

User Manual

bright Chair 2



I083-01MU-08 rev.0

Revision History

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Manual Guide

Thank you for purchasing Dentium bright Chair 2, the latest dental chair, electric (ICT-CH02S).

This manual describes in detail how to use, how to handle, or what is related to general use.

Please read this manual thoroughly in advance to use the equipment smoothly.

Please keep the manual around the equipment for reference at any time.

The manual is subject to change without notice due to product quality upgrades and specification changes.

Before using the product, be sure to read "Safety Precautions" and use the equipment correctly.

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If there is a serious accident regarding the device, please contact the manufacturer immediately.

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1. Introduction

1.1. Product Description

This product is a dental chair, electric equipped with the necessary equipment to be used for various dental treatments.

1.2. Intended Purpose

This electric dental chair system is intended to support patient positioning during dental procedures by providing a stable and adjustable platform. It facilitates integration with separately classified dental devices such as ultrasonic scalers, micromotors, and dental operating lights. The chair itself does not independently perform diagnostic or therapeutic functions.

1.3. Intended User

This product is intended for use only by professionally trained and skilled dentists and dental hygienists

- Qualification: Qualified dentists only, and you must be authorized to prescribe a diagnosis.

- Age: 20 years of age or older

Graduating from the required curriculum is beyond that age.

- Country: Not related

There is no difference between countries in the use of the equipment.

- Language: English or Korean

The basic language of the manual and label is English, and upon request from EU countries, we will provide a manual translated into the language of the EU countries in accordance with Dentium's translation management process

- Education: Major related to graduation from a major

Dentists or specialists must graduate from universities that provide relevant education and obtain a medical license to carry out medical practice.

- Knowledge: Dental and medical knowledge required

Since the basic prescription for diagnosis comes from a doctor, the intended user needs sufficient medical training to make a judgment based on the patient's condition.

- Experience: I strongly recommend that you complete training on how to use it

Products from the same group of items are designed for the purpose intended by the manufacturer and may differ in how they are used, so the exact intended situation and patient training should be provided.

- Facility: None

No additional facilities

- Education: Ongoing training in dental care

It should be able to provide patients with more efficient and safer care by continuously having technical problem-solving skills, such as equipment use training and patient safety training.

2. Precautions for Safety

2.1. Precautions Before Product Installation

- Install in a place where power cords such as the equipment's power cord are not damaged and avoid doors or passages.
- Do not use old outlets and damaged power cords or plugs.
- Do not drop the device or subject it to impact.
- Avoid installation in damp or dusty places as much as possible.
- Do not install the device in an unstable location subject to slope, vibration, impact, etc.
- Please install on a flat floor.
- Please use a grounded outlet.

2.2. Precautions Before Use

- Ensure that the medical device is operated by a qualified person
- Be sure to read the instruction manual before use.
- Disinfect all accessories that require disinfection before use.
- When using the equipment, be sure to check the operating conditions, status check, and the distance from the patient.
- Do not modify the equipment without the manufacturer's permission. Damage to the device due to user disassembly is not covered under warranty even within the warranty period.
- Do not place similar medical electrical devices near the equipment. It may degrade the performance of your device.
- Keep away from other sources of electromagnetic energy to avoid electromagnetic interference

- If you use a product other than the recommended product, it may cause performance degradation or malfunction.

2.3. Precautions for Product Operation

- Be sure to keep the handpiece in the dedicated cradle after the procedure.
- Be careful not to touch with your hands or other objects while the surgical instrument is rotating.
- Do not assemble or disassemble the handpiece while the device is in operation.
- Connect the handpiece after the micromotor and related devices have completely stopped working.
- Do not apply excessive load to the equipment, as excessive force or excessive force may cause malfunction or deterioration of the equipment.
- If noise or heat generation occurs during use, stop using it immediately and contact the nearest Dentium branch or manufacturer to check before use.
- If you use a product other than the recommended product, it may cause performance degradation or malfunction.
- Do not drop the handpiece or subject it to strong external impact.
- This product is not a medical device to provide heat to the patient.
- The product is applicable to healthy skin of adults.
- People with poor blood flow (vascular disorders, blood circulation disorders, diabetes, high blood pressure) or weak skin sensitivity are prone to low-temperature burns.
- For inspection and repair of the device, contact the point of purchase or the manufacturer.
- Do not put objects in the movable parts or range of movement of the body, such as the joint of the backrest under the seat or put your fingers or feet. If it gets caught during operation, it may cause injury or damage or malfunction of the device.
- Do not apply excessive load to the table arm or light arm, or place heavy objects on, lean on, or sit on the end of the seat, backrest, headrest, or table, Assist tray, or mouse tray. The fall or breakage of the device may cause injury to the user or malfunction of the device.
- Observe safety precautions and ensure proper use of the device while operating the device.
- Do not install the device in an unsafe place subject to inclination, vibration, or impact.
- Do not operate the device except for qualified personnel.
- Avoid any movements or postures that endanger the patient.
- Be careful not to get your fingers or body parts caught in the moving parts of the main body.
- Do not allow more than two people to sit on the seat. Climbing up with a child can be dangerous.
- Do not allow people not related to medical care to approach the device.
- If there is a risk such as a collision while operating the seat of the body, press one of the chair operation keys on the table control panel on Doctor table's side or the Assist table's side to perform an emergency stop operation.
- For inspection and repair of the device, contact the point of purchase or the manufacturer.

2.4. Precautions When Using the Product

- The operation of the treatment table may cause injury or harm to the patient and the operator.
- Be careful of both the patient and the operator when the treatment table is operating.
- Actions such as jumping on the treatment table can be dangerous.
- Do not apply more than 30N(3kgf) load to Doctor table.
- Do not apply more than 10N(1kgf) load to the Assist table.
- If an inappropriate medical system device is connected to the medical device, it may cause an electric shock. When connecting IT devices to medical equipment, comply with the provisions of IEC60601-1 and IEC60601-1-2.
- Do not stick stickers or adhesive tape to the instrument's tube. The tube may tear.
- Drain the water in the water pipe for about 2 minutes before starting treatment every day.
- When the equipment is not in use, wash or drain the water and air pipes.
- Thoroughly disinfect the equipment.
- After treatment, water the spittoon several times.
- Be careful when treating patients for a long time as pressure sores may occur.
- When replacing the tips or bars of all instruments, be sure to replace them in a stopped state. Replacing during operation may cause unexpected accidents and hazards. In addition, replacing with a non-certified product may cause unexpected accidents or hazards.
- When inserting each instrument into the holder, make sure to tighten it slowly and securely.
- Do not subject the watering system to a serious impact or load.
- Do not overuse or disassemble the equipment.
- If you reach out to a table or instrument, your hand or sleeve may become caught on the instrument in the holder, resulting in injury or infection.
- Be careful not to let your body come into contact with or around the light head during or after use.
- Do not look directly at the lamp while it is on or shine it directly into the patient's eyes.

2.5. Electrical Precautions

- Be sure to use 220-240V for input power.
- Do not install the equipment in a place where it is difficult to connect the power plug.
- If you need to change the input power, contact the nearest sales office or manufacturer.
- Do not unplug the power plug forcibly.
- Periodically wipe off foreign substances (dust, water, etc.) on the power plug terminals and contacts with a dry cloth.
- Do not forcibly bend, pull, twist, or tie the power cord. Also, do not hang it on metal parts, place heavy objects on it, insert it between instruments, or push it behind the product.
- Connect the power plug all the way to the outlet, and do not use a damaged power plug,

power cord, or loose outlet.

- To disconnect power from the equipment, the power cord must be disconnected from the instrument.

2.6. Warning

- Do not pour or spray liquid substances such as water or sprays on this product. It may cause electric shock, damage to equipment, fire, etc.
- Do not store flammable materials around the equipment, otherwise it may cause a fire
- Never operate the operation switch of the equipment while the equipment is operating. It may cause equipment malfunction.
- In the event of an electrical fire, a fire extinguisher marked for that purpose must be used. The use of water or liquids in electrical fires can cause serious damage and damage to people and equipment. Disconnect the electrical plug before extinguishing the fire to avoid the risk of electric shock.
- Do not sterilize or disinfect with a spray. The sprayed sterilizer/disinfectant may ignite.

2.7. Manufacturer's Obligation Policy

For Dentium's bright Chair 2 dental chair, electric (ICT-CH02S), the manufacturer is responsible for product safety and normal operation only in the following cases.

- When it is not an accident or equipment damage caused by the customer's negligence
- When the product is used normally in accordance with the user manual
- When using a genuine product approved by the manufacturer
- In case of maintenance/maintenance by an authorized dealer in the manufacturing
- When the product is installed by a dealer authorized by the manufacturer
- When the equipment is installed in compliance with the installation conditions and precautions presented by the manufacturer



- Never disassemble or modify the product.
- An untrained person may cause harm when replacing parts

2.8. Safety Instructions

- Symbols used in this manual
- In this manual, for the efficient use of the product, the following symbols are used to fully understand the meaning of the symbols and follow them.
- To avoid personal injury and property damage, observe the safety precautions specified in this document. Notices are indicated by the symbol below.

Symbol	Name	Description
	Precautions (CAUTION)	Failure to comply may result in user injury.
	Warning (WARNING)	Failure to comply may result in death or serious injury to the user.
	ELECTRIC SHOCK	If touched, there is a risk of injury from electric shock.
IPX1	RATE OF WATERPROOF	Shows waterproof rating of 1.
	ELECTROMAGNETIC INTERFERENCE	Indicates electromagnetic interference.
	SEPERATE DISPOSAL OF ELECTRIC AND ELECTRONOC PRODUCT	It must be disposed of as instructed.
	EMERGENCY SWITCH	Display the emergency switch.
	ON	Shows power on.
○	OFF	Shows power off.
	PE	Indicates the protective earth terminal (safety earth).
	NOTE	The operating instructions in the user manual must be followed.
	Applied part (Protection Against Electric Shock)	The degree of protection against electric shock is type B.
	MANUFACTURING DATE	Displays the date of manufacture.
	MANUFACTURER	Identifies the manufacturer of the product.
	EUROPEAN REPRESENTATIVE	Represents a European representative.

	MODEL NAME	Indicates the manufacturer's model name.
	Medical Device	Indicates that the product is a medical device
	UDI Symbol	Indicates the UDI of the product
	SERIAL NO.	Indicates the manufacturer's serial number.
	ACTIVE POWER	Displays power consumption.
	Temperature limit	Indicates the storage temperature range.
	Humidity limitation	Indicates the storage humidity range.
	Batch code	Indicates the manufacturer's batch code so that the batch or lot can be identified

2.9. For Your Safety

Type B applied parts

	Type B Applied Part	3-way syringe tip / scaler / Doctor table / Foot switch / Arm rest / Head rest
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Safety precautions

	CAUTION	Never disassemble or modify the product. An untrained person may cause harm when replacing parts
	WARNING	When the device is not in use, the power switch must be turned OFF.
	WARNING	Do not place objects more than 3 kg on the table. (with accessories) Do not use excessive force or subject it to strong impact. If the patient position cannot be adjusted during the treatment, stop the treatment and contact your nearest agency for quick action.
	WARNING	You can't change settings while the handpiece is operating. Lifting the handpiece while pressing the foot control switch may result in personal injury. Be sure to hold the handpiece first and, then press the foot switch.

	WARNING	Be careful since you can't check the operating status of the scaler when using the One-Touch function. You can't change the settings while the handpiece is in operation.
	WARNING	Do not put the load exceeding 3 kg on the table (including accessories) Do not use excessive force or give strong impact.
	WARNING	Please note that black, transparent, or metal cups are not recognized. Please note that cups smaller than 2.5 ounces are not recognized.
	WARNING	When adjusting the head angle by using the Head Button, be careful as excessive angle adjustment may put a strain on the patient. When adjusting the head angle while the patient is lying down, be careful as an abrupt movement may occur due to the weight of the patient's head. If you press the headrest button while the scaler is running or the foot controller pedal is pressed, the system will not operate for safety.
	WARNING	If you operate the foot controller while moving the treatment chair, the chair will stop moving.
	WARNING	If you operate the foot control while moving the chair, the chair stops moving.
	WARNING	Always be careful not to let the patient, operator, or object enter the lower part of the treatment chair. Do not arbitrarily operate the safety switch. If the unit is damaged or does not work, contact our local distributor.
	WARNING	If you need to open the unit cover, please contact our local distributor. There is a risk of equipment failure or electric shock when operating arbitrarily.
	WARNING	During sanitation, the system does not operate until the entire sanitation has been completed, so please perform the cleaning with care.
	WARNING	The sanitary solution container may have a negative effect if washed at high temperatures, such as in a dishwasher or washing machine. Wash the water pipe with the water temperature below 40 °C. If any damage such as cracks, discoloration, etc. is confirmed before filling the bottle, stop using it and replace the bottle with a new one.
	WARNING	Be sure to disconnect the power source before cleaning electronic device accessories. Do not fold cables made of electric wires (power, micro motor). Do not use compressed air for cleaning.

	WARNING	The holder may be damage if the load exceeding 1.5kg is applied to the holder.
	WARNING	If the LCD screen stops during the treatment, stop the treatment and contact your nearest representative for quick action.
	WARNING	If the patient position cannot be adjusted during the treatment, stop the treatment and contact your nearest agency for quick action.
	WARNING	Do not use both the Doctor Table and the Assist Table at the same time when adjusting the position of the chair.
	WARNING	Do not control the chair with a foot switch while controlling the chair with a Doctor Table.
	WARNING	Use only one handpiece on the Doctor Table.
	WARNING	Do not operate the up and down position switch on the chair at the same time.
	WARNING	Do not overdo it outside the operating range.
	WARNING	Do not turn on the lights at the same time on the doctor's table and the assist table.
	WARNING	Do not turn off the product while saving the settings. If the power is turned off while saving the setting value, it will be automatically set to the initial setting value, so please set the setting value again.
	WARNING	When using 3-Way Syringe for the first time, clean and sterilize it once.

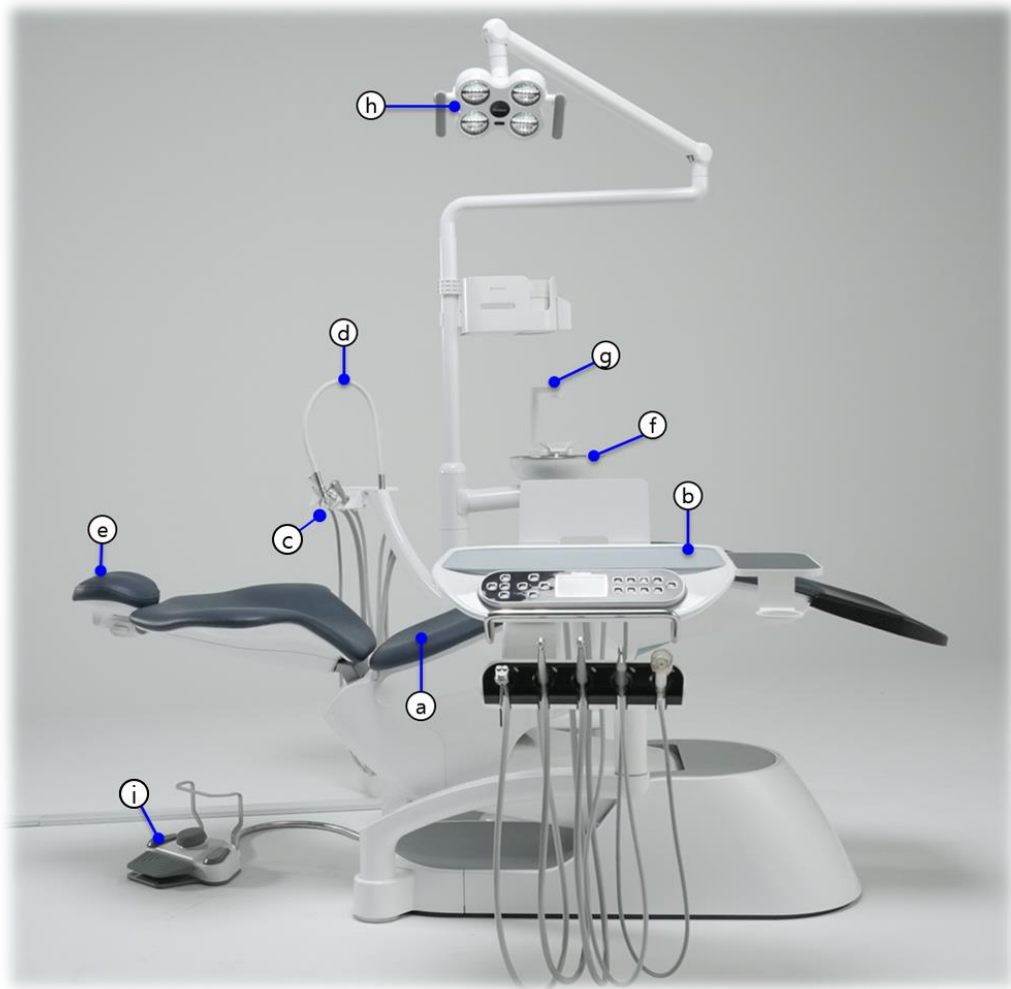
	Note	Check and use the power supply (220[V]) for the device. When you turn on the equipment, the LCD screen will display the default status.
	Note	The arrangement of instruments can be changed, and in order to apply the desired arrangement, please request the service to the local distributor. Doctor Table's silicone pad sterilization conditions: up to 135 degrees for 10 minutes

	Note	The arrangement of the instrument to be mounted on the holder can be changed as needed and may differ from the picture above. Please contact local distributor for service to apply the desired type and arrangement. Periodically sterilize Doctor Table's silicone pad (sterilization conditions: up to 135 degrees within 10 minutes)
	Note	It is not possible to move the position of the medical chair while the handpiece is in operation. When using multiple handpieces, the first handpiece is activated.
	Note	The position of the medical chair cannot be moved while the handpiece is in operation. To adjust the brightness of the handpiece light, contact our local distributor for service.
	Note	The position of the medical chair cannot be moved while the handpiece is in operation. To adjust the brightness of the handpiece light, contact our local distributor for service.
	Note	The position of the medical chair cannot be moved while the handpiece is in operation. To adjust the brightness of the handpiece light, contact our local distributor for service. One-Touch Function: If you press this button when you use the scaler, it will continue operation (Option)
	Note	When one suction operates, both suctions operate. The suction force of each suction can be used independently using the locking lever. Periodically sterilize syringe tip (sterilization conditions: up to 135 degrees within 10 minutes)
	Note	High-pressure steam sterilization conditions: Maximum 135°C, 10 minutes
	Note	For automatic cup watering, you can selectively set two modes: The quantity recognition mode and time control mode. To set this function, request the service to the local distributor. The spittoon watering can be set as long as the user wants. To set this, request the service to the local distributor.
	Note	The function of the foot controller can be set variously in addition to setting the start position and memory 1 position. When changing to another setting, please contact the local distributor.
	Note	If regular maintenance is not done, oil may fall to the floor.

	Note	The sanitation is recommended to be done one a day.
	Note	The control pressure is set at 2 Bar (0.2) at the factory.
	Note	Finish cleaning the water pipe, remove the sanitary solution container, and clean the water bottle with a mild detergent and bottle brush.
	Note	Be sure to inspect the device in a state where there is no moisture or water Be sure to turn off the power of the main unit before handling errors in the device. The items that the user can take simple actions are as shown in the table above. If the problem persists, please contact nearest Dentium branch or local distributor.
	Note	The applicable monitor size is from 17 inch to 24 inch. When you want to change the monitor or adjust the height of the monitor arm, please contact the nearest Dentium branch or local distributor.
	Note	1. The limit of contamination is determined by particle size. Filters for both water and air apply. Check the size of the filter. If larger particles are introduced, it is judged to be contamination

3. Name of Each Part

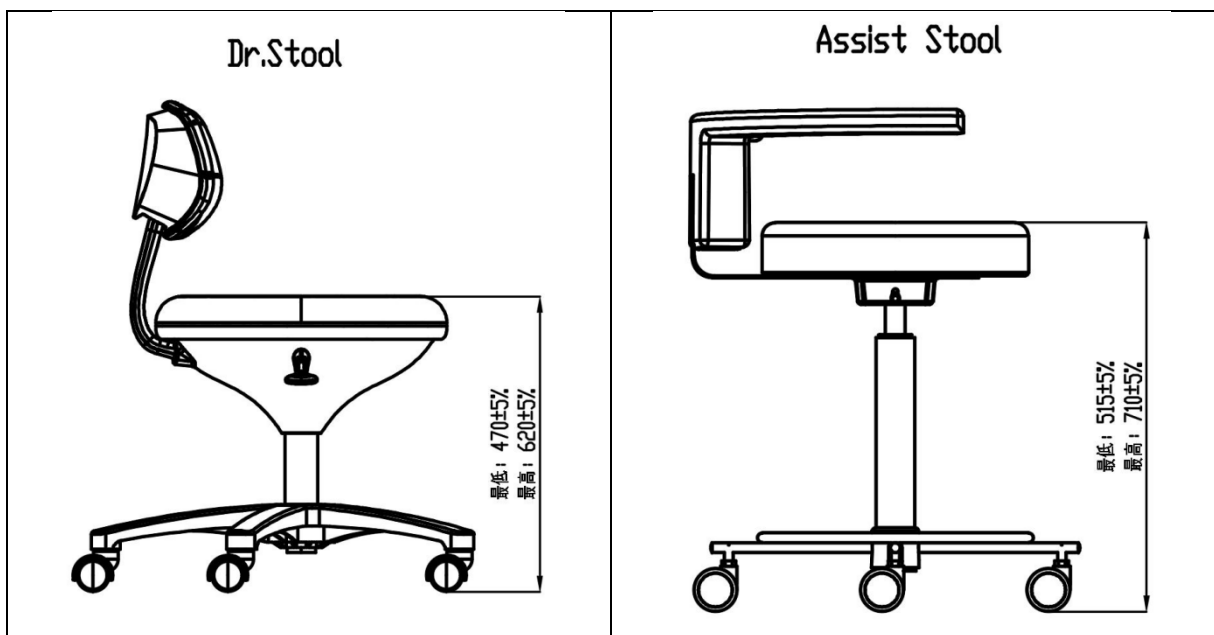
3.1. bright Chair 2 (ICT-CH02S)



No.	Name	Function
(a)	Seat	Move the patient to the treatment location.
(b)	Doctor Table	Operate the unit chair and mount the medical equipment used by the doctor.
(c)	Assist table	Operate the unit chair and mount the medical equipment used by the nurse
(d)	Assist Suction	Assist Suction Module for One-Person Treatment
(e)	Headrest	Move the patient's head to the treatment position.
(f)	Spittoon	Patient can gargle.
(g)	Water inlet	Supply water for gargling.
(h)	Dental light	The LED light is irradiated to the patient's mouth for treatment.
(i)	Foot controller	Controls the functions required for chair operation.

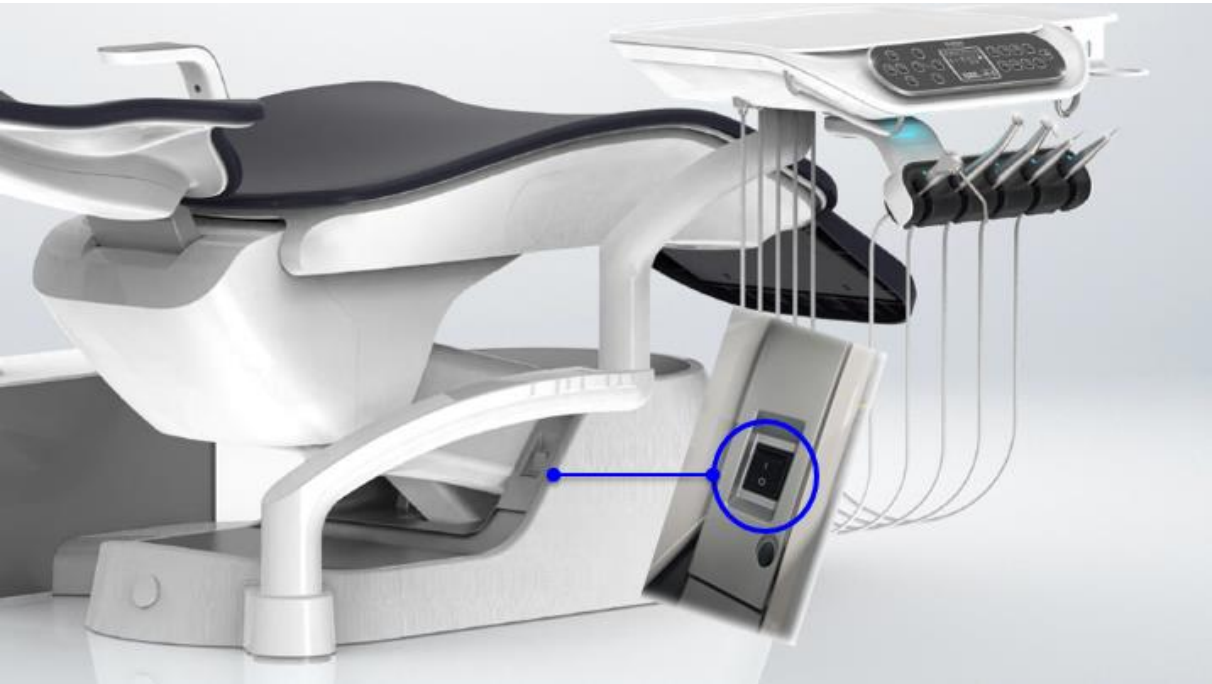
3.2. Stool

A dentist can sit in a chair while treating or operating the patient. The height of the Doctor Stool can be adjusted from 470 to 620 mm using the lever, and the height of the Assist Stool can be adjusted from 515 to 710 mm. The maximum load that the chair can withstand is 150kg.



4. How to Operate Each Part

4.1. How to Use the Power System



Name	How to use
Main switch	Turn on the power by pressing the power switch to the "I" direction. I : Power on O : Power off

 Note	• Check and use the power supply (220[V]) for the device. • When the power is turned on, the Doctor Table LCD lights up.
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	• When the device is not in use, the power switch must be turned OFF.
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4.2. Doctor Table

4.2.1. How to Use Doctor Table

- ◆ When the handpiece is taken out of the instrument holder, the corresponding instrument information is displayed on the LCD screen, and the handpiece operates when the foot switch is pressed.
- ◆ The maximum weight limit on the mouse tray is 1.5kg.
- ◆ The Scaler (ICT-BS1) and Electric Motor (ICT-BE1) are included in the bright Chair 2 overall equipment system and cannot be used as separate medical devices and are not sold individually. Additionally, it is not compatible with other Dental Chair equipment and is only compatible with bright Chair 2 products.



No.	Name
(a)	3-way syringe
(b)	Two Air High Speed Handpieces
(c)	Control panel
(d)	Air Low speed handpiece & Electric Low speed handpiece motor
(e)	Scaler
(f)	Mouse tray

 Warning	• Do not place objects more than 3 kg on the table. (with accessories) • Do not use excessive force or subject it to strong impact.
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 Note	• The order of instrument placement is fixed. • It is recommended that only instruments which include anti-retraction devices are to be used together with the dental unit of bright Chair 2. • If the instruments does not operated properly, users can take on-site action by referring to "6. Problem Solving". If the problems with the instruments does not resolve, please contact the manufacturer of each instrument. • Doctor table's silicone pad sterilization conditions: 135°C for 10 minutes.
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a. How to Use the Control Panel



Button	How to use
	When the button is pressed, the medical chair rises, and when released, it stops.
	When the button is pressed, the treatment chair descends, and when released, it stops.
	When the button is pressed, the back of the treatment chair rises, and when released, it stops.
	When the button is pressed, the back of the treatment chair descends, and when released, it stops.

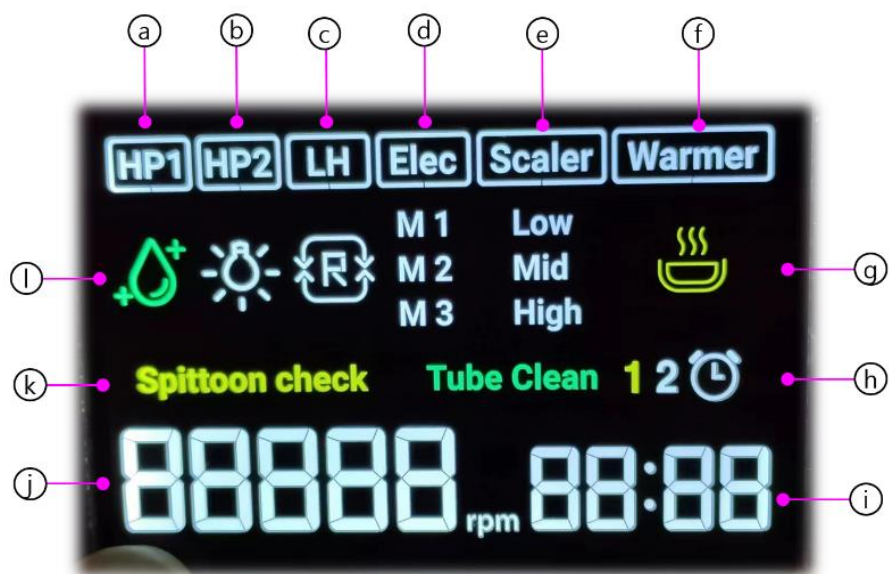
	1. Press the button to move to the basic position. 2. If the dental light is on while the chair is moving automatically, it is automatically turned off. 3. After moving to the basic position, the dental light does not turn on. 4. When moving to the basic position is completed using the basic position button, press the button to move to the previous treatment position. Upon completion of the movement, the dental light turns on automatically.
	1. Navigate to the saved location. 2. To save the position, after setting the chair position, select button 1, 2, or 3 and press for more than 3 seconds to save the position. 3. If pressed again during movement, it stops. 4. When moving to the saved position is completed, the dental light turns on automatically.
	
	
 Warning	• Be careful not to get your feet caught in the lower part while moving the chair. • After detecting being caught in the lower part while moving the chair, it rises to a certain height and then stops.

