use the chair movement buttons to drive the patient chair. Notice that the lever underneath the legrest has to be unlocked (moved to the right) in order to move the legrest with the backrest. Support the legrest with your other hand when locking or unlocking the lever.



1. Automatic legrest
2. Lever

The automatic legrest can be locked approximately 18° from the horizontal position. To lock the legrest, the lever has to be moved to the left. Support the legrest with your other hand when locking or unlocking the lever. Notice that the backrest will move upward and downward when the legrest is locked.

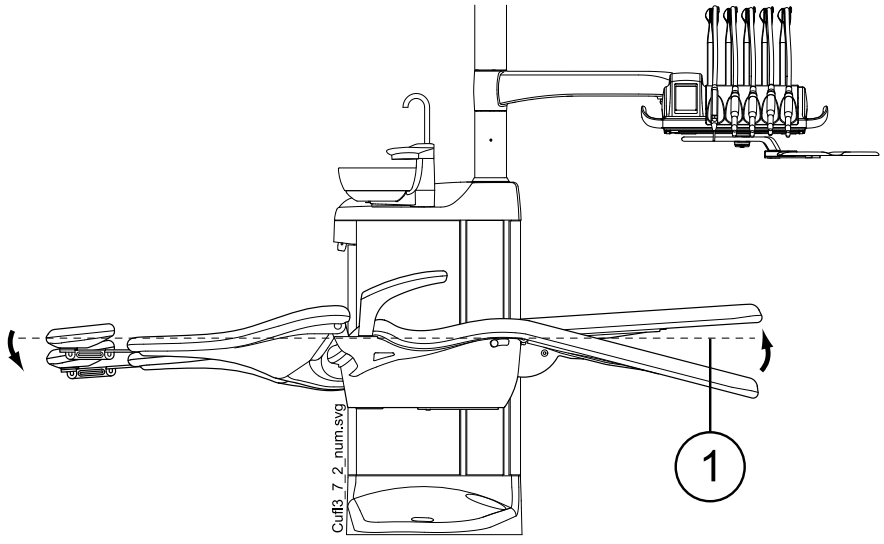


1. Approx. 18° from the horizontal position
2. Lever

12.3 Trendelenburg position

If required, the patient chair can be inclined from the horizontal position to the Trendelenburg position. In the Trendelenburg position the legrest is in the horizontal position and the backrest is driven -4° from the horizontal position.

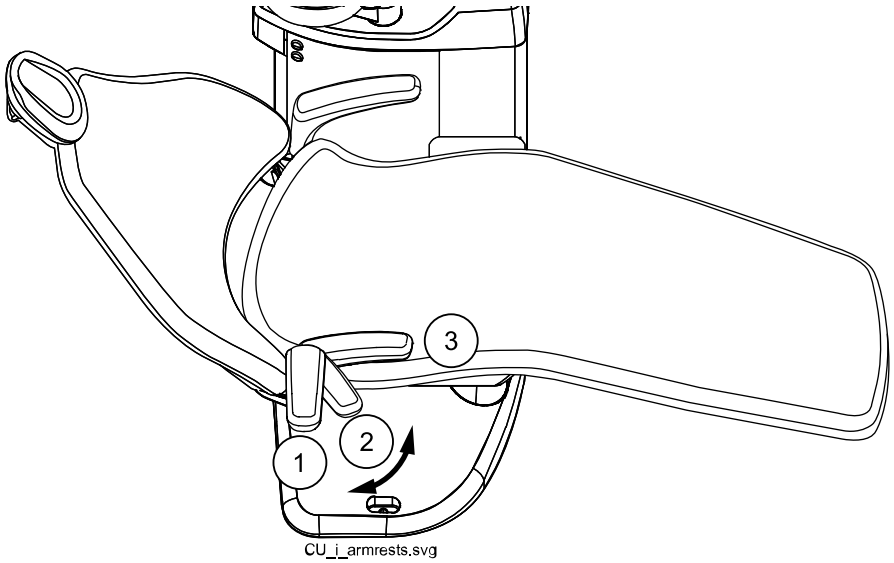
To drive the patient chair to the Trendelenburg position, first drive the chair to horizontal position, lock the legrest manually by moving the lever underneath the legrest to the left, and press the **Backrest down** button until the backrest reaches a position of -4°.



1. Horizontal position

12.4 Armrests

The right armrest can be moved 90° outwards. Before you move the armrest horizontally you must lift it slightly to unlock it. The armrest can be locked into the positions 1 and 3 presented below. The armrest can be removed when it is in position 2.



Surgical armrest

As an option, a surgical armrest is available. The patient's arm can be strapped to the armrest when, for example, infusing saline solution.

NOTE

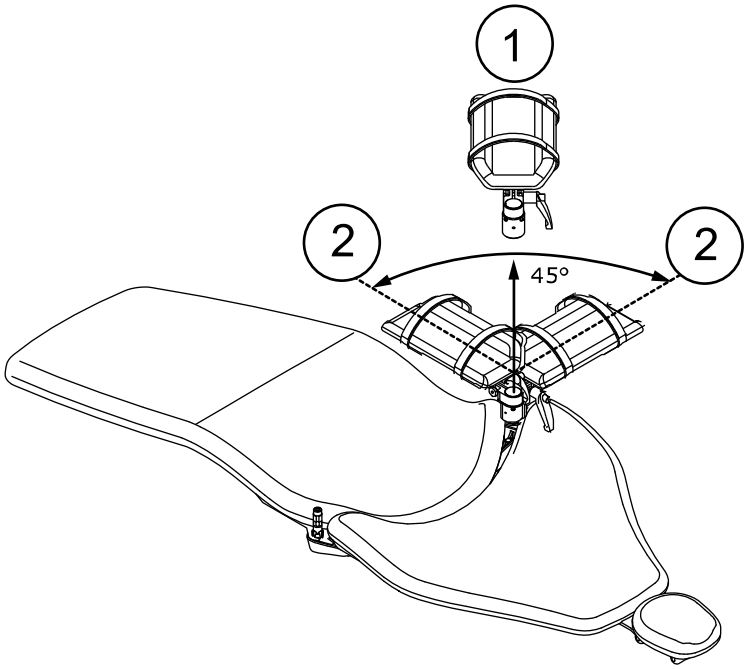
Make sure that the patient does not lean on the armrest when getting in or out of the chair.

To move the armrest horizontally you must lift it slightly to unlock it.

To replace the right standard armrest with the surgical armrest you must first detach the standard armrest. To do so, lift the armrest slightly to unlock it and move the armrest to a 45° position. When the armrest is in a 45° angle, lift it straight up to remove it (1).

Once you have removed the standard armrest, place the surgical armrest on the spindle in a 45° angle, push the armrest down and rotate in either direction until it locks into place (2).

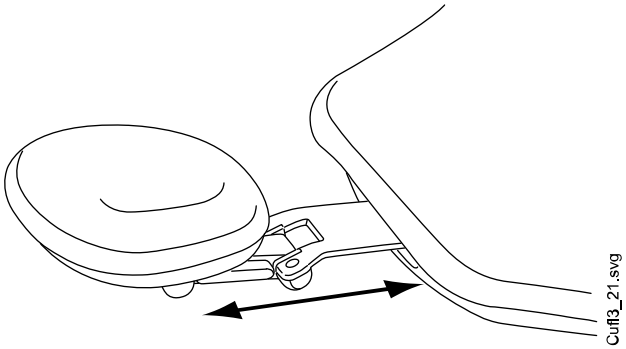
The surgical armrest is removed in the same way as the standard armrest.



12.5 Manual headrest

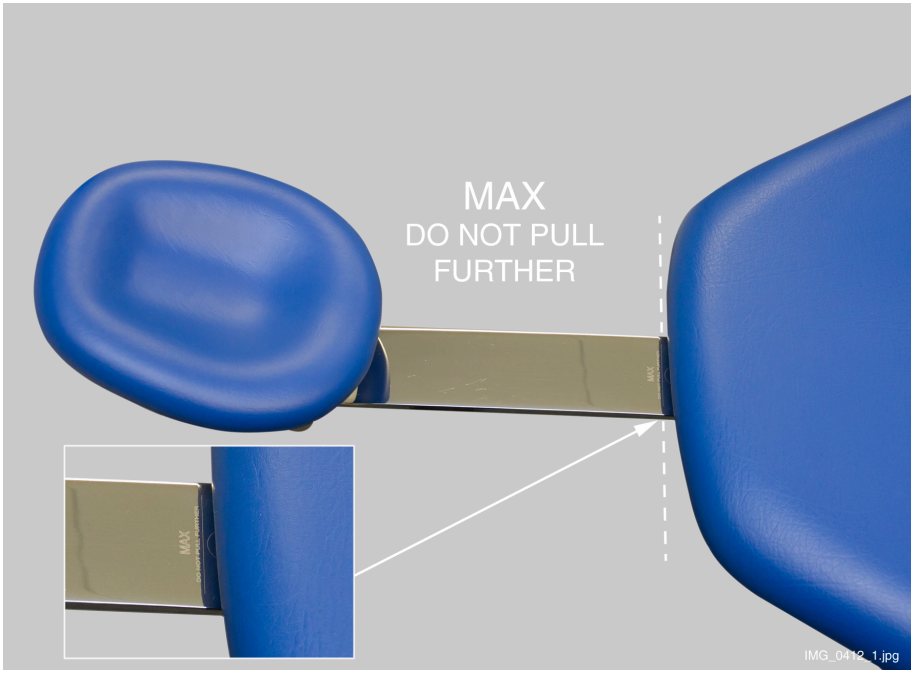
12.5.1 Adjusting height of headrest

The height of the headrest can be adjusted by sliding it manually.



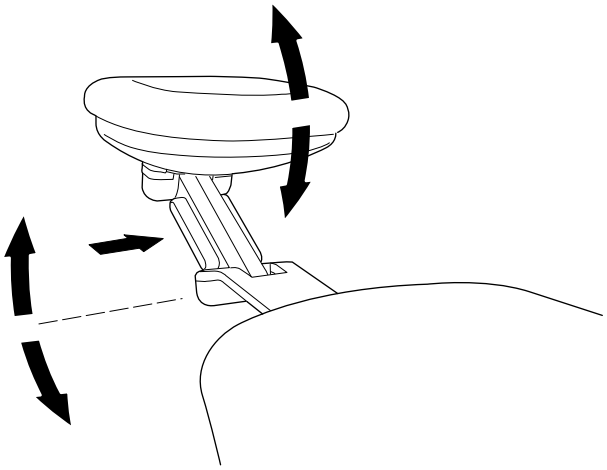
NOTE

The headrest can only be pulled out as far as to the MAX mark.



12.5.2 Adjusting headrest angle

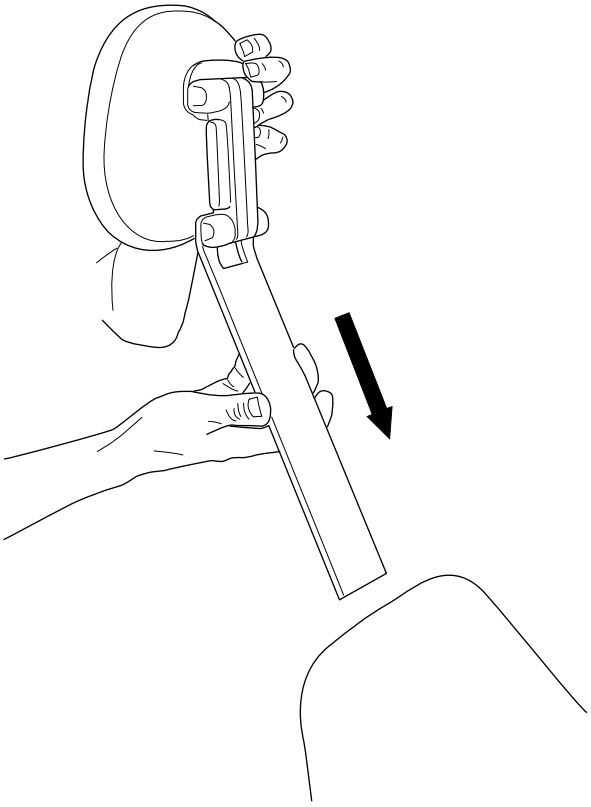
To adjust the angle of the headrest, press the bar on the side of the headrest support to release the locking mechanism. Manually set the headrest to the required angle and release the bar. When adjusting, the headrest should be supported by hand.



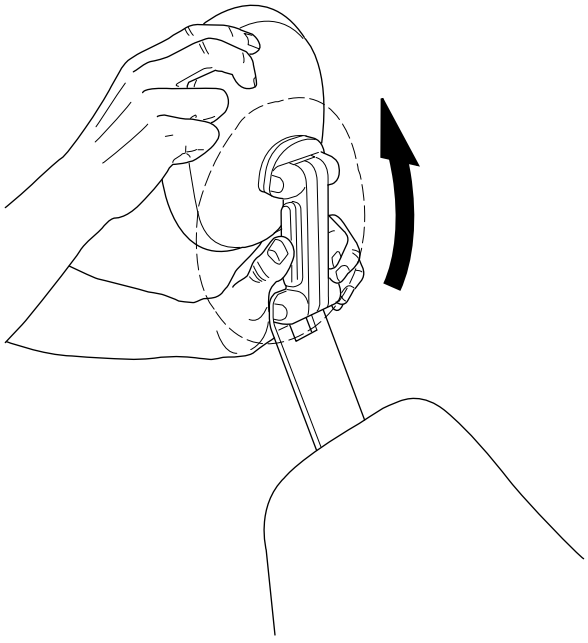
12.5.3 Adjusting headrest for children or short patients

The headrest can be turned around and repositioned for better head support for children or short patients.

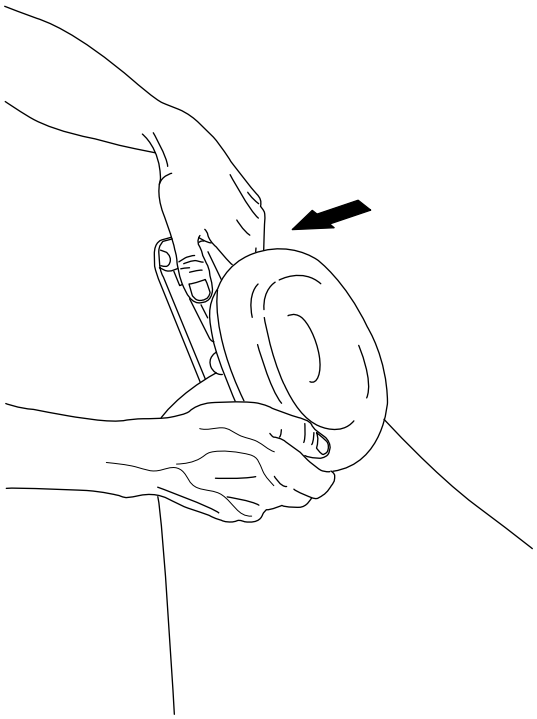
Pull the headrest out. Turn it around so that the cushion faces backward and push the headrest back into the chair.



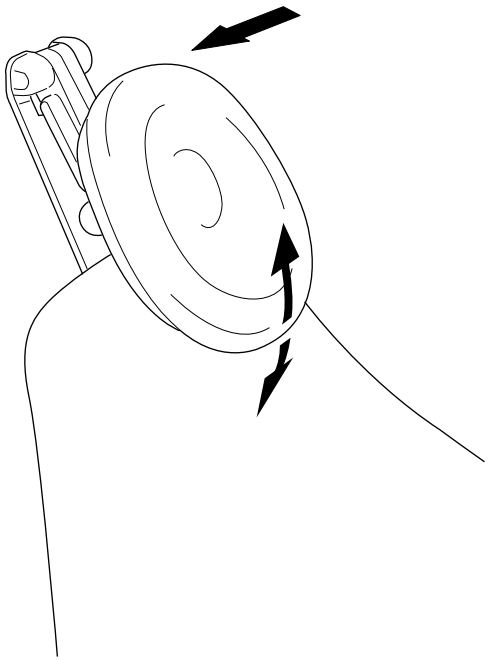
Turn the cushion around (180° counter-clockwise).



Press the bar on the side of the headrest support to release the locking mechanism and position the headrest at the top of the chair.

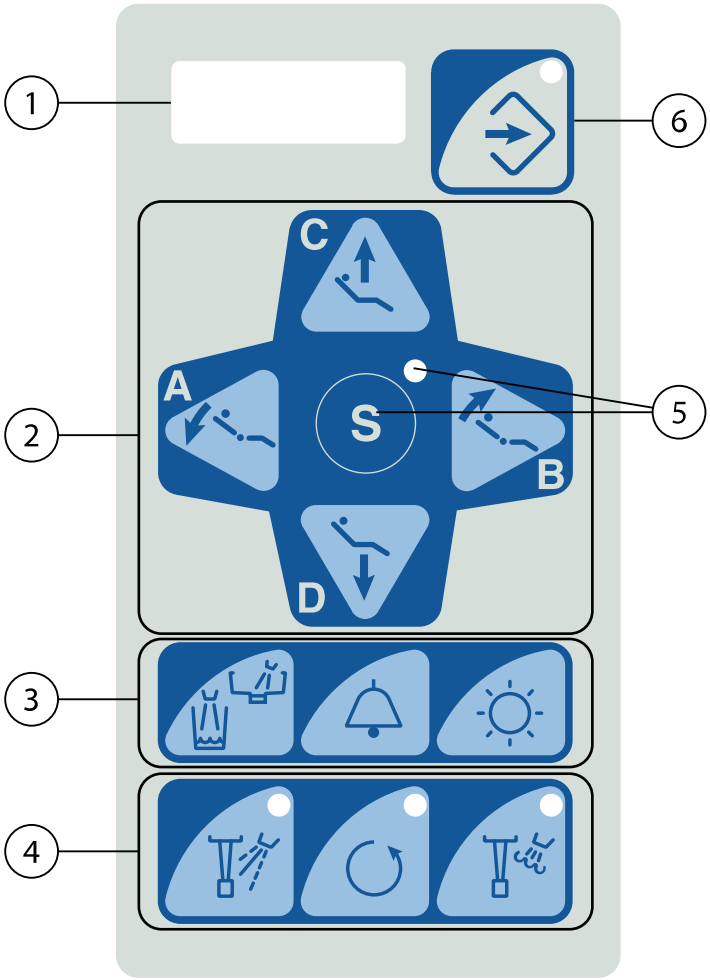


The headrest is now repositioned. To adjust the angle of the headrest, press the locking bar. Manually set the headrest into the required position and release the bar. When adjusting, support the headrest with your other hand.



13 Control panel

13.1 Control panel on instrument console



1. Display
2. Chair buttons
3. Unit buttons
4. Instrument buttons with indicator lights
5. Rinsing position button with indicator light
6. Program button with indicator light

The control panel is located on the instrument console. You can use it to control and program the instruments, the dental unit, and the chair. You can also start maintenance procedures from the control panel.

The instrument buttons are used to operate and program the settings of the active instrument.

When the instrument is removed from its holder, the indicator light on the instrument button displays the current operation status of the instrument.

In normal operation, the speed or power of the active instrument (percentage of the maximum value) is shown on the small display on the control panel. If the polymerisation light is the active instrument, the display shows the current curing time.

During programming, the indicator light on the instrument button indicates whether the function is selected to the active instrument. The setting to be changed is shown on the small display on the control panel.

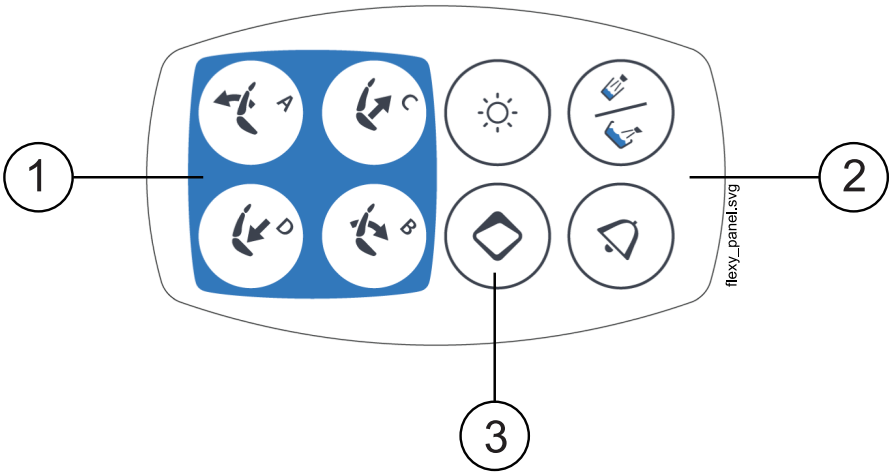
The indicator light on the **Rinsing position** button shows when the chair is in the rinsing position.

The indicator light on the **Program** button shows when the unit is in the programming mode.

In case of malfunction, an error code or a help message is displayed, see section "Help and error messages" on page 147.

13.2 Control panel on Flexy-holder

The control panel on the Flexy-holder is used for controlling the dental unit and the chair.



1. Chair buttons
2. Unit buttons
3. Flexy button

The function behind the **Flexy** button can be programmed by the service technician. Depending on what has been programmed, you can do one of the following by pressing the **Flexy** button:

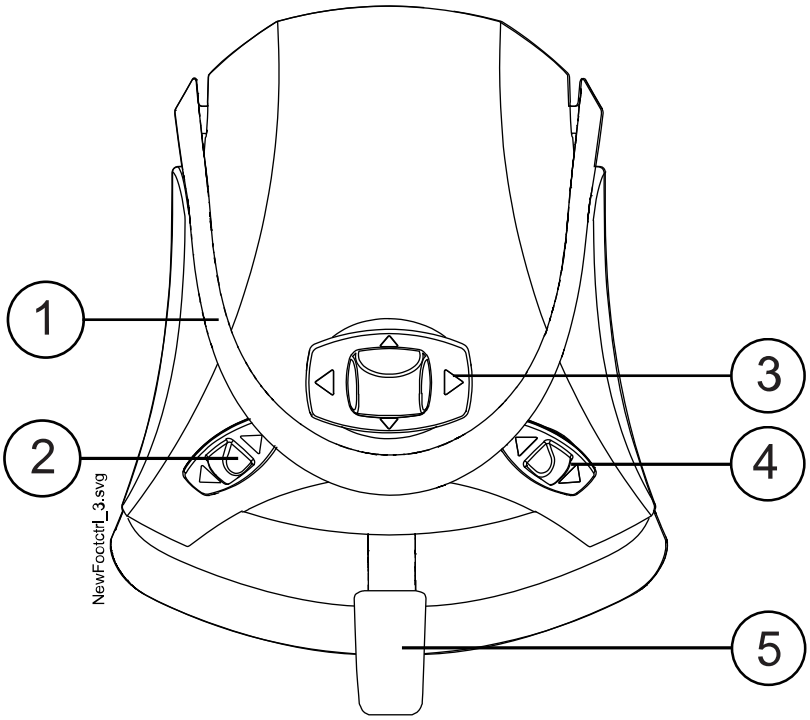
- activate/deactivate the intraoral camera
- drive the chair to the rinsing position (default)
- turn the suction on/off
- turn the operating light's composite mode on/off (short press) or adjust its intensity (long press)
- change the light tone of the operating light

For more information, contact your Planmeca dealer.

14 Foot control

14.1 Introduction

The dental unit has one integrated foot control that operates the instruments, the unit and the chair.



1. Handle
2. Left-side knob
3. Centre knob
4. Right-side knob
5. Pedal

CAUTION

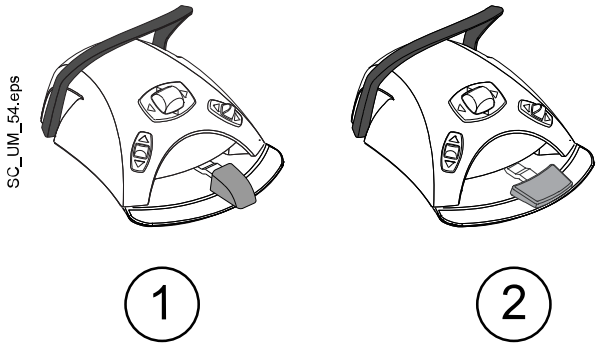
The foot control is a precision instrument. Do not stand on or apply unnecessary force to the foot control and its knobs.

CAUTION

Do not use the foot control in areas where liquids are likely to be present on the floor.

14.2 Foot control pedal

Two foot control pedals are available: a standard pedal (1) and a wide pedal (2).



NOTE

If you want to change from a standard pedal to the wide pedal, or vice versa, contact your Planmeca dealer.

The two foot control pedals function differently. For example, to increase the instrument speed, you must push the standard pedal horizontally, either to the left or to the right. When you use the wide pedal, you increase the speed with a vertical movement: the further down you push the pedal, the higher the instrument speed is.

The functional differences between the standard pedal and the wide pedal only apply to the operation of the micromotor, turbine and scaler. They do not apply to the operation of the dental unit or chair. The differences are described in the table below.

Standard pedal vs. wide pedal

Function	Standard pedal	Wide pedal
Increase instrument speed	Push pedal to left/right	Push pedal down
Change instrument spray type	Push pedal down briefly	Push pedal to left
Activate manual chip blow	Push and hold pedal down	Push pedal to right
Activate momentary spray	Push pedal down briefly while driving instrument	N/A

For more information, see sections "Micromotor" on page 80, "Turbine" on page 84, and "Scaler" on page 87.

NOTE

When the functionality of the foot control pedal is different for the standard pedal and the wide pedal, this is clearly indicated in the text and pictures of this manual. When the text refers to the foot control pedal in general without making this differentiation, the same functionality applies to both types of pedal, although the illustration only presents the standard pedal.

14.3 Foot control functions

14.3.1 Centre knob functions

Action	Function
Centre knob left	Chair to automatic position A
Centre knob left, long activation	Backrest down
Centre knob right	Chair to automatic position B
Centre knob right, long activation	Backrest up
Centre knob up	Chair to automatic position C
Centre knob up, long activation	Chair up
Centre knob down	Chair to automatic position D
Centre knob down, long activation	Chair down

14.3.2 Left-side and right-side knob functions

Action	Function
Left-side knob up	Can be configured by a Planmeca service technician. Default function: Operating light on/off
Left-side knob down	Can be configured for a selection of instruments by a Planmeca service technician. The function depends on the selected instrument slot. Only one function per instrument slot can be configured.
Right-side knob up	Can be configured by a Planmeca service technician. Default function: Intraoral camera on/off
Right-side knob down	Chair to rinsing position.

14.3.3 Pedal functions

The factory default functions of the foot control pedal when the dental unit is equipped with a standard pedal and no instrument is activated are presented below.

Action	Function
Pedal left	Assistant call
Pedal down, short activation	Cup fill and bowl rinse
Pedal down, long activation	Cup fill for as long as the pedal is pressed
Pedal right & down	Chair to rinsing position

When an instrument is activated, the functions of the standard pedal depend on the used instrument. These instrument-specific functions are presented below.

Micromotor, turbine

Action	Function
Pedal left / pedal right	Drive instrument
Pedal down, short activation	Change spray water & air / air / off

Micromotor, turbine

Action	Function
Pedal down, long activation	Manual chip blow; activated for as long as the pedal is pushed and held down

Scaler

Action	Function
Pedal left / pedal right	Drive instrument
Pedal down, short activation	Change spray on / off

Unit controlled polymerisation light

Action	Function
Pedal left / pedal right / pedal down	Start / stop instrument

Intraoral camera

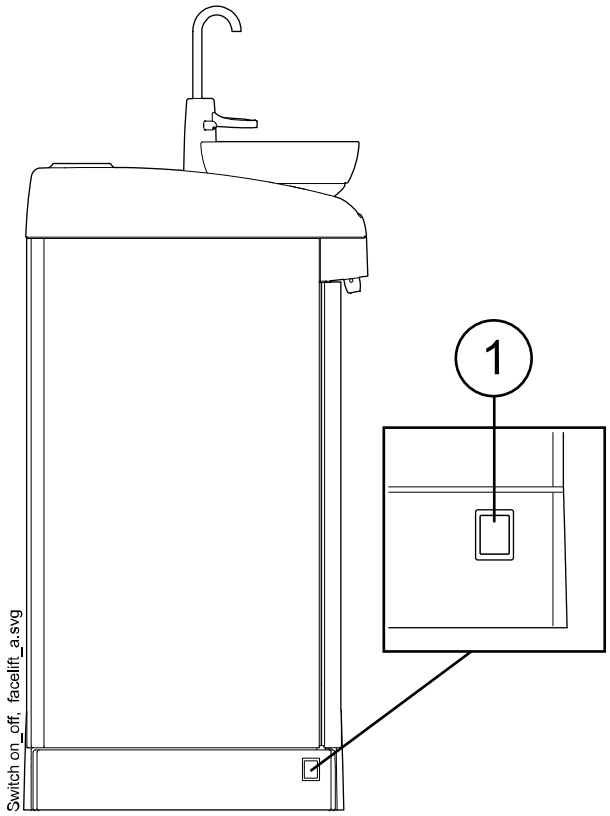
Action	Function
Pedal left / pedal right	Freeze / unfreeze picture
Pedal down	Save still picture

Intraoral scanner

Action	Function
Pedal left	Move upward in the list of scan type selection tools
Pedal right	Move downward in the list of scan type selection tools
Pedal down, short activation	Start scanning
Pedal down, long activation	Take image

15 Switching unit on and off

The on/off switch (1) is located at the rear of the unit base. Press the switch to turn the unit on. Press the switch again to turn the unit off.



When the unit is switched on, the on/off switch light is on.

The control panel briefly shows the software version number.

16 Signing in and out with PlanID

16.1 Signing in

Planmeca PlanID allows you to sign in to the dental unit and use the dental unit with your own personal settings.

If your dental unit does not include Planmeca PlanID, you do not sign in, but can start using the dental unit immediately after you have switched the dental unit on.

NOTE

Signing in to the dental unit with Planmeca PlanID is possible only with certain dental unit configurations. For more information on the configuration, or for changing it, contact your Planmeca dealer.

NOTE

Before you can sign in with a PlanID card, you must assign a PlanID card to your user profile. For instructions, see section "Assigning PlanID card to user" on page 62.

If you have a PlanID card and the dental unit is equipped with a PlanID reader, sign in by showing the PlanID card to the PlanID reader on the instrument console.

CAUTION

At least 15 cm of separation distance between the PlanID reader and the user's body must be maintained at all times.

When the dental unit configuration requires signing in, the text *SIG·n* is shown on the display.

When you have signed in, the text *USE·r* is shown on the display.

The small dot in the text indicates that the Romexis connection is enabled. If there is no dot, the connection to Romexis is disabled and you cannot sign in with the PlanID card.

It is also possible to sign in to the dental unit as a guest user by pressing the **Rinsing position** button until you hear a beep signal and the text *GSt* is shown on the display.

NOTE

The possibility to sign in as a guest user depends on the dental unit's configuration. For more information, contact your Planmeca dealer.

Once you have signed in to the dental unit with the PlanID card, you can start using the unit with your own personal settings that are stored in Planmeca Romexis software. For more information, contact your Planmeca dealer.

Your personal settings include the following:

- instrument settings
- operating light settings
- chair settings.

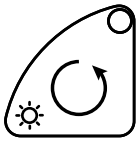
Factory settings are loaded for guest users every time they sign in.

16.2 Signing out

Steps

1. If you have signed in with a PlanID card, sign out by showing your PlanID card to the PlanID reader.

   If you are a guest user, press **Reverse** until you hear a beep signal and the dental unit signs you out.



   Pressing **Reverse** is also an alternative sign-out method for those who have signed in with a PlanID card.

   When you sign out, your personal settings are stored in Planmeca Romexis.

17 Assigning PlanID card to user

Before you begin

Prerequisites:

- Planmeca Romexis version 4.6 or later installed
- Dental unit is connected to the Planmeca Romexis server
- Dental unit's PlanID reader has been enabled by a qualified Planmeca service technician.

For information on the dental unit's configuration requirements, contact your Planmeca dealer.

Before you assign the PlanID card to a user, the user must be created in the Admin module of Planmeca Romexis. This is typically done by a Planmeca Romexis administrator.

The following information must be supplied when creating the user:

- In *Add User* window, *User* tab
  - Username
  - Member of Groups

    We recommend that you create a group for PlanID users and add all PlanID users to that group.
- In *Add User* window, *Personal* tab
  - First Name
  - Last Name

For instructions, see *Planmeca Romexis technical manual*, chapter *Administration*, section *Resource*.

About this task

Before you sign in to the dental unit with the PlanID card for the first time, you must assign the PlanID card to the user. This is done from the Planmeca Romexis computer, see *Planmeca PlanID quick guide* (30005120).

