

MANUAL

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Feb.2020

CE

RT-17

RC-100

RC-200

RC-400

RC-500



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■ Foreword

Thank you for purchasing an ophthalmologic medical treatment device and a chair (Model: RT-17). Be sure to read the "Safety Precautions" carefully before use. Be sure to observe the precautions shown here because they contain important safety information.

Use Environment

- Do not use under the conditions of living environment (10°C ~ 40°C), humidity (30 ~ 75%), air pressure (70 ~ 106Kpa) and exposed to direct sunlight.
- Install the unit horizontally and steadily for smooth operation.
- Always make sure that the cord is connected correctly before use.
- Use the 230V~ 50/60Hz voltage.
- When you are not using this unit, please turn off the power.

■ Indications for safe use

This manual contains important information to prevent any damage to property or property that may occur to the person or person who uses it, and to use it safely and correctly.

After understanding the following signs and symbols, please read the "Safety Precautions" and the text and observe the following items.

Indications & Meanings

	Warning	Ignoring this mark and handling it in the wrong way may result in death or serious injury.
	Caution	If you ignore these signs and treat them in the wrong way, there is a possibility of injury or material damage to persons.

Symbols & Meanings

	Template for a prohibition sign (red circle and diagonal); The black symbol or text shall be placed centrally on the background and shall not obliterate the cross bar, or a supplementary text next to the sign.
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	Template for a mandatory action sign (blue background); The white symbol or text shall be placed centrally on the background, or a supplementary text next to the sign.
	Template for a warning sign (yellow background and black triangle); The black symbol or text shall be placed centrally on the background, or a supplementary text next to the sign
	Follow instructions for use
	Power On
	Power Off
	Manufacturer
	Date of Manufacture
	Serial no.
	Indicates a medical device that needs protection from light sources.
	Don't sit on the unit
	When instrument operates, don't insert finger into the instruments. You can get hurt.
	Indicates the temperature limits to which the medical device can be safely exposed.

	<p>Indicates the range of humidity to which the medical device can be safely exposed.</p>
	<p>Warning - Disposal of waste products</p> <ol style="list-style-type: none"> 1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2012/19/EU. 2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities. 3. The correct disposal of your waste products will help prevent potential negative consequences for the environment and human health. 4. For more detailed information about disposal of your waste products, please contact your city office, waste disposal service or the shop where you purchased the product.
	<p>Type B applied part (Patient chair)</p>

■ Safety Warnings & Precaution

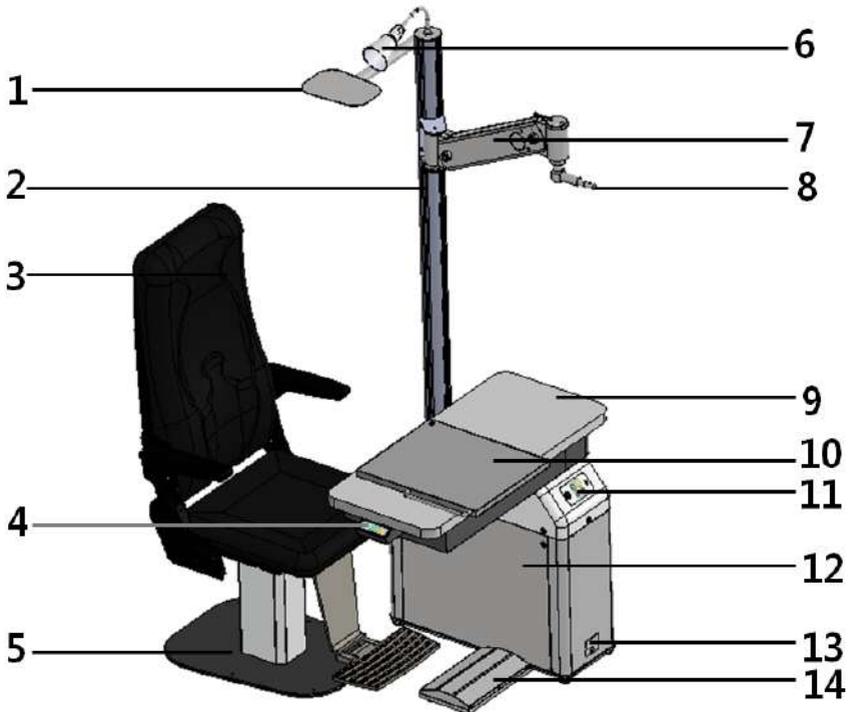
Symbol	Prevention Item
	Do not disassemble the unit for repair. You may get an electric shock. Contact your dealer for repair.
	Do not place the device where water or other liquids are sprinkled. A fire or electric shock may occur.
	Connect to single-phase AC power plug. If it is connected to other places, it may cause fire and electric shock.
	Disconnect the fuse from the power cord before replacing it. Otherwise, electric shock may be occurred. Use a rated fuse.
	If smoke or other problems occur with the unit, immediately unplug the power cord. Otherwise, there is a risk of fire. Contact your dealer for repair.
	When placing the device on table, do not tilt it over 5 ° or place it in an unstable position. You could be injured.
	Do not place heavy objects above the table on the table. You could be injured.
	Do not place your fingers between moving devices during operation. You could be injured.
	Do not open the cover. You may get an electric shock.
	Tighten correctly the hanger bolts of classic arm. Things can be fallen and you could be injured.

Symbol	Prevention Item
	Do not hang heavy objects of more than 7 kg on a classic arm. Things can be fallen and you could be injured.
	Ensure that the voltage of the main power supply is the same as the voltage described in the instruction manual of the equipment.
	If you are unsure of the voltage you are going to use, please consult the electric company or the company responsible for the maintenance to confirm the voltage of the main power.
	To ensure the protection and electrical safety of the equipment, the power socket to which the equipment is connected must not have multiple sockets or other connections for power use.
	Connecting electrical equipment to the multiple socket-outlet effectively leads to creating a medical electrical system, and can result in a reduced level of safety. The responsible organization (accountable for the use and maintenance of a medical electrical system) shall be referred to EN 60601-1, 3rd edition for requirements.
	The external and internal socket-outlets shall be connected with ophthalmic instruments only complying with IEC 60601-1.

■ Product Overview

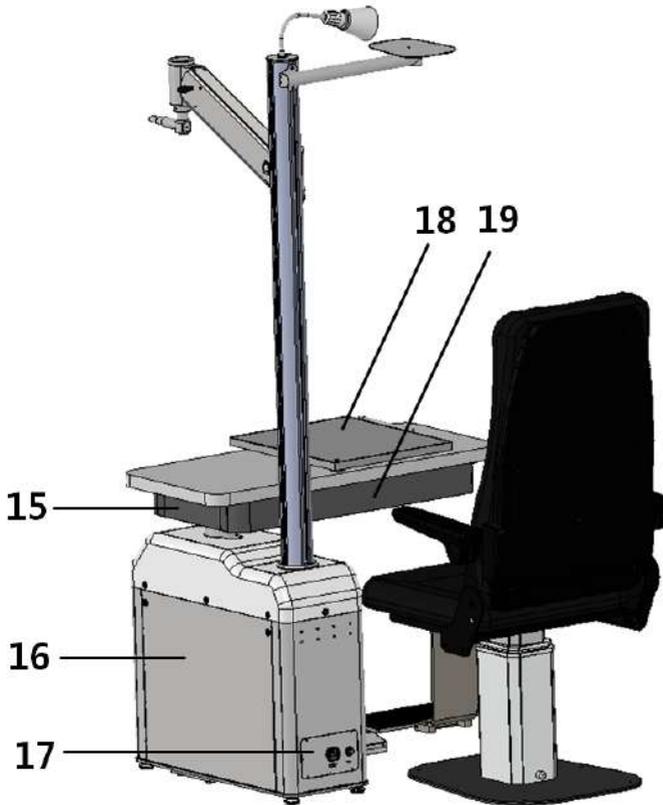
- ④ You can choose either left-handed or right-handed(when place order, you can select one of them)
- ④ When using the eye-sight test chart, the brightness of the LED lamp is adjusted to minimize glare, minimize power consumption, and ensure semi-permanent durability.

■ Name of each part



⑩ **Names & Functions of each parts**

- ① Chart Arm: The chart projector can be installed.
- ② Stand: can be attached Chart Arm.
- ③ Chair Seat: It consists of backrest and a cushion
- ④ Table Control Panel: Chair Up/ Down/ Full Down, Lamp On/Off and Brightness can be adjusted.
- ⑤ Chair Base: The horizontal adjustment can be done.
- ⑥ LED Lamp: Can adjust the brightness in two steps. (50%, 100%)
- ⑦ Phorofter Classic Arm:
- ⑧ Link Bar: Fasten an optical or ophthalmic instrument
- ⑨ Table for treatment: You can manually rotate 90 ° to a table for medical examination or diagnosis. Fastening bolt of table: Fasten the bolt after adjusting the horizontal of table.
- ⑩ Turn Table: You can rotate Refraction Table at 90° max.
- ⑪ Control Panel: Main Power On/Off, Chair Up/ Down/ Full Down , Lamp On/Off and Brightness can be adjusted. And Usb Charge Port.
- ⑫ Main Body Cover: You can see the inside of the body.
- ⑬ Cable Cover: Allow the cable to come out of the front of the main body.
- ⑭ Level Foot: can adjust the level of the main body

