DENTAL UNIT AND CHAIR

CP-One

OPERATING INSTRUCTIONS

IMPORTANT

This manual provides operating instructions for CP-ONE.
The instructions contained in this booklet should be thoroughly read and understood before operating the unit and chair.
File this manual and refer back to it for future maintenance.

Belmont

CE 0197

TABLE OF CONTENTS

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.

Environmental Requirements

Ambient Temperature	Operating +5°C - +40°C	Storage -10°C - +50°C
Humidity	10 % - 80%	
Atmospherical Pressure	600 hPa - 1060 hPa	

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 contat 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.

In case of disposal of equipment

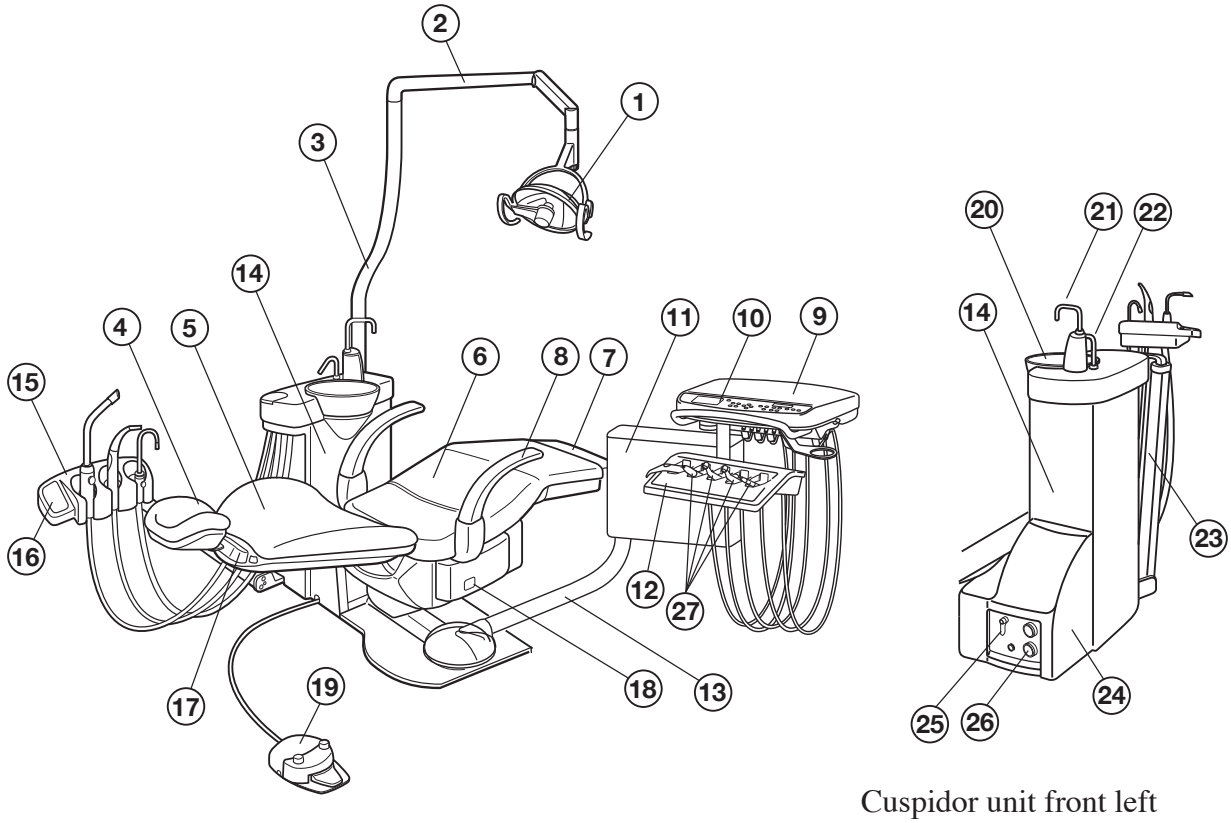
When disposing the chair, appropriately dispose complying with all current applicable regulations and local codes.

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

LP	Chair last position	0	Chair auto return	1	Chair preset1	2	Chair preset2
	Chair control		To raise the chair		To Recline the backrest		To lower the chair
	To raise the backrest		Headrest manual control		Film viewer on/off		Handpiece Setting
	Fiber optic handpiece light on//off		Handpiece coolant spray on/off		Micro motor Forward/Reverse select		Syringe
F	Function		Store	— min.	Minus	+ sec.	Plus
	Bowl flush		Cupfiller		Timer		Dental light on/off
W	Water	A	Air		Type B Applied Parts		Non-ionizing radiation
EC REP	Authorized representative in the European community		Manufacturer		Date of manufacture		Caution It means “caution, warnings, or possibility to danger”.
	Separate collection for electrical and electronic equipment						

