DENTAL UNIT

CLESTA II

OPERATING INSTRUCTIONS

IMPORTANT

- **This manual provides operating instructions for the CLESTA-II.**
- **The instructions contained in this booklet should be thoroughly read and understood before operating the unit and chair.**
- **After the installation has been completed, keep this manual in a safe place and refer to it for future maintenance.**
- **If you have any questions about this Manual or this product, please contact us. If manual becomes unreadable or is lost, please request a new manual by contacting your dealer.**
- **Installation should be conducted by authorized personnel only. Follow instructions on installation manual.**

Belmont

CE 0197

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Intended Use of the Product

This product is an active therapeutic device intended for the exclusive use for diagnoses, treatments and relative procedures of dentistry.
The product must be operated or handled by the qualified dentists or by dental staffs under the supervision of the dentist.
Such dentists or dental staffs should instruct and/or assist the patients to approach to and leave from the product.
Patients should not be allowed to operate or handle the product unless he/she is so instructed.
The product is supplied together with the handpieces like electric micromotor, air turbine and/or motor, scaler and so on.

Compatibility of Handpieces

Use the compatible handpieces as shown on the attached list for this unit. (List of compatible handpieces).

Important Notes

In case of the troubles, please contact Takara Belmont offices or your dealers.
Do not disassemble or attempt to repair.
Disassembly, repair or modifications shoud only be done by a qualified repair technician.
Attempts at disassembly, repair or modifications may lead to abnormal operation and accidents.

Disposal of residue material

Please request a special contractor when you dispose amalgam.

In case of disposal of equipment

When disposing the chair, appropriately dispose complying with all current applicable regulations and local codes.
In EU area, EU directive 2002/96/EC on waste electrical and electronic equipment (WEEE) is applied on this product. In this directive, environment conscious recycling/abandonment is obligated.

SYMBOLS

In this manual, on the labels, on the control panel of CLESTA II, following symbols are used. Confirm the meaning of each symbol.

	Protective earth (ground)		Functional earth (ground)		ON (power)		OFF (power)
LP	Chair last position	0	Chair auto return	1	Chair preset1	2	Chair preset2
	To raise the chair		To lower the chair		To Recline the backrest		To raise the backrest
LP	Chair last position	0	Chair auto return	1	Chair preset1	2	Chair preset2
	Chair manual control		Chair auto control		Chair manual control		To raise the chair
	To Recline the backrest		To lower the chair		To raise the backrest		Handpiece Setting
	Fiber optic handpiece light on//off		Handpiece coolant spray on/off		Rotation mode select		Micro motor Forward/Reverse select
F	Function		Store		Rotation speed contol		Scaler power control
	Syringe		Bowl flush		Cupfiller		Dental light on/off
	Dental light mode selection	min.	Minus	sec.	Plus		Service outlet (water)
	Service outlet water flow control		Service outlet (air)	W	Water	A	Air
	Water heater	SN	Serial number		Manufacturer		Date of manufacture
EC REP	Authorized representative in the European community		Caution It means “caution, warnings, or possibility to danger”.	135°C	Autoclave Symbol This symbol on component means that the component can be sterilised with an autoclave at 135°C max.		Separate collection for electrical and electronic equipment
	Type B Applied Parts		Alternating current		Refer to instruction manual/booklet		Non-ionizing radiation

SAFETY PRECAUTIONS

■ Before use, read the “Safety precautions” carefully to ensure proper use.

■ The following information is designed to ensure safe use of this product and to prevent injury and damage to you and others. The precautions contained here are classified depending on the severity and degree of imminence of possible injury or damage resulting from improper use. Be sure to follow all the information, which is important for safety.

Classification of precautions	Severity and degree of imminence of possible injury or damage
⚠ WARNING	This symbol indicates that “ignorance of these precautions may lead to severe injury or even death as a result of improper use.”
⚠ CAUTION	This symbol indicates that “ignorance of these precautions may lead to mild or moderate physical injury or damage to property as a result of improper use.”
NOTICE	This symbol indicates that “it is recommended to follow these precautions for safety.”

⚠ WARNING

1. Be sure to turn off breakers for equipment in the clinic when this product will not be used for a long period of time

Be sure to turn off breakers for equipment in the clinic when this product will not be used for a long period of time (following the completion of work, during the suspension of business, etc.). Insulation degradation may cause electrical fire.

2. Be sure to turn off the main switch upon completion of work or during work breaks

Be sure to turn off the main switch upon completion of work or during work breaks. This prevents incorrect operation due to accidental contact and associated hazards.

3. Do not sit on other than seat

When the backrest is at the forward position. do not sit on or place an undue load on the headrest or legreat of dental chair. This could cause the unit to topple or could damage the unit.

4. Do not place an undue load on the arm

Do not get on or place an undue load on the arm of this unit or dental chair armrest. This could cause the unit to topple or other accidents.

5. Be sure to establish a grounding connection

Be sure to establish a proper grounding connection. (Refer to a vendor for grounding connection.) Failure or electric leakage may lead to electric shock.

6. Never disassemble, repair or modify this product

Individuals other than certified repair technicians should not disassemble or attempt to repair and modify this product. This could lead to an accident, failure, electric shock or fire.

7. Use with caution in the presence of electromagnetic interference waves

Do not place this product around equipment generating electromagnetic waves (including communications equipment, elevators, etc.) as incorrect operation of this product may occur in the presence of electromagnetic interference waves. Do not use equipment generating electromagnetic waves, such as mobile phones, around this product.

SAFETY PRECAUTIONS

⚠ WARNING

8. Be sure to turn off the main switch when electrocautery is in use

Be sure to turn off the main switch when electrocautery is in use, because noise may cause incorrect operation of this product.

9. Ensure the maintenance of this product

- Failure to maintain this product may lead to physical injury or property damage.
- Refer to the section of maintenance.

10. Do not place objects weighing 3 kg or more on the Doctor's table

Do not place objects weighing three kilograms or more on the Doctor's table. This could cause damage to the Doctor's table, defective function or accidents.

11. Be sure to use the mirror cover

- Be sure to use the mirror cover of the dental light when the light is turned on. Direct contact with lamps may cause burns.
- See the Instruction Manual of the dental light for further information.

12. Be sure to turn off the power when replacing lamps

- Be sure to turn off the power when replacing the dental light. This could result in electric shock.
- Use only dedicated halogen lamps.
- Immediately after a halogen lamp has burnt out, the lamp and the lamp holder are still hot. Replace the lamp after they cool down.
- Do not touch halogen lamps with bare hands.
- See the Instruction Manual of the dental light for further information.

13. Immediately wipe off any water spills or leakage on the floor

Immediately wipe off any water spills or leakage on the floor. Decreased strength of the floor may lead to physical injury including fall, or property damage.

14. Use with caution on patients with a cardiac pacemaker

Use this product with extreme caution on patients with a cardiac pacemaker. In the case of any abnormalities in patients during use, immediately turn off this product and discontinue use.

⚠ CAUTION

1. Only experienced personnel should use this product

Only dentists or other dental professionals should use this product.

2. Confirm safety before use.

Before use, confirm that the parts are correctly and safely operating and that there are no obstacles around this product.

3. Pay attention to patients and children

Keep your eyes on patients (especially, children) so that mischief or inadvertent operation of equipment will not lead to unexpected accidents.

4. Discontinue use if you feel that “something is wrong”

Always be careful to inspect this product for looseness, rattling, tilting, wobbling, sounds, temperature, odors, etc. Immediately discontinue use at the first feeling that “something is wrong.”

SAFETY PRECAUTIONS

⚠ CAUTION

5. keep your eyes on the patient during operation.

- Confirm that the patient is seated in the proper position. Keep your eyes on the patient during the operation.
- Pay special attention to surroundings at automatic operation of the dental treatment table. Damage to the backrest, stool or Doctor's table may occur.

6. Pay attention during movement of the Doctor's table

- Pay attention to surroundings when you move the Doctor's table. Injury by the tips of handpieces, etc., may occur.
- Be sure to move the Doctor's table by holding the handle of the unit.
- Be sure to move up & down the Doctor's table by releasing the balance arm brake of the unit.

7. Do not place anything hot on the Doctor's table

Do not place anything hot on the Doctor's table. This could cause deformation or discoloration.

8. Cautions when adjusting the height of the cart-type instrument table (Cart type only)

After adjusting the height, be sure to fasten the loosened lock screw. Failure to heed this warning may cause the table to drop, resulting in an accident.

9. Observe the cart hose (Cart type only)

Do not tread on the cart hose. Failure to heed this warning may result in damage to the hose, as well as people tripping over.

10. Do not smack or rub this product

Do not smack or rub this product forcefully. This could cause damage to covers or defective function.

11. Precautions for cleaning a spittoon bowl

The spittoon bowl is made of glass. Handle with care. Do not wash it with hot water. Otherwise, it may break.

12. Pay attention to water discharge when attach/detach the spittoon bowl

Make sure to turn the main switch off when you attach/detach the spittoon bowl. Cup filler sensor may react to hands. Resulting water spill.

13. Precautions for cleaning the resin cover

For cleaning, do not use cleaning agents containing solvent or abrasives, thinners or oil-based alcohol (butanol and isopropyl alcohol), which may cause cracks.

14. Immediately wipe off drug solution when it comes into contact with this unit

Should drug solution or water comes into contact with this unit, immediately wipe it off with a dry soft towel, etc. This could result in defective function or electric leakage as well as spotting or rusting.