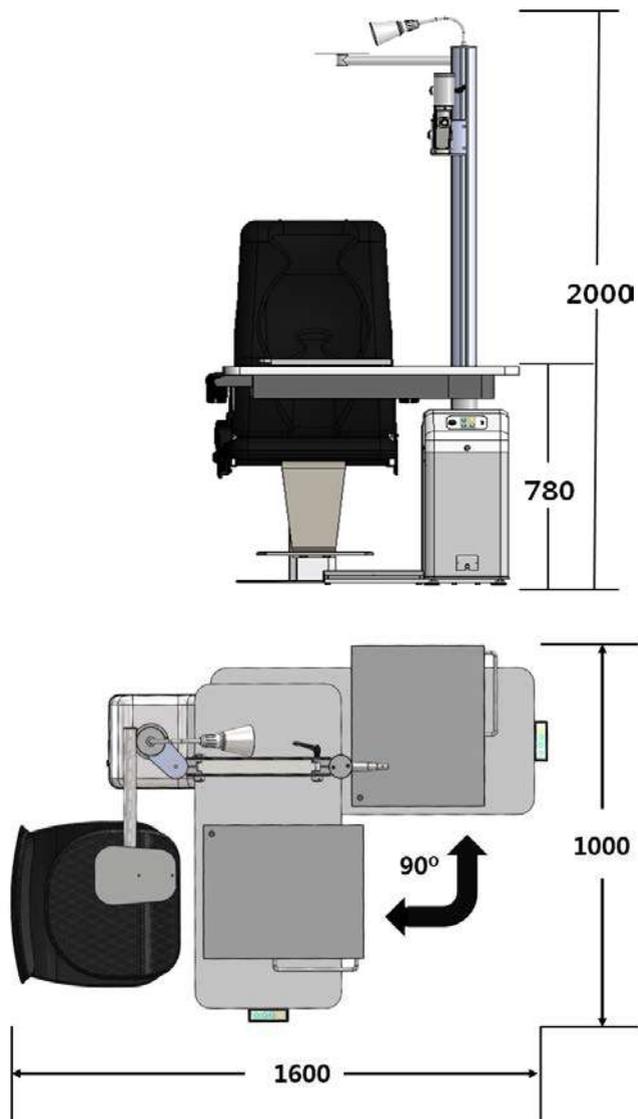


- 15 Table Side Cover: Allows to fix the rotary joint by removing the cover
- 16 Main Body Side Cover: You can see the inside of the body
- 17 Power Input Socket: Includes 250V 5A fuse
- 18 Handle: Control handle to turn refraction table
- 19 Safety switch: When the patient's knee touches the bottom of the table, the chair is stopped

Performance and electrical characteristics.

- Table size for medical examination : 900 * 420 mm
- Table height for medical examination : 780 mm
- Table rotation angle for medical examination: 90 °
- Table allowable weight for medical examination: 20 kg
- Unit Weight : 77 kg
- Height of chair seat :
 Minimum 480mm ~ Maximum 730mm
- Speed of chair up & down: 20mm/sec
- Allowable weight of chair: 160 kg
- Chair weight : 52 kg
- Rated voltage and power consumption: 230V~ 50/60Hz,
260VA
- Classification by protection type and degree of protection
against electric shock: Class 1 equipment, type B mount.
- Chair size : 620(W)*780(D)*1080(H)
- Drawer size: 546(W)*350(D)*55(H)

■ Dimension(measurement: mm)



Ⓢ Accessory

Check the following accessories () indicates the quantity of parts.

- Instruction manual
- LED lamp (1), mounted on the stand
- 250V 5A fuses (2), built into the power input socket
- Main body power cable, 1,800 mm, black (1)

■ Precautions before use

- Ⓢ If any abnormality is detected during use of the equipment, immediately discontinue use of the equipment, isolate the patient from the equipment, turn off the equipment, and contact the place of purchase or headquarters.
- Ⓢ You must use the specified power source for the use of the medical equipment. If the voltage used is too high or too low, the system may not operate normally.
- Ⓢ Use a genuine fuse conforming to the voltage specified in the instruction manual.
- Ⓢ Do not place heavy objects on the medical table that exceed the weight used.
- Ⓢ Equipment should not be dismantled by nonprofessional. This may cause equipment failure or cause problems with the power system. Do not alter or modify the equipment or any part of the equipment for any purpose other than its intended use.
- Ⓢ Do not arbitrarily manipulate people who do not have the knowledge of using the equipment, and do not allow children to

access or manipulate the equipment arbitrarily.

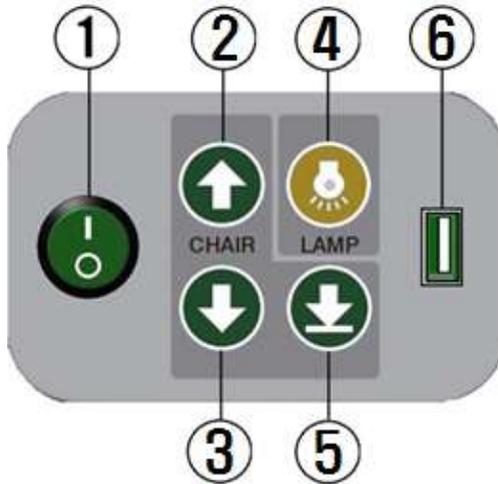
■ How to use

Ⓜ Preparation before use

1. Ensure that the voltage of the main power supply is the same as the voltage described in the instruction manual of the equipment.
 - If you are not sure of the voltage you are using, you should ask the electric company or the company you are responsible for repairing and check the voltage of the main power.
2. To ensure the protection and electrical safety of the equipment, the power socket to which the equipment is connected must not have multiple sockets or other connections for power use.
3. Plug the power plug into the outlet and press the power switch once on the control panel. Then yellow light will be turn on.



④ Control Pad

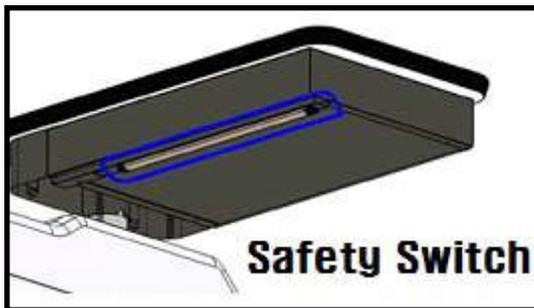
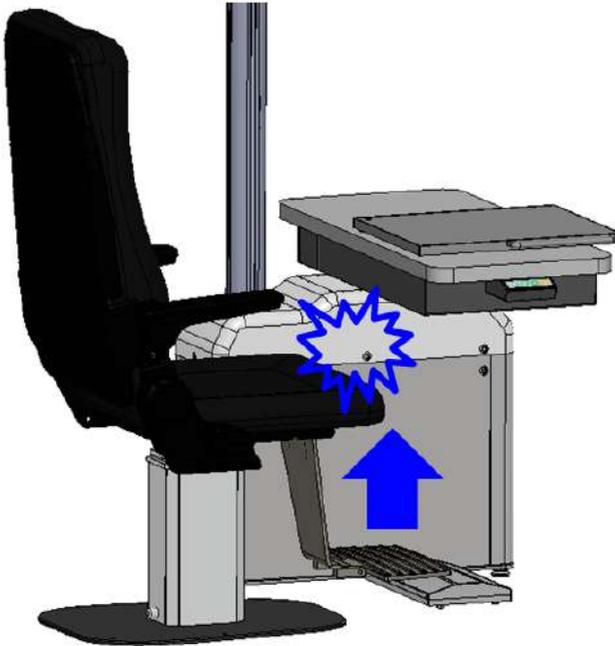


- ① Main power is On and Off
- ② Chair will keep ascending when the button is pushed
- ③ Chair will keep descending when the button is pushed
- ④ LED lamp
 - Press once to turn on the lamp at 50% brightness
 - Press again to turn on the lamp at 100% brightness
 - Press again to turn off the lamp
- ⑤ Press once to FULL DOWN the CHAIR to the lowest position
- ⑥ Micro USB charging port: USB charging is possible

■ Safety function

⊗ Operation of Safety switch for Treatment table

- The moment patient's leg lap touches the table, Chair stops operating



■ Countermeasures in case of failure or malfunction.

④ How to operate in case of trouble.

	Warning	Do not disassemble the unit for repair. You may get an electric shock. Contact your dealer for repair.
	Caution	Do not open the cover. You may get an electric shock. Contact your dealer when you need to repair.

If you have any problems, please check the following checklist.
 Otherwise, please contact your dealer.

• Check List

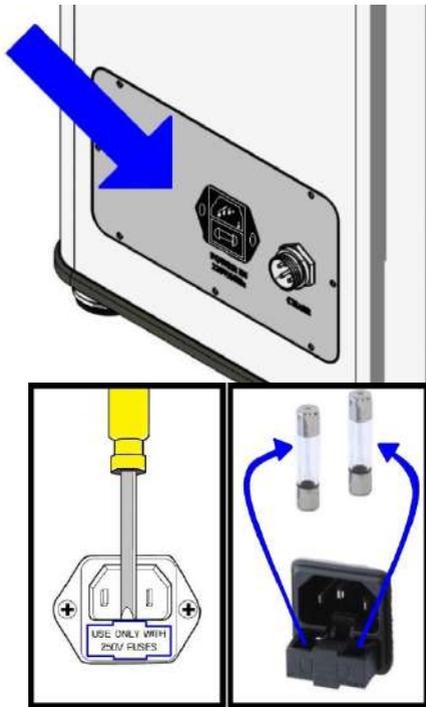
When the up and down operation of the chair does not work.	Check the power cord connection	Turn off the power switch and connect the power cord.	
	Check the main switch "ON" status	Turn on the main switch.	
	Check the fuse status.	See "Replacing the fuse".	
	Knee safety Sensor. Check the switch	Check that the safety switch attached at the bottom of the table is working.	

■ Maintenance and inspection matters

- When you are not using the unit, turn off the power switch.
- Do not place the device in a dusty place.

Ⓜ Replacement of fuse

	Warning	Disconnect the fuse from the power cord before replacing. Otherwise, electric shock may occur. Use a rated fuse only.
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- Open the fuse folder at the bottom of the power input socket with a screwdriver or a sharp tool
- Replace with a new fuse (250V 5A 2EA).

Ⓢ Replacing the Lamp

	Warning	When replacing the lamp, turn off the power switch. You may get an electric shock. Do not replace the lamp with power on. You may get burned.
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- ✓ Make sure that the power switch is "OFF".



Ⓢ Cleaning the outer cover

	Caution	Do not open the cover. You may get an electric shock. Contact your dealer when repair is required.
	Warning	Do not install in a chemical storage area or a gas generating place. Install in a place where water is not close. Install in a place that does not cause adverse effects from air, including air pressure, temperature, humidity, sunlight, salt, ion components, etc. Unplug the power cord when not in use.