Buttons	How to use																								
	1. You can control the water supply On/Off by holding the handpiece and pressing the button. 2. If you press the button without holding the handpiece, you can adjust the amount of water in the spittoon. After changing the setting value, press the watering button to save it. <table><tr><th>Button</th><th>Display</th><th>Cup awareness</th><th>Water control</th><th>Setting</th></tr><tr><td rowspan="4">F/R</td><td>AS</td><td>Auto</td><td>Sensor</td><td rowspan="4">1~10</td></tr><tr><td>At</td><td>Auto</td><td>Time</td></tr><tr><td>HS</td><td>By hand</td><td>Sensor</td></tr><tr><td>Ht</td><td>By hand</td><td>Time</td></tr><tr><td>MEM</td><td>SP</td><td colspan="2">Spittoon water out time</td><td>1~20</td></tr></table> 3. Press the button for more than 3 seconds to enter the water pipe cleaning mode.	Button	Display	Cup awareness	Water control	Setting	F/R	AS	Auto	Sensor	1~10	At	Auto	Time	HS	By hand	Sensor	Ht	By hand	Time	MEM	SP	Spittoon water out time		1~20
Button	Display	Cup awareness	Water control	Setting																					
F/R	AS	Auto	Sensor	1~10																					
	At	Auto	Time																						
	HS	By hand	Sensor																						
	Ht	By hand	Time																						
MEM	SP	Spittoon water out time		1~20																					
	1. You can turn On / Off the handpiece light by holding the handpiece and pressing the button. 2. You can adjust the light brightness of each handpiece by pressing the button without lifting the handpiece. After changing the setting value,																								

	press the light key to save it. <table><tr><th>Button</th><th>Display</th><th>Handpiece Type</th><th>Setting</th></tr><tr><td rowspan="4">F/R</td><td>HP1</td><td>Air high speed handpiece1</td><td>1~10</td></tr><tr><td>HP2</td><td>Air high speed handpiece 2</td><td>1~10</td></tr><tr><td>LP/EL</td><td>Air low speed handpiece / Electric low speed handpiece</td><td>1~10</td></tr><tr><td>SC</td><td>Scaler</td><td>1~10</td></tr></table>	Button	Display	Handpiece Type	Setting	F/R	HP1	Air high speed handpiece1	1~10	HP2	Air high speed handpiece 2	1~10	LP/EL	Air low speed handpiece / Electric low speed handpiece	1~10	SC	Scaler	1~10
Button	Display	Handpiece Type	Setting															
F/R	HP1	Air high speed handpiece1	1~10															
	HP2	Air high speed handpiece 2	1~10															
	LP/EL	Air low speed handpiece / Electric low speed handpiece	1~10															
	SC	Scaler	1~10															
	You can turn On / Off the dental light. Press once to turn on, press again to turn off.																	
	1. Rotation direction can be set when using an electric motor - F : Forward, R : Reverse 2. You can set the mode when using the scaler. - Operates in Scaling Mode after power on. - When you press the button and 1 is displayed on the screen, Perio Mode ((NSK only) - If you press the button again and 2 is displayed on the screen, it is Endo Mode. ((NSK only) - If the set value is not saved even if the power of the product is turned off and then turned on, it operates in the default scaling mode.																	
	1. Electric motor rpm can be stored in 3 memories. - If you press Mem once, it blinks M1, and if you press it again, M2 and M3 blink sequentially.  - At this time, press the right button to set the RPM.() - If the Mem button is pressed for 3 seconds or there is no input for more than 5 seconds, it is automatically saved.																	
	1. Press the button to start the set alarm - How to set the alarm time is as follows.  - Press the button to set the time - Can be set up to 99 minutes and 99 seconds - If there is no input, the alarm starts automatically after 3 seconds at the set time. - After changing, pressing the alarm button again cancels the alarm setting change and turns it off.																	
	1. Electric motor rpm and alarm time can be changed (rising)																	

	1. Electric motor rpm and alarm time can be changed (falling edge)
	1. Warmer can be turned on/off - The warmer is automatically turned off if there is no operation for 30 minutes. - (chair position manipulation, handpiece motion, suction motion, spittoon motion) - The warmer turns on automatically if there is any operation while the image is displayed.()

b LCD Description



No.	Image	Description
a, b		1. Displays high handpieces 1 and 2. 2. When the handpiece is removed from the holder, the border of HP1 or HP2 on the LCD top screen blinks to indicate selection.
c		1. Shows the low handpiece. 2. When the handpiece is removed from the holder, the border of LH on the top screen of the LCD flickers to indicate selection. (This mark is displayed when air handpiece is installed)
d		1. Display the electric motor 2. When the handpiece is removed from the holder, the Elec border on the LCD top

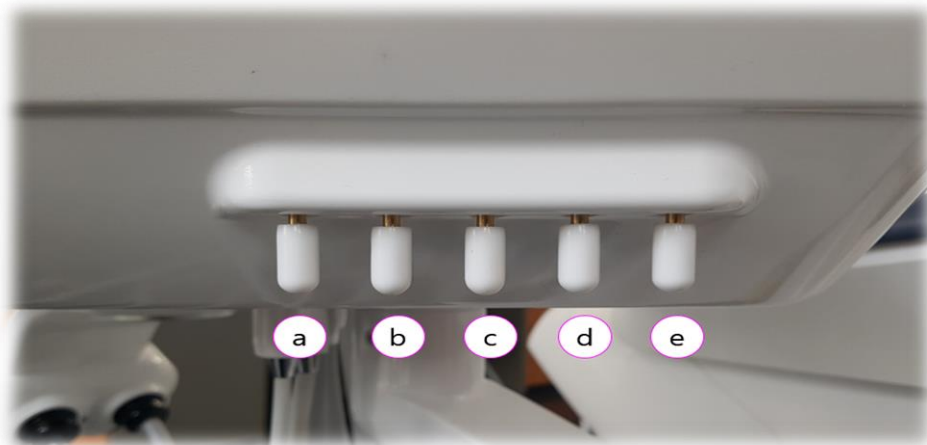
		screen blinks to indicate selection. (This function is displayed when an electric motor is installed)
e		1. Display Cavitron selection 2. When the handpiece is removed from the holder, the border of the scaler on the top right of the LCD blinks to indicate selection. - You can select the intensity from 1 to 10 (Adjust the intensity using the up/down buttons on the right control panel)
f		1. Display the warmer - You can select ON/OFF through the switch - If there is no operation in the displayed state, the warmer turns off after 30 minutes.
g		1. Displays warmer operation status 2. Icon display state is ON, OFF when off.
h		1. Displays the water pipe washing function. Press the irrigation button for more than 3 seconds to change to the water pipe washing mode. For details, refer to 4.5 Water pipe washing mode. 2. Also used for scaler mode indication. ()
i		1. Displays the alarm function. Press the alarm button to activate the alarm function at the bottom right. When OFF, press the alarm button again to turn it off.
j		1. The display at the bottom left of the LCD indicates the electric motor rpm or the output status of the handpiece and the set strength of the scaler.
k		1. Spittoon displays rotation detection status, and chair motion is restricted while displayed.
l		1. Displays the irrigation status. ON/OFF can be selected.

m		1. Displays the handpiece optical operation status. ON/OFF can be selected through the switch.
n		1. Displays the forward/reverse direction of the electric motor. A switch allows you to choose between 'F' for forward and 'R' for reverse rotation direction.
o		1. Displayed when a jamming occurs at the lower part of the chair.

 Note	- It is not possible to move the position of the medical chair while the handpiece is in operation. - When using multiple handpieces, the first detachable handpiece is activated.
---	---

4.2.2. How to Adjust the Water Quantity of the Handpiece

- ◆ There are 5 volume control valves for each handpiece as shown in the figure below. Turning it clockwise decreases the watering amount, and turning it counterclockwise increases the watering amount. You can adjust the watering amount by adjusting the water amount.(It's on the bottom right of the doctor table)



No.	Name
①	3-way syringe
②	High Speed Handpiece 1
③	High Speed Handpiece 2
④	Low speed handpiece
⑤	Scaler

4.2.3. How to Use the Air High Speed Handpiece

- ◆ The high speed handpiece 1 and the high speed handpiece 2 are located in the ⑥ position and ③ position of the doctor table, respectively.



- ◆ After removing the handpiece from the holder, press the foot switch pedal to operate.
- ◆ Speed control can be adjusted according to the pressing depth of the foot switch.

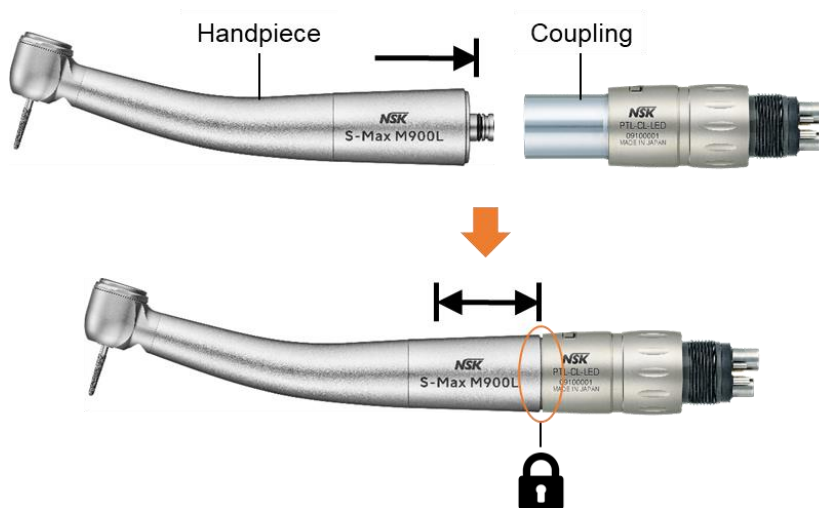
Display in screen	How to use
	When using the High Handpiece, the High Handpiece screen appears on the LCD screen. Press the function button of the front panel to change settings.

Display in screen	Button	Function
		Press the button to select Handpiece Light On/Off.

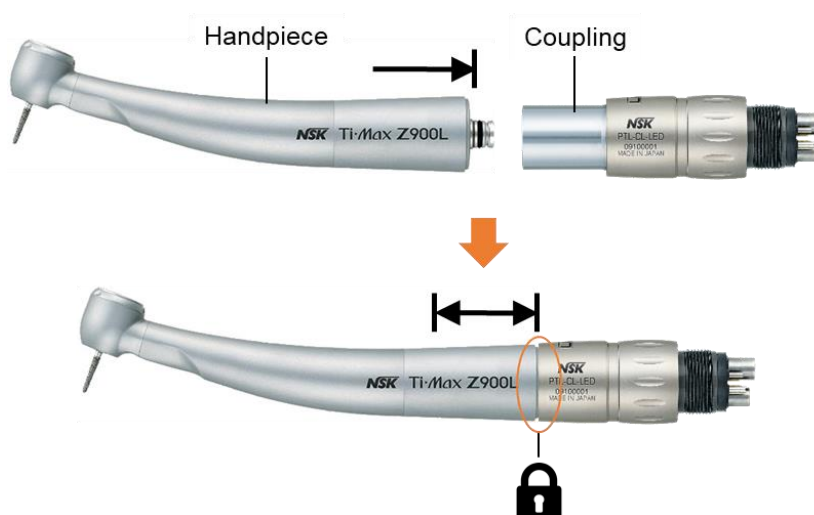
		Press the button to select Irrigation On/Off
---	---	---

◆ Assembly of Air High Speed Handpiece

- Insert the handpiece correctly into the coupling for assembly.



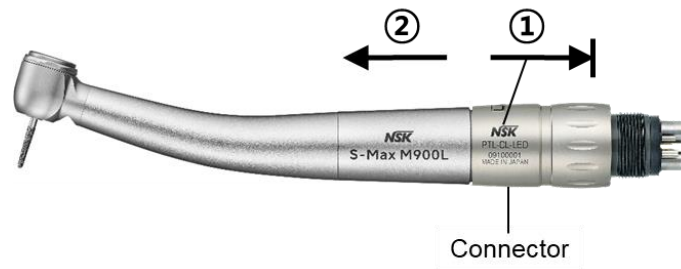
S-Max M900L



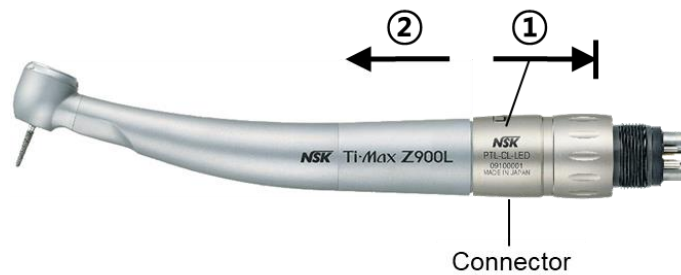
Ti-Max Z900L

◆ Disassembly of Air High Speed Handpiece

- Pull the connector to disassemble the handpiece from the coupling.



S-Max M900L



Ti-Max Z900L

 Warning	• You can't change settings while the handpiece is operating. • Lifting the handpiece while pressing the foot control switch may result in personal injury. Be sure to hold the handpiece first and, then press the foot switch.
 Note	• The position of the medical chair cannot be moved while the handpiece is in operation.

4.2.4. How to Use the Air Low Speed Handpiece

- ◆ The low speed handpiece is located in the ④ position of the doctor table.



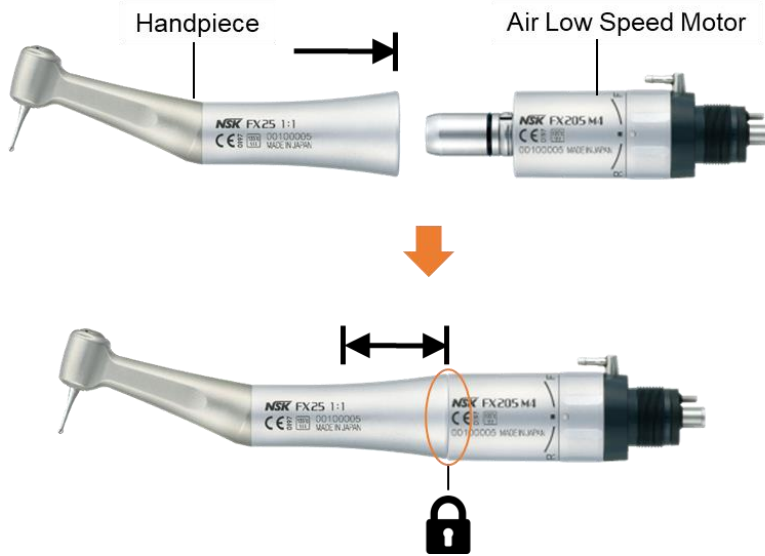
- ◆ Remove the handpiece from the holder and press the foot switch pedal to operate.
- ◆ The speed can be adjusted according to the depth of pressing of the foot switch.

Display in screen	How to use
	When the low handpiece is removed, the LH window on the home screen flashes to indicate the selection. You can change the setting by pressing the function button on the panel located on the front of Doctor Table.

Display in screen	Button	Function
		Press the button to select Handpiece Light On/Off.
		Press the button to select Irrigation On/Off

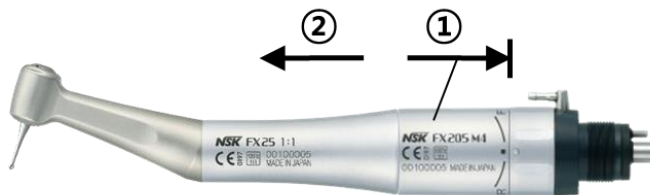
◆ Assembly of Air Low Speed Motor (FX205 M4 with FX25)

- Insert the handpiece correctly into the air low speed motor for assembly.



◆ Disassembly of Air Low Speed Motor (FX205 M4 with FX25)

- Hold the air low speed motor and pull the handpiece for the disassembly.



Warning

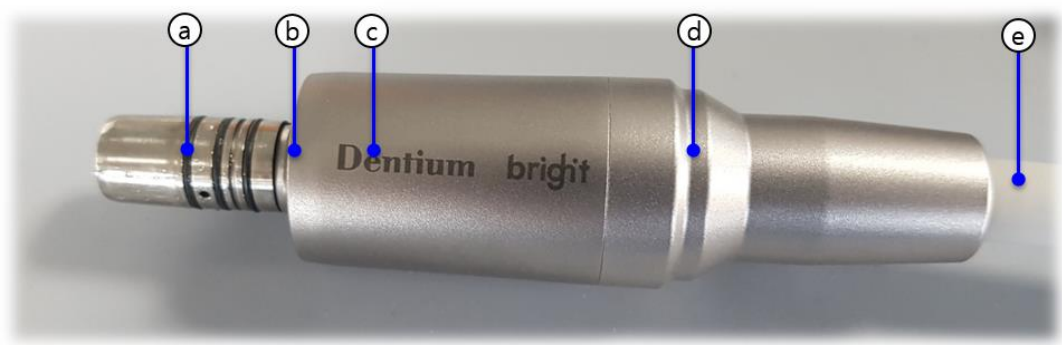
- You can't change settings while the handpiece is operating.
- Lifting the handpiece while pressing the foot control switch may result in personal injury. Be sure to hold the handpiece first and, then press the foot switch.



Note

- The position of the medical chair cannot be moved while the handpiece is in operation.

4.2.5. How to Use Electric Motor (Option ICT-BE1)

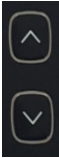


NO.	NAME
(a)	O-ring
(b)	Optical LED
(c)	Motor Body
(d)	Motor Connector
(e)	Motor Tubing (8.5mm x 2,000mm)



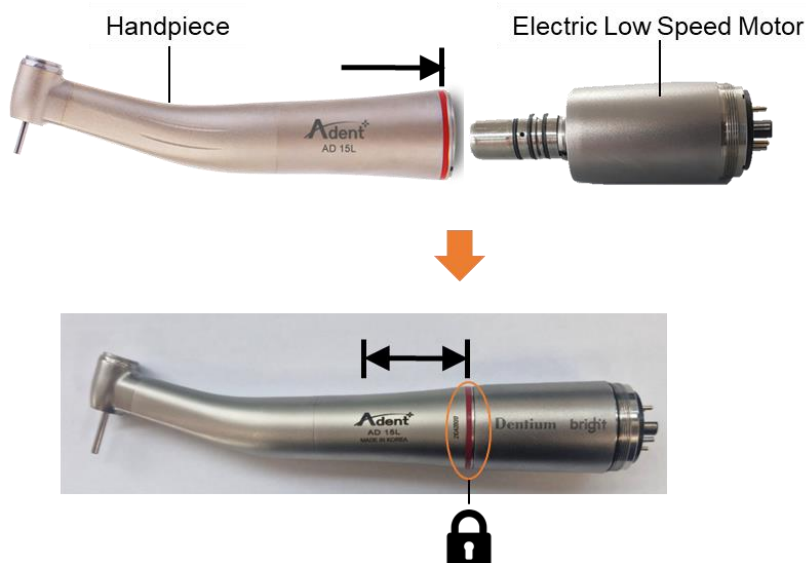
- ◆ After removing the handpiece from the holder, press the foot switch pedal to operate.
- ◆ The speed can be adjusted according to the depth of pressing of the foot switch.

Display in screen	How to use
A screenshot of the Dentium LCD screen. At the top, it says 'Dentium'. Below that are buttons for 'HP1', 'HP2', 'LH', 'Elec', 'Scaler', and 'Warmer'. The 'Elec' button is highlighted with a green plus icon. Below these are icons for a water drop, a sun, and a fan, followed by 'M 2'. At the bottom, it displays '20000 rpm'.	When you take out the electro handpiece, the LCD screen on the top shows the Elec (electro handpiece) setting screen. You can change the RPM by adjusting the UP/DOWN arrow buttons on the front of the Doctor Table

Display in screen	Button	Function
		1. Press the "MEM" button to use the RPMs stored in each memory. Press the switch to move M1, M2, M3 in order. - Press arrow for 3 seconds after RPM change to the selected memory to save.
		1. RPM increase: press up arrow() 2. RPM decrease: press down arrow() - It can be set from 3,000 to 40,000 RPM.
		1. "F" Rotate clockwise. 2. "R" Rotate counterclockwise.
		1. Press the button to set the Irrigation On/Off
		1. Press the button to control the Handpiece Light On/Off.

◆ Assembly of Electric Low Speed Motor

- Align the guide structure with the hole, then insert the handpiece correctly into the electric low speed motor



◆ Disassembly of Electric Low Speed Motor

- Hold the electric low speed motor and pull the handpiece for the disassembly.



 Warning	• When the handpiece is in operation, other operation switch functions do not change. • Using the handpiece while pressing the foot control can cause injury. • Be sure to hold the handpiece and press the foot switch. • Using the handpiece while pressing the foot control can cause injury. • Be sure to hold the handpiece and press the foot switch. • Implantable systems such as pacemakers and implantable cardioverter defibrillators (ICDs) are subject to electric, magnetic, and electromagnetic fields. This motor system emits an electromagnetic field, which means there are some potential hazards. Interference may occur during use and malfunctions may occur. • These devices can. Dentium will guide you as follows : - Check with patients and users for implanted devices before using this product - Please explain the situation to the patient and consider the risks. - Keep this product away from implanted devices. - Take appropriate first aid measures and take immediate action if the patient is ill. Symptom • An increased heart rate, irregular pulse, and lightheadedness may be signs of a heart problem. • Do not drop the motor. This may result in electrocution or damage leading to product malfunction. • According to IEC 60601-1/ANSI/AAMI ES60601-1 the motor is potentially not suitable for use. • Explosive atmospheres or potentially explosive mixtures of anesthetic substances containing oxygen or nitrogen dioxide, where these gases may accumulate concentrated in confined spaces. The motor and handpiece tubing are not suitable for use in oxygen enriched atmospheres.
--	--

 Caution	• Follow the manufacturer's recommendations for electric motors and accessories. • A damaged motor poses a danger to the patient, user, and others. • bright elec products should only be used for dental care by qualified persons. • Instructions for use - Before each use, check the motor, motor tube and O-rings for damage, looseness and leaks. - Make sure the motor tube is not twisted. Do not use the motor if damage is detected. - Do not look directly at the motor lighting as it may cause visual impairment.
--	--

	- Sterilize the motor before first use. - Be sure to supply cooling air to the motor. Otherwise, the surface temperature of the motor will rise to 60 degrees and may cause burns.
--	---

 Note	• While the handpiece is operating, the operation to move the medical chair cannot be performed. • Sterilization conditions are as follows. • High-pressure steam sterilization conditions: Maximum 135°C, 10 minutes • Maximum number of sterilization : 250 times
---	--

4.2.6. Usage Environment and Conditions

- ◆ Use only uncontaminated water and air.
- ◆ Proceed with regular function and maintenance checks.
- ◆ The product has an operating time of 3 minutes and provides an intermittent operating condition of 10 minutes off.
- ◆ If the surface temperature of the motor increases during continuous use, the output torque may decrease. Wait until it cools down sufficiently. When used, it can be used as normal output torque.

4.2.7. Periodic Inspection

- ◆ The following items should be tested before treatment for safety and normal use.
 - Before using the motor and tube, make sure they are working properly.
 - Always ensure that cooling is delivered to the appropriate motors via air and coolant. If the cooling water supply fails, the motor should be stopped immediately.
 - Check the motor, motor tube and O-rings for damage, looseness, leaks and biofilm before each use. Do not use the motor or motor tube if the motor tube is kinked or damaged. Requires use after service or replacement.

4.2.8. Precaution for Use

1. Electric motors must be maintained according to infection control according to this instruction.
2. Use of parts not approved by Dentium voids all claims under warranty and all other claims.
3. Regular servicing of the motor, including accessories, is required for proper function and safety.
4. Damaged O-rings may cause the following symptoms. Please contact your Dentium dealer or customer service for replacement of damaged O-rings.

4.1 Air/water leaks.

4.2 Air/water cannot reach the inside of the handpiece, so it will not work properly.

4.3 Vibration.

4.4 Difficult to connect/disconnect to handpiece.

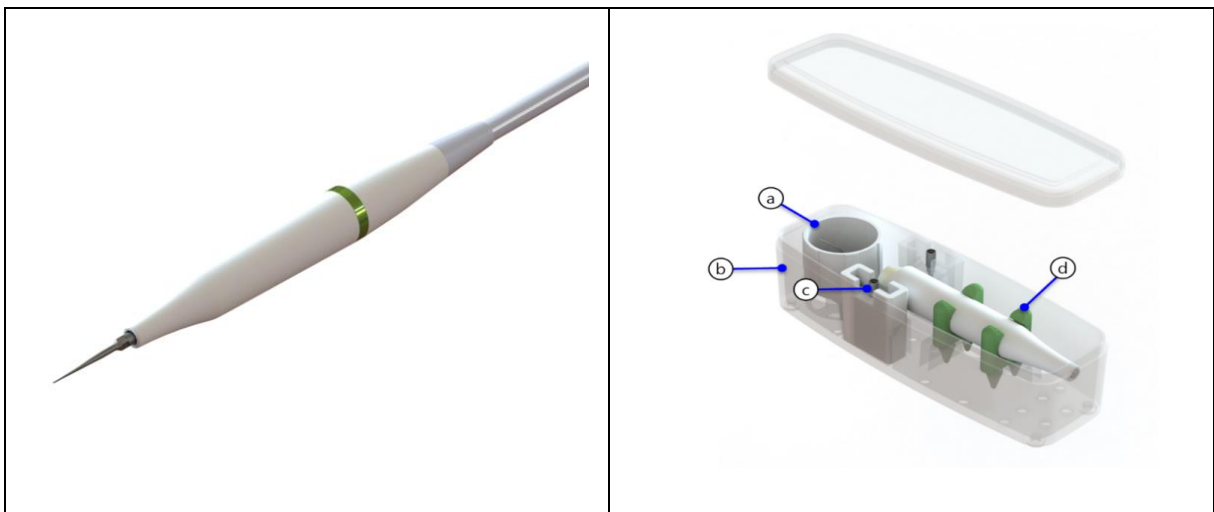


Warning

- Failure to turn off the power before performing maintenance may result in product damage or malfunction.

4.2.9. How to Use the Scaler (bright Scaler ICT-BS1)

a. Main Components



NO.	NAME
(a)	Torque wrench
(b)	Sterile case
(c)	Scaler tip (A, P, PS)
	TIP-A: Used for all oral cavity to remove general deposits
	TIP-P: Used for all oral cavity for supragingival and sublingual scaling
	TIP-PS: Used on proximal surfaces and subgingival (Thin and long tip)
(d)	Scaler body fixed part



Note

- When using high-pressure steam sterilization, please refer to the following
 - High-pressure steam sterilization conditions: up to 135°C for 10 minutes
 - Maximum number of sterilization : 250 times
- ※ When sterilization conditions are different from the above, use according to the instructions of the sterilizer manufacturer.

b. Operating Scaler

- ◆ The scaler is located in the ⑤ position of the doctor table..



- ◆ After removing the scaler handpiece from the holder, press the foot switch pedal to operate.
- ◆ Power can be adjusted according to the scaler adjustment on the LCD display screen. (1 to 10 steps)

Display in screen	How to use
	When the scaler is taken out of the holder, the LCD Scaler outline blinks.

Display in screen	Button	Function
		1. Adjust the intensity with the scaler removed from the holder. - You can adjust the level by pressing the arrow on the left (1 to 10 levels adjustable)
		1. Press the button to set the Irrigation On/Off

		1. Press the button to control the Handpiece Light On/Off.
---	---	--

 Warning	• Be careful since you can't check the operating status of the scaler when using the One-Touch function. • You can't change the settings while the handpiece is in operation.
--	--

 Note	• The position of the medical chair cannot be moved while the handpiece is in operation. • One-Touch Function: If you press this button when you use the scaler, it will continue operation (Option)
---	---

◆ Precautions before Use

- Secure power and water supply sources suitable for use.
- To prevent infection, be sure to sterilize the tip and handpiece in an autoclave before use.
- Use a torque wrench and tip holder when handling tips to prevent infection.
- Use handpieces, tips, tip holders, and sterilization boxes after sterilizing them in a high-pressure steam sterilizer.

◆ How to Use

- Adjust vibration and water pressure appropriately using the adjustment panel on the dental treatment device.
- After selecting a tip suitable for the purpose, install it accurately using a torque wrench.
- Step on the foot pedal connected to the dental treatment device to check whether it works.
- Check if the watering is done properly during operation.
- In normal operation, the operator applies to the patient.

◆ Precautions for Use

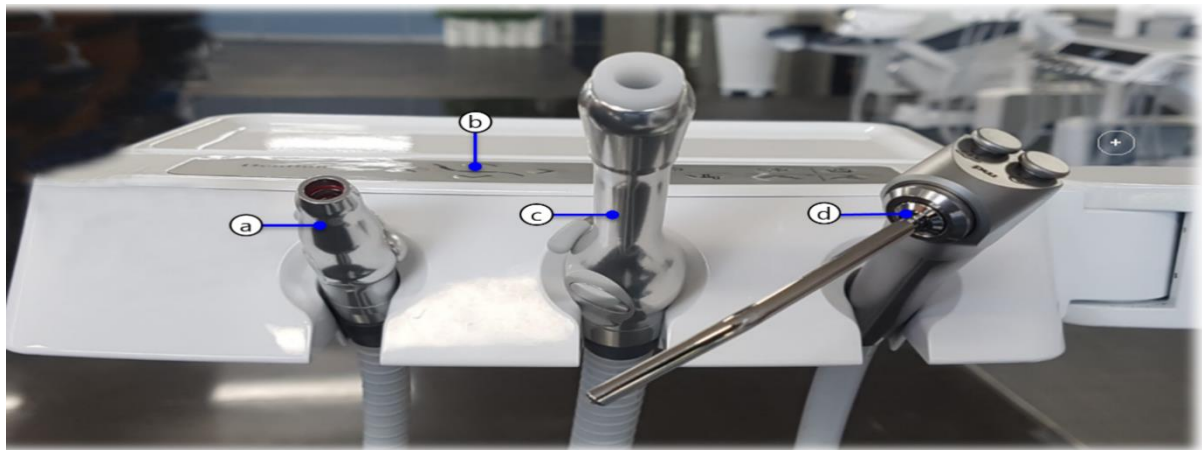
- Use only by a qualified dentist.
- Do not use for patients with cardiac pacemakers.
- Use for purposes other than intended is prohibited.
- Due to the risk of explosion, do not use in the presence of ignitable anesthetics or gases.
- Be sure to clean and sterilize handpieces and tips before and after use.
- Replace bent or deformed tips immediately, and replace tips worn by more than 2mm to avoid possible damage or injury during use.
- Be sure to use a torque wrench when attaching or detaching the tip.