15. Close the water main valve and turn off the main switch upon completion of work

Be sure to close the water main valve and the main switch at the end of each work day to prevent water leakage from occurring.

16. Be sure to operate switches with your hands

Be sure to operate switches with your hands, except the foot controller, which is operated with your foot. Operation with body parts other than hands may cause damage or incorrect operation.

17. Pay attention during the headrest operation

Do not allow hands, fingers, or hair to become entangled in the moving parts of the headrest during operationg

18. Be careful not to heat an empty water heater

Exercise caution as heating of an empty water heater may result in burning of the heater, leading to fire.

SAFETY PRECAUTIONS

⚠CAUTION

19. Precautions when using handpieces, etc.

In order to ensure safety, be sure to confirm that rotation has completely stopped before changing the rotation speed of the micromotor or inserting/removing the bar of handpieces. See the Instruction Manual accompanying various handpieces for further information.

20. Precautions for cleaning the operation panel (membrane switches)

Penetration of droplets of sanitizing spray into the back of the operation panel may be associated with switch failure. Use a paper towel soaked with sanitizing solution to clean the surface of the operation panel.

21. Precautions for cleaning

- Never use sandpaper, metal scrub brushes and abrasive cleaning agents to clean the unit.
- Do not use strongly acidic cleaning agents or alkaline pipe cleaning agents to avoid corrosion of metals, etc.

22. Practice of flush out

Practice the flush out of water retained in the unit before the start of clinical practice at the beginning of each work day to maintain the quality of water for dental treatment and ensure a steady supply of water to handpieces. Refer to the procedure for flush out.

23. Set the pressure of the water tank at 200 kPa or less

Adjust the air supply pressure for the water tank to 200 kPa or less. An excessively high pressure may cause damage to the water tank.

24. Do not use water other than purified water, distilled water or pure water for the water tank

The water tank is intended only for use with purified water, distilled water and pure water. Do not use mouthwash or electrolyzed water, such as ConCool or povidone iodine, as they may cause clogged tubing or affect internal valves and equipment.

25. Read the documents accompanying the various pieces of equipment

Before use, be sure to carefully read the package inserts and Instruction Manuals accompanying the various pieces of equipment (including optional articles) to ensure proper use.

NOTICE

1. Troubleshooting and contact information

In the case of any problems, discontinue use, turn off the main switch and contact the dealer or our company.

2. Check operation of the compressor

With no air supplied, this product does not operate even after turning on the main switch. Turn on the power of the compressor before operating this product.

3. Precautions when using water other than tap water

The water unit is intended for use with tap water. Caution should be exercised as the use of water other than tap water (water through a sterilizer of water systems, etc.) may result in failure of equipment.

4. Use the turbine with a water check valve

Use the turbine with a water check valve. Contact the dealer or our company when a turbine without a water check valve will be used.

5. Handling of equipment in the case of a power failure

Put the handpiece in the holder and turn off the main switch if equipment stops working during use due to a power failure or other reasons.

1. OVERVIEW AND MAJOR COMPONENTS

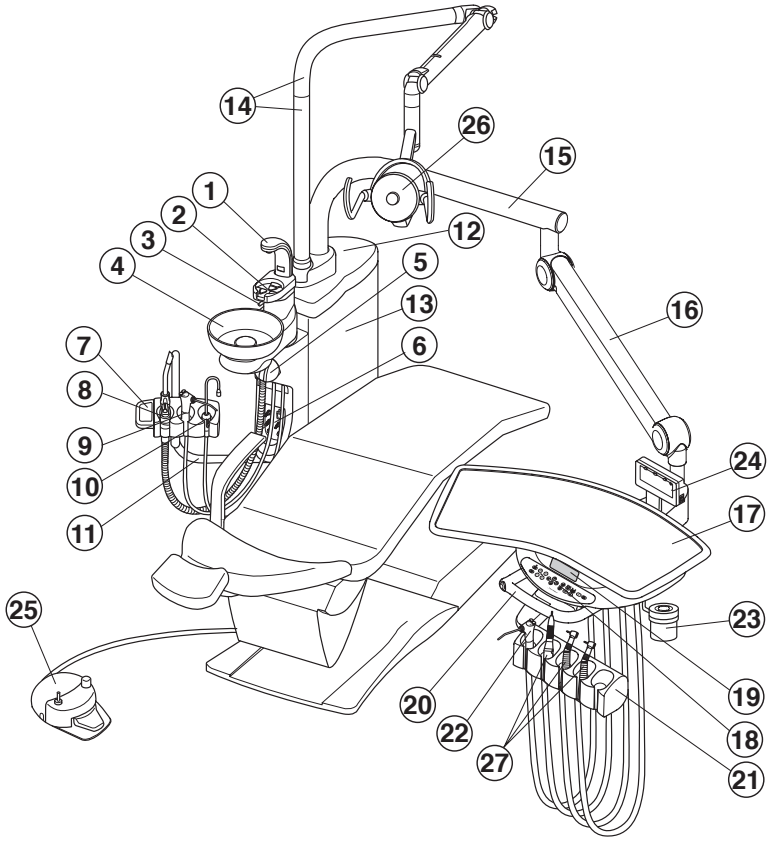


Fig.1-1 Overview and Major Components

① Cupfiller Nozzle
② Cupfiller Base
③ Bowl Flush Nozzle
④ Spittoon Bowl
⑤ Solid Collector
⑥ Cuspidor Unit Control Panel
⑦ Assistant Holder
(With Membrane Switch)
⑧ Vacuum Handpiece
⑨ Assistant Side Syringe
⑩ Saliva Ejector Handpiece
⑪ Assistant Holder Arm
⑫ Cuspidor Top
⑬ Cuspidor Body
⑭ Light Pole
⑮ First Arm (Horizontal Arm)
⑯ Balance Arm
⑰ Instrument Tray
⑱ Main Control Panel
⑲ Dr. Table Indicator
⑳ Tray Handle (With Arm Air Brake Button)
㉑ Dr. Side Handpiece Holder
㉒ Dr. Side Syringe
㉓ Waste Receptacle
㉔ Film Viewer
㉕ Foot Controller
㉖ Dental Light
㉗ Handpieces
(Micromotor, Air Turbine/Motor, Scaler and etc.)
Manufacturers recommend to use the handpieces

2. DIMENSIONS AND SPECIFICATIONS

2-1. DIMENSIONS

Chair Mount Type

Pedestal Type -mm-

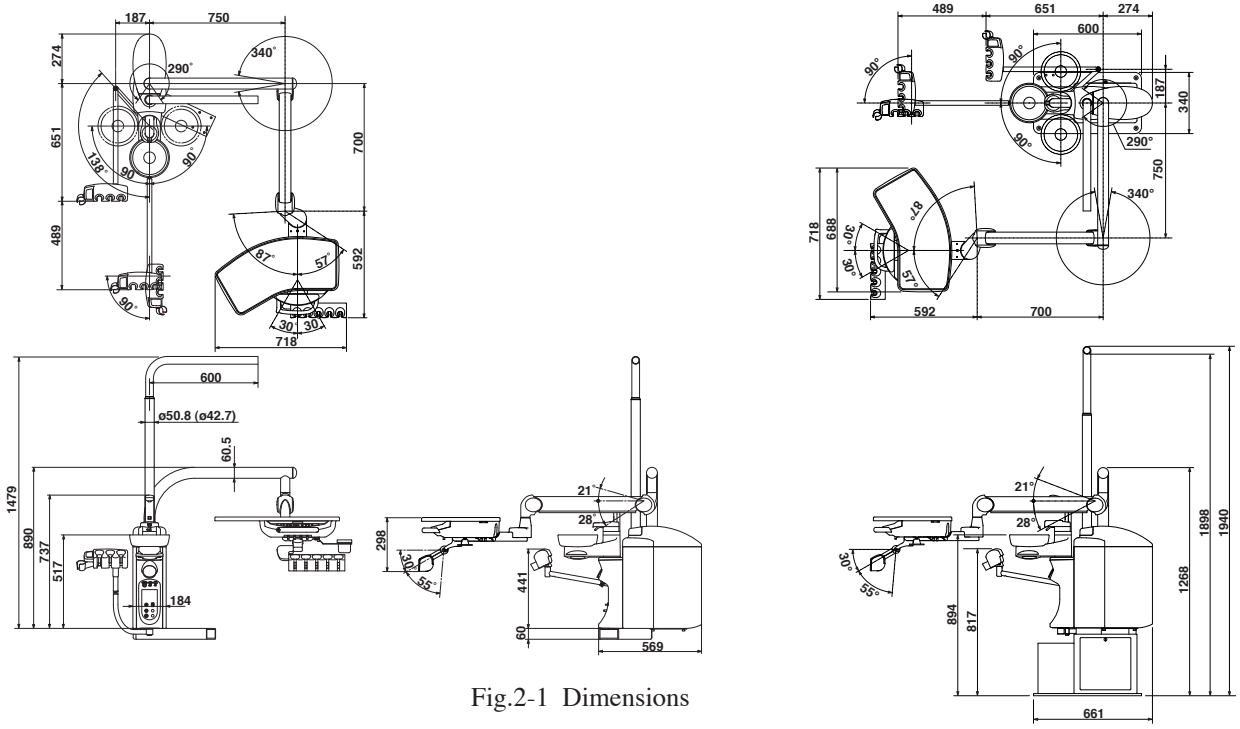


Fig.2-1 Dimensions

2-2. SPECIFICATIONS

Rated power supply ---------- AC230V 50HZ 1.6A

Air main pressure ---------- 0.45 to 0.5MPa

Water main pressure ---------- 0.1 to 0.2MPa

Mass ---------- Chair Mount Type 94.7 kg (Without Dental Light)

Pedestal Type 111.7 kg (Without Dental Light)

Dental light ---------- AL-720S / AL-720M

AL-520

900 Dental Light (Type 920)

Working environment ---------- Temperature : (Operating) +5°C ~ +40 °C

(Storage) -10°C ~ +50°C

Humidity : 10 ~ 80%

Atmospheric pressure : 600hPa ~ 1060hPa

Service Life ---------- 10 Years

Classification of foot controller ---------- IPX1 (applicable standard IEC60529)

Protection class against electric shock ---------- Class I equipment

Applied parts ---------- Type B applied parts : Handpiece for unit

(List of compatible handpieces)

Equipment that is not suitable for use in air, flammable anesthetic gas, oxygen or nitrous oxide

3. OPERATING INSTRUCTIONS

3-1. DOCTOR TABLE SECTION

Turn off the master switch after daily operation and for long term interval.