- Wipe the outer cover or operating panel with a soft cotton cloth. If the surface is stained, wipe it with a cloth dampened with household cleaner.

■ Warranty Period

The warranty period of this equipment is one year from the date of purchase, and failure due to user's negligence will be excluded from warranty repair period.

■ How to keep and manage after use

- When you are finished, lower the chair to the lowest position
- Move the table for treatment to the rest position after use
- Keep it near water
- Store at room temperature
- When not in use for a long time, please keep it covered with a clean cloth.
- Make sure that the main power of the equipment is completely shut off except during medical hours.
- Do not install or store in places where excessive humidity or direct sunlight is transmitted.
- Lowest and highest temperatures for easy installation and storage
(From 10 ° C to less than 55 ° C minimum).
- Recommended humidity for easy installation and storage
(10% to 90%).
- Clean the equipment with a soft cotton cloth. If the surface is dirty, spray it with household cleaner and wipe it with a cotton swab.
- If equipment moves during use, check table's horizontal state.

■ Assembly and Installation

Ⓢ The bolts required for assembly are fastened to the product.

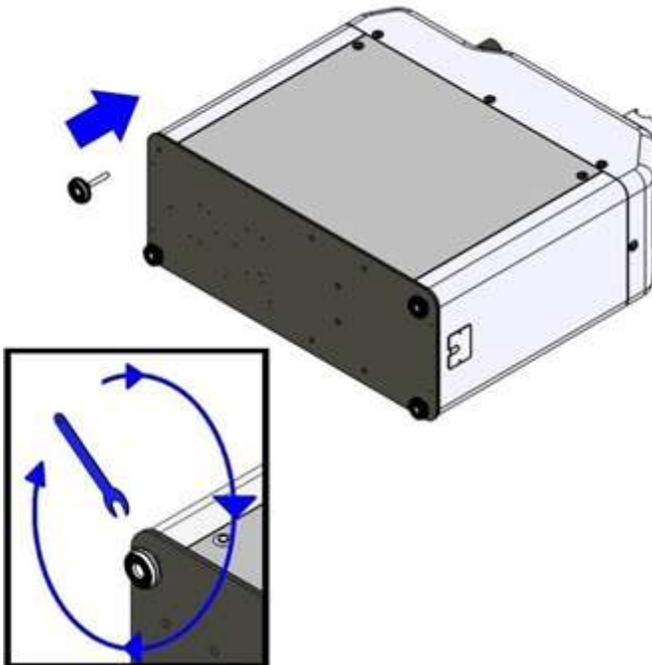
Ⓢ The following tools are required.

- Driver(+)
- Hexagon Wrench(Allen Wrench)
- Tools with pointed ends such as an awl

Ⓢ **Body and adjustable left and levelling foot assembly**

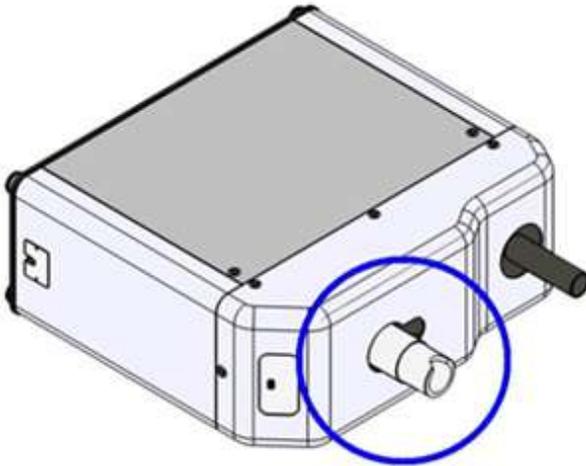
1. Tighten adjustable levelling foot(4) to the bottom of body.

- You can adjust the height using the adjustable left.



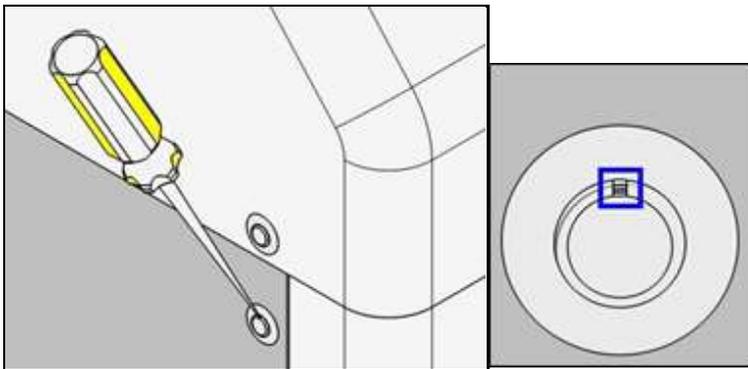
2. Raise the body upright.

- Grasp the marked area when lifting the unit and raise it up.

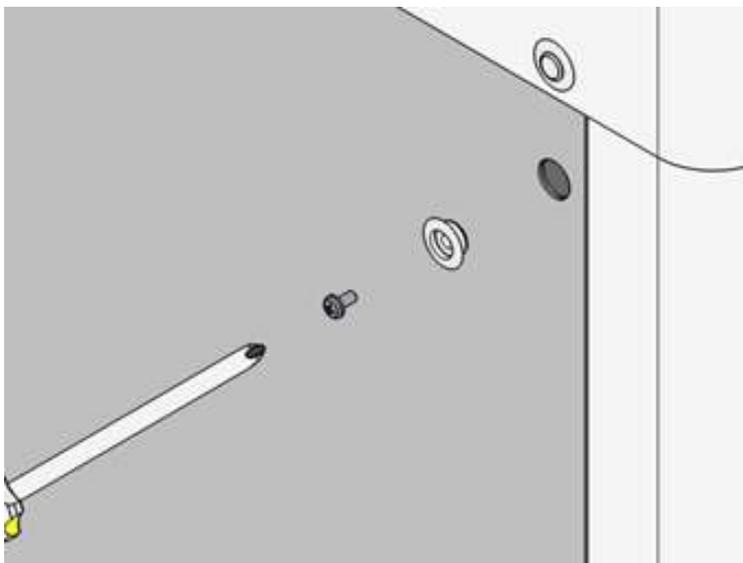


3. Open the body cover; Use an awl, driver (+).

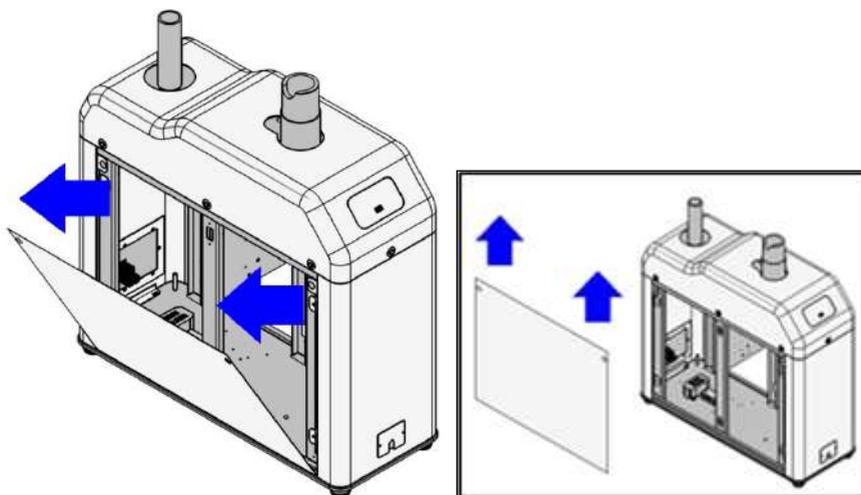
- Remove the bolt cap by piercing a tool with a pointed end, such as an awl, into the groove below.



- After removing the bolts and sockets, open the main body cover.

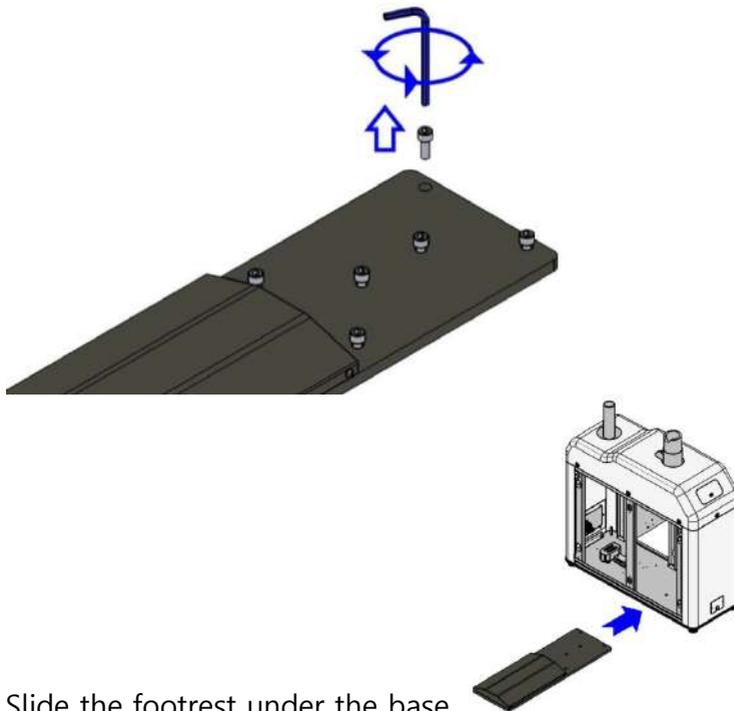


- Pull the top of the main unit cover first, then lift it to remove it.