Steps

1. Follow the instructions in the *Planmeca PlanID quick guide* to assign the PlanID card to the user.

18 Operating patient chair

18.1 Manual operation

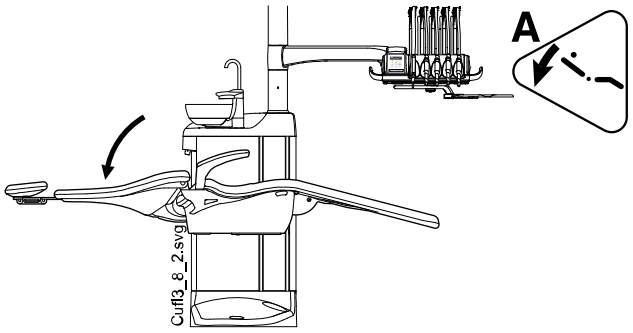
CAUTION

When driving the chair near the upper limit, make sure that the console arm does not press or hit the patient.

CAUTION

When driving the backrest up, make sure that the patient's hand or arm does not get squeezed between the armrest and the backrest.

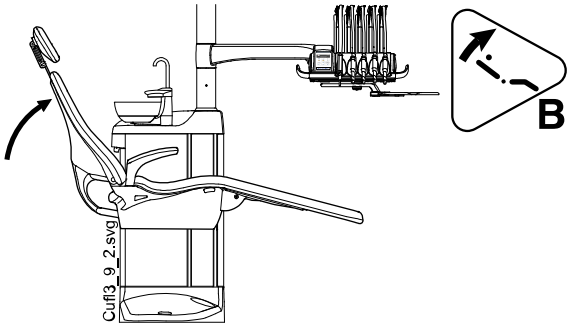
To drive the backrest down, press the **Backrest down** button until the chair reaches the required position.



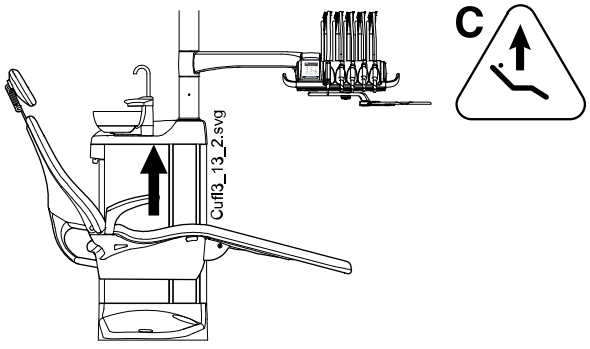
NOTE

If the chair is equipped with an optional automatic legrest, the legrest position is adjusted simultaneously with the backrest position.

To drive the backrest up, press the **Backrest up** button until the chair reaches the required position.



To drive the chair up, press the **Chair up** button until the chair reaches the required position.



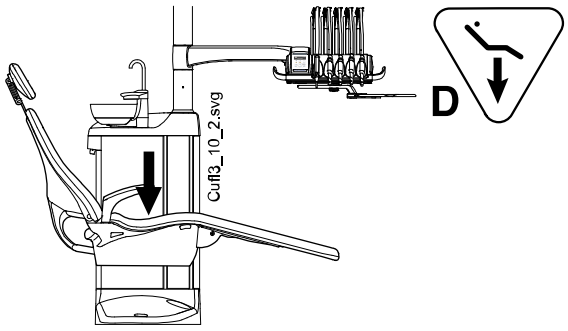
NOTE

Make sure that the bowl is not above the patient chair when driving the chair up.

NOTE

If the chair is equipped with the chair-mounted left/right suction arm, make sure that the Flexy-holder does not hit the cuspidor when driving the chair up.

To drive the chair down, press the **Chair down** button until the chair reaches the required position.



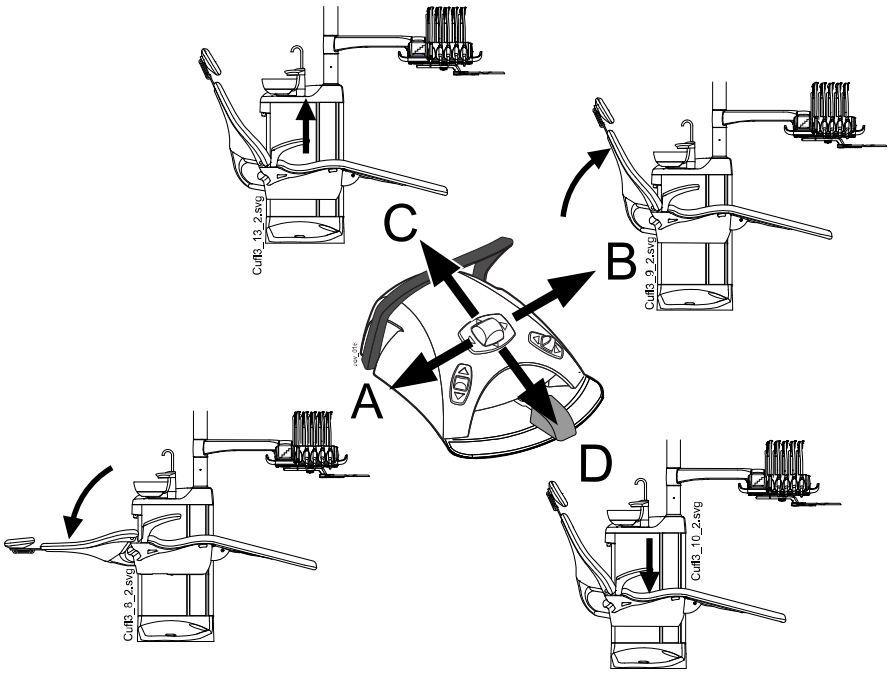
NOTE

If your chair is equipped with an optional automatic legrest, the lowest possible position of the chair depends for safety reasons on the legrest position.

NOTE

In case the chair is equipped with the chair-mounted left/right suction arm, make sure the Flexy-holder is not above the cuspidor when driving the chair down. If the chair does not move downward and H 03 is displayed, check that the chair-mounted arm is not in the upmost position. This arm position prevents the chair from moving downward.

Alternatively, you can adjust the position of the chair with the foot control. Push and hold the centre knob in the desired direction (see picture below). When the chair reaches the desired position, release the centre knob. You can steer the chair only in one direction at a time.



18.2 Automatic operation

18.2.1 Overview

Automatic chair positions can be stored into memory.

For more information on how to store the automatic positions, see section "Automatic chair positions" on page 100.

When automatic positions have been stored into memory you can select an automatic position from the control panel or the foot control and the chair automatically drives to the selected position. When the chair has reached its preprogrammed position, the position can be adjusted. To adjust the position manually, use the foot control’s centre knob or the chair positioning buttons on the control panel in a non-automatic mode (see section "Manual operation" on page 63).

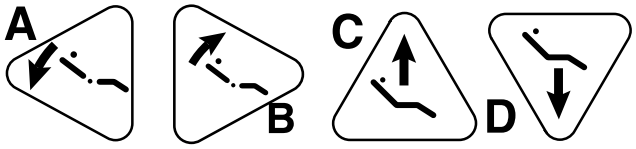
You can program the operating light to be on or off in preprogrammed positions. The light goes off when the chair begins to move to a position where the light has been programmed to be off, but goes on only after the chair has reached the programmed position, where the light has been programmed to be on. The operating light intensity can also be programmed to a certain value.

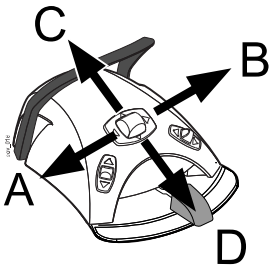
NOTE

If the chair is equipped with the chair-mounted left/right suction arm, make sure the Flexy-holder is not above the cuspidor when driving the chair down. If the chair does not move downward and H 3 is displayed, check that the chair-mounted arm is not in its upmost position. This arm position prevents the chair from moving downward.

18.2.2 Selecting automatic position

Control panel: To move the chair to a preprogrammed position, press briefly the corresponding chair position button.





Foot control: Push the centre knob briefly to the position (A, B, C or D) where the preprogrammed chair position has been stored. The chair will move automatically to the preprogrammed position.

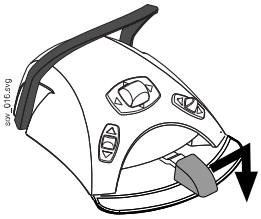
18.2.3 Selecting rinsing position

Press **Rinsing position** to move the chair to the preprogrammed rinsing position. The indicator light flashes throughout the movement. Filling the cup starts automatically and the bowl is rinsed.

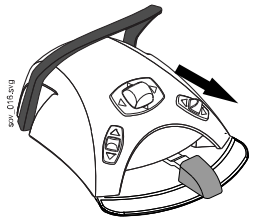
When the chair stops in the rinsing position, the indicator light remains on.

When you press **Rinsing position** again, the chair will return to the previous working position. Bowl rinsing starts automatically. The indicator light flashes throughout the movement.

Foot control



You can drive the chair to the rinsing position by pushing the pedal to the far right and down.



You can also drive the chair to the rinsing position with the foot control by pushing down the right-side knob.

To return to the working position, push down the right-side knob again.

For information on how to program the rinsing position, see section "Automatic chair positions" on page 100.

NOTE

Alternatively, the dental unit can be configured so that the chair moves to the preprogrammed rinsing position when you press the Flexy button. Contact your Planmeca dealer.

NOTE

If you press the Rinsing position button for longer than 1 second when moving the chair to the rinsing position, you will enter the position normally, but when the chair stops in the rinsing position, the indicator light goes off and the chair does not remember its previous position.

NOTE

If you press and hold the Rinsing position button when the chair is in the rinsing position, the indicator light goes off, and the chair will forget the previous position (the return function is inactivated).

NOTE

The unit can be set up so that the Rinsing position indicator light goes off and the previous position is not stored when you are driving from the rinsing position to a preprogrammed position. Next time you press Rinsing position, the chair will move to the rinsing position. Contact your Planmeca dealer.

NOTE

Automatic cup fill and bowl rinse functions when the dental unit reaches the rinsing position are configurable; contact your Planmeca dealer.

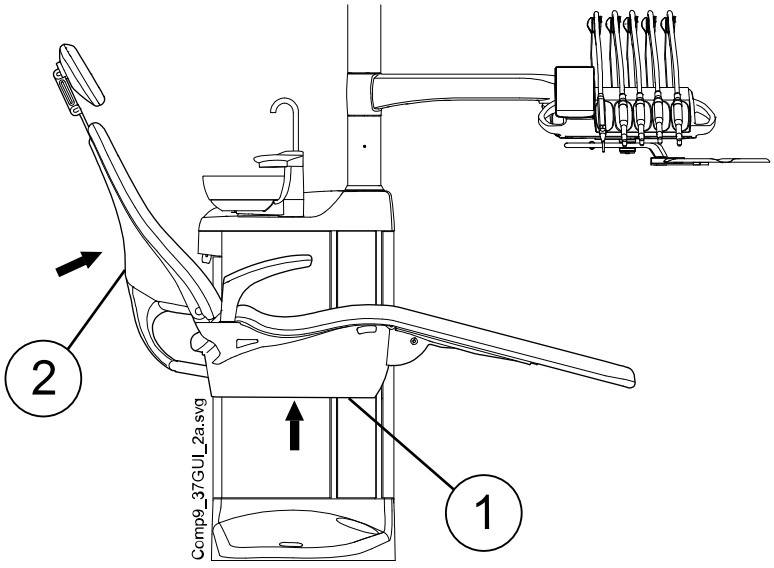
NOTE

The water in the dental unit is intended for rinsing only, not for drinking.

18.2.4 Stopping chair movements

To stop the chair from moving before it reaches the preprogrammed position, press any chair button on the Flexy-holder, push the foot control pedal in any direction, or push the foot control centre knob in any direction.

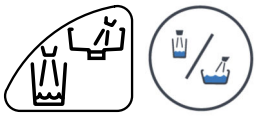
The chair movement stops also when the stop plate is pushed or when the backrest is pressed upward. The chair can be driven normally after the possible obstruction has been removed.



1. Stop plate
2. Backrest

19 Operating dental unit

19.1 Bowl rinse



Control panel: Press **Cup fill / Bowl rinse** to rinse the bowl. Bowl rinsing can be stopped before it stops automatically by pressing **Cup fill / Bowl rinse** again.

The flow rate of the bowl rinse can be adjusted by turning the black knob inside the unit, see section "Adjusting cup fill and bowl rinse flow rates" on page 104.

The duration of bowl rinsing can be programmed, see section "Duration of bowl rinsing" on page 104.

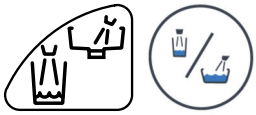
19.2 Cup fill

NOTE

By default, the cup fill is not activated unless the cup is positioned in its place under the cup fill tube. To change this setting, contact your Planmeca dealer.

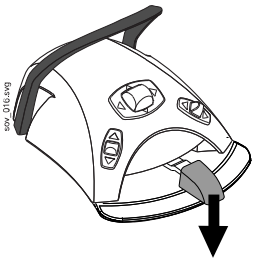
NOTE

The water in the dental unit is intended for rinsing only, not for drinking.



Control panel: Press **Cup fill / Bowl rinse** twice or press the button once until the cup filling starts (0.5 - 1 sec.) and the unit will automatically fill the cup and then rinse the bowl. Cup filling can be stopped before it stops automatically by pressing **Cup fill / Bowl rinse** again.

If **Cup fill / Bowl rinse** is pressed and held for longer than 1 second, water flows for as long as the button is pressed, and the bowl is not rinsed.



Foot control: When all the instruments are in their holders you can fill the cup either by briefly pushing the pedal down twice or by pushing down the pedal once until the filling starts (0,5 - 1 sec.). The unit will automatically fill the cup and then rinse the bowl. Cup filling stops automatically after a preset time. Cup filling can be stopped before it stops automatically by pushing the pedal briefly down.

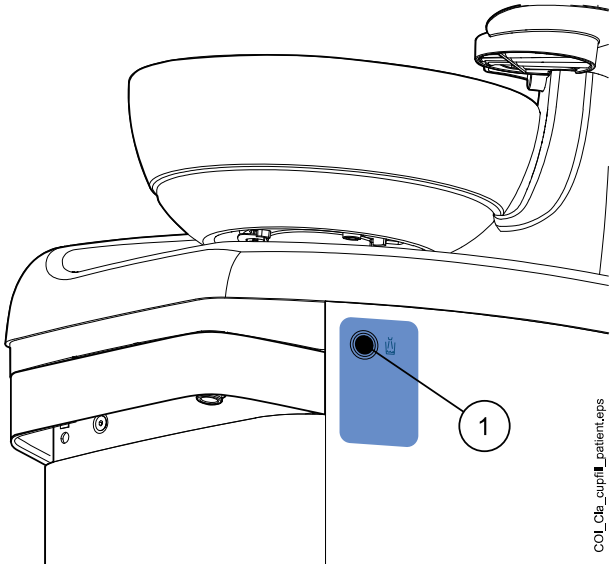
If the pedal is pushed for longer than 1 second, water flows for as long as the pedal is pushed, and the bowl is not rinsed.

The flow rate of the cup fill can be adjusted by turning the black knob inside the unit, see section "Adjusting cup fill and bowl rinse flow rates" on page 104.

The duration of the cup fill can be programmed, see section "Duration of cup filling" on page 105.

Patient's cup fill button (optional)

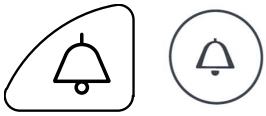
The patient can fill the cup by pressing the patient's cup fill button on the cuspidor. The water flows for as long as the button is pressed.



1 Patient's cup fill button

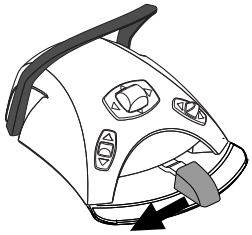
19.3 Door open / assistant call

If you have installed a door opening device or assistant call, you may activate these from the control panel or the foot control.

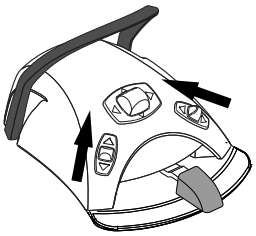


Control panel: Press **Door open / assistant call** to activate the function. You will hear a short signal tone when the function starts.

Press **Door open / assistant call** for longer than 0.5 seconds to continue the function until the button is released.



Foot control: When all the instruments are in their holders you can push the pedal to the left to activate the Door open / assistant call function. If the pedal is pushed for longer than 0.5 seconds, the function continues for as long as the pedal is pushed.



NOTE

Alternatively, the foot control can be configured so that the Door open / assistant call function is activated when you push the left-side or right-side knob up. Contact your Planmeca dealer.

The duration of the signal can be programmed, see section "Duration of door open / assistant call" on page 108.

19.4 Planmeca Solanna and Planmeca Solanna Vision operating light

CAUTION

Do not allow the patient to grab the operating light or its arm when getting seated or getting up from the patient chair.

NOTE

The Planmeca Solanna Vision operating light is not available for Planmeca Compact i Classic dental units with a legacy control panel.

NOTE

The light must be moved from the handles only. Do NOT move the light from the arm or from the light body.

NOTE

The light beam may speed up the hardening of some filling materials. Move the light so that the light beam is not directed towards the filling material or turn on the operating light's composite mode.

NOTE

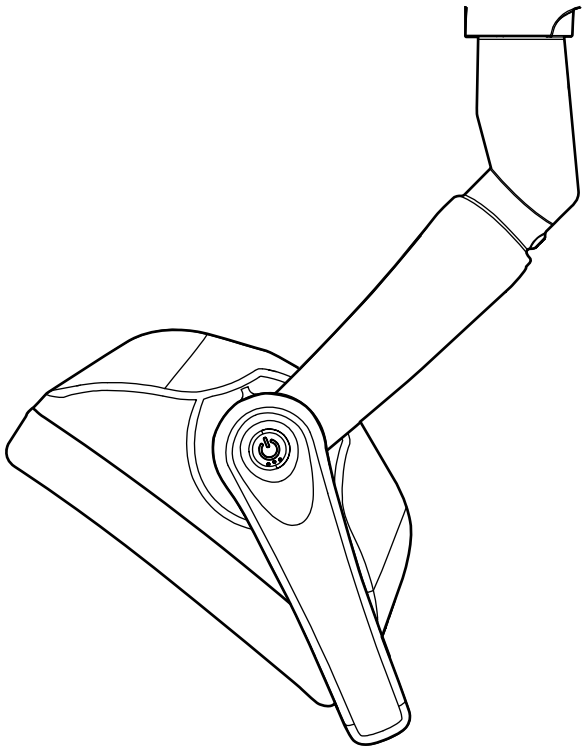
To be able to use the operating light hands-free with the gesture sensor, the sensor must be enabled.

NOTE

The sensor detects your hand movement at an approximate distance of 3 - 18 cm (1.2 - 7.1 in.) from the infrared sensor.

19.4.1 Indicator lights

The indicator lights on the operating light's handle buttons indicate the current state of the operating light.



Indicator lights

Colour	Meaning
White 	The operating light is on and the colour temperature is neutral.
Light blue 	The operating light is on and the colour temperature is cool.
Peach 	The operating light is on and the colour temperature is warm.

Indicator lights

Colour	Meaning
Orange 	The composite mode is on.
Green 	The operating light is off.
Yellow 	When the indicator light blinks yellow, the operating light is not functioning properly and full luminosity can not be reached. You can also hear a warning sound. Please contact your local Planmeca service technician.

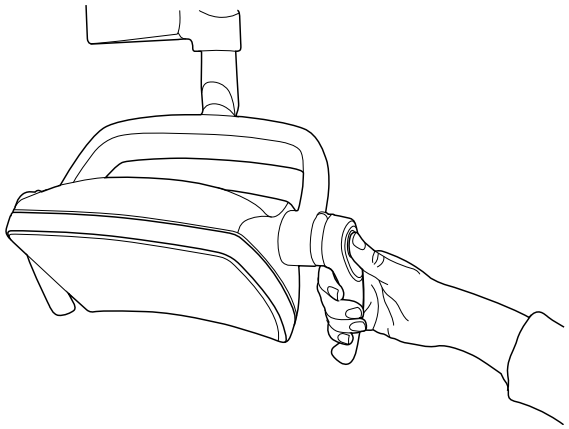
19.4.2 Switching operating light on/off

From operating light

From one handle

Briefly press the handle button on either handle to switch the light on. Press the handle button a second time to switch the light off.

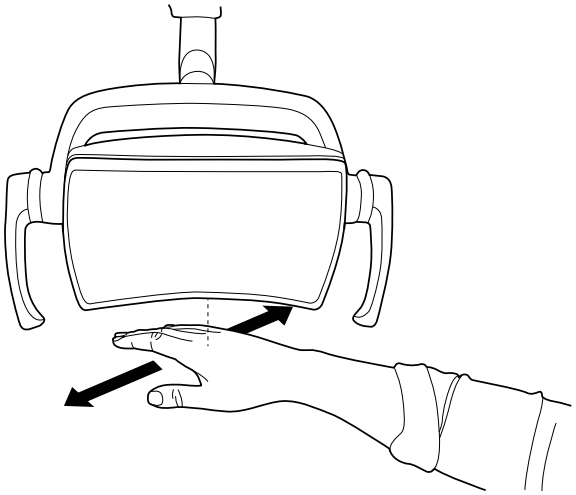
You will hear a clicking sound when you press the button.



Hands-free with sensor

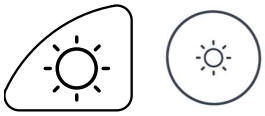
Wave your hand shortly in front of the sensor to switch on/off the operating light. The light will switch on/off **after** you have moved your hand away from the sensor activation area.

You will hear a clicking sound when you wave your hand in front of the sensor.

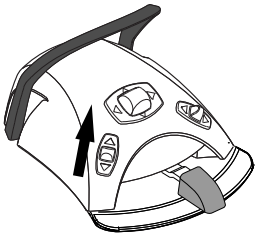


From dental unit

When you switch the operating light on, the indicator light on the **Operating light** button is lit.



Control panel: Press **Operating light** to switch the operating light on or off.



Foot control: Push the left-side knob up to switch the operating light on/off. This is the default factory setting.

NOTE

The foot control can also be configured so that the operating light is switched on/off when you push the right-side knob up. Contact your Planmeca dealer.

19.4.3 Switching composite mode on/off

The composite mode allows you to work with composite materials with minimal risk of pre-polymerisation caused by the operating light.

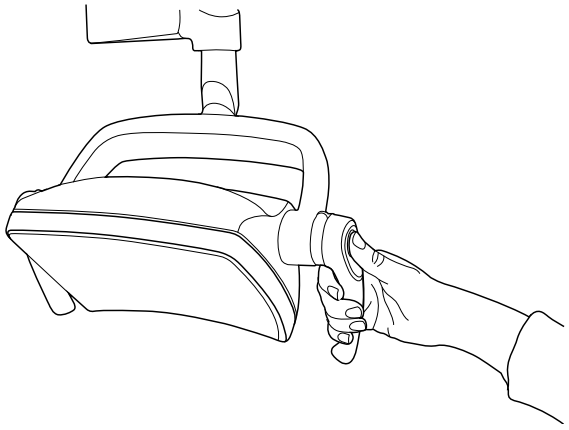
The composite mode turns off automatically when another instrument than the polymerisation light is picked up from the instrument console.

From operating light

From one handle

Press twice the handle button on either handle to switch to composite mode. Press the handle button twice again to switch the composite mode off.

You will hear a clicking sound each time you press the button.

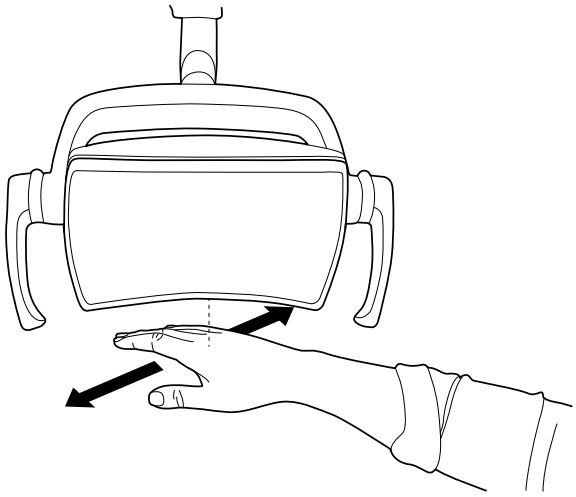


Hands-free with sensor

Wave your hand twice in front of the sensor to switch the composite mode on/off.

The light will switch to composite mode after you have moved your hand away from the sensor activation area for the second time.

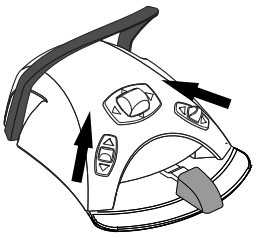
You will hear a clicking sound each time you wave your hand in front of the sensor.



From dental unit

NOTE

The dental unit can be configured so that you can switch the operating light's composite mode on or off by pressing the Flexy button. Contact your Planmeca dealer.



NOTE

The foot control can be configured so that the composite mode is switched on/off when you push the left- or the right-side knob up. Contact your Planmeca dealer.

NOTE

When the polymerisation light is taken from the holder and returned to it, the composite mode is switched on. This feature is configurable; contact your Planmeca dealer.

19.4.4 Adjusting intensity of operating light

The intensity adjustment range is from 30% to 100%.

Each time you adjust the intensity, the direction of the adjustment (increase/decrease) changes. Thus, if you first increase the intensity, the intensity will be decreased the next time you adjust it.

You will hear short successive clicking sounds while the intensity is being adjusted and a long signal tone when the maximum/minimum intensity is reached.

The operating light intensity can also be programmed, see section "Planmeca Solanna and Planmeca Solanna Vision operating lights" on page 106.

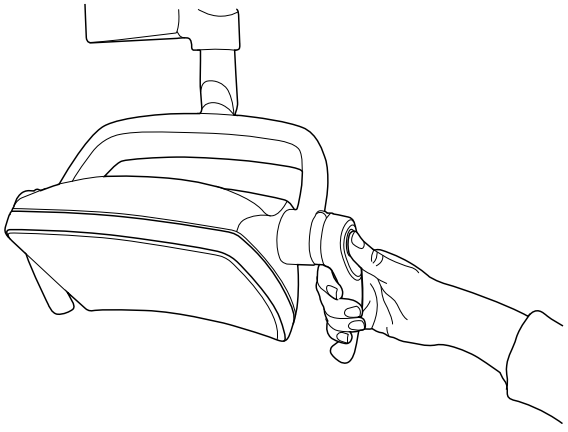
NOTE

The operating light intensity will decrease to 30% of the maximum intensity when the chair is moving.

From operating light

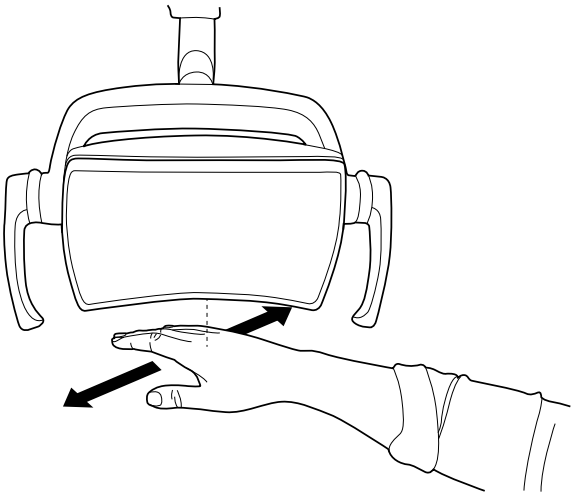
From one handle

Press and hold the handle button on either handle to adjust the intensity of the operating light. The intensity increases/decreases for as long as you press the button.



Hands-free with sensor

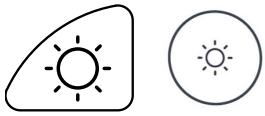
Once the operation light is lit, keep your hand longer in front of the sensor to adjust the intensity of the light.



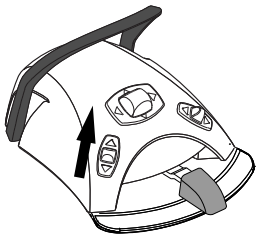
NOTE

If the operating light is installed to another manufacturer's dental unit, the intensity adjustment can be done only from the operating light.

From dental unit



Control panel: Press and hold the **Operating light** button to adjust the operating light intensity.



Foot control: Push and hold the left-side knob up to adjust the operating light intensity.

NOTE

The foot control can also be configured so that the intensity is adjusted when you push and hold the right-side knob up. Contact your Planmeca dealer.

After one second, the intensity will increase until you release the button/knob. When you press and hold the button/knob again, the intensity will start to decrease.

The intensity starts to decrease/increase after the maximum/minimum value has been reached. When the limit value is reached, you will hear a short signal tone.

19.4.5 Adjusting intensity of operating light in composite mode

The intensity adjustment range is from 30% to 100%.

Each time you adjust the intensity, the direction of the adjustment (increase/decrease) changes. Thus, if you first increase the intensity, the intensity will be decreased the next time you adjust it.

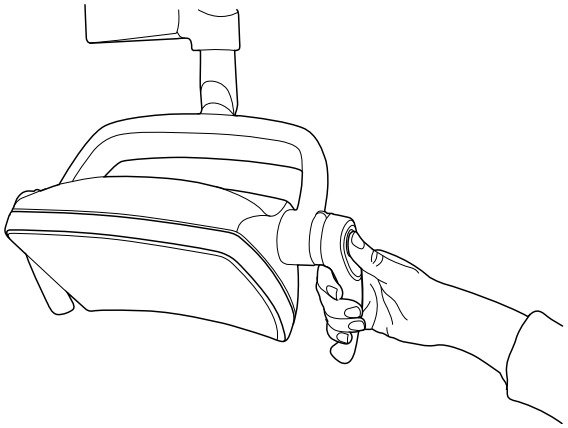
You will hear short successive clicking sounds while the intensity is being adjusted and a long signal tone when the maximum/minimum intensity is reached.

The operating light intensity can also be programmed, see section "Planmeca Solanna and Planmeca Solanna Vision operating lights" on page 106.

From operating light

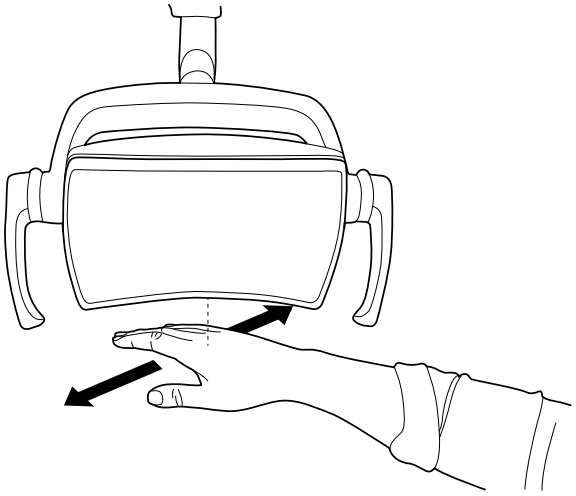
From one handle

Press and hold the handle button on either handle to adjust the intensity of the operating light. The intensity increases/decreases for as long as you press the button.



Hands-free with sensor

Once the operation light is lit, keep your hand longer in front of the sensor to adjust the intensity of the light.



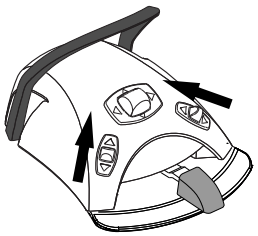
NOTE

If the operating light is installed to another manufacturer's dental unit, the intensity adjustment can be done only from the operating light.

From dental unit

NOTE

The dental unit can be configured so that the operating light's intensity in the composite mode can be adjusted when you press and hold the Flexy button. Contact your Planmeca dealer.



NOTE

The foot control can be configured so that the intensity is adjusted when you push and hold the left-side or the right-side knob up. Contact your Planmeca dealer.

19.4.6 Changing light tone of operating light

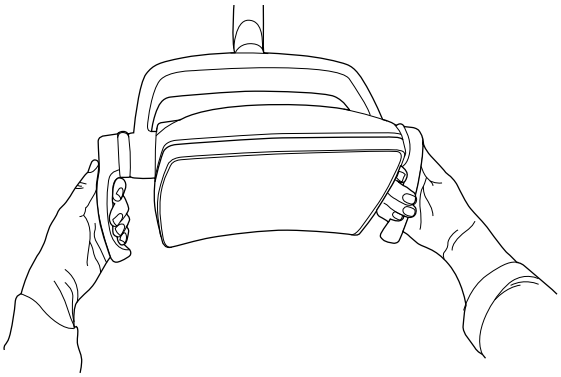
The white light tone of the operating light can be warm, neutral or cool.