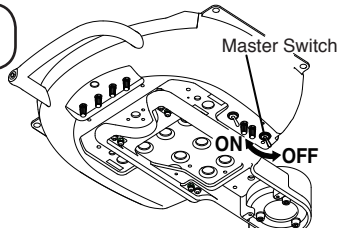


Fig.3-1 Master Switch

(1) Master Switch (Fig.3-1, Fig.3-2 & Fig.3-3)

Turn on the master switch located under the right hand side of the doctor table, the power indicator on the main control panel will then illuminate green. (Fig.3-2&3-3 ①)

(2) Main Control Panel

A Spec. Control Panel [A]

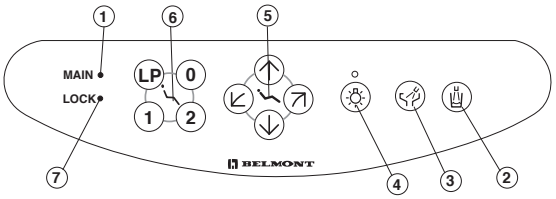


Fig.3-2 A Spec. Main Control Panel

E Spec. Control Panel [E]

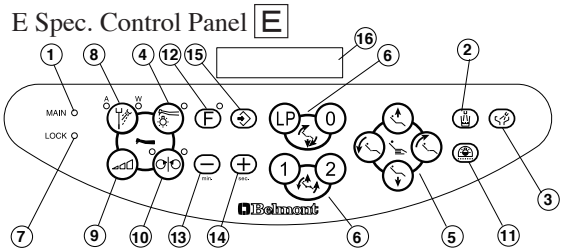


Fig.3-3 E Spec. Main Control Panel

① Power Indicator
② Cupfiller Switch
③ Bowl Flush Switch
④ Light Pack Switch
⑤ Chair Manual Control Switches
⑥ Chair Auto Mode Switches
⑦ Safety Lock Indicator
⑧ Coolant Water ON/OFF Switch
⑨ Electric Motor Speed Setting Switch
⑩ Electric Motor Direction Control Switch
⑪ Dental Light Switch
⑫ Function Switch
⑬ Decreasing Switch
⑭ Increasing Switch
⑮ Store Switch
⑯ Function Indicator

② Cupfiller Switch (Fig.3-4) [A] [E]

Momentarily press the cupfiller switch ( ), water will come out from the cupfiller nozzle for 3 seconds and stops automatically.
Also the bowl flush starts and will run for 6 seconds and stops automatically.
While the cupfiller is working, by momentarily pressing the cupfiller switch ( ) the cupfilling will cancel.
Also, when the cupfiller starts, the spittoon water flushes 6 seconds and stops automatically.(Synchronized Bowl Flush)

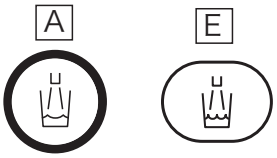


Fig.3-4 Cupfiller Switch

Note : The cupfiller water volume can be adjusted by the cupfiller flow control knob located inside the cuspidor body. Refer to 3-2.(3).

③ Bowl Flush Switch (Fig.3-5) [A] [E]

Momentarily press the bowl flush switch ( ), water flushes for 6 seconds and stops automatically. (Timer Mode) Press the bowl flush switch for 2 seconds, water flushes continuously. (Continuous mode)
While the bowl flush is working by momentarily pressing the bowl flush switch ( ) the bowl flush will stop.

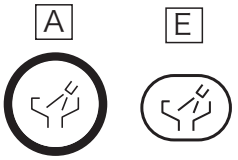


Fig.3-5 Bowl Flush Switch

Note 2 : Clesta-II unit can be set to timer mode (standard setting) and continuous mode for bowl flush. The bowl flush water volume can be adjusted by the bowl flush flow control knob located inside the cuspidor body. Refer to 3-2.(3).

④ The Light Pack Switch (Optional)(Fig.3-6) [A] [E]

Pick up the fiber optic handpiece from the holder, momentarily press the light pack switch ( ),the indicator illuminates in green and the fiber optic power turns on.
To switch off the light pack simply press the light pack switch again.

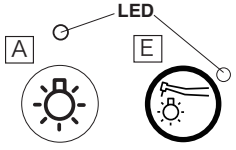


Fig.3-6 Light Pack Switch

⑤ Chair Manual Control Switches (Fig.3-7) A E

a. Seat Lifting ---------- Press the ( ) switch until the seat is lifted up to the desired position.

b. Seat Lowering --------- Press the ( ) switch until the seat is lowered to the desired position.

c. Backrest Reclining ---- Press the ( ) switch until the backrest is reclined to the desired position.

d. Backrest Raising ------ Press the ( ) switch until the backrest is raised up to the desired position.

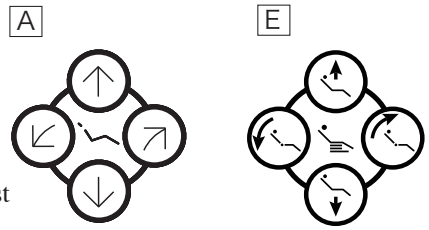


Fig.3-7 Chair Manual Control Switches

⑥ Chair Auto Mode Switches (Fig.3-8) A E

a. Preset Operation

Momentarily press the preset-1 switch (1), the chair moves to the preset 1 position and stops automatically.

Preset 2 position operated by the preset switch (2).

Note : For preset position adjustment refer to chair Manual.

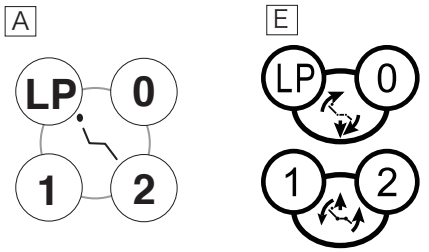


Fig.3-8 Chair Auto Mode Switches

b. Auto Return Operation

Momentarily press the auto return switch (0), the chair returns to the initial position (the seat is the lowest position and the backrest is the upright position) and stops automatically.

c. Last Position Memory Operation

Momentarily press the last position memory switch (LP) at the treatment position, the backrest raises up to the rinsing position (upright position) and stops automatically.

Momentarily press the last position memory switch (LP) again, the backrest returns to the previous treatment position and stops automatically.

d. Emergency Stop (Safety Stop)

During automatic movements (preset, auto return and last position memory), by momentarily pressing any chair control switch this will cancel the automatic movement immediately.

⑦ Safety Lock Indicator (Fig.3-9) A E

The safety lock indicator illuminates umber when the safety lock device is working.

Note : Please refer to page 18 4. Safety Lock Device.

Fig.3-9 Safety Lock Indicator

⑧ Coolant Water ON/OFF Switch (Fig.3-10) E

When a handpiece is picked up and this switch is pressed, both LED A (air) and LED W (water) lights up, the coolant water and air comes out from the handpiece. In case of air motor or air turbine, switching between spray (both of LED A and LED W are lit) and OFF occurs when this switch is pressed. In case of electric scaler, switching between water only (LED W is lit) and OFF occurs when this switch is pressed, regardless of the mode. In case of micromotor, either the 2-mode or the 4-mode can be selected by mode select setup.When this switch is pressed in the 2-mode setup, switching between spray and OFF occurs. In case of 4-mode setup, switching occurs in the sequence indicated below each time when this switch is pressed: Spray to Water only to Air only to OFF.

As for the mode setting, Please refer to 3-1.(3) h.

Fig.3-10 Coolant Water ON/OFF Switch

⑨ Electric Motor Speed Set Switch (Optional) (Fig.3-11) E

Two different modes, limit mode and preset mode, are available as micromotor rotation speed modes. Pressing this switch each time changes the speed mode: Limit speed -> SET1 -> SET2 -> SET3 -> Limit speed. The indicator indicates the selected mode.

Fig.3-11 Electric Motor Speed Set Switch

1) Switching to limit rotation speed (limit mode)

Pick up the micromotor from the holder, and press this switch ( ) to select limit mode. For selecting the upper limit in the limit mode, press either plus (⊕) switch or minus (⊖) switch. The upper limit of the micromotor rotation speed changes in three steps (or 5 steps).

- Upper limit of rotation speed in case of 3 steps: 10000/20000/40000 min^{-1}(rpm)
- Upper limit of rotation speed in case of 5 steps: 5000/10000/20000/30000/40000 min^{-1}(rpm)

See item g. on page 7 for setting in 5 steps.

