

# PaX-i Insight™ PaX-i Plus™

## Installation Manual

Model : PCH-30CS  
Version : 1.42

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- English



Full version

**vatech**



## Notice

This manual covers the installation procedures for the **PaX-i Plus / Insight** dental X-ray unit. The Installation Manual and the User Manual are shipped with each hardware unit.

**Brand name: PaX-i Plus / Insight (Model: PCH-30CS)**

**Manufactured by: VATECH Co., Ltd.**

In this manual, "equipment" refers to the **PaX-i Plus / Insight**.

In abbreviated forms, CEPH and PANO denote Cephalometric image and Panoramic image, respectively.

The "Optional" in this manual means that the function or features are left to customer's or user's choice

A thorough review of this manual is recommended before installation to ensure the proper installation of this equipment. The **PaX-i Plus / Insight** is a steady improvement. The information contained in this manual may be subject to change without notice, justification, or notification of the persons concerned.

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The QR code linked to video file about the installation is provided in the cover of this manual. The smart phone and pad which have the QR code reader application program can be used to watch video.



**Manual Name: PaX-i Plus / Insight (Model: PCH-30CS) Installation Manual**

**Document number: VDH-IM-070**

**Version: 1.42**

**Publication Date: 2022-07**

## Important Notes

	<p>Moisture could be built upon the equipment from a sudden temperature change inside and outside the installation room. Allow at least an hour before turning ON the equipment to avoid condensation.</p>
	<ul style="list-style-type: none"> <li>▪ To avoid improperly balanced equipment, install the device on a flat surface to maintain stability.</li> <li>▪ If the equipment is not stable, property damage and/or personal injury may occur.</li> <li>▪ Do not push or pull the equipment.</li> <li>▪ Equipment should only be installed by an authorized technician, complying with proper installation procedures</li> </ul>
	<p>Failure to read and understand the information provided in this manual may result in physical injury, damage to the equipment, or equipment failure. Please read each CHAPTER in its entirety and understand the information therein before attempting any of the installation procedures.</p>

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# 1. Introduction

## 1.1 Manufacturer's Liability

As the manufacturer, **VATECH** assumes liability for the safe and reliable installation and operation of this equipment only when:

- Equipment installation, including software installation, was carried out by an authorized agent by this installation manual.
- The electrical installation was carried out by the appropriate requirements specified in IEC-60363.
- Genuine original or approved replacement parts are used.
- Maintenance/repair service has been performed by a qualified technician(s) from one of our authorized agents.
- The equipment has been used under a normal condition by the user's manual.
- PC Software has been properly used by the manufacturer's installation instructions and user manuals.

## 1.2 Customer's Responsibility

Site planning and preparation are the responsibility of the customer. The following points should be considered fundamentally important to all customers of this product:

- Install all required materials prior to delivery of the system.
- Complete the floor, ceiling, and walls of the room before installing the equipment.
- Install proper sized junction boxes, with covers, at the necessary locations.
- Install a mains power with the proper voltage output and an adequate kVA rating.
- Install the circuit breaker specified by this manual.
- Provide the installer(s) with the current dimensions of the room including the hallway and entry door sizes.
- The customer must have an electrician install more than two power outlets in the room.

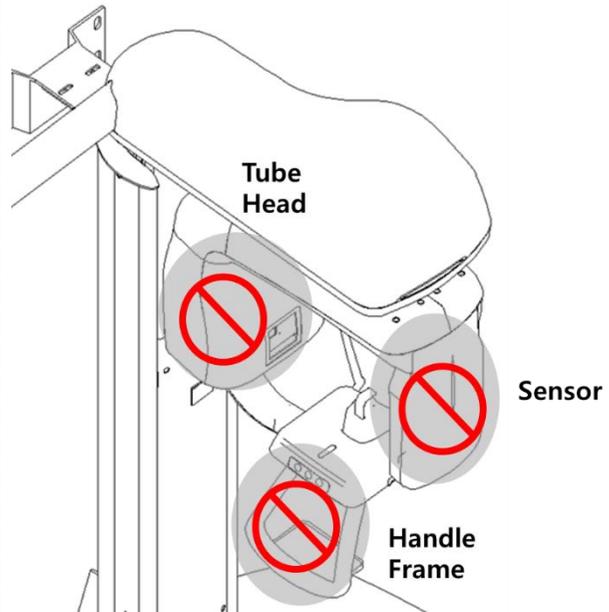
### 1.3 Conventions in this Manual

The following symbols are used throughout this manual to emphasize information or indicate a potential risk to the equipment or user. Make sure that you fully understand each symbol and follow the instructions accompanied.

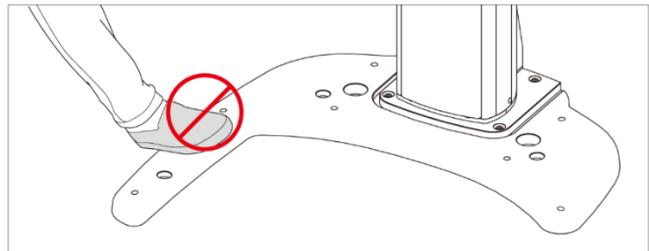
To prevent physical injury and/or damage to the equipment, please observe all warnings and safety information included in this document.

	<b>WARNING</b>	Indicates information that should be followed with the utmost care. Failure to comply with a warning may result in severe damage to the equipment or physical injury to the operator and/or patient.
	<b>CAUTION</b>	Indicates a situation that demands prompt and careful action, a specific remedy, or emergency attention.
	<b>IMPORTANT</b>	Indicates a situation or action that could potentially cause problems to the equipment and/or its operation.
	<b>NOTE</b>	Emphasizes important information or provides useful tips and hints.
	<b>RADIATION</b>	Indicates a possible danger from exposure to radiation.
	<b>ESD susceptibility</b>	Indicates that an item is susceptible to damage from electrostatic discharges.

Never touch or hold the Sensor or Tube Head areas while moving, installing, or operating the equipment.



Do not use the electrical power drill during installation unless it can do so.

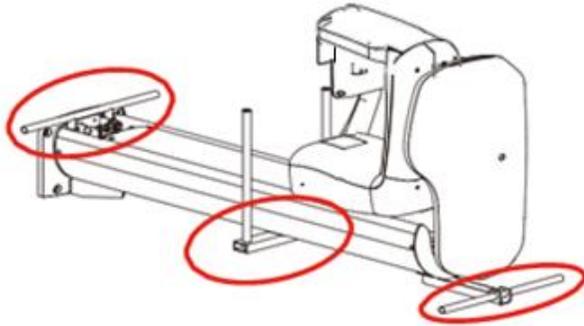


Do not use the electrical power drill during installation unless it can do so.



**IMPORTANT**

The recommended holding area during transportation is as below.

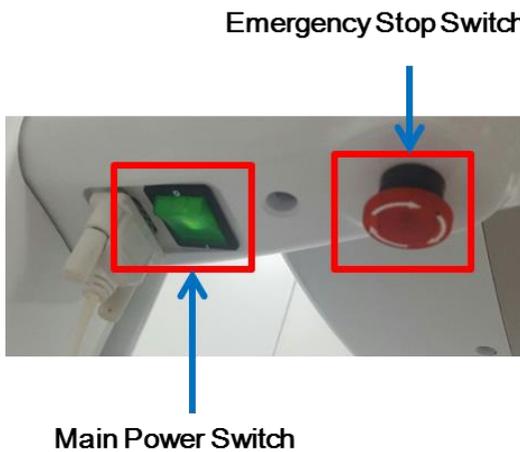


**NOTICE**

Three installers are required to install the equipment safely.

**NOTICE**

The Main Power Switch and **Emergency Stop Switch** are located at the bottom of the Vertical Frame as below.





- Installers must read and understand the installation instructions fully before installation.
- The installer must confirm that the system is installed according to the instructions provided by this manual and perform the appropriate procedures therein.
- If the equipment has been stored at temperatures of below 10 °C (50 °F) for more than a couple of hours, allow the equipment to reach room temperature before applying mains voltage.
- Installation and related work must only be performed by people authorized by VATECH.
- Do not connect any items or equipment to this system which are not part of the system: IEC60601-1-1 (3<sup>rd</sup> edition: 2005).
- Any equipment not approved by VATECH must comply with the applicable standards: IEC 60950-1 (2<sup>nd</sup> edition: 2005) for IT equipment (Ex: PC) and IEC 60601-1 (3<sup>rd</sup> edition: 2005) for medical electrical equipment.
- All operators of this equipment are responsible for ensuring that the requirements outlined in IEC 60601-1-1 (3<sup>rd</sup> edition: 2005): Safety Requirements for Medical Electrical Equipment are fully met to ensure the safety of patients, operators and the environment.
- Never touch-sensitive areas such as sensors during installation. These areas are indicated at the applicable stages during the installation procedures.
- The use of wireless phones may interfere with the operation of this equipment.
- Use an ESD (electrostatic sensitive device) wristband during installation and connect it to a ground wire.
- Touch a ground point to discharge static electricity before handling PCB boards.

### IMPORTANT

#### Installation Site

- The PC monitor, emergency cut off switch, and X-ray **Exposure Switch** should be installed near the operator so that he or she can manage them simultaneously in an emergency.
- Proper shielding of the room is essential: Since these requirements vary depending on the country, it is the installer's responsibility to verify that all applicable radiation safety requirements.
- This equipment should not be installed near other devices.
- Do not install the equipment in an area that is exposed to strong electromagnetic fields.
- Do not install this system in an area where there is the risk of an explosion.
- The electrical installation of this system shall comply with all local code requirements for electro-medical systems: IEC 60364-7-710:2002.
- It is strongly recommended that a UPS be installed at the same time as the equipment.
- The equipment, PC, and all peripheral devices must be well-grounded.

### WARNING

#### Warnings Regarding X-ray Radiation

- Failure to install this equipment in an approved location may be dangerous to the patient and operator.
- Stationary radiation shielding must be installed to protect the operator from radiation.
- The X-ray system may cause injury to the patient if improperly used. Obey all federal and municipal standards regarding radiation safety.
- When exposing the patient to the X-ray, the operator must be behind a protective wall or take other protective actions. The operator should remain at least 2 m (7 feet) away from the X-ray when pressing the **Exposure Switch** and observe the patient and capture-progression.
- Operators must provide protective clothing to the patient before X-ray capturing. Pregnant women must consult with a doctor before being exposed to an X-ray.

**IMPORTANT**

**This equipment complies with the following standards.**

**IEC60601-1-1:2005** Standard Safety Requirements for Medical Electrical Equipment

**IEC 60601-1-2:2005** Electromagnetic Interference

**IEC 60601-1-3:2005** Radiation Protection

**IEC 60601-1:2005** Standards for Medical Electrical Equipment

**IEC 60950-1: 2nd edition:2005** Standards for Information Technology Equipment

**IEC60601-2-7 and IEC60601-2-28:** X-ray Tube Heads

**IEC60364-7-710: 2002** Local Code Requirements for Electro-Medical System Installation

- IEC 60601-1-1:2005 regulation shall be met to their full extent for the safety of the patients, operators, and the environment—when any person assembles or modify a medical electrical system by combing it with other equipment.
- Any equipment not provided by VATECH can be connected when the following standards are complied with: IEC 60950-1 and IEC 60601-1
- The electrical installation shall comply with local code requirements for electro-medical systems: IEC 60364-7-710: 2002.

## 1.4 Marks and Symbols

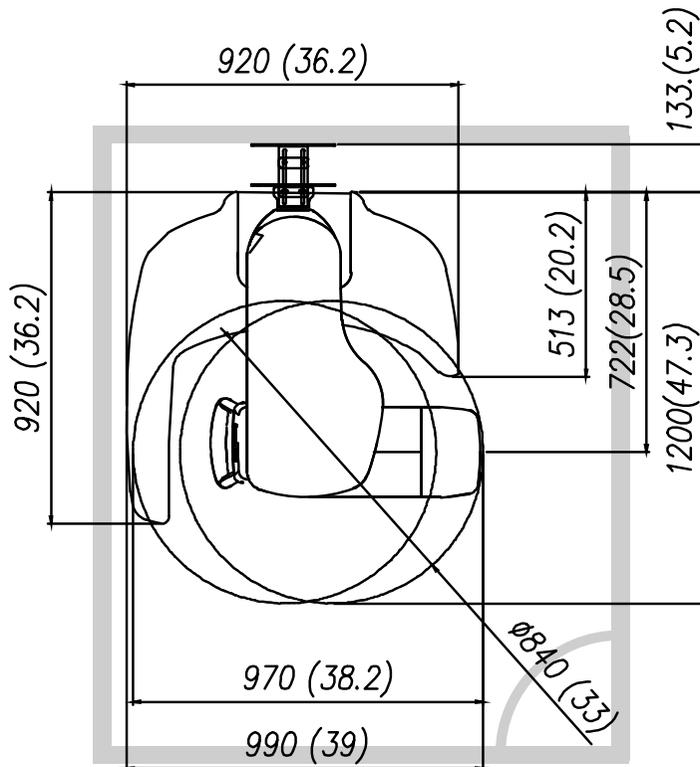
Symbols	Description	Location
	Dangerous voltage	Power board / Inverter board / Monoblock
	Protective earth (Ground)	Column
	Off (power: disconnected to the <b>Main Power Switch</b> )	Main Power Switch
	On (power: connected to the <b>Main Power Switch</b> )	Main Power Switch
	Warns ESD hazard.	MCU board / Board package

## 2. Choosing an Installation Site

### 2.1 Room Requirements

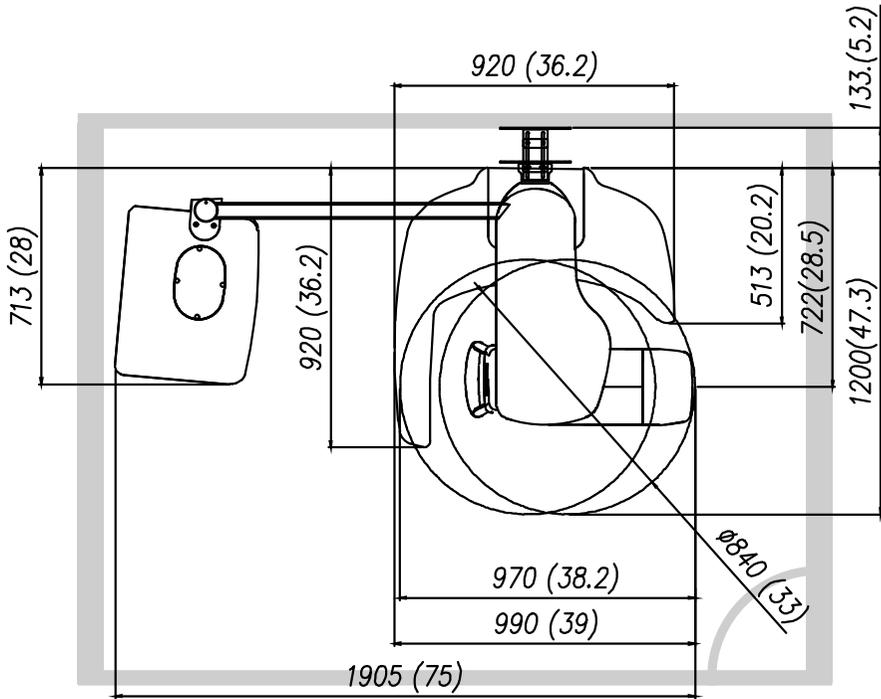
#### IMPORTANT

- The location of this equipment should allow for high visibility of the patient by the operator and the operator should be as near to the patient as possible.
- This equipment should not be installed on thick carpets for stability reasons.
- Anti-static floor materials should be used on the equipment.
- The PC monitor, emergency cut off switch, and X-ray **Exposure Switch** should be installed near the operator so that he or she can manage them simultaneously in case of emergency.