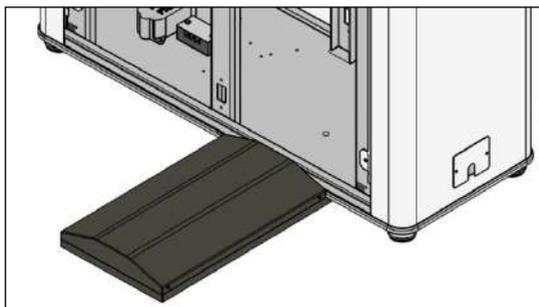


4. Assemble the body and the footrest; using a wrench driver

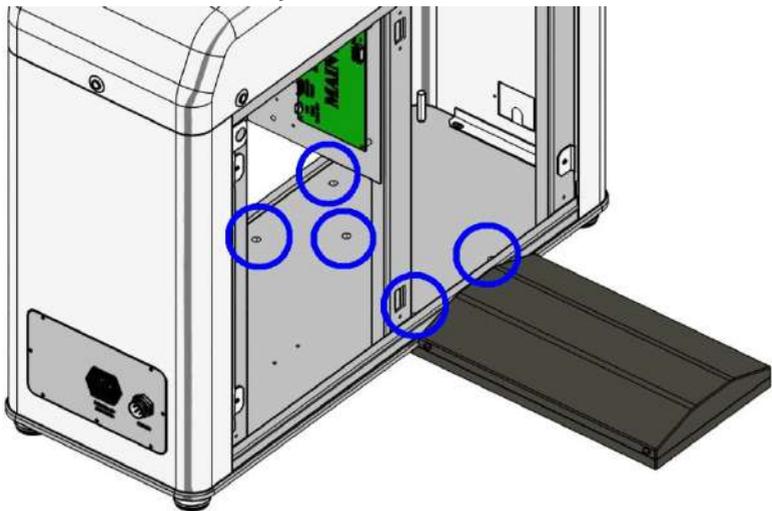
- Remove the six bolts fastened to the footrest.



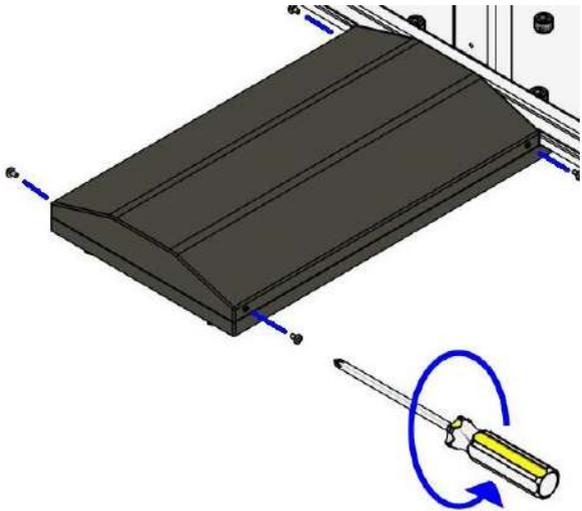
- Slide the footrest under the base.



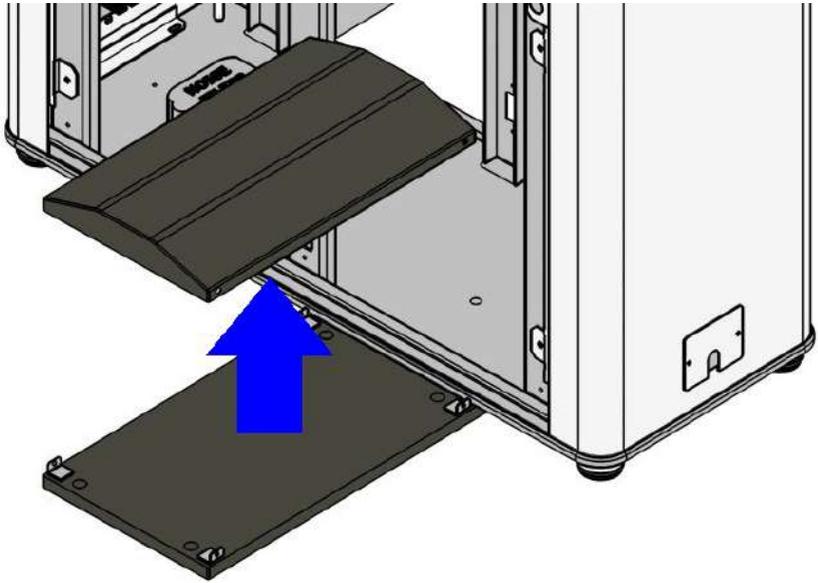
- Tighten the bolts to the marked areas
(The bolts are already fastened.)



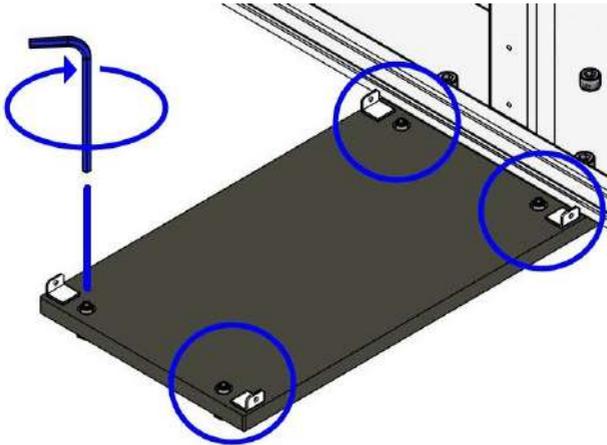
- Remove the foot cover bolt; using driver(+)



- Remove footrest cover



- Tighten the bolt to align horizontally; using a wrench driver.

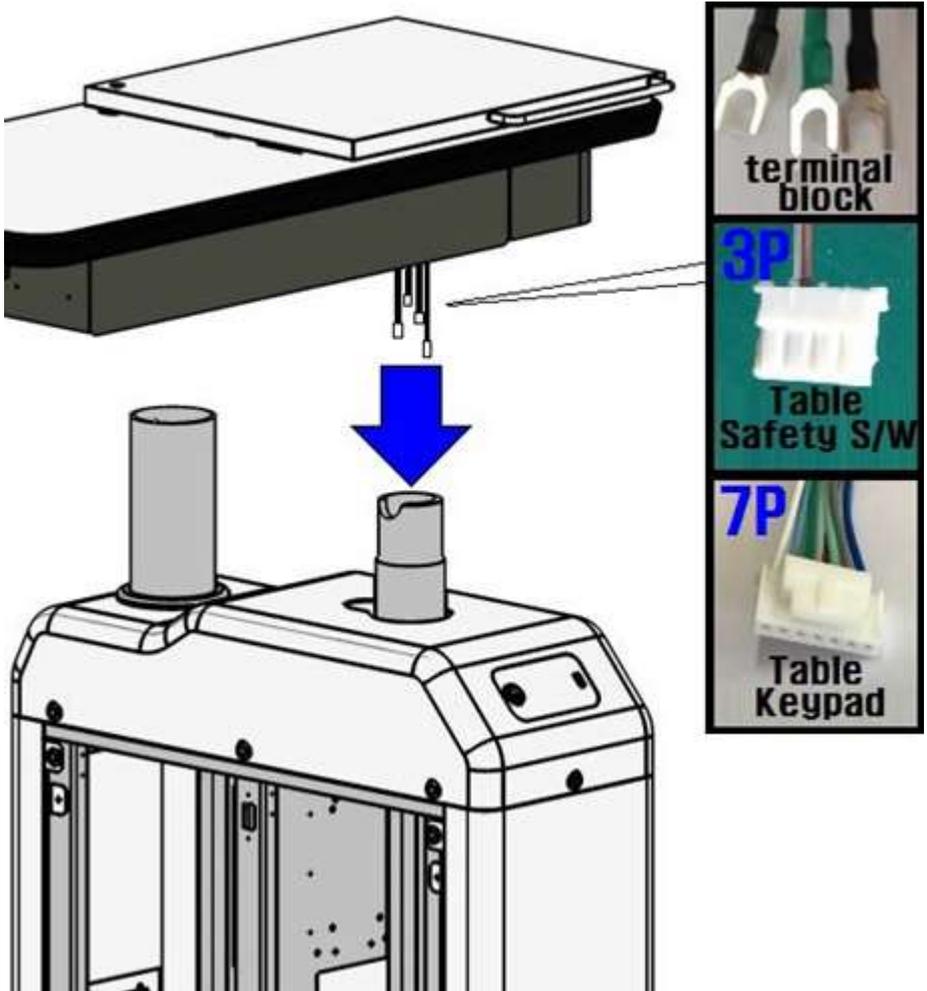


- Assemble the footrest cover in reverse order.

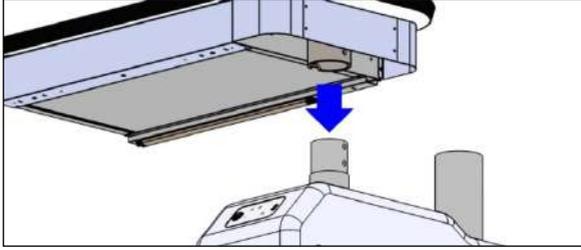
Ⓢ **Assembling table for main body and table**

1. Insert the table for examination into the main body.

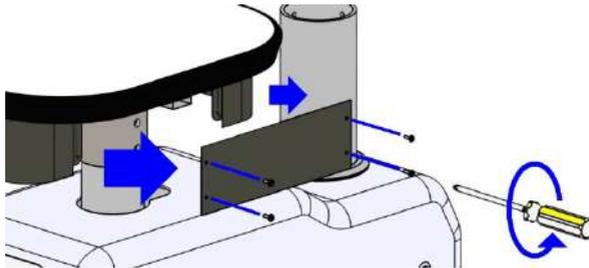
- Insert the table cable into the main body hole



- Insert the table and the main body as shown below..

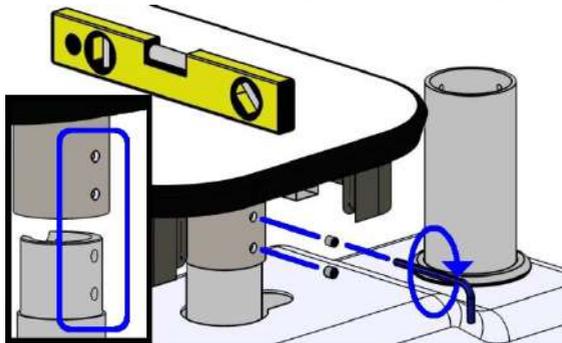


2. Remove the side cover of the table; Using the driver (+)



3. Tighten the stop screw after inserting the main body rotation shaft and the groove of the treatment table together; Using a wrench driver.