The micromotor rotation speed can be varied in the range of up to the selected upper limit by sliding the foot controller pedal right or left. The rotation speed range varies by the micromotor type.

2) Switching to preset rotation speed (preset mode)

Pick up the micromotor out of the holder, press this switch ( ), and then select preset mode (SET1 to 3). The rotation speed in this mode can be changed by pressing plus (⊕) switch or minus (⊖) switch. Press store switch ( ) for storing the changed rotation speed.

When the foot controller is depressed upon selection of preset mode (SET1 to 3), the micromotor runs at the fixed rotation speed indicated on the indicator.

⑩ Electric Motor Rotation Direction Control Switch (Optional) E (Fig.3-12)

After picking up the electric motor from the holder, the electric motor rotation direction can be changed by momentarily pressing this switch ( ) the rotation direction will be indicated by the amber and green LEDs.

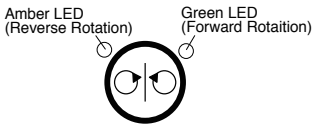


Fig.3-12 Electric Motor Direction Control Switch

Indicator in green : Forward Rotation
Indicator in amber : Reverse Rotation

Note: Do not change the electric motor direction while the motor is running.
When the electric motor with setting Reverse Rotation is returned the holder and picked up again, a buzzer sounds.

⑪ Dental Light ON/OFF Switch (Fig.3-13) E

Switch for on/off the dental light.

Fig.3-13 Dental Light ON/OFF Switch

⑫ Function Switch (Fig.3-14) E

Use this switch for setting various working conditions.
As for the setup procedures, please refer to 3-1.(3) a-i.

Fig.3-14 Function Switch

(3) Function Swicth Setup Procedure E

a. Timer

Timer can be set maximum 90 mins. 50 secs. in 10 secs. segment.

1) To set a timer

Momentarily press the function switch, and set the time by pressing decrease switch and increase switch.

(+) .... Minimum setting time by switch is 10 seconds.

(−) .... Minimum setting time by switch is 1 minute.

The setting time is indicated on the function indicator.

Momentarily press the start switch to start timer. The end of setting time is informed by electronic sounds.

Example: Setting time 3 minutes 30 seconds is indicated as 03:30 in the function indicator.

2) Preset time setting

Four preset time can be set. (0) (1) (2) (LP)

Momentarily press function switch, and set the time by pressing decrease switch and increase switch.

Press the store switch, then press the (0)(1)(2) or (LP) switch to store in memory.

3) Preset time operation

Press the function switch, then press the (0)(1)(2) or (LP) switch to choose desired preset number.

Press start switch to start timer.

4) Cancel the timer during time countdown

Momentarily press function switch, then press start switch to cancel timer.

b. Group Selection Mode

The group selection mode is a convenient function for the dental clinic where a multiple (up to four groups) of dentists work with one unit.

The following functions can be set for each group.

Preset position for chair.

Preset rotation speed for micro motor.

To set the group.

1) Momentarily press the function switch twice on main control panel, and the function indicator will indicate group number.

2) Momentarily press the 0,1, 2 or LP switch on main control panel to set one of 4 group.

0 ; Group1 / 1 ; Group2 / 2 ; Group3 / LP ; Group4

c. Flush out system (Optional)

The CLESTA II is equipped with two types of flush out system.

Short time flush out is for cleaning handpiece water lines.

Long time flush out is for handpiece water lines, bowl flush water line and cupfiller water line.

1) Short time flush out

Momentarily press the function switch three times and momentarily press the decrease switch.

Pick up the handpieces from the holder and set them in the cuspidor bowl.

By momentarily pressing the foot controller this starts short time flush out.

Water comes out from the handpiece and stops automatically after 40 seconds.

During flush out, by momentarily pressing any one of unit control switch or foot controller will cancel flush out immediately.

2) Long time flush out

Momentarily press the function switch three times and momentarily press the increase switch.

Pick up the handpieces from the holder and set them in the cuspidor bowl.

By momentarily pressing the foot controller this starts long time flush out for 5 minutes.

Then, cupfiller and bowl flush out starts and stops automatically in another 5 minutes.

During flush out, momentarily pressing the any one of unit control switch or foot controller will cancel flush out immediately.

d. Control panel switching sound on/off

Pressing a switch on the control panel makes an electronic sound.

This sound can be eliminated as follows;

Momentarily press the function switch four times and momentarily press the decrease switch.

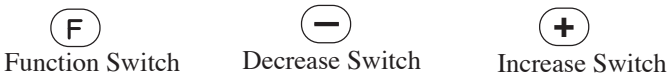
To return to original setting.

Momentarily press the function switch four times and momentarily press the increase switch.

e. Fiber optic handpiece lighting mode (Optional)

In case that fiber optic handpiece is installed, the fiber optic turns on when the handpiece is taken out of the holder, and turns off when the handpiece is returned to the holder.

This could be changed to fiber optic turns on when the handpiece is taken out of the holder and drive air pedal of foot control is activated.



Momentarily press the function switch five times and press the decrease switch.

To return to original setting.

Momentarily press the function switch five times and press the increase switch.

f. Electronic sound for timer

Electronic sound for timer can be changed.

Function Switch Chair Auto Mode Switch

Momentarily press the function switch six times.

Momentarily press one of chair auto mode switch (0,1,2,LP) then the new electronic sound is to be memorized.

g. Micro motor maximum speed setting (Optional)

The maximum rotation speed of the micro motor can be selected in 3 steps (10000,20000,40000min^{-1}(rpm)).

This function can be changed to 5 steps (5000,10000,20000,30000,40000min^{-1}(rpm)) as follows:

Function Switch Decrease Switch Increase Switch

Momentarily press the function switch seven times and press the increase switch.

To return to original setting.

Momentarily press the function switch seven times and press the decrease switch.

h. Coolant Water ON/OFF Switch

In case of micromotor, either the 2-mode or the 4-mode can be selected by mode select setup.

When this switch is pressed in the 2-mode setup, switching between spray and OFF occurs.

In case of 4-mode setup, switching occurs in the sequence indicated below each time when this switch is pressed: Spray to Water only to Air only to OFF.

Function Switch Decrease Switch Increase Switch Coolant Water ON/OFF Switch

To set 2 mode

Momentarily press the function switch eight times and press the decrease switch.

To set 4 mode

Momentarily press the function switch eight times and press the increase switch.

i. Cupfiller and bowl flush

Cupfiller and bowl flush are set to operate together (when the cupfiller switch is activated, bowl flush also starts).

To make these operate independently.

Function Switch Decrease Switch Increase Switch

Momentarily press the function switch nine times and press the decrease switch.

To return to original setting.

Momentarily press the function switch nine times and press the increase switch.

(4) Scaler for SATELEC SP4055 (Optional)

The setting range of ultrasonic scaler can be selected in 3 ranges (Scaling, prosthesis removal, amalgam, plugging / Ultrasonic endodontic treatment / Ultrasonic periodontal treatment).

Pick up the handpiece of scaler and set the range by pressing increase switch or decrease switch.

(5) Doctor Table Section Control Knobs

A. Handpiece Spray Water Control Knobs (Fig.3-15)

The handpiece spray water control knobs are located under the doctor table.

Each handpiece spray water control knob is marked 1-4 from the left side HP1,HP2,HP3,...

The handpiece spray water volume can be controlled independently.

*The HP4 is optional.

B. Doctor's Syringe Flow Control Knobs (Fig.3-15)

Doctor's syringe flow control knobs are located on the facing right side under the doctor table.

The flow control knobs adjust the doctor's syringe air and water flow volume.

The yellow capped knob is the air flow control knob, the blue capped knob is the water flow control knob.

Note : Turning the control knob counterclockwise will increase the flow volume and turning clockwise will decrease. (Fig.3-16)

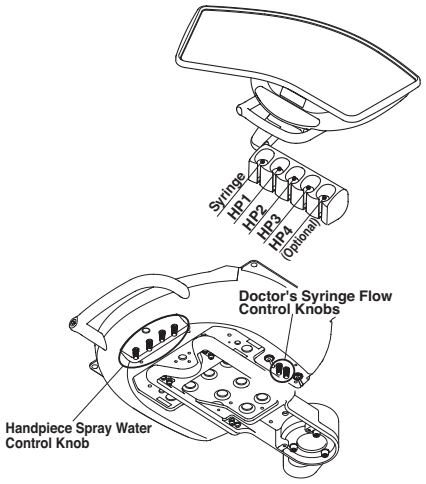


Fig.3-15 Doctor Table Section Control Knobs

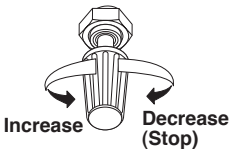


Fig.3-16 Control Knob

(6) Handpiece Pressure Gauge (Fig.3-17)

Handpiece drive air pressure gauge is located on the rear side of the doctor table.

While a handpiece is working, the handpiece drive air pressure is indicated on the handpiece pressure gauge.

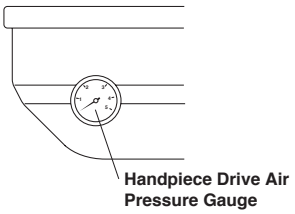


Fig.3-17 Handpiece Pressure Gauge

(7) Balance Arm Air Brake (Fig.3-18)

Balance arm air brake button is located on the handle.
When the master switch is ON, the balance arm is locked.
Grasp the handle and press the air brake button to adjust the table height.
Release the air brake button at the desired table position, the balance arm is locked.