(Installation and detachment using other tools may lead to reduced output and shortened life of the device.)

- Be careful not to drop the device when using, cleaning, or sterilizing it. (vandalism)
- If the surface of the tip is peeled off, replace it with a new one after about 10 treatments.

4.3. Assist Table

4.3.1. Name of Parts



No.	Name
(a)	Saliva ejector
(b)	Control panel
(c)	Vacuum syringe
(d)	3-way syringe



Warning

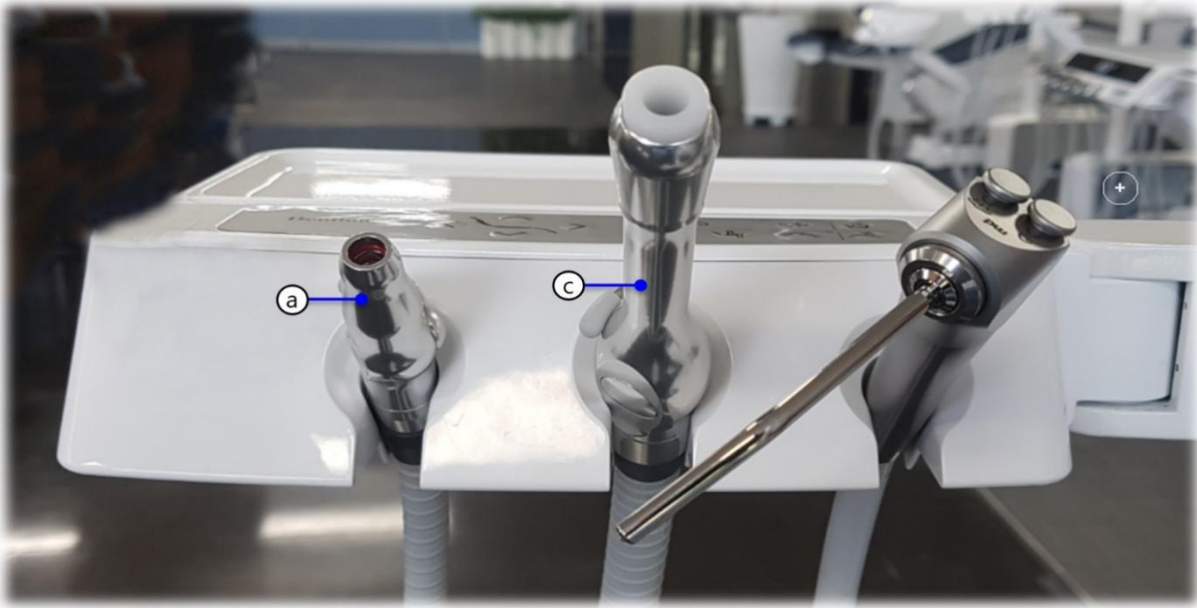
- Do not put the load exceeding 1kg on the table (including accessories)
- Do not use excessive force or give strong impact.

4.3.2. How to Use the Assist Table



Button	Function	Button	Function
	The chair height rises when the button is pressed, and stops when released.		When the button is pressed, the chair back rises, and when it is released, it stops.
	Press the button to lower the chair height, and release to stop.		When the button is pressed, the chair climb descends and when released, it stops.
	After moving the chair to the position you want to save, press the button for more than 5 seconds to save the treatment position, and then press the button to automatically move to the saved position.		When the button is pressed, the chair moves to the start position.
			When the button is pressed, the dental light turns On / Off.
			Pressing the button turns the Suction Pump On / Off.
	Automatic water supply to the spittoon: When the button is pressed and released within 2 seconds, it switches to automatic water supply mode and water is supplied for the set time. Manual water supply to the spittoon: When the button is pressed for more than 2 seconds, the manual water supply mode is switched, and water is supplied while the button is pressed.		Cup automatic water supply : When the button is pressed and released within 2 seconds, it switches to automatic water supply mode, and water is supplied as much as the set amount Cup manual water supply: When the button is pressed for more than 2 seconds, the mode is converted to manual water supply mode, and water is supplied while the button is pressed.

4.3.3. How to Use Suction Syringe (Vacuum Syringe & Saliva Ejector)

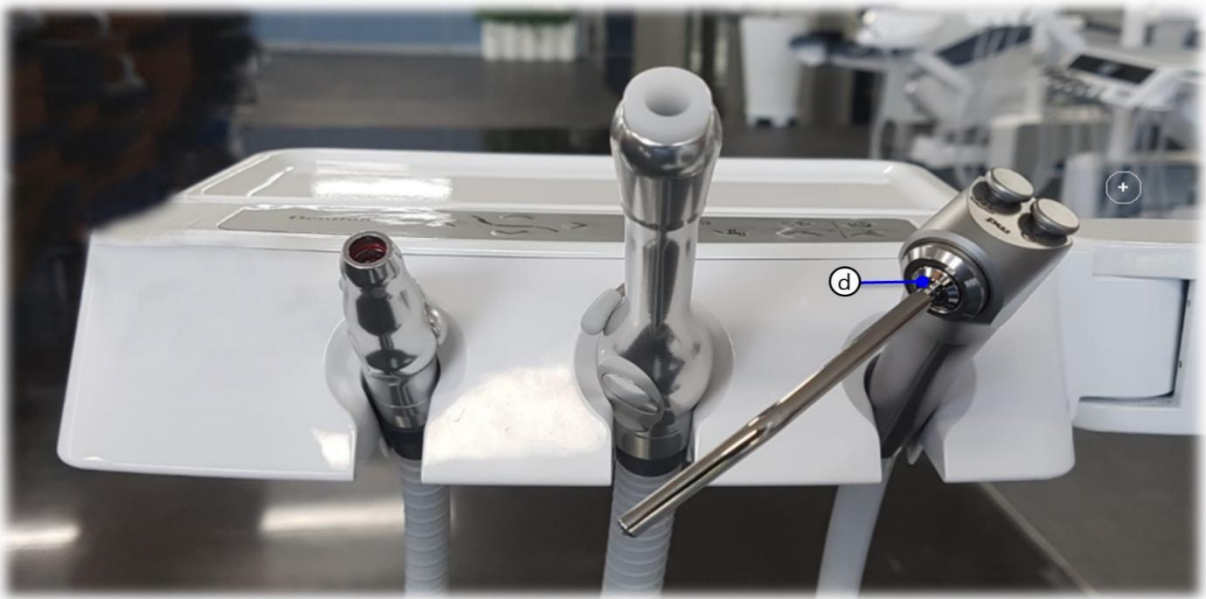


How to use
1. Remove the suction (vacuum syringe & saliva ejector) from the holder to use the suction. 2. Operate the locking lever up and down to absorb foreign substance.

Open (absorb)	Close (stop)

 Note	When one suction operates, both suctions operate. The suction force of each suction can be used independently using the locking lever.
---	--

4.3.4. How to Use 3-Way Syringe



Name of Parts



NO.	Name
(a)	Syringe Tip
(b)	Syringe Body
(c)	Water button
(d)	Air button

Button	How to use
	Water is injected while the left button is pressed.
	Air blows while the right button is pressed
	Press the left and right buttons at the same time to use water spray

 Warning	Use only syringe tips provided by Dentium. If you use a syringe tip manufactured by Dentium, the syringe tip may pop out. Do not use third party products as tips may be swallowed or aspirated due to tip ejection.
--	--

4.3.5. How to Use Single-person Treatment Suction

- It provides the convenience of one-person treatment. Through the exclusive suction module, you can use it conveniently as follows



- During practice, the suction module should be in the practice position as shown in the picture above.



- Pressing the "a" button activates the suction, allowing easy medical care without assistance. After use, please press the button again to turn off the suction.

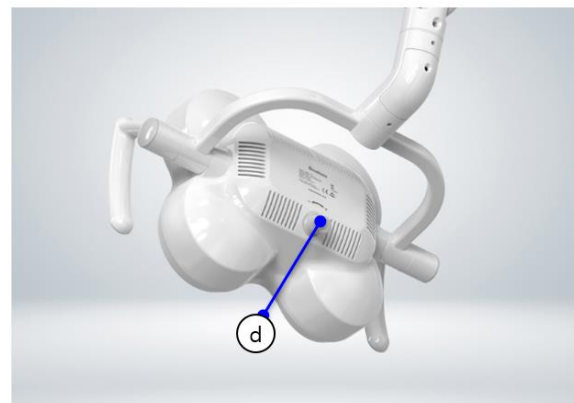
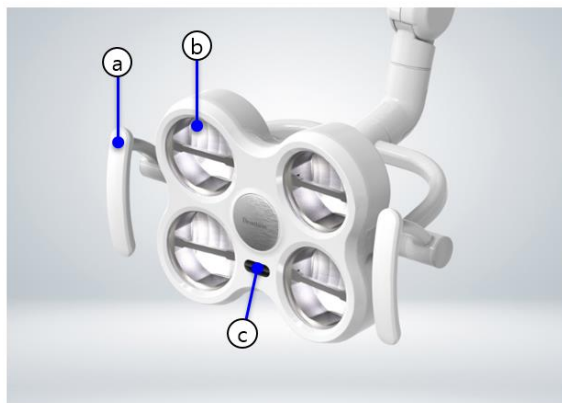
4.3.6. Suction Head Loss

- The following table includes information about vacuum syringe and saliva ejector head loss

Flow NL/min	Vacuum Syringe kPa	Saliva Ejector kPa
90	56	63
150	103	116
200	142	160
250	181	204
300	220	248
350	259	292
400	298	336

4.4. Dental Light (bright Light_ICT-BL1)

Button	How to use
	Pressing the control module button of Doctor table and Assist table turns the dental light on.
	

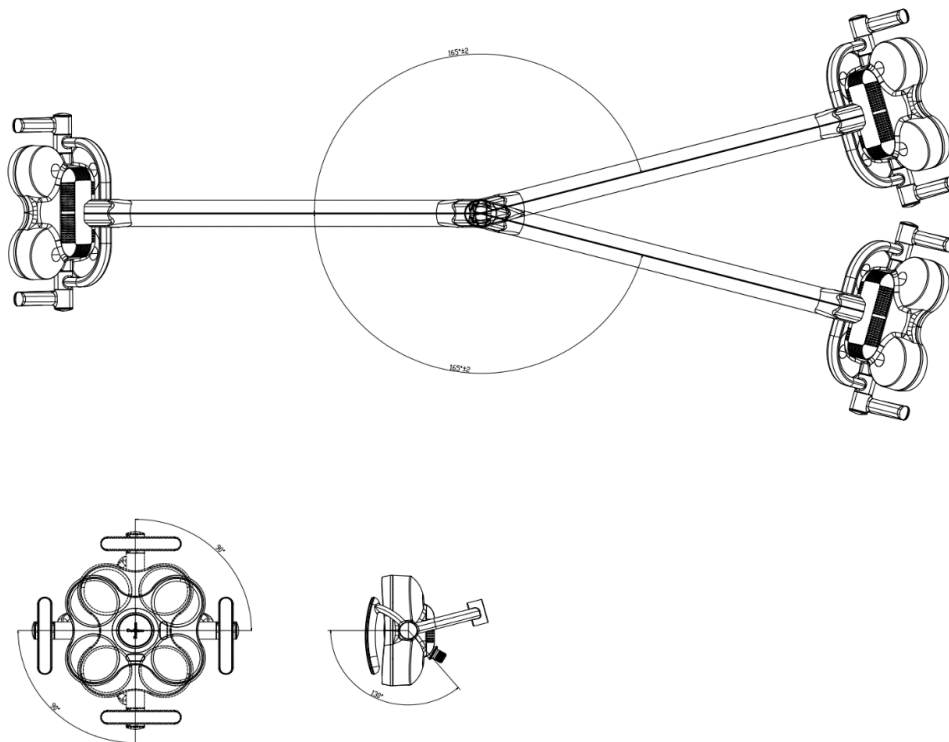


NO.	NAME	FUNCTION
①	Transport handle	Position adjustment knob
②	Optical module	Illustrator
③	Contactless power sensor	Contactless light power ON/OFF Motion Sensor (On/Off: sensing distance 50mm)
④	Lighting volume	Lighting brightness min & max

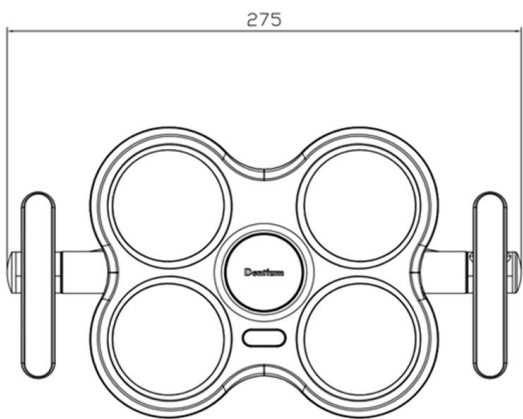
- ◆ Brightness can be adjusted within the range of 10,000–50,000 lux.
- ◆ When the treatment chair moves to the saved position, the dental light is automatically turned on.
- Start and move the gargle position: Before moving the chair, the dental light is turned off
- Move to the previous position of gargle and chair memory 1, 2, 3: After chair movement is completed, the dental light turns on.
- ◆ Disinfect the dental light handle before use

4.4.1. Appearance

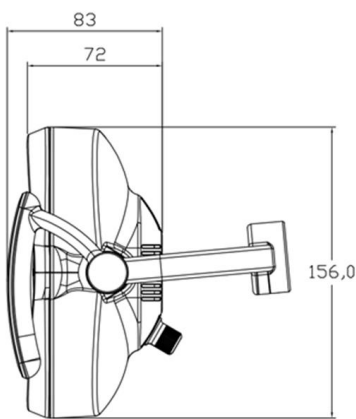
- You can freely adjust the up/down and left/right rotation angle of the dental light



(Unit: mm)



*Weight: 1kg



 Warning	• When changing light positions, do not point the light at the patient, user, or third parties. • When moving the light head, keep the light field away from the patient's eyes.
 Caution	• Using third-party lighting may cause malfunction or failure • Follow the manufacturer's instructions when using disinfectants to disinfect. • Wipe when disinfecting. • Do not immerse the product or parts in water or other liquids.

4.5. Spittoon System

4.5.1. Water Supply Module

- This is a device for spitting out and rinsing your mouth during and after treatment. The cup and spittoon can be watered at the same time. (Warm water is supplied depending on the option)



No.	Name	Purpose
Ⓐ	Water feeder	A unit that supplies a certain amount of water to a paper cup
Ⓑ	Sensor	A unit that recognizes the cup and controls the water level
Ⓒ	Cup stand	A unit that holds a paper cup
Ⓓ	Nozzle	A unit where the water to wash the spittoon is injected
Ⓔ	Spittoon	A place where the water rinsed the mouth is spitted. The batting table offers one of two materials (Plastic Ultem or Metal Stainless steel)

Automatic Water Supply

- If you place a cup on the spittoon, the unit will automatically stop watering when a certain amount of water is filled. When you remove the water cup, the spittoon will stop the watering automatically.

Button	How to use
	When you press and release the button on the Assist table within 2 seconds, it will switch to automatic watering mode and stop watering after watering the set amount.
	When you press and release the button on the Assist table within 2 seconds, it will switch to automatic watering mode and stop watering after watering the set amount.

Manual Water Supply

- Further, the cup and spittoon can be filled with water by operating the manual button on the Assist table.

Button	How to use
	If you press and hold the button on the Assist table for more than 2 seconds, it will switch to manual watering mode, and watering will proceed while the button is pressed.
	If you press and hold the button on the Assist table for more than 2 seconds, it will switch to manual watering mode, and watering will proceed while the button is pressed.

 Note	• For automatic cup watering, you can selectively set two modes: The quantity recognition mode and time control mode. To set this function, request the service to the local distributor. • The spittoon watering can be set as long as the user wants. To set this, request the service to the local distributor.
---	---

 Warning	• Please note that black, transparent, or metal cups are not recognized. • Please note that cups smaller than 2.5 ounces are not recognized.
--	---

Water Supply Control

- When you open the front cover of the unit below, there are 3 volumes to control the water quantity.

Function	How to use
CUP	1. Water quantity increases : Rotate the switch counterclockwise 2. Water quantity decreases : Rotate the switch clockwise
SPITTOON	
3-Way SYRINGE	



4.5.2. Drainage Capacity

- The drain pipe of the dental unit chair shall have a slope of at least 15 mm per 1 m, and the maximum drainage through the spittoon is 4 L/min.



Item	Content
Slope of Drain Pipe	>15mm/m
Max Drainage Capacity	4L/min

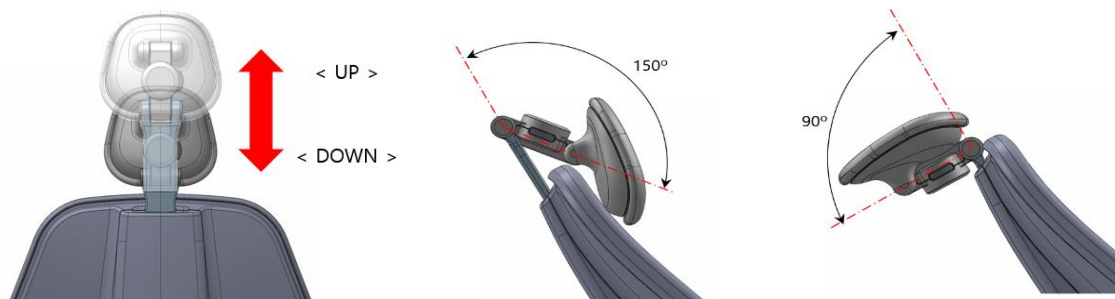
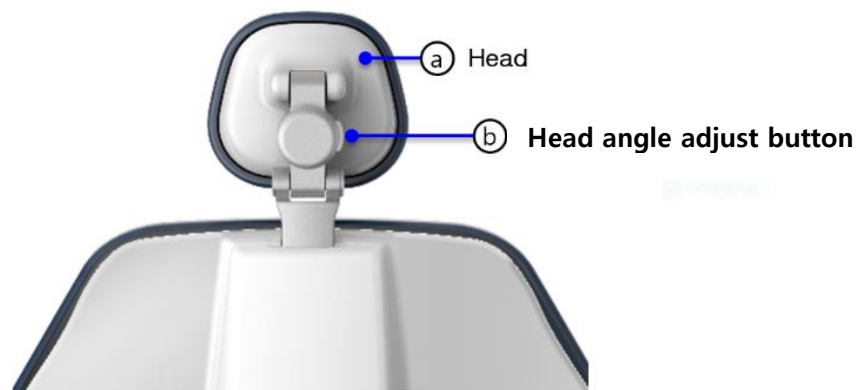
4.5.3. Recommended Vacuum Conditions

- The dental unit is typically used in a vacuum pressure range of 100-150 mmHg and can withstand vacuum pressures of up to 800 mmHg.

Item	Content
Vacuum Pressure Range	100-150mmHg
Max Allowable Vacuum Pressure	800mmHg

4.6. Headrest

- The headrest can adjust the head up/down and angle according to the treatment situation as shown in the picture. 2 Joints can be adjusted, so it is convenient for treating children and the disabled.
- To adjust the headrest, press the head angle adjustment button to adjust the head to the desired position, then release the button to fix the headrest at that position. In addition, according to the height of the patient's upper body, you can hold the entire head and adjust it up/down to fix it in the desired position.



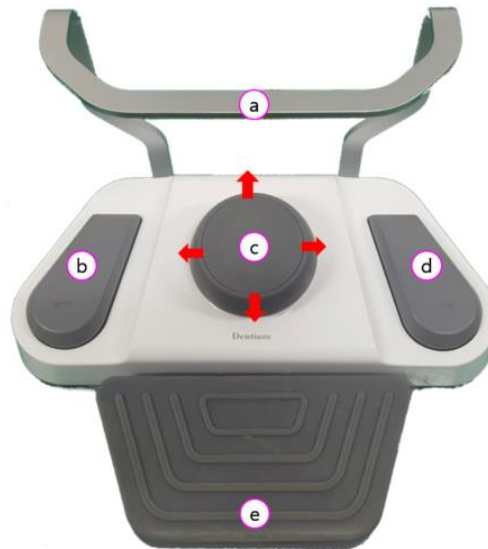
Warning

- When adjusting the head angle by using the Head Button, be careful as excessive angle adjustment may put a strain on the patient.
- When adjusting the head angle while the patient is lying down, be careful as an abrupt movement may occur due to the weight of the patient's head.
- If you press the headrest button while the scaler is running or the foot controller pedal is pressed, the system will not operate for safety.

4.7. Foot Controller

4.7.1. Functional Foot Controller

- The position of the medical chair can be controlled with the joystick and function buttons, and the handpiece can be operated using the pedal.



No.	Name	Description
Ⓐ	Footrest	The foot switch is moved using a footrest
Ⓑ	Function Button 1	Move to the starting position.
Ⓒ	Joystick Up	When operating upward, the medical chair rises.
	Joystick Down	When operating downward, the medical chair goes down.
	Joystick Left	When operating to the left, the back of the medical chair does down.
	Joystick Right	When operating to the right, the back of the medical chair rises.
Ⓓ	Function Button 2	Moves to the location of memory 1
Ⓔ	Pedal	When you step on the pedal, the handpiece operates, and the speed of the handpiece increases or decreases according to the depth of pressing.

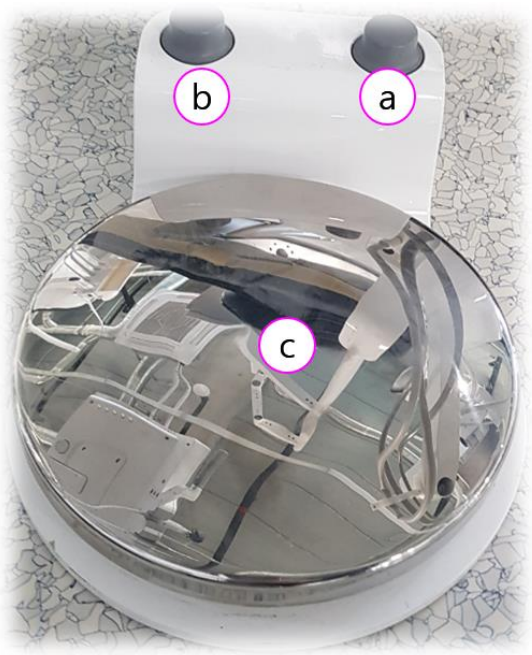


Warning

- If you operate the foot controller while moving the treatment chair, the chair will stop moving.

4.7.2. Disc-type Foot Controller

- The position of the treatment chair can be controlled with the function button, and the handpiece can be operated using the pedal.



No.	Name	Description
Ⓐ	Function Button1	Moves to the start position
Ⓑ	Function Button2	Moves to the Memory 1 position
Ⓒ	Pedal	Stepping on the pedal operates the handpiece

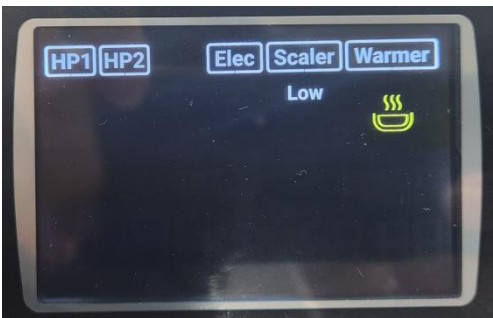
 Warning	• If you operate the foot control while moving the chair, the chair stops moving.
--	---

 Note	The function of the foot controller can be set variously in addition to setting the start position and memory 1 position. When changing to another setting, please contact the local distributor.
---	---

4.8. Emergency Operation

4.8.1. Guide for Operation

- In the event of an obstruction closing underneath the medical chair or an emergency situation, the medical chair will stop operating and automatically raise itself to protect the patient and system.



Name	Operating condition
Safety	• When an obstacle is detected at the lower part of the treatment chair, the operation of the treatment chair stops or rises to a specific position.

 Warning	• Always be careful not to let the patient, operator, or object enter the lower part of the treatment chair. • Do not arbitrarily operate the safety switch. • If the unit is damaged or does not work, contact our local distributor.
--	--

4.9. Spittoon Table Rotation Detection Guidance

- A rotation detection sensor is applied to the ball hitting table. The chair will not work if it is twisted beyond a certain angle. In the case of medical treatment, please confirm the position of the batting table.

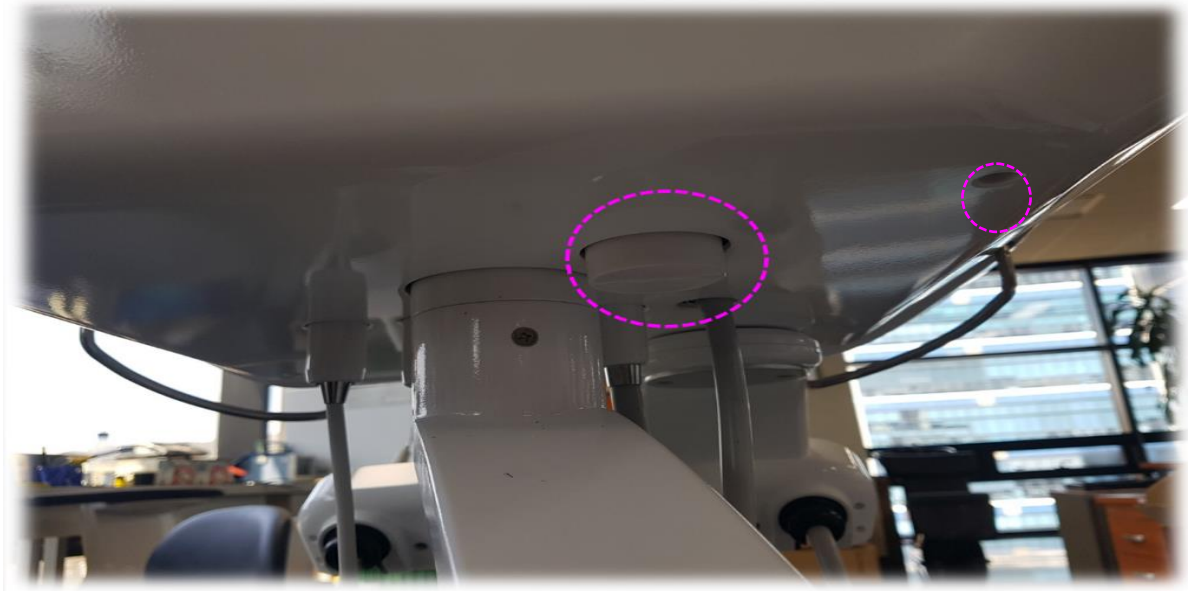


Situation	Operating conditions
Ball hitting table normal operation	There is no Spittoon check display on the LCD, and there is no problem with the movement of the chair and the seat plate.
Ball hitting table rotation detection	Chair climbing and seat functions stop LCD screen displays Spittoon check on the screen (Please align the positions of the batting table for use)

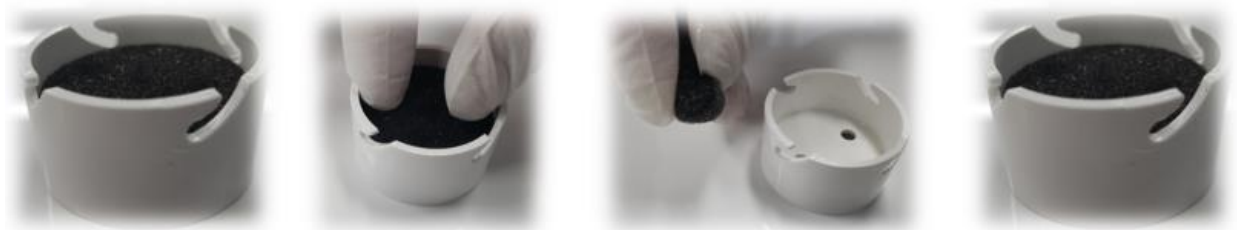
5. Maintenance

5.1. Replacement of Oil Can of Doctor Table

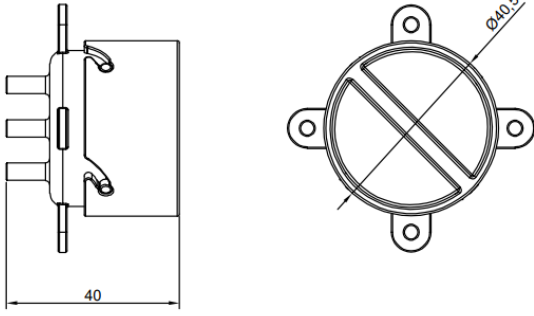
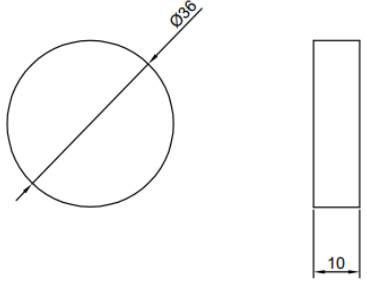
- The oil can is located under Doctor Table. When using the Air Turbine Handpiece, it collects backflow water and oil. It is located on the floor surface outside Doctor Table.



- Check the cleaning cycle every 6 months.
- The oil can is located at the bottom back of Doctor Table, and when checking, hold the case and turn counterclockwise to disassemble it.
- After disassembling, remove the sponge inside and press it to separate the oil and reconnect in the reverse order.