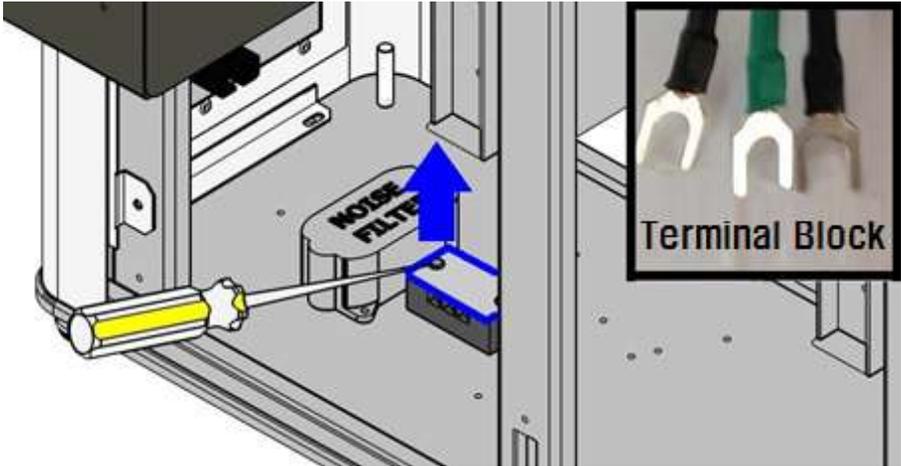
- Tighten the table while maintaining a horizontal position.



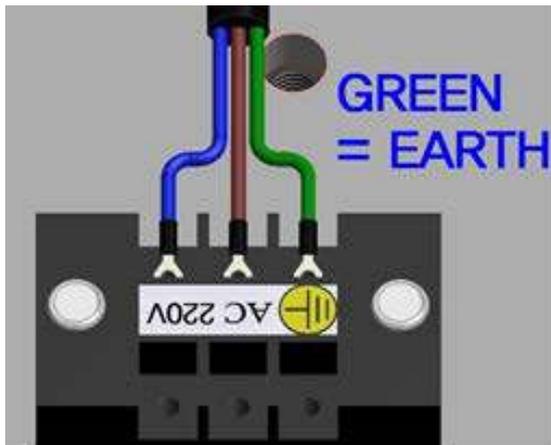
- Close the side cover in reverse order; Using the driver (+)

4. Tighten the power cable of Auto Ref/Kerato-meter to the Terminal Block.

- Remove the terminal block cover using a pointed tool



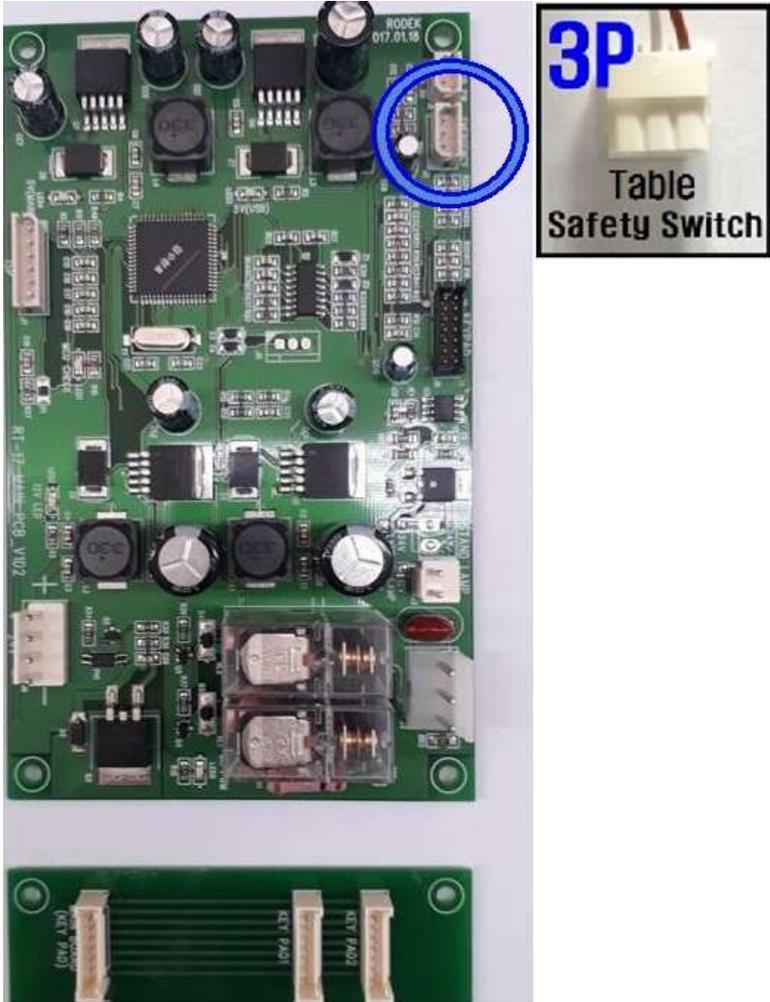
- Tighten the bolts to secure the 3P cable as shown below;
Using the driver (+)



- Close the terminal block cover

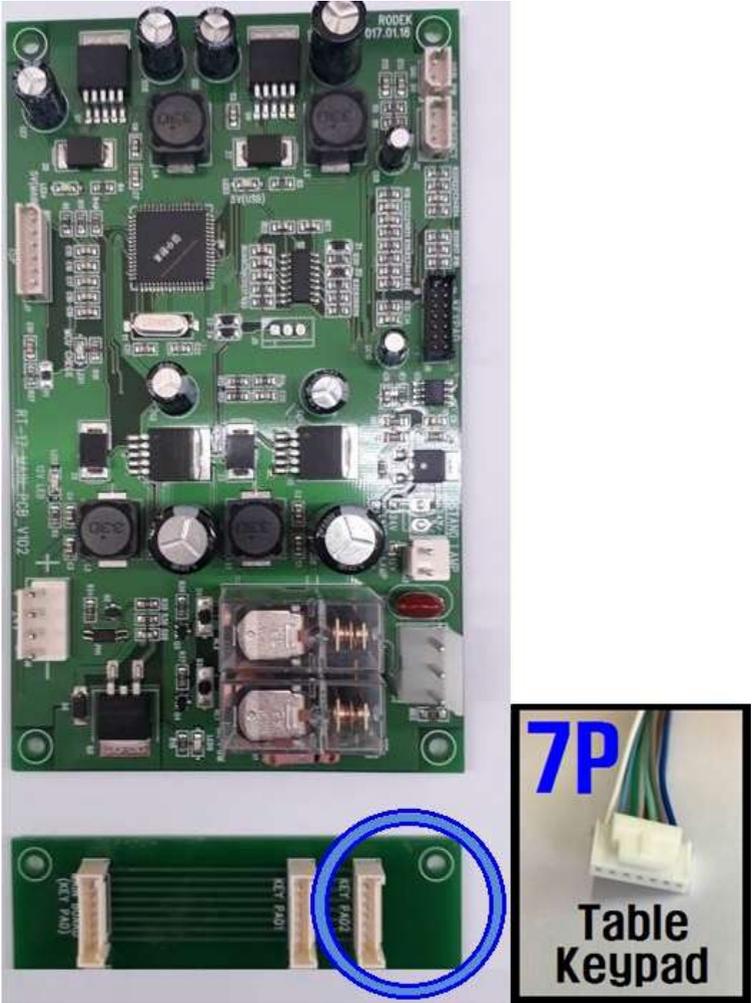
5. Tighten the Table Safety Switch (3-pin) connector to the PCB

- Don't overload push-power when connecting connectors.
- Care to the orientations of connector



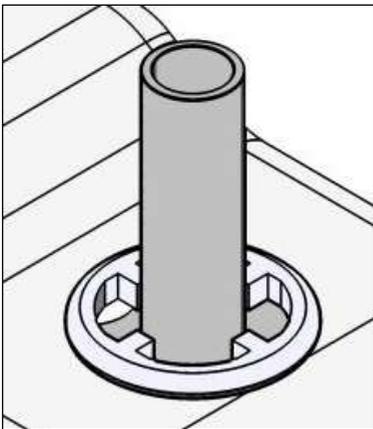
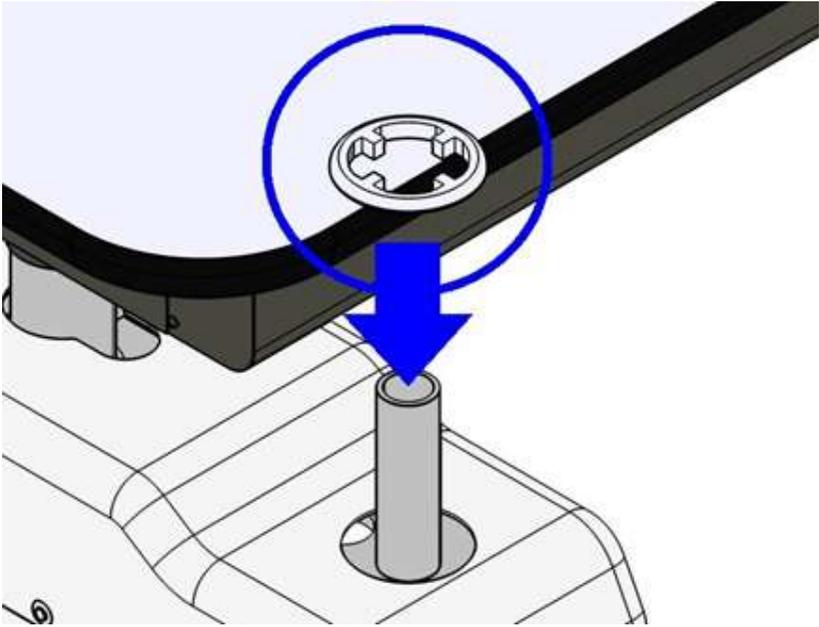
6. Connect Table Keypad Connector(7pin) to the underside of main PCB

- Don't overload push-power when connecting connectors.
- Care to the orientations of connector.