From operating light

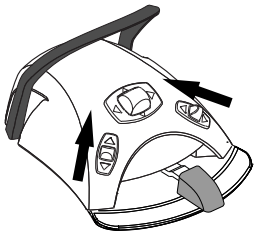
From both handles

When the light is on (and composite mode off), press and hold both handle buttons simultaneously to toggle between the three colour temperatures warm, neutral and cool.

You will hear a signal tone when you toggle the colour temperature from the handle buttons.



From dental unit



You can change the light tone by pushing the left-side or the right-side knob up, if this function has been configured to the foot control. To configure the function, contact your Planmeca dealer.

Alternatively, you can change the light tone by pressing the **Flexy** button, if this function has been configured to the **Flexy** button. To configure the function, contact your Planmeca dealer.

You can also change the light tone in the programming window, see section "White light tone" on page 107.

20 Operating instructions

20.1 Instrument logic

NOTE

If you use similar instruments at the same time, keep them in their own places. The memory operation does not recognise the parameters and settings of the similar instruments if their places are changed.

The dental unit contains an instrument logic with the principles described below. The active instrument can be operated with the foot control and its settings are displayed on the control panel and they can be changed.

When the active instrument is operated, other instruments can be away from the instrument console, but they can not be operated.

The syringe can be operated independently of other instruments at any time.

1. When the dentist picks up instrument 1 from the instrument console, it becomes the active instrument. The dentist can drive it with the foot control pedal (a short push to the right/left or down is enough).
2. While the dentist drives instrument 1, the assistant can pick up instrument 2 for preparation. Picking up instrument 2 does not change the active instrument.
3. The dentist returns the active instrument (instrument 1) to the instrument console.
4. The assistant returns instrument 2 to the instrument console.
5. The dentist activates instrument 2 by picking it up from the instrument console. After this, it can be driven with the foot control as above.

The memory operation of the logic settings makes it possible to store parameters and settings for up to eight instruments. Changing the place of the instrument on the console does not change the parameters and settings of that instrument.

Intelligent four-handed dentistry

In four-handed dentistry it is important to enable a smooth preparation and exchange of instruments between the dentist and the assistant. Therefore, an alternative instrument logic can be taken into use for four-handed dentistry. Please contact your Planmeca dealer.

In intelligent four-handed dentistry one instrument can be left waiting in a queue so that it is ready for use when the dentist returns the active instrument to the instrument console.

The intelligent four-handed dentistry follows the principles described below. The active instrument can be operated with the foot control and its settings are displayed on the control panel and they can be changed.

The instrument logic does not control the syringe which can be used at any time.

1. When the dentist picks up instrument 1 from the instrument console, it becomes the active instrument. The dentist can drive it with the foot control pedal (a short push to the right/left or down is enough).
2. While the dentist drives instrument 1, the assistant can pick up instrument 2 for preparation and the instrument goes to the instrument queue.

NOTE

Only one instrument at a time can be in the queue. If two or three instruments are picked up while driving an instrument, only the instrument that was picked up last will remain in the queue.

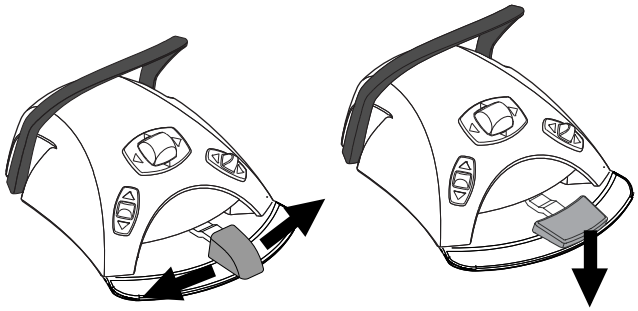
3. The dentist returns the active instrument (instrument 1) to the instrument console and immediately the instrument in the queue (instrument 2) is activated and handed to the dentist by the assistant. Instrument 2 can be driven with the foot control as described above.

20.2 Micromotor

20.2.1 Speed/power

Standard pedal: To drive the instrument, push the foot control pedal to the right or to the left.

Wide pedal: To drive the instrument, push the foot control pedal down.



Pushing the pedal further to the right/left or down will increase the speed or power of the instrument. As you push the pedal, the power output is displayed on the control panel.

The normal range is 10 - 100%.

To stop the instrument, allow the pedal to return to the rest position.

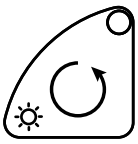
CAUTION

Ensure that the pedal is in rest position when you activate the instrument.

NOTE

The speed/power level depends on the instrument.

20.2.2 Reverse rotation



In normal operation the micromotor rotates in a clockwise direction. To reverse the direction of rotation press **Reverse**. Reversing is possible only when the micromotor is picked up from the instrument console, but not operated.

When the micromotor rotates in the reverse direction, the indicator light is amber. To enable a low ticking sound during reverse rotation, please contact your Planmeca dealer.

NOTE

The foot control can be configured so that the reverse rotation is activated/ deactivated when you push the left-side knob down. Contact your Planmeca dealer.

NOTE

Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

20.2.3 Instrument spray

The instrument cooling spray setting can be selected to be water & air, air or no spray.

The spray flow rate can be programmed. See section "Instrument spray" on page 101.

Press **Instrument spray** once to switch on the water & air spray. You will hear two short signal tones. Additionally, a green indicator light shows that the water & air spray is switched on.

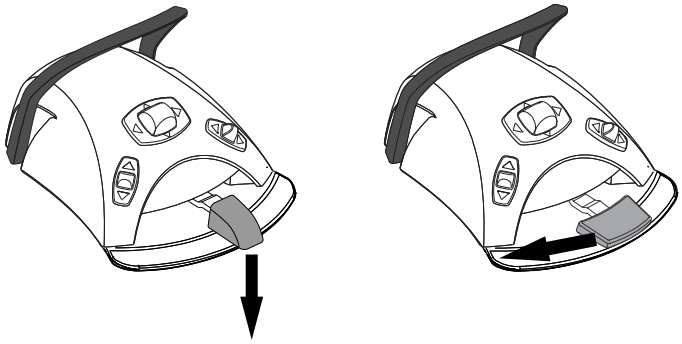
Press **Instrument spray** a second time to switch the air spray on. You will hear one short signal tone. Additionally, a yellow indicator light shows that the air spray is switched on.

Press **Instrument spray** a third time to switch off the instrument cooling spray. You will hear one long signal tone. Additionally, the indicator light goes out.

Alternatively, you can select the spray setting with the foot control. The indicator lights on the control panel are lit accordingly.

Standard pedal: Push the pedal down briefly to select the spray setting.

Wide pedal: Push the pedal briefly to the left to select the spray setting.



Push the pedal once to switch on the water & air spray. You will hear two short signal tones.

Push the pedal again to switch on the air spray. You will hear one short signal tone.

Push the pedal a third time to switch off the instrument spray. You will hear one long signal tone.

NOTE

The foot control can also be configured so that you push the left-side knob down to select a different spray setting. Contact your Planmeca dealer.

NOTE

Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

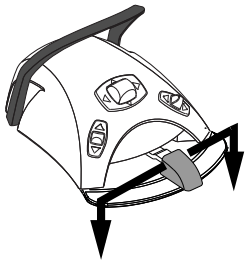
NOTE

The spray must be switched off when using an instrument without a waterline inside the handpiece.

NOTE

The instrument spray operated with the foot control can be disabled in the service mode, in which case you can switch the spray on and off only from the control panel. Contact your Planmeca dealer.

20.2.4 Momentary spray



When you are driving the instrument, you can activate the momentary spray by pressing the foot control pedal down. The spray will continue until you remove your foot from the pedal.

NOTE

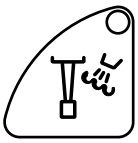
The momentary spray can be enabled and configured in the service mode, contact your Planmeca dealer.

NOTE

The momentary spray can not be activated with the wide foot control pedal.

20.2.5 Automatic chip blow

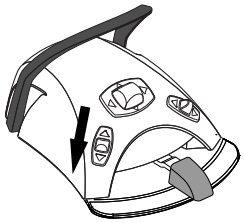
When the automatic chip blow is on, the indicator light on the control panel button is on and two short blows of water, air, or both will occur after the instrument is stopped.



Control panel: Press **Chip blow** to switch the automatic chip blow on or off.

NOTE

The foot control can be configured so that you push the left-side knob down to switch the automatic chip blow on/off. Contact your Planmeca dealer.



NOTE

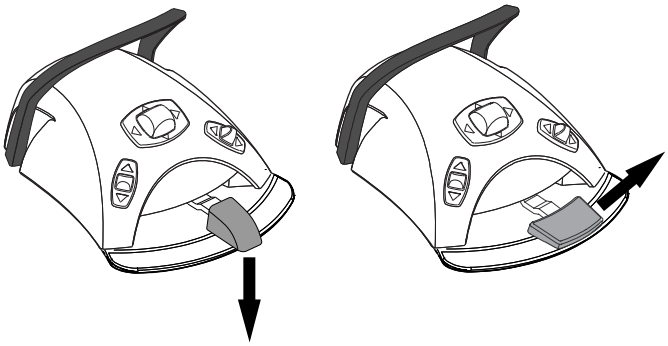
Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

The type of chip blow can be programmed, see section "Automatic chip blow" on page 102.

20.2.6 Manual chip blow

Standard pedal: You can temporarily activate the manual chip blow by pushing and holding down the pedal.

Wide pedal: You can temporarily activate the manual chip blow by pushing and holding the pedal to the right.



The flow of air will continue until you remove your foot from the pedal.

NOTE

The type of manual chip blow does not depend on the type of the automatic chip blow, but is always dry. The manual chip blow can be set to be dependent on programming; contact your Planmeca dealer.

20.2.7 Instrument light

The instrument light is either on or off when you pick up the instrument from the instrument console.

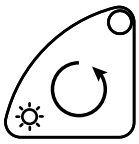
Whether the light is on or off, as well as its intensity, can be defined in the programming mode, see section "Instrument light" on page 103.

20.3 Bien-Air MCX micromotor

Besides the basic micromotor functions, the Bien-Air MCX micromotor has some additional features. These are described below.

20.3.1 Torque

The torque limit is disabled by default.



Press **Reverse** for 4 seconds to toggle between the torque limits 25% > 50% > 75% > 100% (torque limit disabled).

The torque limit is shown on the display as, for example, t 75 (75% of the maximum torque limit). If the rpm limit is also selected, it is shown on the display alternating with the torque value.

The following table presents a conversion table of percentage values to Ncm values for a 1:1 handpiece. The tolerance is +/- 5%.

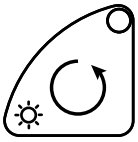
NOTE

The torque depends on the handpiece type.

Conversion table: % to Ncm (1:1 handpiece)

Percent	Ncm
25	0.6
50	1.3
75	1.9
100	2.5

20.3.2 RPM



Press **Reverse** for 2 seconds to reduce the micromotor's maximum speed (40 000 rpm) to a preset level of 4000 rpm.

Press **Reverse** again to switch the rpm limit off.

The maximum speed (40 000 rpm) is shown as 40.00 on the display and the reduced speed (4000 rpm) is shown as 4.00 on the display. If the torque limit is also selected, it is shown on the display alternating with the rpm value.

20.4 Turbine

The turbines supplied by Planmeca have a built-in backflow prevention system, which protects the water used in the instrument from contamination.

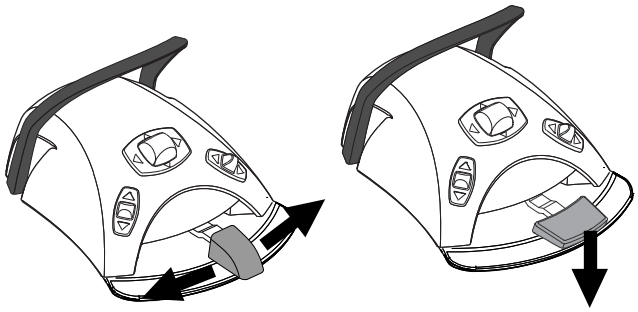
CAUTION

A power cut will shut down the software-controlled backflow prevention system. If you are using a turbine without a built-in backflow prevention system, contaminated water can enter into the turbine and turbine hose in the event of a power cut.

20.4.1 Speed/power

Standard pedal: To drive the instrument, push the foot control pedal to the right or to the left.

Wide pedal: To drive the instrument, push the foot control pedal down.



Pushing the pedal further to the right/left or down will increase the speed or power of the instrument. As you push the pedal, the power output is displayed on the control panel. The normal range is 5 - 100%.

To stop the instrument, allow the pedal to return to the rest position.

CAUTION

Ensure that the pedal is in rest position when you activate the instrument.

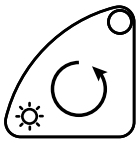
NOTE

The speed/power level depends on the instrument.

20.4.2 Quickstart

The turbine will start with maximum speed if the quickstart is enabled.

When quickstart is enabled, the indicator light on the control panel button is green.



Control panel: When the instrument is active, but not operated, press **Reverse** to enable/disable the quickstart.

NOTE

The foot control can be configured so that you push the left-side knob down to enable/disable the quickstart. Contact your Planmeca dealer.

NOTE

Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

20.4.3 Instrument spray

The instrument cooling spray setting can be selected to be water & air, air or no spray.

The spray flow rate can be programmed. See section "Instrument spray" on page 101.

Press **Instrument spray** once to switch on the water & air spray. You will hear two short signal tones. Additionally, a green indicator light shows that the water&air spray is switched on.

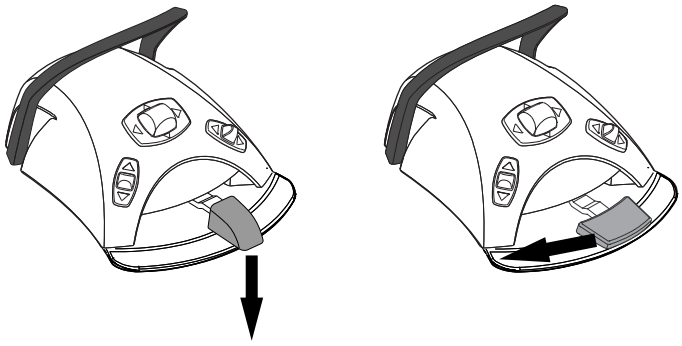
Press **Instrument spray** a second time to switch the air spray on. You will hear one short signal tone. Additionally, a yellow indicator light shows that the air spray is switched on.

Press **Instrument spray** a third time to switch off the instrument cooling spray. You will hear one long signal tone. Additionally, the indicator light goes out.

Alternatively, you can select the spray setting with the foot control. The indicator lights on the control panel are lit accordingly.

Standard pedal: Push the pedal down briefly to select the spray setting.

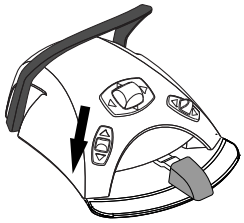
Wide pedal: Push the pedal briefly to the left to select the spray setting.



Push the pedal once to switch on the water & air spray. You will hear two short signal tones.

Push the pedal again to switch on the air spray. You will hear one short signal tone.

Push the pedal a third time to switch off the instrument spray. You will hear one long signal tone.



NOTE

The foot control can also be configured so that you push the left-side knob down to select a different spray setting. Contact your Planmeca dealer.

NOTE

Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

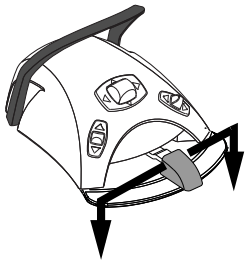
NOTE

The spray must be switched off when using an instrument without a waterline inside the handpiece.

NOTE

The instrument spray operated with the foot control can be disabled in the service mode, in which case you can switch the spray on and off only from the control panel. Contact your Planmeca dealer.

20.4.4 Momentary spray



When you are driving the instrument, you can activate the momentary spray by pressing the foot control pedal down. The spray will continue until you remove your foot from the pedal.

NOTE

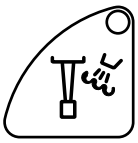
The momentary spray can be enabled and configured in the service mode, contact your Planmeca dealer.

NOTE

The momentary spray can not be activated with the wide foot control pedal.

20.4.5 Automatic chip blow

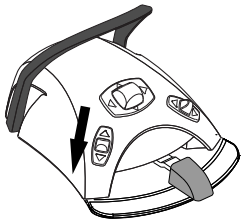
When the automatic chip blow is on, the indicator light on the control panel button is on and two short blows of water, air, or both will occur after the instrument is stopped.



Control panel: Press **Chip blow** to switch the automatic chip blow on or off.

NOTE

The foot control can be configured so that you push the left-side knob down to switch the automatic chip blow on/off. Contact your Planmeca dealer.



NOTE

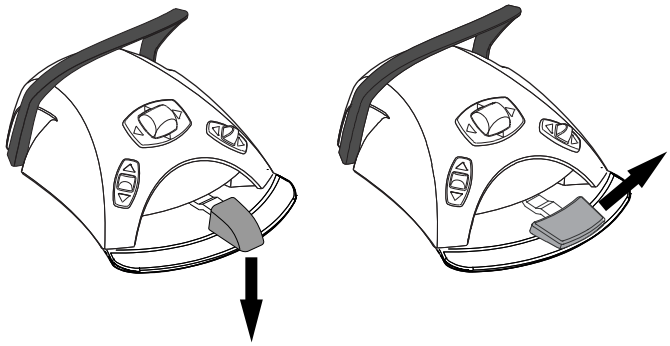
Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

The type of chip blow can be programmed, see section "Automatic chip blow" on page 102.

20.4.6 Manual chip blow

Standard pedal: You can temporarily activate the manual chip blow by pushing and holding down the pedal.

Wide pedal: You can temporarily activate the manual chip blow by pushing and holding the pedal to the right.



The flow of air will continue until you remove your foot from the pedal.

NOTE

The type of manual chip blow does not depend on the type of the automatic chip blow, but is always dry. The manual chip blow can be set to be dependent on programming; contact your Planmeca dealer.

20.4.7 Instrument light

The instrument light is either on or off when you pick up the instrument from the instrument console.

Whether the light is on or off, as well as its intensity, can be defined in the programming mode, see section "Instrument light" on page 103.

20.5 Scaler

CAUTION

Do not use the scaler on patients with cardiac pacemakers. The scaler can cause disturbance on the pacemaker's function.

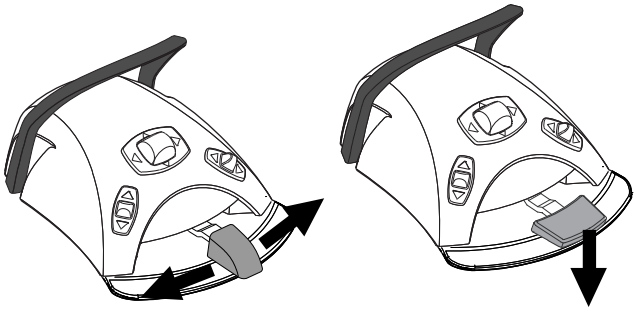
NOTE

A scaler requires additional electronics and the scaler type can not be changed without changing electronics.

20.5.1 Speed/power

Standard pedal: To drive the instrument, push the foot control pedal to the right or to the left.

Wide pedal: To drive the instrument, push the foot control pedal down.



Pushing the pedal further to the right/left or down will increase the speed or power of the instrument. As you push the pedal, the power output is displayed on the control panel.

To stop the instrument, allow the pedal to return to the rest position.

CAUTION

Ensure that the pedal is in rest position when you activate the instrument.

NOTE

The speed/power level depends on the instrument.

20.5.2 Instrument spray

The spray setting for the scaler can set on or off.

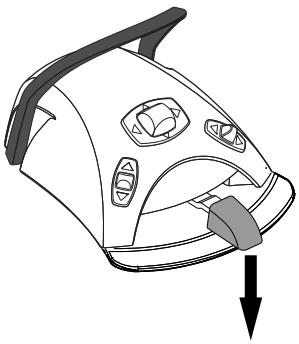
The amount of water that runs through the scaler can be programmed, see section "Instrument spray" on page 101.

Press **Instrument spray** to turn the instrument spray on or off. An indicator light on the button shows that the water is switched on.

Alternatively, you can turn the instrument spray on/off with the foot control. The indicator light on the control panel is lit accordingly.

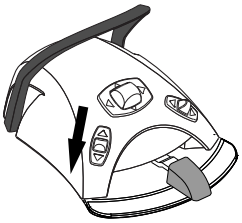
Standard pedal: Push the pedal down briefly to turn the instrument spray on/off.

Wide pedal: Push the pedal briefly to the left to turn the instrument spray on/off.



NOTE

The foot control can also be configured so that you push the left-side knob down to turn the instrument spray on/off. Contact your Planmeca dealer.



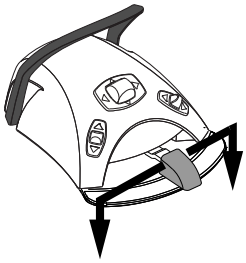
NOTE

Check the indicator light on the control panel to verify that pushing the left-side knob down activates the correct function.

NOTE

The instrument spray operated with the foot control can be disabled in the service mode, in which case you can switch the spray on and off only from the control panel. Contact your Planmeca dealer.

20.5.3 Momentary spray



When you are driving the instrument, you can activate the momentary spray by pressing the foot control pedal down. The spray will continue until you remove your foot from the pedal.

NOTE

The momentary spray can be enabled and configured in the service mode, contact your Planmeca dealer.

NOTE

The momentary spray can not be activated with the wide foot control pedal.

20.5.4 LM scaler

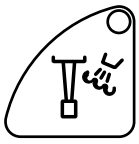
CAUTION

Keep the patient's lips, cheeks and tongue out of the way of the activated scaler tip, as contact may cause burns.

The LM scaler has three modes:

- low (0 - 40)
- medium (0 - 70)
- full (0 - 100).

Start with the low mode and, if needed, gradually change to medium and full mode.



When the scaler is the active instrument, the scaler mode can be changed by pressing **Chip blow**.

NOTE

The foot control can be configured so that you push the left-side knob down to change the scaler mode. Contact your Planmeca dealer.

NOTE

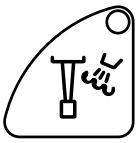
Check the scaler mode symbol on the control panel to verify that pushing the left-side knob down activates the correct function.

20.5.5 EMS No Pain scaler

The EMS No Pain scaler has three modes:

(The abbreviation in the brackets is displayed on the control panel.)

- endodontics **(Endo)**; power range 1 - 50
- scaling **(SCAL)**; power range 1 - 100
- restoration **(rES)**; power range 50 - 100.



When the scaler is the active instrument, the scaler mode can be changed by pressing **Chip blow**.

NOTE

The foot control can be configured so that you push the left-side knob down to change the scaler mode. Contact your Planmeca dealer.

NOTE

Check the scaler mode symbol on the control panel to verify that pushing the left-side knob down activates the correct function.

20.5.6 Instrument light

The instrument light is either on or off when you pick up the instrument from the instrument console.

Whether the light is on or off, as well as its intensity, can be defined in the programming mode, see section "Instrument light" on page 103.

20.6 Planmeca Lumion Plus polymerisation light

CAUTION

The polymerisation light generates optical radiation and proper safety measures should be taken when using the instrument. For detailed information, please refer to OEM documentation.

CAUTION

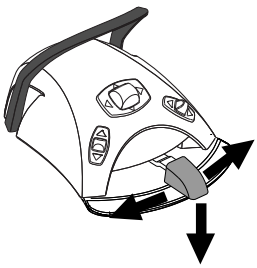
Do not use the polymerisation light on patients with cardiac pacemakers. The polymerisation light can cause disturbance on the pacemaker's function.

NOTE

When the polymerisation light is taken from the holder in the instrument console and returned to it, the operating light's composite mode is switched on. This feature is configurable; contact your Planmeca dealer.

To start the polymerisation cycle, first select the desired curing mode by pressing the navigation button on the handpiece. Then, start the polymerisation cycle by pressing the start button on the handpiece.

The polymerisation cycle can be interrupted by pressing the start button again.



To start the polymerisation cycle with the foot control, first select the desired curing mode by pressing the navigation button on the handpiece. Then, push the foot control pedal to the right or to the left or down to start the polymerisation cycle.

The polymerisation cycle can be interrupted by pushing the foot control pedal to the right or to the left or down.

The length of the cycle is programmable, see section "Planmeca Lumion Plus polymerisation light" on page 103.

When the polymerisation light is activated, the length of the polymerisation cycle is displayed on the control panel. When you start the cycle, you will hear a signal tone. This signal tone is repeated every 10 seconds, and also at 5 seconds. The progress of the polymerisation cycle is displayed on the control panel.

Independent mode

The Planmeca Lumion Plus polymerisation light can also be operated in the independent mode. The independent mode is typically used when the Planmeca Lumion Plus polymerisation light is attached to the assistant element, but the independent mode can also be configured to be used on the dentist side (the configuration is performed by a Planmeca service technician).

The independent mode is indicated by the text *d.LEd* on the control panel.

When the Planmeca Lumion Plus polymerisation light is in the independent mode, it can only be controlled by the buttons on the instrument itself, not over the control panel or the foot control.

To start the polymerisation cycle in the independent mode, first select the desired curing mode by pressing the navigation button on the handpiece. Then, briefly press the start button on the handpiece to start a 10-second exposure, or press and hold the start button for 2 seconds to start a 20-second exposure. The polymerisation cycle can be interrupted by pressing the start button.

In the 10-second cycle, a signal tone is heard at the beginning and the end of the cycle. In the 20-second cycle, a signal tone is heard as the cycle starts, after 2 seconds to confirm the start of the 20-second cycle, after 10 seconds and at the end of the cycle.

NOTE

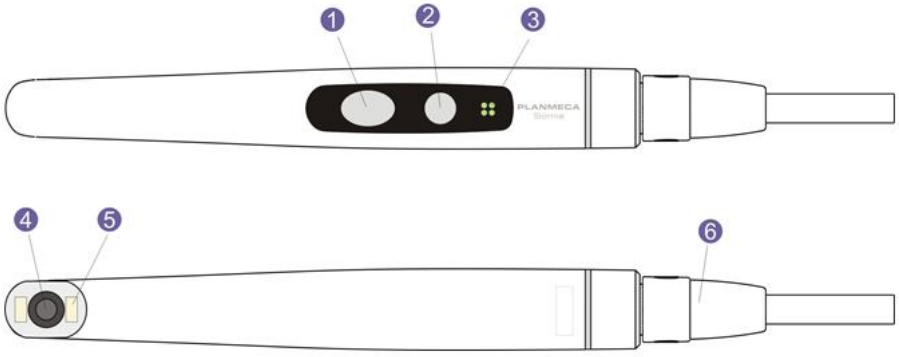
When the Planmeca Lumion Plus polymerisation light is in the independent mode, it can not be controlled over the foot control.

Refer to the Planmeca Lumion Plus manual of use and maintenance.

20.7 Intraoral camera and Planmeca Romexis

For detailed information on the Somia intraoral camera, please refer to *Planmeca Somia user's manual*.

Handpiece



1. Image control button
2. Power/macro button
3. Indicator light
4. Camera lens
5. Light source (LED)
6. USB cable

Prerequisites

- The intraoral camera must be connected to the USB port.

  When the intraoral camera is placed in the instrument console, it is connected to the USB port on the underside of the instrument console.

  When the intraoral camera is placed in the suction holder, it is connected to the USB port on the cuspidor.
- Planmeca Romexis software must be installed and the connection between it and the dental unit must be enabled. When Planmeca Romexis is running, the intraoral camera is continuously connected to the software.

After you have saved the images

Once you have saved the images, you can browse through them in the Planmeca Romexis Image browser. Press the **Done** button at the bottom of the intraoral camera window in Planmeca Romexis to move to the Image browser. For more information on the Image browser, see the *Planmeca Romexis user's manual*.

20.7.1 Intraoral camera placed in instrument console

Starting intraoral camera

Before you turn on the intraoral camera, first select the patient and then select the 2D module in Planmeca Romexis.

To turn on the intraoral camera, pick it up from the instrument console.

Alternatively, you can turn the intraoral camera on by pressing either of the buttons on the camera handpiece (**Power/macro** or **Image control** button).

NOTE

If you turn on the intraoral camera from the buttons on the handpiece, the camera can not be operated from the dental unit's foot control.

When the intraoral camera turns on,

- the indicator light on the handpiece turns blue,
- you will hear a short sound signal,
- the Planmeca Romexis intraoral camera view is displayed on the monitor,
- the text "I_CAM" shows on the display.

Once the intraoral camera is activated, you can operate it

- from the dental unit's foot control, if the camera has been turned on by picking it up from the instrument console
- from the camera handpiece, or
- remotely from the Planmeca Romexis user interface.

You can use the camera in normal or macro mode, as well as freeze and save the image. The LED on the handpiece is turned on and off simultaneously with the intraoral camera.

Macro on/off

A short sound signal indicates that the macro mode is turned on/off. When the macro mode is on, autofocus is off and the indicator light on the handpiece is lilac.

Interface	Action
Handpiece	Press the **Power/macro** button to turn the macro mode on/off.

Freezing/unfreezing image

A short sound signal indicates the freeze/unfreeze of an image. When the image is frozen, the indicator light on the handpiece is green. When you unfreeze the image, the camera goes back to live stream (indicated by the blue indicator light on the handpiece).

Interface	Action
Foot control	In Planmeca Compact i dental units, push the foot control pedal to the left or right to freeze/unfreeze the image.
Handpiece	There are two ways to freeze/unfreeze the image from the handpiece. • Press the **Image control** button halfway and hold it to freeze the image. When you release the button, the image unfreezes. • Press the **Image control** button all the way down and release it to freeze the image. To unfreeze the frozen image, either press the **Image control** button halfway and then release it, or press the button all the way down and release it.
Planmeca Romexis	Press the **Freeze** button to freeze the image. Press the **Resume** button to unfreeze the image. The buttons are located at the bottom of the intraoral camera window.

Saving image

A frozen image can be saved from the dental unit, the handpiece and Planmeca Romexis. From the handpiece you can save an image also without freezing the image first.

A long sound signal indicates that an image is saved. When the image is being saved, the indicator light on the handpiece blinks orange. After the image is saved, the camera goes back to live stream (indicated by the blue indicator light on the handpiece).

Interface	Action
Foot control	In Planmeca Compact i dental units, when the image is frozen, briefly push the foot control pedal down to save the image.
Handpiece	Press the **Image control** button for two seconds. Note! When saving an image from the handpiece, you can, but do not have to freeze the image first.
Planmeca Romexis	When the image is frozen, press the **Save** button at the bottom of the intraoral camera window.

Turning off intraoral camera

When you return the intraoral camera to the instrument console, the camera is automatically turned off and the indicator light on the handpiece goes off.

The intraoral camera can also be turned off by

- closing the Planmeca Romexis intraoral camera view,
- pressing the **Power/macro** button on the handpiece for two seconds, or by
- not using the intraoral camera for 300 seconds.

20.7.2 Intraoral camera placed in suction holder

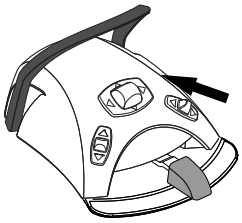
Starting intraoral camera

Before you turn on the intraoral camera, first select the patient and the 2D module in Planmeca Romexis. Then, start the camera from the dental unit.

1. Pick up the camera from the suction holder (Flexy-holder).
2. Activate the intraoral camera with the foot control by pushing the right-side knob up (factory default setting).

   The dental unit can also be configured so that the intraoral camera is activated when you push the foot control's left-side knob up or when you press the **Flexy** button. Contact your Planmeca dealer.

   The indicator light on the handpiece turns blue. The text “I_CAM” shows on the display and the Planmeca Romexis intraoral camera view is displayed on the monitor.



Once the intraoral camera is activated, you can operate it

- from the dental unit's foot control,
- from the camera handpiece, or
- remotely from the Planmeca Romexis user interface.

You can use the camera in normal or macro mode, as well as freeze and save the image. The LED on the handpiece is turned on and off simultaneously with the intraoral camera.

Macro on/off

A short sound signal indicates that the macro mode is turned on/off. When the macro mode is on, autofocus is off and the indicator light on the handpiece is lilac.

Interface	Action
Handpiece	Press the **Power/macro** button to turn the macro mode on/off.

Freezing/unfreezing image

A short sound signal indicates the freeze/unfreeze of an image. When the image is frozen, the indicator light on the handpiece is green. When you unfreeze the image, the camera goes back to live stream (indicated by the blue indicator light on the handpiece).

Interface	Action
Foot control	In Planmeca Compact i dental units, push the foot control pedal to the left or right to freeze/unfreeze the image.