1. OVERALL VIEW AND MAJOR COMPONENTS



Cuspidor unit front left

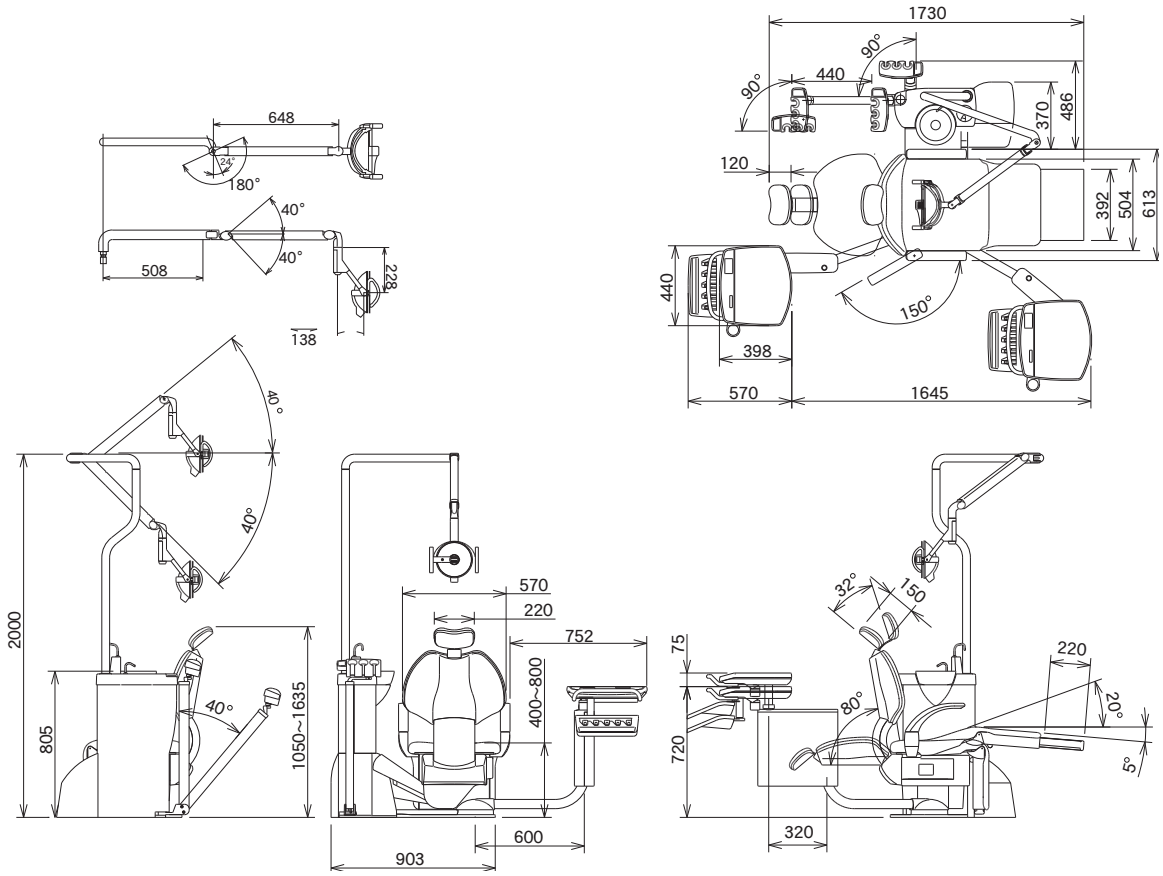
Fig.1-1-1 Overall view and major parts

1. Dental light (io5000)
2. Dental light horizontal arm
3. Dental light pole
4. Power headrest
5. Backrest
6. Seat
7. Footrest
8. Armrest
9. Doctor table unit
10. Main control panel
11. Control housing
12. Handpiece holder (Place type)
13. Doctor table arm
14. Cuspidor unit
15. Assistant holder
16. Assistant control panel
17. Power headrest control panel
18. Chair control panel
19. Foot control (SE Type)
20. Cuspidor bowl
21. Cupfiller nozzle
22. Bowl flush nozzle
23. Assistant holder arm
24. J-Box cover
25. Stop valve for water
26. Pressure gauge
27. Handpieces
(Micromotor, Air Turbine/Motor, Scaler and etc.) Manufacturers recommend to use the handpieces with CE markings

2. DIMENSIONS AND SPECIFICATIONS

2-1. Dimensions

-mm-



2-2. Specifications

Seat initial height---------- 400mm

Seat lifting stroke ---------- 400mm

Backrest movement---------- 0° ~ 80° above horizontal

Auto movements ---------- 2 Preset, 1 Last position memory and 1 Auto return

Control voltage---------- DC12V

Power consumption---------- 230V 50Hz 3.1A

Dental light ---------- io5000 (520 Type)

Net weight ---------- Chair 170 kg
Unit 90 kg

Maximum Load ---------- 135 kg

Service Life ---------- 10 years

3. OPERATING INSTRUCTIONS

3-1. Control Panel

Control panels locations and functions are shown in Fig.3-1-1.