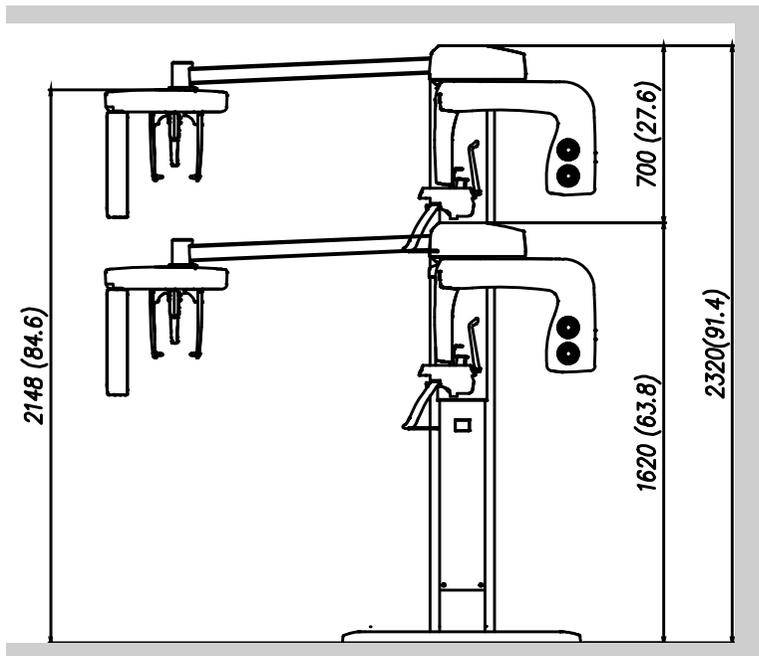


<Without CEPH Unit (optional): 1,890 mm (L) x 2,233 mm (W) or wider >

2. Choosing an Installation Site



<With CEPH Unit (optional): 2,805 (L) x 2,233 mm (W) or wider >



<Ceiling Height: 2,420 mm (H) or higher >

**Minimum Space Required**

<b>Without CEPH unit</b>	1,890 mm (L) x 2,233 mm (W) x 2,420 mm (H)
<b>With CEPH unit</b>	2,805 mm (L) x 2,233 mm (W) x 2,420 mm (H)

**IMPORTANT**

If the ceiling height is less than 2392 mm (without Base) / 2420 mm (with Base) (= max. height of the column + 100 mm), refer to **Appendix C. Limiting the Column Height** to lower the max. the height of the column.

**Lead Thickness**

≥ 1 mm

**The width of the Entrance**

The door of the X-ray room should have a clearance of more than 800 mm (31.5") wide.

**Floor Area**

The floor of the X-ray room must be stable and level for system balance.

The floor must be able to support a minimum weight of 500 kg/m<sup>2</sup> (110 lbs./feet<sup>2</sup>)

**Protection against Radiation**

- To protect against radiation hazards, follow all federal and municipal requirements.
- During exposure, the operator should follow applicable radiation shielding requirements and remain at least 2m (7') from the source of the radiation.
- Maintain visible contact with the patient and a clear view of indicators such as the warning lamp and imaging status on the PC.

## 2.2 Specifications for Electrical Installation

These specifications are based on the **MEIGaN** (Medical electrical installation guidance notes).

## 2.3 Electrical Requirement



This equipment must be connected to a grounded outlet to fulfill the safety provisions specified in **IEC 60364: the 2<sup>nd</sup> edition (2006)**.



Both PC and equipment must use the same power line are connected to an MPSO.  
Whenever possible, use different power outlets for each device. If a multiple portable socket outlet (MPSO) must be used, ensure that the PC and equipment are connected to the same MPSO.



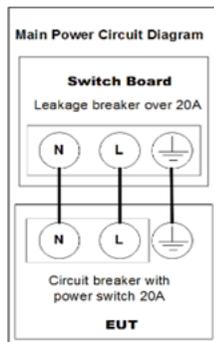
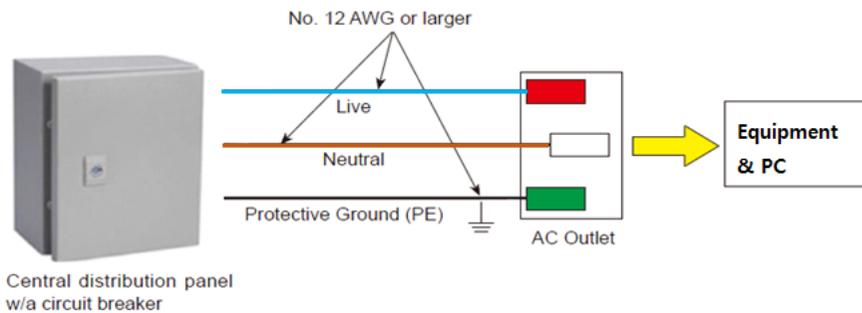
Use a dedicated power outlet for the power cord. Failure to do so may result in unstable system operation caused by power fluctuations.



It is strongly recommended that you install an AVR. An AVR (automatic voltage regulator) maintains a constant voltage and allows for continuous operation in the event of power fluctuation.

Item	Description
Power supply voltage	100 - 240 V ~
Frequency	50 / 60 Hz
Power rating	1.3 kVA
Accuracy	Tube Voltage (kVp) $\pm$ 10 % Tube Current (mA) $\pm$ 20 % Exposure Time (s) $\pm$ (5 % + 50 ms)

- The input line voltage depends on the local electrical distribution system.
- Allowable input voltage fluctuation requirement:  $\pm$ 10 %.
- Mode of operation: Non-continuous operation (NFPA 70: long time operation) - needs waiting time (at least 60 times the exposure time) before the next exposure begins.
- Column operation time: Max. 2 min. On / 18 min. off (Ratio 1:9)

**NOTICE**

- To assure line voltage quality, a separate 3-core grounded power cable connected directly to the central distribution panel with an over-current circuit breaker rated for 20A must be used.
- Maximally allowed deviation of the tube voltage/tube current/exposure time:  
Tube Voltage (kVp)  $\pm 10\%$  / Tube Current (mA)  $\pm 20\%$  / Exposure Time (s)  $\pm (5\% + 50\text{ ms})$  according to IEC 60601-2-63.
- The mains resistance should not exceed 0.045 ohms at 100 V and 0.19 ohm at 240 V. This equipment should be connected to the earthed outlet.

## 2.4 Environmental Specifications

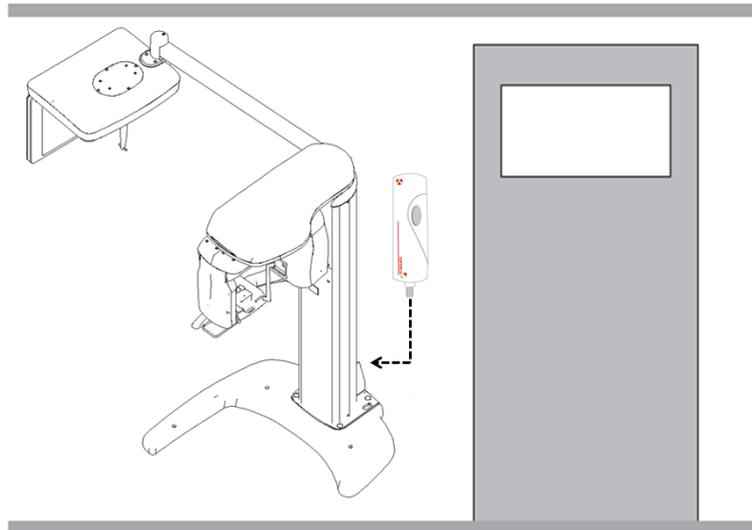
	Item	Description
During Operation	Temperature	10 ~ 35 °C
	Relative humidity	30 ~ 75 %
	Atmospheric pressure	860 ~ 1060 hPa
During Transport and Storage	Temperature	-10 ~ 60 °C
	Relative humidity	10 ~ 75 %
	Atmospheric pressure	860 ~ 1060 hPa

## 2.5 Exposure Switch Installation Options

There are three options for installation, depending on the configuration of the site. Nevertheless, the 2<sup>nd</sup> option is preferred.

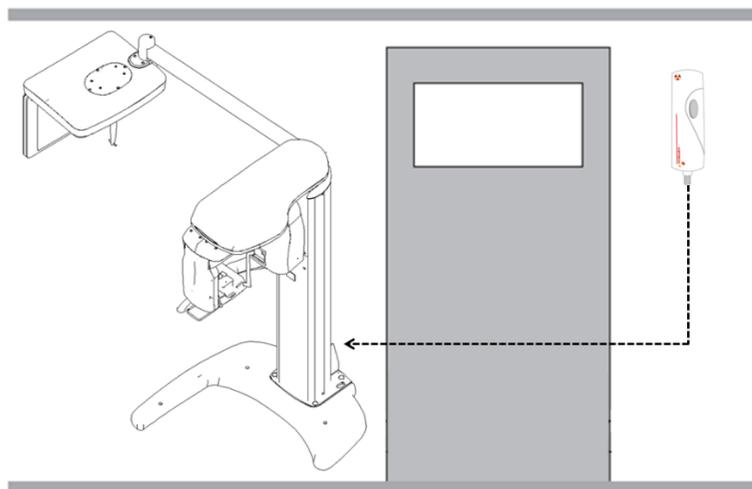
### Option No. 1:

The user operates the **Exposure Switch** from inside the X-ray room.



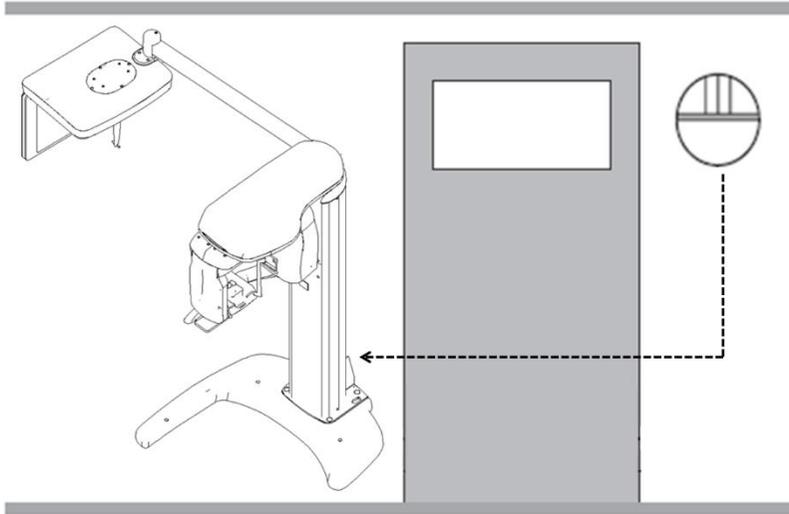
### Option No. 2:

The user operates the **Exposure Switch** from outside the X-ray room. The **Exposure Switch** holder is mounted on the wall.



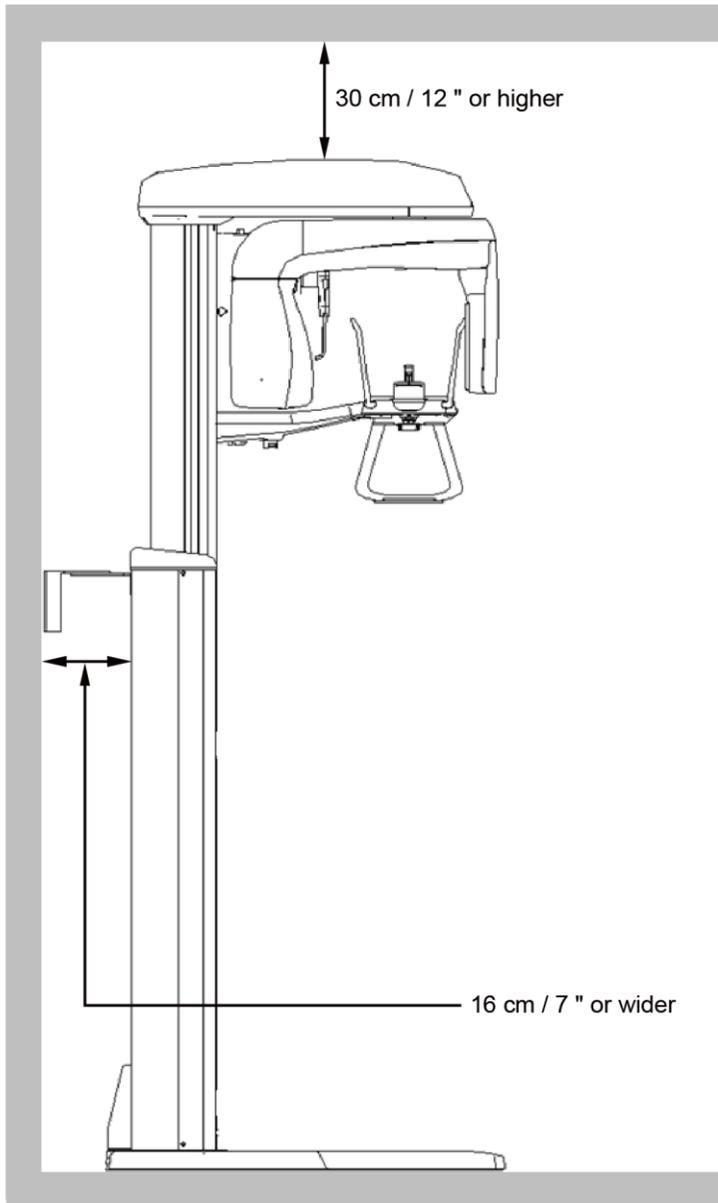
### **Option No. 3:**

The 3<sup>rd</sup> party **Exposure Switch** (not VATECH's) is used on the demand of the customers. For this scenario, see Appendix D "Connecting the 3<sup>rd</sup> party The **Exposure Switch**" for details.