Note : Do not load over 3 kg on the table.

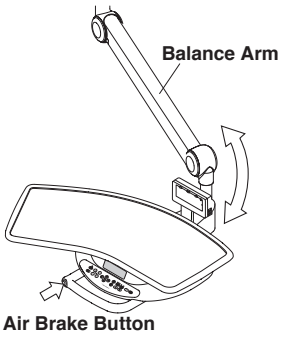


Fig.3-18 Balance Arm Air Brake

(8) Dental Size Film Viewer (Fig.3-19)

Film viewer ON/OFF switch is located right side of the film viewer.
Press the switch, the film viewer turns on.
Press again, the film viewer turns off.

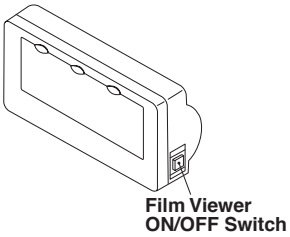


Fig.3-19 Dental Size Film Viewer

(9) Panorama Size Film Viewer (Optional)
(Fig.3-20)

Film viewer ON/OFF switch and film viewer dimmer are located on the right side of the film viewer.
Film viewer brightness can be adjusted by the film viewer intensity control wheel.

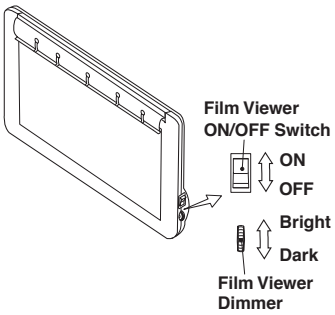


Fig.3-20 Panorama Size Film Viewer

Holder Support Arm / Handpiece Holder (Fig.3-21)

⚠CAUTION

Do not adjust the holder support arm and handpiece holder. Because the angle adjustment of the holder is fixed at the point of installation, the holder support arm will be damaged in case it is moved too hard.

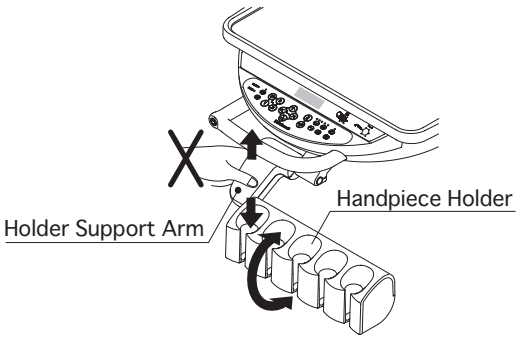


Fig.3-21 Holder Support Arm / Handpiece Holder

Handpieces

⚠CAUTION

Refer to handpiece manufacturers operating instructions.

3-2. CUSPIDOR UNIT SECTION

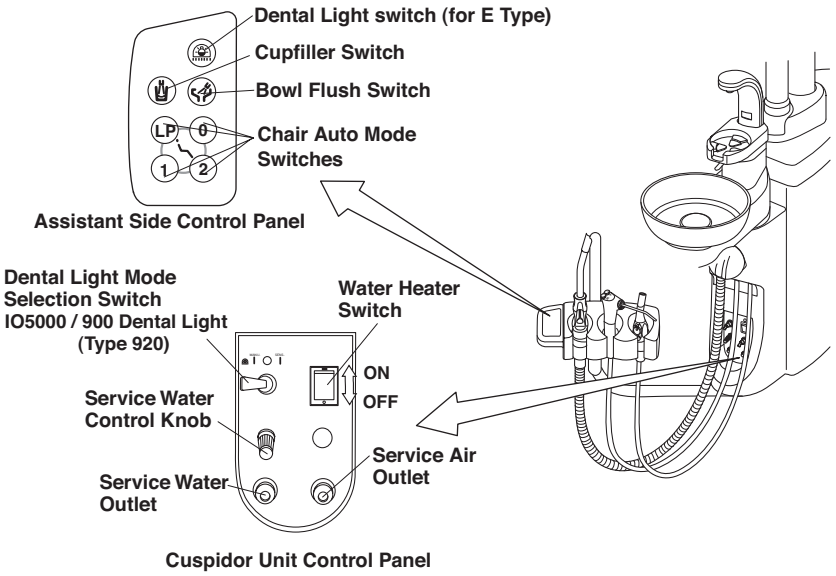


Fig.3-22 Assistant Side Control Panel and Cuspidor Unit Control Panel

(1)Assistant Side Control Panel (Fig.3-22)

Cupfiller switch, bowl flush switch, dental light switch and chair auto mode switches are located on the assistant side control panel. Refer to 3-1.(2) ②, ③, ④, ⑥ & ⑪.

(2) Cuspidor Unit Control Panel (Fig.3-22)

A. Dental Light Mode Selection Switch

IO 5000 / 900 Dental Light (Type 920)

Dental light can be operated (ON/OFF) either by the touchless switch located on the light head, or by the manual switch on the cuspidor unit control panel.

To operate by the touchless switch ----------Set the switch lever to Left side (SENSOR Side)

To operate manually ----------Set the switch lever to Right side (Manual Side)

Set the switch lever to Centre for OFF.

B. Water Heater Switch (Fig.3-22)

Water heater switch is located on the cuspidor unit control panel.

Turn on the water heater switch, and the cupfiller water will warm up.

C. Service Water Outlet (Fig.3-22)

The service water outlet provides a quick-connection for water.

D. Service Water Outlet Control Knob (Fig.3-22)

The water volume from the service water outlet can be adjusted by the service water outlet control knob.

Turning the knob counterclockwise will increase the flow volume and turning clockwise will decrease.

E. Service Air Outlet (Optional)(Fig,3-22)

Service air outlet provides a quick-connection for air.

(3) Cuspidor Unit Body

A. Assistant's Syringe Flow Control Knobs (Fig.3-23)

Assistant's syringe flow control knobs are located in the cuspidor unit body.

The yellow capped knob is to adjust the assistant's syringe air flow volume, and the blue capped knob is to adjust water flow volume.

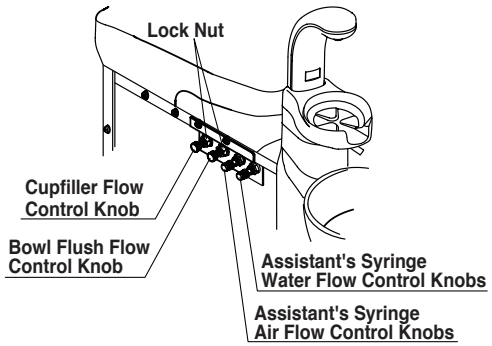


Fig.3-23 Flow Control Knobs in Cuspidor Unit Body

B. Cupfiller Flow Control Knob (Fig.3-23)

Cupfiller flow volume can be controlled by the cupfiller flow control knob. (Pinch valve system)

Loosen the lock nut and adjust cupfiller water flow volume by turning the knob.

Tighten the lock nut after adjustment.

C. Bowl Flush Flow Control Knob (Fig.3-23)

Bowl flush flow volume can be controlled by the bowl flush flow control knob.(Pinch valve system)

Loosen the lock nut and adjust bowl flush water flow volume by turning the knob.

Tighten the lock nut after adjustment.

Note : Turning a knob counterclockwise increase flow volume and turning clockwise will decrease.

(4) Assistant Instrument Holder (Fig.3-24)

When picking up an instrument (Saliva ejector or Vacuum handpiece) from the assistant holder this starts the instrument working automatically.

Returning the instrument to the holder stops automatically.

Saliva ejector handpiece and vacuum handpiece have stop valves to close and adjust suction power.

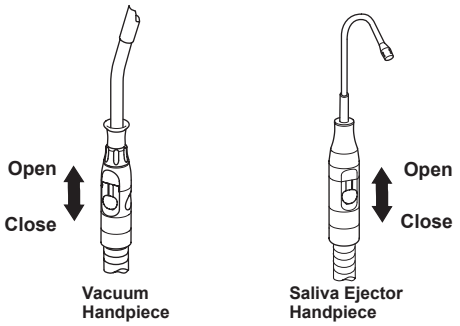


Fig.3-24 Vacuum Handpiece and Saliva Ejector Handpiece

(5) Sensor Cupfiller (Optional) (Fig.3-2, Fig.3-3 & Fig.3-25)

Place the cup (paper cup) on the cupfiller base, water comes out from the cupfiller nozzle, fills up the cup and stops automatically.

When cupfiller starts, the bowl flush also starts, and will run for about 6 sec. and it stops automatically.

While filling the cup, by momentarily pressing the cupfiller switch ( ) this will cancel the cup filler water flow.

During bowl flush, momentarily press the bowl flush switch ( ) this will cancel the bowl flush water flow.

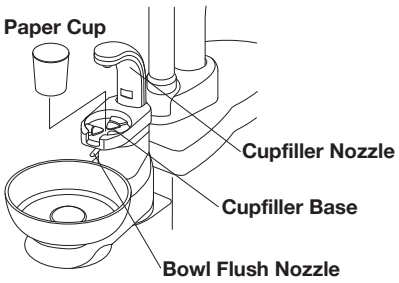


Fig.3-25 Sensor Cupfiller

Note : Use only suitable disposable paper cup (dental paper cup).

Use only an empty cup, using a cup with some water left, can cause an over flow.

The sensor cupfiller needs over 2 seconds interval between cup filling.