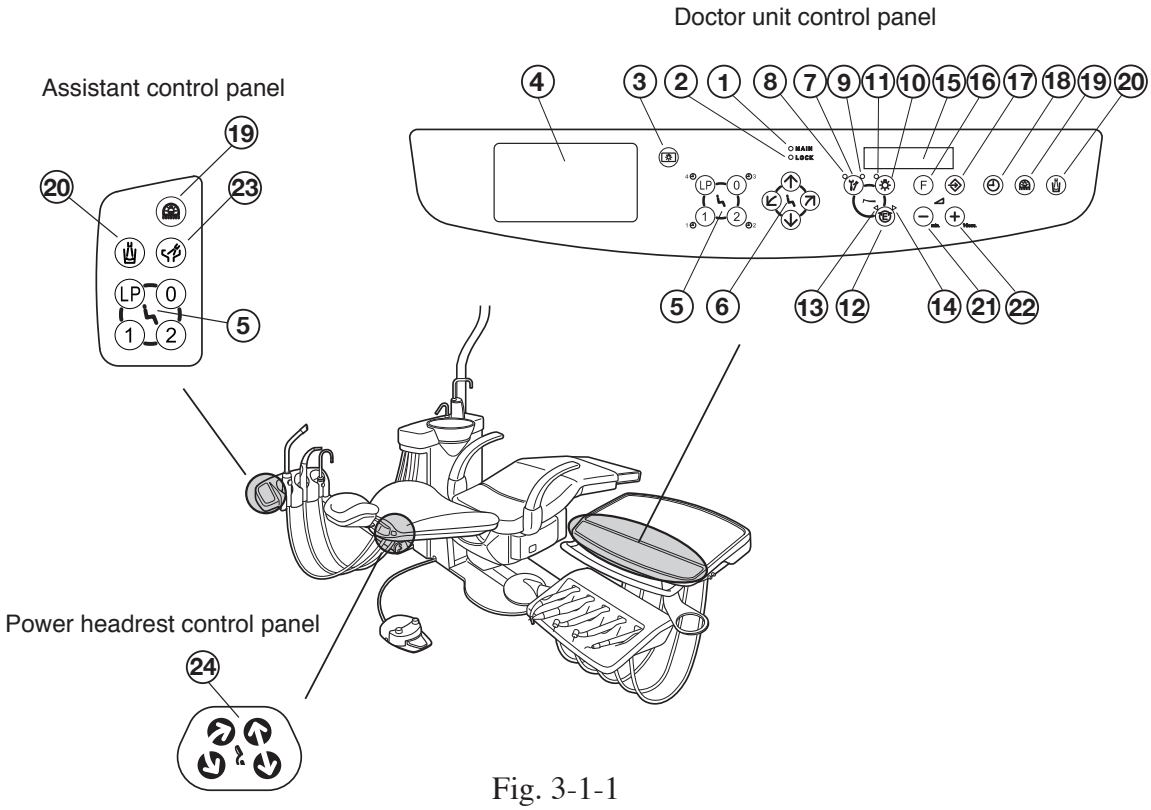


Fig. 3-1-1

1. Power indicator
2. Lock indicator
3. Film viewer switch (Dental size)
4. Film viewer
5. Chair auto mode switch
6. Chair manual control switch
7. Handpiece coolant water switch
8. Handpiece coolant air indicator for micro motor
9. Handpiece coolant water indicator for micro motor
10. Light pack switch
11. Light pack indicator
12. Micro motor direction control switch
13. Micro motor direction indicator counter-clockwise
14. Micro motor direction indicator clockwise
15. Function indicator
16. Function switch
17. Store switch
18. Timer switch
19. Dental light switch
20. Cupfiller switch
21. Decrease switch
22. Increase switch
23. Bowl flush switch
24. Power headrest switch

3-2. Master Switch

Turn on the master switch located on the facing right side table (Refer to Fig.3-2-1), the power indicator on the main control panel illuminates in green.

Note : CP mark in function indicator will be turned off if the unit is not operated for 30 seconds. It will appeare again when the unit is re-operated.

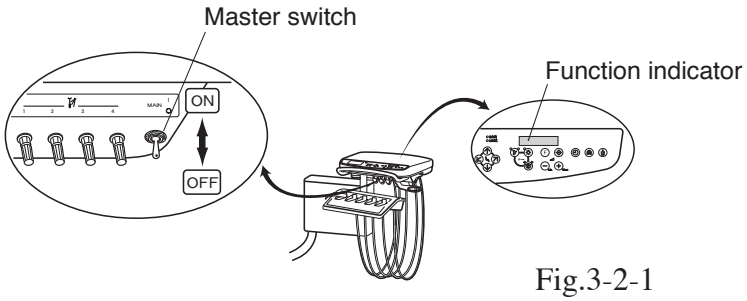


Fig.3-2-1

⚠CAUTION

Turn off the master switch after daily operation or in long term interval.