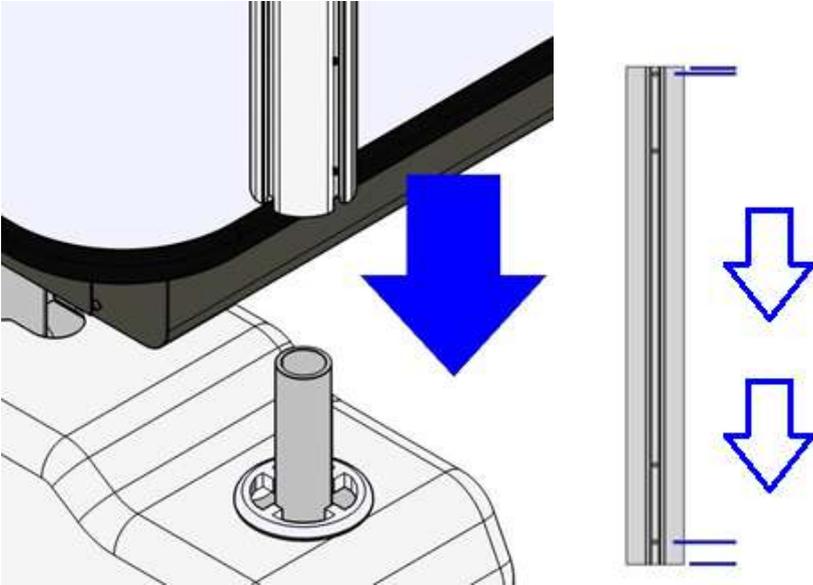


Ⓢ Assemble the stand on the main body

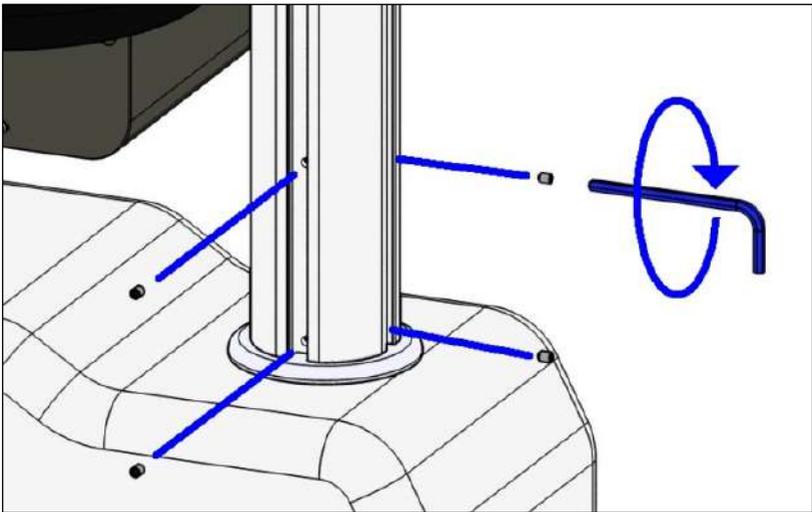
1. First insert the stand cover as shown.



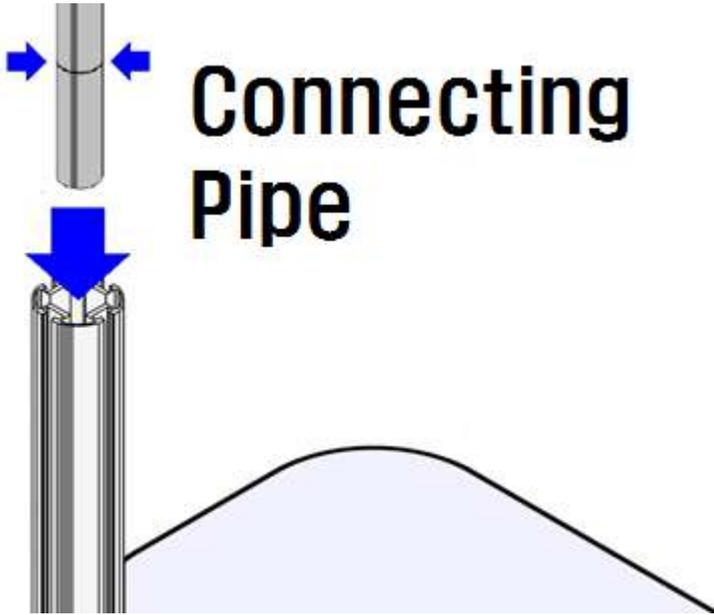
2. Insert the bottom of the lower stand as shown.



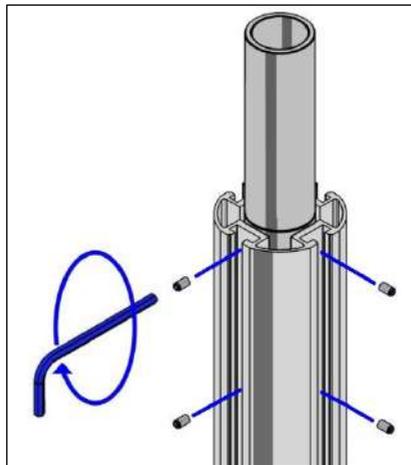
- Tighten the setscrew; Using a wrench driver



3. Insert the connecting pipe at the top of the lower stand up to the marked part.

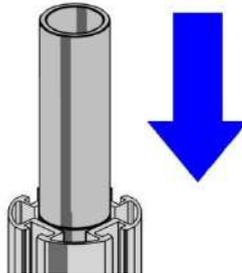
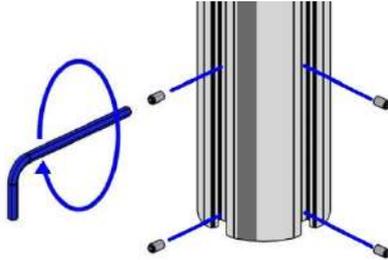


- Tighten and secure the four setscrews; Using a wrench driver

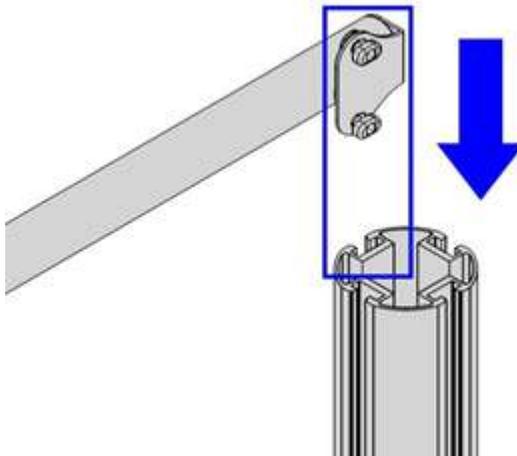


4. Insert the upper stand into the connecting pipe

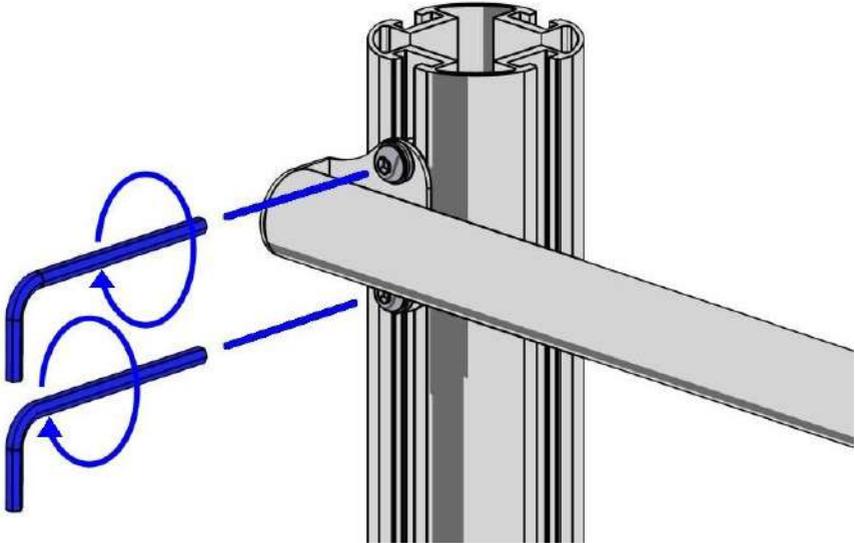
- Tighten and secure the four setscrews; Using a wrench driver



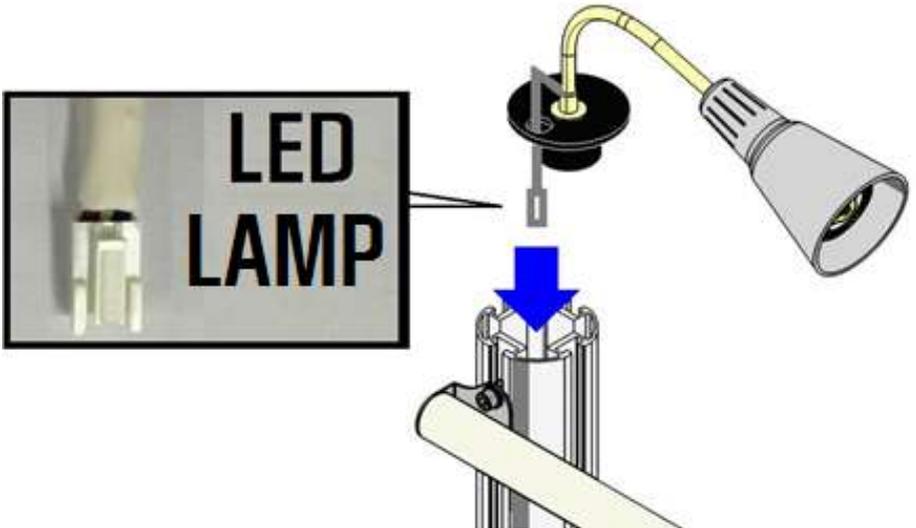
5. Insert chart arm on top of upper stand