Interface	Action
Handpiece	There are two ways to freeze/unfreeze the image from the handpiece. • Press the **Image control** button halfway and hold it to freeze the image. When you release the button, the image unfreezes. • Press the **Image control** button all the way down and release it to freeze the image. To unfreeze the frozen image, either press the **Image control** button halfway and then release it, or press the button all the way down and release it.
Planmeca Romexis	Press the **Freeze** button to freeze the image. Press the **Resume** button to unfreeze the image. The buttons are located at the bottom of the intraoral camera window.

Saving image

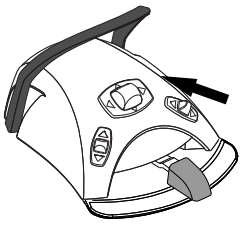
A frozen image can be saved from the dental unit, the handpiece and Planmeca Romexis. From the handpiece you can save an image also without freezing the image first.

A long sound signal indicates that an image is saved. When the image is being saved, the indicator light on the handpiece blinks orange. After the image is saved, the camera goes back to live stream (indicated by the blue indicator light on the handpiece).

Interface	Action
Foot control	In Planmeca Compact i dental units, when the image is frozen, briefly push the foot control pedal down to save the image.
Handpiece	Press the **Image control** button for two seconds. Note! When saving an image from the handpiece, you can, but do not have to freeze the image first.
Planmeca Romexis	When the image is frozen, press the **Save** button at the bottom of the intraoral camera window.

Turning off intraoral camera

Deactivate the intraoral camera from the dental unit when you have finished working with it.



Deactivate the intraoral camera with the foot control by pushing the right-side knob up (factory default setting).

The dental unit can also be configured so that the intraoral camera is deactivated when you push the foot control's left-side knob up or when you press the **Flexy** button. Contact your Planmeca dealer.

When the camera is deactivated, the indicator light on the handpiece goes off. Return the intraoral camera to its holder.

20.8 Planmeca intraoral scanner

The Planmeca intraoral scanner is used together with Planmeca Romexis and Planmeca PlanCAD Easy software. The scanner is mainly operated with the software, but to make the scanning procedure easier, some of the operations can also be performed from the dental unit’s foot control.

The intraoral scanner is placed in the Flexy-holder.

CAUTION

Make sure that you attach the intraoral scanner connector the right way into the USB 3.0 port for the scanner on the cuspidor. If the connector is turned the wrong way, it will not go into the port. Use of unnecessary force will break the connector.

NOTE

There are three USB ports on the cuspidor. Make sure you attach the connector to the right port, see section "Cuspidor" on page 24.

NOTE

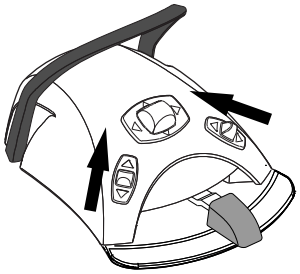
To avoid splashes on the scanner, remove it from the dental unit after use and place it on the table stand.

For more information, see *Planmeca FIT user's manual*.

20.8.1 Operating intraoral scanner from foot control

To be able to operate the Planmeca intraoral scanner from the foot control, the feature must be enabled by a Planmeca service technician.

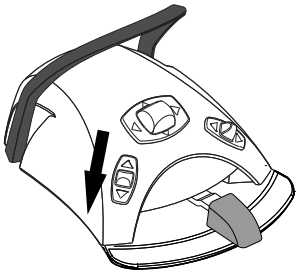
Activating instrument view



The foot control can be configured so that the Planmeca intraoral scanner is activated when you first pick up the scanner from the Flexy-holder and then push the left-side or the right-side knob up. Contact your Planmeca dealer.

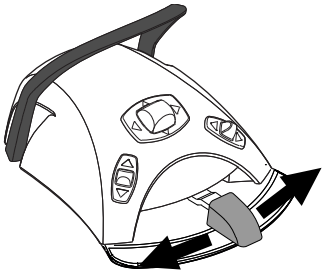
The scanner can be deactivated by pushing the knob up once more.

Generating model



Push the left-side knob down to generate a model of the scanned area.

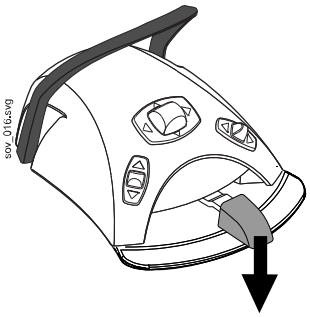
Selecting scanning mode



To move upward in the list of scan type selection tools in the Planmeca Romexis menu on the monitor, push the foot control pedal to the left.

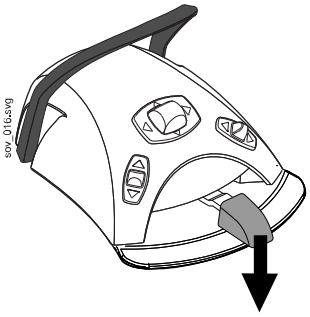
To move downward in the list of scan type selection tools in the Planmeca Romexis menu on the monitor, push the foot control pedal to the right.

Starting scanning



Briefly push the foot control pedal down to start the scanning.

Taking image



Push and hold down the foot control pedal to take an image.

21 Operating suction handpieces

NOTE

Remove the suction handpiece from the patient's mouth before stopping the suction.

NOTE

In addition to the instructions below, the suction can also be configured so that it is started/stopped by pushing the foot control's left-side or right-side knob up, or by pressing the Flexy button. Contact your Planmeca dealer.

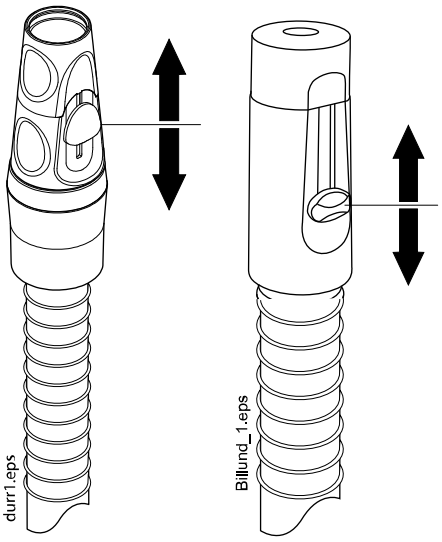
NOTE

If you have stopped the suction from the foot control or the Flexy button while the suction handpiece was in your hand, the suction will start for a while when you return the handpiece to the suction holder. The duration of this post-suction delay is configurable, contact your Planmeca dealer. This feature is not available for the tilting high-volume suction handpiece.

21.1 Saliva and high-volume suction

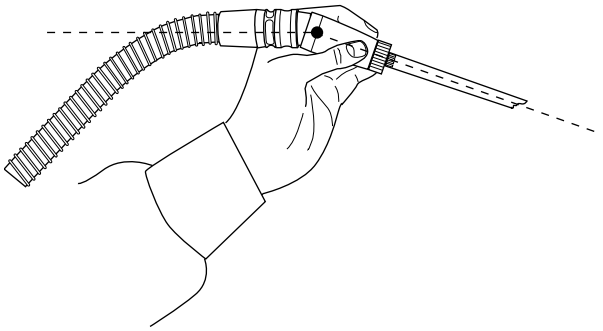
When a saliva or high-volume suction handpiece is lifted from its holder, the suction will automatically start. When the handpieces are returned, the suction will stop.

When you are using the suction handpiece, the suction can be controlled by sliding the adjuster up or down.



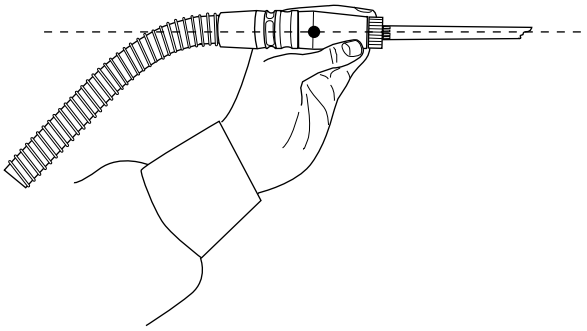
21.2 Tilting high-volume suction

When you lift the suction handpiece from its holder, the weight of the suction tube will cause the end of the handpiece to “tilt” slightly. This action opens the handpiece valve allowing the suction to start.



You can stop the suction temporarily by “straightening” the suction handpiece with your thumb and forefinger.

If you temporarily put the suction handpiece down during dental treatment, the suction will automatically stop as the force of the suction will straighten the handpiece.



22 Programming

22.1 Introduction

NOTE

If the instrument is operated during programming, the changes in settings are seen immediately.

NOTE

The air/water flow of the syringe can not be programmed.

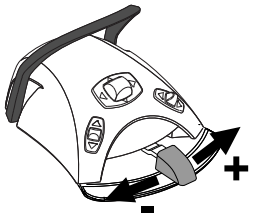
NOTE

To check a function setting without programming it, press Program and the button of the desired function. The setting is displayed on the control panel. Press Program again to close the window without changing the setting.

Most of the programming follows the same pattern:

1. If you are programming an instrument, pick up the instrument from the instrument console.
2. Press **Program** to activate the programming mode.

   The indicator light is lit.
3. Select the desired function from the control panel.
4. Change the setting of the function with the foot control. To increase the parameter value, push the pedal to the right. To decrease the parameter value, push the pedal to the left. When the pedal is pushed halfway (right or left) the parameter changes slowly. When the pedal is pushed to its extreme position (right or left) the parameter changes quickly. If the pedal is pushed for longer than 0.4 seconds, the value will change as long as the pedal is pushed.



NOTE

Alternatively, you can change the settings with the up/down buttons. The instrument settings can be adjusted with these buttons without operating the instrument.

5. Press **Program** to store the new setting into memory.

NOTE

If you interrupt programming for over 90 seconds, the unit automatically exits the programming mode without storing the new settings.

22.2 Automatic chair positions

About this task

NOTE

The chair height cannot be programmed near the upper limit. The help code H 8 is displayed if the chair position is not allowed. When needed, the upper limit can be altered. Contact your Planmeca dealer.

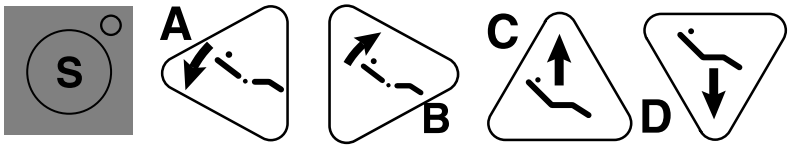
Steps

1. Move the chair to the required position by using the chair movement buttons on the control panel or by using the foot control.

   For instructions, see section "Manual operation" on page 63.

2. If you want the operating light or its composite mode to be on (off) in this position, turn it on (off).
3. Adjust the intensity of the operating light and/or its composite mode as described in section "Intensity" on page 106.

4. Press **Program**.
5. Press the desired chair position where to store the chair's position (**rinsing position**, **A**, **B**, **C** or **D**).



   The chair position is displayed on the control panel.

6. Press **Program** to confirm that you want to save the current position as an automatic position.

22.3 Instrument settings

If Planmeca Romexis and/or Planmeca PlanID is enabled, and you have signed in to the dental unit with your own user name, all changes you make to the instrument settings and then save, are saved to your personal settings. This means that whenever you sign in to the dental unit, you will use your last saved instrument settings.

22.3.1 Instrument spray

Steps

1. Activate the instrument.

2. Press **Program**.

3. Press **Instrument spray**.
4. Adjust the flow rates for water and air.

   The text 'SA' on the control panel indicates that the spray air is adjusted, and the text 'SH' indicates that the spray water is adjusted. The maximum value is marked as F (e.g. SA.F).

For the scaler, only the spray water (SH) can be adjusted.

The minimum value of all parameters is 0 (no flow) and maximum 100. The adjustment step is 1 in the value range 0 - 35% and 5 in the value range 35 - 100%.

5. Change the parameter (air/water) to be adjusted by pressing **Instrument spray** or by pushing the foot control pedal briefly down.
6. Adjust the flow rate.
7. Press **Program**.

22.3.2 Automatic chip blow

About this task

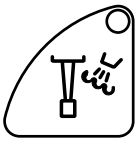
NOTE

The type of manual chip blow does not depend on the type of the automatic chip blow, but is dry as a factory default. The manual chip blow can be set to be dependent on programming, contact your Planmeca dealer.

Steps

1. Activate the instrument.
2. Press **Program**.

3. Press **Chip blow**.

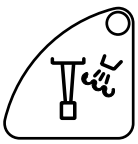


4. Adjust the flow rates for water and air.

   The text ‘CA’ on the control panel indicates that the chip air is adjusted, and the text ‘CH’ indicates that the chip water is adjusted. The maximum value is marked as F (e.g. CA.F).

   The minimum value of both parameters is 0 (no flow) and maximum 100. The adjustment step is 1 in the value range 0 - 35% and 5 in the value range 35 - 100%.

5. Change the parameter (air/water) to be adjusted by pressing **Chip blow** or by pushing the foot control pedal briefly down.



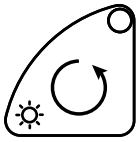
6. Adjust the flow rate.
7. Press **Program**.

22.3.3 Instrument light

Steps

1. Activate the instrument.
2. Press **Program**.

3. Press **Reverse**.



4. Adjust the light intensity.

   The minimum value is 70% of the maximum intensity and the maximum 100%, and the adjustment step is 2.

   After reaching the minimum value the light is switched off.

   The light intensity is displayed on the control panel. 'L.oFF' means that the light is switched off.

5. Press **Program**.

22.3.4 Planmeca Lumion Plus polymerisation light

About this task

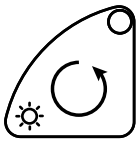
NOTE

The duration of the polymerisation cycle can be programmed only for the Planmeca Lumion Plus polymerisation light.

Steps

1. Activate the instrument.
2. Press **Program**.

3. Press **Reverse**.



NOTE

Alternatively, you can press Instrument spray or Chip blow.

4. Adjust the length of the polymerisation cycle.

   The value range is 5 - 100 seconds. The adjustment step is 5 sec. and the default value is 10 sec.

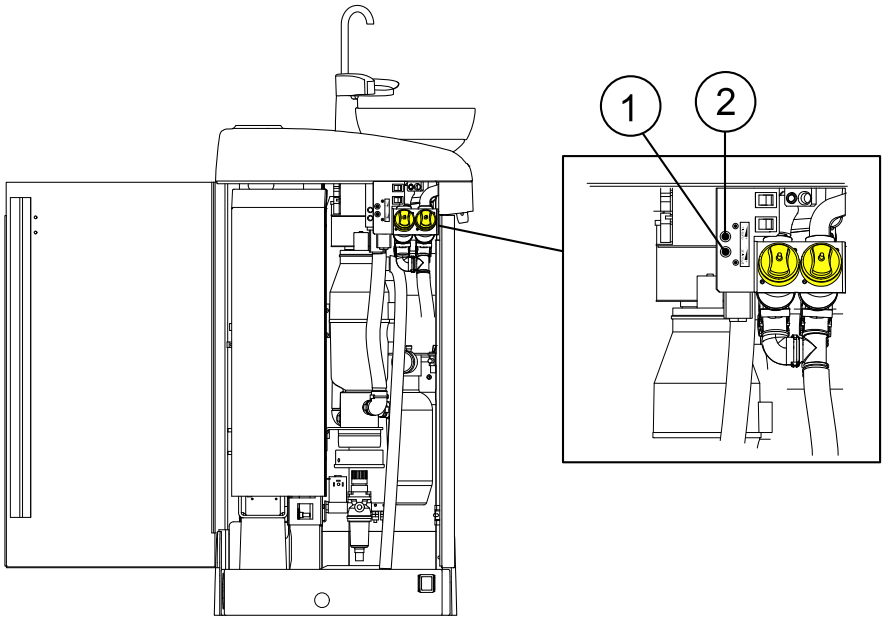
The remaining time or the text ‘LED’ is displayed on the control panel.

5. Press **Program**.

22.4 Bowl rinse and cup fill

22.4.1 Adjusting cup fill and bowl rinse flow rates

The flow rates of the bowl flush and cup fill can be adjusted with the two black knobs located inside the dental unit.



1. Adjustment knob for bowl flush
2. Adjustment knob for cup fill

When you have adjusted the flow rates, you might need to adjust the duration of the bowl rinse and cup fill. For instructions, see sections "Duration of bowl rinsing" on page 104 and "Duration of cup filling" on page 105.

22.4.2 Duration of bowl rinsing

Steps

1. Press **Program**.

2. Press **Cup fill / bowl rinse**.

3. Adjust the duration of the bowl rinsing.

   The letter ‘b’ on the control panel indicates that the duration of the bowl rinsing is adjusted.

   If the letter 'c' is displayed, it means that the duration of the cup fill is adjusted. To change the function to be adjusted, press **Cup fill / bowl rinse**.

   The minimum value is 5 seconds and the maximum 240 seconds, and it is adjusted in steps of 5.

4. Press **Program**.

22.4.3 Duration of cup filling

About this task

NOTE

By default, the cup fill is not activated unless the cup is positioned in its place under the cup fill tube. To change this setting, contact your Planmeca dealer.

NOTE

The water in the dental unit is intended for rinsing only, not for drinking.

Steps

1. Press **Program**.

2. Press **Cup fill / bowl rinse**.

3. Adjust the duration of the cup filling.

   The letter ‘c’ on the control panel indicates that the duration of the cup filling is adjusted.

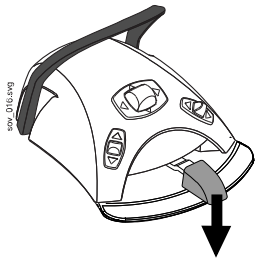
   If the letter 'b' is displayed, it means that the duration of the bowl rinse is adjusted. To change the function to be adjusted, press **Cup fill / bowl rinse**.

   The minimum value is 2 seconds and the maximum is 10 seconds. The duration is adjusted in steps of 0.5 seconds.

4. Press **Program**.

What to do next

The duration of the cup filling can also be programmed as follows:

1. Place an empty cup to the cup holder.
2.  Press **Program**.
3.  Press **Cup fill / bowl rinse** twice. The text ‘C n.n’ will appear on the control panel.
4.  Push the foot control pedal down. The cup filling time will first be set to 2 seconds and will start to increase after pushing the foot control pedal for 2 seconds. The pedal can be released and then pushed again, and the time continues to increase. Continue until the cup is filled to the desired level.
5.  Press **Program**.

22.5 Planmeca Solanna and Planmeca Solanna Vision operating lights

NOTE

The Planmeca Solanna Vision operating light is not available for the Planmeca Compact i dental unit.

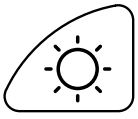
22.5.1 Intensity

About this task

NOTE

The light intensity can also be adjusted from the operating light, see sections "Adjusting intensity of operating light" on page 75 and "Adjusting intensity of operating light in composite mode" on page 76.

Steps

1.  Press **Program**.
2.  Press **Operating light**.

3. Adjust the intensity of the operating light.

   The operating light intensity is displayed on the control panel.

   The minimum value is 30% of the maximum intensity and the maximum 100%, and the adjustment step is 5.

4. Press **Program**.

22.5.2 White light tone

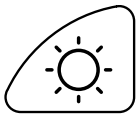
About this task

NOTE

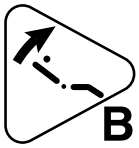
The white light tone can also be adjusted from the operating light, see section "Changing light tone of operating light" on page 78.

Steps

1. Press **Program**.



2. Press **Operating light**.

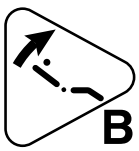


3. Press chair position button **B**.

   The letter t and 1-3 horizontal lines appear on the display.

   The lines indicate the light tone.

   - One line = warm tone
   - Two lines = neutral tone
   - Three lines = cool tone



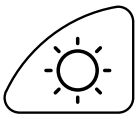
4. Change the intensity by pressing the chair position button **B** for one second. Every time you press the button, the tone changes. The number of horizontal lines changes accordingly.

5. Press **Program**.

22.5.3 Maximum brightness

Steps

1. Press **Program**.



2. Press **Operating light**.

3. Press chair position button **A**.

   The letter I and 1-3 horizontal lines appear on the display.

   The lines indicate the maximum brightness of the operating light.

   - One line = mild
   - Two lines = strong
   - Three lines = glaring

4. Change the maximum brightness by pressing the chair position button **A** for one second. Every time you press the button, the maximum brightness changes. The number of horizontal lines changes accordingly.

5. Press **Program**.

22.6 Duration of door open / assistant call

Steps

1. Press **Program**.

2. Press **Door open / assistant call**.

3. Adjust the door open / assistant call time.

   The door open / assistant call time is displayed on the control panel.

   The minimum value is 0 seconds, the maximum 250 seconds. The value is adjusted in steps of 1 in value range 0 - 30, and in steps of 5 in value range 30 - 250. The default value is 5.

4. Press **Program**.

23 Flushing and cleaning programs

23.1 When to use cleaning programs

We recommend that you run the flushing and cleaning programs as follows:

Recommended flushing intervals

Cleaning program	When	Duration
Short flushing	After every patient	30 seconds / instrument (default; can be configured by a qualified Planmeca service technnician)
Long flushing	In the morning and after the working day	2 minutes (default; can be configured by a qualified Planmeca service technnician)
Suction cleaning	After the working day	6 - 8 minutes

23.2 Before you start

NOTE

Always feed cold water to the dental unit.

NOTE

The water in the dental unit is intended for rinsing only, not for drinking.

NOTE

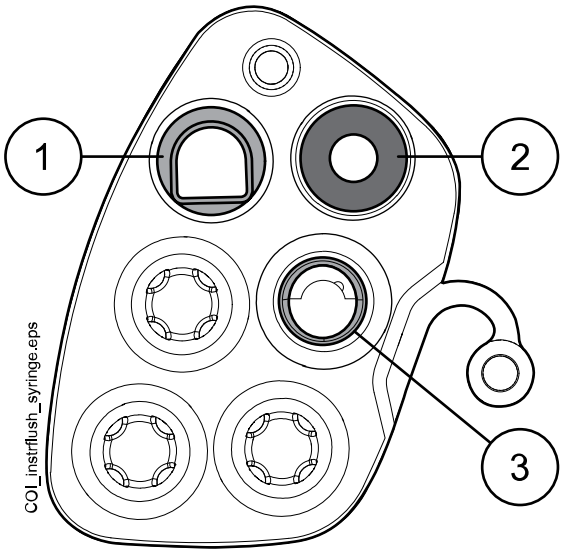
The water tap must be closed when the dental unit is not in use.

NOTE

If disinfectant is splashed on the surfaces of the dental unit, remove the splashes instantly with water and mild soap to avoid stains.

Placing syringe in flushing holder

Each type of syringe has its dedicated place in the flushing holder. The picture below shows the syringe openings in the holder, but note that the picture is an example only and does not represent the actual holder.



1 **Luzzani Ergo syringe**

Remove the metallic syringe cover and place the syringe in the flushing holder. Make sure you insert the syringe the right way so that it fits into the holder.

2 **DCI syringe**

Remove the syringe cover and place the syringe in the flushing holder. Lock the syringe into place with a rotating movement when the syringe is in the holder.

3 **Luzzani Minibright syringe**

Remove the metallic syringe cover and place the syringe in the flushing holder. Lock the syringe into place by pushing it downwards until you hear a click.

23.3 Short instrument flushing

About this task

NOTE

The duration of the short flushing cycle is configurable. Contact your Planmeca dealer.

NOTE

You can interrupt the flushing cycle by pressing Instrument spray. After the interruption, the dental unit can be used normally.

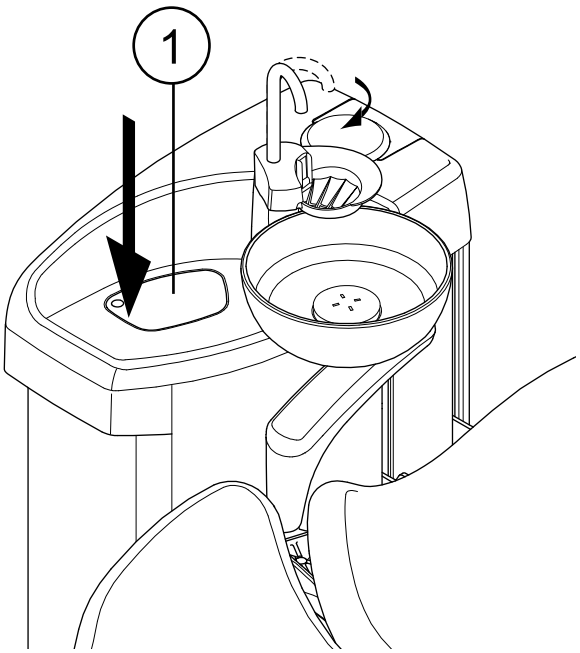
NOTE

You can flush the instrument hoses independently or at the same time as you clean the suction system by using OroCup.

Steps

1. Remove the cup from the cup holder. Turn the bowl away from above the flushing holder as shown in the figure. Turn also the cup fill tube

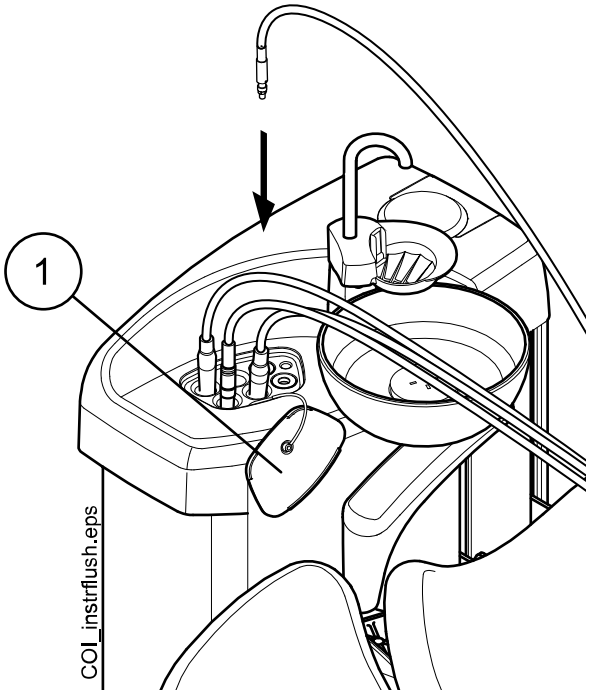
above the bowl as shown in the figure. Press the outer edge of the flushing holder cover (1) and remove the cover.



2. Remove the instrument handpieces from the instruments and clean them according to the manufacturer’s instructions.
3. Place all water consuming instruments (including syringes) into the openings in the instrument flushing holder.

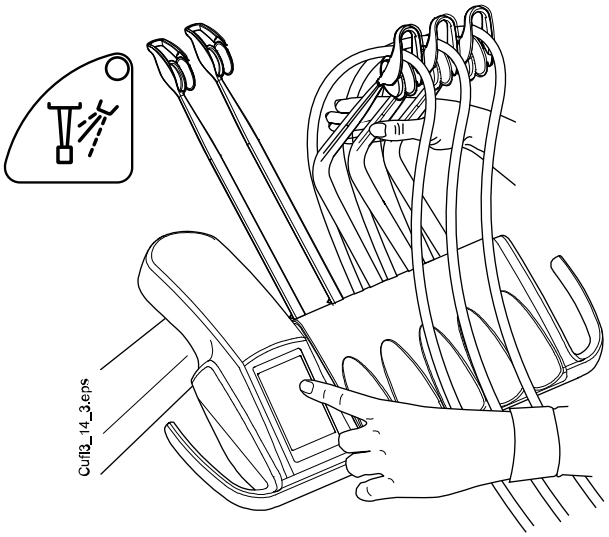
   Optionally, in dental units with balanced instrument arms, you can remove the hoses of the instruments to be flushed from the instrument arms / instrument holders before placing the instruments in the flushing holder.

   In dental units with hanging-tube instruments, the instruments to be flushed must be removed from the instrument holders before placing them in the flushing holder.



1 Flushing holder cover

4. Start the short flushing cycle.



Balanced instrument arms: Start the flushing cycle by bending the instrument arms of those instruments (including syringe) that are to be flushed to an angle of at least 90° and simultaneously pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button and arms when you hear a second signal tone.

Hanging-tube instruments: Start the flushing cycle by pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button when you hear a second signal tone.

The system will first identify the instruments and then each instrument hose is flushed with air and water for 30 seconds in its turn.

5. Once the flushing cycle is finished, H 36 is displayed. Remove the instruments from the flushing holder and return them to the instrument console. Place the flushing holder cover back to its position.

   If water flow was not detected for all water consuming instruments, H 36.1 is displayed. Run instruments for a while with spray water to ensure that the flushing of instruments is sufficient.

   Press **Instrument spray** to view the instrument flushing results on the display. The bars on the display represent the instruments in the order they are placed in the instrument console. A full bar means that the instrument was flushed successfully and a half bar that the flushing for that instrument failed.

23.4 Long instrument flushing

About this task

NOTE

The duration of the long flushing cycle is configurable. Contact your Planmeca dealer.

NOTE

You can flush the instrument hoses independently or at the same time as you clean the suction system by using OroCup.

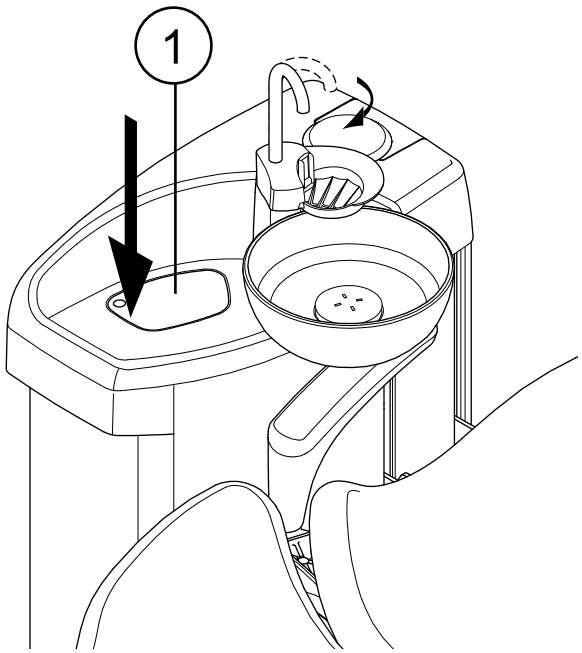
NOTE

You can interrupt the flushing cycle by pressing Instrument spray. After the interruption, the dental unit can be used normally.

Steps

1. Remove the cup from the cup holder. Turn the bowl away from above the flushing holder as shown in the figure. Turn also the cup fill tube

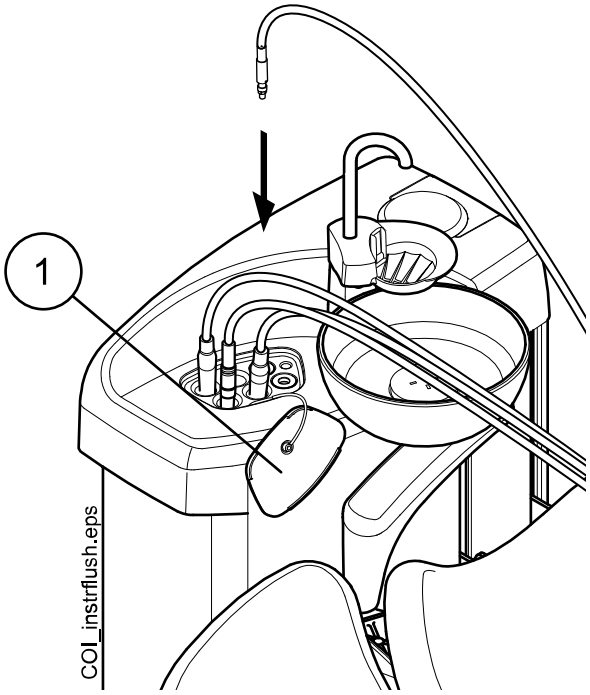
above the bowl as shown in the figure. Press the outer edge of the flushing holder cover (1) and remove the cover.



2. Remove the instrument handpieces from the instruments and clean them according to the manufacturer’s instructions.
3. Place all water consuming instruments (including syringes) into the openings in the instrument flushing holder.

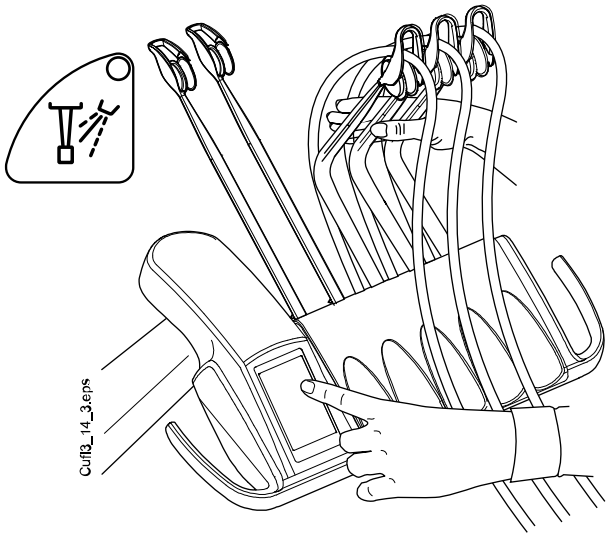
   Optionally, in dental units with balanced instrument arms, you can remove the hoses of the instruments to be flushed from the instrument arms / instrument holders before placing the instruments in the flushing holder.