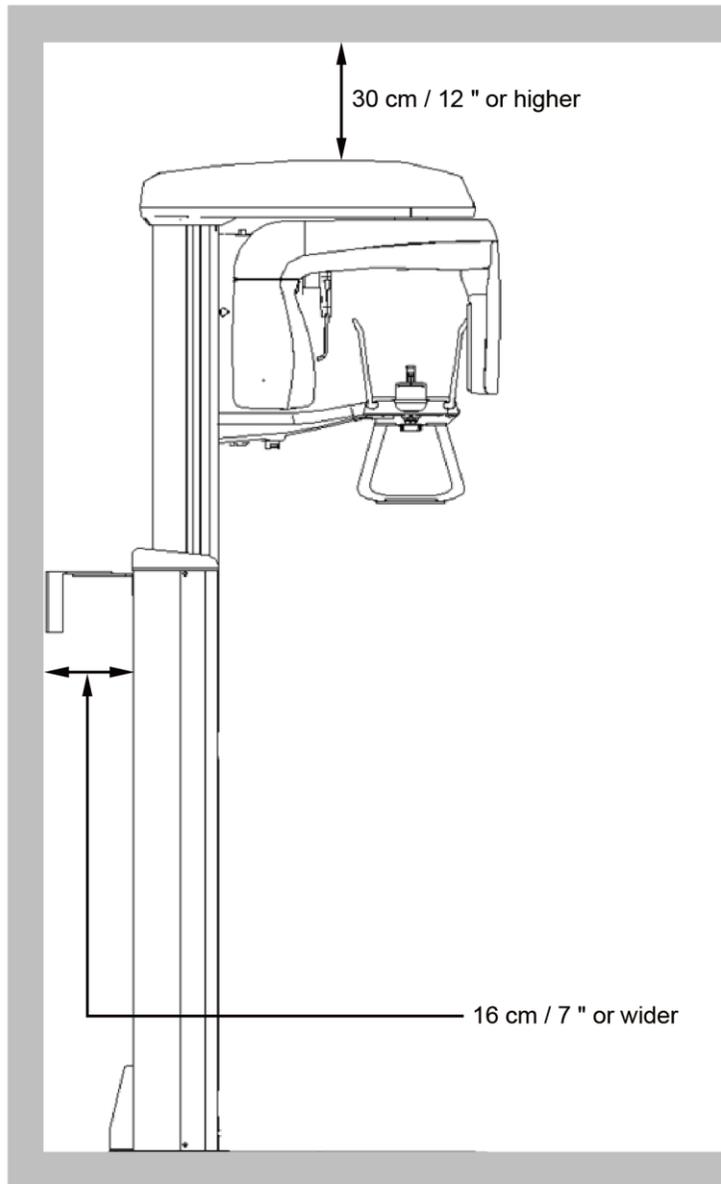


## 2.6 Installation Versions

### Base-stand Type



Wall-mount Type



## 2.7 Installing the Warning Lamp and Door Interlock Switch

Refer to **Appendix A** for a complete installation guide.

- This system can be equipped with a warning lamp and the Door Interlock Switch which are activated when the X-ray is energized.
- The warning lamp and Door Interlock Switch are not included in the equipment.
- The warning lamp and the Door Interlock Switch must be installed by a qualified technician.

## 2.8 Installing the Emergency Stop Switch

Refer to **Appendix B** for a complete installation guide.

- Install the Emergency Stop Switch along with the main power cable in the central distribution panel
- Install this switch so that it is within easy reach of the operator but cannot be accidentally pressed.
- The switch must be a fool-proof model.

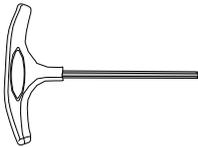
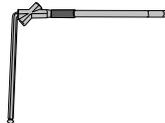
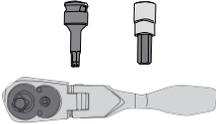
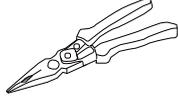
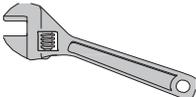
## 3. Before Installing the System

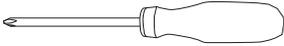
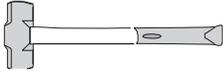
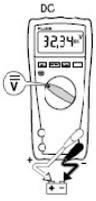
### IMPORTANT

Before or during the system installation, make sure that you use the checklist No.3 through No.6 in the Appendix F. Installation Checklist.

### 3.1 Required Tools

The following tools are necessary to install the PaX-i Plus / Insight.

Item	Figure	Size
Wrench Set		1.5 mm - 10 mm (0.06" - 0.4")
T-shaped Hex Wrench		6 mm - 10 mm (0.24" - 0.4")
Hex Wrench w/ Handle		6 mm - 10 mm (0.24" - 0.4")
Ratchet Wrench		Tips: 3 mm - 8 mm (0.12" - 0.3")
Needle-nose Pliers		Regular
Monkey Wrench		n/a
Spanner Wrench		n/a

Item	Figure	Size
Cross Head Screw Driver w/ Magnetic Tip		L = 200 mm (7.9")
Spirit Level		n/a
Anti-Static Glove		n/a
Knife		n/a
Tape Ruler	 : for Wall Mount type	5 m
Marker Pen (thick tip)	 : for Wall Mount type	n/a
Hammer	 : for Wall Mount type	n/a
Multimeter		n/a
Hammer Drill	 for Wall Mount type	L = 200 mm (7.9")
Transport Dolly		n/a

### 3.2 Checking the ShockWatch and TiltWatch Indicators

This equipment is carefully inspected and packed before shipment. Nevertheless, the recipient of this equipment should carry out a visual inspection of all packages before opening them to ensure that the equipment was not damaged during shipping.

**IMPORTANT**

The installers and/or supervisors should check the status indicators on each package before opening the package.

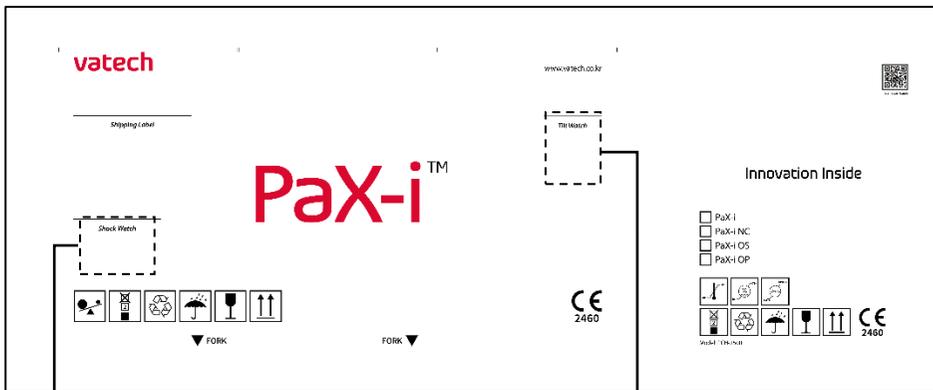
**NOTICE**

- The ShockWatch and TiltWatch indicators become red if the package has suffered any physical impacts during transportation. However, a red indicator does not necessarily mean that the unit has been damaged.
- These indicators are affixed only to the main box, which contains the equipment very sensitive to external impacts.

**Check the followings before opening each package:**

1. These indicators are affixed only to the main box, which contains the equipment very sensitive to external impacts.
2. Check the packaging for signs of damage visually.
3. Locate the ShockWatch and TiltWatch indicators and check if they have been activated.

If either the packaging is damaged or the ShockWatch or TiltWatch indicators have been activated, please do not open the package and immediately contact the shipping company, agent, or **VATECH**.



**Shock Watch**



**Tilt Watch**



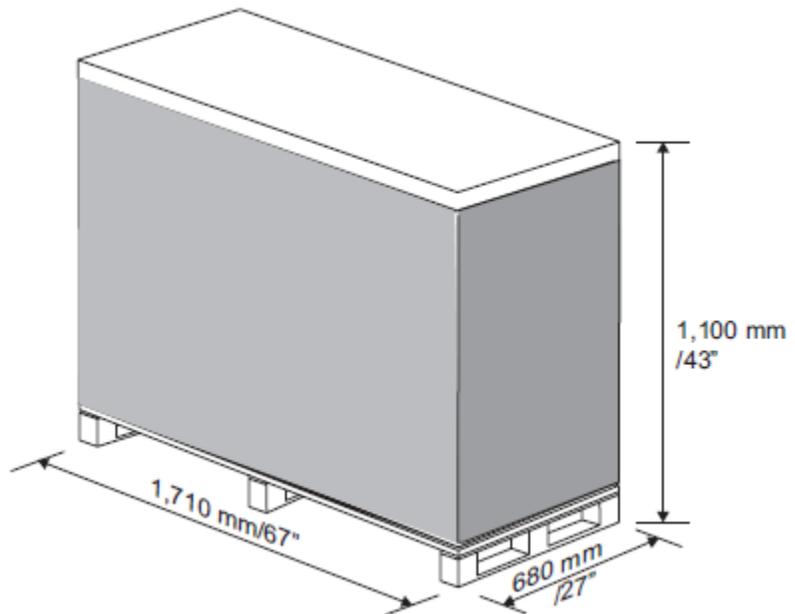
### 3.3 Unpacking Boxes

#### IMPORTANT

- All packaging and Styrofoam used to ship this equipment are recyclable.
- Return the packaging to **VATECH** representatives or dispose of it in compliance with the legal regulations of your country.

#### 3.3.1 Box No. 1 - Main Box

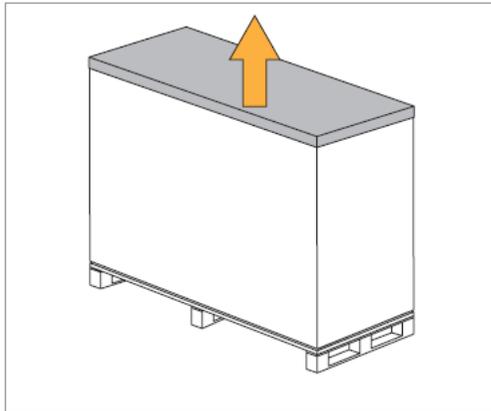
Component	Size (mm / inch)	Weight (kg / lbs.)
<ul style="list-style-type: none"> <li>▪ Column and Rotating Unit Assembly</li> <li>▪ Accessories and Parts</li> <li>▪ PC System (Optional)</li> <li>▪ Monitor (Optional)</li> </ul>	1,710 (L) x 680 (W) x 1,100 (H) / 67" (L) x 27" (W) x 43" (H)	145 / 320



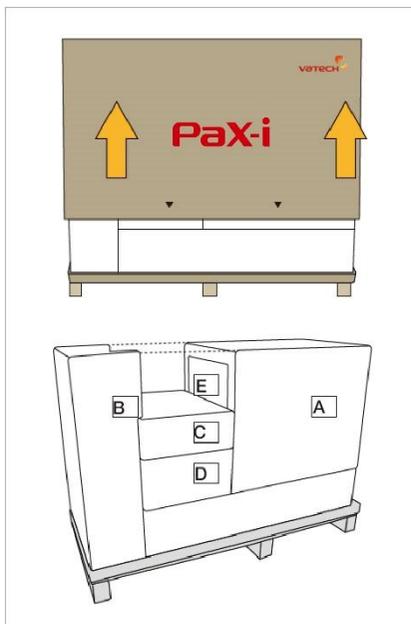
<Main Box>

### Removing the Cover

1. Move the Main Box to a convenient place as close as possible to the installation location.
2. Remove the Top Cover.



3. Remove a single side cover.

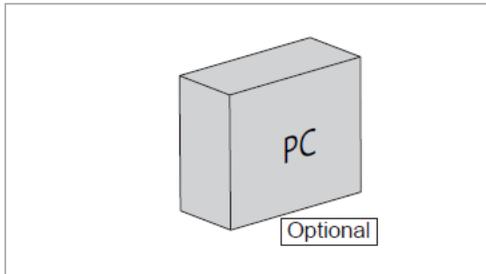


- A: EPS
- B: EPS "(Monitor (Optional))"
- C: Accessory and part box 1
- D: Accessory and part box 2
- E: PC system (Optional)

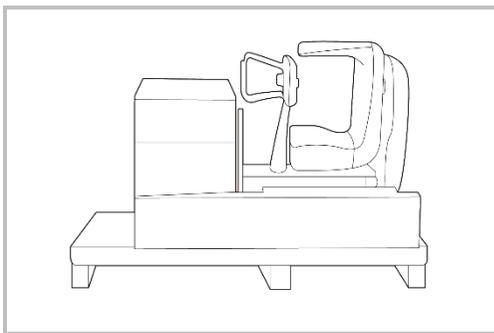
### **NOTICE**

In case of unable to lift the side cover-up fully, due to ceiling height, cut the box in half using the utility knife instead.

- Put the PC System (Optional) down on the floor.

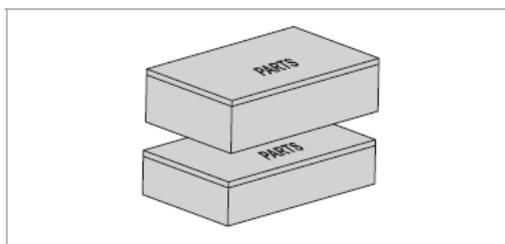


- Separate two side EPS (A, B). The resulting view is as follows.

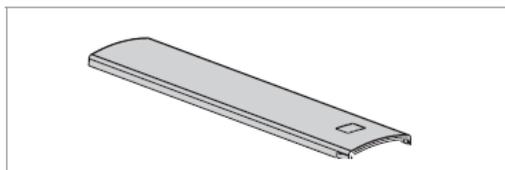
**IMPORTANT**

Do not discard these EPS (A, B), so that they are reused later when the CEPH unit is installed.

- Separate two side EPS (A, B). The resulting view is as follows.