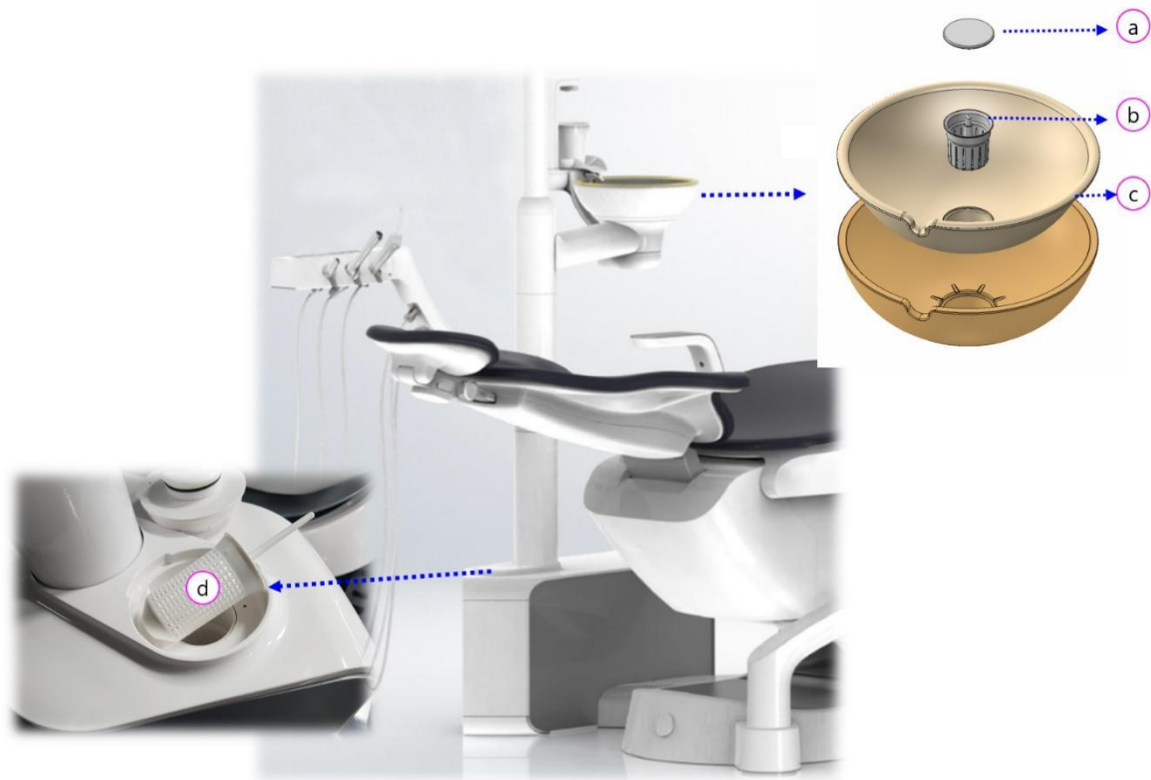
- Oil Filter Spec

	Oil Filter Case	Oil Filter
Dimension (mm)		
Material	PP (Polypropylene)	PU Foam (Polyurethane Foam)

 Note	If regular maintenance is not done, oil may fall to the floor.
---	---

5.2. Cleaning Dental Unit

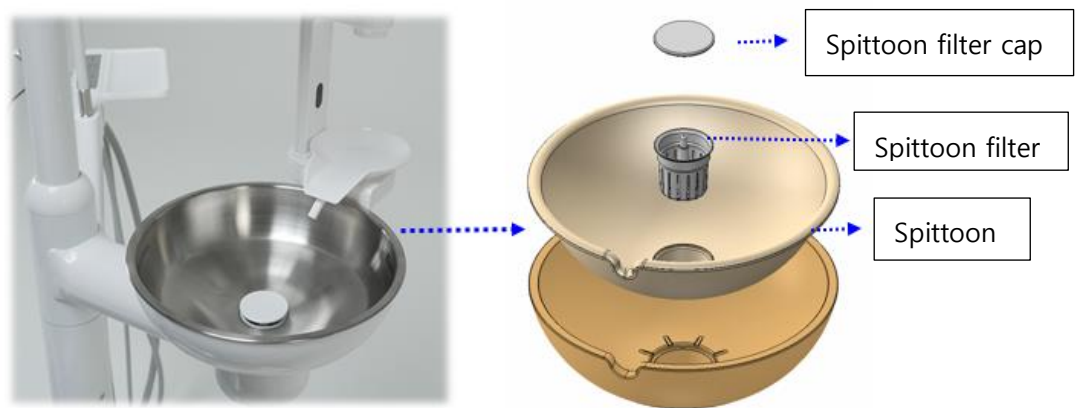
- The parts that need periodic maintenance in the unit are the spittoon and the suction filter. You can prevent clogging of the drain due to foreign substances by cleaning the filter periodically.



No	Cleaning area	Cleaning cycle
Ⓐ	Spittoon filter plug	Once a day
Ⓑ	Spittoon filter	Once a day
Ⓒ	Spittoon	Once a day
Ⓓ	Suction filter	Once a day

5.3. Cleaning Spittoon

How to clean
After removing the spittoon and lifting the filter cap, take out the filter to remove dirt and clean it with a soft brush.



- Spittoon Filter Spec

	Spittoon Filter
Dimension (mm)	
Material	LDPE (Low Density Poly Ethylene)

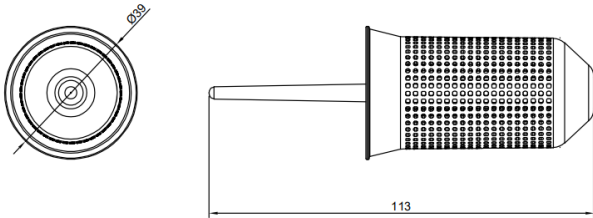
5.4. Cleaning Suction Filter

- Cleaning the suction filter can prevent the suction force from being weak.

How to clean
Open the cap in the direction of the arrow, remove the filter cap, remove dirt from the mesh, and wash it with a soft brush.



- Suction Filter Spec

	Suction Filter
Dimension (mm)	
Material	PP (Polypropylene)
Mesh Size	140 mesh

 Note	The spittoon can be sterilized by high pressure steam High-pressure steam sterilization conditions: up to 135°C, 10 minutes
---	--

5.5. Cleaning Suction Handpiece

5.5.1. Vacuum Syringe



- ① Pull in the direction of the arrow to disassemble each part.



- ② After disassembly is completed, the parts can be sterilized at 93°C using a washer/disinfector, and then optionally high-pressure sterilized at a maximum of 135°C for 10 minutes using a sterilizer.

5.5.2. Saliva Ejector



- ① Pull in the direction of the arrow to disassemble each part.

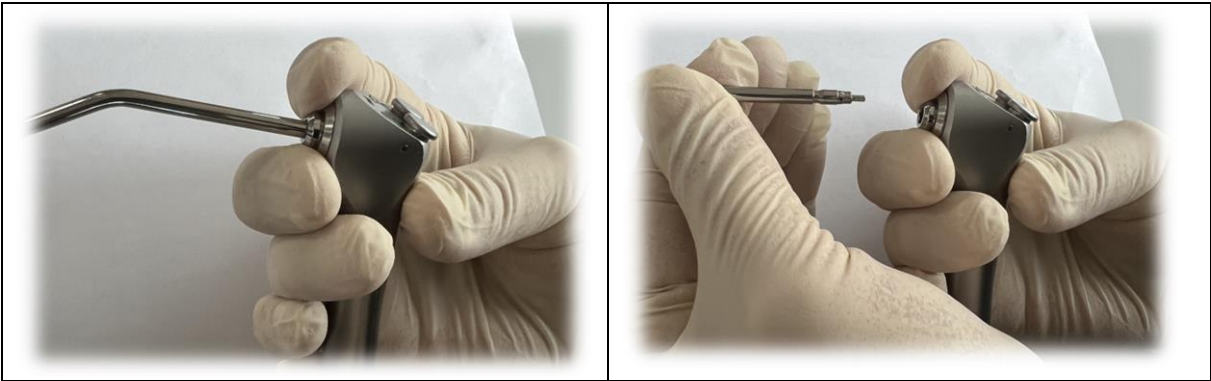


- ② After disassembly is completed, the parts can be sterilized at 93°C using a washer/disinfector, and then optionally high-pressure sterilized at a maximum of 135°C for 10 minutes using a sterilizer.

5.6. Cleaning of 3-way Syringe

5.6.1. Cleaning Method

- ① To separate the syringe tip from the 3-way syringe, press the release button and pull the head out.
- ② Mix mild detergent with warm water.
- ③ Place the head end in warm water mixed with detergent for about 5 minutes.
- ④ Wipe the outside or corners of the head with a soft cloth or melamine foam.
- ⑤ Remove foreign substances and rinse the head end with clean water.
- ⑥ Dry the tip with a soft dust-free cloth.
- ⑦ If foreign substances still exist, repeat steps 1 to 5.



 Warning	• Do not use autoclave sterilizers that use rapid heating or cooling. Sudden temperature changes cause component degradation and failure. • Do not use sterilizer above 277°F (136°C) including drying process. It may be the cause. • The product is hot after sterilization and should not be touched immediately. Doing so may cause burns.
--	--

 Caution	※ Follow local guidelines, standards and guidelines. • Remove only dry sterile products from the sterilizer. • Keep sterile products dry and free of dust. • If sterilized instruments contain disinfectants or other residues, use of chemicals may discolor the surface and damage internal components. • The use of automatic washers and heat sterilizers is not recommended as they may damage the syringe body and tip finish. Machining this type of metal may cause discoloration of the instrument.
--	--

5.6.2. Storage Method

- Store in a dry, dust-free place. Do not store non-sterile.
- Refer to the sterile packaging manufacturer's instructions. (Used to determine how long sterility can be maintained.)

5.7. Cleaning of Scaler

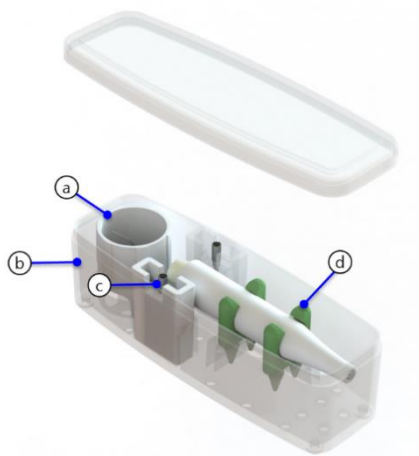
5.7.1. Scaler Tips

- ① After use, the scaler tips can be cleaned using a detergent and brush or using an ultrasonic cleaner.
- ② The scaler tips should be cleaned and rinsed with deionized distilled water at least three times using a disposable syringe (minimum capacity of 50ml).
- ③ The scaler tips are the consumable part and must be replaced if the tips are corroded or worn.

 Caution	• The tip is a consumable, and when the tip is worn by 1mm, the tartar removal efficiency is reduced by about 25%, and by about 50% when the tip is worn by 2mm. • In addition, there is a concern that the vibration state may change due to wear and damage the tooth surface. Use the tip card to periodically check and manage the wear condition.
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5.7.2. Torque Wrench

- ① Wash the torque wrench with 60-90% ethanol or neutral detergent on a clean cloth and wipe its surface at least once.
- ② When using an autoclave, the sterilization conditions are as follows.
 - Steam sterilization: 135°C for 10 minutes, drying for 15 minutes
- ③ Since the torque wrench is consumable and may affect vibration performance of the scaler, it is recommended to replace it at least once a year.
- ④ When sterilizing, insert the torque wrench, scaler, and tips into the case and sterilize under the appropriate conditions.



5.7.3. Storage Method

- Store in a place away from water.
- Store in a place with low dust and moisture.
- Store away from direct sunlight.
- Temperature: -5 ~ 45°C
- Humidity: 20 ~ 80%
- Atmospheric pressure: 800 ~ 1,100hPa

5.7.4. Sterilization

- ① Pull the handpiece to disassemble the angled head from the motor.

* When assembling, align the assembly guide structure as shown in the image below and rotate until it clicks.

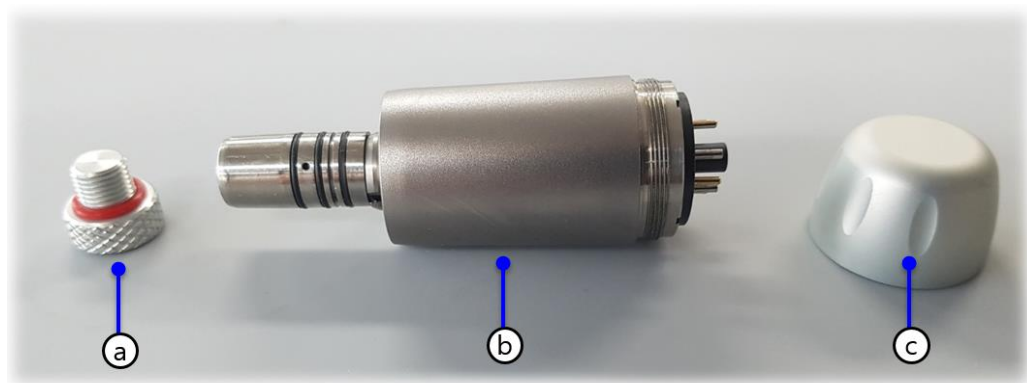


- ② Wipe the outside of the motor and the motor tube at least once with a cloth coated with disinfectant or 60-90% concentration ethanol.

* Use chlorine or protein fixers certified by an accredited organization. Follow the disinfectant manufacturer's specifications for proper use.

- Do not allow liquid to enter the motor during cleaning and disinfection.
- Do not use a heat cleaning sterilizer to clean the motor or motor tube.
- Do not lubricate the motor.

- ③ Fasten the sterilization cap as shown below.



No	Name	Function
①	Sterilization Cover	Protects the connector engaged with the handpiece
②	Motor	-
③	Motor Cover	Protects the connector engaged with the motor

- ④ Seal the motor with a paper or foil sterile pouch approved by the US FDA in compliance with ISO 11607-1.
- ⑤ Sterilize the parts of handpieces using an autoclave. Set the sterilization time and temperature by referring to the conditions as follows.
 - * Sterilization at 135 °C for 10 minutes, followed by drying for 15 minutes.
- ⑥ Dry for at least 15 minutes before removing from the sterilizer.
 - * Before removing from the sterilizer, dry thoroughly to ensure that there are no remaining droplets in the sterilizing pouch.
- ⑦ When storing the motor, place it in a sterile pouch to keep it clean and dry.



Warning

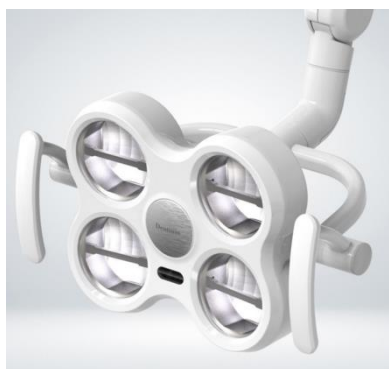
- Do not use autoclave sterilizers that use rapid heating or cooling. Sudden temperature changes cause component degradation and failure.
- Do not use sterilizer above 277°F (136°C) including drying process. It may be the cause.
- The product is hot after sterilization and should not be touched immediately. Doing so may cause burns.
- Be careful not to press the footswitch when removing the motor and handpiece. Failure to do so may result in motor failure or injury.

 Caution	• Follow local directives, standards and instructions: - Cleaning and disinfecting the motor before sterilizing it ensures that the sterilization process is efficient and prevents damage to the motor. - Do not sterilize motor tubes. - Remove only dry, sterile products from the sterilizer. - Store sterile products in a dry, dust-free environment. - Sterilize the motor with USFDA approved paper/foil laminate sterilization wrap per ISO 11607-1. - If the sterilization instruments contain disinfectants or other residues, the use of chemicals can discolor the surface of the motor and damage internal components. - Motors are recommended for autoclave sterilization. Other sterilization methods have not been validated. - Handle the motors carefully to avoid damaging the front LEDs.
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5.8. Cleaning of Dental Light

5.8.1. Main Body

1) Clean the surface of dental light using a proper disinfectant and soft cloth after each patient's treatment.



5.8.2. Handles and Handle Covers

- 1) Separate the handle covers and handles from the dental light.
- 2) Soak the components (Dental light handles and covers) in the prepared cleaning solution and gently scrub the dirty surface of the components for 1 minute using a soft brush or cloth.
- 3) Rinse the residual cleaning detergent from the components with purified water.
- 4) Wipe off the moisture with a clean, dry cloth and let any remaining water dry.

5) Sterilize the components using an autoclave.

- Temperature: 135°C
- Time: Sterilization time 10 minutes, drying time 15minutes



5.9. Sterilization of Silicone Pad on Doctor Table

The silicone pad on the doctor table can be sterilized under the following conditions.

- Temperature: 135°C
- Time: Sterilization time 10 minutes, drying time 15minutes



5.10. Sanitation (Optional Item)

- Sterilize all water pipes of the entire instrument.

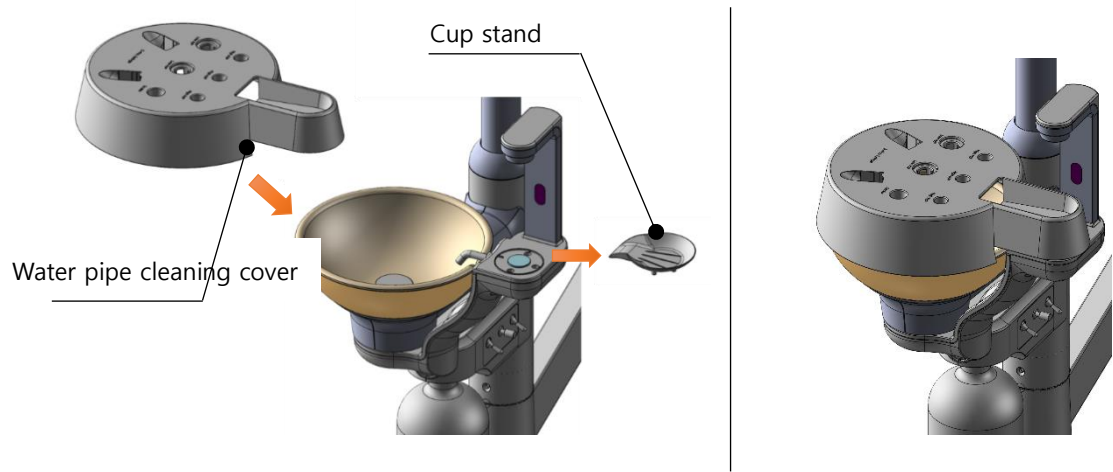
 Warning	During sanitation, the system does not operate until the entire sanitation has been completed, so please perform the cleaning with care.
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 Note	The sanitation is recommended to be done one a day.
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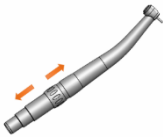
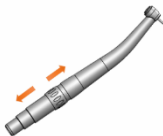
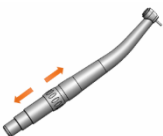
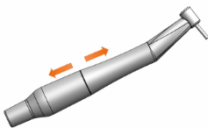
5.10.1. Preparations Before Sanitation

a. Instrument Setting

- ① Remove the cup stand of the spittoon and mount the sanitation cover.
- ② Remove instruments (except suction) of Doctor table and Assist table, and mount the sanitation referring to the following Fig.



Setting method
① Take out the handpieces one by one from Doctor Table and place them on the sanitation cover. ② Refer to the table below for the location of the handpiece

No	Item	Handpiece Image
1	High H/P	
2	High H/P	
3	Air Low H/P	
4	Elec Low H/P	
5	Scaler	
6	3-Way Syringe	

b. Sanitation Cover and Mounting Image

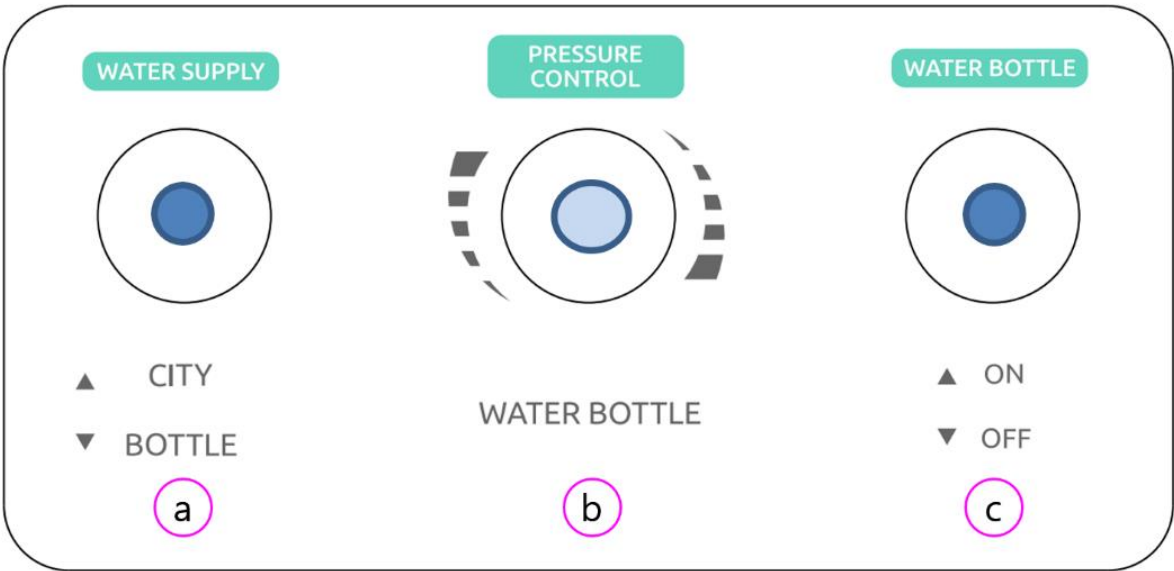


Sanitation Cover



Mounting Image

5.10.2. Distilled Water and Sanitation Control Module



No	Name	Description
Ⓐ	WATER SUPPLY	Select the water to be used (water supply & bottle)
Ⓑ	PRESSURE CONTROL	Watering pressure volume (0.15~0.2MPa is recommended)
Ⓒ	WATER BOTTLE	Watering bottle pressure On/Off switch

a. How to use the distilled water + water pipe cleaning control module

No	Operation mode	Setting		
		WATERING	PRESSURE CON	WATER BOTTLE
1	Use the water supply	ON	0.15~0.2MPa	OFF
2	Sanitation	OFF		ON
3	Use the bottle watering	ON		ON

b. How to set the press control pressure

- Set as 0.15~0.2MPa by adjusting the volume with the gauge below (0.2MPa is recommended)



Note

The control pressure is set at 0.2MPa at the factory.

5.10.3. Supplement the Disinfectant

Image	Process
	1 . Put 60ml of 3% hydrogen peroxide solution and 940ml of distilled water in the sanitary solution container. 2 . Insert the sanitary solution bottle into the upper holder of the unit, and then turn it in the direction of the arrow to fix it.
	1 . When using sanitation, set it as shown in the image on the left.

 Warning	• The sanitary solution container may have a negative effect if washed at high temperatures, such as in a dishwasher or washing machine. Wash the water pipe with the water temperature below 40 °C. • If any damage such as cracks, discoloration, etc. is confirmed before filling the bottle, stop using it and replace the bottle with a new one.
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 Note	• After cleaning the water pipe, remove the sanitary solution container and clean the water bottle with a neutral detergent and bottle brush.
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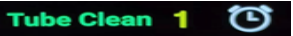
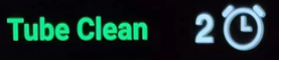
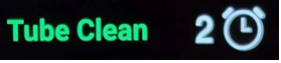
5.10.4. Waterline Cleaning

The waterline of the dental unit should be cleaned once a week with a Dentium approved waterline disinfectant. The solution is left in the unit overnight and the waterlines of the unit are flushed with water the next morning. The disinfectant should not be left in the waterlines for longer than one night.

 Caution	• Dentium does not guarantee the suitability of and is not liable for damages caused by other disinfectants.
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5.10.5. Sanitation Process of Doctor Table

Button	How to use
	Press and hold the Water Drop button of Doctor Table membrane panel for more than 3 seconds to enter into the sanitation mode.

Sequence	LCD Image	Process
1		1. When entering the water tube cleaning mode, the number 1 as shown on the left is displayed on the LCD is displayed and blinks.
2		1. Press the water drop button() on the Doctor Table membrane panel to inject disinfectant. 2. Repeat 3 cycles of total 1 minute each, 8 seconds for each 4 handpieces, 8 seconds for 3-way syringes, 10 seconds for cup, and 10 seconds for waiting.
3		1. Injection of the disinfectant is completed, and while waiting for the injection of the cleaning solution. The left and number 2 are displayed and flashing. 2. Standby state after completion of injection of disinfectant for cleaning solution injection 3. Turn off only the Water Bottle switch. 4. Turn off the power in standby mode. Go to work the next day and proceed to step (For efficient cleaning, it is recommended to wait at least 5 hours before cleaning in the water pipe line.)
4		1. During cleaning process, Change the setting of the distilled water + sanitation control module as shown on the left.
5		1. After turning off the power, turn on the next day, the left and number 2 are displayed on the LCD and blink. 2. When washing after disinfection without turning off the power, press the water drop button() on the Doctor Table membrane panel for more than 3 seconds to enter the water line washing mode again.

6		1. Press the water drop button of Doctor Table membrane panel to inject the cleaning solution. 2. 4 handpieces 8 seconds each, 3-way syringe 8 seconds, cup 10 seconds, standby 10 seconds, repeat 5 times in a 1 minute cycle.
7		1. When the disinfection solution injection is completed, the corresponding screen appears. 2. This shows the standby status after the cleaning solution injection has been completed.

 Note	• Water line flushing cannot be forced to end after disinfectant injection has started. Forced shutdown is possible only when waiting for the first disinfectant injection. • If the water drop button() is pressed or the handpiece is placed while disinfectant or cleaning solution is being injected, the operation is stopped and switched to standby mode, and the operation time is initialized. By pressing the button, you can proceed from the beginning again. • After water pipe washing is finished, put all instruments back to their original positions. • If the water bottle switch is not turned OFF after the disinfectant injection is finished, the injection continues until the disinfectant is exhausted in the bottle.
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5.11. Lubricating

- ① At high pressure, lubricate is placed into the handpiece.

*Spray type lubricant recommended (e.g. PANA SPRAY Plus, NSK)



- ② Spray a sufficient amount when greasing with your hands.
- ③ Wrap the handpiece in a clean cloth or tissue and grease it, then make sure that any foreign substances have been removed.
- ④ The angle head of the handpiece is directed upward to allow oil to drain.

*If high viscosity oil is used, the discharge time must be increased.



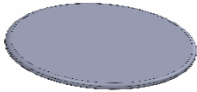
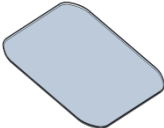
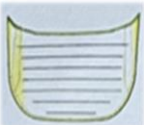
Warning

- Lubrication should be performed only on the handpiece and not on the electric motor.

5.12. Consumables

Consumables are detachable parts of the dental unit that the user can change.

Infection Control Parts

Part		Order Number	Material
	SUS Bowl	F24904	SUS304
	Bowl Filter Cap	F23761	ABS
	Table Pad	F24768	SILICONE
	Footrest Cover	F24663	ABS
	Bottle	F23726	PP
	CleanWater System Cover	F24654	ABS
	HANDLE BODY COVER	F24862	SILICONE

Handpieces Parts

Part		Order Number	Material
	TORQUE WRENCH	D201600431	ULTEM-PEI
	TIP-A TIP-P TIP-PS	B201600428 B201600429 B201600430	TRIMRITE (STEINLESS)
	ICT-BE1	F24839	STAINLESS
	ICT-BS1	B201600432	PPSU
	AUTOCLAVE BOX	D201600432	ULTEM-PEI

6. Maintenance After Use

- After use, turn off the system.
- Unplug the power cord when not in use for a long time.
- After use, remove foreign substances from the spittoon and wash it with water.
- To clean the inside of the drain or air suction pipe, suck it with clean water from the end.
- Periodically clean the spittoon filter and suction filter.
- Disinfect used instruments. If necessary, use a sterilizer. (Please follow each manufacturer's standards for disinfection method)
- Disinfect the handpiece after use and leave it in place (Please follow each manufacturer's standards for disinfection method)
- Clean the outside by spraying cleaning solution for preventing microbial infection or 80% ethyl alcohol on a clean cloth. Do not apply excessive force or use sharp objects.
- Do not allow liquid substances, water, or other foreign substances to penetrate into the inside of the device.
- When cleaning the surfaces of equipment and chairs, gently rub the surfaces with a soft, flat dry towel.



Warning

- Be sure to disconnect the power source before cleaning electronic device accessories.
- Do not fold cables made of electric wires (power, micro motor).
- Do not use compressed air for cleaning.