3-3. Chair Operating Instructions

⚠CAUTION

Before operating the chair, confirm safety for the patient and the operator

3-3-1. Chair manual control switch

1) Seat lifting

Keep depressing ⓤ switch of the chair manual control switch until the seat is lifted up to the desired position.

2) Seat lowering

Keep depressing ⓓ switch of the chair manual control switch until the seat is lowered to the desired position.

3) Backrest reclining

Keep depressing ⓑ switch of the chair manual control switch until the backrest is reclined to the desired position.

4) Backrest raising

Keep depressing ⓕ switch of the chair manual control switch until the backrest is rased to the desired position.

5) Headrest extension

Keep depressing switch of the power headrest control panel until the headrest is lifted up to the desired position.

6) Headrest lowering

Keep depressing switch of the power headrest control panel until the headrest is lowered to the desired position.

7) Headrest forward

Keep depressing switch of the power headrest control panel until the headrest is raised up to the desired position.

8) Headrest retract

Keep depressing switch of the power headrest control panel until the headrest is retracted to the desired position.

3-3-2. Chair auto mode control switch

1) Preset Control

CP-ONE chair has two preset positions.

Momentary depress ① button of the chair auto mode switch, the chair will move to the preset-1 position automatically. (Preset-2 is operated by ② button.)

2) Preset position adjustment

Two preset position can be set.

Procedure 1.

1. Set seat and backrest in the desired position by manual control switches.
2. Keep depressing store button on chair preset panel until buzzer sounds Pi-,Pi-,Pi-.
3. While buzzer is sounding, press ① button on doctor table or assistant side control panel so that the position is memorized to preset 1, then the buzzer sound ceases.
4. Preset 2 is memorized by pressing ② button as following 1 to 3.

Procedure 2.

1. Set seat and backrest in the desired position by manual control switches.
2. Keep depressing ① button on doctor table or assistant side control panel until buzzer sounds so that the position is memorized to Preset 1, then the buzzer sound ceases.
3. PRESET 2 is memorized by pressing ② button as following 1 to 2.

3) Auto return

Momentary depress ⓪ button of the chair auto mode switch, the chair will move to the initial position automatically.

(The seat is fully lowered and backrest is upright position.)

4) Last Position Memory

Momentary depress ⓁⓅ button of the chair auto mode switch at chair treatment position, the backrest and seat will move to the mouth rinsing position automatically.

Momentarily depress ⓁⓅ button again, the backrest and seat will return to the previous treatment position automatically.

5) Emergency Stop

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

6) Safety lock

During the handpiece is running, the safety lock indicator illuminates in red and all chair control switches are inactivated.

3-4. Control Panel Operating Instructions

3-4-1. Dental size film viewer switch (Fig.3-4-1)

Momentarily press the film viewer switch, film viewer turns on until film viewer switch is pressed again.

Fig. 3-4-1

3-4-2. Handpiece coolant water switch (Fig.3-4-2)

When both indicators are illuminated, coolant water comes out of the handpiece when it is taken out of its holder and foot controller pedal is depressed.

Momentarily pressing the handpiece coolant water switch will stop spray water.

Fig. 3-4-2

3-4-3. Light pack optional switch (Fig.3-4-3)

Momentarily press the light pack switch, the indicator illuminates and the handpiece light turns on until the light pack switch is pressed again.

Fig. 3-4-3

3-4-4. Micromotor optional direction control switch (Fig.3-4-4)

Rotational direction of the micromotor can be changed by momentarily pressing the micromotor direction control switch, and rotational direction is indicated by the indicator.

Note ; Do not change rotational direction during micromotor is running.

Fig. 3-4-4

3-4-5..Function switch (Fig.3-4-5) / Store Switch (Fig.3-4-6)

This unit provides supplement functions (flushout system, control panel switching sound on/off, fiber optic handpiece illumination timing, timer, micromotor control and bowl flush timing). Supplement function are selected by the function switch and set by the store switch.

Fig. 3-4-5

Fig. 3-4-6

3-4-6. Dental light switch (Fig.3-4-7)

Momentarily press the dental light switch, the dental light turns on until the dental light switch is pressed again.

Fig. 3-4-7

3-4-7. Timer switch(Fig.3-4-8) / Time setting switches (Fig.3-4-9/Fig.3-4-10)

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

Momentarily press the timer switch, and set the time by pressing ⊕ switch and ⊖ switch.

Fig.3-4-8

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.

Example : Setting time 3 mins. 30 secs. is indicated as T s 03 : 30 in the function indicator.