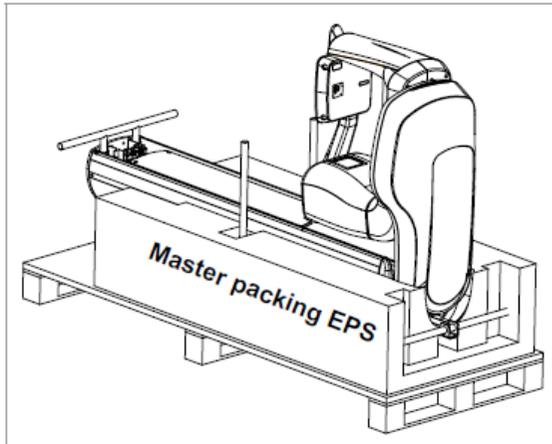


- Remove the case column front cover



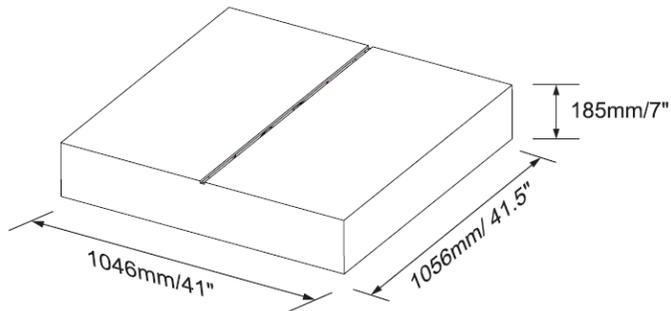
### 3. Before Installing the System

- The view after removal of the EPS is as below.



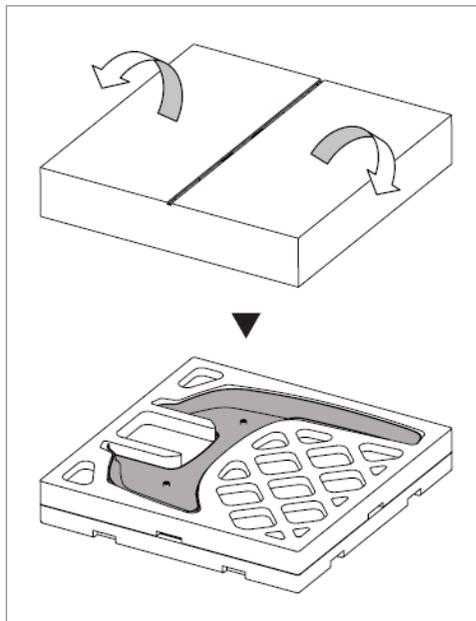
### 3.3.2 Box No. 2 - Base Unit

Component	Size (mm / inch)	Weight (kg / lbs.)
Base	1046 (L) x 1056 (W) x 185 (H) / 41" (L) x 41.5" (W) x 7" (H)	47 / 103



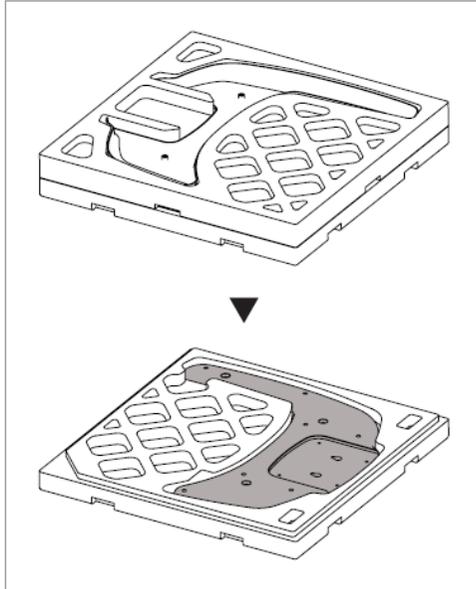
#### Removing the cover

1. Open the box cover, the Base Cover appears.



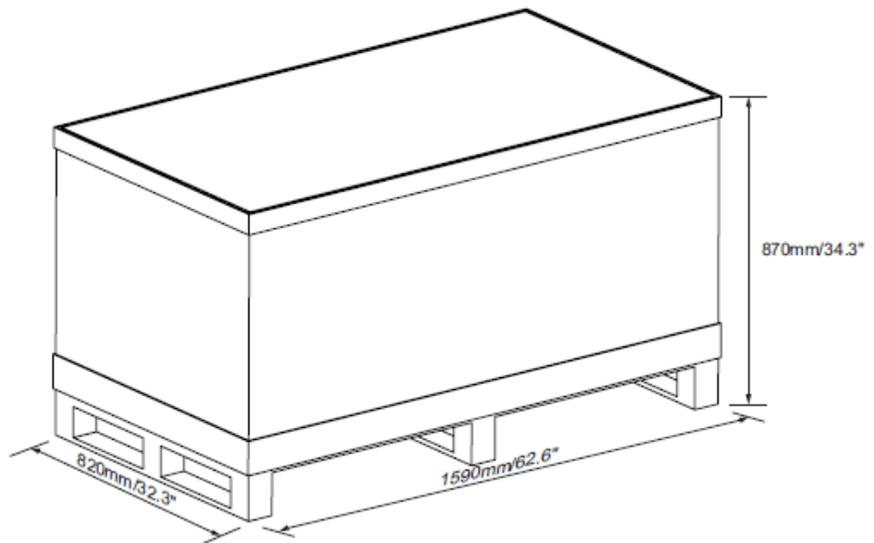
### 3. Before Installing the System

2. Remove the upper box, the Base Unit appears.



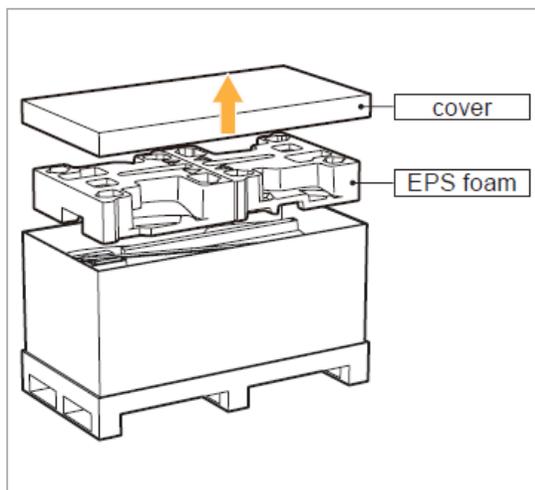
### 3.3.3 Box No. 3 – CEPH Unit (Optional)

Component	Size (mm / inch)	Weight (kg / lbs.)
CEPH unit	1590(L) x 820(W) x 870(H) / 62.6"(L) x 32.3"(W) x 34.3"(H)	50 / 110



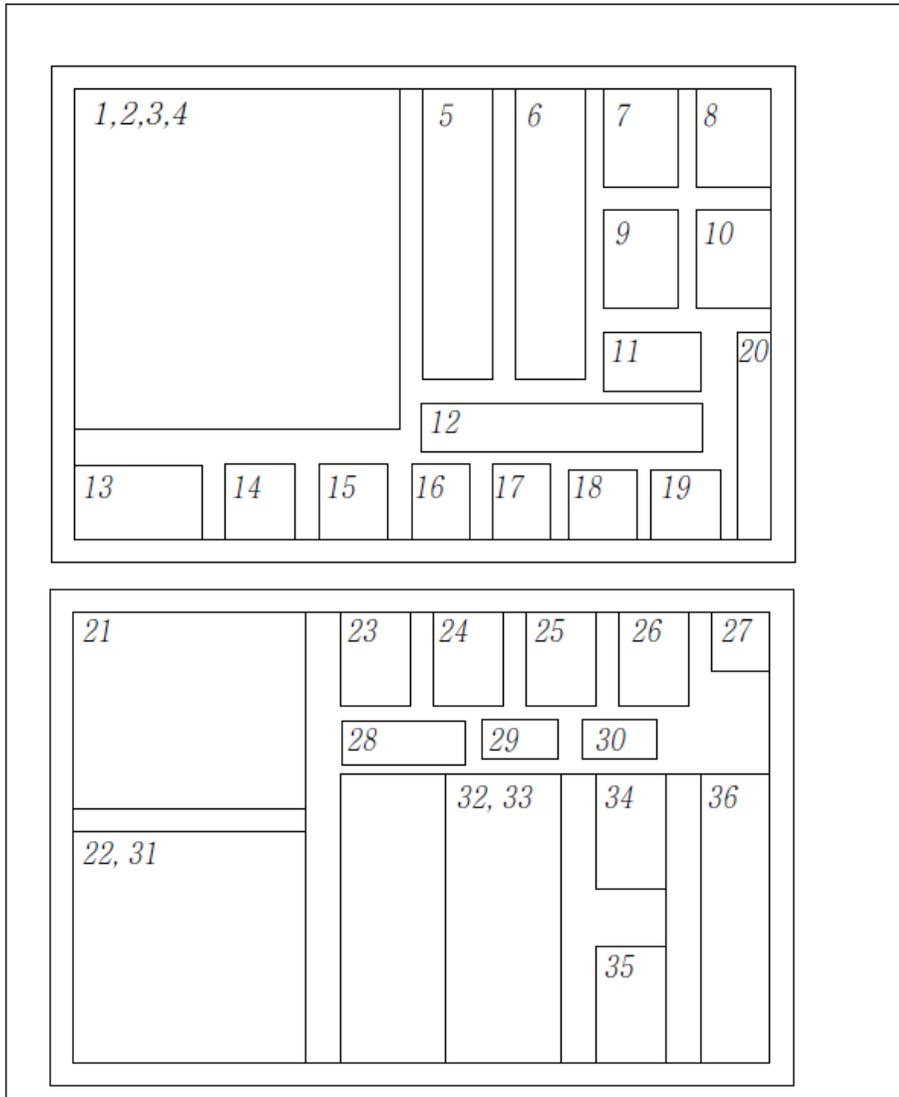
#### Removing the cover

1. Open the box cover and remove the packing material as shown in the figure.



### 3.4 Checking the Parts

#### 3.4.1 Location Layout of the Parts and Accessories



## 3.4.2 Parts List

In the Accessory Box 1 & 2

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
1	Manuals	User Manual		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Installation Manual		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
		2D Viewer Manual		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Installation CD or USB			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	USB Key	2D Viewer key		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Exposure Switch			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Exposure Switch Holder			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Up / Down Switch Holder			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Double-Sided Sticker			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Screws	M3 x 16		3		Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Hand Plate	Carpus		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Handrest Sticker			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Plate Align Wall			1		Yes <input type="checkbox"/> No <input type="checkbox"/>

### 3. Before Installing the System

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
5	Temple Supports	Right & Left		1 set		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Cap Ear Rods	Right & Left		1 set		Yes <input type="checkbox"/> No <input type="checkbox"/>
6	Anti-Static Gloves			1 pair		Yes <input type="checkbox"/> No <input type="checkbox"/>
7	Chin Block High	ABS (WHITE)		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
8	Blank					
9	Blank					
10	Blank					
11	Pano Cover Box	PP(BAG)		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
12	Chin Bite	PC transparent Black		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Deep*	PC transparent Black		1	*. Deep Bite Block is only available in some Asian countries.	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Chin Bite 2	PC transparent Black		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Sinus/TMJ Bite			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
13	Blank					
14	Cap	For Ear Rods		2 + 2	CEPH Option (2: on the equipment)	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Silicon Cover	For Nasal Positioner		1	CEPH Option: extra	Yes <input type="checkbox"/> No <input type="checkbox"/>

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
15	Blank					
16	Silicon Cap	White		18		Yes <input type="checkbox"/> No <input type="checkbox"/>
17	Base Cap 1			4		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Base Cap 2			3		Yes <input type="checkbox"/> No <input type="checkbox"/>
18	Blank					
19	Blank					
20	Cable Tie			10		Yes <input type="checkbox"/> No <input type="checkbox"/>
21	Frame Grabber System	Optic Cable		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
		FTG Card (or) VTG Card		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
22	Wall Bracket 2			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Protractor			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
23	Wrench Bolt	M10 x 20 w/ Spring		4		Yes <input type="checkbox"/> No <input type="checkbox"/>

### 3. Before Installing the System

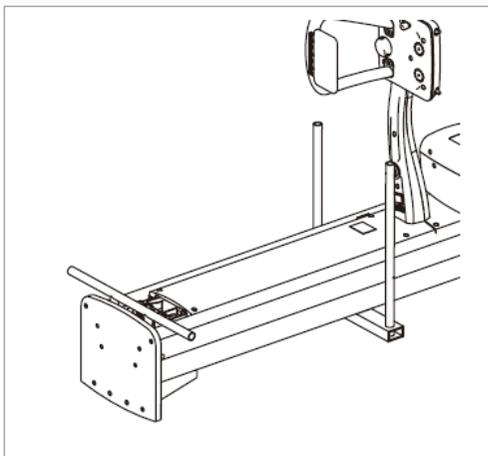
Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
24	Wrench Bolt	M10 x 25 w/ Spring and Flat Washers		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wrench Bolt	M10 x 25		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
25	Wrench Bolt	M8 x 45 w/ Spring and Flat Washers		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
26	Truss Bolt	M5 x 8		3		Yes <input type="checkbox"/> No <input type="checkbox"/>
27	Truss Bolt	M4 x 8		10		Yes <input type="checkbox"/> No <input type="checkbox"/>
28	Plate-Switch/Rectangle One Switch	C0000009		1	For domestic only	Yes <input type="checkbox"/> No <input type="checkbox"/>
29	Wrench Bolt	M8 x 20 w/ Spring and Flat Washers		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
30	Set Screw	M10 x 20		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
31	Wall Plate			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Terminal Block 3 Pole			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
32	Blank					
33	Up / Down Switch			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Up / Down Switch Holder			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Double-Sided Sticker			1		Yes <input type="checkbox"/> No <input type="checkbox"/>

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
34	Ficher strong anchor	M10 x 40 EAM8N		4	column	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wrench Bolt	M10-L20 w/ Spring Washer		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Ficher strong anchor	M8 x 30 EAM8N		4	wall	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Hex Bolt	M8-L15 w/ Spring Washer		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wood Screw	M8 x 60		4	wall Wood	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wood Screw	M12 x 70		2	base	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wrench Bolt	M8 x 25 w/ Spring and Flat Washers		2	wall Bracket	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Nut	M8		2	wall Bracket	Yes <input type="checkbox"/> No <input type="checkbox"/>
35	Wall Bracket 1			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wall Bracket 2			1	For America only	Yes <input type="checkbox"/> No <input type="checkbox"/>

## 4. Installing the Equipment: Base Stand (Optional)

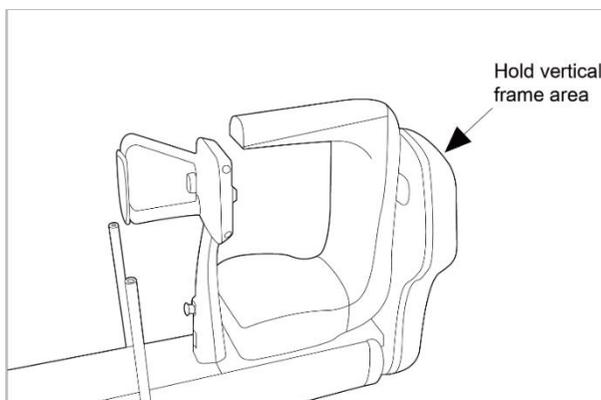
### 4.1 Unloading the Base and Main Unit

1. First, unload the Main Unit on the floor.

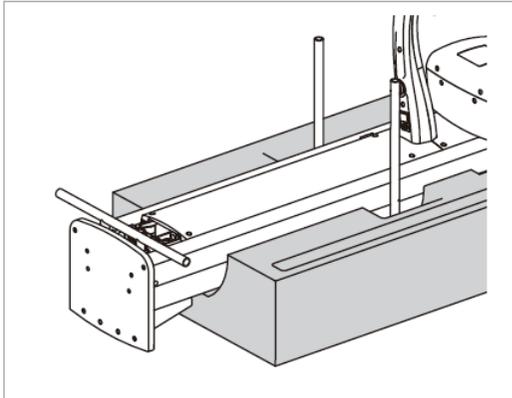


- Place some protective stuff on the floor to avoid the scratches on the surface.
- One installer should keep on holding the Vertical Frame area to keep the equipment stable after it is unloaded.