(6) Cuspidor Bowl (Optional) (Fig.3-26)

The cuspidor bowl can be rotated either 90˚ to the inside and 90˚ to the outside.

⚠CAUTION

Do not hold the cupfiller nozzle when rotating the cuspidor bowl; be sure to hold the bottom of the spittoon bowl. Rotating via the cupfiller nozzle may result in damage to the cupfiller nozzle .

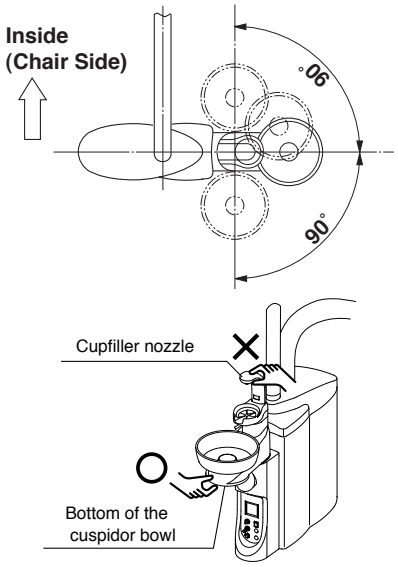


Fig.3-26 Cuspidor Bowl Rotation

(7) Height Adjustable Assistant Arm (Optional) (Fig.3-27)

Press the lock release button and raise arm to adjust the assistant holder height.

Position at desired height and release the lock button after that.

Note: Support the arm with your hand until it is positioned at the desired height.

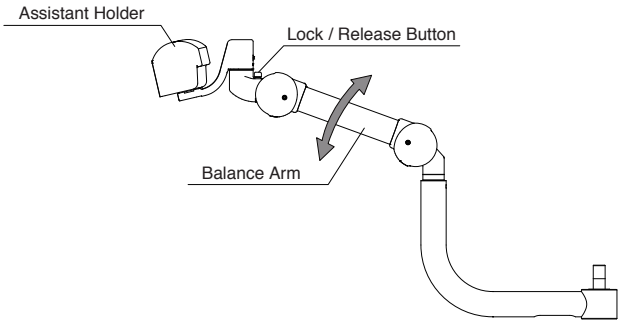


Fig.3-27 Height Adjustable Assistant Arm

(8) Dental Light (Fig.3-28)

Please refer to operating instruction for dental light.

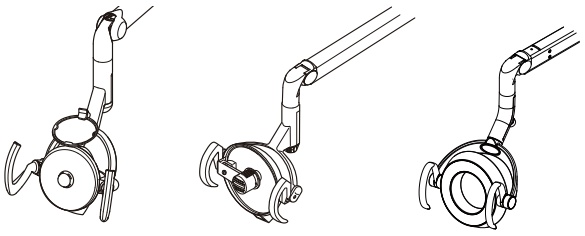


Fig.3-28 Dental Light

3-3. FOOT CONTROL SECTION

(1) Foot Control (Type A2) (Fig.3-29)

A. Drive Air Pedal

Pick up a handpiece from the handpiece holder and depress the drive air pedal, the handpiece starts running.

B. Coolant Water Switch

Coolant water switch allows handpiece coolant water to be turned on or off.

C. Chip Blower Pedal

By depressing the chip blower button, the chip air will come out from handpiece without the bur rotating.

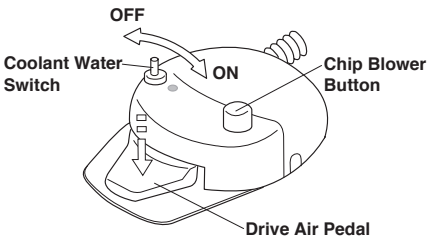


Fig.3-29 Foot Control (Type A2)

(2) Electric Motor Foot Control (Type SE)

(Fig.3-30)

A. Drive Air Pedal

Pick up a handpiece from the handpiece holder and depress the drive air pedal, the handpiece starts running.

B. Coolant Water Switch

Momentarily depressing the coolant water switch is changed handpiece coolant water and air situation.

The situation is shown on the main control panel.

Refer to page 8 ⑧ Coolant Water ON/OFF Switch.

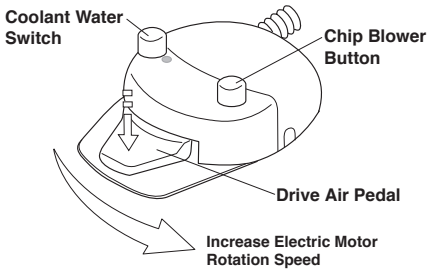


Fig.3-30 Electric Motor Foot Control (Type SE)

C. Chip Blower Button

By depressing the chip blower button, the chip air will come out from handpiece without the bur rotating.

D. Electric Motor Rotation Control (Optional)

Pick up the electric motor from the handpiece holder and while pressing down slide drive air pedal horizontally to right, and the electric motor will start running.

The rotation speed increases by sliding the drive air pedal further to the right.

The speed control by the foot control is within the limits of the electric motor speed setting.

E. Coolant Water Switch / Electric Motor Rotation Direction Switch (Optional)

The coolant water switch can be changed for electric motor rotation direction switch.

To change to electric motor rotation direction switch.

Keep depressing the coolant water switch until buzzer sound (about 2 sec.).

To return to original (coolant water switch) setting.

Keep depressing the coolant water switch until buzzer sound (about 2 sec.).

The electric motor rotation direction is indicated on the control panel by LED.

Please see page 9 ⑩ Electric Motor Rotation Direction Control Switch.

4. SAFETY LOCK DEVICE

In the following cases the safety lock device to lock the chair movement is activated.

1. When the pedal of the foot controller is depressed.
2. When any switch on the doctor control panel or the assistant control panel is depressed while the chair is moving.
3. During setting with the function switch on the doctor control panel.
4. When the cuspidor bowl is rotated toward the patient side. (Pedestal type)

Note: Please refer to page 8 ⑦ (Fig3-9).

5. CARE AND MAINTENANCE

⚠CAUTION

Turn OFF the master switch after daily operation and for long term intervals.

Cleaning Unit

⚠CAUTION

All surfaces can be cleaned with DURR FD333 cleaner.
Spray the cleaner (DURR FD333) on cloth and wipe the surfaces with the cloth. Do not drench the chair and unit. Wipe all surfaces dry after cleaning.

(1) Cuspidor Bowl (Fig.5-1)

Take out the drain cap and the basket strainer located in the center of cuspidor bowl and clean them.
Remove the cupfiller base and pull out the cuspidor bowl and clean it.
After cleaning, secure the cuspidor bowl firmly.

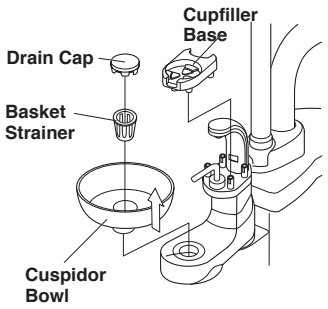


Fig.5-1 Cuspidor Bowl, Drain Cap and Basket Strainer

⚠CAUTION

Turn off the main switch before removing the cuspidor bowl.

(2) Solid Collector (Fig.5-2)

Pull out the solid collector filter and clean it.
After cleaning, refit the solid collector firmly.

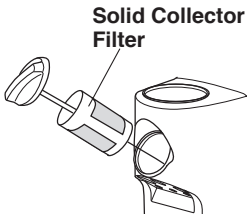


Fig.5-2 Solid Collector Filter

(3) Handpiece

1-1.Vacuum Handpiece and Saliva Ejector Handpiece

For effective sterilization, washing for removing contamination and immersion by a cleaning agent are required. Then, rinse by water in order to remove residual cleaning agent on medical device. Take following procedures from cleaning to sterilization.

* Use the disposable saliva ejector tip.

Disassembly (Fig.5-3)

Disassemble the handpiece for the preparation of cleaning as the following figures show. Pull the hose connector to disconnect the vacuum hose.

Cleaning by hand

A. Wipe off the surface contamination by a cloth while rinsing the surface by running clean warm water at 40±5 degrees. **(Fig.5-4)** Scrub the intubation or hole, slide groove and filter by a cleaning brush or by a tooth brush with running clean warm water at 40±5 degrees. **(Fig.5-5)** Wipe off by a cloth for the area which brush is unable to reach. **(Fig.5-6)**

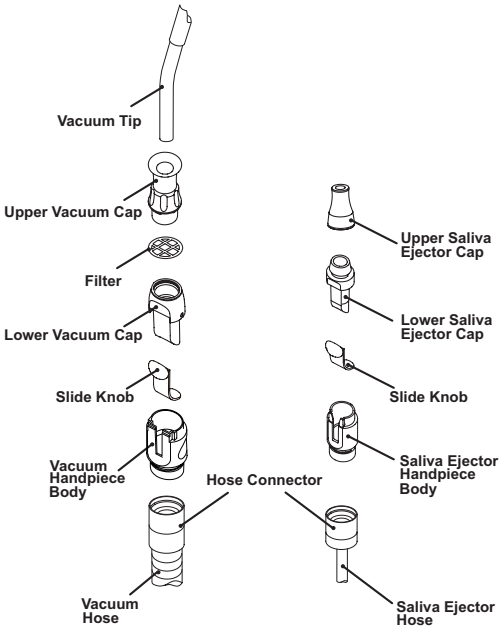


Fig.5-3 Vacuum Handpiece and Saliva Ejector Handpiece

B. Rinse thoroughly by distilled water at ordinary temperature or by clean water for more than 1 minute.
C. Check whether contamination is removed or not after cleaning. Continue the cleaning if contamination is remained.
D. Immersed with an alkaline detergent for 5 minutes. (We recommend to use ID212 made by DURR)
E. Rinse thoroughly by distilled water at ordinary temperature or by clean water for more than 1 minute.