Fig.3-4-9

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

Fig.3-4-10

3-4-8. Cupfiller switch (Fig.3-4-11)

Momentarily press the cupfiller switch, cupfiller water comes out from the cupfiller nozzle for about 6.5 seconds and stops automatically.

During the cupfilling, pressing the cupfiller switch stops filling.

Fig.3-4-11

Note : Do not press the cupfiller switch when a cup is not on the cupfiller base.

3-4-9. Bowl flush switch (Fig.3-4-12)

Momentarily press the bowl flush switch, bowl flush water flushes for about 6 seconds from the bowl flush nozzle and stops automatically.

During the bowl flushing, pressing the bowl flush switch stops bowl flushing.

Fig.3-4-12

Keep pressing the bowl flush switch for about two seconds, water flushes continuaously until the bowl flush switch is pressed again.

3-5. Unit Supplement Functions

3-5-1. Flush out system

The CP-ONE 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 and momentarily press the ⊖ switch.

Function switch

Pick up the handpieces from holder and set them in cuspidor bowl.
Momentarily pressing the foot controller starts short time flush out.
Water comes out from the handpiece and stops automatically in about 40 seconds.

During flush out, momentarily pressing the any one of Ⓕ, ⊖, ⊕ or foot controller will cancel flushout immediatly.

2) Long time flush out Ⓕ + ⊕

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

Pick up the handpieces from holder and set them in cuspidor bowl.
Momentarily pressing the foot controller starts long time flush out.
Flush out starts and cupfiller and bowl flush after another and stops automatically in about 10 minute.
During flush out, momentarily pressing the any one of Ⓕ, ⊖, ⊕ or foot controller will cancel flushout immediatly.

3-5-2. Control panel switching sound on/off

Pressing a switch on the control panel makes an electronic sound. This sound can be eliminated as follows;

Function switch

Momentarily press the function switch **twice** and momentarily press ⊖ switch.

To return to original setting.
Momentarily press the function switch **twice** and momentarily press ⊕ switch.

3-5-3. Fiber optic handpiece lighting mode

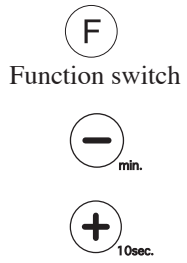
In case that fiber optic handpiece is installed, fiber optic turns on when the handpiece is taken out of the holder, and turns off when the handpiece is returned to the holder.

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

Momentarily press the function switch **three times** and press ⊖ switch.

To return to original setting.

Momentarily press the function switch **three times** and press ⊕ switch.

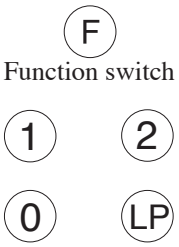


3-5-4. Electronic sound for timer

Electronic sound for timer can be changed.

Momentarily press the function switch **four times**.

Momentarily press one of ⓪,①,②,ⓛⓟ switchs then the new electronic sound is to be memorized.



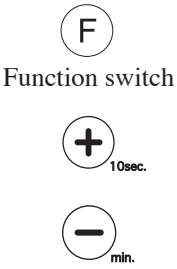
3-5-5. a. Micromotor maximum speed setting for PL970

The maximum rotation speed of the micromotor can be selected 3 steps (10000,20000,40000rpm). This function can be changed to 5 steps (5000,10000,20000,30000,40000rpm) as follows:

Momentarily press the function switch **five times** and press ⊕ switch.

To return to original setting.

Momentarily press the function switch **five times** and press ⊖ switch.



b. Micromotor maximum speed setting for PLMPPE021

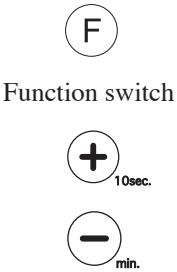
The maximum rotation speed of the micromotor can be selected 3 steps (60 - 500, 1000 - 20000, 1000 - 40000rpm).

This function can be changed to 5steps (60 - 500, 60 - 1000, 1000 - 20000, 1000 - 30000, 1000 - 40000rpm) as follows:

Momentarily press the function switch **five times** and press ⊕ switch.

To return to original setting.

Momentarily press the function switch **five times** and press ⊖ switch.



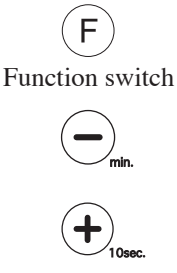
3-5-6. Micromotor spray mode

In case that micromotor is installed, coolant air and water can be operated independentry as follows;

Momentarily press the function switch **six times** and press ⊖ switch.

To return to original setting.

Momentarily press the function switch **six times** and press ⊕ switch.



3-5-7. Cupfiller and bowl flush

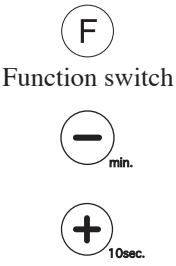
Cupfiller and bowl flush are set to operate together (when cupfiller switch is activated, bowl flush also starts).