#### **NOTICE**



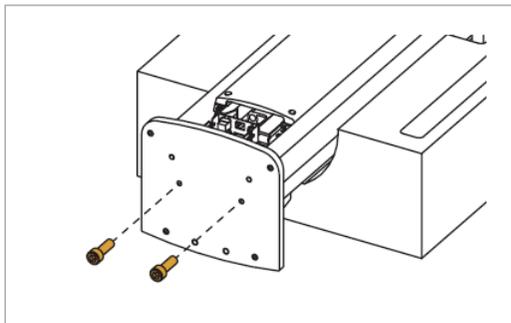
- Put the Main Unit back on the master packing EPS and remove the protective plastic cover with a knife. Then put the cables down on the floor carefully.



Be careful not to damage the cables or have the column surface scratched.

- Assemble two wrench bolts as shown below.

Wrench Bolt	M10 x 25 (Part No. 24)	
-------------	---------------------------	---

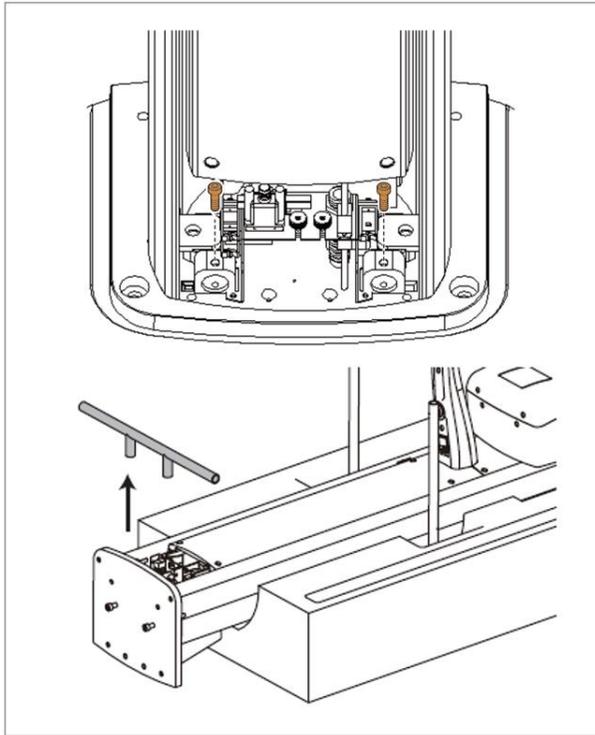


#### 4. Installing the Equipment: Base Stand (Optional)

4. Remove the carrying handle at the bottom of the column unit.

Allen Wrench

6 mm / 0.24"



## 4.2 Assembling the Base with the Column Unit

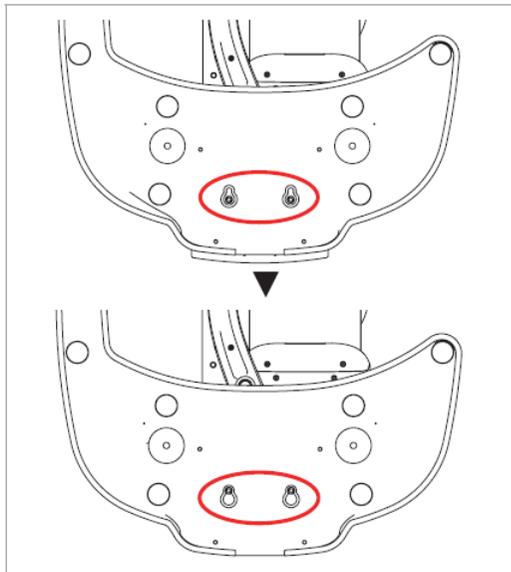
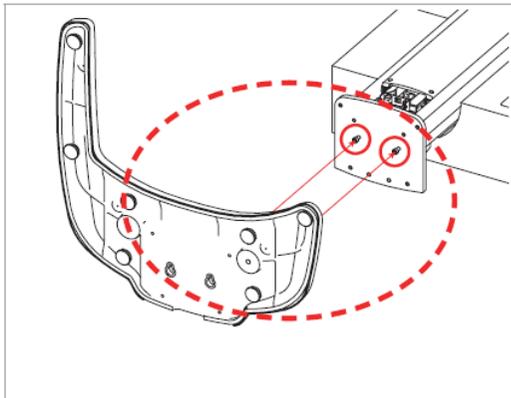
### NOTICE

If the installation site is a concrete floor, go to section **4.5 Fixing the base (Optional)** and do number **1** first, after that turn back **4.2 Assembling the Base with the Column Unit**.

1. Hang the base unit onto two bolts temporarily as shown below.

### CAUTION

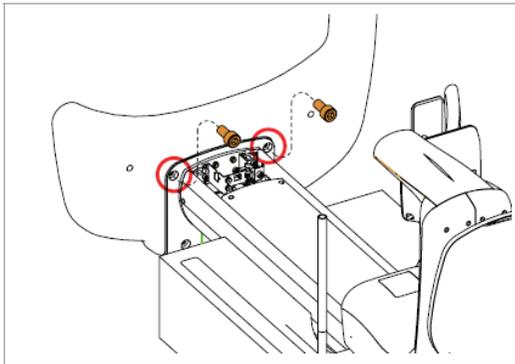
An installer should hold the base unit to keep it from falling.



#### 4. Installing the Equipment: Base Stand (Optional)

2. Fasten the Base Unit with two Wrench Bolts.

Allen Wrench	8 mm / 0.3"	
Wrench Bolt	M10 x 20 w/ Spring (Part No. 23)	



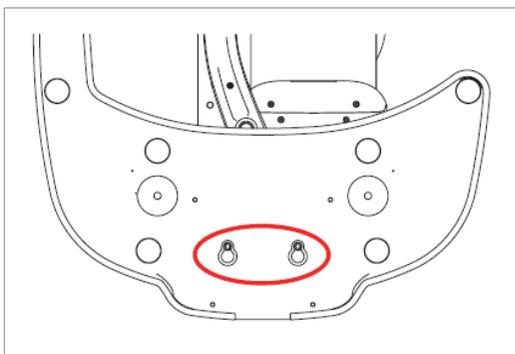
Put the bolts into the holes until about 20 mm are left outside.

**IMPORTANT**

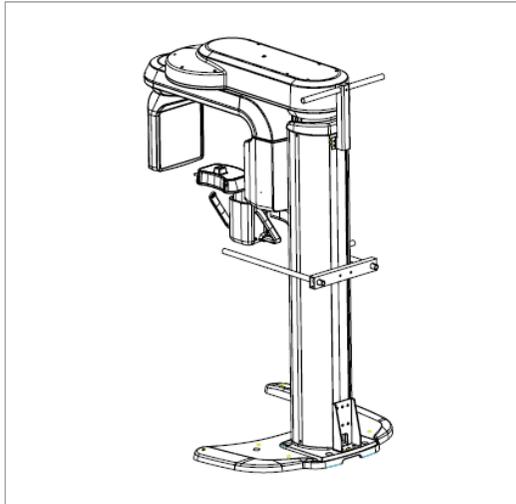
2cm  
/0.8"



3. Tighten two Wrench Bolts firmly as shown below.



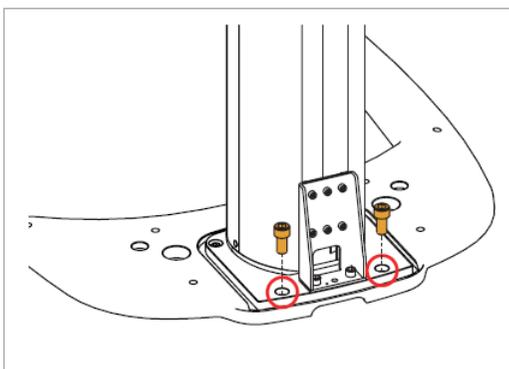
- Put the equipment in a vertical position slowly while holding the upper handle.



Be sure not to damage the cables. Before erecting the equipment, keep them clear of the equipment.

- Tighten the three Wrench Bolts to attach the base unit.

Allen Wrench	8 mm / 0.31"	
Wrench Bolt	M10 x 20 w/ Spring (Part No.23)	

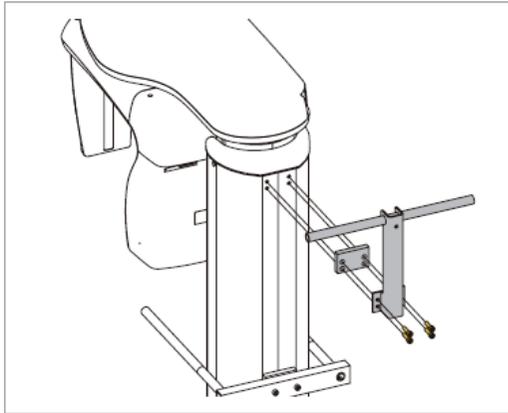


### 4.3 Removing the Transportation Handle (without the CEPH unit)

1. Remove the upper carrying handles.

Allen Wrench

6 mm / 0.24"

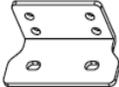


One installer should hold the handle, while the other is removing the bolts.

## 4.4 Installing the Wall and Column Brackets

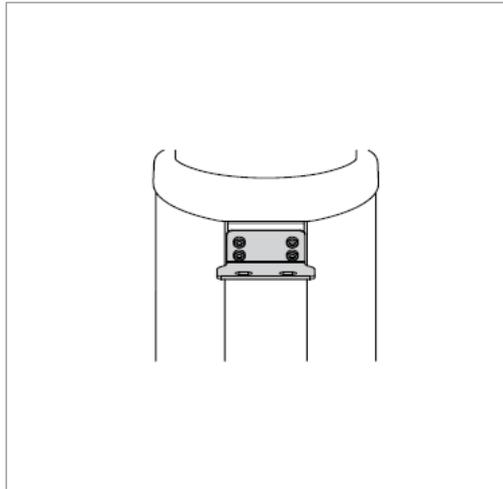
### Assembling the Column Bracket

1. Remove the plastic wrap covering the column unit by using a cutter.
2. Prepare the column bracket.

Wall Bracket 2	(Part. No. 22)	
----------------	----------------	---

3. Attach the above bracket to the back of the column with the four Wrench Bolts.

Wrench Bolt	M8 x 20 w/ spring and flat washers (Part No. 29)	
Allen Wrench	6 mm / 0.24"	



#### 4. Installing the Equipment: Base Stand (Optional)

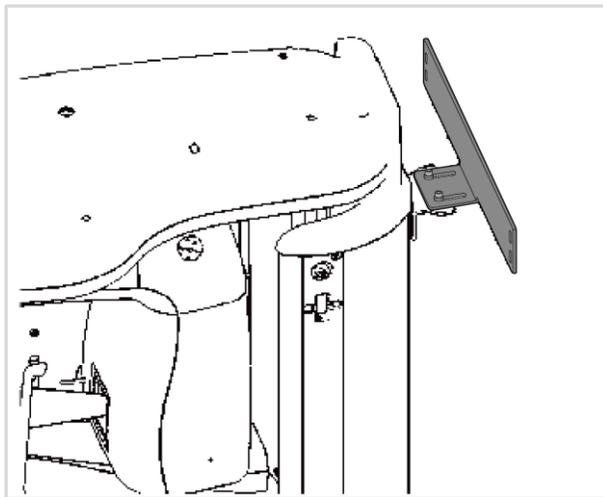
##### Combining Column and Wall Brackets

1. Prepare the wall bracket.

Wall Bracket	(Part No. 35)	
--------------	---------------	---

2. Combine the column and wall brackets in the following manner with the 2 Wrench Bolts.

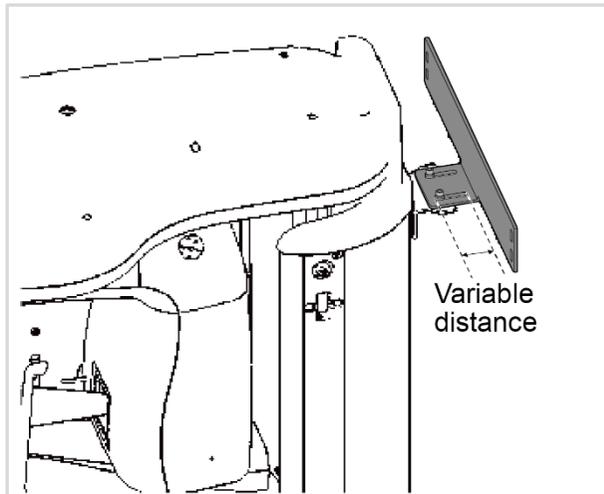
Allen Wrench	6 mm / 0.24"	
Wrench Bolt	M8 x 25 w/ Spring and Flat Washers (Part No. 34)	
Monkey Wrench	n/a	
Nut	M8 (Part. No. 34)	



Do not tighten the bolts fully yet.