Equipment Maintenance Checklist

Division	Checklist
Post-patient care review	- Disinfection and cleaning of contact surfaces after patient care - A wall where all splashes pop - Suction line check - Handpiece tube management - 3-way syringe and tip cleaning (using ultrasound) and sterilization - Handpiece cleaning, lubrication and sterilization - Wash the batting table for 1 minute
Every week	- Cleaning chair and stool covers with pure cleaning solutions and water - Suction valve cleaning (HVE and ejector) - Solids collector inspection and maintenance (twice a week) - Management of the oil collector and handpiece chuck oil ring - Clean the front of the dental light (use a soft cloth)
Monthly	- Oil collector maintenance - Replacement if worn and damaged after inspection of all handpiece and motor o-rings - HVE & ejector O-ring lubrication

7. Problem Solving

Error Phenomenon	First Aid in Use
Patient chair does not move	1. Check that the power cable is connected correctly. 2. Check that the power switch is turned on. 3. Check the operation status of Doctor table, Assist table, foot switch. 4. Check if the foot controller pedal is depressed 5. Check if there is any pinching caused by objects under the treatment chair. 6. Confirm that the pinch between the armrest and the batting table has occurred
Handpiece does not work	1. Check that oil has been injected. (Once a day) 2. Check that the handpiece holder is properly positioned. 3. Check air supply condition
Low handpiece does not work	1. Check that the handpiece holder is correctly positioned. 2. Make sure the air pressure is correct. 3. Make sure the machine is turned on.
No water comes out of the handpiece	1. Check that the watering switch of the distilled water tank is set to City 2. Check that the water volume control valve at the bottom of Doctor Table is open. 3. Check that the handpiece hole is not blocked. - Remove the handpiece and check that it works as a single tube.
Scaler does not work	1. Only water comes out but has no vibration - Check that the tip is not loosened - Check that the power control volume works correct - Make sure the cable is broken. 2. Vibration but no water - Check that the watering switch of the distilled water tank is turned on. - Check that the water volume control valve at the bottom of Doctor Table is open - Remove the scaler body and check that it operates as a single item.
The water in the spittoon does not drain well	1. Check if the spittoon filter is clogged
No water comes out to the spittoon	1. Check the type of the cup 2. Check that the watering switch of the distilled water tank is set as City
Dental light not lit	1. Check that the power switch of the dental light head is turned on. 2. Check if the dental light is turned off by the non-contact power sensor

 Note	• Be sure to inspect the device in a state where there is no moisture or water • Be sure to turn off the power of the main unit before handling errors in the device. – The items that the user can take simple actions are as shown in the table above. If the problem persists, please contact nearest Dentium branch or local distributor.
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8. Technical Information

8.1. Dental Chair, Electric

Product Name	
bright Chair 2	
Model Name	
ICT-CH02S	
Mechanical Dimensions	
Installed (mm)	1843(W) x 1747(D) x 1685(H) 623(W) x 497(D) x 332(H) ← Table
Weight	
Approx. 340 kg	
Maximum Allowed Load on Patient Seat	
Maximum allowed patient weight 150kg	
Electric Properties	
Main Voltage Setting	200~240V AC
Main Frequency	50 / 60 Hz, 1Ph
Power Consumption	Max 0.8 kVA
Electrical Classification	Class 1, Type B
Fuse Rating and Type	
Littelfuse 021506.3MXP, 250V/6.3A, Time-Lag, High BR CAP	
Belfuse 0ZCG0150BF2C, 24V/1.5A, PPTC, Fast Trip	
Belfuse 0ZCK0050AF2E, 9V/0.5A, PPTC, Fast Trip	
Transportation Conditions	
Temperature	-5~45°C
Relative Humidity	20~80%RH
Air Pressure	800~1,100hPa
Operating Conditions	
Temperature	10~35°C
Relative Humidity	20~75%RH
Air Pressure	800~1,100hPa
Altitude	<2000m
* There shall be no direct sunlight, flammable, or corrosive gas	
Storage Conditions	
Temperature	-5~45°C

Relative Humidity	20~80%RH
Air Pressure	800~1,100hPa
* There shall be no direct sunlight, flammable, or corrosive gas	
Water Supply	
Regulations	Compliance with local drinking water standards
Pressure Range	0.2~0.5MPa
Water Hardness limit	300mg/L
pH	5.8~8.5
Flow Rate	>5L/min
Connection	10Φ
Air Supply	
Pressure Range	0.5~0.7 MPa
Flow Rate	>50L/min
Humidity Limit	Dew point not greater than -20°C at atmospheric pressure
Oil Contamination	Max 0.5mg/m ³
Connection	10Φ
Water and Air Filters	
Water Filter	40um
Air Filter	5um
Suction Connection	
Vacuum	>20kPa
Flow Rate	>300ml/min
Connection	Vacuum Syringe : 11.2Φ / DP : 24mm Saliva Ejector : 6.6Φ / DP : 22mm
Type	Medium Volume
Class	Wet of dry depending on installed options
Free Warranty Period	
2 years	

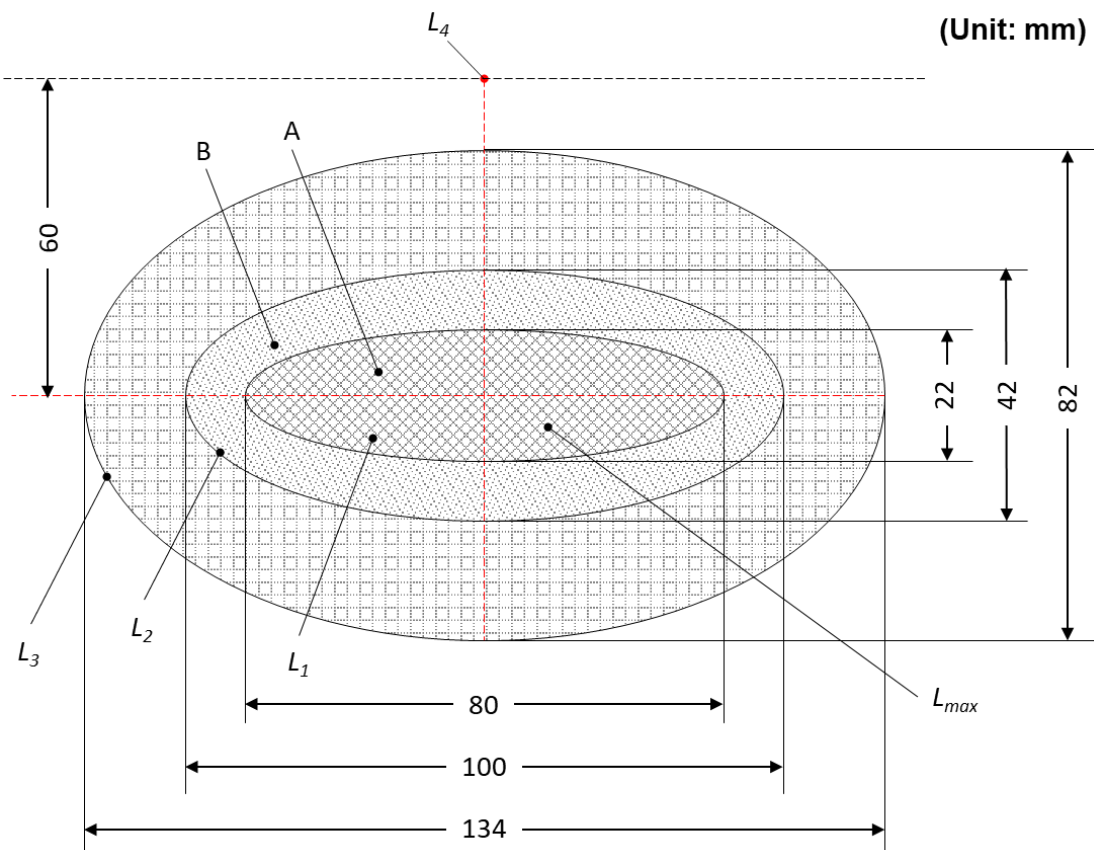
8.2. Electric Motor

Item	Description
Product Name	bright Elec
Model Name	ICT-BE1
Input Voltage	DC 24V
Fuse Rating and Type	Belfuse 0680H6300-0, 125V/6.3A, Slow Blow, Enhan BR CAP
Material	Stainless Steel
Rotational Speed and Torque	Rotation Speed: 3,000~40,000rpm $\pm 10\%$ Rotation Torque: 3.2Ncm $\pm 20\%$
Injection Water Supply	85ml/min $\pm 20\%$
Air Supply Volume	1.5NL/min
Duty Cycle	1 min ON / 10 min OFF
Weight and Size	Weight: 70 grams Size: Ø 22 X 89(L)mm
Tube Length	1,400mm
Usage Environment	Temperature: 10~35°C Relative Humidity: 20~75% Atmospheric pressure: 800~1,100hPa
Transportation and Storage Environment	Temperature: -5~45°C Relative Humidity: 20~80% Atmospheric Pressure: 800~1,100hPa
Free Warranty Period	1 year

8.3. Dental Light

Item	Description
Product Name	bright Light
Model Name	ICT-BL1
Type	LED (Reflector Type)
Input Voltage	DC 24V
Fuse Rating and Type	Belfuse 0ZCG0150BF2C, 24V/1.5A, PPTC, Fast Trip
Power Consumption	8W (24V/0.3A)
Beam Size	165 x 85mm (±20%)
Color Temperature	5,000k
Color Index (Color Rendering Index, CRI)	>85
Brightness	10,000 ~ 50,000 lux (Preset: 30,000 lux)
Usage Environment	Temperature: 10~35°C Relative Humidity: 20~75% Atmospheric pressure: 800~1,100hPa
Transportation and Storage Environment	Temperature: -5~45°C Relative Humidity: 20~80% Atmospheric Pressure: 800~1,100hPa
Free Warranty Period	1 year

- Illumination Pattern of Dental Light



Item	Specification
A Inner area of illumination	37,500 ~ 50,000 lx
B Outer area of illumination	$\leq 25,000$ lx
L_{max} Point of maximum illuminance	50,000 lx
L_1 Illuminance within the area A	80 x 22 mm
L_2 Line of pattern with $L=0.5 \cdot L_{max}$	100 x 42 mm
L_3 Line of pattern with $L=0.1 \cdot L_{max}$	134 x 82 mm
L_4 Illuminance at a distance of 60mm, $L_4 \leq 1200$ lx	$\leq 1,100$ lx

8.4. bright Scaler

Item	Description
Product Name	bright Scaler
Model Name	ICT-BS1
Type	Piezoelectric dental ultrasonic scaler
Output Frequency	26~32kHz
Output Adjustment	0.1~0.35A
Primary Vibration Displacement	±80um (±10%)
Semi-displacement Force	0.5N (±10%)
Water Supply Quantity	50ml/min ±20% (1bar)
Operating Conditions	Continuous operation
Weight and Size	Weight: 60 grams Size: Ø18 X 153.5 (L)m
Tube Length	2,000mm
Input Voltage and Power Consumption	DC 24V,
Fuse Rating and Type	Belfuse 0ZCG0110BF2B, 24V/1.1A, PPTC, Fast Trip
Water Supply Conditions	1 ~ 5bar
Usage Environment	Temperature: 10~35°C Relative Humidity: 20~75% Atmospheric pressure: 800~1,100hPa
Transportation and Storage Environment	Temperature: -5~45°C Relative Humidity: 20~80% Atmospheric pressure: 800~1,100hPa
Free Warranty Period	1 year

9. Labeling

9.1. Labels

Item	Description
Device Name	Dental Chair, electric
Type Name	ICT-CH02S
Purpose of Use	It refers to a medical treatment device and chair used for treatment in the dental field, and a treatment system is also configured.
Weight	340 kg
Performance and Operating Procedure	Refer to user manual
Precautions for Use	Refer to user manual
Rated Protection Type and Degree of Protection	Class 1, Type B
Rated Power	200-240VAC, 50/60Hz
Power Consumption	Max 0.8 kVA
Maximum Allowable Weight	150 kg

9.1.1. ICT-CH02S



Label – 83mm(W) × 38(L)

bright Chair 2		Dentium	
REF ICT-CH02S	MADE IN KOREA Dental Chair, electric		
LOT	Input Power : 200-240 Va.c., 50/60Hz, 0.8kVA		
	Fuse Rated : 250V/6.3A, T,L		
	Protection Against Electric Shock : Class1		
	Duty Cycle (Chair) : 60s on, 600s off		
Dentium Co.,Ltd. (ICT Branch)			
(16229) 76 Changnyong-daero 256beon-gil, Yeontong-gu, Suwon-si, Gyeonggi-do, Republic of Korea			
Tel +82-70-7098-8962 Fax +82-31-8019-9106			
I083-01LA-02 rev.0			

9.1.2. ICT-01-FUNC



Dentium
bright Chair 2

 Dentium Co.,Ltd. (ICT Branch)
(16229) 76 Changnyong-daero 256beon-gil,
Yeontong-gu, Suwon-si, Gyeonggi-do,
Republic of Korea

Tel +82-70-7098-8962
Fax +82-31-8019-9106
I083-02LA-01 rev.0

MADE IN KOREA
REF ICT-01-FUNC

Dental Foot Controller: FUNC
IP CODE : IPX1
Input Power:3.3VDC



Label - 55mm(W) × 22(L)

9.1.3. ICT-01-DISC



Dentium
bright Chair 2

 Dentium Co.,Ltd. (ICT Branch)
(16229) 76 Changnyong-daero 256beon-gil,
Yeontong-gu, Suwon-si, Gyeonggi-do,
Republic of Korea

Tel +82-70-7098-8962
Fax +82-31-8019-9106
I083-02LA-02 rev.0

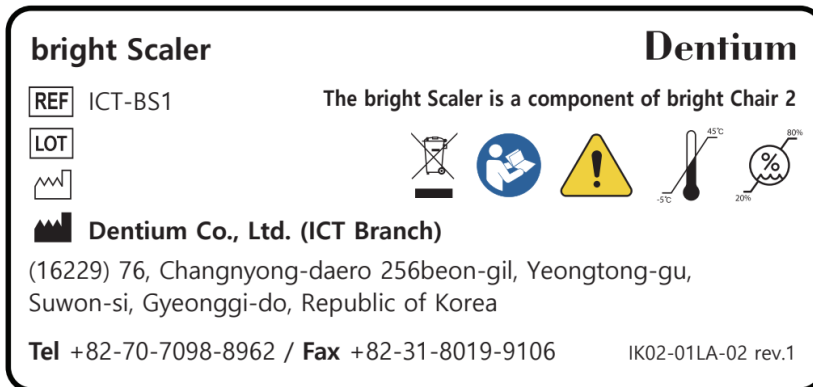
MADE IN KOREA
REF ICT-01-DISC

Dental Foot Controller: DISC
IP CODE : IPX1
Input Power:3.3VDC



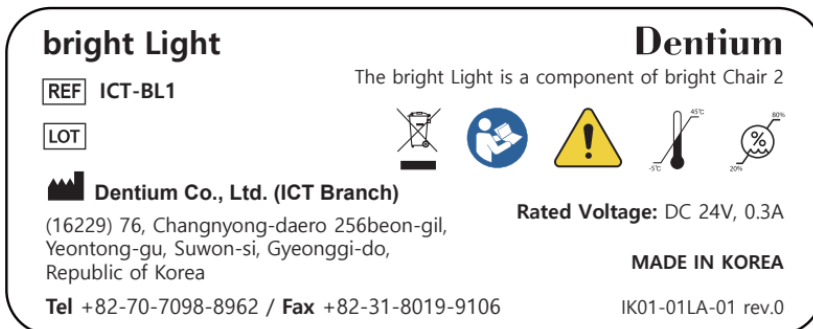
Label – 55mm(W) × 25(L)

9.1.4. ICT-BS1



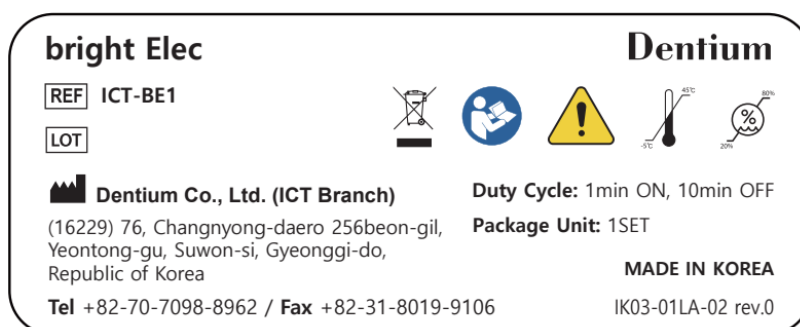
Label – 55mm(W) × 25(L)

9.1.5. ICT-BL1



Label – 55mm(W) × 25(L)

9.1.6. ICT-BE1



Label – 55mm(W) × 25(L)

10. Components

10.1. Basic Components

Model	Basic Components	Qty.	Options
ICT-CH02S	Doctor Table	1	N/A
	Dental Light	1	Model Name: ICT-BL1
	Chair Seat	1	Color Options: ① Indigo Navy ② Ocean Blue ③ Dark Cyan ④ Brown
	Foot Controller	1	IPX Grade: 1 Controller Options: ① Disc Type ② Func Type
	Electric Motor	1	Model Name: ICT-BE1
	Scaler	1	Model Name: ICT-BS1
	3-Way Syringe	2	N/A
	Saliva Ejector	1	N/A
	Vacuum Syringe	1	N/A
	Doctor's Stool	1	N/A
	 Note		

The scaler (ICT-BS1) and electric motor (ICT-BE1) are included in the bright Chair 2 overall equipment system and cannot be used as separate medical devices and are not sold individually. Additionally, it is not compatible with other Dental Chair equipment and is only compatible with bright Chair 2 products.

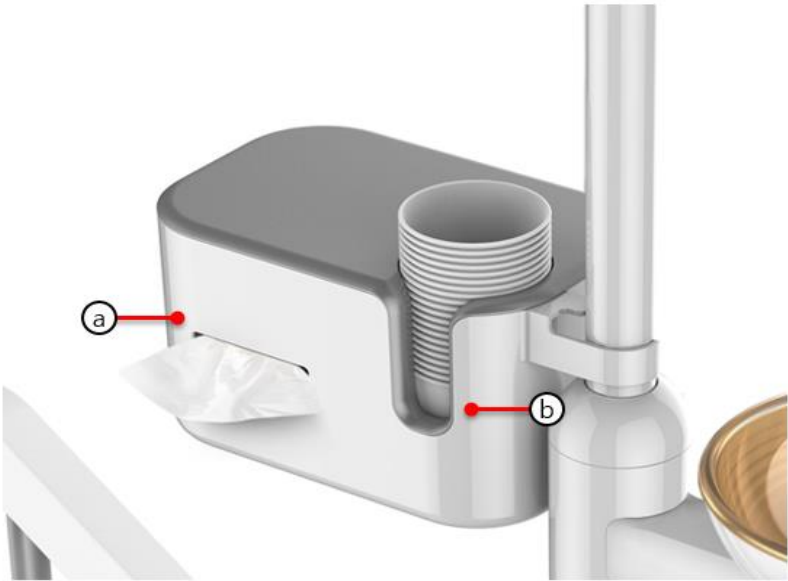
If the user wants to use an different electric low speed motor and scaler instead of ICT-BE1 and ICT-BS1, the instrument can be selected by referring to the compatible components list (Table in Chapter 9.2).

10.2. Optional Components

Device Name	Standard Requirement	Model Name	Manufacturer
Air High Speed Handpiece	ISO 9168 EN ISO 14457:2017 IEC 80601-2-60:2019	S-Max M900L (Compatible with 'PTL-CL-LED' motors)	NSK
	ISO 9168 EN ISO 14457:2017 IEC 80601-2-60:2019	Ti-Max Z900L (Compatible with 'PTL-CL-LED' motors)	NSK
	ISO 9168	750TK-L	Dentium
	ISO 9168	750TN-L	Dentium
Air Low Speed Motor	ISO 9168 EN ISO 14457:2017 IEC 80601-2-60:2019	FX205 M4 (Compatible with 'FX25' handpiece)	NSK
	ISO 9168	AD304	Dentium
Electric Low Speed Motor	ISO 9168 EN ISO 14457:2017 IEC 80601-2-60:2019	NLX nano (Compatible with 'S-Max M25L' handpiece)	NSK
Scaler	ISO 9168 EN ISO 18397:2016 IEC 80601-2-60:2019	Varios 170	NSK
Monitor Arm	-	Monitor Arm	Dentium
Stool	-	Assist Stool	Dentium
Tissue & Cup Holder	-	Tissue & Cup Holder	Dentium
 Note	Dentium does not provide the Air High Speed Handpiece (S Max M900L, Ti Max Z900L), Air Low Speed Motor (FX205 M4), Electric Low-Speed Motor (NLX nano), and Scaler (Varios 170). The handpieces, motors, and scalers listed in the table are CE certified products. These must be purchased directly by the product user, and it is recommended that the user contact Dentium before using the purchased dental handpiece, motor and scaler. Dentium is also not responsible for any risks/side effects related with the purchased dental handpiece, motor and scaler.		

10.2.1. Tissue and Cup Holder

- These are chair-only accessories that are mounted on the chair to store tissues and cups for the convenience of patients during treatment.



No.	Name	Function
Ⓐ	Tissue Holder	The part that holds tissues
Ⓑ	Cup Holder	The part that holds a cup

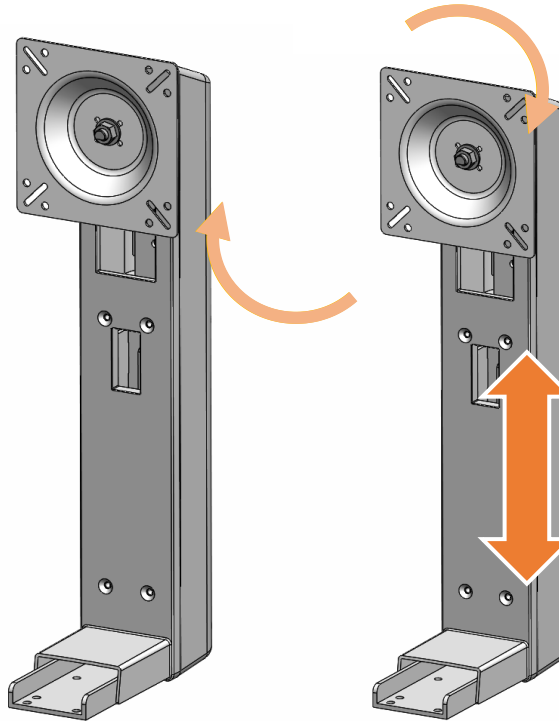


Warning

The holder may be damage if the load exceeding 1.5kg is applied to the holder.

10.2.2. Monitor Arm

- It supports the monitor and allows the user to fix the monitor in various positions desired by the user.



Note

- The applicable monitor size is from 17 inch to 24 inch.
- When you want to change the monitor or adjust the height of the monitor arm, please contact the nearest Dentium branch or local distributor.
- The maximum load on the monitor stand is 2kg.

11. Appendix

11.1. Precautions for Disposal of the System

- When disposing electric machines and accessories, they must be disposed of in accordance with the guidelines of the local laws and regulations.



- This mark means that electrical and electronic equipment waste cannot be disposed of as unsorted municipal waste must be collected separately.
- Before disposing of products or parts, contact the nearest Dentium sales office or local distributor to ensure that they are disposed of in a safe and appropriate manner.
- This equipment is basically designed to be disposed of without environmental pollution.
- Details

Part Name	Raw Material	Recyclability	Hazardous Material
Frame	Aluminum + Steel	◆	
Cover	Plastic	◆	
Sheet	Memory foam	◆	
Control board	Electronic components + PC	◆	
Cable	Copper + Steel + Oil	◆	
Packaging	Cardboard + foam	◆	

- This Dental Chair, electric Dentium ICT-CH02S is designed according to medical device regulations and manufactured and tested according to strict quality control system. Dentium Co., Ltd warrants that this warranty complies with the international warranty provisions of consumer protection laws.

11.2. Electronic Appliance Compatible Information

- This device is manufactured to operate in the electromagnetic environment described below.
- The customer or user must ensure that this device is being used in the environment described below.

Emission test	Standard	Electromagnetic Environment Guide
HF emissions according to CISPR 11	Group 1	The radiation properties of ICT-CH02S make it suitable for use in industrial areas and hospitals (CISPR 11 Class A). When used in a residential environment (where CISPR 11 Class B is normally required), this equipment may not provide adequate protection for radio frequency communication services. Users may be required to take mitigation measures, such as relocating or reorienting equipment.
Emissions according to CISPR 11	Class B Class A	ICT-CH02S is suitable for use in all establishments other than domestic use and can be used in homes directly connected to the public low-voltage power supply network. Warning This equipment should only be used by medical professionals. This equipment/system may cause radio interference and may interfere with the operation of nearby equipment. It may be necessary to take mitigation measures such as redirecting or relocating ICT-CH02S or shielding its location.
Harmonics according to IEC61000-3-2		
Voltage fluctuations/flicker according to IEC 61000-3-3	Compliance	

11.2.1. Radio Interference Resistance

- This device is designed to operate in the electromagnetic environment described below.
- The customer or user of this device must ensure that the device is being used in such an environment.

Radio interference resistance test	IEC60601-1-2 test level	Standard Compliance level	Electromagnetic Environment Guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	8 kV direct contact discharge 15 kV air gap discharge	8 kV direct contact discharge 15 kV air gap discharge	Floors must be made with wood, cement or ceramic tiles. For floors made of synthetic materials, the relative humidity must be at least 30%

Radiated RF electromagnetic field immunity according to IEC 61000-4-3	3V/m 80MHz-2.7GHz 80% AM at 1kHz	3V/m 80MHz-2.7GHz 80% AM at 1kHz	ICT-CH02S is suitable for use in professional medical environments.
Transient fast electrical disturbance/burst according to IEC 61000-4-4	± 2kV power line ± 1kV I/O line 100 kHz repetition frequency	± 2kV power line ± 1kV I/O line 100 kHz repetition frequency	The quality of the supply voltage must be suitable for a typical business or hospital environment.
Surge voltage according to IEC 61000-4-5	±1 kV line to line ±2kV line and ground	±1 kV line to line ±2kV line and ground	The quality of the supply voltage must be suitable for a typical business or hospital environment.
Immunity to conducted disturbances induced by RF fields according to IEC 61000-4-6	3V 0.1580MHz 80% AM at 6V 1kHz in ISM band between 0.15~80MHz Power supply line & I/O line	3V 0.1580MHz 80% AM at 6V 1kHz in ISM band between 0.15~80MHz Power supply line & I/O line	The strength of the RF field in the frequency range higher than 150 kHz to 80 MHz, the strength of the RF field is less than 3V. The quality of the supply voltage must be suitable for a typical business or hospital environment.
Drops, interruptions and fluctuations in supply voltage according to IEC 61000-4-11	0 % UT: 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT; 1 cycle and 70 % UT; 25/30 Cycles Single phase: at 0°, 0 % UT; 250/300 cycle	0 % UT: 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT; 1 cycle And 70 % UT; 25/30 Cycles Single phase: at 0°, 0 % UT; 250/300 cycle	The quality of the supply voltage must be suitable for a typical business or hospital environment. It is recommended that the appliance have an uninterruptible power supply or battery to keep the appliance operating in the event of a power outage.
Supply frequency according to IEC 61000-4-8	3 A/m	3 A/m	If LCD display distortion occurs, it may be necessary to place the Model ICT-CH02S LCD display away from sources of power frequency magnetic fields or to install a magnetic shield. The power frequency magnetic field must be measured low enough at the intended installation location.
Note: UT is the mains AC voltage before using the test level.			

11.2.2. Protection Distance

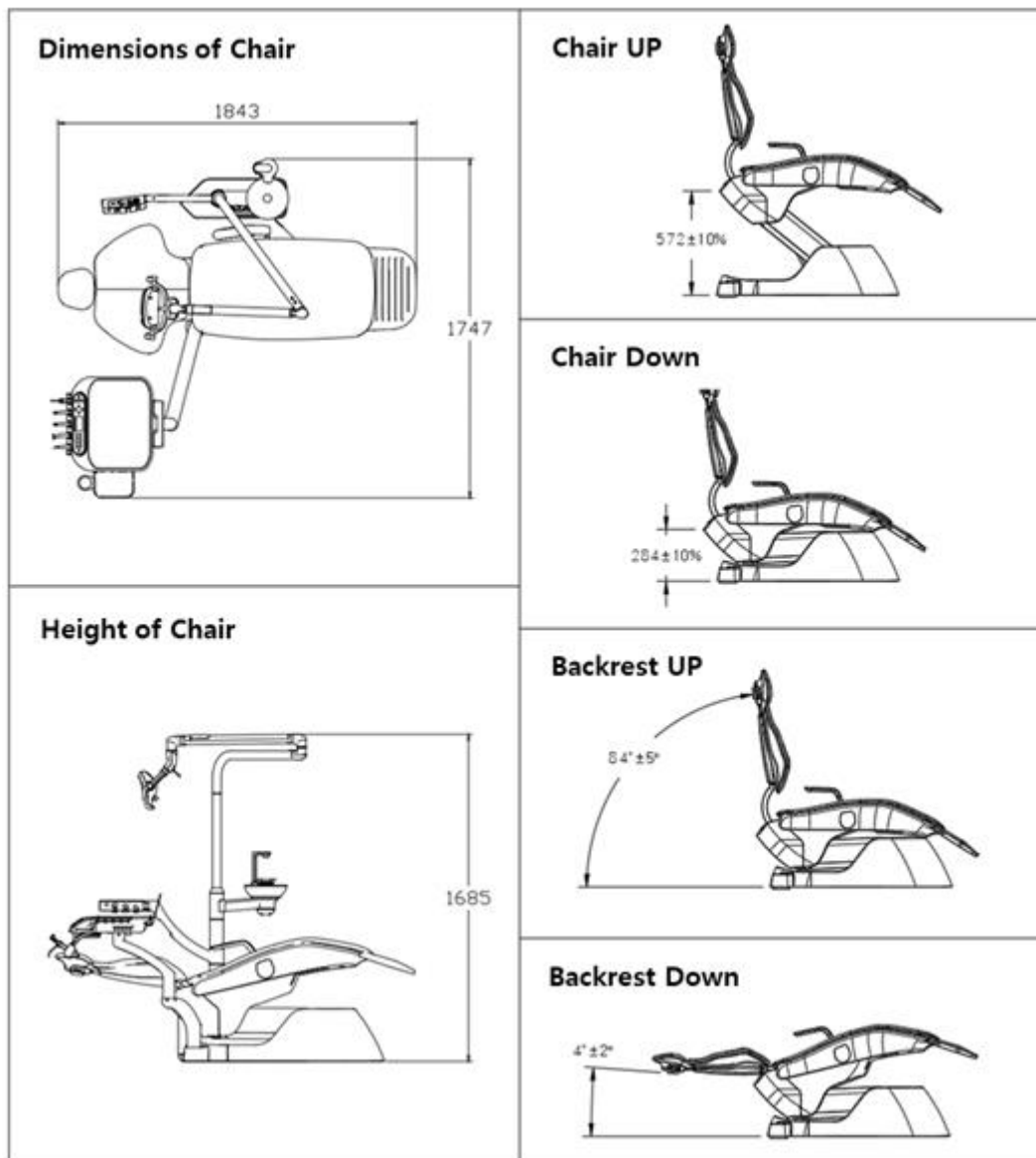
- Recommended protective distance between portable and mobile HF communication devices and this device
- This device is intended to operate in an electromagnetic environment in which radiated HF disturbances are controlled.
- RF communication equipment must be at least 30cm away from any part of ICT-CH02S, including cables designated by Dentium.