To make these operate independentry.

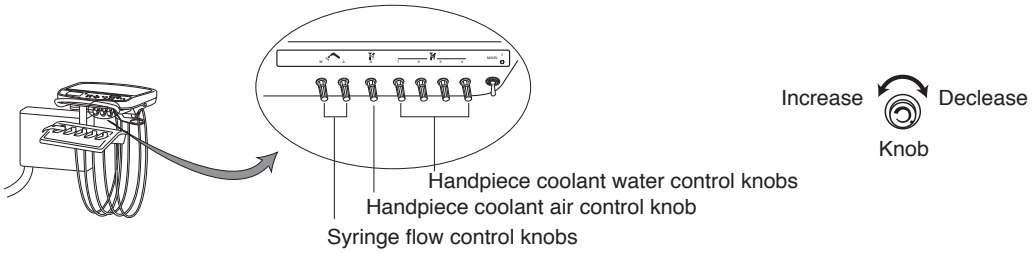
Momentarily press the function switch **seven times** and press ⊖ switch.

To return to original setting.

Momentarily press the function switch **seven times** and press ⊕ switch.



3-6. Doctor table operating instructions



3-6-1. Handpiece coolant water control

The handpiece coolant water control knobs are located at the front of doctor table bottom.

Each handpiece coolant water knob is lined up from the facing left.

The handpiece coolant water can be controlled independentry.

3-6-2. Handpiece coolant air control

The handpiece coolant air control knobs are located at the front of doctor table bottom.

The handpiece coolant air for all handpieces is controlled by an air control knob.

3-6-3. Syringe flow control knobs

Syringe flow control knobs for doctor are located at the right side of doctor unit bottom.

The syringe flow control knobs adjust syringe air and water flow.

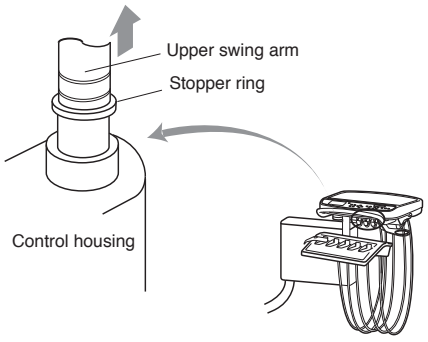
The yellow capped knob is the air flow control knob, the blue capped knob is the water control knob.

3-6-4. Table height adjustment

Hold the doctor table and slightly lift it up, stopper ring will come up on upper swing arm.

Slide up or down the stopper ring to appropriate groove on upper swing arm.

Lower the doctor table to fix it at that height.



⚠CAUTION

Turn off the master switch before adjusting the table height.

⚠CAUTION

Handpieces

Refer to handpiece manufacturers operating instructions.

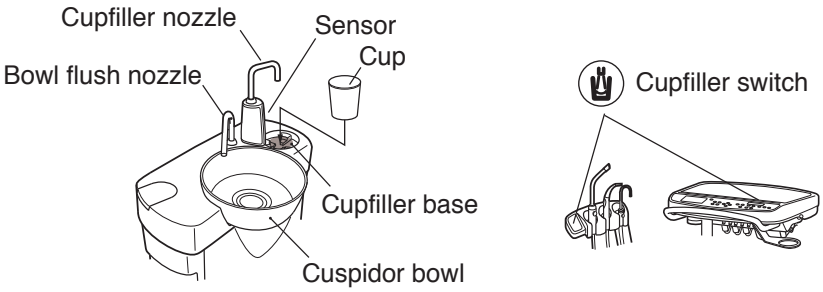
3-7. Cuspidor unit operating instruction

3-7-1. Sensor cupfiller

Place a cup on the cupfiller base, water comes out from the cupfiller nozzle to fill the cup, and stops automatically.

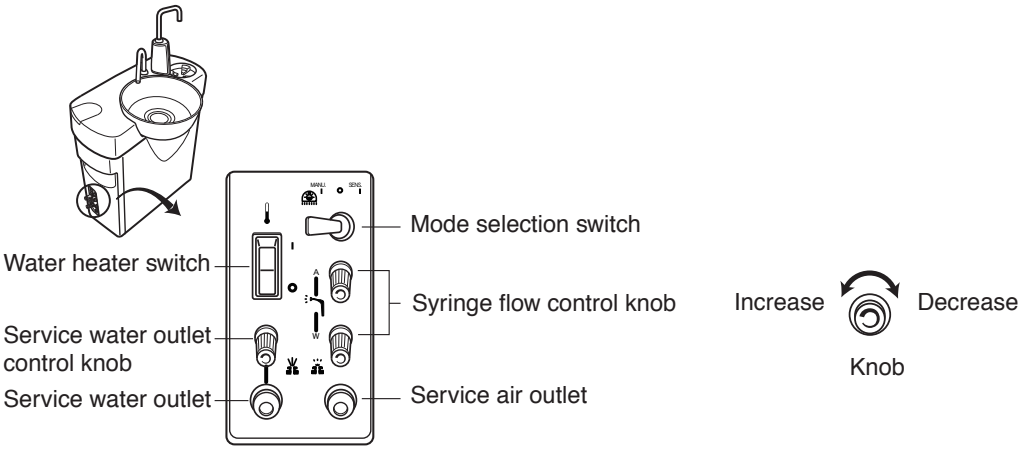
During filling the cup, momentarily pressing the cupfiller switch will stop filling.