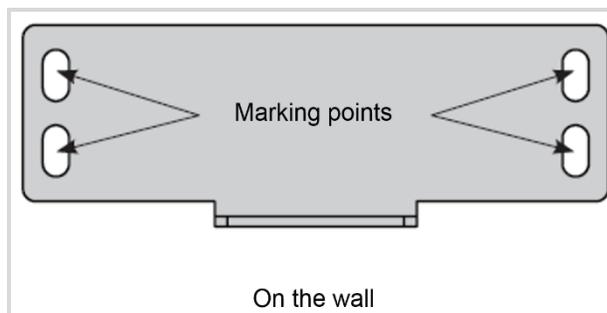
**Marking Points on the Wall**

1. Move the equipment to the installation site as close as possible.
2. Adjust the distance between the wall and equipment by moving it slightly, so that the wall bracket touches the wall.



3. Mark four anchor bolt locations on the wall.

Marker	n/a	
--------	-----	--



## 4. Installing the Equipment: Base Stand (Optional)

### Drilling on the Wall

1. Drill the wall holes of size 10.5 mm x 30 mm (depth) using the concrete hammer drill.



2. Remove the debris and clean the holes using the dust pump.
3. Using the hammer, insert a Fischer strong anchor into the hole.

Fischer Strong Anchor	M8 x 30	
Hammer	N/A	



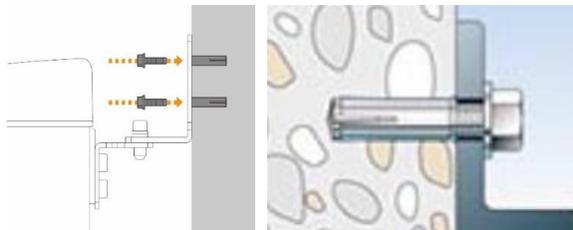
4. Using the hammer, insert an EHS tool into the inner bolt.

EHS Tool	EAW H 8x30	
Hammer	N/A	

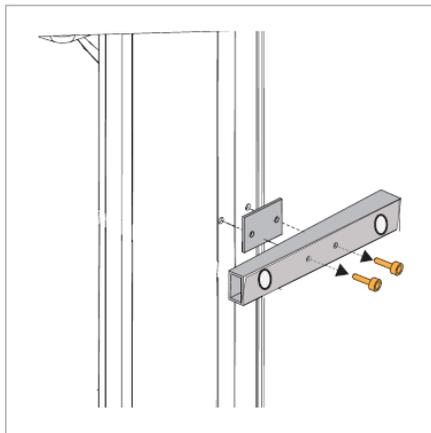
**Combining the Equipment with the Anchor Bolts**

- Place the equipment on the alignment plate, while observing 4 Hex bolts are being inserted properly through each hole.

Hex Bolt	M8 x 15	
Spring Washer	M8	
Flat Washer	M8	
Torque Wrench	Spanner type	



- Remove the middle carrying handle.

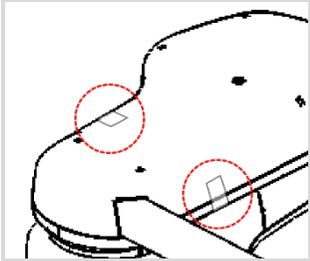


**IMPORTANT**

If the CEPH unit is to be installed, this is used as the carrying handle. Do not detach it until indicated later after the equipment is moved to the installation site

## 4.5 Removing the Transportation Safety Bolts

1. Remove the semi-transparent tape on both sides of the vertical top cover.



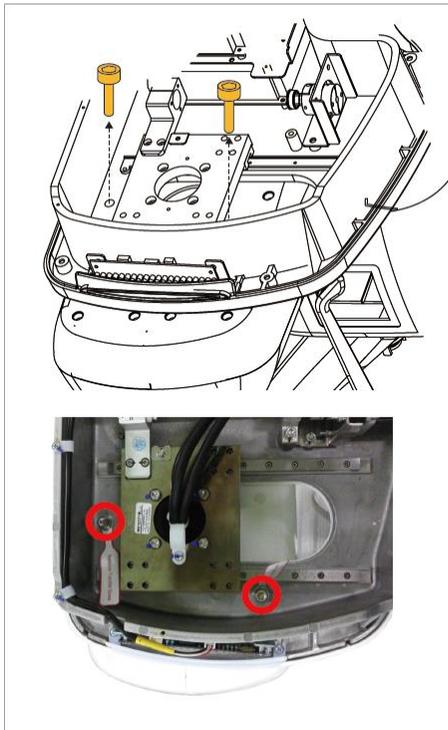
### IMPORTANT

When removing the semi-transparent tape, be careful not to scratch the surface of the equipment.

2. Remove the vertical top cover.
3. Remove the safety lock bolt with a wrench.

Allen Wrench

6 mm / 0.23"

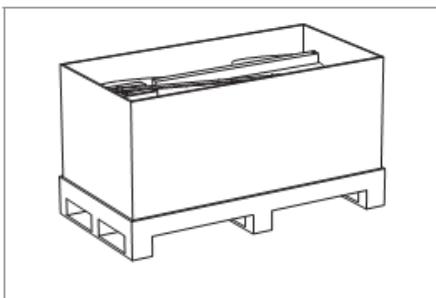


## 4.6 Installing the CEPH Unit (Optional)

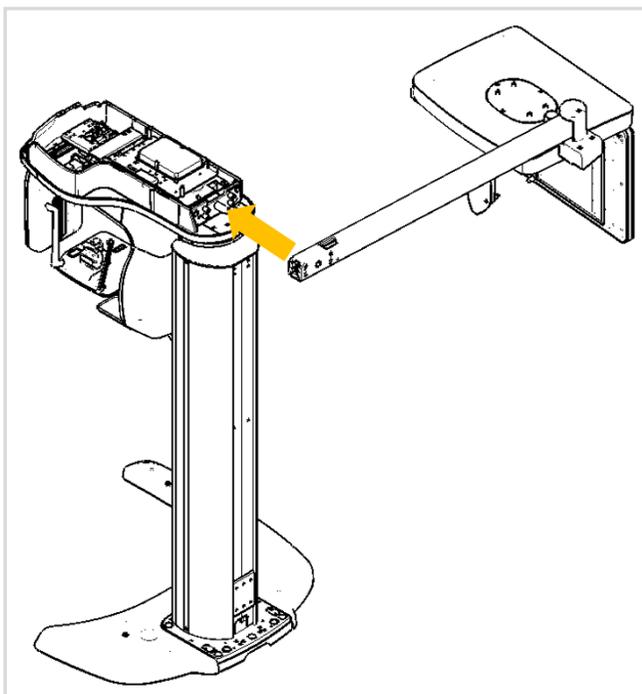
**WARNING**

Never hold the areas of the collimator, sensor, and tube head.

1. Now it is assumed that the CEPH box has already been opened.



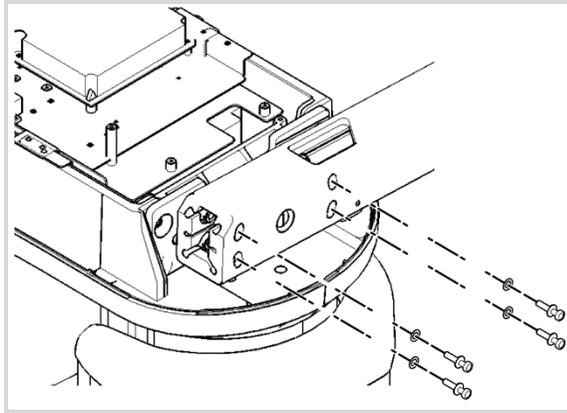
2. Remove the plastic wrap covering the column unit and the tape for fixing the CEPH cables by using a cutter.
3. Move and mount the CEPH unit on the Main Unit carefully, while observing the insertion state of 4 studs.



#### 4. Installing the Equipment: Base Stand (Optional)

4. Tighten the four wrench bolts to attach the base unit.

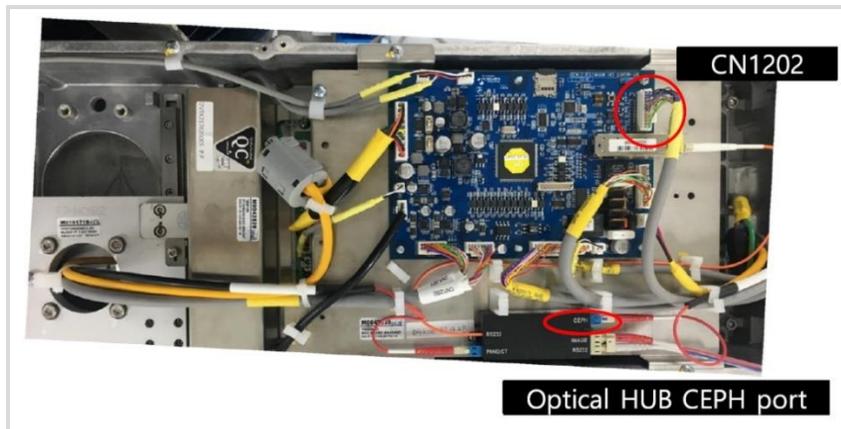
Allen Wrench	6 mm / 0.24"	
Wrench Bolt	M8 x 45 w/ Spring and Flat Washers (Part No. 25)	



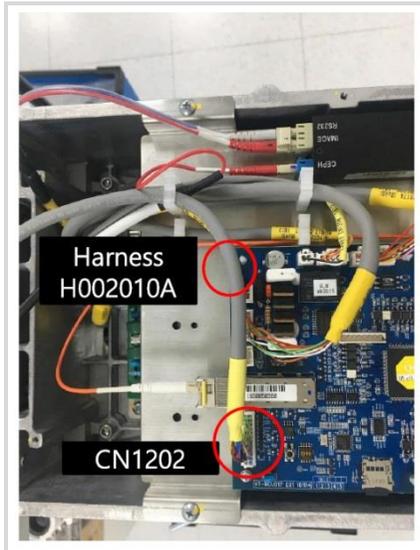
#### IMPORTANT

- When fastening a bolt, make sure that the cable is not stuck on the surface.
- When removing the semi-transparent tape, be careful not to scratch the surface of the equipment.

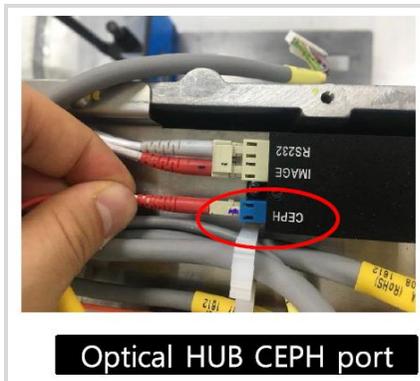
5. Connect the cable to the CEPH unit and main unit.



4. Connect H002010A of the CEPH unit to CN1202 of the MCU board.



5. Connect the H002040A fiber optic cable to the CEPH port of the optic hub.



When handling fiber optic cable,

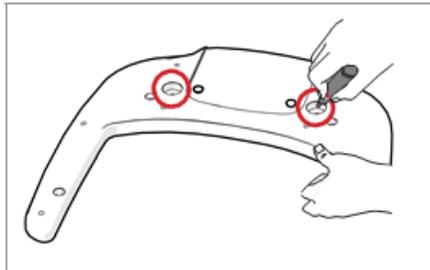
- Do not bend, pull, and/or crushing it.
- Ensure that the caps of the fiber optic cable be removed
- Do not touch the tip of the fiber optic cable to prevent it from being dirty.
- Insert the fiber optic cable fully until the click sound is heard.

## 4.7 Fixing the Base (Optional)

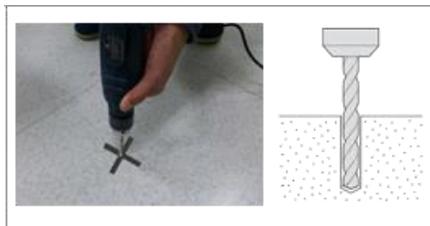
### Concrete Floor

Hammer Drill	L = 200 mm (7.9")	
Hammer	n/a	
Fischer Strong Anchor	M10 x 40 (Part No. 34)	
Allen Wrench	8 mm / 0.3"	
Wrench Bolt	M10 x 25 w/ Spring and Flat Washers (Part No. 24)	

1. Put the base unit on the installation site and mark 2 locations on the floor before installing the equipment.

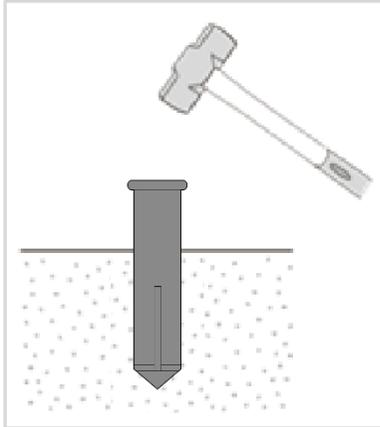


2. Drill the floor holes of size 12mm x 30mm (depth) using the concrete hammer drill.

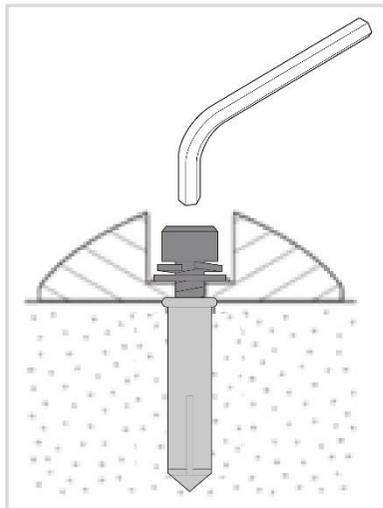


3. Remove the debris and clean the holes using the dust pump.

4. Secure the anchor bolts with the hammer.



5. Place the base unit combined equipment in the proper position, lock the nuts and washers using a ratchet wrench.

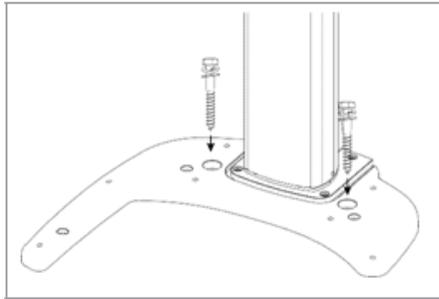


## 4. Installing the Equipment: Base Stand (Optional)

### Wooden Floor

Wood Screws	M12 x 70 (Part No. 34)	
Hammer Drill	L = 200 mm (7.9")	

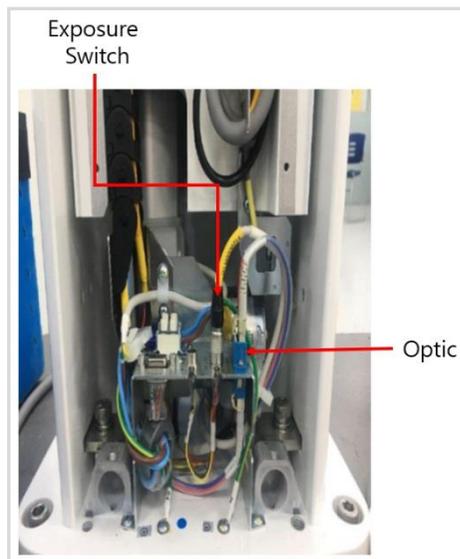
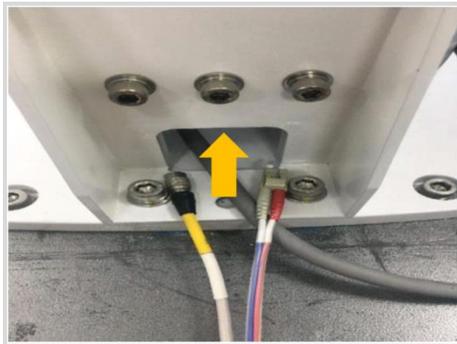
1. Secure the base unit using the wood screws.