   In dental units with hanging-tube instruments, the instruments to be flushed must be removed from the instrument holders before placing them in the flushing holder.



1 Flushing holder cover

4. Start the long flushing cycle.



Balanced instrument arms: Start the flushing cycle by bending the instrument arms of those instruments (including syringe) that are to be flushed to an angle of at least 90° and simultaneously pressing **Instrument spray** (you will hear a signal tone) and holding it for 6 seconds. Release the button and arms when you have heard a second and a third signal tone.

Hanging-tube instruments: Start the flushing cycle by pressing **Instrument spray** (you will hear a signal tone) and holding it for 6 seconds. Release the button when you have heard a second and a third signal tone.

The system will first identify the instruments and then each instrument hose is flushed with air and water in its turn. The time of flushing is the same for all instruments. The total flushing time is displayed on the

control panel. At the same time the cup fill tube and the bowl are flushed, too.

NOTE

Adjust the water flow of the cup fill tube so that the water does not splash into the bowl.

5. Once the flushing cycle is finished, H 36 is displayed. Remove the instruments from the flushing holder and return them to the instrument console. Place the flushing holder cover back to its position.

   If water flow was not detected for all water consuming instruments, H 36.1 is displayed. Run instruments for a while with spray water to ensure that the flushing of instruments is sufficient.

   Press **Instrument spray** to view the instrument flushing results on the display. The bars on the display represent the instruments in the order they are placed in the instrument console. A full bar means that the instrument was flushed successfully and a half bar that the flushing for that instrument failed.

What to do next

NOTE

After the flushing cycle, the unit should immediately be switched off. This procedure ensures that cool water remains in the pipelines of the unit, thus minimising the growth of biofilm.

NOTE

The dental unit can be configured to display help message H 99 if the unit has been switched off without performing long flushing after water has been used. When H 99 has been enabled, it can be displayed as a reminder only, or it can be set to disappear only after you have performed long flushing. To take help message H 99 into use, contact your Planmeca dealer.

23.5 Suction cleaning

About this task

NOTE

The Suction Tube Cleaning System (STCS) is an optional feature. If your dental unit does not have this feature, clean the suction tubes with OroCup as instructed in section "OroCup" on page 132.

Steps

1. Remove the suction handpieces from the suction tubes and clean them according to the manufacturer’s instructions.
2. Open the suction cleaning cover.
3. Insert the suction tubes into the suction tube cleaning holder.

   NOTE

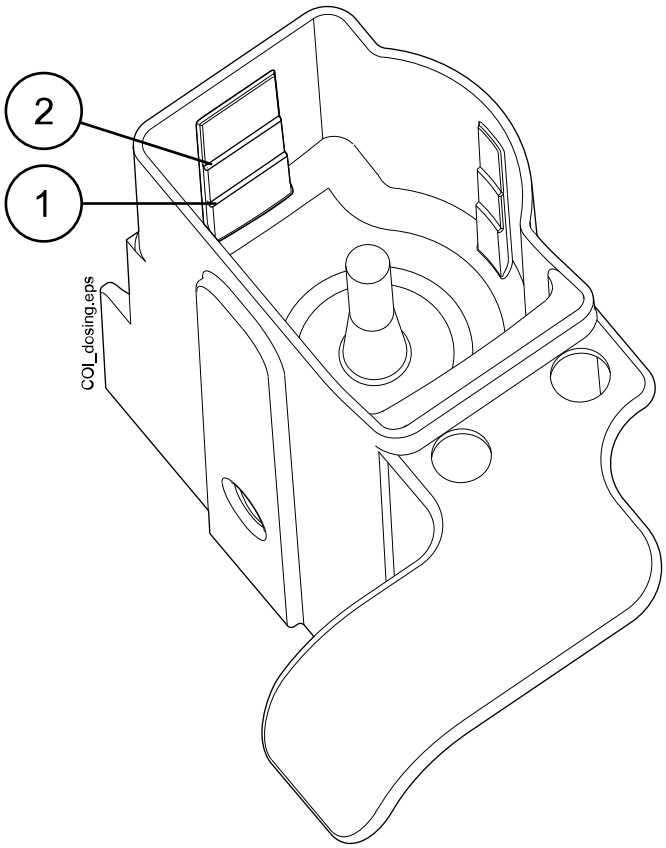
   Make sure that the suction tube cleaning holder itself is in place (i.e. pushed to the bottom of the suction cleaning unit. See step 6 for a picture of the unit).

NOTE

Make sure that a plug is inserted into each empty suction tube holder in the suction tube cleaning holder to prevent the concentrate from spilling.

4. Lift the dosing cubic from the suction cleaning unit and fill it with Planmeca approved suction disinfectant.

   The dosing scale indicates the required amount for 1 or 2 suction tubes.



   1 One suction tube

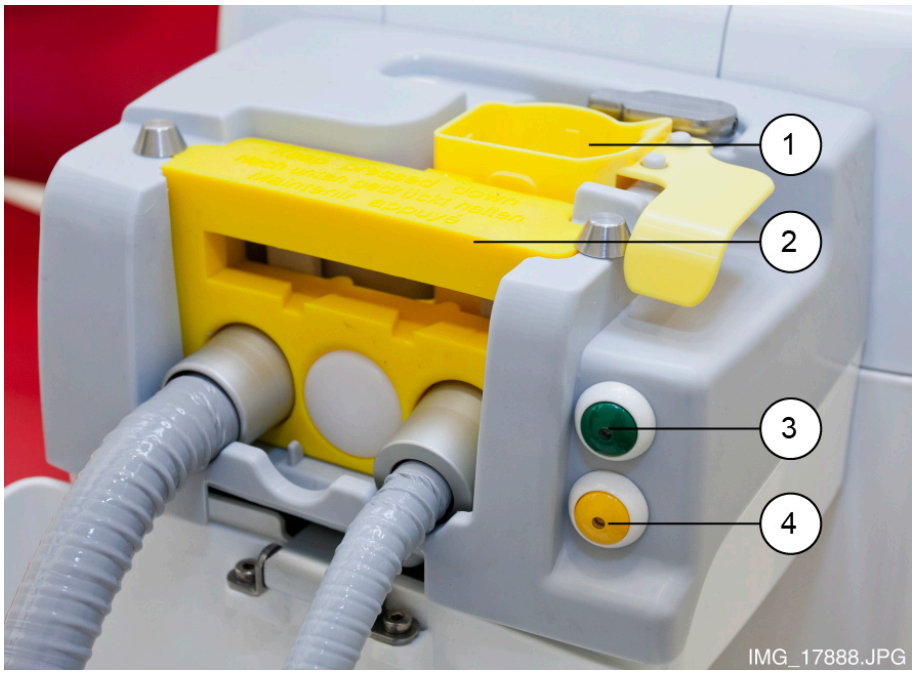
   2 Two suction tubes

5. Place the dosing cubic back to the suction cleaning unit.
6. The green indicator light of the start button is on when the cleaning program can be started. Start the cleaning by pressing the green start button.

   The start button indicator light is flashing during the cleaning procedure and the control panel informs you about the progress of the procedure.

   The cleaning program can be interrupted by pressing the yellow cancel button. H 43 is displayed.

   After interrupting the cleaning program a final suction is performed automatically. After that you can start the cleaning program again by filling the dosing cubic and pressing the green start button. The program will start from the beginning.



1. Dosing cubic
2. Suction tube cleaning holder
3. Start button (green)
4. Cancel button (yellow)

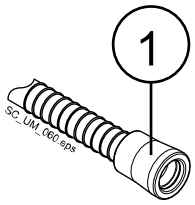
7. When the cleaning program is completed, help message H 42 is displayed. Return the suction tubes to the suction holder and close the suction cleaning cover.
8. If suction disinfectant is left in the dosing cubic after the cleaning cycle, clean the cubic under running water.

Results

The dental unit is now ready for normal operation.

NOTE

Before attaching the handpieces back on the suction tubes, wipe the identification bushings (1) with Planmeca approved surface disinfectant.



24 Cleaning and disinfection

24.1 Introduction

Planmeca approved surface disinfectants, upholstery disinfectants, dental unit water and waterline disinfectants, and suction disinfectants are listed in the document *Planmeca approved disinfectants* (30007097). The document can be found in the Planmeca Material bank.

NOTE

Do not use cleaning agents in aerosol or spray form directly on any surfaces.

NOTE

All parts must be cleaned before disinfecting or autoclaving them.

NOTE

If disinfectant or cleaning solution is splashed on the surfaces of the dental unit, remove the splashes instantly with water and mild soap to avoid stains.

NOTE

Before starting the cleaning procedures in the evening, hang the foot control on the hook under the patient chair and make sure no cables lie on the floor.

24.2 Dental unit surfaces

The table below lists when and how to clean the dental unit surfaces.

How to clean dental unit surfaces

When	Part	Cleaning agent	Additional cleaning method		
			Dish-washer (65°C)	Washer-disinfector (93°C)	Autoclave (134°C)
After every patient and after the working day	Instrument console	Planmeca approved surface disinfectant			
	Hygienic membrane	Planmeca approved surface disinfectant	X	X	
	Instrument hoses	Planmeca approved surface disinfectant			
	Balanced instrument arms	Planmeca approved surface disinfectant			
	Hanging-tube instrument holders	Planmeca approved surface disinfectant		X	X
	Control panel	Planmeca approved surface disinfectant			
	Trays	Planmeca approved surface disinfectant			
	Metal parts of headrest	Planmeca approved surface disinfectant			
	Metal parts of armrests	Planmeca approved surface disinfectant			
	Front cover of operating light	Planmeca approved surface disinfectant			
	Handles of operating light	Planmeca approved surface disinfectant		X	X
	Cup fill tube	Planmeca approved surface disinfectant			
	Bowl surfaces	Mild soap- and water solution Planmeca approved surface disinfectant	X		
	Bowl filter	Mild soap- and water solution	X	X	

How to clean dental unit surfaces

When	Part	Cleaning agent	Additional cleaning method		
			Dish-washer (65°C)	Washer-disinfector (93°C)	Autoclave (134°C)
	Cuspidor	Planmeca approved surface disinfectant			
	Flexy-holder, tablet holder and suction arm	Planmeca approved surface disinfectant			
	Suction handpieces	Planmeca approved surface disinfectant		X	X
	Suction tubes	Planmeca approved surface disinfectant			
	Monitor	Planmeca approved surface disinfectant			
	Upholstery	Mild soap- and water solution			
After the working day	Upholstery	Planmeca approved upholstery disinfectant			
	On Flexy-holder: Suction tube holders (incl. rollers), instrument holder and supplementary holders	Planmeca approved surface disinfectant		X	
	On Flexy-holder: Holder for intraoral scanner	Planmeca approved surface disinfectant			

Parts that should be cleaned weekly or monthly

When	Part	Cleaning method
Weekly	Upholstery	Treatment with Dürr FD 360. Wipe away any excess oil after treatment.
Monthly	Instrument flushing holder	Washer-disinfector (93°C) or autoclave (134°C). See also section "Instrument flushing holder" on page 125.
	Suction tube cleaning holder	Washer-disinfector (93°C). See also section "Suction tube cleaning holder" on page 126.

NOTE

When the dental unit is equipped with hanging-tube instruments, dry the instrument holders properly after cleaning. Wet surfaces might disturb instrument recognition.

NOTE

The instrument console and control panel must be completely dry before covering them with a protective cover.

24.3 Instruments

Clean and service the instruments according to the information supplied with the instrument.

NOTE

After cleaning the instrument, let the oil run from it for at least 10 minutes before replacing it on the console.

Do not use lubricating oil on the Morita TORX micromotor (with the exception of its O-rings).

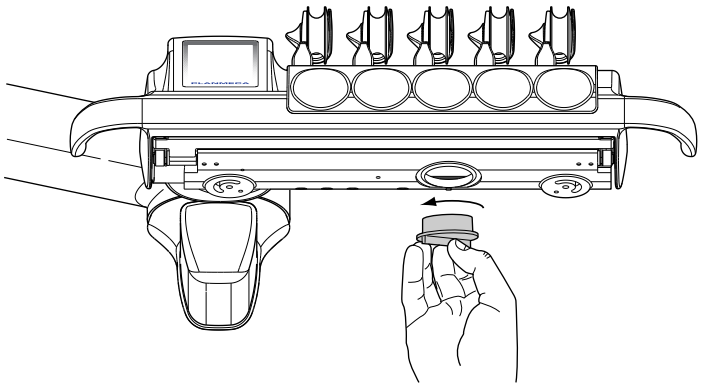
Throw away the intraoral camera's disposable hygiene sleeve after use.

24.4 Instrument console

24.4.1 Oil collector

Instrument console with balanced instrument arms

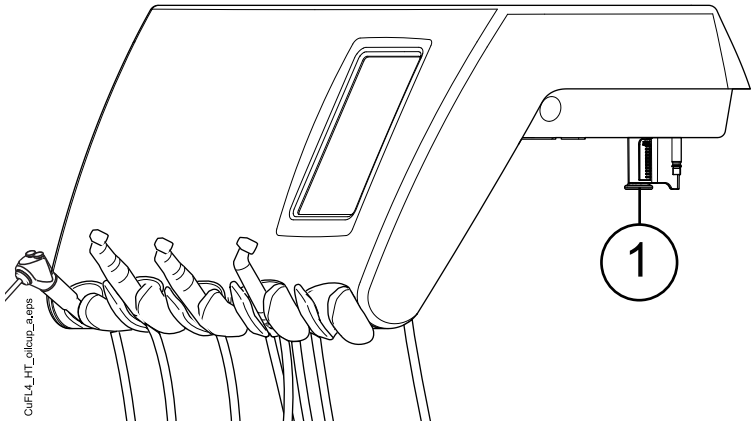
The oil collector underneath the instrument console has to be emptied and cleaned monthly. Remove the oil collector by turning it counter-clockwise as shown in the picture below.



Instrument console with hanging-tube instruments

The oil collector underneath the instrument console has to be checked monthly and emptied when full.

You can check how full the oil collector is without removing it. If the oil level in the narrower chamber has started to fill, it is time to empty the oil collector.



To remove the oil collector from the instrument console, unscrew the oil collector attachment knob and carefully pull the collector out.

24.5 Cuspidor

24.5.1 Bowl

NOTE

Do not pour anything into the bowl unless the unit is switched on and has air and water (that is, the compressor is switched on and the air- and waterlines are opened).

NOTE

Do not pour anything else than water and a suction line cleaning agent into the bowl. The water must be poured slowly into the bowl. The flow may not exceed 5 l/min.

NOTE

Do not empty the bowl filter to the drain!

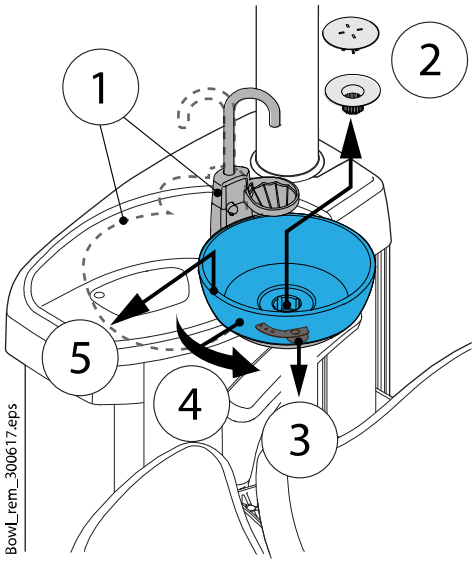
NOTE

The bowl can be removed and washed in the dishwasher. The maximum washing temperature is 65°C. At higher temperatures the bowl may break. Avoid rapid temperature changes in the dishwasher and when the bowl is in use. When positioning the bowl into the dishwasher, make sure that the bowl does not press other objects in the machine.

Clean the bowl after every patient by pouring a few drops of Planmeca approved suction disinfectant into the bowl and using a soft brush. Rinse the bowl by pressing **Bowl rinse**. The outside of the bowl can be wiped clean with a damp cloth.

The bowl can also be removed and washed in the dishwasher if required. To remove the bowl, do as follows:

1. Turn the bowl and the cup fill tube away from above the cuspidor.
2. Remove the bowl filter parts and empty the bowl filter.
3. Push the bowl fastening clip carefully down and
4. rotate the bowl counter-clockwise.
5. Lift the bowl slightly upward and remove it by pulling it horizontally.



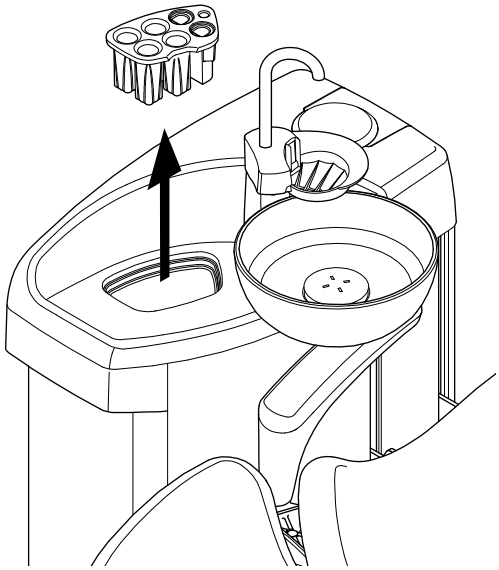
Replace the bowl in reverse order.

NOTE

The cover cap of the filter makes the removal of the filter easier, but the filter can also be used without the cover cap.

24.5.2 Instrument flushing holder

The instrument flushing holder can be lifted away from its position.

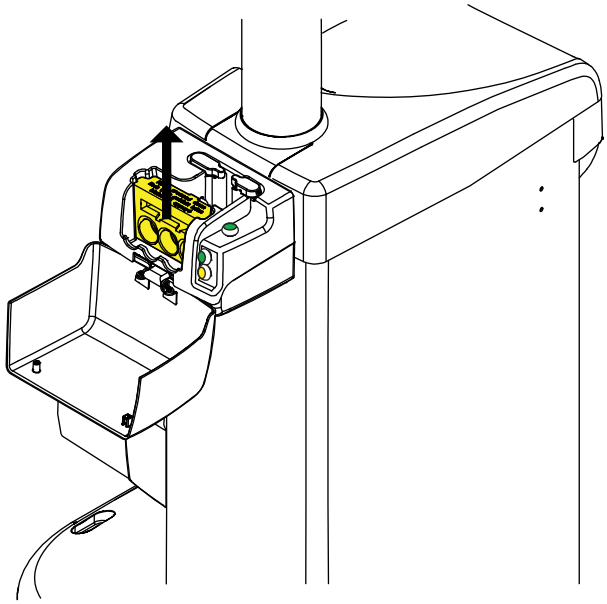


Disinfect the flushing holder once a month in a washer-disinfector at 93°C or autoclave it at 134°C.

Note that the flushing holder cover can not be autoclaved. Remove the cover before autoclaving the instrument flushing holder.

24.5.3 Suction tube cleaning holder

Disinfect the suction tube cleaning holder once a month in a washer-disinfector at 93°C.



NOTE

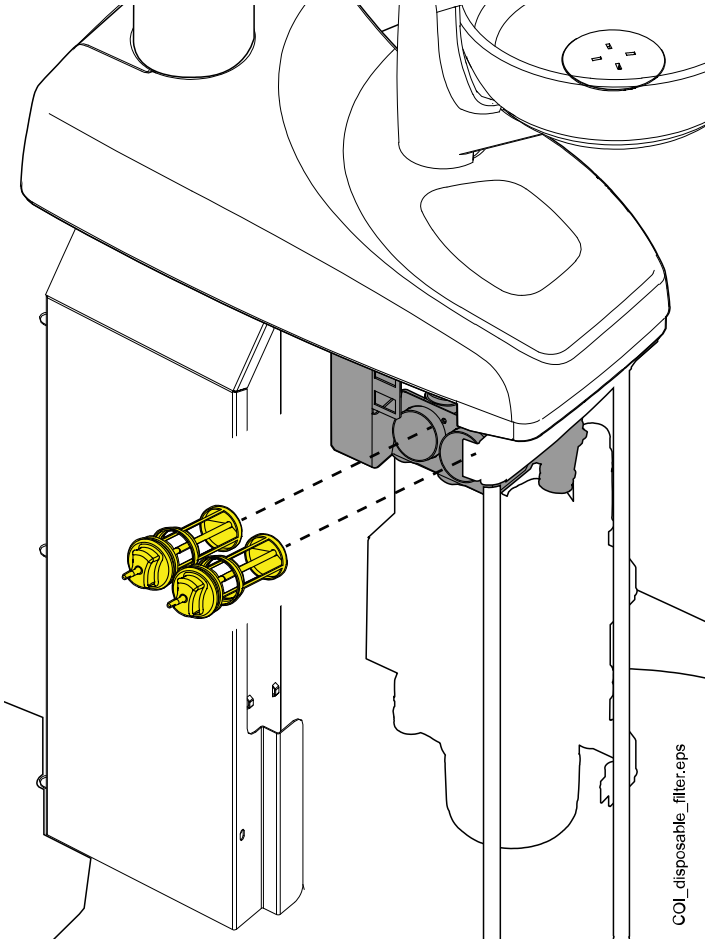
When you place the suction tube cleaning holder back in the cuspidor after cleaning, make sure it is pushed firmly into its position in the cuspidor.

24.5.4 Disposable filters

Empty the disposable filters daily or when they are full. Replace them weekly.

NOTE

The disposable filters must be emptied/disposed into a separate amalgam container.



24.5.5 Spittoon valve coarse filter

If your dental unit is equipped with a VS/A compatible suction system, empty the spittoon valve coarse filter when it is full.

NOTE

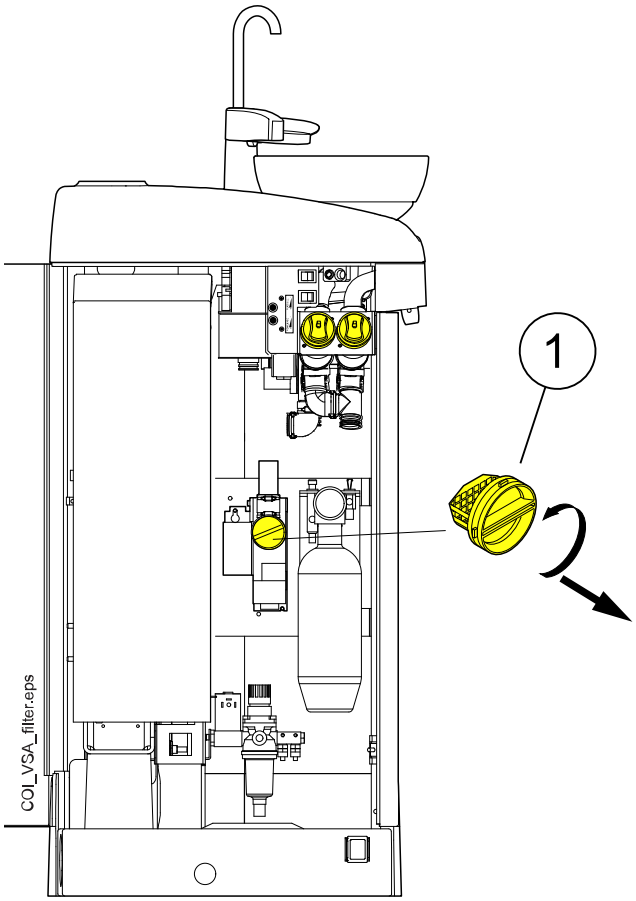
Before emptying the spittoon valve coarse filter you must empty the bowl (spittoon) valve of any excess water by pressing the Program button for about 5 seconds until the suction starts. The valve will close automatically after about 15 seconds.

NOTE

The spittoon valve coarse filter must be emptied into a separate amalgam container.

When you have emptied the filter, make sure you place it properly back in its holder to prevent the water from leaking onto the floor.

When the filter is clogged, the dental unit will instruct you to empty the filter. In some error situations, the dental unit may also restrict the water flow to prevent leakage.



1 Spittoon valve coarse filter

24.5.6 Amalgam collector

CAUTION

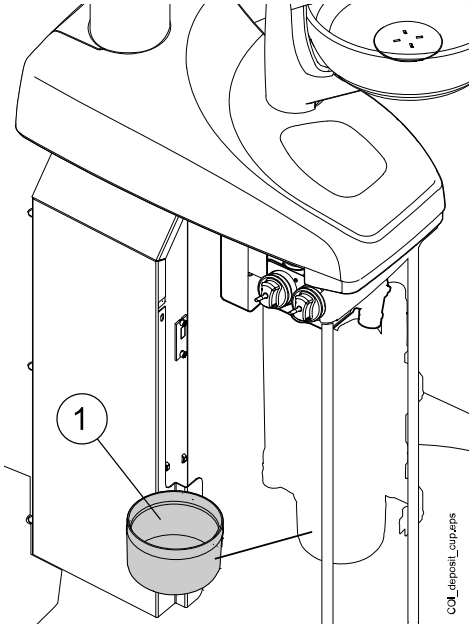
Switch the unit off before removing the amalgam collector from the dental unit.

DÜRR CAS1 suction system

Replace the amalgam collector as soon as possible after help message H 1 is displayed, or at least before the next patient.

The degree of fullness of the amalgam collector can also be checked from the indicator light next to the collector on the Dürr CAS1 suction system.

Yellow indicator light	≥ 90 % full
Red indicator light	100 % full



1 Amalgam collector

24.5.7 Deposit cup

CAUTION

Switch the unit off before removing the deposit cup from the dental unit.

DÜRR CS1 suction system

Check the deposit cup weekly and clean or replace it when it is 70% full.

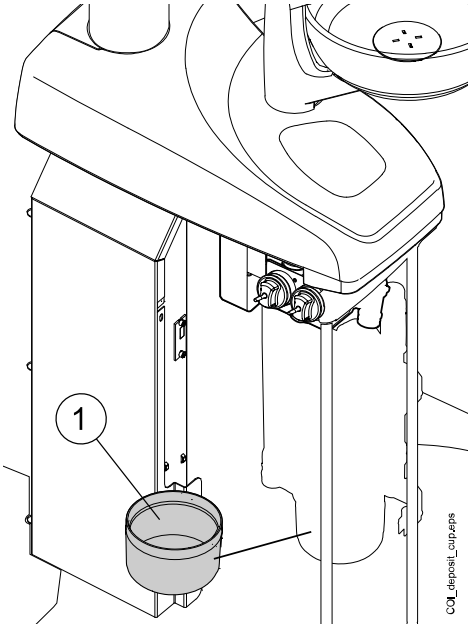
Refer to the instructions supplied with the Dürr separator.

Wet suction system

Check the deposit cup weekly and clean or replace it when it is 70% full.

Microvac suction system

Check the deposit cup weekly and empty and clean it when it is 70% full.

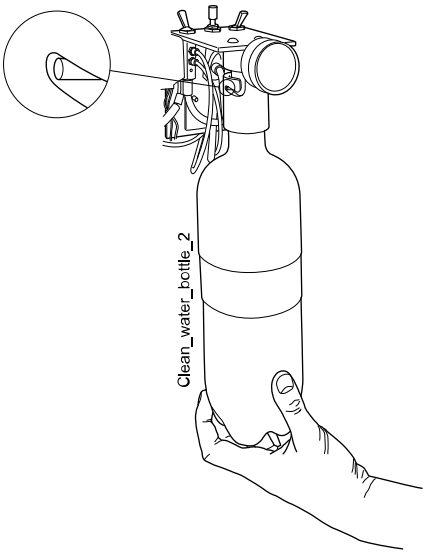


1 Deposit cup

24.5.8 Clean-water bottle

Use a bottle brush and a mild soap- and water solution to clean the clean-water bottle once a week.

To remove the clean-water bottle from the dental unit, first turn the Water bottle switch toward 'OFF'. Then, take a hold of the bottom of the bottle, turn the bottle slightly so that the pin moves along the groove and pull the bottle downwards.



24.6 Suction system

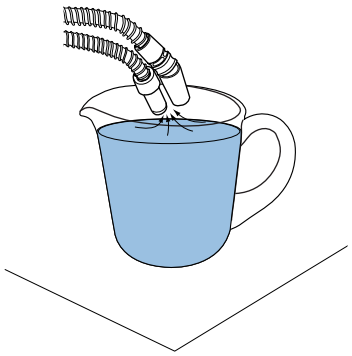
NOTE

Dry the suction tube holders and the tube bushings properly after cleaning. Wet surfaces might disturb suction tube recognition.

24.6.1 In the morning

Steps

1. Rinse each suction tube with 0.5 litres of water by slowly aspirating water and air through the suction handpieces.



2. Wipe the suction handpieces with Planmeca approved surface disinfectant.

24.6.2 After each patient

Steps

1. Remove the used aspirating tips.
2. For hygienic and operational reasons, empty one glass of water (100 - 200 ml) with each suction tube by aspirating water and air through the suction handpiece. Do this even if only the saliva suction tube has been used.
3. Wipe the suction handpieces with Planmeca approved surface disinfectant.
4. Wipe the suction holder / Flexy-holder, including the tablet holder, with Planmeca approved surface disinfectant.

Results

NOTE

Do not use a spray disinfection solution for the suction arms and holders.

NOTE

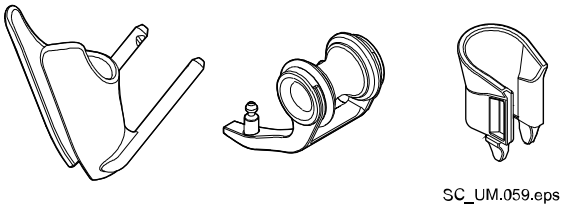
Clean the tablet according to the instructions given by the manufacturer.

24.6.3 After each working day

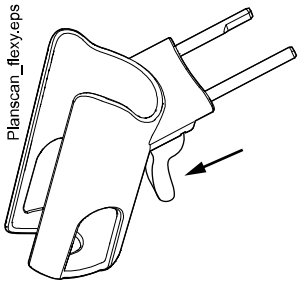
Steps

1. Disinfect the suction system either by running the suction cleaning program or by using OroCup. For information on the suction cleaning program, see section "Suction cleaning" on page 117.
2. When the suction system has been rinsed, disinfect the suction handpieces in a washer-disinfector at 93°C, then optionally autoclave them at 134°C.

3. Flexy-holder: Disinfect the supplementary holders, suction tube holders (including rollers) and instrument holder in a washer-disinfector at 93°C.



4. Flexy-holder: Wipe the holder for the intraoral scanner with Planmeca approved surface disinfectant.



24.6.3.1 OroCup

About this task

The following describes how to disinfect the suction system with OroCup.

Steps

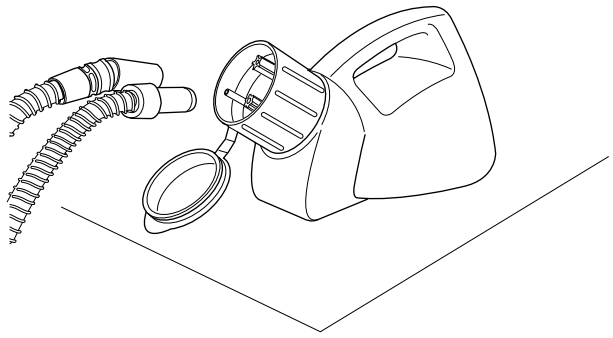
1. Mix the cleaning solution:

   Pour 20 ml Planmeca approved suction disinfectant into the rinsing bottle. Add 1 l water and shake well.

   NOTE

   Do not use dish washing detergents.

2. Place the rinsing bottle (for example OroCup) on a flat surface (table or floor).



3. Remove the suction handpieces from their holders and push them onto the inserts inside the cap of the rinsing bottle. Allow the bottle to empty.
4. Return the suction tubes back to the holder right after OroCup has been emptied. Do not use suction only for air.
5. Replace the exchangeable parts (filters etc.) the next morning.

24.6.4 Weekly cleaning procedures

24.6.4.1 During working day

About this task

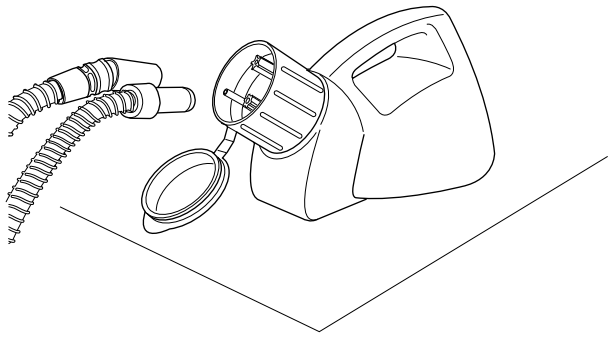
Clean the suction system with Dürr MD 555 cleaner 1 - 2 times a week to prevent the buildup of deposits in the suction system, especially if you are using dental air polishers.