Note : Use suitable disposable paper cup only.



3-7-2. Assistant panel

Assistant's syringe air and water flow control knobs, service air and water outlet, service water control knob, water heater switch, and mode selection switch for dental light are located on the cuspidor unit control panel.



1) Syringe flow control knobs

The syringe flow control knobs adjust syringe air and water flow.

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

2) Service water outlet

The service water outlet provides quick- connect water.

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

3) Service air outlet

The service air outlet provides quick- connect air.

Note : Turning a control knob counterclockwise increases flow volume and turning clockwise decreases.

4) Water heater switch

Turn on (Press “1” side) the water heater switch, cupfiller water will be warmed up.

5) Mode selection switch for Dental light io5000

Dental light can be operated (on/off) either by the sensor switch located on the light head, or by the doctor unit control panel and assistant control panel.

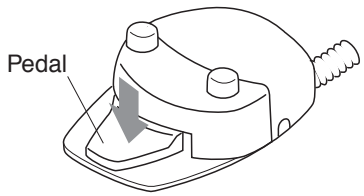
To operate by sensor switch : Set the switch lever to right(sens.).

To operate by control panel : Set the switch lever to left(manu.).

3-8. Foot controller

Pick up a handpiece from handpiece holder and depress the foot controller pedal, the handpiece starts running and coolant water comes out from the handpiece. Handpiece rotation speed can be controlled by the pressure of depressing the foot controller pedal. During air handpiece is running, the drive air pressure is indicated in the handpiece pressure gauge. Handpiece pressure gauge is located on the right side of doctor table.

Note : Handpiece coolant water on/off can be controlled by the handpiece coolant water switch on the doctor unit control panel.



1) Safety lock system

During a handpiece is running, the lock indicator illuminates on the doctor unit control panel and all movements of chair are locked for safety.

2) First priority system

If a handpiece is taken from the handpiece holder, any other handpiece will not operate for safety.

3-9. Assistant instrument holder

Pick up a instrument(saliva ejector or vacuum handpiece) from the assistant holder, and it starts working automatically.

Note : In central vacuum system, the vacuum handpiece will keep working for about eight seconds after it is returned to its holder to clean the inside of vacuum hose.

4.CARE AND MAINTENANCE

⚠CAUTION

Turn off the master switch at the initial position after daily operation or in long term interval.
Turn off the main water valve after daily operation or in long term interval.

4-1. Care and maintenance for chair

4-1-1. Other than cleaning, no scheduled maintenance of chair is required.

⚠CAUTION

Do not drench the chair for cleaning.
Do not use polishing powder, solvents, strong disinfectant and hot water for cleaning.
After cleaning, wipe with a dry soft cloth and keep dry.

Upholstery can be cleaned with a neutral detergent.
Paint parts, metal parts and plastic parts can be cleaned with DURR FD333 cleaner (or equivalent).
Do not drench the chair and unit. Wipe all surfaces dry after cleaning.

4-2. Care and maintenance for unit

4-2-1. Cleaning unit

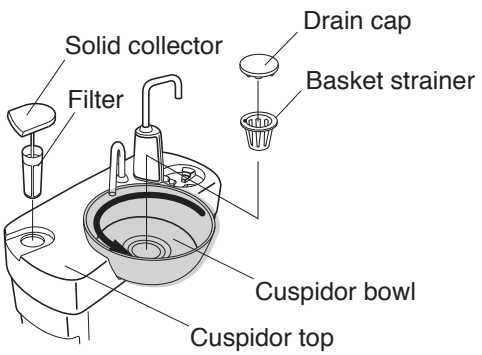
⚠CAUTION

Do not drench the unit for cleaning.
Do not use polishing powder, solvents, strong disinfectant and hot water for cleaning
After cleaning, wipe with a dry soft cloth and keep dry.

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.

4-2-2. Cuspidor bowl

Take out the drain cap and the basket strainer from the cuspidor bowl.
Unscrew the cuspidor bowl and remove it.