## 4.8 Connecting the Cables to the Equipment.

1. Connect the cables in the back of the column as shown in the figure.

Optic Cable	Cable No. H002040A (Part No. 21)	
Cable Tie	(Part No. 20)	

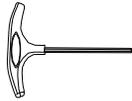


#### 4. Installing the Equipment: Base Stand (Optional)

2. Use the Cable Tie (Part No. 20) or Cable Holder (Part No.20) to fix the cables as shown below after the connection is completed.



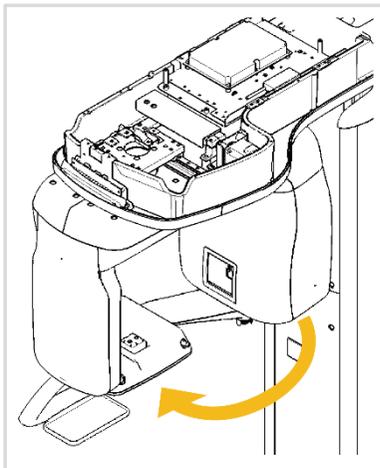
## 4.9 Leveling the Equipment

T-shaped Hex Wrench	8 mm / 0.3"	
Spirit Level	n/a	

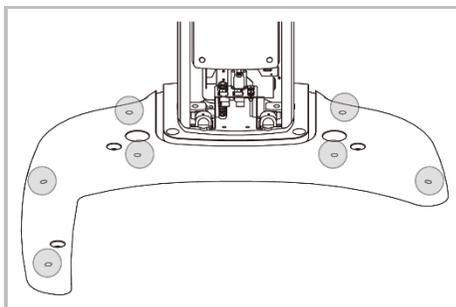
### IMPORTANT

Ensure that the Spirit Level should rest only on the locations indicated in the following figures to obtain the accurate center.

1. Prepare the Spirit Level.
2. Turn the Rotating Unit clockwise so that the X-ray tube head faces the front as shown in the figure.

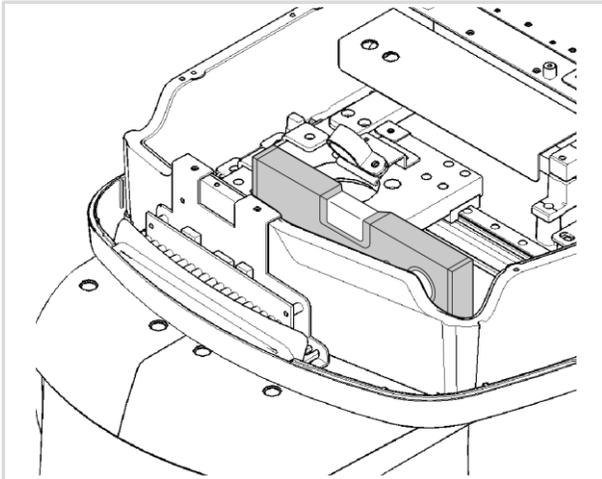


3. Remove the case column front.
4. Turn all screws on the base plate unit clockwise until they touch the ground.

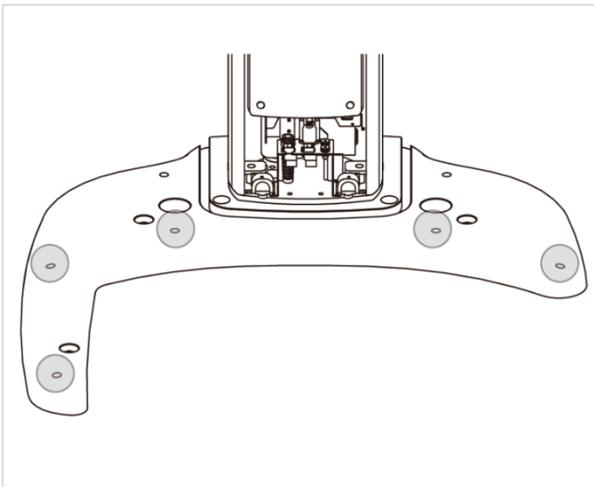


**Leveling Right and Left**

1. Place the Spirit Level, as shown in the figure.

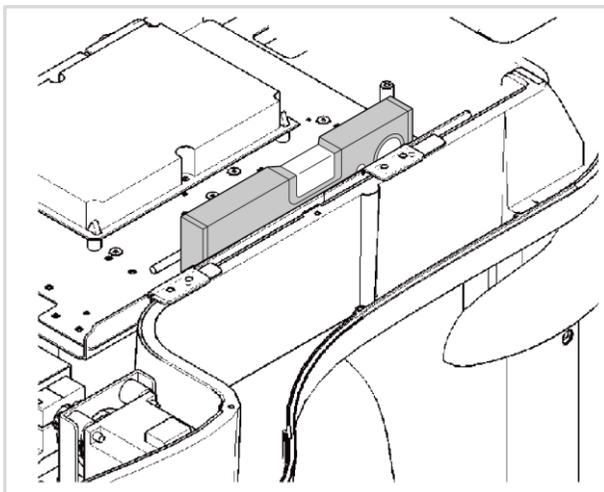


2. Adjust the base until the bubble on the Spirit Level centers in the middle, by turning left and right screws clockwise or vice versa.

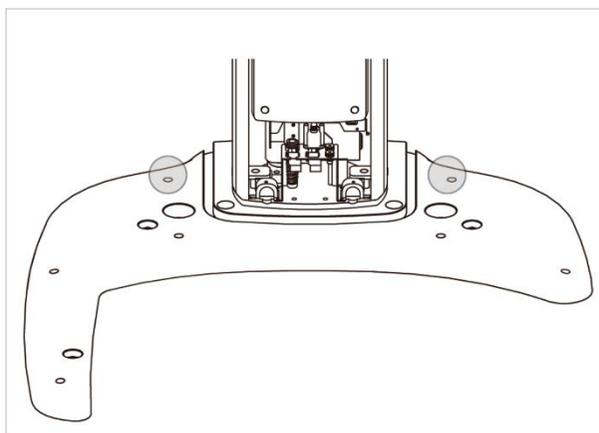


### Leveling the Front and Back

1. Place the Spirit Level on the Vertical Frame, as shown in the following figure.



2. Adjust the screws until the bubble of Spirit Level centers (level), by turning the front and/or back screws clockwise or vice versa.



3. When the leveling is completed, make sure that all eight set screws touch the floor by turning them clockwise if necessary.
4. Assemble the vertical top cover.
5. Assemble the case column front.

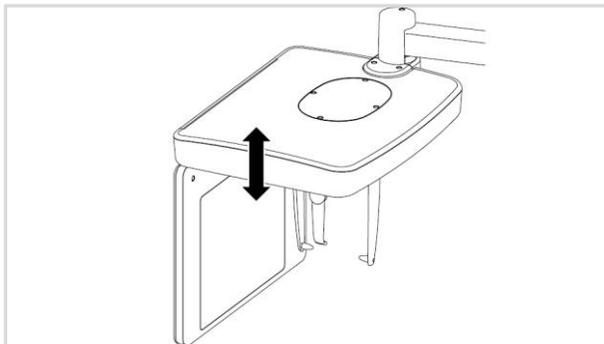
### 4.10 Aligning the Ceph unit

Allen Wench	8 mm / 0.3"	
Allen Wench	10 mm / 0.4"	
Spirit Level	n/a	

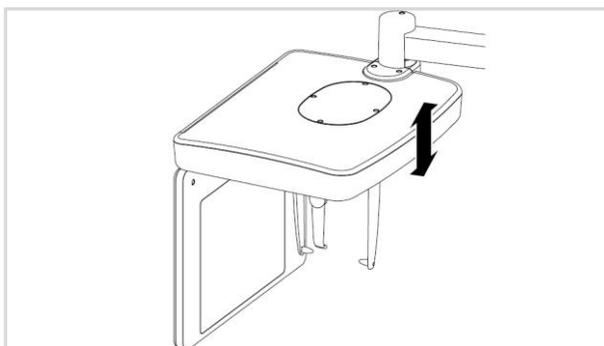
**IMPORTANT**

Ensure that the Spirit Level should rest only on the locations indicated in the following figures to obtain the accurate center.

Verify the Ceph unit is level on all four sides (front, back, right and left), and adjust the level as necessary.



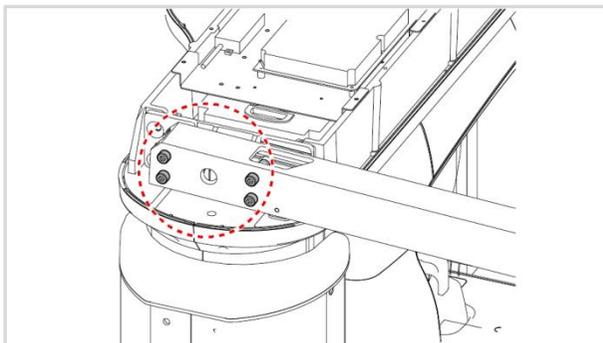
[Leveling the Front and Back]



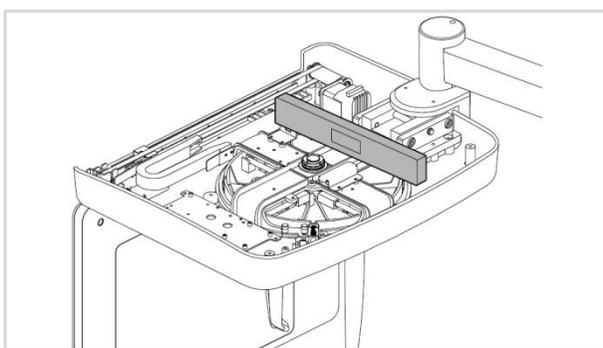
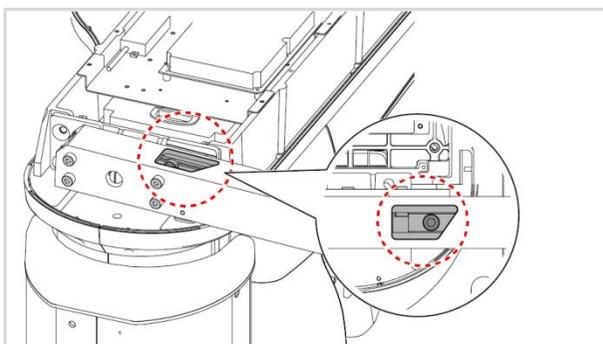
[Leveling the Right and Left]

**When the Ceph unit is tilted to the right or left**

1. To adjust the Align bolt, untighten four Wrench Bolts (M8) slightly.

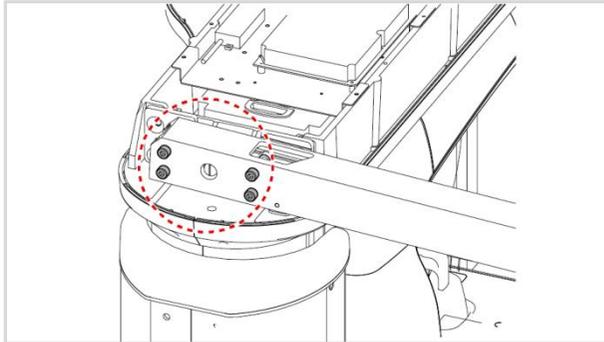


2. Adjust the level of the Ceph unit on both the right and left sides until the bubble on the Spirit Level sensors in the middle, by adjusting Align Bolt (M10).



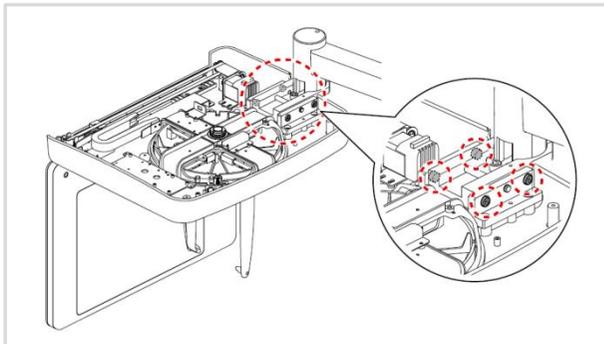
#### 4. Installing the Equipment: Base Stand (Optional)

3. When the aligning is completed, tighten four Wrench Bolts (M8) of the Main unit fully.

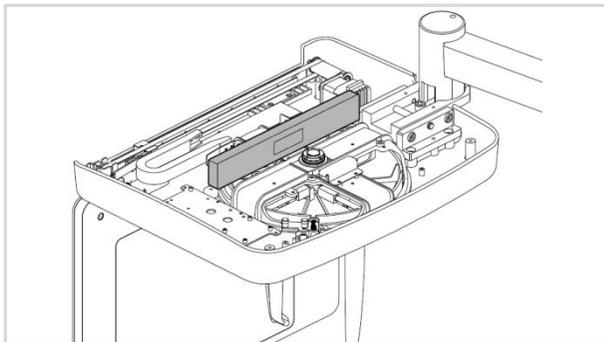


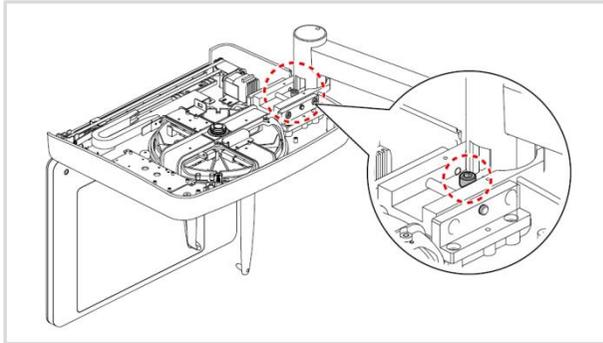
#### **When the Ceph unit is tilted to the front or back**

1. Untighten four Wrench Bolts (M8) of the Ceph unit slightly.

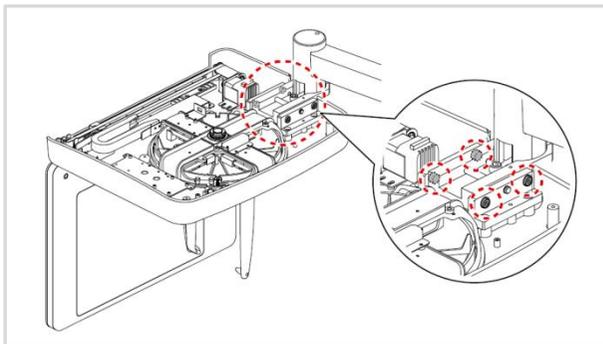


2. Align the level of the Ceph on both the front and back sides unit until the bubble on the Spirit Level centers in the middle, by adjusting the Align Bolt (M10).