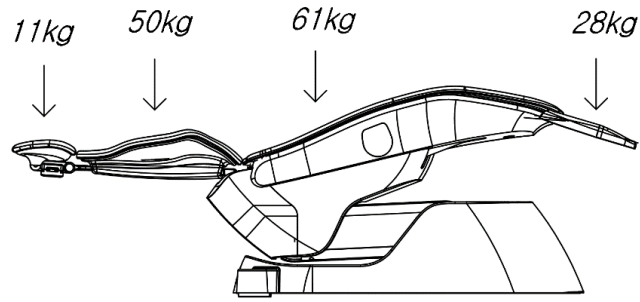
Electromagnetic Interference Resistance Test	IEC 60601-1-2 Test level	Standard Compliance level	Electromagnetic environment guidance
Induced HF disturbance /IEC 6100 0-4-6 Induced HF disturbance/ IEC 6100 0-4-3	3Veff 150 kHz ~ 80 MHz 3V/m 80MHz ~ 800MHz 3V/m 800MHz ~ 2,5GHz	3Veff 3Veff 3Veff	The use of portable and mobile wireless devices, including cables, should not be made closer to the device than the recommended protective distance. The recommended guard distance can be calculated using the appropriate equation for the transmit frequency. The recommended protection distance; $d = [1, 2] \sqrt{P}$ For 80 MHz to 800 MHz; $d = [2, 3] \sqrt{P}$ For 800MHz to 2.5GHz; P is the rated power (unit: W) of the transmitter according to the transmitter manufacturer's data, and d is the recommended protection distance (unit: m). The magnetic field strength of a stationary radio transmitter depends on the site survey, but must be less than the compliance level at all frequencies. Disturbance may occur in the environment of equipment marked with the following symbol. 

11.3. Installation and Precautions

11.3.1. Installation Location

- The installation site must be a flat place, and it must be installed after securing enough free space.
- Select and install in a well-ventilated and level place.
- Avoid installation in places where there are dangerous substances such as explosives around.
- Securing equipment installation space: Secure 30cm distance from the wall [200*200*200cm].
- Product movement should be handled by an expert or by contacting the manufacturer.
- Ensure sufficient clearance (at least 20 cm to 30 cm) from the device and install it in a place where movement is controlled, such as on a wall or window.
- Check maximum weight specifications for each part



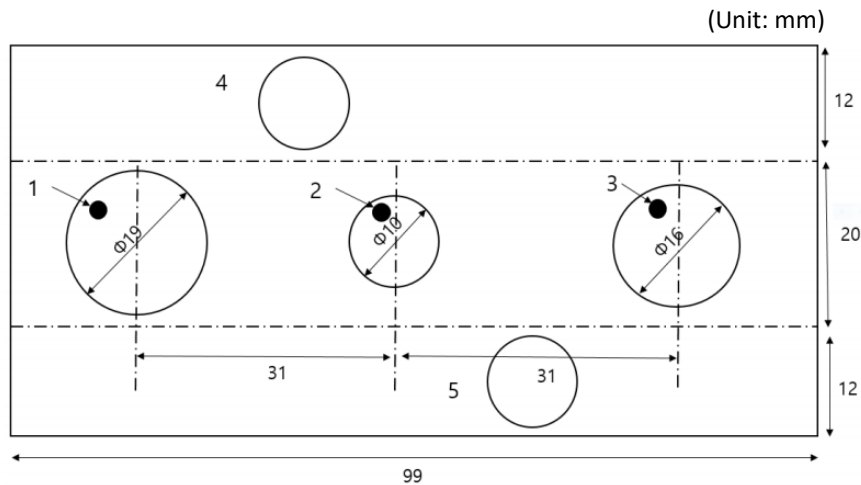


Caution

This equipment must be installed by a qualified professional service engineer

11.3.2. Supply Connection Requirements

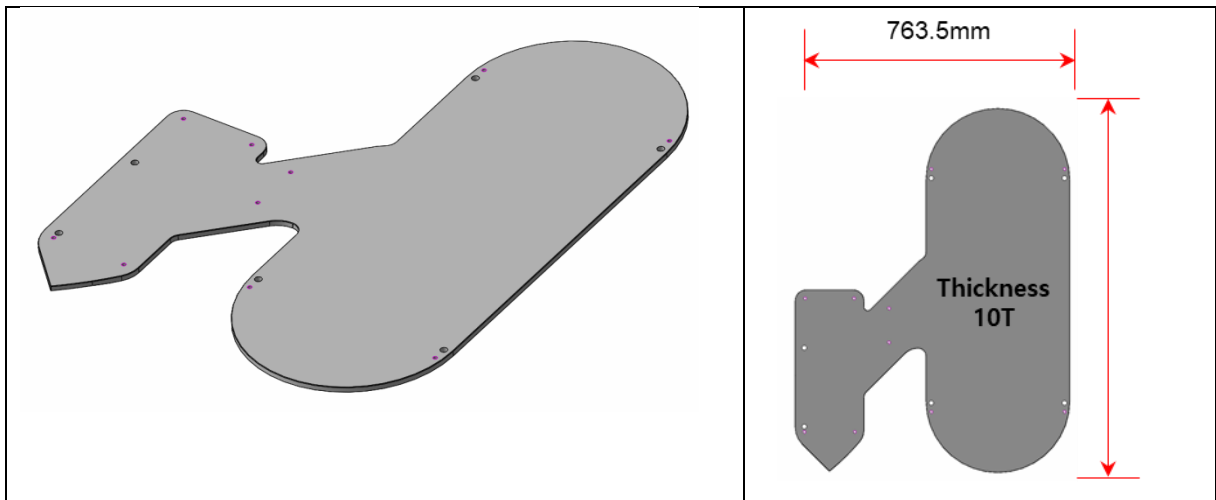
For dental multitherapy units that are connected directly to an external drinking water supply, piping is installed at or near the intake connection point. Connecting ports and adjacent supply areas under the layout diagram.



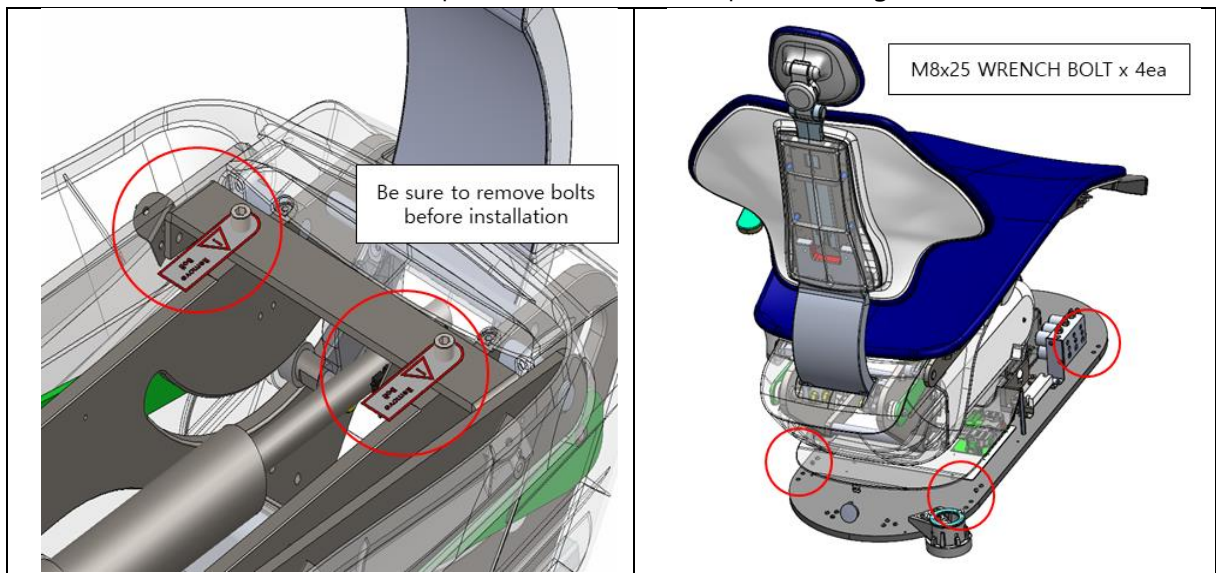
- 1 - Wastewater connection port
- 2 - Input water connection port
- 3 - Dental unit suction source connection port
- 4 - Power and communication connection area
- 5 - Input gas connection area

11.3.3. Installation Procedure

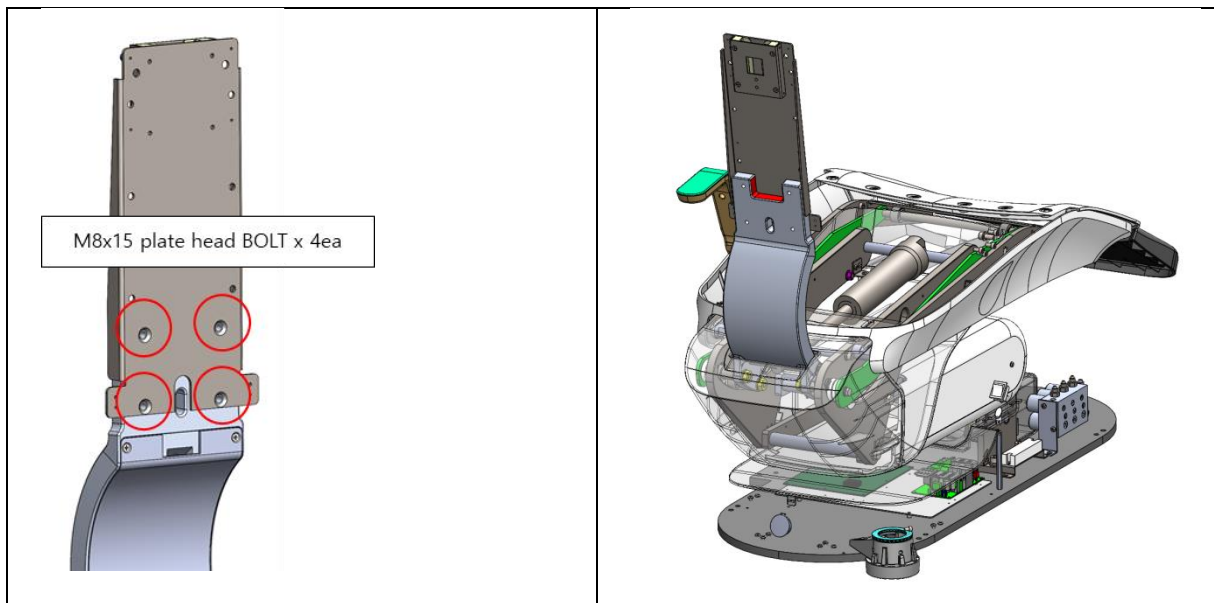
- ① Place the Bottom Plate on the floor.



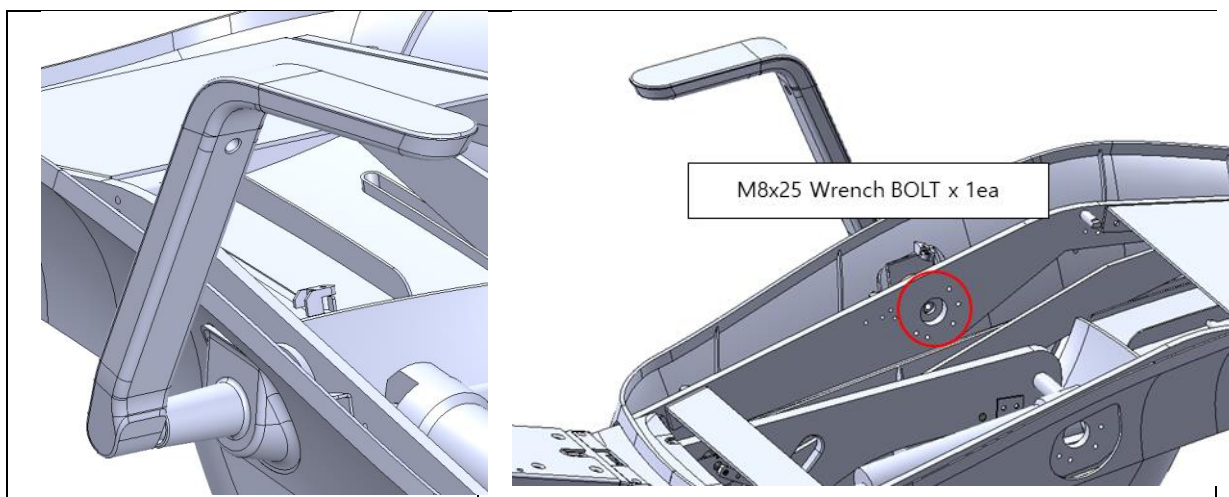
- ② Remove the chair from the box, place it on the bottom plate, and tighten the bolt.



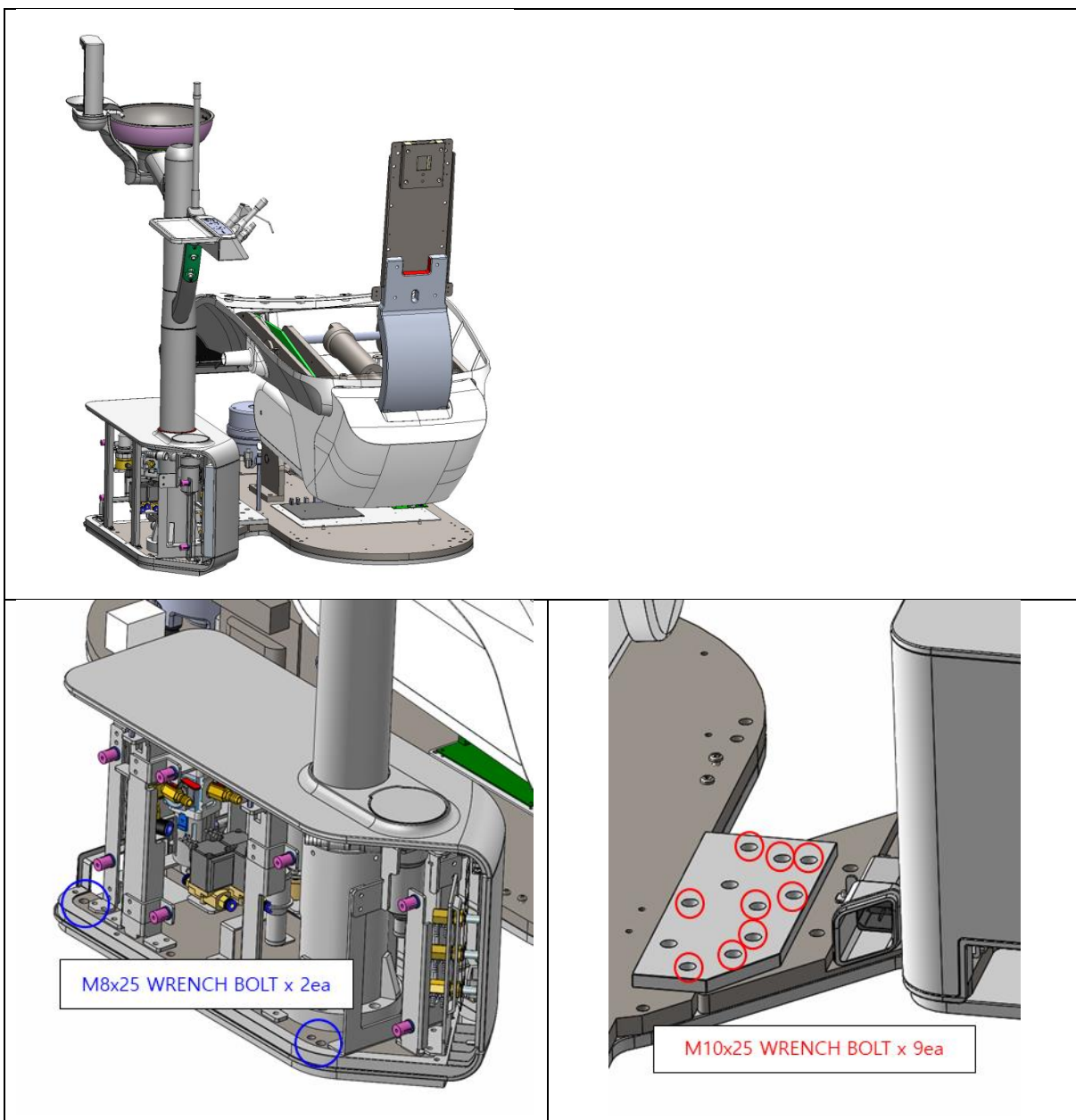
- ③ Install the Backrest Support BRK on the chair.



- ④ Install the armrest.

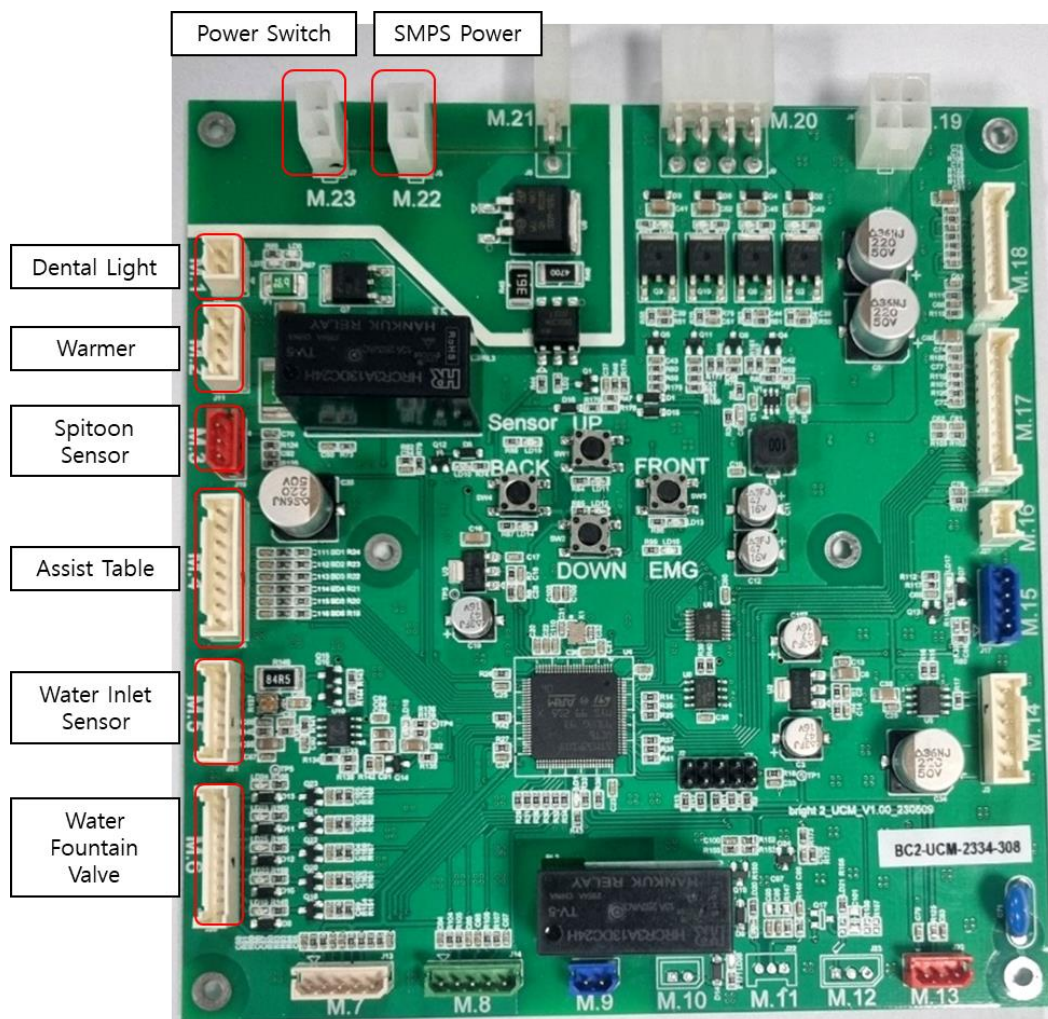


⑤ Separate the unit from the box, place it on the bottom plate and chair, and then tighten the bolts.



⑥ Check the labels on the harnesses coming from the unit side and connect each to the UCM board.

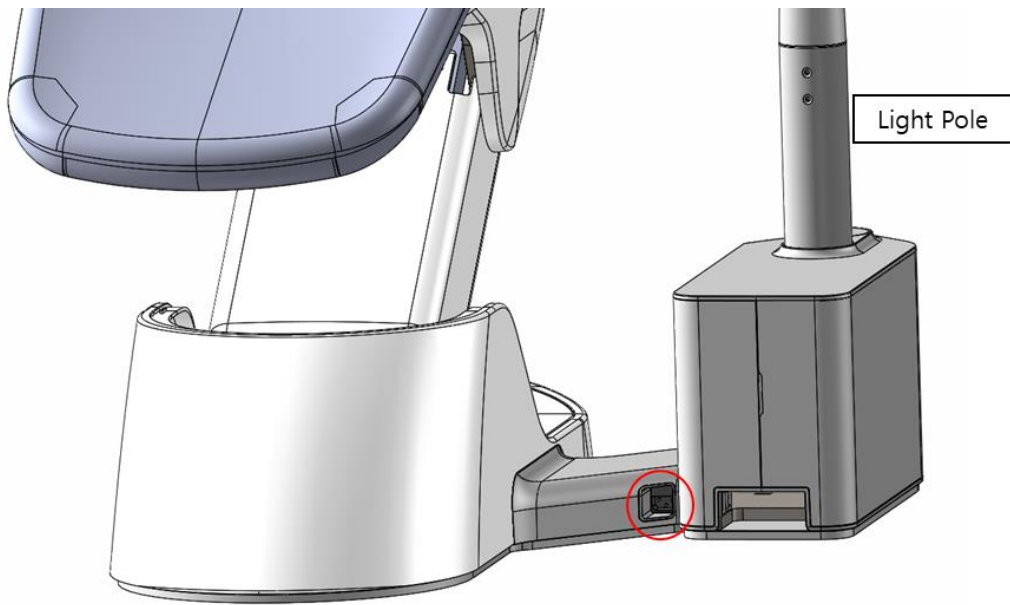
- The AC INLET's harness is connected to the equipment switch, and the cable coming from the equipment switch is connected to M.23.



- AC INLET Fuse Specifications

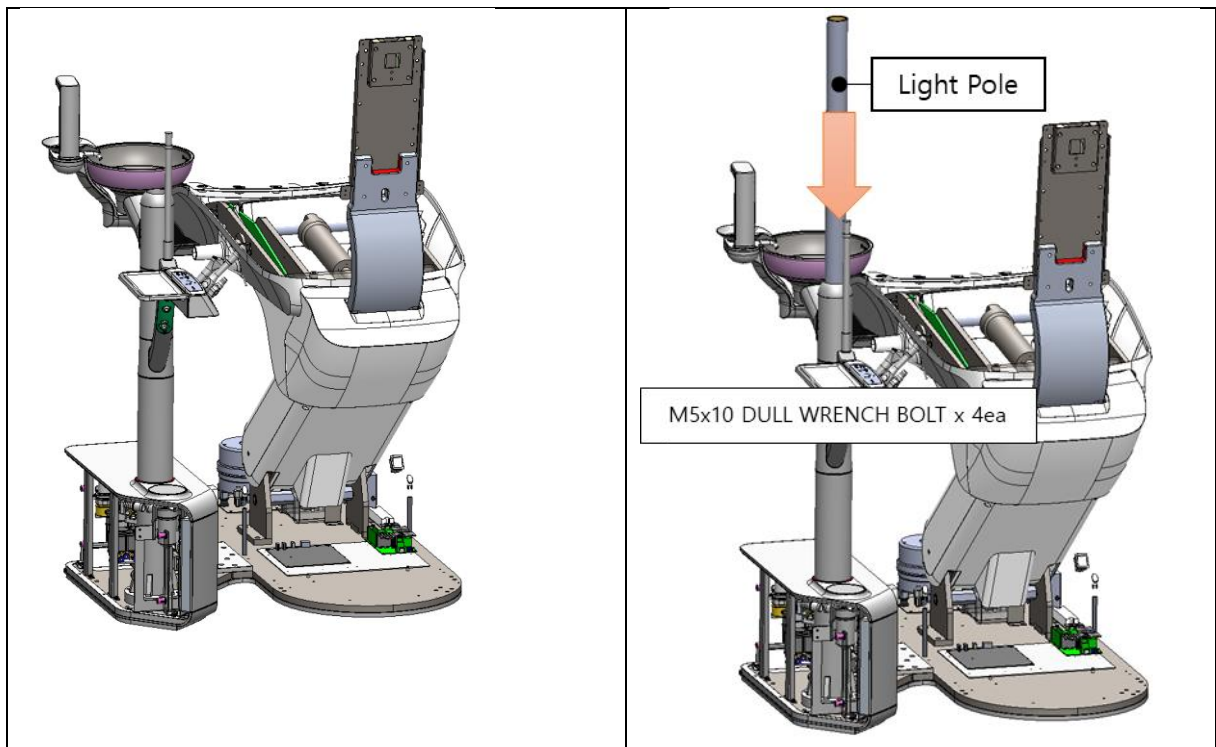
PCB name	FUSE Capacity		Mounting location
AC INLET FUSE	AC250V/6.3A, 2EA	5mm x 20.00mm(L)	UNIT FRAME

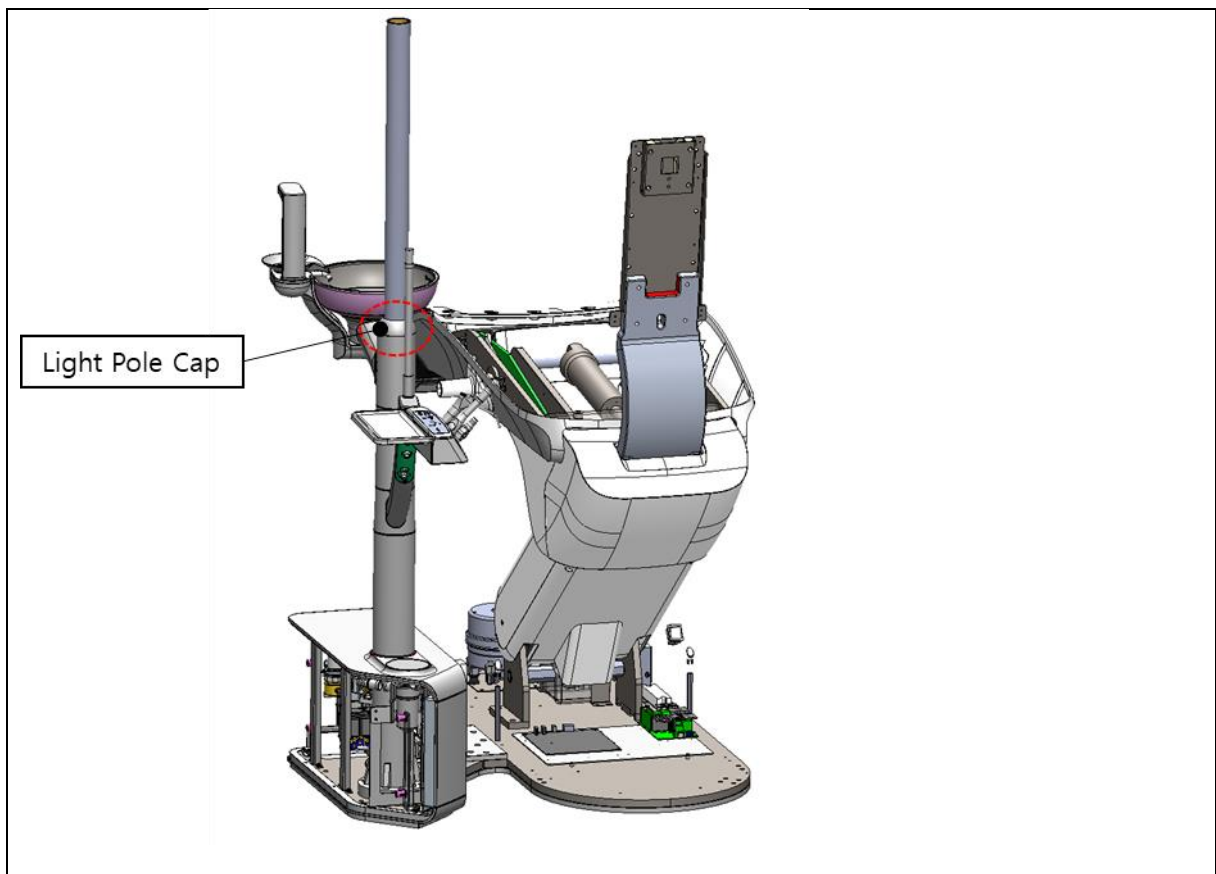
- ⑦ Connect the power cable to the equipment power device connection main body.



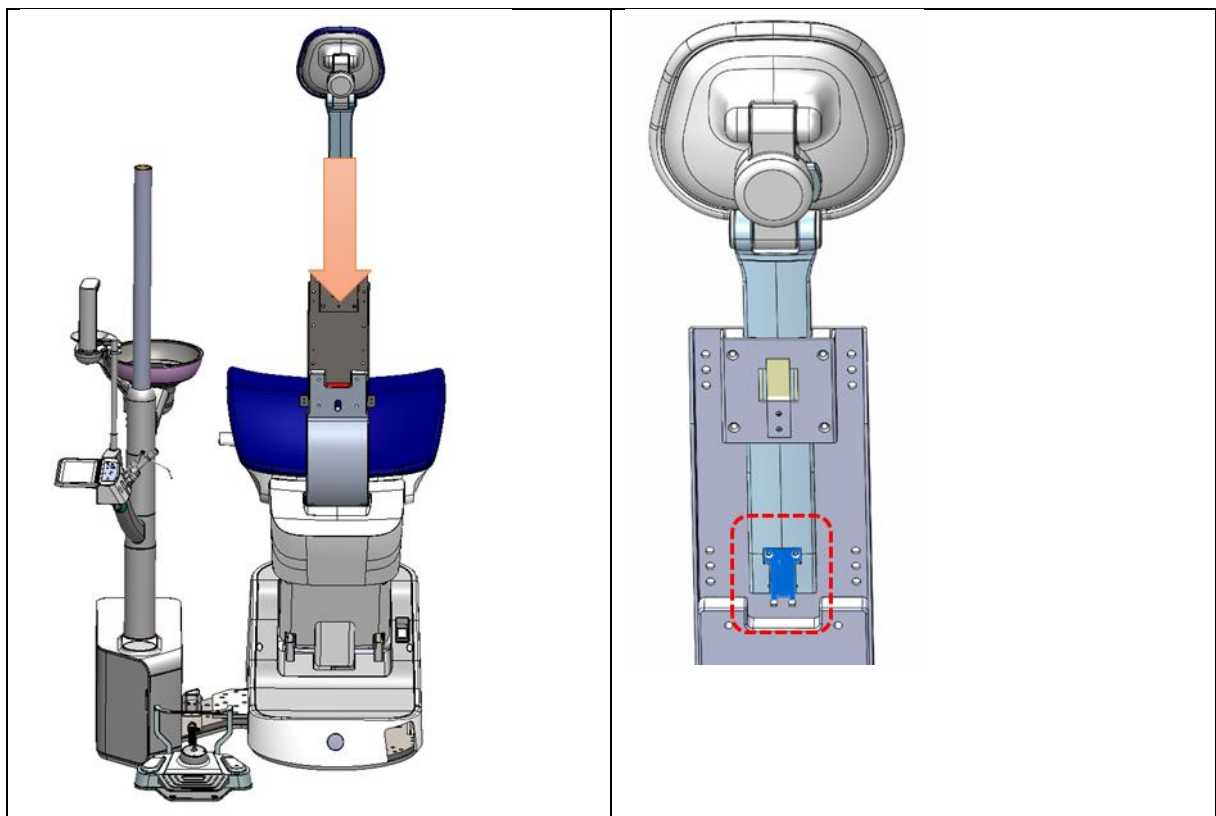
- ⑧ Turn the power switch on and the assist table. Raise the chair using **the chair rise button**.