This procedure is mandatory for dental units with a Dürr amalgam separator or Dürr VS/A separator.

For more information on Dürr MD 555 cleaner, please visit http://www.duerrdental.com.

Steps

1. Pour 50 ml of Dürr MD 555 cleaner into a rinsing bottle (for example OroCup). Add 1 l water and mix well.
2. Place the rinsing bottle on a flat surface (table or floor).



3. Remove the suction handpieces from their holders and push them onto the inserts inside the cap of the rinsing bottle.
4. Remove the suction handpieces from the rinsing bottle when there is 250 ml of the solution left in the bottle.
5. Return the suction handpieces immediately back to the holder. Do not use suction only for air.

6. Open the bowl valve to remove any excess water by pressing the **Program** button for about 5 seconds until the suction starts. The valve will close automatically after about 15 seconds.
7. When the valve has closed, pour the 250 ml that is left of the solution into the bowl.
8. Let the solution affect for 30 - 120 minutes.

9. Rinse the bowl by pressing **Bowl rinse**.
10. Rinse the suction tubes by manually aspirating water through the suction handpieces.

24.6.4.2 After working day

About this task

If your dental unit is equipped with a Dürr amalgam separator or Dürr VS/A separator, you must clean the suction system with Planmeca approved suction disinfectant once a week.

Steps

1. Mix 5 ml of Planmeca approved suction disinfectant with 250 ml water and stir well.

2. Open the bowl valve to remove any excess water by pressing the **Program** button for about 5 seconds until the suction starts. The valve will close automatically after about 15 seconds.
3. When the valve has closed, pour the suction disinfectant solution into the bowl.
4. Let the solution affect overnight. Rinse the suction system the next morning with 2 l of water.

5. Rinse the bowl with water the next morning by pressing **Cup fill / bowl rinse**.

24.6.5 Cleaning suction handpieces

The following explains how the suction handpieces can be disassembled for cleaning.

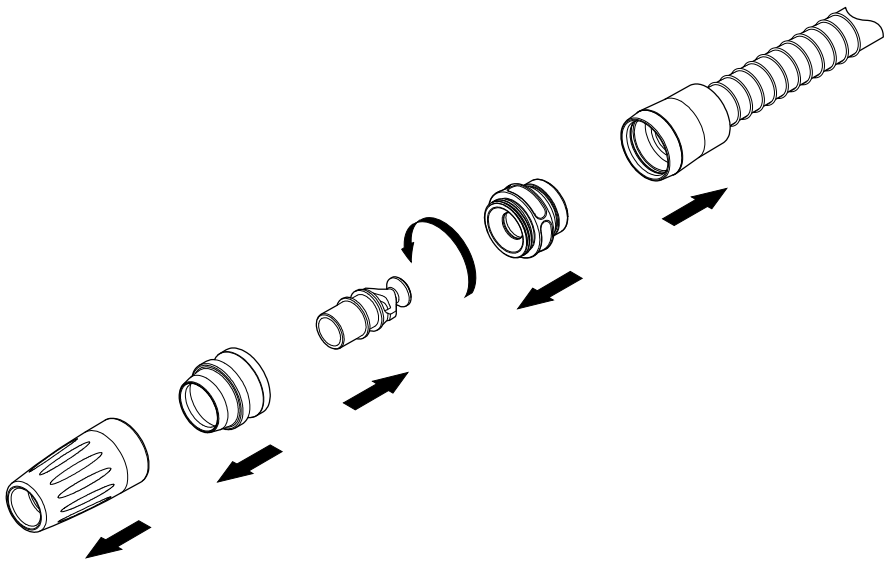
NOTE

We recommend that the suction handpieces be replaced once a year.

High-volume suction handpiece

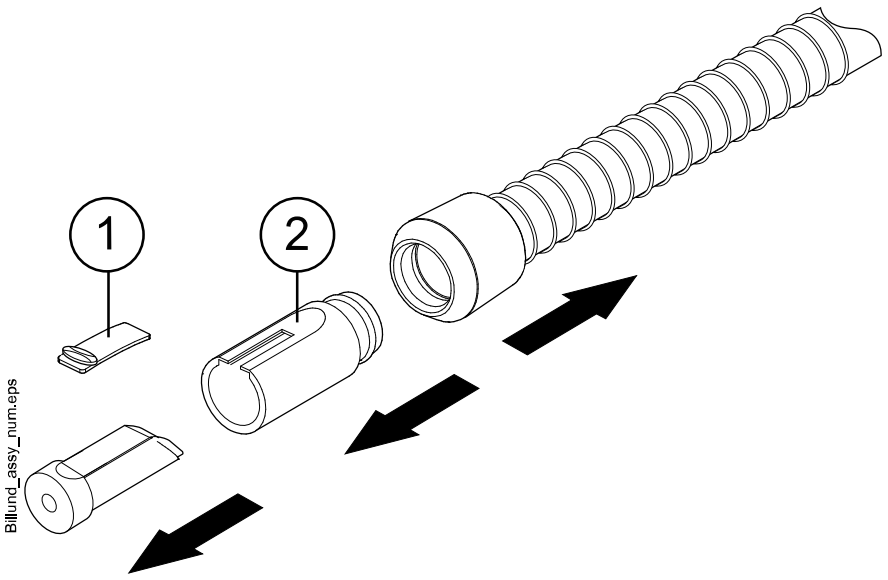
Unscrew the handpiece from the suction tube for cleaning.

If necessary, the handpiece can be completely disassembled for more thorough cleaning. The handpiece parts can be disinfected in a washer-disinfector at 93°C, then optionally autoclaved at 134°C.



Saliva suction handpiece

The saliva suction handpiece can be disassembled for cleaning by pulling out the end of the handpiece and removing the core (2) and the adjuster (1). The handpiece parts can be disinfected in a washer-disinfector at 93°C, then optionally autoclaved at 134°C.



24.7 Planmeca intraoral scanner

For information on how to clean the Planmeca intraoral scanner, see *Planmeca FIT user's manual*.

24.8 External PC

The external PC together with its mouse and keyboard can be wiped with a dry cloth, or according to the manufacturer's instructions.

CAUTION

When cleaning the external PC, always disconnect the PC from the mains electricity supply.

25 Planmeca ActiveAqua

25.1 Introduction

CAUTION

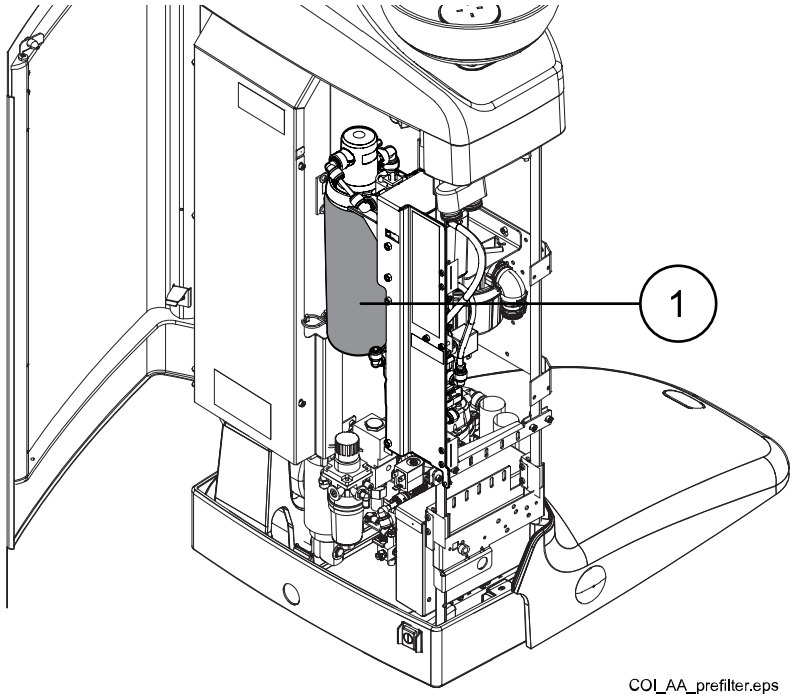
No chemicals must be added to the Planmeca ActiveAqua water treatment system.

Planmeca ActiveAqua is a water treatment system that produces clean and soft water for dental unit instruments and cup fill. All the water used by the dental unit runs through an air gap, which fulfills the EN1717 standard.

The clean water is disinfected without any added chemicals. The disinfection process, which is based on electrolysis, removes microorganisms, provides total biofilm control and guarantees a safe treatment environment for both the dental team and the patients.

When Planmeca ActiveAqua is installed to the dental unit, instrument flushing and suction cleaning are performed daily as instructed in section "Flushing and cleaning programs" on page 110. As Planmeca ActiveAqua takes care of water disinfection, neither the Waterline Cleaning System nor the Planmeca WEK water disinfection system is available for dental units equipped with Planmeca ActiveAqua.

Planmeca ActiveAqua maintenance parts



1 Prefilter

25.2 Measuring free chlorine

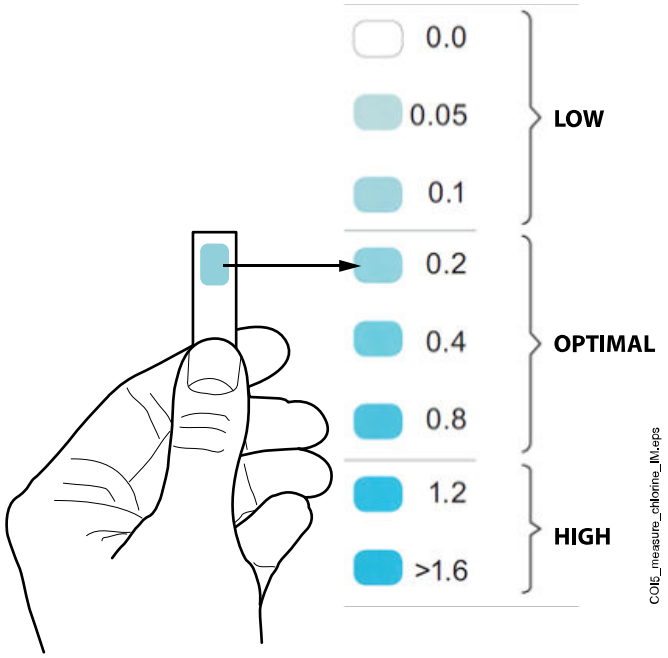
About this task

To ensure that the Planmeca ActiveAqua water treatment system functions properly and that the settings are on an optimal level, the free chlorine in the outcoming water must be measured weekly.

When help message H90.1 is displayed, measure the concentration of free chlorine in the water using test strips.

Steps

1. Use the syringe to fill half a cup with water.
2. Immerse a test strip in the water and carefully swirl the test strip around for 30 seconds.
3. Take out the test strip and compare its colour with the colour chart on the test strip bottle.



4. Select the correct chlorine level on the control panel.

4.a. Press **Program**.

The text CL and a horizontal line shows on the display.

4.b. Select the correct chlorine level with the **Chair up/down** buttons.

There are three chlorine level alternatives:

< 0.2 (low)

0.2 - 0.8 (optimal)

> 0.8 (high)

Move up by pressing **Chair up** and move down by pressing **Chair down**.

4.c. When the horizontal line that corresponds to the water's chlorine level shows on the display, press **Program** to confirm the measurement result.

Based on these measurements, a help message is displayed and the dental unit automatically adjusts the electrolysis strength in normal use, which in turn affects the chlorine level.

Results

If the water does not contain enough chlorine (value < 0.2), perform long instrument flushing and measure the free chlorine concentration again.

For instructions on how to perform long instrument flushing, see section "Long instrument flushing" on page 114.

25.3 Changing Planmeca ActiveAqua prefilter

About this task

The prefilter's lifetime depends on the water hardness setting and the clean water consumption, the maximum change period for the prefilter being 25 weeks.

A counter keeps track of the change period. Change the prefilter when the dental unit displays help message H90.2.

CAUTION

To ensure the proper operation of the dental unit, it is important that you change the prefilter when help message H90.2 is displayed and do not reset the prefilter change period counter until the prefilter has been replaced.

NOTE

If you for some reason need to delay the prefilter change, pick up any instrument to cancel help message H90.2. Remember to change the prefilter as soon as possible. Depending on the dental unit's settings, H90.2 is displayed again when you sign in to the dental unit or when the dental unit is switched on.

Remember to reset the prefilter change period after you have changed the prefilter by pressing the Program button for two seconds when help message H90.2 is active.

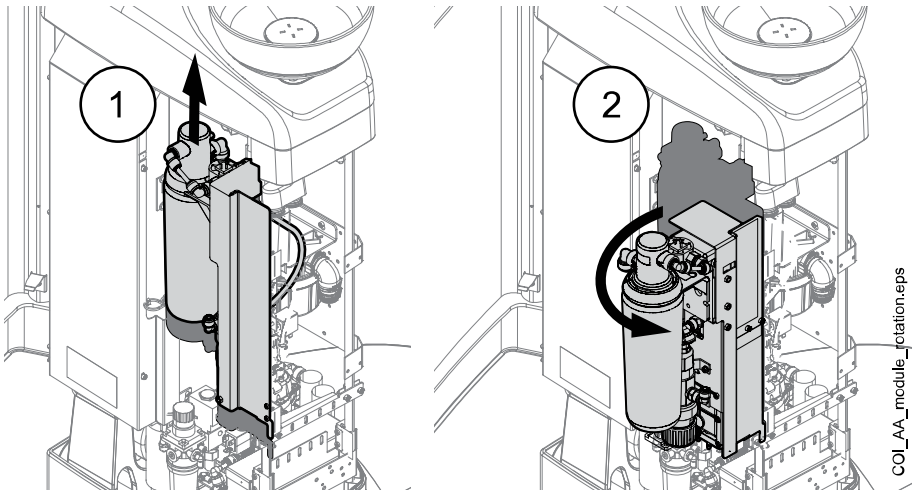
NOTE

It is very important that the water hardness value has been set correctly in the Planmeca ActiveAqua settings to ensure proper operation of the Planmeca ActiveAqua water treatment system and to prevent calcification of the Planmeca ActiveAqua electrolysis chamber.

Steps

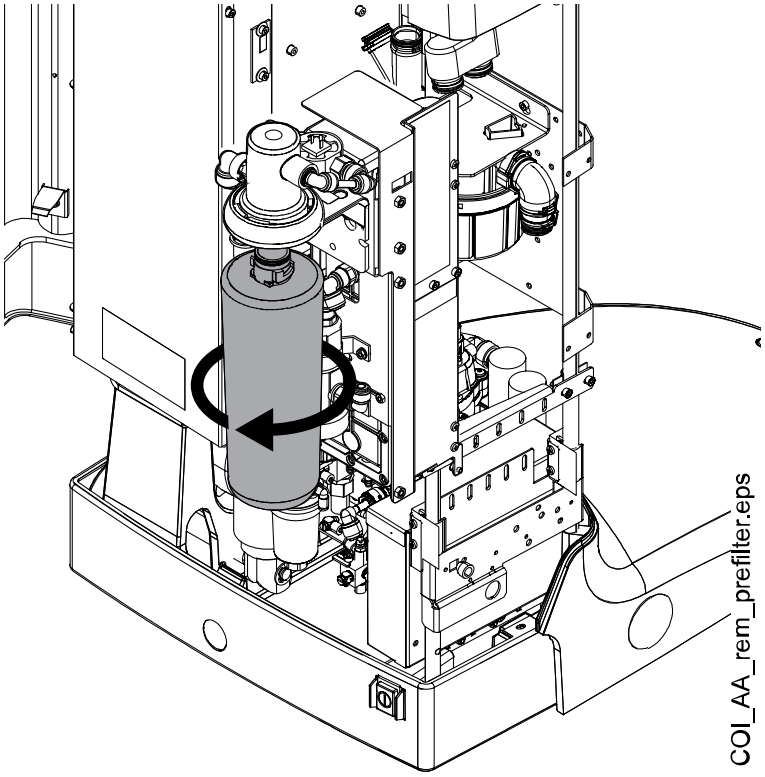
1. Switch off the dental unit.
2. Open the cuspidor door.

3. Lift (1) the ActiveAqua module and then turn it out from the cuspidor (2) to access the prefilter.



4. Remove the prefilter.

   Hold a plastic bag around the prefilter at removal, as some water will drop from the filter head. Detach the prefilter by first rotating it in the direction shown below and then pulling it downward.

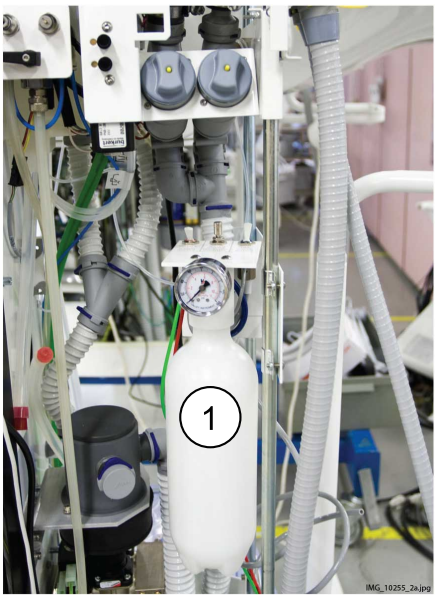


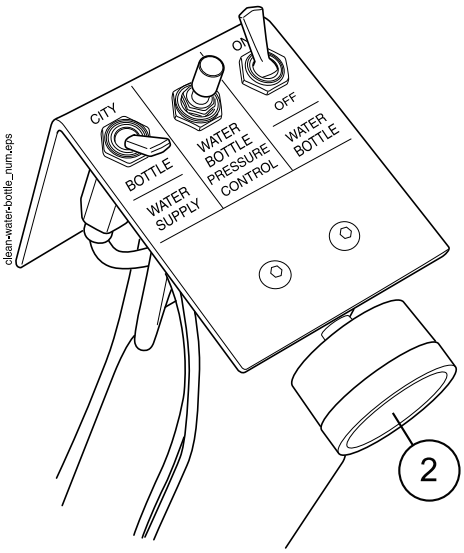
5. Attach the new prefilter by first placing it into position and then rotating it in the opposite direction until it locks into position.
6. Turn the ActiveAqua module back into the cuspidor and press it down so that it locks into position.
7. Close the cuspidor door.
8. Switch on the dental unit.
9. When help message H90.2 is active, press **Program** for two seconds to confirm the prefilter change and reset the expiry counter.
10. Wait for 90 s while ActiveAqua circulates water to bleed the prefilter.

26 Clean water system

26.1 Introduction

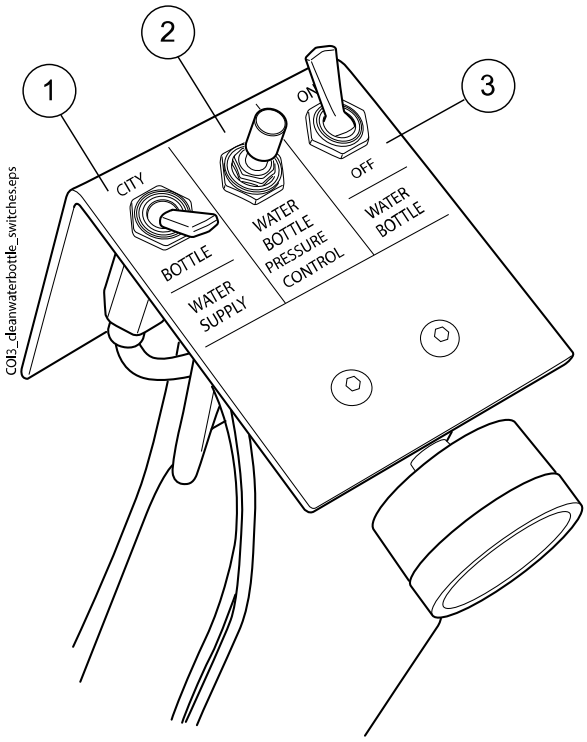
In the Clean Water System (CWS), the water that is used for the instruments comes from a clean-water bottle installed to the dental unit. CWS can be used, for example, when the domestic water is of poor quality, the waterline system does not generate enough pressure, or if its use is required by legislation.





1. Clean-water bottle
2. Pressure monitor

The switches on the clean-water bottle assembly let you control the water supply.



1. Water supply

   Lets you select the water supply for your dental unit. Turn the switch toward ‘CITY’ to select domestic water, and toward ‘BOTTLE’ to select the clean-water bottle.

   NOTE

   If your dental unit is installed so that it has no domestic water, this switch is missing and the water supply for the dental unit is clean-water bottle only.

2. Water bottle pressure control

   The pressure in the water bottle can be adjusted by turning the knob. The pressure can be checked from the pressure monitor and should be between 2.5 and 2.8 bar.

3. Water bottle

   When the clean-water bottle is used (water supply -switch turned toward ‘BOTTLE’), the water bottle -switch lets you turn the bottle on or off.

   When the switch is toward ‘ON’, the pressure is maintained in the bottle, and the bottle can be used.

   When the switch is toward ‘OFF’, you can detach the bottle, for example, for cleaning. Allow a few seconds for the pressure to drop before unscrewing the bottle.

26.2 Waterline cleaning

The waterlines of the dental unit should be cleaned once a week with a Planmeca approved waterline disinfectant. The solution is left in the unit overnight and the waterlines of the unit are flushed with water the next morning. The disinfectant should not be left in the waterlines for longer than one night.

CAUTION

Only Planmeca Planosil, Planmeca PlanPure or Alpro Bilpron disinfectant must be used. Planmeca does not guarantee the suitability of and is not liable for damages caused by other disinfectants.

NOTE

To avoid stains, possible disinfectant splashes should be wiped away immediately.

26.2.1 After the working day

About this task

NOTE

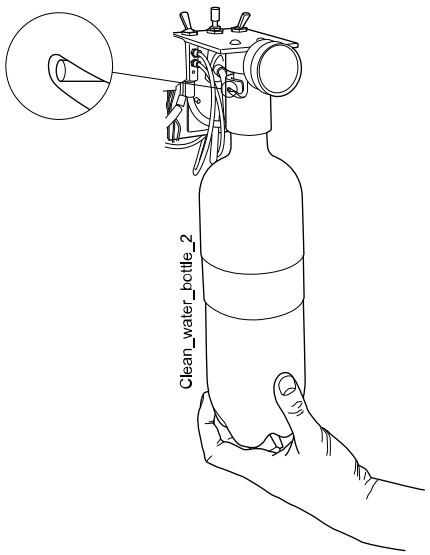
You can interrupt the flushing cycle by pressing Instrument spray. After the interruption, the dental unit can be used normally.

Steps

1. Open the dental unit door.

2. Remove the clean-water bottle.

   First, turn the Water bottle switch toward 'OFF'. Then, take a hold of the bottom of the bottle, turn the bottle slightly so that the pin moves along the groove and pull the bottle downwards.



3. Empty the possible water from the clean-water bottle.
4. Fill the clean-water bottle with approx. 1 dl of Planmeca approved waterline disinfectant. The amount depends on the unit configuration.

   The assistant's syringe uses about 1 dl of disinfectant. Thus, if the syringe is in use, add this amount to your calculations on the required disinfectant amount.

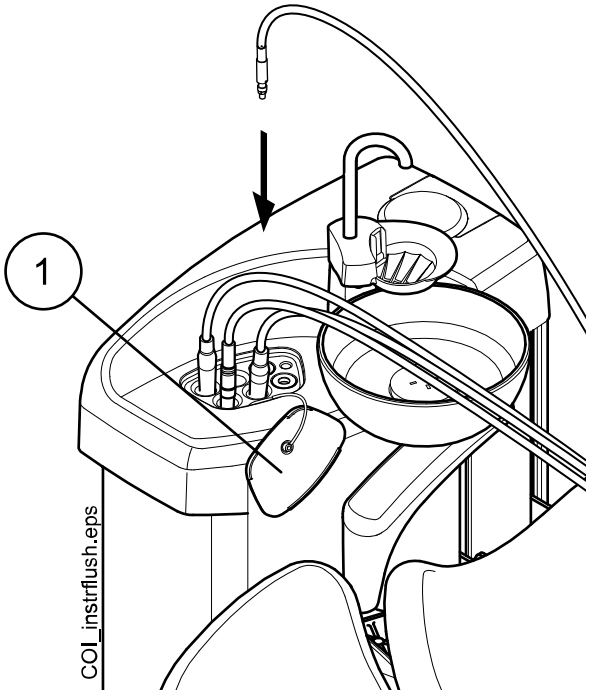
   We recommend you keep record of how much disinfectant has been used.
5. Place the clean-water bottle back in its place in the dental unit and close the unit door.

   NOTE

   Ensure that the water supply switch is turned toward ‘BOTTLE’ and that the water bottle switch is turned toward ‘ON’.
6. Remove the instrument handpieces from the instruments and clean them according to the manufacturer’s instructions.
7. Place all water consuming instruments (including syringes) into the openings in the instrument flushing holder.

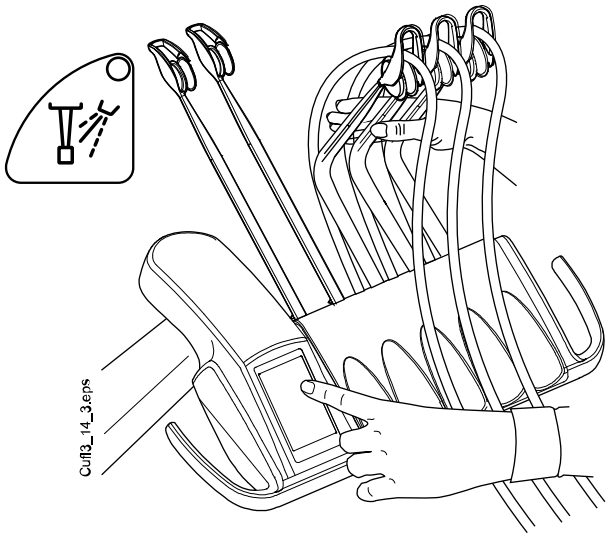
   Optionally, in dental units with balanced instrument arms, you can remove the hoses of the instruments to be flushed from the instrument arms / instrument holders before placing the instruments in the flushing holder.

   In dental units with hanging-tube instruments, the instruments to be flushed must be removed from the instrument holders before placing them in the flushing holder.



1 Flushing holder cover

8. Start the short flushing cycle.



Balanced instrument arms: Start the flushing cycle by bending the instrument arms of those instruments (including syringe) that are to be flushed to an angle of at least 90° and simultaneously pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button and arms when you hear a second signal tone.

Hanging-tube instruments: Start the flushing cycle by pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button when you hear a second signal tone.

The system will first identify the instruments and then each instrument hose is flushed with air and water for 30 seconds in its turn.

9. Turn the unit off and let the disinfectant affect in the unit overnight.

NOTE

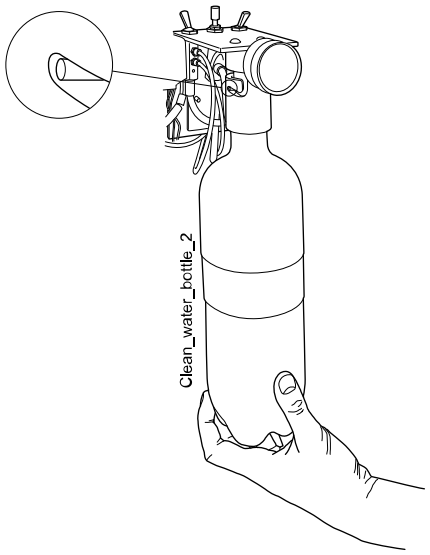
Leave the instruments in the flushing holder overnight.

26.2.2 In the morning

Steps

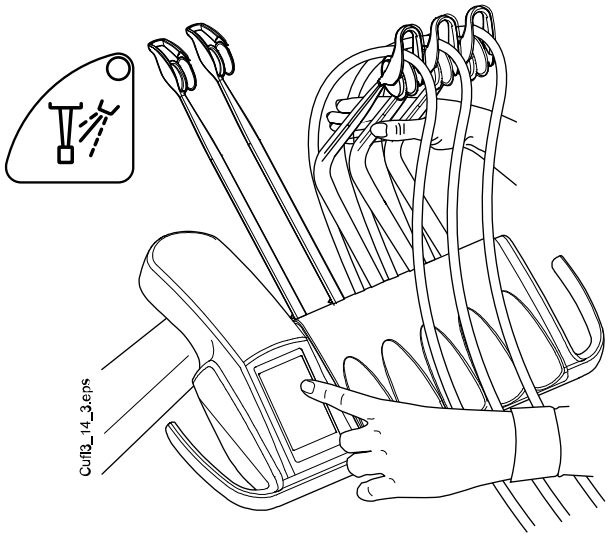
1. Open the dental unit door.
2. Remove the clean-water bottle.

   First, turn the Water bottle switch toward 'OFF'. Then, take a hold of the bottom of the bottle, turn the bottle slightly so that the pin moves along the groove and pull the bottle downwards.



3. Rinse the clean-water bottle and fill it with clean water.
4. Place the clean-water bottle back in its place in the dental unit and close the unit door.

5. Start the short flushing cycle.



Balanced instrument arms: Start the flushing cycle by bending the instrument arms of those instruments (including syringe) that are to be flushed to an angle of at least 90° and simultaneously pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button and arms when you hear a second signal tone.

Hanging-tube instruments: Start the flushing cycle by pressing **Instrument spray** (you will hear a signal tone) and holding it for 3 seconds. Release the button when you hear a second signal tone.

The system will first identify the instruments and then each instrument hose is flushed with air and water for 30 seconds in its turn.

6. Repeat the flushing sequence in step 5 at least three more times, or until the water is clean. If the clean-water bottle runs out of water, refill it.

   If the water quality of the domestic water is good, you can also use the domestic water mode when performing the flushing.

7. **Balanced instrument arms:** Place the instrument hoses back in the instrument arms, and the instruments back in the instrument console.

   Hanging-tube instruments: Place the instruments back in the instrument holders.

Results

The dental unit is now ready for use.

27 Help and error messages

27.1 Overview

The dental unit displays two types of safety messages: help messages and error messages.

Help messages provide helpful information for the user. They are displayed, for example, if you are using the unit or instrument incorrectly, or if the function is not allowed for some reason. The help message disappears automatically when the situation is corrected.

Error messages warn of a fault in the dental unit and require actions from the user. To correct the error situation, and thus to close the error message, follow the instructions in the message.