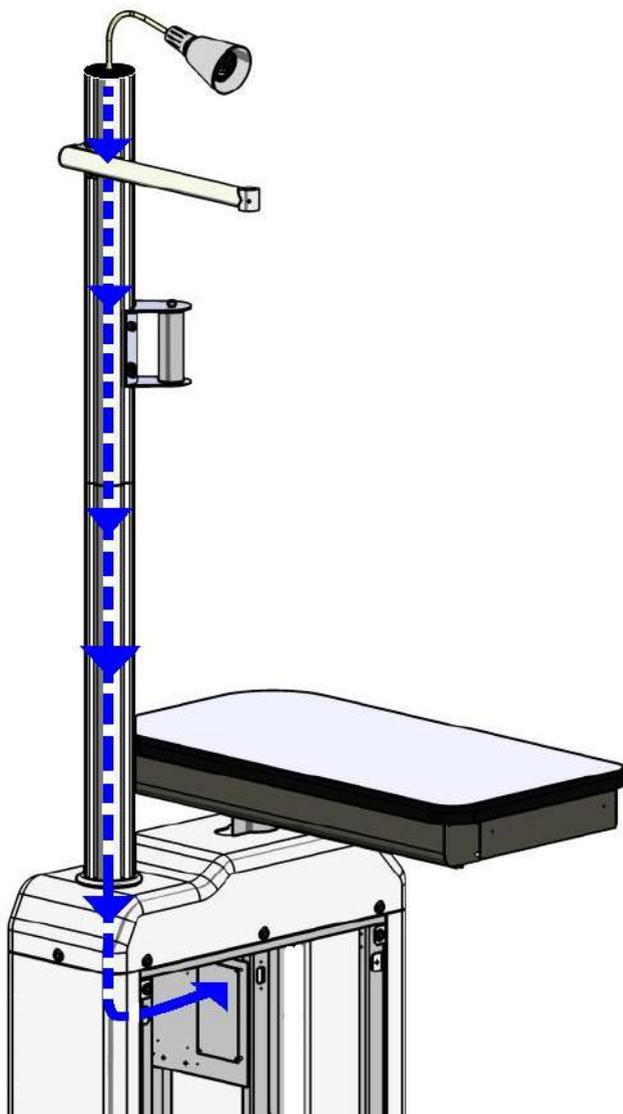
6. Bolt the chart arm; Using a wrench driver



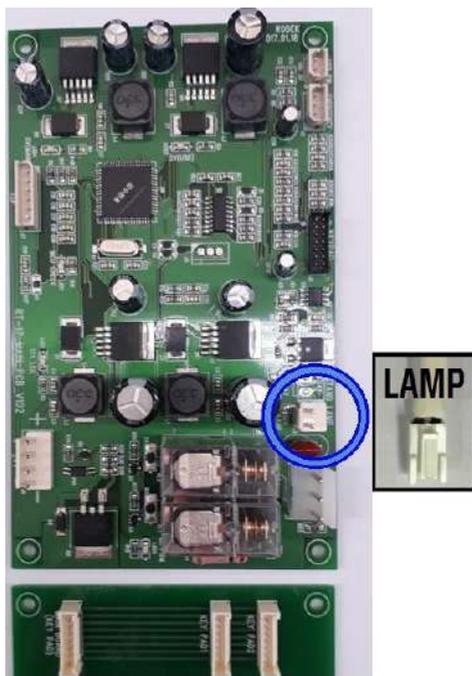
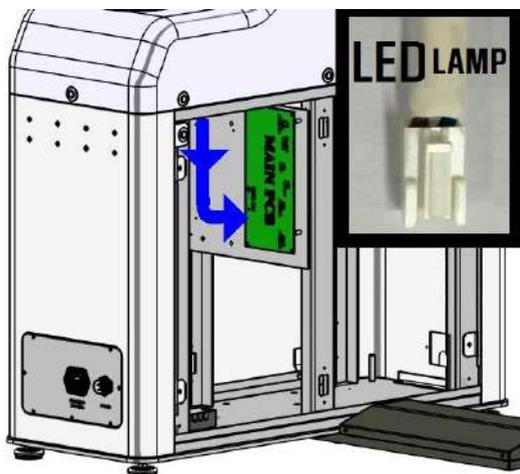
7. Insert the cable of the lamp stand into the upper stand.



8. Insert the lamp cable into the body as shown below

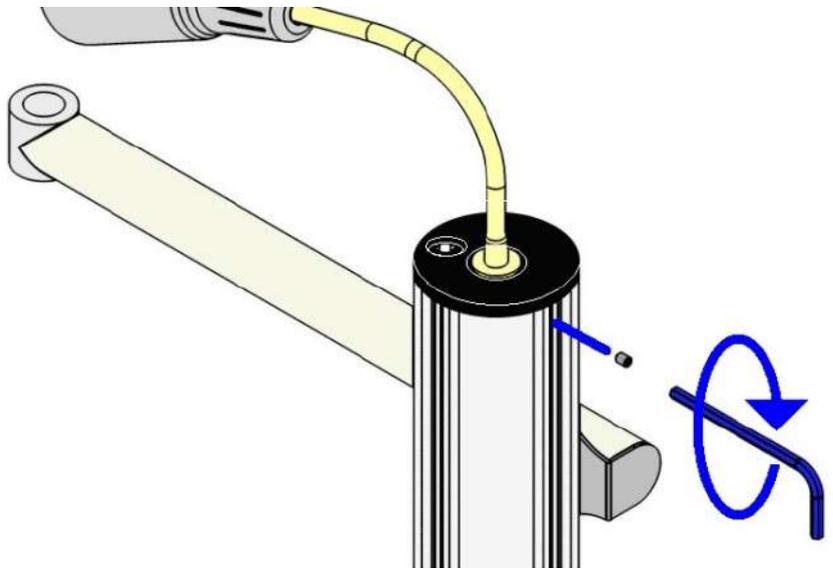


9. Tighten the lamp cable to the PCB.

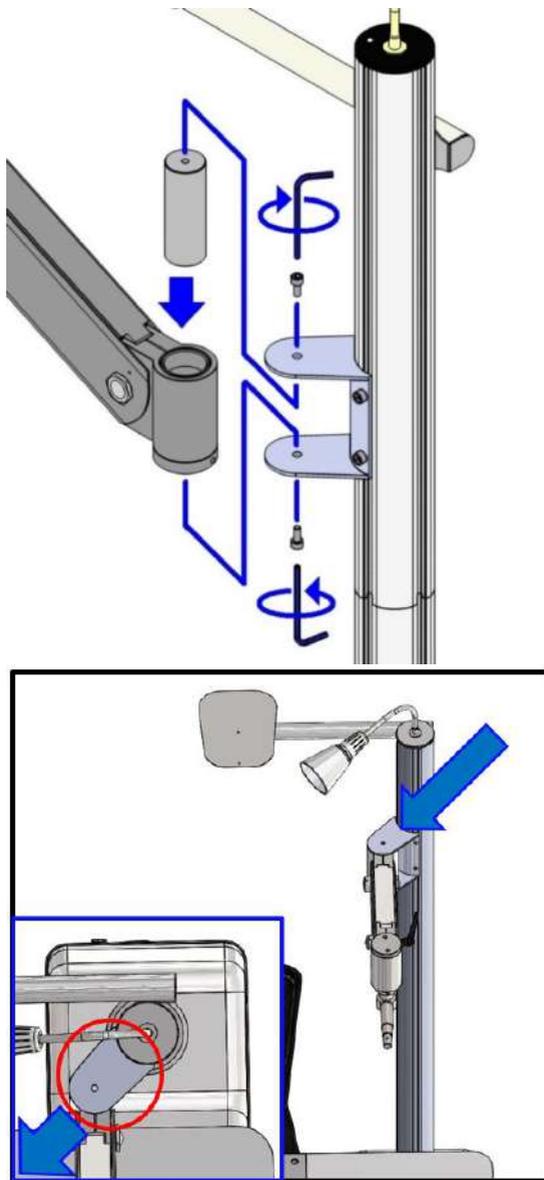




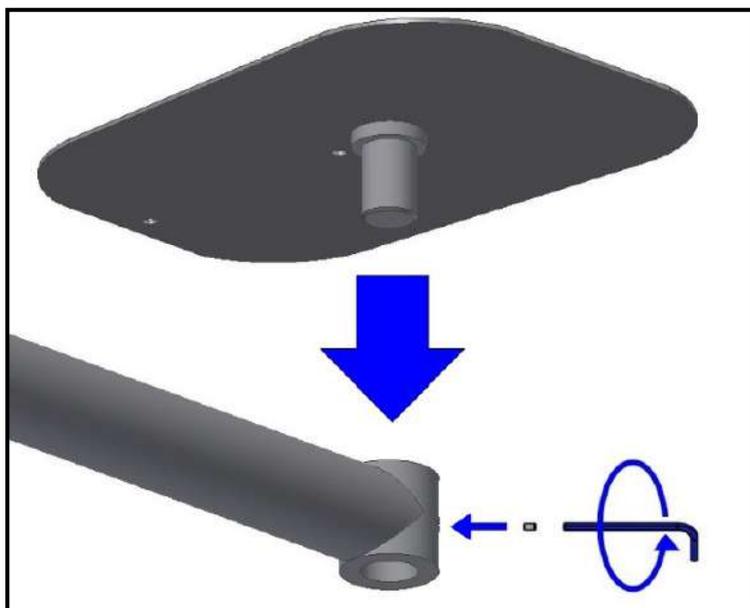
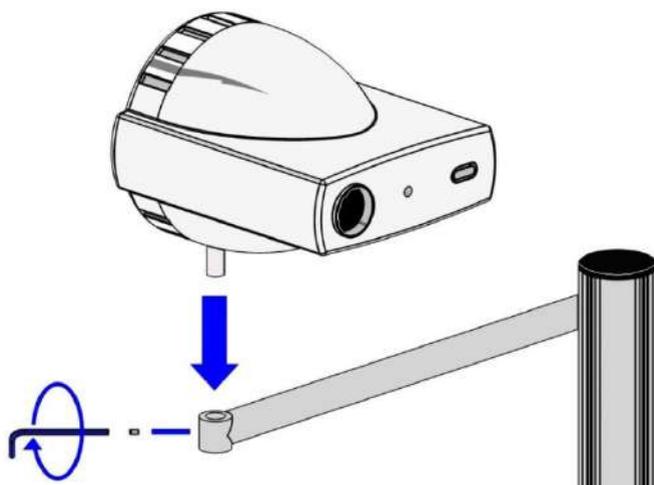
- Tighten the setscrew to secur