- ⑨ Insert the Light Pole into the Spittoon Frame Holder and secure it with a headless bolt. After fixing, insert the Light Pole Cap into the Light Pole.





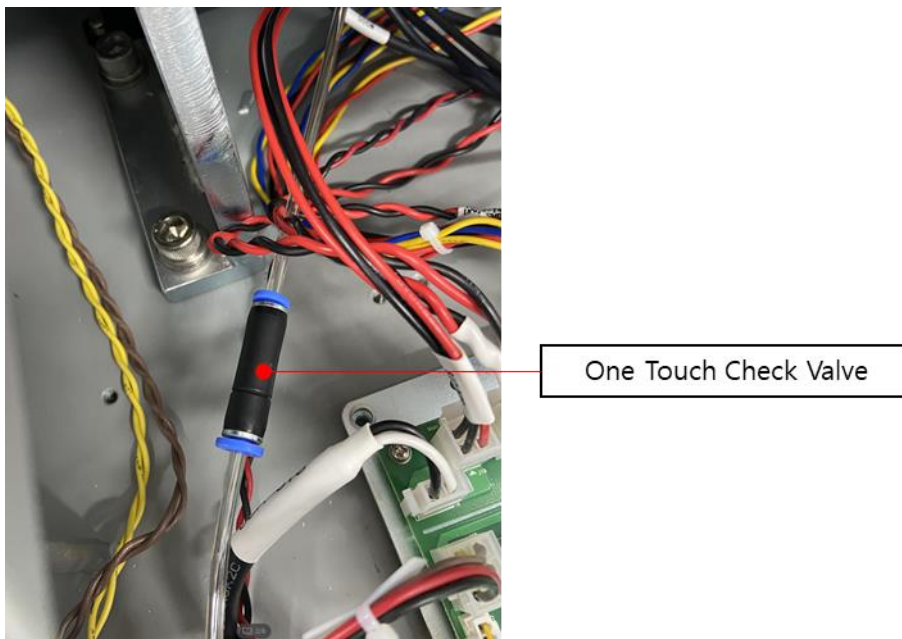
⑩ After inserting the headrest into the backrest support frame, use the stopper bracket to remove the headrest. Fasten to Slide Bar.



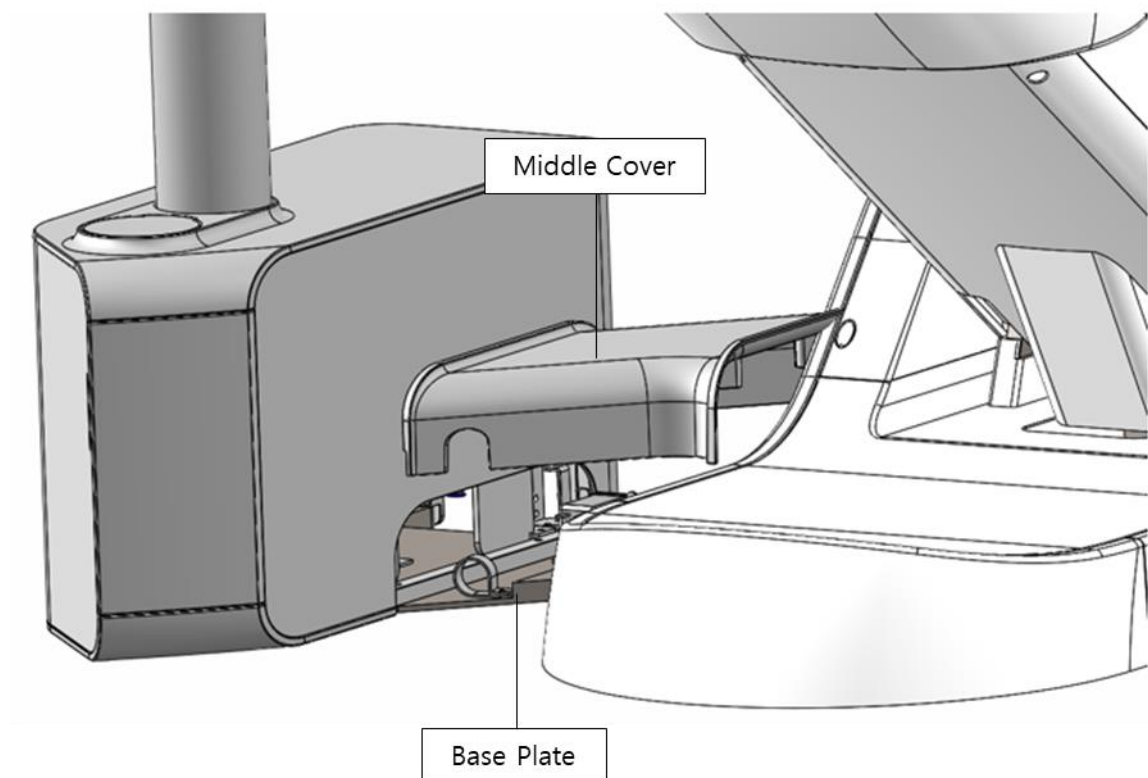
- ⑪ Connect the air hose and wire connector at the bottom of the Headrest Slide Bar to the air hose and wire connector on the chair. Combine. Attach the enclosed cable tie holder to the Backrest. Support Frame and attach the wire and air hose. Fix it.



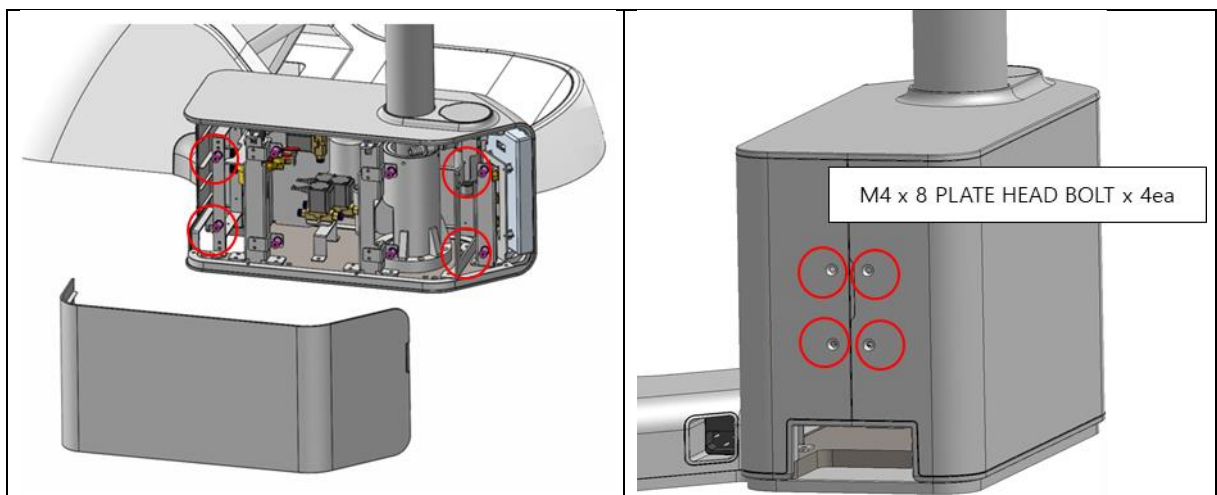
- ⑫ After moving the Headrest Air Hose connected to the unit to the bottom of the chair. Combines with the headrest one-touch check valve.



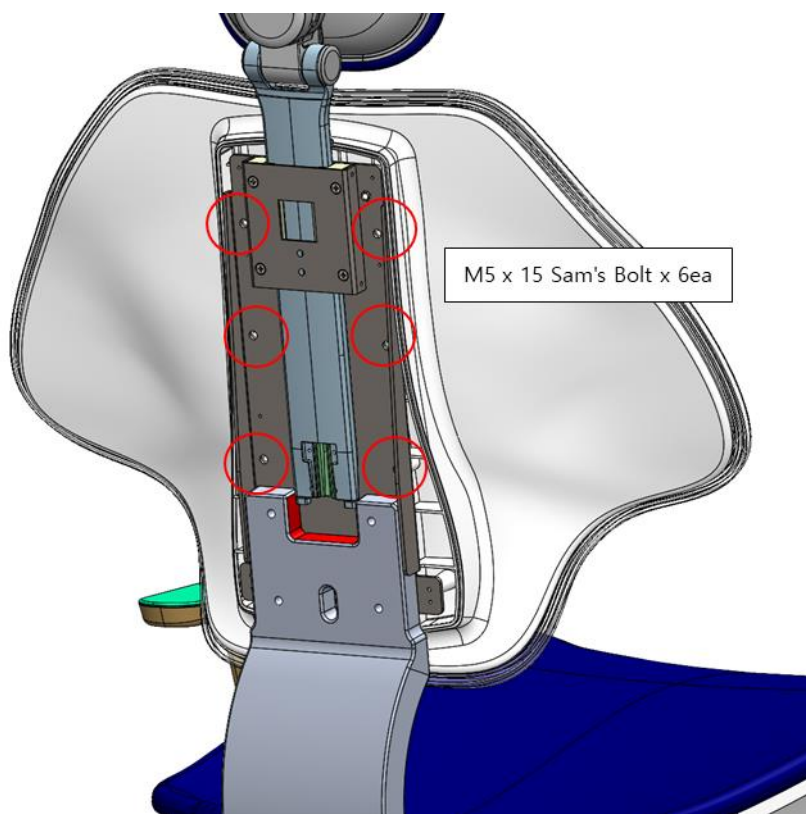
- ⑬ Assemble the Base Frame Middle Cover.



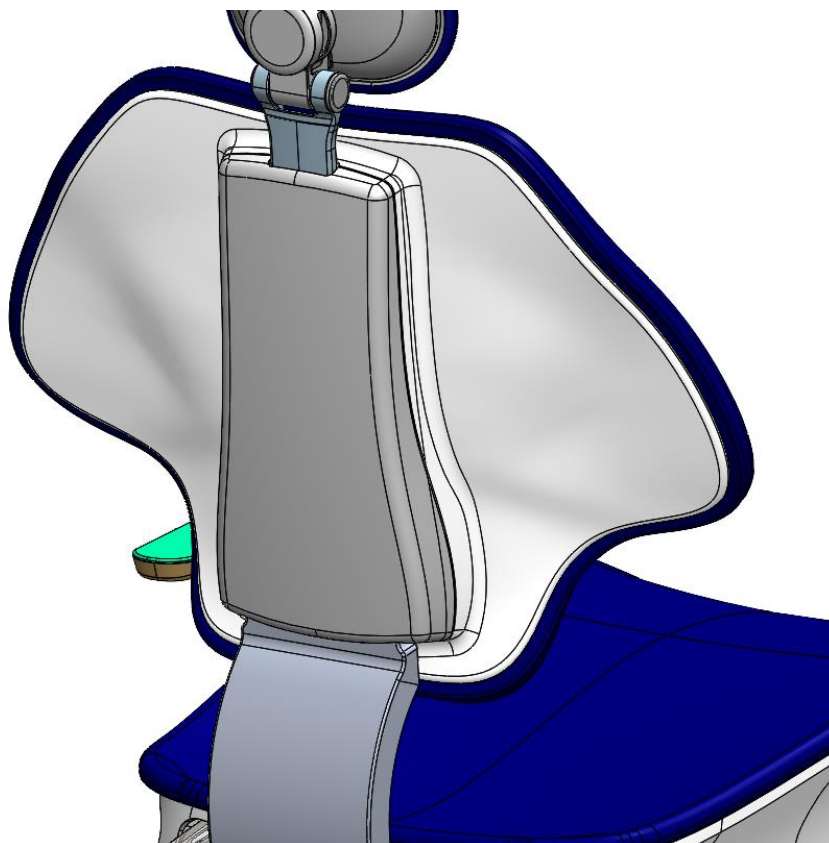
- ⑭ Assemble the left cover of the unit. When assembling, assemble after accurately aligning the Assy Ball position.



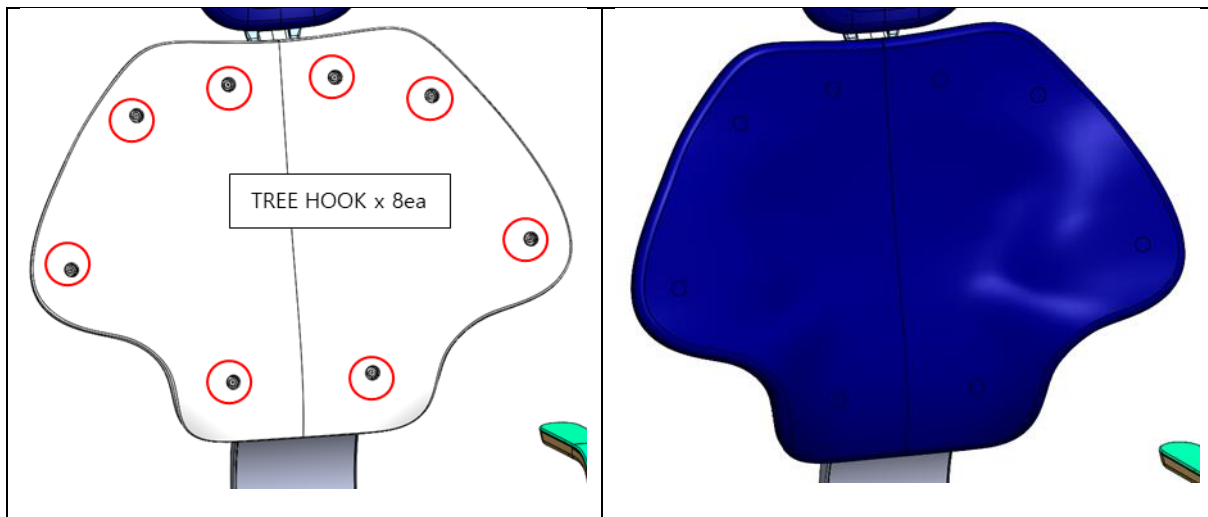
⑮ Assemble Backrest Seat Cover A.



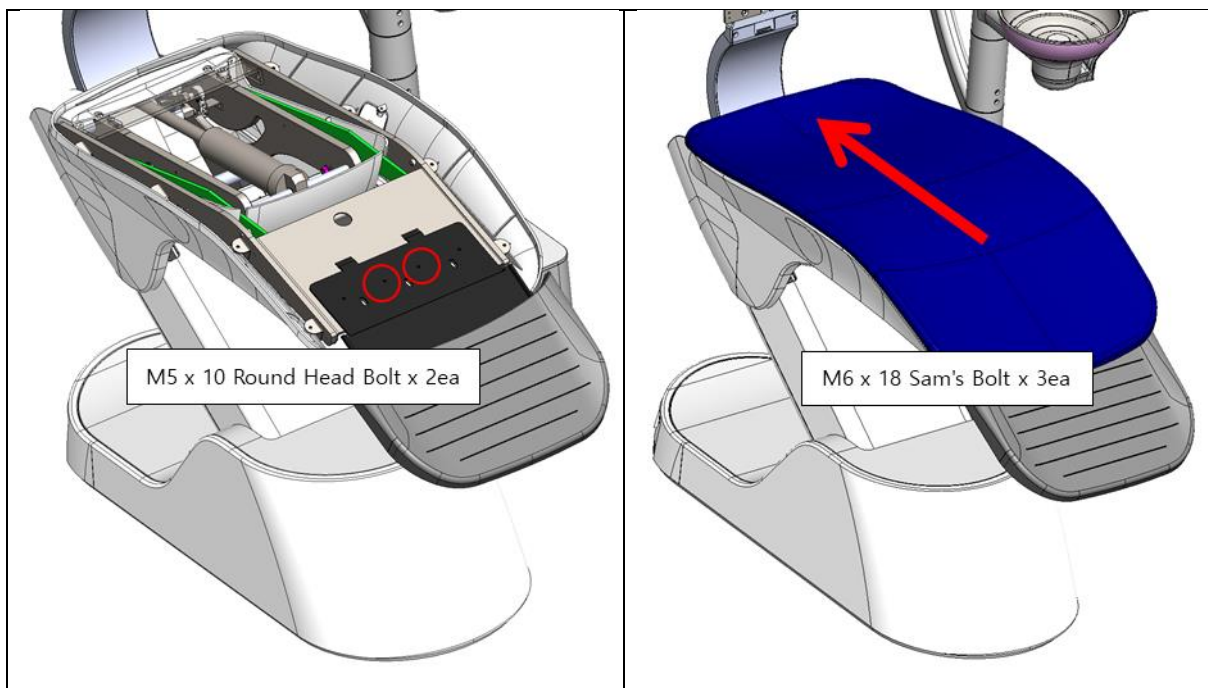
⑯ Install Backrest Seat Cover B.



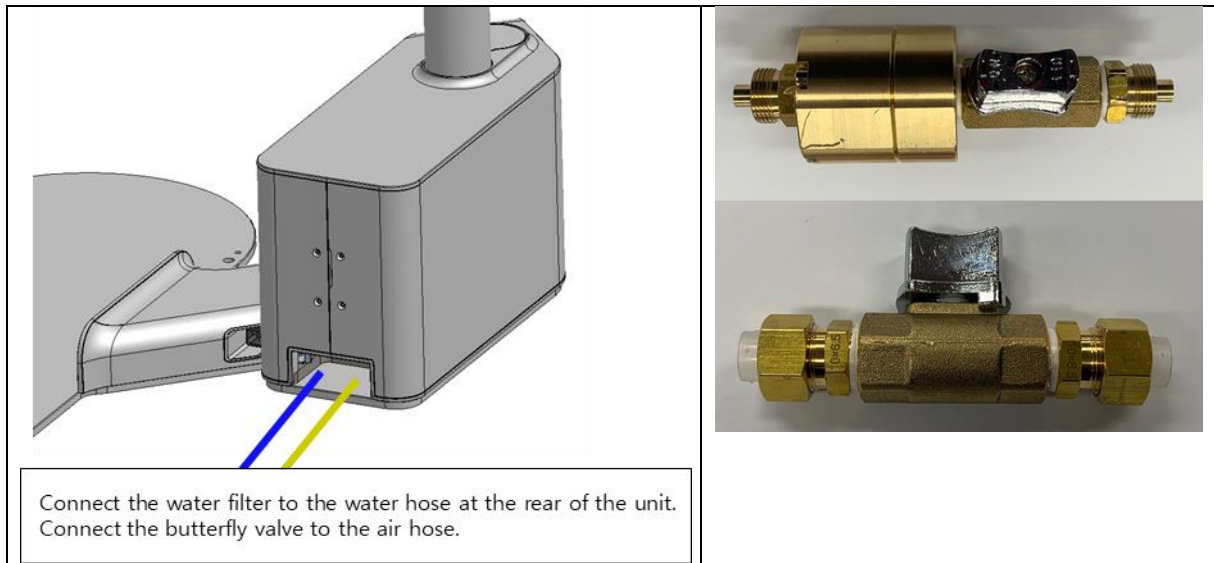
- ⑰ Install the Backrest Seat. (Insert it into the tree hook.)



- ⑱ After assembling the footrest, install the base seat. (Push it in and tighten the bolt on the lower side of the seat.) Before seating the seat, do not place objects weighing more than 20 kg on it.

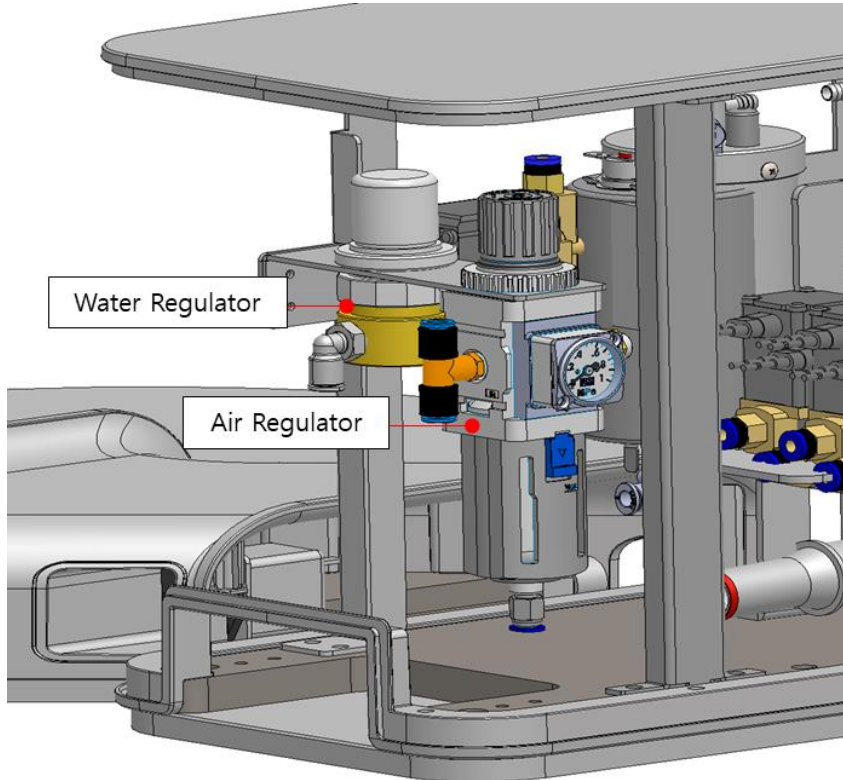


①⁹ Water and air supplied from the building are supplied to the outside of the chair using a two-touch fitting valve. Connect with hose.



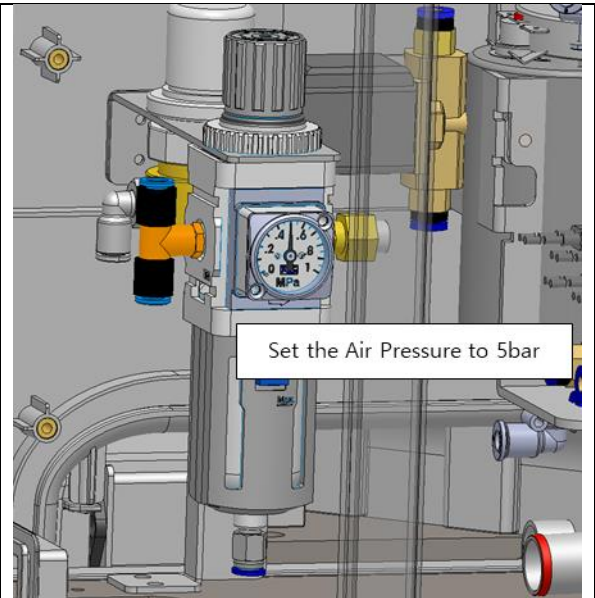
[A valve can be connected to the front of the unit to sample water supply inflow]

②⁰ Connect the sewer pipe, suction pipe, and suction signal line to the chair.



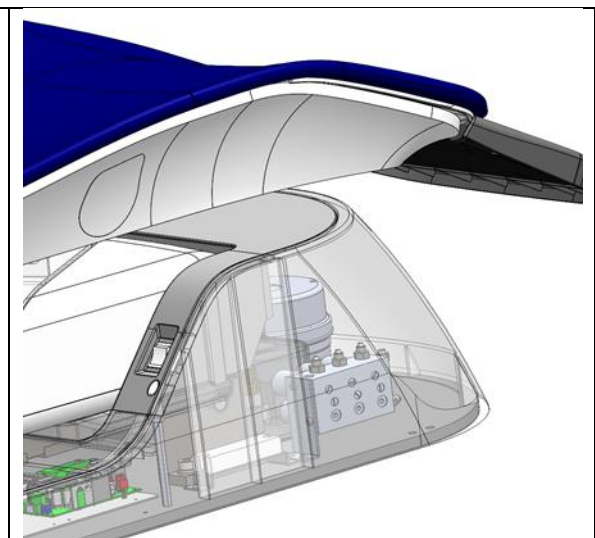
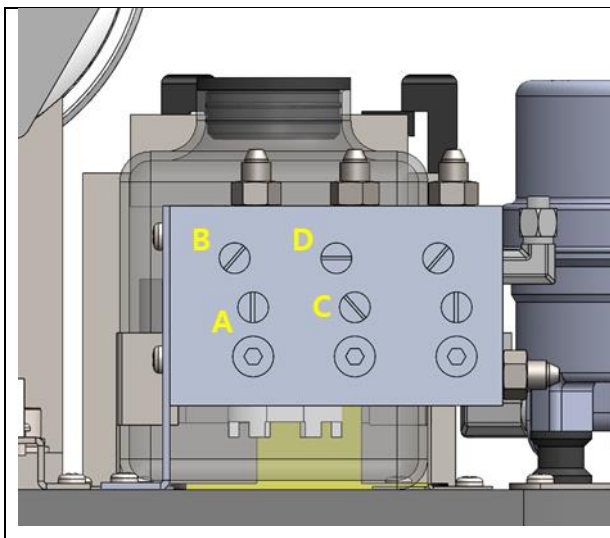
② Set the air pressure.

- Lift the lever of the air regulator upward and turn it clockwise until the air pressure is set to 5 bar.
- After completing the setting, press the upper lever to fix it.



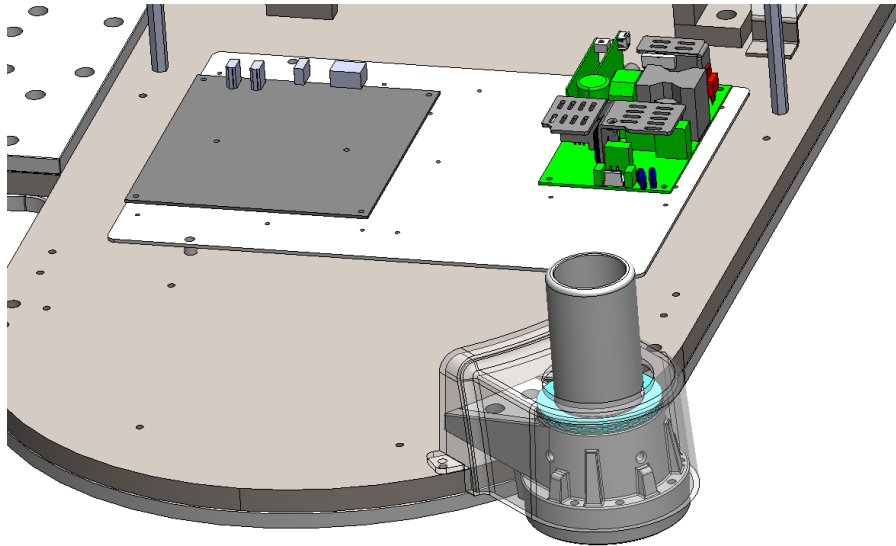
③ Adjust the chair speed.

- A: Seat rise speed control
- B: Seat plate lowering speed control
- C: Adjustable climbing speed
- D: Controlling the speed of descent of the slope



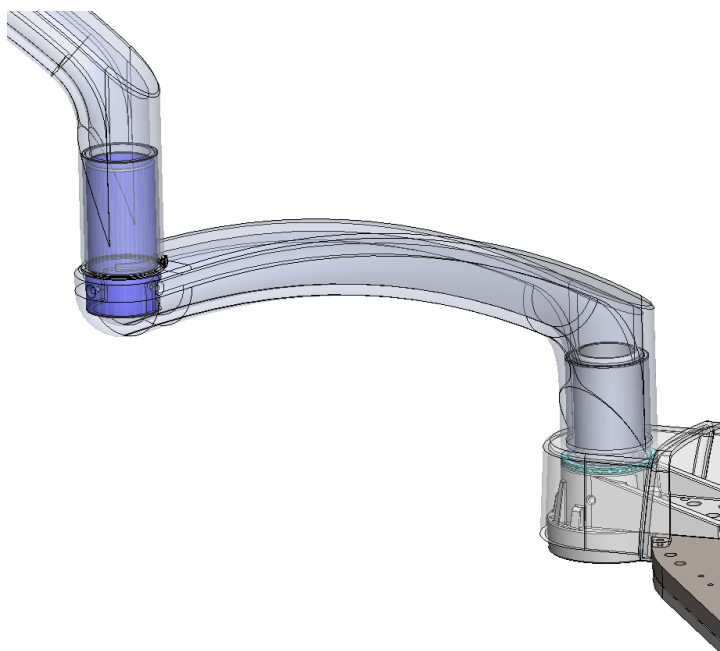
②③ Install the large arm mount block.

- Install the large arm mount block. (M10 x 25 wrench bolt, spring washer + washer)
- Assemble the thrust bearing
- Install the Count Cover
- Apply grease to the surface of shaft



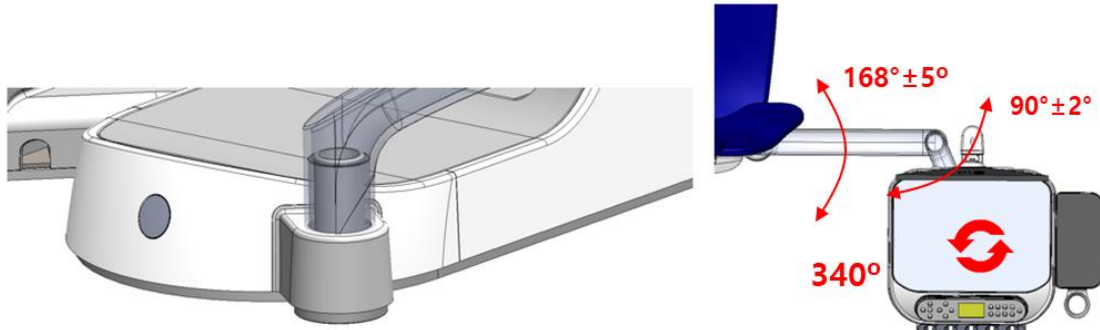
②④ Install the large arm.