4-2-3. Solid collector

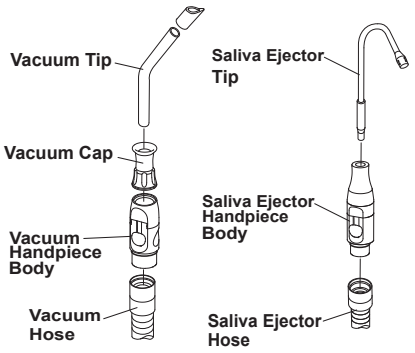
Pull out the solid collector with filter and clean it.

4-2-4 Handpiece

1. Vacuum Handpiece and Saliva Ejector

A. Pull and remove the top parts of each handpiece and clean strainer.

B. After daily operation, run two cup of clean water through handpieces to clean inside.



Sterilization

Vacuum Tip/Saliva Ejector Tip/Vacuum Cap/Vacuum Handpice Body/Saliva Ejector Handpiece Body can be sterilized with autoclave. Vacuum handpiece body and saliva ejector body must be assembled before autoclaving.

A. Wash off dirt of the handpiece with natural detergent.

B. Rinse the handpiece with tap water

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

D. Autoclave for 20 min. at 121°C

Note: The slide knob can be autoclaved 100 times and is an expendable supply.

⚠CAUTION

• Skip dry cycle.

Note: After cleaning the handpieces, apply a white vaseline lightly on the upper parts (O-Ring) and screws parts for long life.

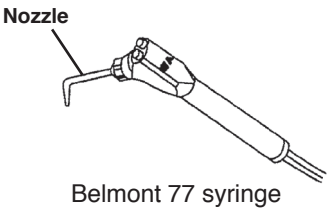
Keep the handpieces in a clean place

2. Micro Motor / Turbine / Scaler

Sterilize the handpiece according to manufacturer's operating manual.

3. Belmont 77 Syringe

Remove the nozzle from syringe and clean it.



Belmont 77 syringe

Sterilization

The nozzle can be sterilized with autoclave.

A. Wash off dirt of the nozzle with natural detergent.

B. Rinse the nozzle with tap water.

C. Insert the nozzle in a sterilization pouch and seal it.

D. Autoclave for 20 min. at 121°C

⚠CAUTION

• Skip dry cycle.

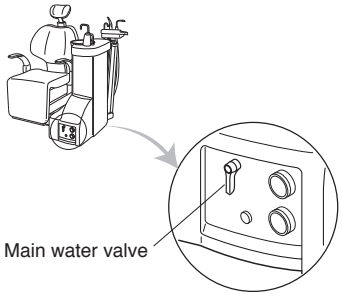
Note: Keep the syringes in a clean place

4. Tubing and Hose

It is recommended that Durr FD333 be used to clean the exterior parts of tubing and hose.

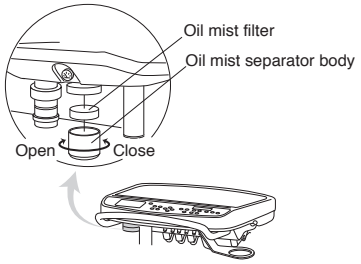
4-2-5. Main water valve

Main water valve is located on the utility parts of cuspidor unit. Turn off the main water valve after daily operation or in long term interval.



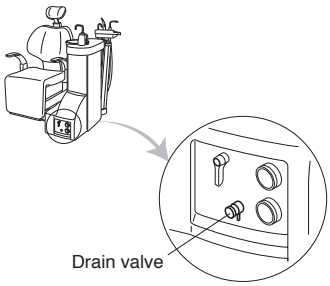
4-2-6. Oil mist separator

Handpiece oil mist separator is located under the doctor table. Once a week open the oil mist separator and clean the oil mist filter.



4-2-7. Drain valve for air filter

The drain valve is located on the utility parts of cuspidor unit. Once a week open the drain valve and drain off water from the air filter.



5.ELECTROMAGNETIC COMPATIBILITY

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 CP-One is intended for use in the electromagnetic environment specified below. The customer or the user of the CP-One should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The CP-One 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 CP-One 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 CP-One is intended for use in the electromagnetic environment specified below. The customer or the user of the CP-One 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 CP-One requires continued operation during power mains interruptions, it is recommended that the CP-One 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 CP-One is intended for use in the electromagnetic environment specified below. The customer or the user of the CP-One 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 CP-One, 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 CP-One is used exceeds the applicable RF compliance level above, the CP-One should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the CP-One.

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 section of the CP-ONE 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 CP-One

The CP-One is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CP-One can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CP-One 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.

6. LIST OF COMPATIBLE HANDPIECES

	DESCRIPTION
Syringe	LUZZANI(3-way) Minilight w/Light
	LUZZANI(6-way) Minilight w/Light
	DCI(3-way)
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 / PL970 PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PLMP021PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PL970. / PM1132
	NSK TIM-40J / DA-290N PCB. / EX-6
Scaler	SATELEC SP4055 w/Light
	EMS SCALER
	NSK VARIOS VA 150 LUX(w/light)

NOTE

EC REP

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