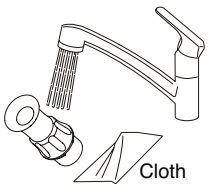


Fig.5-4 Surface cleaning

⚠CAUTION

Cleaning must be done within 1 hour after use.
Throw out and do not take autoclave handpiece for following cases.
- **Any waste material can not be removed by clogged hole.**
- **Contamination and solid material attached to handpiece can not be removed.**

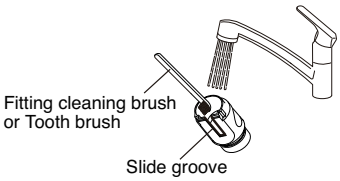


Fig.5-5 Cleaning of hole and sliding part

Sterilization (Fig.5-7)

Vacuum Tip/Vacuum Cap/ Vacuum Handpiece Body/Saliva Ejector Handpiece Body can be autoclave. Vacuum handpiece body and saliva ejector body have to assemble before autoclave.

A. Insert the handpiece in a sterilization pouch and seal it.
B. Autoclave for 20 min. at 121°C or 4 min. at 135°C. Sterilization with autoclave is permitted up to 250 times.

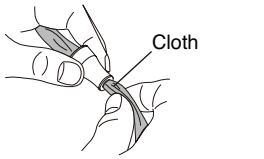


Fig.5-6 Cleaning the area (brush is unable to reach)

⚠CAUTION

- **Sterilization by class B cycles.**
- **Sterilization temperature is 135 degrees or less.**
- **The cap, filter and body are made of resin. They may become deteriorated if they are sterilized in an autoclave many times.**
- **After autoclave sterilization, the cap, filter, body and valve are subject to discoloration, which does not have a negative effect on performance.**
- **The slide knob can be autoclave 100 times and is expendable supplies.**
- **Skip the drying process if the temperature is to exceed 135°C.**
- **If damage occurs to the sterilization pouch, discard and sterilize again using a new pouch.**

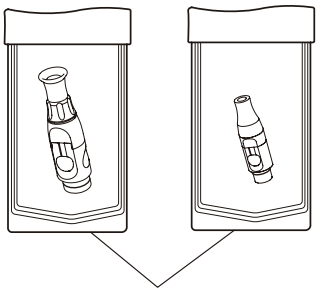


Fig.5-7 Vacuum Handpiece and Saliva Ejector Handpiece

Storage

After cleaning the vacuum tip, keep it in the clean place.

1-2. Cleaning vacuum and saliva ejector lines (Fig.5-8)

The sucking unit comes into contact with secretions, spit and blood that contain bacteria every day. Be sure to clean and sterilize it at the end of each work day.
Recommended cleaner : Orotol Plus made by DURR.

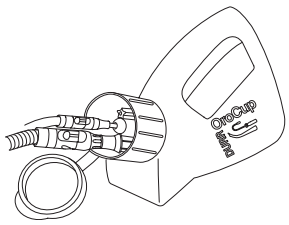


Fig.5-8 Cleaning Vacuum /Saliva Ejector Lines

⚠CAUTION

Do not use strongly acidic cleaning agents or alkaline pipe cleaning agents, which may cause corrosion of metals, etc/

1-3. Vacuum hose and saliva ejector hose are detachable from the cuspidor unit.(Fig.5-9) Turn the hose connector 90° counterclockwise the hose can be removed from the cuspidor unit. Insert the hose connector and turn through 90° clockwise to reconnect.
Note: After daily operation, run two cup of clean water through handpieces to clean inside.

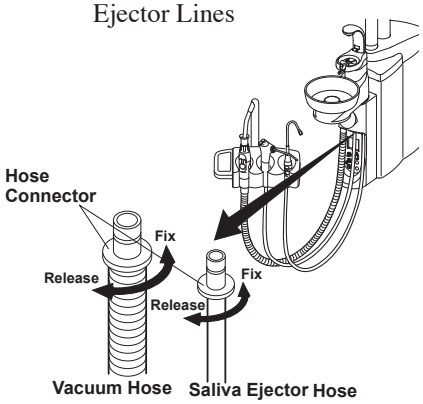


Fig.5-9 Vacuum and Saliva Ejector Hose

2. Micro Motor / Turbine / Scaler
Sterilize the handpiece according to manufacturer's operating manual.

3. Belmont 77 Syringe (Fig.5-10)

Disassembly

Remove the nozzle from syringe by turning it in direction A.

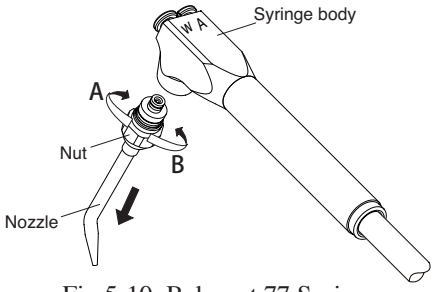


Fig.5-10 Belmont 77 Syringe

Cleaning by hand

A. Wipe off the surface contamination by a cloth while rinsing the surface by running clean warm water at 40±5 degrees.
Scrub the tip and joint part of nozzle by a cleaning brush or by a tooth brush with running clean warm water at 40±5 degrees. (**Fig.5-11**)

B. Rinse thoroughly by distilled water at ordinary temperature or by clean water for more than 1 minute.

C. Check whether contamination is removed or not after cleaning.
Continue the cleaning if contamination is remained.

D. Immersed with an alkaline detergent for 5 minutes.
(We recommend to use ID212 made by DURR)

E. Rinse thoroughly by distilled water at ordinary temperature or by clean water for more than 1 minute.

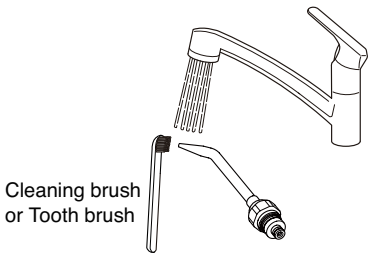


Fig.5-11 Cleaning Belmont 77 Syringe Nozzle

⚠CAUTION

Cleaning must be done within 1 hour after use.
Throw out and do not take autoclave handpiece for following cases.
• Contamination and solid material attached to handpiece can not be removed.

Sterilization (Fig.5-12)

The nozzle can be sterilized with autoclave.

A. Insert the handpiece in a sterilization pouch and seal it.

B. Autoclave for 20 min. at 121°C or 4 min. at 135°C.
Sterilization with autoclave is permitted up to 250 times.
Apply Vaseline thinly and evenly to the two O-rings after sterilization.
Tighten the nut firmly in direction B to undo the nozzle.

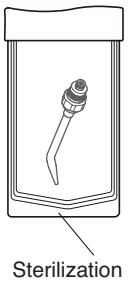


Fig.5-12 Sterilization Belmont 77 Syringe Nozzle

⚠CAUTION

- **Sterilization by class B cycles.**
- **Sterilization temperature is 135 degrees or less.**
- **Skip the drying process if the temperature is to exceed 135°C.**
- **If damage occurs to the sterilization pouch, discard and sterilize again using a new pouch.**
- **Before use, make sure that the nut is firmly tightened.**

Storage

After cleaning the nozzle, keep it in the clean place.

(4) Tubings and hoses
Tubings and hoses can be cleaned with DURR FD333 cleaner.

(5) Air Filter Drain Valve (Fig.5-13)
Air filter drain valve is located under the maintenance lid.
Once a week open the drain valve and drain off water from the air line.

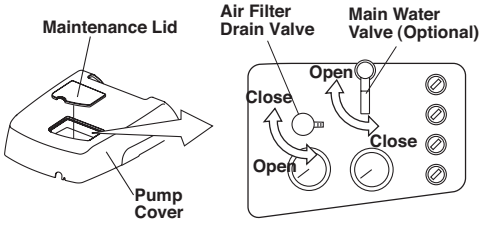


Fig.5-13 Air Filter Drain Valve and Main Water Valve

(6) Main Water Valve (Optional)(Fig.5-13)
Main water valve is located under the maintenance lid. Turn off the main water valve after daily operation and for long term intervals.

(7) Filter Replacement (Fig.5-14)
The water filter in the junction box needs to be replaced at least once a year. The air filter in the junction box needs to be replaced at least once every three years. Contact your local service representative for replacement.

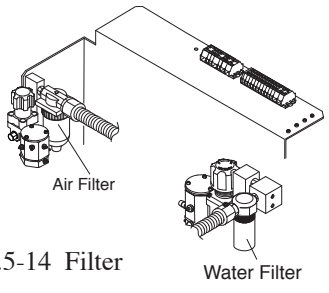


Fig.5-14 Filter

6. MAINTANANCE AND INSPECTION

6-1. Guide for daily maintenance and inspection (Maintenance and inspection by user)

•Management of maintenance and inspection of medical equipment should be implemented by the user (medical institution). In case the user does not implement such management, it is permitted that such management is outsourced to a qualified entity such as a medical equipment repair company.

• For safe use of this product, it is necessary that inspection should be conducted in the specified frequency on the tems described below.