27.2 Help messages in short form

NOTE

The WCS related help messages can be disabled. Contact your Planmeca dealer.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 1	Amalgam collector is 95% full.	Replace or empty the collector as soon as possible, or at least before the next patient. Pressing the program button allows to continue the operation until the collector is 100% (totally) full.
H 2	Amalgam collector is 100% full.	Replace or empty the collector immediately. The suction system cannot be used before the collector is emptied or replaced.
H 3	Patient chair cannot be driven down because safety switch is activated.	Check that the space under the seat is free and nothing is touching the plate at the bottom. The chair can be driven normally after the possible obstruction has been removed.
H 3.1	Move mannequin arm back to driving sector to enable height adjustment.	The mannequin arm must be horizontally positioned to the driving sector to enable driving the torso up/down. Otherwise there is a risk of colliding the mannequin arm with the table.
H 4	This left-hand instrument position allows only syringe.	The leftmost position in the console is reserved for the syringe only. Replace this instrument with a syringe. Place the other instrument to one of the four right-hand places.
H 5	This instrument position does not accept syringe.	Remove the syringe from this position and replace it with any other kind of instrument. The syringe must be placed in the leftmost place.
H 6	Patient chair cannot be driven when instrument is in use.	Stop the instrument (release the foot control pedal) to be able to run the chair.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 7	Patient chair up/down movement is not allowed when cuspidor door is open.	Close the cuspidor door to be able to run the chair up/down or to a pre-programmed position.
H 8	Chair height can not be programmed this high in automatic positions for patient safety reasons.	Run the chair slightly down to be able to program this position into memory.
H 9	This scaler cannot currently be used with this unit.	This scaler needs a dedicated electronics that is not installed, or the scaler electronics installed is not compatible with this scaler.
H 10	Wait while configuring the dental instrument setup.	Wait a few seconds for the unit to check your instrument configuration, since it has changed.
H 11	Software download mode is on.	
H 12	Unit's internal error reporting is disabled.	The unit operates normally but no errors are reported (exhibition use). Use service mode n.15 to turn error reporting back on.
H 13	Instrument cannot run because of patient security violation.	Return the foot control pedal once to the middle position to start the instrument. Instruments do not start if the standard foot control pedal is already pushed to the right or left when the instrument is picked up from the instrument console.
H 14	This dental instrument is not recognised (new type of instrument).	To be able to operate this new instrument the MCB software must be updated. Contact your Planmeca dealer.
H 14.1	Instrument presets reset to defaults.	Instrument presets are faulty. Presets are reset to defaults.
H 15	This button has no function at the moment.	Instruments: Pick up a dental instrument before attempting to alter its settings; or if the instrument is selected, this function is not allowed with this instrument. Other buttons: the unit does not have this function.
H 16	Operating light is dimmed and polymerisation light can be used.	This feature enables easier work with composite materials, minimising the risk of operating light induced curing. This feature is triggered by picking up and returning the polymerisation light to its holder without starting it. The operating light returns to normal at the same instance any control is touched or another instrument selected. The feature can be disabled. Contact your Planmeca dealer.
H 17	No syringe connected to instrument console.	The console syringe must be re-connected, otherwise there is an air-leak from the syringe QC whenever an instrument or device that requires air pressure is used.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 18	No instrument hose connected to this instrument place.	The instrument is picked up, but there is no hose connected at this location. Check that all hoses go to the right instrument arms.
H 19	No syringe connected to connector located on cuspidor.	The assistant's syringe must be re-connected, otherwise there is an air-leak from the assistant's syringe QC whenever an instrument or device that requires air pressure is used. Contact your Planmeca dealer.
H 20	Wrong instrument is connected to syringe connector on cuspidor or assistant instrument configuration is wrong.	Contact your Planmeca dealer.
H 21	Flow of both spray air and spray water are programmed to zero (no flow).	Contact your Planmeca dealer.
H 22	Main air or water valve is set to be always closed in SM 12 (air) /13 (water).	This is a reminder that either of the main valves has been set to be always closed. The setting may be changed in service modes SM 12 (air) and SM 13 (water).
H 23	Automatic/manual chip blow cannot be used when sterile water function is selected.	
H 24	Programming of selected setting is disabled.	The programming of the selected setting is disabled. Contact your Planmeca dealer.
H 25	Planmeca Compact e help message: Patient chair cannot be driven into automatic chair position.	Contact your Planmeca dealer.
H 26	Drive chair upwards, then lower backrest. If patient chair is attached to unit, chair's automatic positions are not switched on.	Drive the chair upwards before lowering the backrest. If this help message is shown while the patient chair is attached to the unit, it means that you have forgotten to switch on the chair’s automatic positions. To clear the message, put the operation mode switch on the cuspidor side of the chair base in the “AUTO” position (switch up).
H 27	Drive backrest upwards, then lower chair. If patient chair is attached to unit, chair's automatic positions are not switched on.	Drive the backrest upwards before lowering the chair. If this help message is shown while the patient chair is attached to the unit, it means that you have forgotten to switch on the chair’s automatic positions. To clear the message, put the operation mode switch on the cuspidor side of the chair base in the “AUTO” position (switch up).
H 28	Planmeca Compact WE's help message.	Connect the lifter cable.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 29	Drive chair downwards, then lower backrest. If patient chair is attached to unit, chair's automatic positions are not switched on.	Drive the chair downwards before lowering the backrest. If this help message is shown while the patient chair is attached to the unit, it means that you have forgotten to switch on the chair's automatic positions. To clear the message, put the operation mode switch on the cuspidor side of the chair base in the "AUTO" position (switch up).
H 30	Close water tap. Fill container with disinfectant up to groove and attach to unit.	
H 31	Switch unit off, leave disinfectant in unit overnight (min. 8 h).	When unit is turned back on, disinfection procedure continues.
H31.1	Remove container, fill it up to groove with water and attach to unit.	
H31.2	Attach container filled with water.	
H 32	Container flushing completed.	Remove container from unit.
H 33	Open water tap.	
H 34	No instruments selected when starting instrument flushing or waterline cleaning.	Select at least one instrument and syringe (remove from holder, bend the instrument arms).
H 35	Instruments are locked for safety reasons.	Select instruments, place them in flushing holder, and press Instrument flushing button to start instrument flushing.
H35.1	Waterline cleaning cancelled or failed. Remove container.	Make sure water tap is open. Select instruments, place them in flushing holder and press Instrument flushing button to start instrument flushing.
H 36	Flushing ready. Return instruments to instrument console.	Also bend and release syringe's instrument arm once.
H36.1	Instrument flushing completed, but water flow was not detected for one or more instruments.	Run instruments for a while with spray water to ensure instrument flushing is sufficient.
H36.8	Low water pressure during final flushing.	Perform long instrument flushing to ensure instruments are flushed.
H 37	Waterline cleaning has been interrupted.	
H 38	Low water pressure during final rinsing.	When waterline cleaning is finished, perform long instrument flushing to ensure instruments are flushed.
H 39	Syringe misplaced or its flow not detected in waterline cleaning.	Return syringe to console. Then, select syringe (bend instrument arm) again and place it carefully in flushing holder.
H 40	Too many Bien-Air MX brushless micromotors.	A maximum of two is allowed.
H 41	Insert suction tubes to suction tube cleaning holder, add disinfectant and press green start button (upper button).	

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 41.1	Insert suction tubes to suction tube cleaning holder.	
H 41.2	Remove suction tubes from holder to start suction cleaning.	
H 42	Suction cleaning completed. Return suction tubes to suction holder and close suction cleaning cover.	
H 42.1	Suction cleaning completed. Return suction tubes to suction holder.	
H 43	Suction cleaning cancelled. Return suction tubes to suction holder.	
H 44	Incorrect suction tube amount detected. Return them to suction holder, place them back to suction tube cleaning holder and start cleaning.	
H 45	Set WMS to Domestic Water Supply -mode and wait until WMS bottle is full. Then start suction cleaning.	Suction cleaning can not be used when WMS is set to Bottled Water -mode.
H 46	Suction use is forbidden or there are no suction tubes in dental unit configuration.	The value of service mode n.83 is 0.
H 47	Suction disinfectant pressure is low. (In automatised suction cleaning: Fill suction disinfectant container).	
H 47.1	Suction disinfectant level low. Fill suction disinfectant container.	
H 47.2	Suction disinfectant container filled.	
H 48	WMS must be set to Bottled water off and Bottle on -modes before starting suction cleaning.	Bottled water off = domestic water is used Bottle on = bottle is used; domestic water is run through the bottle
H 50	No cup in cup holder. Sensor does not recognise cup when pressing cup fill button.	Place a cup on the cup holder. Or change the setting of service mode n 115.
H 51	Bowl is above patient chair when driving chair up.	If the unit has a bowl, move the bowl to the rest position. If the unit has an OP delivery arm safety switch, check that the OP delivery arm is not blocking the chair movement.
H 52	Patient chair can not be driven upward because safety switch of side delivery arm is released.	
H 52.1	Mannequin arm can not be driven upward because safety switch under the table is released.	
H 53	Patient chair can not be driven downward because safety switch of side delivery arm is released.	

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 53.1	Mannequin arm can not be driven downward because safety switch of the arm is released.	
H 54	Cup is inserted in cup holder.	Remove the cup and make sure the cup fill tube is above the bowl.
H 55	Disinfectant container attached. To start waterline cleaning, select instruments and press Waterline cleaning button.	
H 57	Vision action failed. Select patient in Romexis.	Select patient in Planmeca Romexis before performing Solanna Vision action.
H 60	WMS: Container almost empty in Domestic water supply -mode.	Reduce water use for a moment.
H 61	WMS: Container almost empty in Bottled water -mode.	Reduce water use and fill the container as soon as possible.
H 62	WMS: Container switch is turned off.	Switch on the container switch.
H 63	Cuspidor door is open.	Close the door.
H 64	Fill container with disinfectant over upper sensor.	
H 65	Fill container with water over upper sensor.	
H 66	Wait 8 hours or switch unit off for the night.	
H 67	Instrument flush cancelled. Return instruments to instrument console.	
H 68	Romexis connection lost.	Make sure the Ethernet cable is attached and Romexis is running.
H 69	Unable to create a new user. Maximum amount of local users exceeded.	
H 70	Brushless micromotor is stuck or broken.	
H 71	Romexis user ID already in use.	Check the ID, select another one, or allow rebind in Romexis.
H 72	Incompatible Romexis version.	PlanID is not supported with this version of Romexis.
H 72.1	Incompatible Romexis version	User settings for currently active instrument can not be used. Romexis version does not support user instrument settings or presets for currently active instrument. Check the instrument settings before using instrument and update Romexis.
H 73	Failed to copy user profile from Romexis.	
H 73.1	Failed to save user settings.	
H 74	PlanID reader missing.	PlanID reader is either missing or not functional.
H 75	Annual maintenance in <#> days.	Contact service for annual maintenance.
H 76	Annual maintenance performed.	

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 79.1	Serial number chip missing.	The serial number chip is missing. Contact service.
H 80	Headrest length safety feature activated when driving headrest. Check that nothing is blocking headrest movements.	Check that nothing is blocking the headrest movement. The headrest can be driven normally after the possible obstruction has been removed.
H80.1	Headrest length drive limit activated when driving headrest.	Check that nothing is blocking headrest movements. Faulty length motor, motor cable, nonlubricated slider rail or position potentiometer may cause this problem.
H 81	Headrest angle B safety feature activated when driving headrest. Check that nothing is blocking headrest movements.	Check that nothing is blocking the headrest movement. The headrest can be driven normally after the possible obstruction has been removed. Faulty angle B motor, motor cable or position sensor may cause this problem.
H81.1	Headrest angle A drive limit activated when driving headrest.	Check that nothing is blocking the headrest movement. Faulty angle A motor, motor cable or position sensor may cause this problem.
H 82	Connecting to wireless foot control was successful.	Connection was established with the requested foot control.
H 83	Foot control handle pressed down.	Release the foot control handle.
H 84	Connecting to wireless foot control failed.	Connection with the requested foot control could not be established. Make sure the foot control is active (connect to a charger, if possible), is in the vicinity of the unit, and try again.
H 85	Software update denied. Chair was moving or instrument was in use while starting software update.	The chair was moving or an instrument was in use while starting the software update.
H 86	Software update denied. Incorrect control panel type was detected while starting software update.	An incorrect control panel type was detected while starting the software update.
H 87	Software update halted. Activate the wireless foot control by pressing the handle.	Wireless foot control has to be activated before it can be updated.
H 88	Wireless foot control configuration was successful.	Wireless foot control channel and power settings were successfully changed.
H 89	Wireless foot control configuration failed.	Wireless foot control channel and power settings could not be changed. Make sure the foot control is active (connect to a charger, if possible), is in the vicinity of the unit, and try again.
H 90	This button has no function at the moment, press Pos Sel, Chair/Headr/Light Sel first.	

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 90.1	Measure water chlorine level.	Run at least 50 ml of water from the syringe to the cup. Move the test strip back and forth in the water for 30 seconds. Compare the strip colour with the colour scheme. Select the chlorine level on the control panel according to the measurement. < 0.2 (LOW) 0.2 - 0.8 (OK) > 0.8 (HIGH) If the chlorine level is continuously too low, contact service.
H 90.2	ActiveAqua prefilter expired.	Switch off the dental unit. Replace the prefilter. After switching on the dental unit press the Reset prefilter button to confirm the prefilter replacement. To temporarily ignore this notification, select any instrument or press Cancel.
H 90.3	ActiveAqua water container is empty.	Water container fill is slow or the low level sensor does not sense water.
H 90.4	ActiveAqua water container overflow.	Check ActiveAqua level sensors and water container.
H 90.5	ActiveAqua annual maintenance overdue.	Annual ActiveAqua maintenance must be performed. Contact service.
H 90.6	Measured chlorine level low.	Normal use chlorine level increased by +15%.
H 90.7	Measured chlorine level OK.	No change to normal use chlorine level.
H 90.8	Measured chlorine level high.	Normal use chlorine level decreased by -5%.
H 91	Stop (Help) button pressed.	
H 92	Help (Stop) button pressed.	
H 93	This button has no function at the moment because there is no motorised light.	
H 94	Clock calibration failed. Maximum calibration range exceeded.	
H 95	Patient chair automatic position cannot be reached because legrest is unlocked or armrests are blocking movement.	
H 96	PlanID tag already in use.	PlanID tag assigned to another user.
H 96.1	Different user already logged in.	The unit has rejected a login request because a different user is already logged in.
H 97	Failed to assign PlanID tag to user.	Check Romexis connection.
H 98	User not found.	User not found with this PlanID tag. Create a new user or select an existing Romexis user and assign the PlanID tag.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
H 98.1	User login failed.	Retry login or reboot the unit. If problem persists, contact service.
H 98.2	RFID unknown.	The RFID is unknown to the system.
H 99	Unit has been switched off without performing long flushing after water has been used. Perform long flushing.	This help message can be disabled, contact your Planmeca dealer.
HE200	Detected new software update. Confirm to install?	
HE201	Detected new software update SD-card. Confirm to install 5.3.0.9.R ?	
HE210	Software update. Installing to Control panel bootloader sw. DO NOT TURN POWER OFF.	Do not turn the power off while the software is being updated.
HE212	Software update. Installing to Control panel application sw. DO NOT TURN POWER OFF.	Do not turn the power off while the software is being updated.
HE214	Software update. Installing to Control panel application sw. DO NOT TURN POWER OFF.	Do not turn the power off while the software is being updated.
HE216	Software update. Downloading from server. DO NOT TURN POWER OFF.	Do not turn the power off while downloading software from the server.
HE218	Software update. Installing to Main PCB. DO NOT TURN POWER OFF.	Do not turn the power off while the software is being updated.
END	Flushing completed. Remove syringe from flushing holder and return it to console. If syringe is removed, return it to flushing holder.	
DOOR	Cuspidor door is open.	Close the door.
FC.LD	Move foot control pedal to leftmost position. Press pedal down and hold. While holding, push centre knob briefly in 'chair up' direction.	Move the foot control pedal to the leftmost position. Press the pedal down and hold. While holding, push the centre knob briefly in the ‘chair up’ direction.
FC.LU	Move foot control pedal to leftmost position and hold. While holding, push centre knob briefly in 'chair up' direction.	Move the foot control pedal to the leftmost position and hold. While holding, push the centre knob briefly in the ‘chair up’ direction.
FC.CD	Press foot control pedal down and hold. While holding, push centre knob briefly in 'chair up' direction.	Press the foot control pedal down and hold. While holding, push the centre knob briefly in the ‘chair up’ direction.
FC.CU	Keep foot control pedal in rest position (centre). Push centre knob briefly in 'chair up' direction.	Keep the foot control pedal in the rest position (centre). Push the centre knob briefly in the ‘chair up’ direction.
FC.RD	Move foot control pedal to rightmost position. Press pedal down and hold. While holding, push centre knob briefly in 'chair up' direction.	Move the foot control pedal to the rightmost position. Press the pedal down and hold. While holding, push the centre knob briefly in the ‘chair up’ direction.

Help messages

HELP CODE	MEANING	ACTION OR EXPLANATION
FC.RU	Move foot control pedal to rightmost position and hold. While holding, push centre knob briefly in 'chair up' direction.	Move the foot control pedal to the rightmost position and hold. While holding, push the centre knob briefly in the ‘chair up’ direction.
FC.--	To exit foot control calibration mode, press and hold down calibration switch for 4 seconds.	
H 7003	Control panel is temporarily disabled due to interference on touch screen.	Make sure the touch screen is clean and dry. If the problem continues, contact service.

27.3 Error messages in short form

The error message tables list the error messages, which are mainly intended to assist the technician. If an error message is displayed, contact service.

For more detailed information, see *Planmeca Compact i Classic technical manual*.

27.3.1 General error messages

General error messages

ERROR CODE	EXPLANATION
E1.01	Main water valve short circuit. Disconnect valve and check if error disappears.
E1.02	Main air valve short circuit. Disconnect valve and check if error disappears.
E1.03	Bowl rinse valve short circuit. Disconnect valve and check if error disappears.
E1.04	Cup filling valve short circuit. Disconnect valve and check if error disappears.
E1.05	Water flush valve short circuit. Disconnect valve and check if error disappears.
E1.06	Separator pulse valve short circuit. Disconnect valve and check if error disappears.
E1.07	Ejector valve short circuit. Disconnect valve and check if error disappears.
E1.08	Extra out 1 short circuit. Disconnect output and check if error disappears.
E1.09	Extra out 2 short circuit. Disconnect output and check if error disappears.
E1.10	Extra out 3 short circuit. Disconnect output and check if error disappears.

General error messages

ERROR CODE	EXPLANATION
E1.11	Separator start signal / Microvac's start valve short circuit.
E1.12	Assistant syringe water valve short circuit. Disconnect valve and check if error disappears.
E1.13	Separator alarm reset signal short circuit. Disconnect output and check if error disappears.
E1.14	PLANET output (ELMP) short circuit. Disconnect output and check if error disappears.
E2.01	Incoming water valve open circuit. Error can be detected when circuit is dead.
E2.02	Incoming air valve open circuit. Error can be detected when circuit is dead.
E2.03	Bowl rinse valve open circuit. Error can be detected when circuit is dead.
E2.04	Cup filling valve open circuit. Error can be detected when circuit is dead.
E2.05	Main Control PCB output open circuit warning.
E2.06	Separator pulse valve open circuit. Error can be detected when circuit is dead.
E2.07	Main Control PCB output open circuit warning.
E2.08	Main Control PCB output open circuit warning.
E2.09	Main Control PCB output open circuit warning.
E2.10	Main Control PCB output open circuit warning.
E2.11	Separator start signal open circuit / Microvac valve open circuit.
E2.12	Assistant syringe water valve open circuit. Error can be detected when circuit is dead.
E2.13	Separator alarm reset signal open circuit. Error can be detected when circuit is dead.
E2.14	Main Control PCB output open circuit warning.
E2.15	Not used or not in the manuals.
E3.1	Incoming air pressure compared to water pressure is too low. Ensure that air pressure main switch is on. If problem persists, contact service.
E3.2	Internal water pressure too low. Check dental unit's incoming water pressure. Ensure that dental unit inlet water tap is open.
E3.4	Internal air pressure (after regulator) is too low. Ensure that air pressure main switch is on. If problem persists, contact service.

General error messages

ERROR CODE	EXPLANATION
E3.5	Internal air pressure (after pres. regulator) is too high. Check pressure regulator, pressure sensor and pressure block connector.
E3.6	Waterline cleaning feed pressure too low. Check and adjust waterline cleaning feed pressure. Replace waterline cleaning feed regulator if problem still exists.
E3.7	Waterline cleaning flush pressure too low. Check dental unit's incoming water pressure. Ensure that dental unit inlet water tap is open.
E4.1	Short circuit in cable from MCB to control panel / suction holder in branch 1.
E4.2	Short circuit in cable from MCB to control panel / suction holder in branch 2.
E4.3	Communication bus (CAN) is not operational or CAN devices are disconnected (foot control, operating light, motorised headrest, uWmc).
E4.4	Communication bus (Console CAN) is not operational.
E5	Unsupported device attached. Detach the device or contact service.
E6.01	Cuspidor up -safety circuit error.
E6.02	Cuspidor down -safety circuit error.
E6.03	Chair down -safety circuit error.
E6.04	Bowl up -safety circuit error.
E6.05	Bowl down -safety circuit error.
E6.07	Console up -safety circuit error.
E6.08	Console down -safety circuit error.
E6.09	Emergency stop -safety circuit error.

27.3.2 Power supply related error messages

WARNING

If a fuse has blown, contact your Planmeca dealer. Fuses must be changed only by a qualified Planmeca service technician.

Power supply related error messages

ERROR CODE	EXPLANATION
E7	Power supply related error messages. IPS voltage failure on MCB.

Power supply related error messages

ERROR CODE	EXPLANATION
E7.01	Instrument power supply overcurrent shutdown. Instrument power supply may be shortcircuited or selected instrument hose may be faulty.
E9	Internal operating voltage too low. Unit functionality may be limited.
E10	Internal operating voltage too high.
E11.1	OP-light fuse (F5) and/or Water heater fuse (F7) has blown on the MCB.
E11.2	Separator fuse (F6) and/or Syringe heater fuse (F8) has blown on the MCB.
E11.3	Either of the +24V electronics fuses (F9 or F10) has blown on the MCB.
E11.4	Rectifier D5 or D1 short circuit or either of the 24V electronics fuses (F3 or F4) has blown on the MCB. Chair, instrument and headrest control not allowed.
E11.5	Separator fuse (F5) has blown on the MCB.
E11.6	Water heater fuse (F6) has blown on the MCB.
E11.7	Syringe heater fuse (F7) has blown on the MCB.
E11.8	Polymerisation light fuse (F8) has blown on the MCB.
E12.1	SELV voltage too low. Unit functionality may be limited.
E12.2	SELV voltage too high.
E13	Mains frequency outside acceptable range.
E14	IPS temperature measurement sensor error.
E15	IPS heatsink is running too hot on MCB.
E16	Attached scaler electronics is of new type.
E16.1	New type of scaler electronics is attached to MCB. Update MCB software.
E16.2	New type of scaler electronics is attached to IMUX. Update MCB software.
E16.3	Scaler electronics slot does not match with scaler hose connection. Check scaler electronics connection.
E16.4	Other instrument than scaler is connected to slot where scaler electronics is. Check scaler electronics connection.
E17	Power Supply related error messages.
E18	Power Supply related error messages.

27.3.3 Control panel related error messages

Control panel related error messages

ERROR CODE	EXPLANATION
E19.1	Control panel in branch 1 is of new type. Update MCB software.
E19.2	Control panel in branch 2 is of new type. Update MCB software.
E20.1	Control panel 1 button stuck. Control panel button is stuck during self test.
E20.2	Control panel 2 button stuck. Control panel button is stuck during self test.
E21	Control panel related error messages.
E22	Control panel related error messages.

27.3.4 Instrument related error messages

Instrument related error messages

ERROR CODE	EXPLANATION
E23	Polymerisation light bulb has blown or is not properly attached to socket.
E23.1	Instrument overtemperature error. Check the instrument handpiece and let the instrument cool down.
E23.2	Micromotor error; phase missing. Check that the micromotor and hose are connected properly.
E23.3	Instrument undervoltage error.
E23.4	Instrument power protection error.
E23.5	Instrument EEPROM error.
E23.6	Instrument overvoltage error.
E23.7	Instrument data communication error. Check that instrument hose is properly connected. Do not unmount hose when instrument is selected.
E23.8	Apex locator / Morita micromotor PCB failure.
E23.9	Unable to save instrument settings to selected preset.
E25	Satelec mini LED polymerisation light requires newer IMUX PCB version.

27.3.5 Instrument multiplexer related error messages

Instrument multiplexer related error messages

ERROR CODE	EXPLANATION
E28.1	Reference resistor signal out of bounds when unit is switched on.
E28.2	Active instrument signal out of bounds. Error in hose identifcation system in IMUX. Ensure that the instrument's quick connector is properly attached.
E28.3	Syringe signal out of bounds. Error in hose identifcation system in IMUX. Ensure that the instrument's quick connector is properly attached.
E28.4	Reference resistor signal out of bounds when instrument is activated. Ensure that the instrument's quick connector is properly attached.
E28.5	Syringe signal changes during use (blinking). Error in hose identifcation system in IMUX. Ensure that the instrument's quick connector is properly attached.
E29	Voltage error in instrument light power supply in IMUX. If there is a problem with one instrument only, replace the hose. If the problem is with several instruments or the hose is ok, contact service.
E32.1	IMUX is not responding. IMUX cable disconnected or failure in cable or IMUX.
E32.2	IMUX software is not compatible (IMUX is of new type) with MCB software. Update MCB software.
E32.3	IMUX data error (cable short circuit).
E32.4	IMUX communication error.
E32.5	Wrong IMUX type or wrong unit type.
E33.1	Syringe select valve short circuit.
E33.2	Instrument 1 select valve short circuit.
E33.3	Instrument 2 select valve short circuit.
E33.4	Instrument 3 select valve short circuit.
E33.5	Instrument 4 select valve short circuit.
E33.6	Instrument multiplexer related error messages.
E33.7	Drive/Cooling air valve short circuit.
E33.8	Air coolant valve short circuit.
E33.9	Water coolant valve short circuit.
E34.1	Syringe select valve open circuit.
E34.2	Instrument 1 select valve open circuit.
E34.3	Instrument 2 select valve open circuit.

Instrument multiplexer related error messages

ERROR CODE	EXPLANATION
E34.4	Instrument 3 select valve open circuit.
E34.5	Instrument 4 select valve open circuit.
E34.6	Instrument multiplexer related error messages.
E34.7	Drive/Cooling air valve open circuit.
E34.8	Air coolant valve circuit.
E34.9	Water coolant valve circuit.
E35.1	Drive/Cooling air pressure sensor output <0.2 V.
E35.2	Air coolant pressure sensor output <0.2 V.
E35.3	Water coolant pressure sensor output <0.2 V.
E35.4	Differential pressure sensor output <0.2 V.
E36.1	Drive/Cooling air measurement over range. Check if micromotor handpiece has air- and waterlines. Check if instrument, handpiece or hose is blocked.
E36.2	Spray air measurement over range. Check if micromotor handpiece has air- and waterlines. Switch off spray water and air if there are no air- and waterlines in instrument or handpiece.
E36.3	Spray water measurement over range. Check if micromotor handpiece has air- and waterlines. Switch off spray water and air if there are no air- and waterlines in instrument or handpiece.
E36.4	Differential pressure sensor output >5 V.
E37	Pressure sensor cable not properly attached to IMUX.
E39	Drive (cooling) air valve control servo cannot maintain pressure to instrument.
E42	Air coolant (spray air) control servo cannot maintain required pressure.
E45	Water coolant (spray water) control servo cannot maintain required pressure.

27.3.6 Suction holder related error messages

Suction holder related error messages

ERROR CODE	EXPLANATION
E47	Suction holder is of new type.
E47.1	Suction holder in branch 1 is of new type. Update MCB software.
E47.2	Suction holder in branch 2 is of new type. Update MCB software.

Suction holder related error messages

ERROR CODE	EXPLANATION
E48.1	No suction holders detected. Either the holder is missing or faulty, or the cable to the holder is loose or faulty.
E48.2	Suction holder related error messages.
E48.3	Suction holder related error messages.
E48.4	Suction holder related error messages.
E49.1	Suction holder PCB or its cable is faulty in branch 1. Either the holder is missing or faulty, or the cable to the holder is loose or faulty.
E49.2	Suction holder PCB or its cable is faulty in branch 2. Either the holder is missing or faulty, or the cable to the holder is loose or faulty.
E50	Unidentified STCS jumper configuration.
E50.1	Water management system (WMS) must be set to Bottle water off -mode when starting suction cleaning.
E50.2	Suction disinfectant pump is not running.

27.3.7 Foot control related error messages

Foot control related error messages

ERROR CODE	EXPLANATION
E51.1	Cable from foot control is loose or connected into wrong connector on MCB.
E51.2	Foot control is not responding. Ensure that the foot control cable is properly attached to the unit. If it is, contact service.
E51.3	Foot control pedal was pressed down when dental unit was switched on. Restart the unit without touching the foot control.
E51.4	Foot control pedal was not in home position when dental unit was switched on. Restart the unit without touching the foot control.
E51.5	Foot control's chair control knob was not in home position when dental unit was switched on. Restart the unit without touching the foot control.
E51.6	Foot control left knob is either stuck or active at power-up or after pedal use.
E51.7	Foot control right knob is either stuck or active at power-up or after pedal use.
E52	Foot control is of new type, update MCB software. MCB software must be updated.

Foot control related error messages

ERROR CODE	EXPLANATION
E52.1	Incompatible wireless foot control receiver software.
E52.2	Incompatible wireless foot control software.
E52.3	Incompatible foot control software.
E53	Foot control data error (cable short circuit).
E54.0	Foot control error.
E54.1	Foot control EEPROM write failure.
E54.2	Foot control EEPROM read failure.
E54.3	Pedal too far from sensors, channel A.
E54.4	Pedal too far from sensors, channel B.
E54.5	Sensor plate is tilted too much to either side, checksum error.
E54.6	Sensor plate is too close to PCB, channel A.
E54.7	Sensor plate is too close to PCB, channel B.
E54.8	Foot control re-trigger error.
E54.9	Foot control calibration error.
E55	Wireless foot control connection lost.

27.3.8 Operating light related error messages

Operating light related error messages

ERROR CODE	EXPLANATION
E56	Operating light erroneously connected or short circuit in push button.
E57	Incompatible SingLED software.
E58	Operating light bulb burned out. Replace bulb.

27.3.9 Separator system related error messages

Separator system related error messages

ERROR CODE	EXPLANATION
E59.1	Separator reports functional error. Refer to Metasys separator documentation.
E59.2	Separator reports functional error. Refer to Dürr separator documentation.
E60	Separator is not responding or separator cable is faulty.
E61	Separator is flooded with too much water.
E62	Newly attached separator is of new type and cannot be controlled by MCB.

Separator system related error messages

ERROR CODE	EXPLANATION
E63.1	Water management system (WMS) seems to be installed, although it should not be (according to service mode).
E63.2	No Water management system (WMS) is installed, although it should be according to service mode.

27.3.10 Patient chair related error messages

Patient chair related error messages

ERROR CODE	EXPLANATION
E64	Lift motor position potentiometer or its cable is faulty or disconnected.
E65	Lift motor does not run or no signal from position potentiometer.
E65.1	Lift motor does not run. EmeStop relay PCB/cables or position sensor/cable may be faulty.
E66	Lift motor or its position potentiometer cable has a wrong connection.
E67	Backrest position potentiometer or its cable is faulty or disconnected.
E68	Backrest motor does not run or no signal from position potentiometer.
E68.1	Backrest motor does not run. EmeStop relay PCB/ cables or position sensor/ cable may be faulty.
E69	Backrest motor or its position potentiometer cable has a wrong connection.
E70.1	Lift motor error.
E70.2	Backrest motor error.

27.3.11 Main CPU related error messages

Main CPU related error messages

ERROR CODE	EXPLANATION
E72.1	Program (Flash-EPROM) error. Main software is corrupted. Replace Flash- EPROM.
E72.2	Program (Flash-EPROM) error. Boot software is corrupted. Replace Flash- EPROM.
E72.3	Program (Flash-EPROM) error. Update MCB software.
E72.4	Data transfer error while updating main PCB SW from control panel memory device.

Main CPU related error messages

ERROR CODE	EXPLANATION
E73.1	EEPROM error, CPU EEPROM erase/program failure, replace CPU.
E73.2	CPU configuration register contents are wrong, replace CPU.
E73.3	CPU EEPROM checksum error.
E73.4	CPU EEPROM checksum programmed. Replace CPU if error occurs often.
E75.1	CPU error, WD reset.
E75.2	Illegal OP-code.
E75.3	Illegal vector.
E75.6	Mains voltage failure.
E75.7	Clock monitor reset.
E76	Main PCB hardware test failed.
E76.1	Unknown PCB version. Software upgrade required.
E79	IMUX water pressure cannot be released during waterline cleaning cycle.
E79.1	IMUX water pressure rose during waterline cleaning cycle when pressure rise was not expected.

27.3.12 Headrest related error messages

Headrest related error messages

ERROR CODE	EXPLANATION
E80.1	Motorised headrest is not found (according to service mode configuration).
E80.2	Motorised headrest is found, but is not set in service mode configuration.
E80.3	Headrest joystick (dentist side) stuck or cable broken.
E80.4	Headrest joystick (assistant side) stuck or cable broken.
E80.5	Motorised headrest motor A potentiometer or cable is faulty or disconnected.
E80.6	Motorised headrest motor B potentiometer or cable is faulty or disconnected.
E80.7	Motorised headrest length potentiometer or cable is faulty or disconnected.
E81	Motorised headrest communication error (may be too old or wrong software or loose cables or short circuit).
E81.1	Motorised headrest communication error.
E82	Headrest software is incompatible with MCB software. Headrest or MCB software should be upgraded.

Headrest related error messages

ERROR CODE	EXPLANATION
E82.1	Headrest software is incompatible with MCB software. Headrest or MCB software should be upgraded.
E82.2	Incompatible headrest software.

27.3.13 ActiveAqua related error messages

ActiveAqua related error messages

ERROR CODE	EXPLANATION
E83.1	ActiveAqua and main PCB settings vary. Check and set water hardness (dH) and electrolysis settings in service modes (n.181 and n.182) or in the ActiveAqua view. Reset the counters for prefilter replacement and annual maintenance.
E83.2	ActiveAqua electrolysis chamber asymmetrical current error.
E83.3	ActiveAqua electrolysis chamber high current error.
E83.4	ActiveAqua electrolysis chamber low current error.
E83.5	ActiveAqua RT clock malfunction.
E83.6	ActiveAqua water flow high.
E83.7	ActiveAqua level sensors missing. Level sensors are not connected.
E83.8	ActiveAqua electrolysis chamber very high current.
E83.9	ActiveAqua water container fill timeout. ActiveAqua can not fill the water container. Ensure that nothing blocks the inlet water (stuck inlet water filter or flow reducer inside the main water block) and that the water container does not leak.
E84.1	ActiveAqua water container fill self-test fail. ActiveAqua can not fill the water container. Ensure that nothing blocks the inlet water.
E84.2	ActiveAqua electrolysis chamber self-test fail. Electrolysis chamber current not detected in ActiveAqua self-test. Check the chamber connection.
E84.3	ActiveAqua water flow self-test fail. Water flow not detected in ActiveAqua self-test. Check the flow meter, circulation valve and pump.