10. Mount the CLASSIC Arm

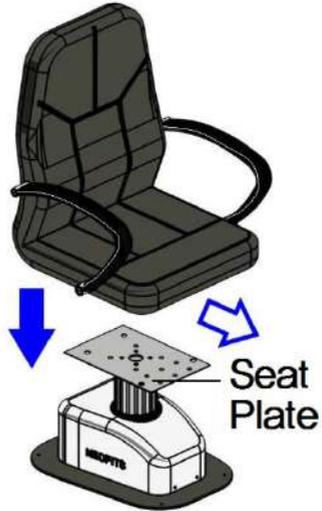


11. Attach the chart projector to the chart arm.

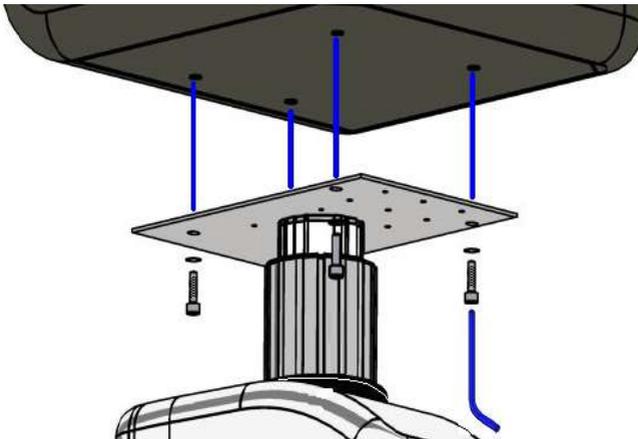


Ⓜ Chair Assemble. (RC-100)

1. Put chair seat on seat plate



2. Attach chair seat to seat plate; Use Wrench Driver

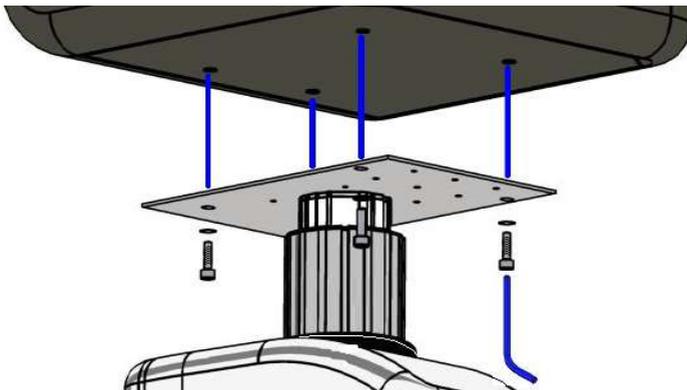


Ⓜ Chair Assemble. (RC-200)

1. Take up a chair seat to the seat plate

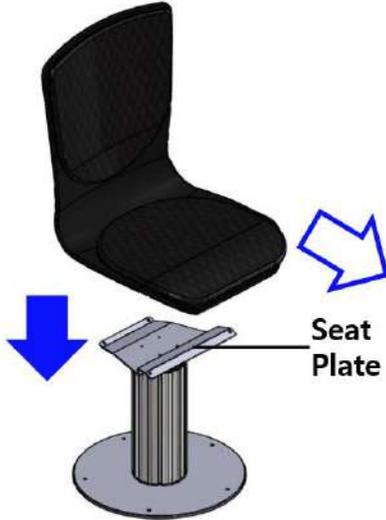


2. Tighten the chair seat to the seat plate; Use wrench driver

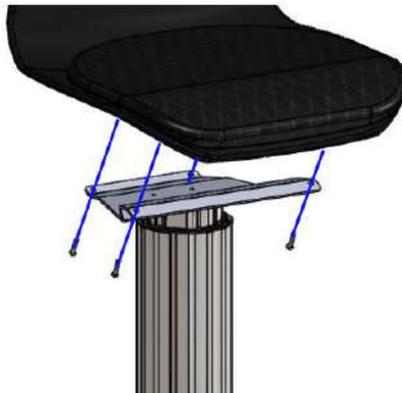


 **Chair Assemble. (RC-400)**

1. Take up a chair seat to the seat plate



2. Tighten the chair seat to the seat plate; Use wrench driver



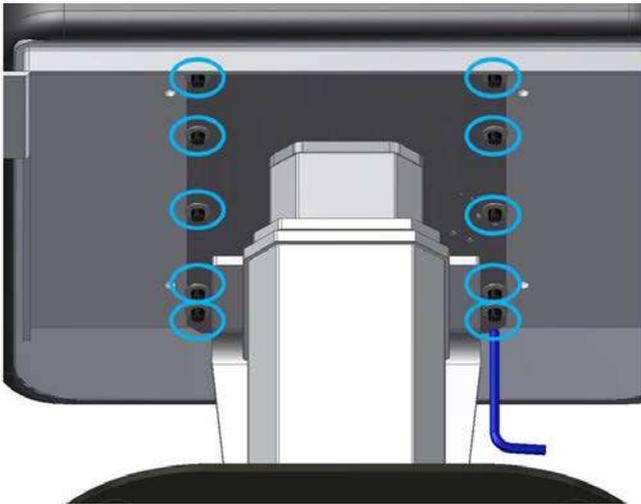
 Insert and to the home is facing a 12 o'clock

Ⓢ **Chair Assemble. (RC-500)**

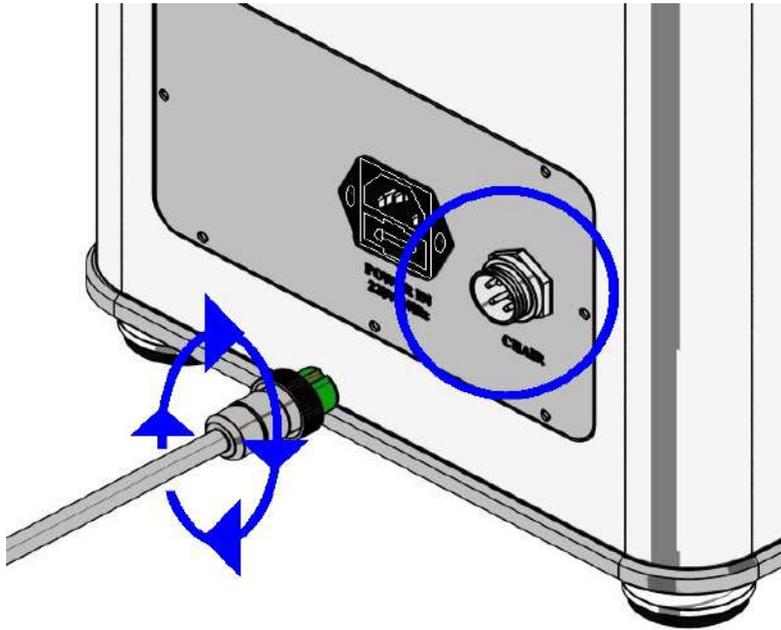
1. Put chair seat on seat plate.



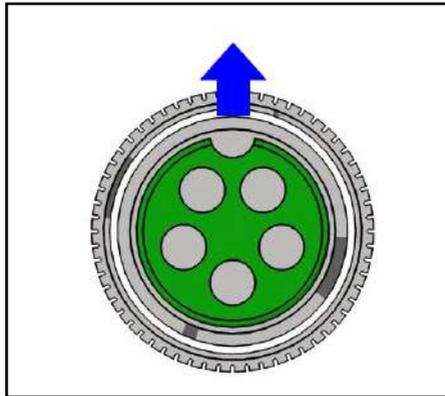
2. Attach chair seat to seat plate; Use Wrench Driver.



3. Insert the chair control cable into the main body's connector and turn it clockwise to secure it.



- And then inserted into grooves toward the 12 o'clock position.



■ Composition of the product

- ① Main Body, Footrest

- ② Box : Table for treatment

- ③ Box : Auto Phoropter Arm, LED Lamp, Link bar,
Adjustable Levelling foot, Bluetooth RCU(Optional)
M10x10L set screw(2pcs), M8x20L Wrench bolt(6pcs)
Fuse 5A (2pcs), Main Cable (1 pcs), Bolt cap(2pcs)

- ④ Box: Chair Seat, Motor motion part

- ⑤ Box(Optional) : Chart projector All part

■ Technical Issues

- Product Name: Refraction Unit & Chair
- Details of Product: Treatment equipment for ophthalmic and chair
- Model : RT-17
- Name of Manufacturer: RODEK Co., Ltd
- Address: 61 JIKJI-DAERO 456 BEONGIL, HEUNGDEOK-GU, CHEONGJU-SI, CHUNGCHEONGBUK-DO, KOREA / Zip Code : 28580
- Tel:+82-(43)-274-2520 Fax:+82-(43)-275-2520
- Web Site: <http://www.Rodek.co.kr>
- E-mail: Rodek@rodek.co.kr overseas@rodek.co.kr
- Manufacturing No & Date: Marked on product label
- Weight & Packing: Total Weigh 130 kg
Auto Phoropter Arm Type> Equipment: 77 kg, Chair: 52kg
- Purpose of use : A medical treatment system is composed of a medical device and a chair in the ophthalmology area.
- Electrical ratings and power consumption : AC 220V
 - Rated frequency: 50 / 60Hz
 - Power consumption: 260VA
- Classification by protection type and degree of protection against electric shock: Class 1 equipment, type B mount
- This product is "medical device"
- Manual Version: VER1.3 / 2020.02

■ Map