No.	Item	Frequency	Inspection method and diagnosis	Influence if inspection not conducted	Maintenance required in case of nonconformity
1	Check of safety functions	Before start	Make sure the chair movement stops by any of the following actions. ①when foot controller pedal is depressed. ②During chair auto movement, depress of any operation switch. ③While setup is in progress with function switch on the doctor membrane switch panel. ④When the spittoon bowl is turned to patient side (Pedestal type)	Unexpected personal injury and troubles may arise due to motion of the chair during medical treatment and due to pinching between doctor section and chair.	Contact your dealer or our office if any abnormality arises.
2	Check for leakage of water and air	Before start	Leakage of water and air shall not be observed around the product.	The product will not normally work, and troubles may arise.	Contact your dealer or our office if any abnormality arises.
3	Cupfiller	Before start	When a paper cup is placed on the cupfiller, the cup shall be detected and cupfilling shall be executed. * Malfunction may arise if the cup is of another material grade (such as stainless steel and plastics) or if the paper cup is of dark color or pattern.	Cupfilling may not be executed.	Execute re-inspection in accordance with "Method for operation" described in the instruction manual. Contact your dealer or our office if recovery is not achieved as a result of re-inspection.
4	Check of motions of equipment	Before start	①Air turbine revolution, water flow, air flow and so forth shall be free of abnormality. ②Micromotor revolution, water flow and so forth shall be free of abnormality. ③Scaler vibration, water flow and so forth shall be free of abnormality.	Troubles such as injury in patient's oral cavity and equipment failure may arise.	Control the water flow in accordance with "Control of components" described in the instruction manual. If any other abnormality arises, refer to the instruction manual attached to individual equipment. Contact your dealer or our office if recovery is not achieved.
5	Check of air turbine bar	For each patient	Appropriate bar shall be positively mounted. Make sure to refer to the instruction manual attached to individual equipment.	The bar will not normally work and troubles may arise.	If abnormality such as flaw and deformation is found on the bar, replace the bar in accordance with the instruction manual attached to individual equipment.
6	Check of scaler tip	For each patient	Appropriate tip shall be positively mounted and be correctly used. Make sure to refer to the instruction manual attached to the scaler.	The tip will not normally work and troubles may arise.	If the tip was worn or deformed, replace the tip in accordance with the instruction manual attached to the scaler. Contact your dealer or our office if any other trouble arises.
7	Check of tightness of syringe nut	For each patient	The nut for fixing the nut of Type 77, 3-way syringe shall be positively tightened.	Troubles may arise if the nut comes off.	Turn and positively retighten the nut that fixes the nozzle.
8	Matters attached to micromotor	After closing	Excessive handpiece oil or the like shall not be attached to the motor section.	The motor section will not work normally and troubles may arise.	Execute care in accordance with the instruction manual attached to individual micromotor.

No.	Item	Frequency	Inspection method and diagnosis	Influence if inspection not conducted	Maintenance required in case of nonconformity
9	Care Vacuum and saliva ejector handpiece	After closing	Flush the suction line, and then clean the filter of the vacuum or saliva ejector handpiece.	Faulty suction may arise.	Clean the suction line and filter in accordance with "Method for care" described in the instruction manual.
10	Care Cuspidor section	After closing	Clean the cuspidor and dust filter.	Faulty water drainage may arise.	Execute dust removal and cleaning in accordance with "Method for care" described in the instruction manual.
11	Care Solid collector	After closing	Clean the filter of the solid collector.	Vacuum suction will become weak.	Clean the filter in accordance with "Method for care" described in the instruction manual.
12	Care Exterior	After closing	Chemical, filthy water and so forth shall not be found (attached or remaining) on the product exterior.	Discoloration and deterioration to the exterior, and corrosion and rusting to metallic components may arise.	Execute wiping in accordance with "Method for care" described in the instruction manual.
13	Check of main switch and main valves	After closing	The product main switch shall be off, and water/air main valves shall be closed.	Product failure and troubles may arise.	Contact your dealer or our office if the main switch cannot be turned off or if the main valve cannot be closed.
14	Product's moving parts	Once every week	No abnormal noise or the like shall be produced from product's moving parts when the product is operated.	The product will not normally work and troubles may arise.	Contact your dealer or our office if any abnormality arises.
15	Care Drain valve	Once every week	Water may enter the air line, and equipment failure may arise.	Drain the water from the air filter drain valve.	Drain the water from the air filter in accordance with "Method for care" described in the instruction manual.
16	Check of water pressure and air pressure	Once every month	Check the water pressure and air pressure by reading pressure gauges in the U-Box section. Basic set pressure : Water: 0.1 to 0.2 MPa Air: 0.45 to 0.5 MPa	The product will not normally work, and troubles may arise.	Contact your dealer or our office if the set pressure is abnormally high or low.
17	Check of conditions of table section	Once every month	The table shall be free of inclination, and water shall not flow on the table.	Injury caused by falling of goods located on the table and other troubles may arise.	Contact your dealer or our office if any abnormality arises.
18	Care Oil mist separator	Once every month	The oil level in the oil mist separator shall be lower than the red line.	Normal output will not be produced due to inferior handpiece exhaust.	Discharge the oil in accordance with "Method for care" described in the instruction manual.

6-2. Guide for Periodical Check-up

- Some parts and components of the products are degraded or deteriorated depending on the frequency of use. Annual check-up and maintenance, as well as replacement of consumable parts, are required.
- The required parts (including consumable parts) are listed below. It may be different from the following list depending on the option of the unit.
- For check-up and repair, call a technician of our authorized dealer.

Parts and components that require periodical check-up

No.	Parts Description	Standard Lifetime	No.	Parts Description	Standard Lifetime
1	Vacuum handpiece body	3 years	8	Regulator	3 years
2	Saliva ejector handpiece body	3 years	9	Valves	3 years
3	Foot controller	5 years	10	Switches	5 years
4	Water supply hose	3 years	11	Film viewer body part	5 years
5	Drain hose	3 years	12	Pressure gauge	3 years
6	Air supply hose	3 years	13	Arm section of moving part	7 years
7	Electric wiring of moving part	5 years	14	Control PCBs.	5 years

Consumable parts

No.	Parts Description	No.	Parts Description
1	Valve for vacum handpiece body	6	Filter for oil mist separator
2	Vacuum tip	7	Filter (Air & Water)
3	Handpiece tubings	8	O-ring, Packing, Diaphragm
4	Vacuum hose		
5	Saliva ejector hose		

⚠ WARNING

Execute the maintenance in accordance with this instraction manual and operating manual attached to each individual equipment (Dental light, Handpiece, etc..) .
Failure to maintain this product may lead to physical injury or property damage.

7. ELECTROMAGNETIC COMPATIBILITY(EMC)

Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

Portable and mobile RF communications equipment can affect medical electrical equipment.

The equipment or system should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacture's declaration – electromagnetic emissions		
The CLESTA II Unit is intended for use in the electromagnetic environment specified below. The customer or the user of the CLESTA II Unit should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The CLESTA II Unit uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The CLESTA II Unit is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ Flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacture's declaration – electromagnetic immunity			
The CLESTA II Unit is intended for use in the electromagnetic environment specified below. The customer or the user of the CLESTA II Unit should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic file. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the CLESTA II Unit requires continued operation during power mains interruptions, it is recommended that the CLESTA II Unit be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to applications of the test level.			

Guidance and manufacture's declaration – electromagnetic immunity			
The CLESTA II Unit is intended for use in the electromagnetic environment specified below. The customer or the user of the CLESTA II Unit should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
			Portable and mobile RF communications equipment should be used no closer to any part of the CLESTA II Unit, including cables, than the recommended separation distance calculated from the equation applications to the Frequency of the transmitter. **Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands[a]	3 Vrms	$d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
NOTE 1 At 80 MHz and 800MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.			

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CLESTA II Unit is used exceeds the applicable RF compliance level above, the CLESTA II Unit should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the CLESTA II Unit.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Essential performance (purpose of IMMUNITY testing)
Unless operated by the switches for chair control, the chair connected to CLESTA II does not make any movements, except for sounding a buzzer and switching on/off the indicator.

Recommended separation distances between Portable and mobile RF communications equipment and the CLESTA II Unit

The CLESTA II Unit is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CLESTA II Unit can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CLESTA II Unit as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter** m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.

8. List of Compatible Handpieces

	DESCRIPTION
Syringe	LUZZANI(3-way) Minilight w/Light
	LUZZANI(6-way) Minilight w/Light
	DCI (3-way) SYRINGE
Turbine	BIEN AIR BORA S36L / UNIFIX with LIGHT
	NSK Ti-Max X
Air motor	BIEN AIR Aquilon 830 / UNIFIX with LIGHT /PM1132
	NSK EX-203 / EX-6
Micromotor	BIEN AIR MC3LK / PLMP021PCB. / PM1132
	BIEN AIR MC3LK / PL970PCB. / PM1132
	BIEN AIR MX / DMX PCB. / PM1132
	BIEN AIR MX2 / DMX2 PRO PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PLMP021PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PL970PCB. / PM1132
	NSK NL-400 / NL-400SB.PCB / EX-6
	NSK TIM-40J / DA-290N PCB. / EX-6
	NSK NLX PLUS
Scaler	SATELEC SP4055 w/Light
	SATELEC SP4055 NEWTRON w/Light
	NSK VARIOS 150 LUX(w/light)
	NSK VARIOS 170 w/light
	EMS SCALER
	CAVITRON

NOTE

EC REP

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