27.3.14 Water leak related error messages

Water leak related error messages

ERROR CODE	EXPLANATION
E90	Water leak detected. Main water valve is closed.
E90.1	Water leak detected. Water use allowed temporarily.

27.3.15 Maintenance related errors

Maintenance related errors

ERROR CODE	EXPLANATION
E91	Annual maintenance overdue. Annual maintenance should have been performed <x> days ago.

27.3.16 Software upgrade error messages

Software upgrade error messages

ERROR CODE	EXPLANATION
E99	Software upgrade failure. Retry upgrade.
E99.1	MCB software upgrade failure. Retry upgrade.
E99.2	IMUX software upgrade failure. Retry upgrade.
E99.3	Control panel software upgrade failure. Retry upgrade.
E99.4	Operating light software upgrade failure. Retry upgrade.
E99.5	Motorised headrest software upgrade failure. Retry upgrade.
E99.6	Foot control software upgrade failure. Retry upgrade.
E99.7	Wireless foot control software upgrade failure. Retry upgrade.
E99.8	Wireless foot control receiver software upgrade failure. Retry upgrade.
E99.9	PlanID reader software upgrade failure. Retry upgrade.

27.3.17 Error messages generated by control panel

Error messages generated by control panel

ERROR CODE	EXPLANATION
EP19.3	Control panel version mismatch.
EP19.5	Control panel software upgrade has failed or memory card is faulty.
EP21.1	Control panel display is faulty.
EP21.2	Control panel data error.
EP21.5	Unable to read Main PCB software version.
EP21.6	Control panel software not installed or software error. Insert software update SD-card or contact service.
EP21.7	Touch panel is not working.

28 Consumables

Consumables are detachable parts of the dental unit that the user can change.

Suction handpieces

Part		Order number	Material
	Saliva suction nozzle	00221015	PU/ABS
	Suction tip Universal Cannula Protect, Dürr, 5 pcs	10034007	PBT
	Suction tip Prophylaxis Cannula, Dürr, 4 pcs	10034009	PBT
	Billund saliva suction handpiece assembly	10039175	PP, POM, stainless steel
	Dürr saliva suction handpiece assembly	10039173	PSU, PP, POM, stainless steel
	Billund high-volume suction handpiece assembly	10039176	PP, POM, stainless steel
	Dürr high-volume suction handpiece assembly	10039172	PSU, PP, POM, stainless steel
	Tilting high-volume suction handpiece assembly	10022870	PSU, PP, POM, stainless steel

Sterile water hoses

Part		Order number	Material
	Sterile water hose with 3.2 x 1.6 mm pump hose	10022953	Silicone, PVC

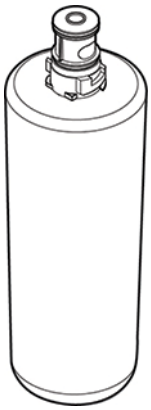
Infection control parts

Part		Order number	Material
	Dürr disposable filter 0725-041-00, 1 piece Dürr disposable filter 0725-041-00, 12 pcs NOTE! 2 filters needed Filters retain solid particles with a diameter of ≥ 2 mm	00221013 10005741	PP PP
	Handle of Planmeca Solanna operating light, 1 piece NOTE! 2 handles needed	30005173	Silicone rubber
	Hygiene membrane	30016100	Silicone rubber
	Silicone mat for tray, size 1	10029421	Silicone rubber
	Silicone mat for tray, size 2	10029413	Silicone rubber

Infection control parts

Part		Order number	Material
	Silicone mat for tray, size NA	10029400	Silicone rubber
	Cover cap for bowl filter	10005746	PSU
	Bowl filter Filter retains solid particles with a diameter of >= 1.9 mm	10005329	PSU
	Extension for cup fill tube	10005343	
	Instrument flushing holder for dental units with Luzzani MiniBright syringe	10036781	Silicone rubber
	Instrument flushing holder for dental units with Luzzani Ergo syringe	10005269	Silicone rubber
	Adapter for DCI syringe	10005801	Aluminium

Infection control parts

Part		Order number	Material
	Adapter for Luzzani Minibright syringe	10037239	Modified polyphenylene ether resin
	Amalgam collector, Dürr	10013485	PBT
	Dürr OroCup	00004883	PE
	Prefilter for Planmeca ActiveAqua	30018103	
	Foot cover for Comfy upholstery	02500000	PVC
	Foot cover for Ultra Relax upholstery	10009142	PVC

Infection control parts

Part		Order number	Material
	Foot cover for Ultra Relax upholstery with automatic legrest	10030201	PVC

Disinfectants

Part		Order number	Contents
	Planmeca Planosil, 2 x 5 kg	10011547	Water, hydrogen peroxide solution and silver
	Planmeca PlanPure, 1 litre, 6-pack	10038303	Mixture of propylene glycol, parabens, biguanides and complexing agents in aqueous solution
	Green and Clean WK solution, 4 x 750 ml	10035933	Water, hydrogen peroxide solution and silver

29 Disposal

In order to reduce the environmental load over the product's entire lifecycle, Planmeca products are designed to be as safe as possible to dispose of. Planmeca products fulfil the requirements of Directives 2011/65/EU (RoHS) and 2012/19/EU (WEEE).

Disposal of obsolete units is the responsibility of the waste possessor. The risks involved and the necessary precautions must be taken into account when handling waste products.

Parts which can be recycled should always be taken to the appropriate processing centres, after hazardous waste has been removed. All parts and components containing hazardous materials must be disposed of in accordance with waste legislation and instructions issued by the local environmental authorities.

The following parts contain hazardous waste:

- Amalgam separators in dental units, including filters and amalgam collector /deposit cup (amalgam)

Batteries must be disposed of following the requirements of Directive 2006/66/EEC and in accordance with waste legislation and instructions issued by the local environmental authorities.

The following parts contain batteries:

- Dental unit wireless foot control
- Circuit boards (may contain)

30 Technical information

30.1 Technical specifications

Original manufacturer	
PLANMECA Oy, Asentajankatu 6, 00880 Helsinki, FINLAND Phone: +358 20 7795 500, fax: +358 20 7795 555, www.planmeca.com	
Colours	
Painted parts:	RAL-9016
Upholstery colours:	Please consult your dealer for availability
Mechanical dimensions	
Installed:	(H x D x W) 1210 mm x 963 mm x 1990 mm (see template for details)
Weight	
150 kg (331 lbs)	
Maximum allowed load on patient seat	
Maximum allowed patient weight 185 kg (407 lbs) and accessories load of 15 kg (33 lbs)	
Environmental conditions	
Transportation conditions	
Temperatures:	-20°C to +60°C (-4°F to +140°F)
Relative humidity:	5% RH to 95% RH; non-condensing humidity
Air pressure:	700 hPa to 1060 hPa (10 psi to 15 psi)
Storage conditions	
Temperatures:	-5°C to +60°C (+23°F to +140°F)
Relative humidity:	5% RH to 95% RH; non-condensing humidity
Air pressure:	700 hPa to 1060 hPa (10 psi to 15 psi)
If the unit has been stored at temperatures below +10 °C (+50 °F) for more than a few hours, time must be allowed for the unit to reach room temperature in the original packing before connecting the unit to the mains voltage.	
Operating conditions	
Temperatures:	+15°C to +35°C (+59°F to +95°F)
Relative humidity:	5% RH to 95% RH; non-condensing humidity
Air pressure:	800 hPa to 1060 hPa (12 psi to 15 psi)
Altitude:	< 2000 m (less than 1.25 miles)
Mains voltage and frequency	
Mains voltage setting:	100V~ 115V~ 220-240V~
Mains frequency:	50 or 60 Hz
Fuse rating and type	

F1, F2 = Schurter 0001.1014 10A/250V/FAST ACTING/HIGH BR CAP. (100V, 115V)	
F1, F2 = Bussmann S501-10-R 10A 250V FAST ACTING/HIGH BR CAP. (100V, 115V)	
F1, F2 = Schurter 0001.1012 6.3A/250V/FAST ACTING/HIGH BR CAP. (220V – 240V)	
F1, F2 = Bussmann S501-6.3-R 6.3A 250V FAST ACTING/HIGH BR CAP. (220V- 240V)	
F3, F4 = 4A/250V/Fast act./High br. cap, Schurter 0001.1010 OR Bussmann S501-4-R	
F5 = 8A/250V/Fast act./High br. cap, Schurter 0001.1013 OR Bussmann S501-8-R	
F6 - F8 = 6.3A/250V/Fast act./High br. cap, Schurter 0001.1012 OR Bussmann S501-6.3-R	
Power consumption	
Idle unit:	≈ 60 VA (unit not in use, OP-light turned on)
Typical average:	≈ 350 VA (during patient treatment)
Maximum:	1450 VA (at maximum rated mains voltage, both chair motors running)
Electrical classification	
Class I	
Operation of chair lift and backrest motors	
Intermittent operation, ED 6%, 25 sec "ON", 400 sec. "OFF"	
Water supply	
Pressure range:	min. 300kPa (44 psi), max. 900 kPa (130 psi) In dental units with Planmeca WEK water disinfection system, the pressure range must be 300 - 600 kPa (44 – 87 psi). In dental units with Planmeca ActiveAqua water treatment system, the pressure range must be (100)200 - 900 kPa ((15)30 - 130 psi).
Flow rate:	≥ 4 l / min (maximum consumption at any instance)
Quality:	hardness; ≤ 8°dH In dental units with Planmeca ActiveAqua water treatment system, the water hardness can be 0 - 40°dH.
pH:	6.5 – 8.5
Connection:	1/4”

Backflow prevention:	The water supply line must be equipped with a backflow prevention valve according to local requirements. E.g. in most European countries according to EN1717 standard, BA Type backflow preventer. In dental units with Planmeca WEK water disinfection system or Planmeca ActiveAqua water treatment system, a backflow prevention valve is not needed as they are separated from mains water with an AB type air gap.
Conductivity:	> 80 µS/cm This requirement applies only to dental units with Planmeca ActiveAqua water treatment system
Chloride content:	Recommended above 8 mg/L but feasible 4 - 8 mg/L. This requirement applies only to dental units with Planmeca ActiveAqua water treatment system
Air supply	
Pressure range:	min. 550 kPa (80 psi), max. 900 kPa (130 psi)
Flow rate:	≥ 55 litres / minute (maximum consumption at any instance)
Humidity:	dew point not greater than −20 °C at atmospheric pressure
Quality:	medical grade, dry and oil-free
Oil contamination:	max. 0.5 mg/m^3
Particulate contamination:	≤ 100 particles per cubic meter for 1 µm to 5 µm particle size
Connection:	1/4”
Water and air filters	
Water filter:	25 µm (internal), 5 µm (external suggested)
Air filter:	25 µm (internal)
Replacement of water and air filters should be performed by qualified service technician according to the maintenance schedule. See section "Annual maintenance" on page 6.	
Suction connection	
Vacuum:	≥ 150 mbar
Flow rate:	≥ 550 l/ min
Connection:	Ø 50 / 46 mm
Type:	Medium volume
Class:	Wet or dry depending on installed options
Drain connection	
Capacity:	min. 10 l/min
Connection:	Ø 50 / 46 mm
Water and air quick-connectors (optional)	

Output pressure:	water 2.8 bar, air 5.5 bar (regulated internal water and air pressure)

30.2 Instrument classifications

The electrical classification of the instrument is marked on the instrument hose either as B or BF. If there is no marking, no electricity flows through the instrument.

Type B

Type BF

The following lists the instruments that are available for the Planmeca dental unit and their electrical classification type.

Instrument classifications

Instrument	Type
Luzzani Ergo 3-way syringe	B
Luzzani Minibright 6-way syringe	B
Luzzani Minibright 6-way syringe with LED	B
PM fibre optic turbine hose S	B
Bien-Air MCX brushless micromotor with LED	B
Planmeca Minetto brushless micromotor with LED	B
EMS No Pain scaler	B
LM-ProPower Ultra scaler	B
LM-ProPower UltraLED scaler	B
Planmeca Lumion Plus LED polymerisation light	B
Planmeca Somia USB intraoral camera	BF
Planmeca Emerald intraoral scanner	B

30.3 Dimensions

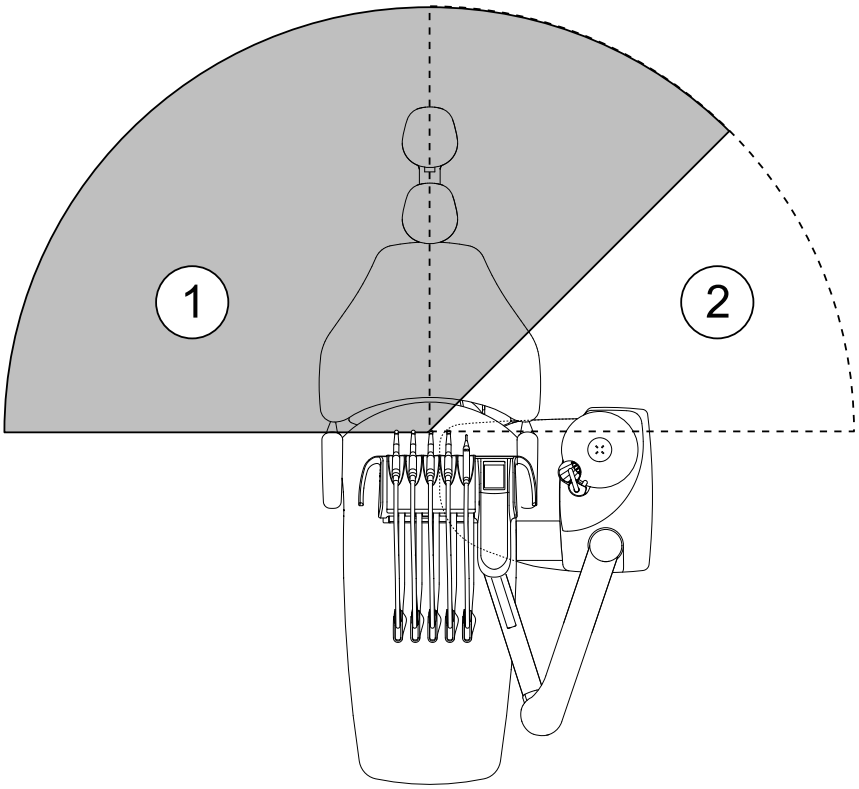
30.3.1 Positioning of patient, dentist and assistant

The following picture shows an example of how to position the dentist and assistant during treatment.

The patient must always be positioned in the patient chair, with arms and legs resting on the upholstery. The dentist and assistant can move within the areas marked in the picture below.

NOTE

The following picture is an example only and presents one possible scenario. The actual positioning of dentist and assistant depends on the used working method, treatment situation, region etc. and can therefore not be explicitly stated in this manual.



1. Dentist's area
2. Assistant's area

30.3.2 Patient area

The patient area is 1.5 m (59.1") in each direction from the dental unit.

The external PC, its keyboard and mouse must be located outside the patient area. The dentist, assistant and patient must not touch the equipment outside the patient area during treatment.

CAUTION

Use only Planmeca specified devices inside the patient area.

CAUTION

The floor of the patient area must be dry.

NOTE

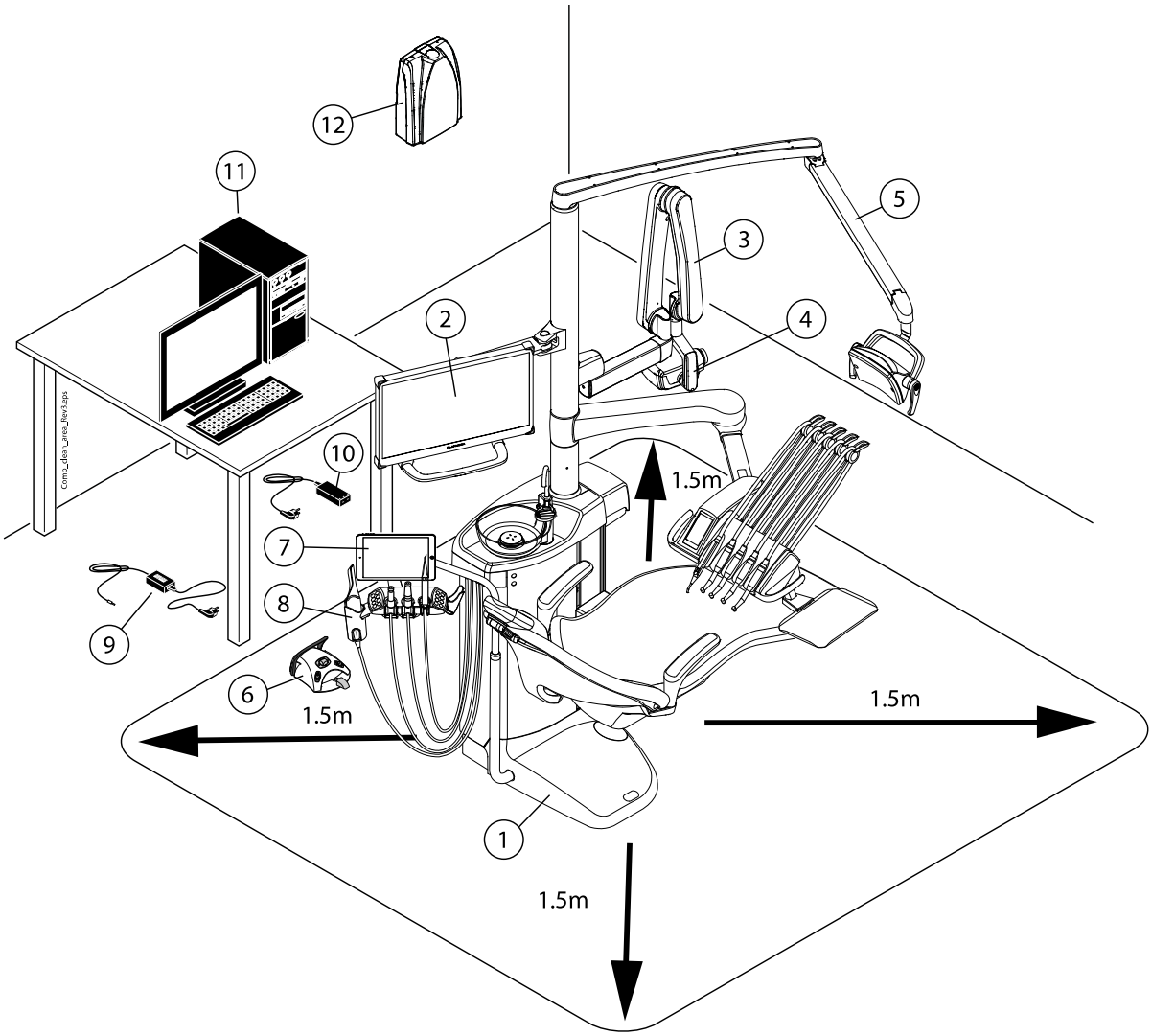
Connect only Planmeca specified devices to the dental unit.

NOTE

The external PC must be protectively earthed and IEC 60950 -approved (CE marked).

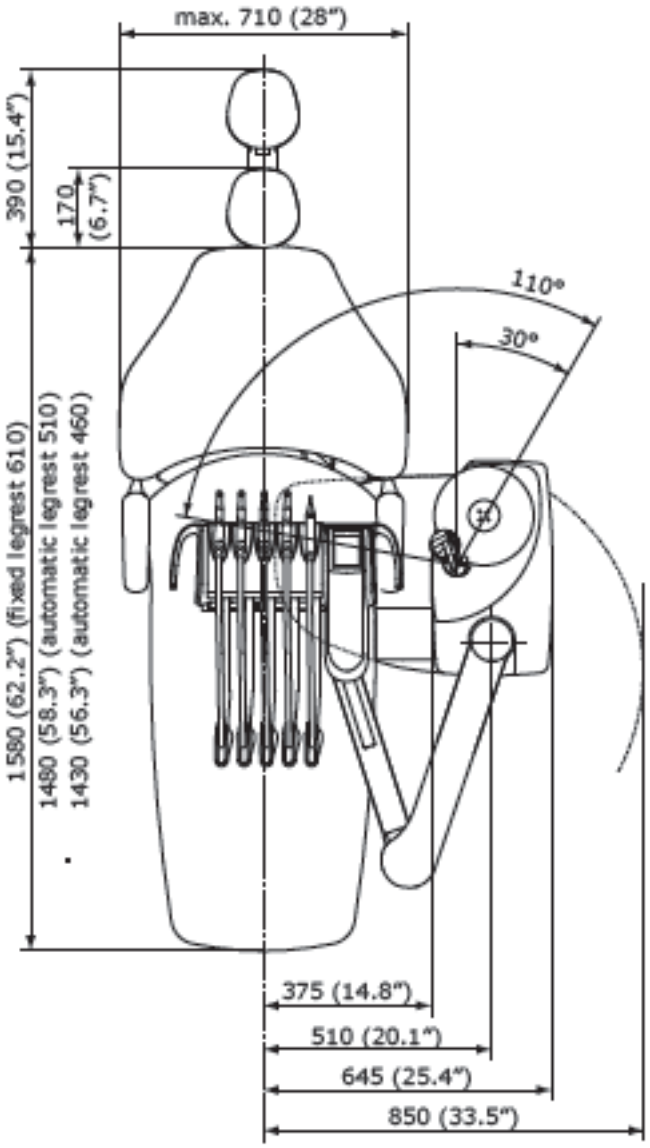
NOTE

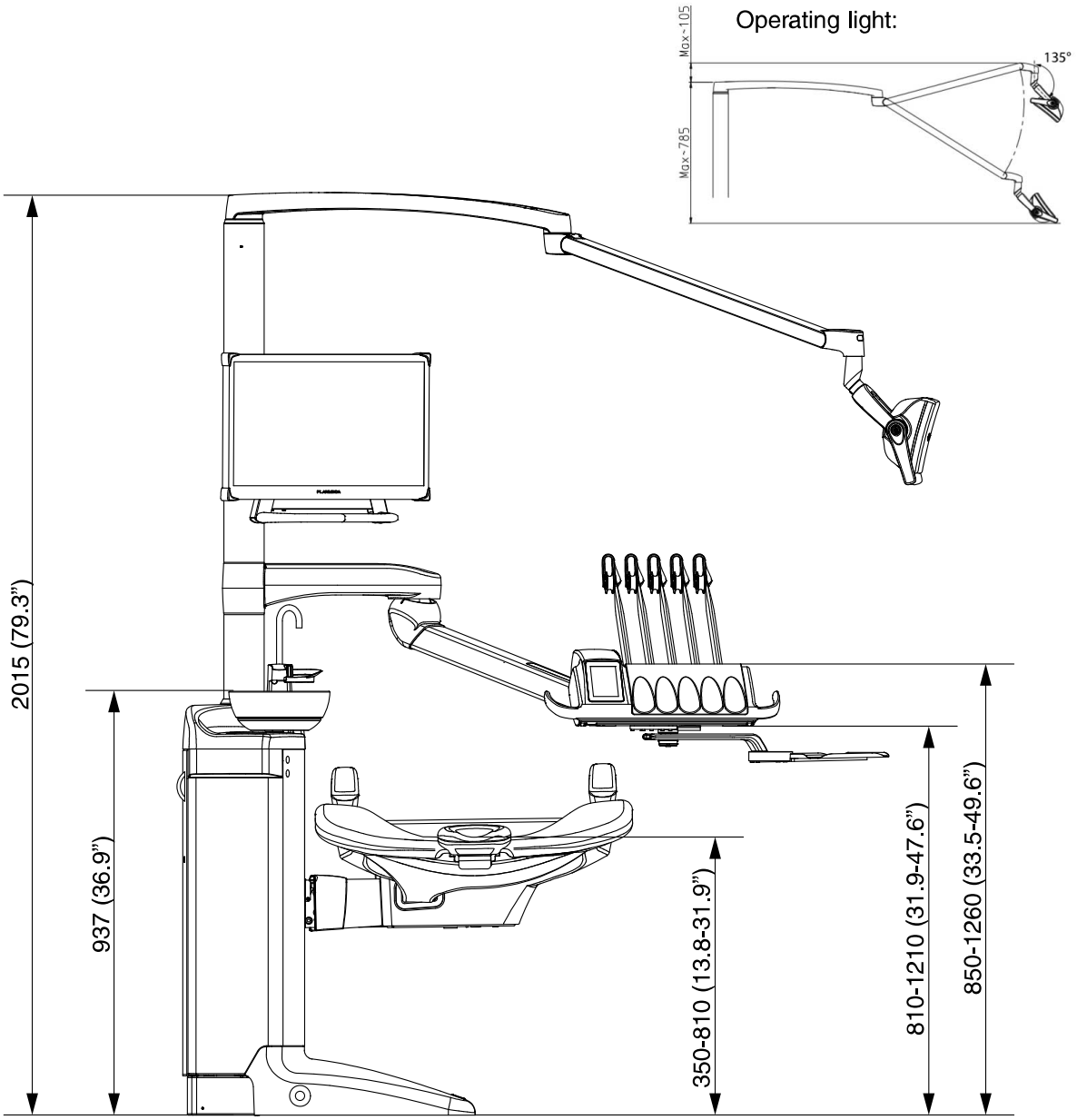
The monitor must fulfil IEC 60601-1 ed.3 requirements.



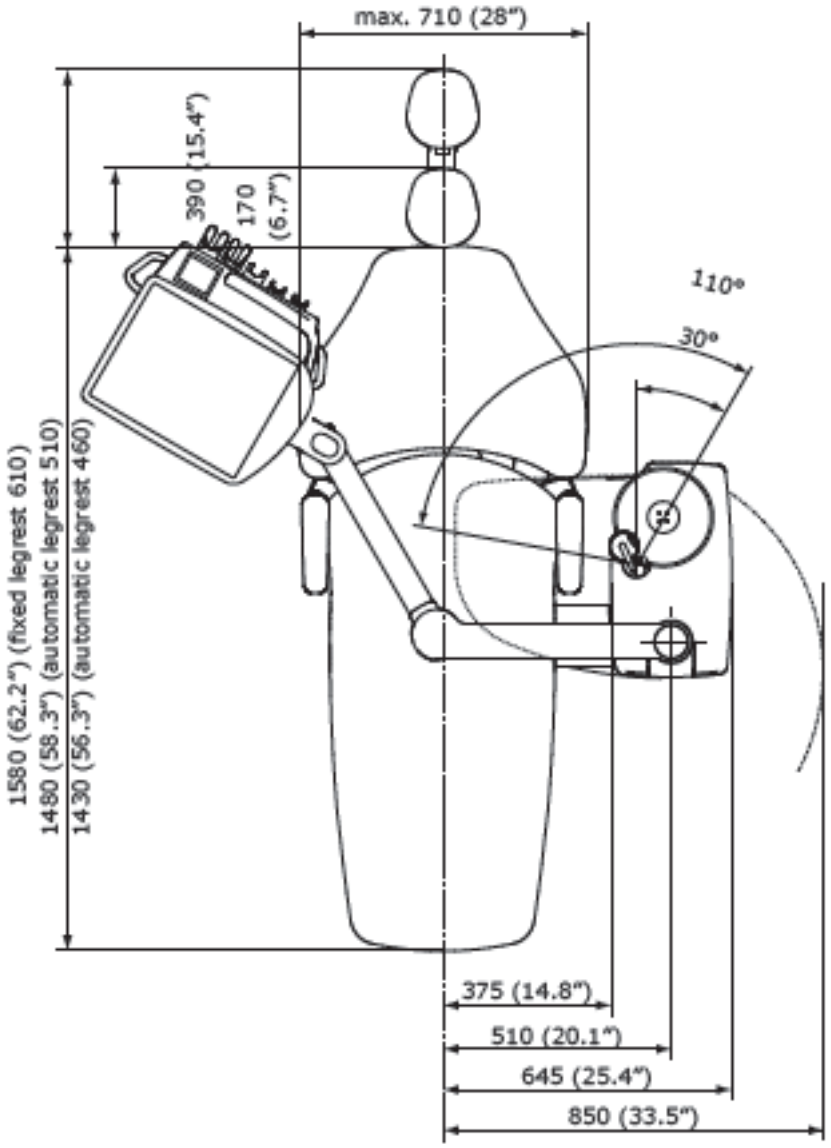
Inside patient area:	Outside patient area:
1. Dental unit	9. Foot control battery charger
2. Planmeca monitor	10. Planmeca ProSensor PoE port and power cable
3. Planmeca ProX X-ray tube head and arm assembly	11. External PC
4. Planmeca ProSensor control box	12. Planmeca ProX generator assembly
5. Planmeca operating light	
6. Foot control. Use only IEC 60601-1 approved power source supplied by Planmeca	
7. Tablet	
8. Planmeca intraoral scanner	

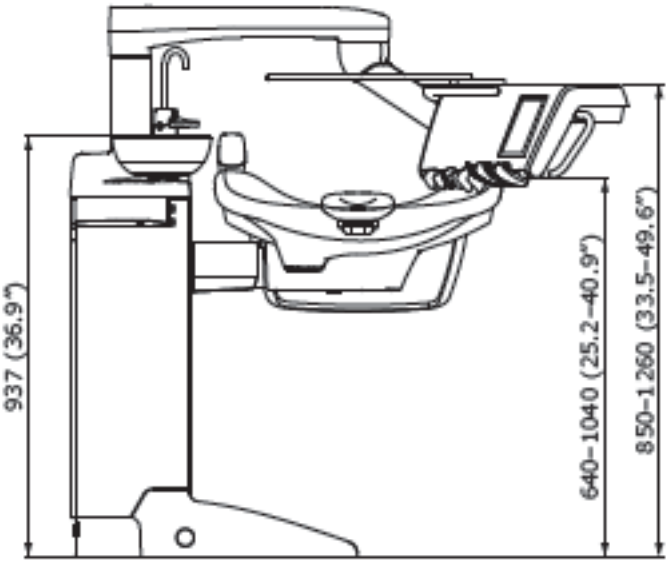
30.3.3 Over-the-patient delivery with balanced instrument arms





30.3.4 Over-the-patient delivery with hanging-tube instruments


max. 710 (28")
390 (15.4")
170 (6.7")
110°
30°
1580 (62.2") (fixed legrest 610)
1480 (58.3") (automatic legrest 510)
1430 (56.3") (automatic legrest 460)
375 (14.8")
510 (20.1")
645 (25.4")
850 (33.5")



30.4 Planmeca Compact i dental unit water consumption

Part	Water consumption
Bowl	The flow rate is approx. 2.5 litres (0.66 gallons) per minute. The flow rate can be configured.
Cup fill	The cup filling is adjusted for the size of cup you use.
Syringe	The flow rate is approx. 0.1 litres (0.03 gallons) per minute.
Handpieces	The flow rate is approx. 0.05 litres (0.01 gallons) per minute.
Suction system	The flow rate is approx. 0.4 litres (0.11 gallons) / minute when the suction is on, and the amount depends on which suction system is used in the dental unit. The water flow keeps the suction system clean when in use.
Suction system cleaning cycle	Cleaning is done once a day and uses 2.5 litres (0.66 gallons) of water.

31 Certifications

31.1 CE

Hereby, Planmeca Oy declares that the radio equipment type PlanID™ is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available upon request.

31.2 EU Declaration of Conformity for PlanID RFID-reader

Hereby, Planmeca Oy declares that the radio equipment type PlanID™ is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available upon request.

31.3 EAC Declaration of Conformity for PlanID RFID-reader

This device has been tested to comply with the applicable standards. The full text of the EAC declaration of conformity is available upon request.

If an operational failure of the device is detected, consult your local Planmeca dealer for assistance.

For date of manufacture of the device please see type label on device.

31.4 FCC Class B Notice for PlanID RFID-reader

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Modifications: Any modifications made to this device that are not approved by Planmeca may void the authority granted to the user by the FCC to operate this equipment.

31.5 Industry Canada (IC) Compliance Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

31.6 Industrie Canada (IC) Déclaration de conformité

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

31.7 RF Exposure

This device has been tested for compliance with FCC RF exposure limits in a portable configuration. At least 15 cm of separation distance between the PlanID device and the user's body must be maintained at all times. This device must not be used with any other antenna or transmitter that has not been approved to operate in conjunction with this device.

PLANMECA

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