- Install the large arm
- Large arm limits Assemble the stopper bolt. (M5 x 8 hexagon wrench bolt 1ea)
- Install the mount cover
- Assemble the stopper bolts for the limits of the first large arm and the second large arm (M5 x 8 wrench Low bolt 1ea)



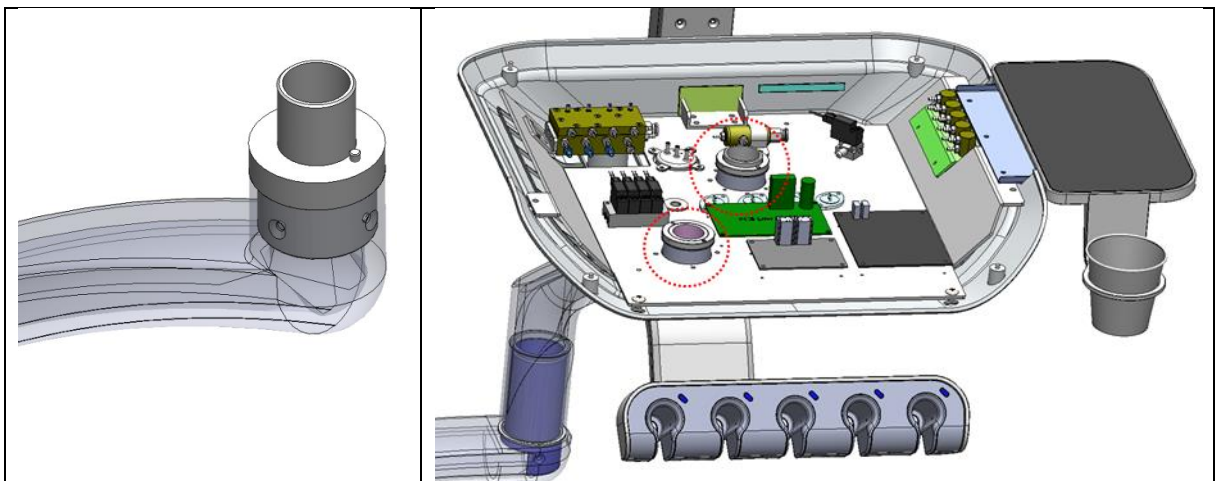
25 Install the Base Cover.

- Install the base front cover. (M5
- Install the base back lower cover. (M5 x 12 round bolt 4ea)
- Install the base back upper cover.



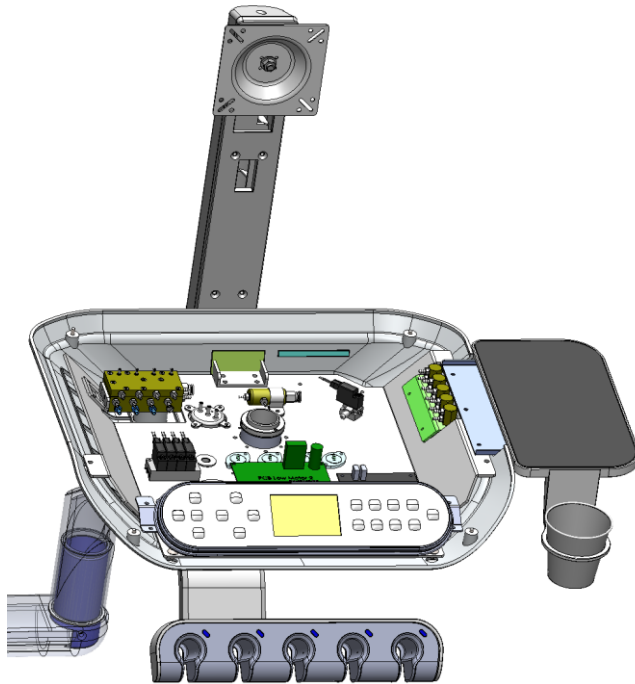
26 Install the Doctor Table and Handpiece Holder.

- Disassemble the table top cover and board plate.
 - Check whether the acetal washer is seated on the large arm and then seat the table.
 - Assemble the table lock nut washer and assemble the lock nut.
- (Emotionally adjust the rotational tension by leveling the tilted table by hand)
- Assemble the acetal washer and lock nut in the same manner as the large arm.



②⑦ Install the monitor arm.

- After installing the monitor arm, connect the cable (hexagon wrench bolt M5X10, spring washer 4EA).
- Install the monitor arm back cover (Sam's Bolt M4)



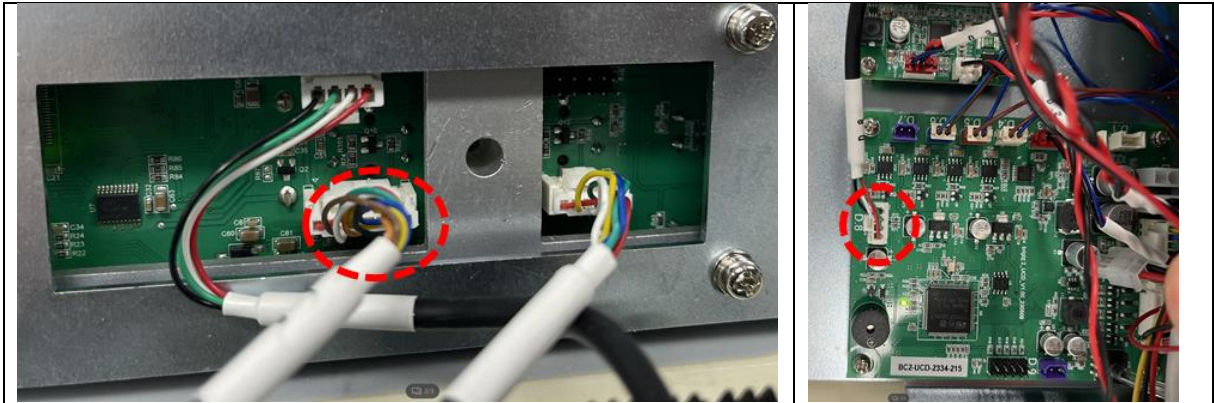
②⑧ Connect the pipes

- Connect the foot air to the master block. (Yellow)
- Connect the main air (Black).
- Connect the main water. (Blue)



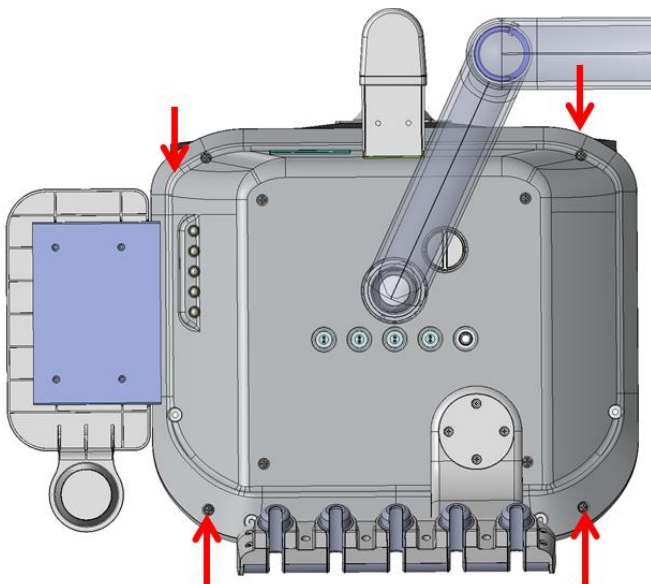
②⑨ Connect the harness.

- Connect the table harness to the UCD board.

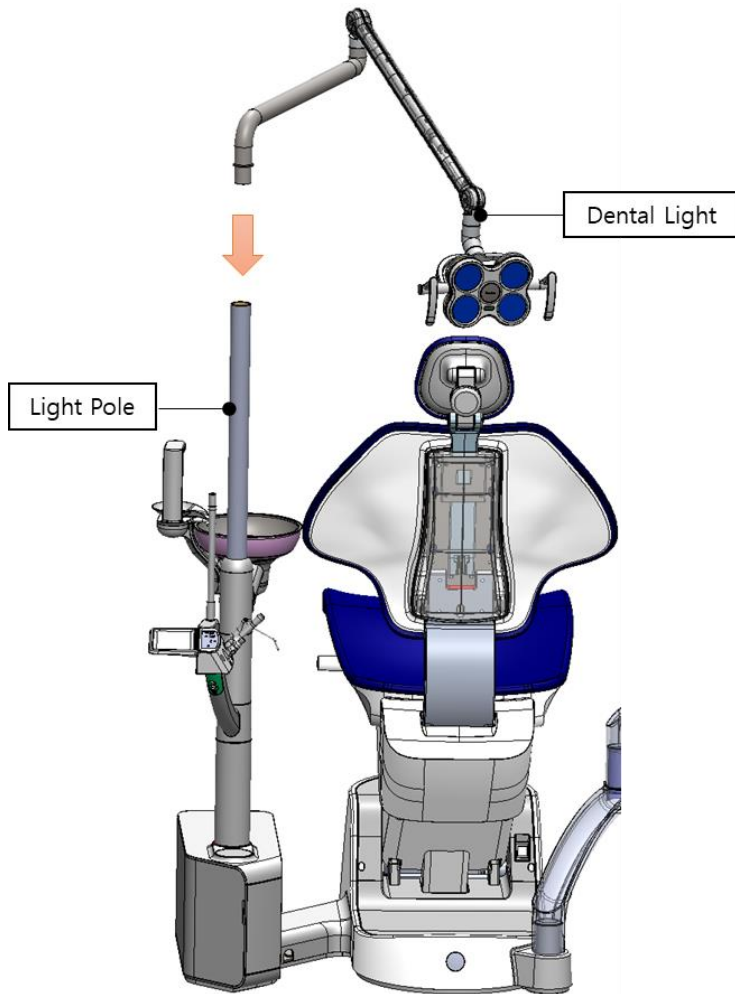


③⑩ Install the doctor table cover.

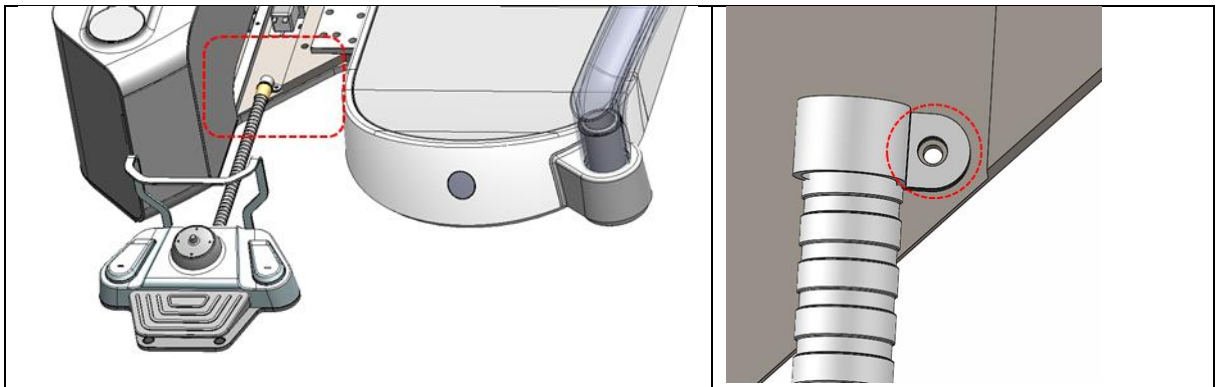
- Install the doctor table upper cover. (Roundhead Sams M4 4EA)



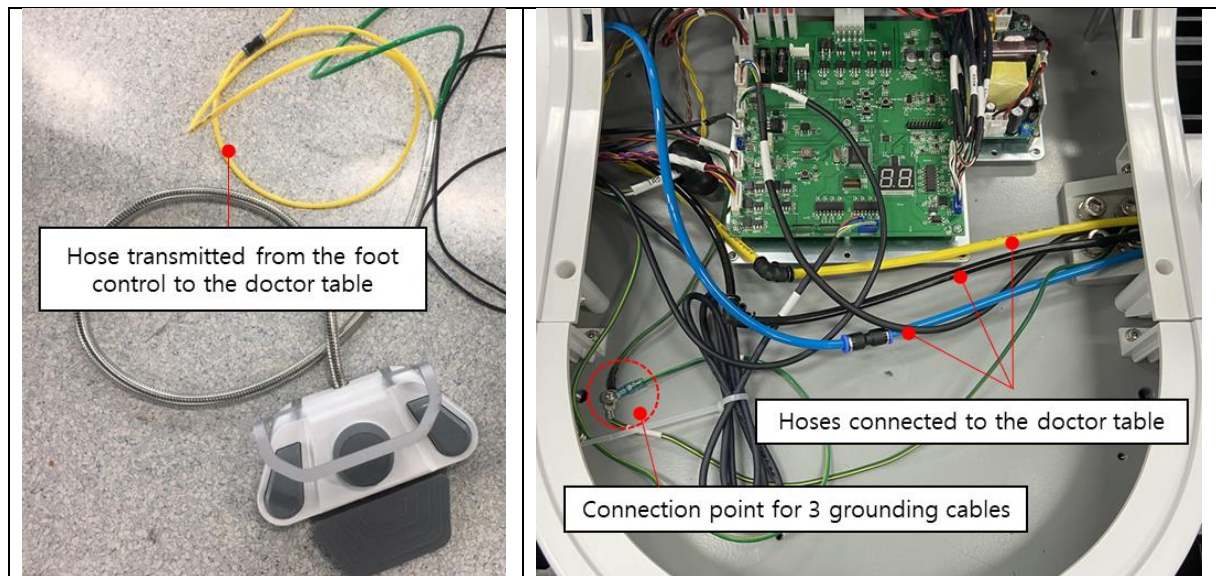
- ⑪ After inserting the dental light wire into the light pole, insert the light arm.
- Light Pole accessories must not exceed 5kg.



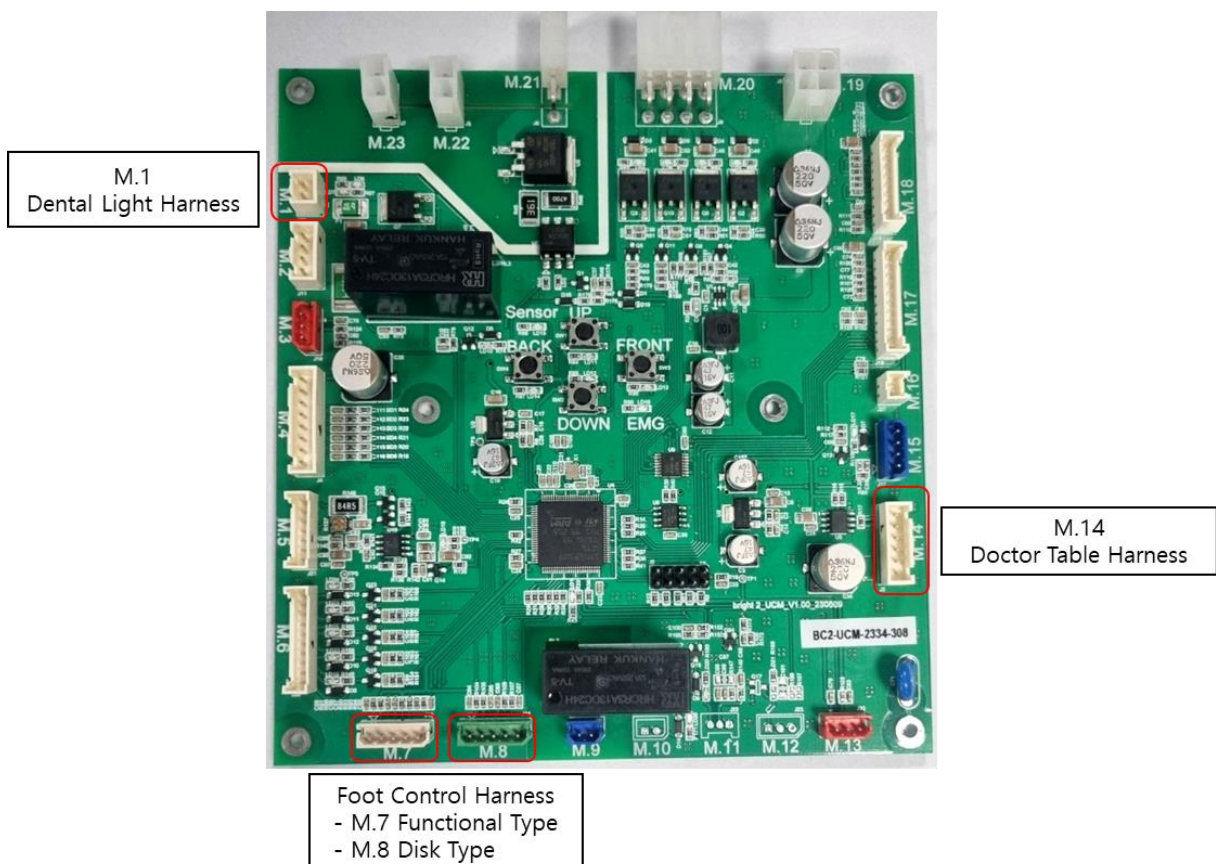
- ⑫ Remove the foot controller from the foot control box and insert it inside the unit. After insertion, assemble the metal hose to the hose clamp and secure it to the unit with bolts.



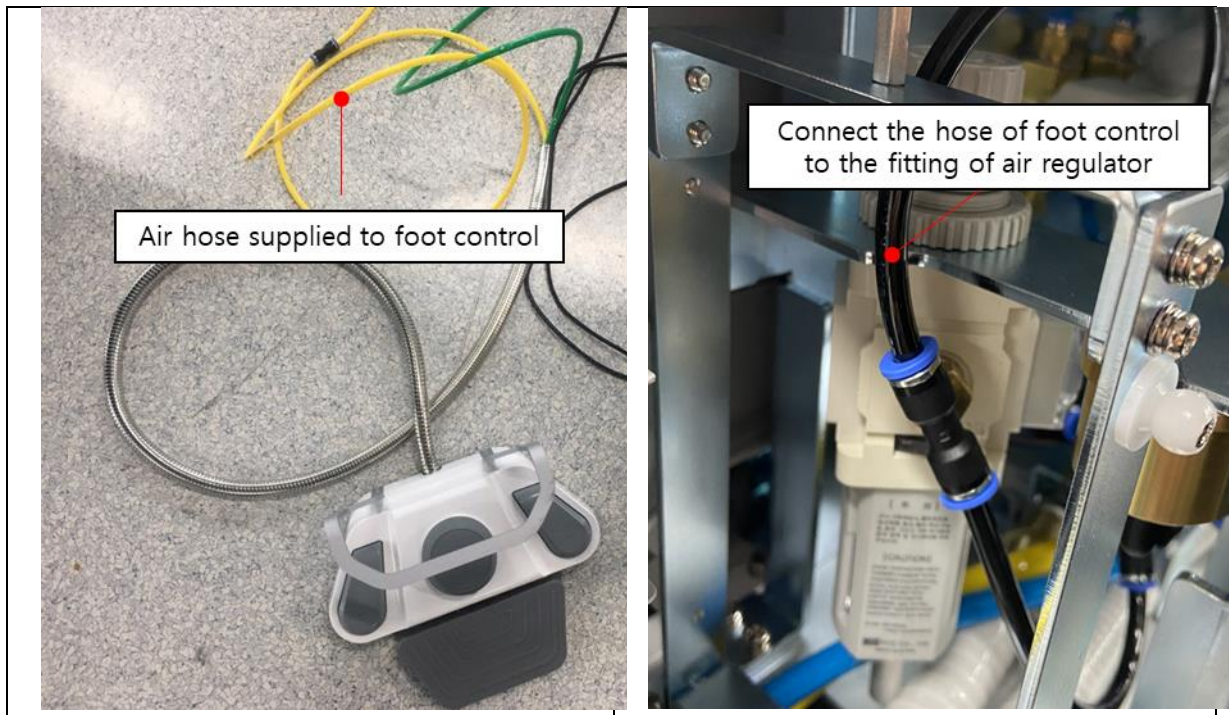
③ At the bottom of the chair, connect the doctor table air hose (yellow), main air hose (black), and main water pipe (blue) to the hose of the same color, respectively, and fix three ground cables to the bottom screw.



④ Connect the harness of dental light, foot control, and doctor table to the UCM board located at the bottom of the chair.



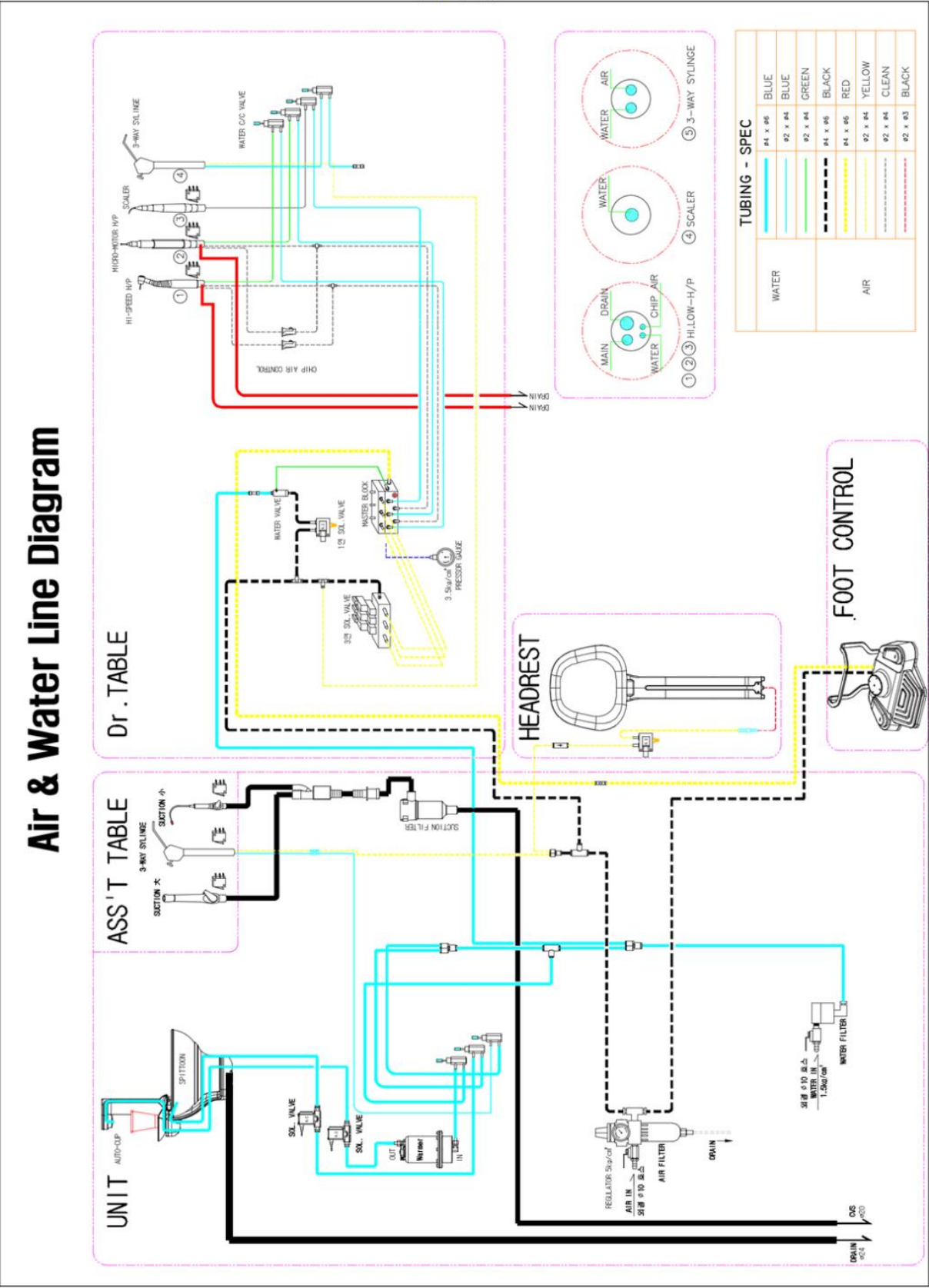
- ⑤ Connect the air hose supplied to the foot control to the air regulator fitting.



bright Chair 2
Wiring Diagram 230623

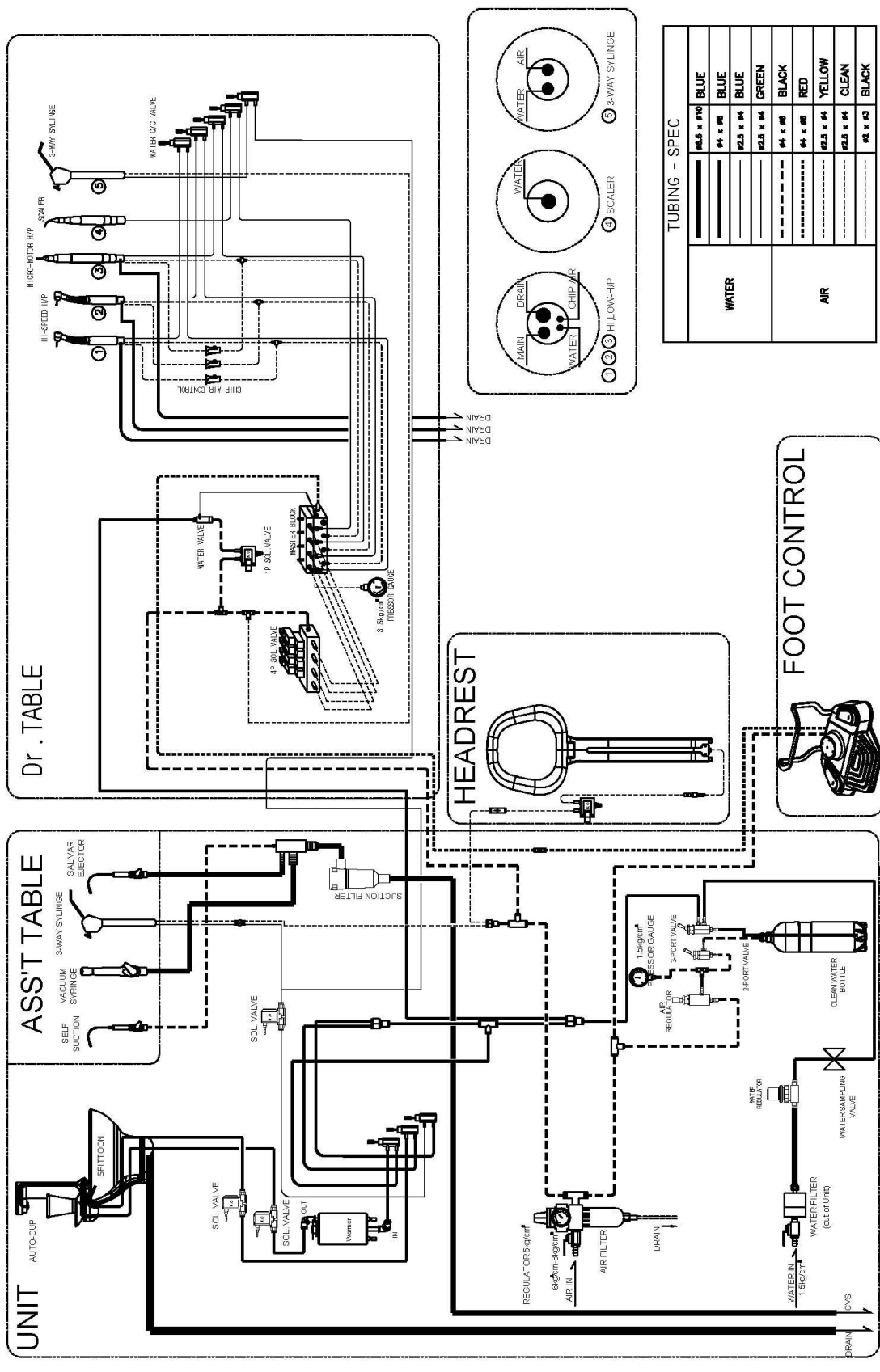


11.3.5. Overall Piping Diagram



11.3.6. Overall Piping Diagram (Water Pipe Cleaning)

bright chair 2 Air & Water Line Diagram



11.4. Manufacturer

Type Name	Dental Chair, electric
Model Name	ICT-CH02S
Manufacturer	Dentium Co., Ltd. (ICT Branch)
Address	(16229) 76 Changnyong-daero 256beon-gil, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea
Contact Info	Tel +82-70-7098-8962 Fax +82-31-8019-9106

- Dentium Co., Ltd. warrants to the purchaser that the ICT-CH02S and accessories are free from defects in material and workmanship under normal use and service for a specified period of two years from the date of purchase.
- The product warranty is conditional on the correct use of the product by the purchaser. During the applicable warranty period, Dentium will repair or replace defective parts of the product free of charge to the buyer. However, if Dentium determines that the product is not considered to be subject to warranty, the buyer will be responsible for paying all parts, shipping and labor costs required for repair.
- Upon purchase, please fill out the following warranty form and send it to the fax number below. (+82-31-8019-9106)
- When requesting the warranty, the customer shall present this warranty to the manufacturer.
- The service life of this device is 15 years.
- The following cases are not eligible for free warranty benefits.

- 1) Defect or damage caused by accident, misuse, abnormal use, abnormal condition, improper storage due to the user's negligence.
- 2) Damage or defects caused by external causes such as collision with objects, fire, flood, sand, earth, storm, lightning, earthquake, weather conditions.
- 3) Defect or damage due to improper testing, operation, maintenance, installation, service, or adjustment not provided or approved by Dentium
- 4) Defects or damage caused by ignoring warning signs in the user manual (instructions for use)

Product Name	ICT-CH02S	Customer Information	
Purchase Date		Dental Clinic	
Manufacturing Date		Address	
Serial No.			
Warranty Period	2 years	Contact	

User Manual Languages

BG	ES	CS	DA	DE	ET	EL	EN
							●
FR	GA	HR	IT	LV	LT	HU	MT
NL	PL	PT	RO	SK	SL	FI	KR

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