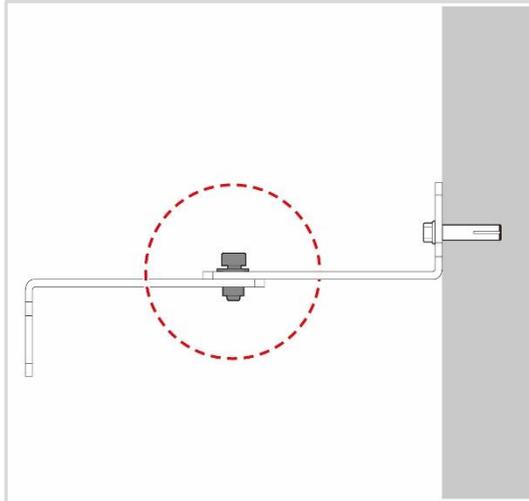
3. When the aligning is completed, tighten four Wrench Bolts (M8) fully.



## 4.11 Tightening the Bolts

1. Tighten the joint bracketbolts.

Allen Wrench	6 mm / 0.24"	
Monkey Wrench	n/a	

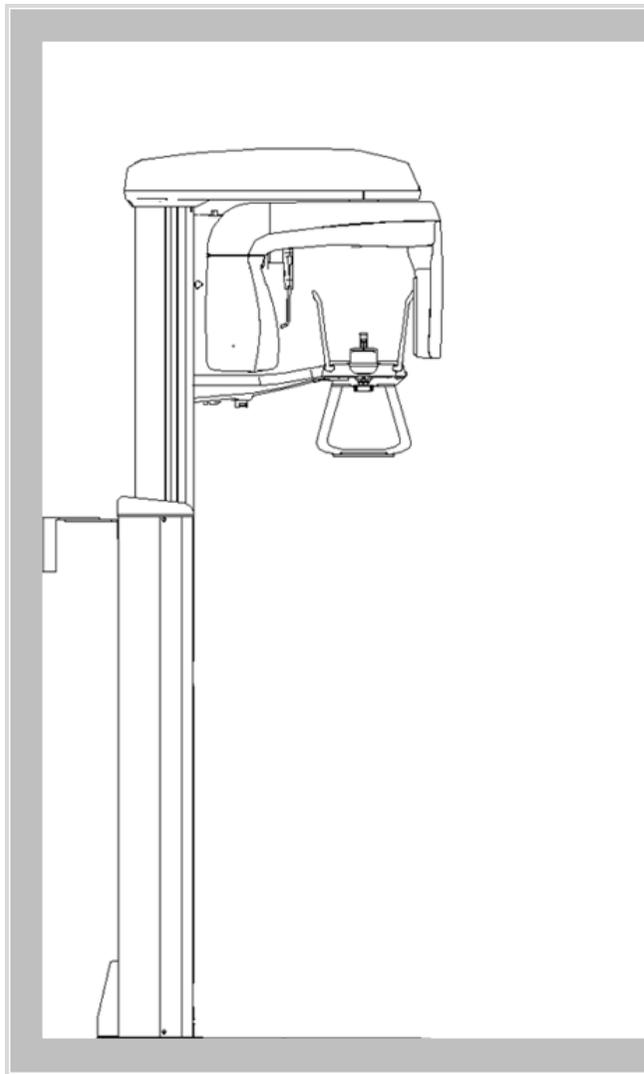


## 5. Installing the Equipment: Wall Mount

### 5.1 Installing the Equipment

You are advised to plan and study the installation environment carefully in advance before proceeding since the installation involves drilling the wall and floor. Pre-installation planning is crucial to a successful installation.

Accurate marking is of critical importance for a successful installation.

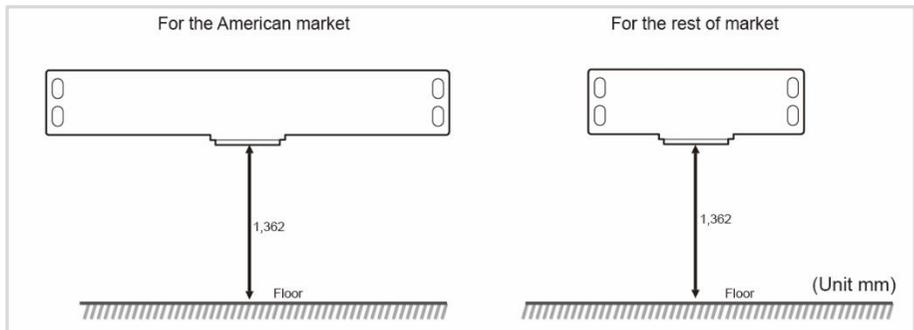
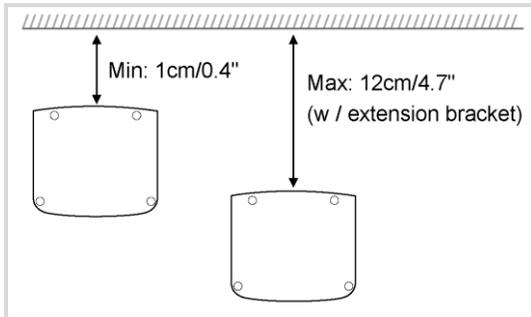


Installation Overview

**Marking Points on the Floor**

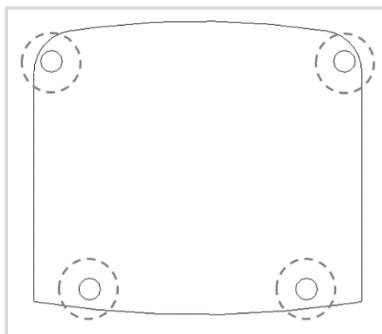
- Put the aligning plate on the floor near the wall where the equipment should be installed as shown in the figure.

Alignment Plate	(Part No. 4)	
-----------------	--------------	---



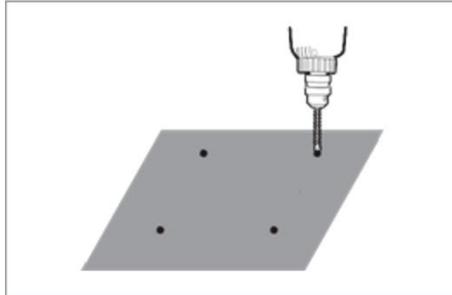
- Mark 6 anchor bolts holes on the floor.

Marker	n/a	
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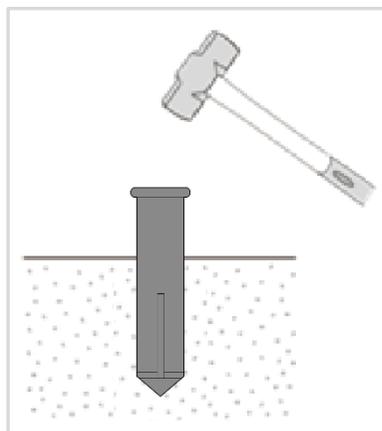
**Drilling the Floor**

1. Remove the aligning plate.
2. Drill the floor holes (size: 10.5 x 30 mm) by using the concrete hammer drill.



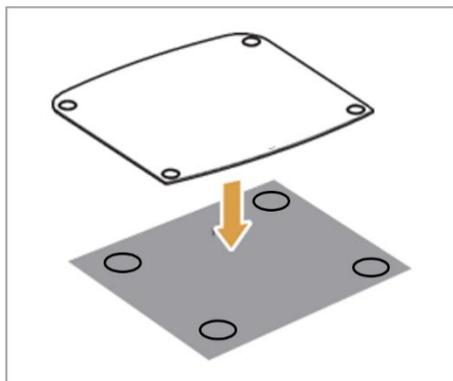
3. Remove the debris and clean the holes with the dust pump.
4. Put the Ficher strong anchor bolts into the holes and attach them with the hammer. Verify that the Ficher strong anchor bolts are secured.

Ficher Strong Anchor	M10 x 40 (Part No. 34)	
Hammer Drill	L = 200 mm (7.9")	

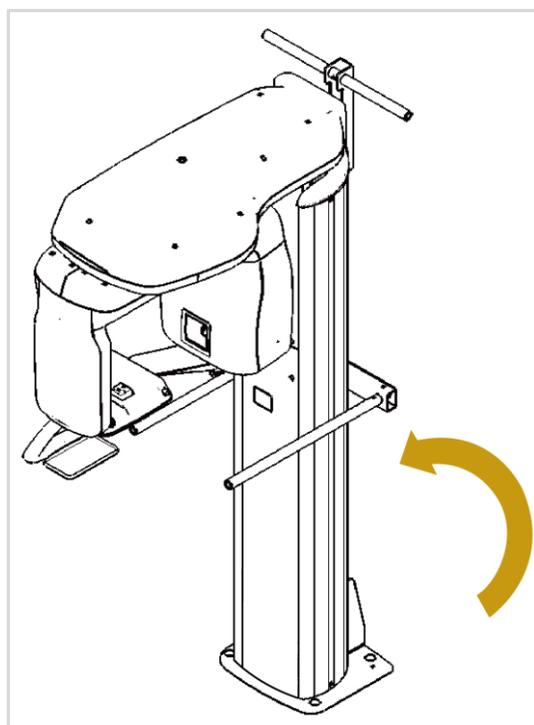


**Combining the Equipment with the Anchor Bolts**

1. Put the aligning plate on the floor while making sure that the align plate's holes engage in the anchored bolts.

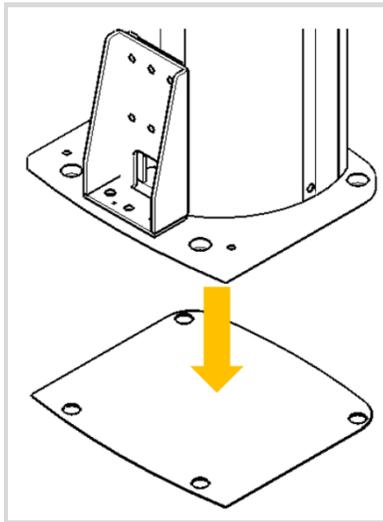


2. Put the equipment in a vertical position slowly while holding the upper handle as shown in the figure.



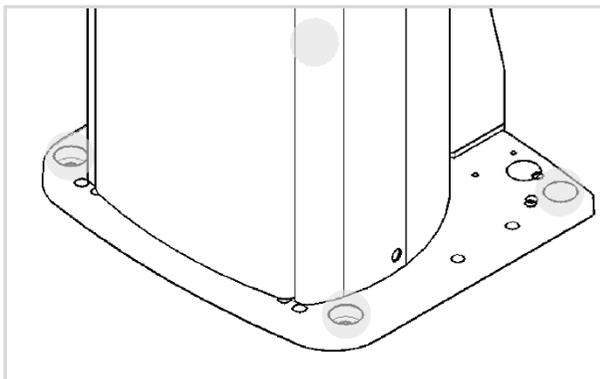
Be careful not to damage the cables before erecting the equipment. Keep them clear of the equipment.

- Put the Equipment on the aligning plate while making sure that the column bottom holes engage in the anchored bolts.



- Put the washers and nuts into the six anchored bolts on the floor and tighten the nuts loosely. Make sure that you put the fasteners in the sequence as shown in the figure.

Allen Wrench	8 mm / 0.3"	
Wrench Bolt	M10 x 20 w/ Spring (Part No. 23)	



**IMPORTANT**

- Do not tighten the nuts until the leveling is completed.
- While one installer is tightening the nuts, the other installers should hold the middle handle to prevent the equipment from falling.

## **5.2 Removing the Transportation Handle) (without the CEPH unit)**

Please refer to section **4.3 Installing the CEPH Unit (Optional)**.

## **5.3 Installing the Wall and Column Brackets**

Please refer to section **4.4 Installing the Wall and Column Brackets**.

## **5.4 Removing the Transportation Safety Bolts**

Please refer to section **4.5 Removing the Transportation Safety Bolts**.

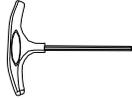
## **5.5 Installing the CEPH Unit (Optional)**

Please refer to section **4.6 Installing the CEPH Unit (Optional)**.

## **5.6 Connecting the Cables to the Equipment**

Please refer to section **4.8 Connecting the Cables to the Equipment**.

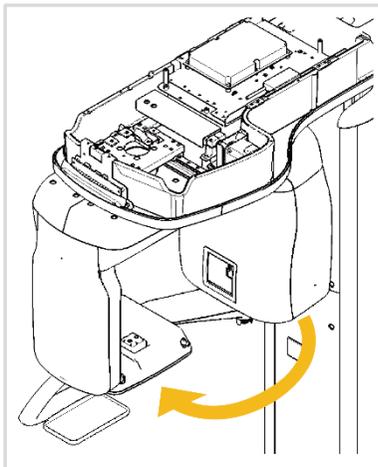
## 5.7 Leveling the Equipment

T-shaped Hex Wrench	8 mm / 0.3"	
Spirit Level	n/a	

### IMPORTANT

Ensure that the Spirit Level should rest only on the locations indicated in the following figures to obtain the accurate center.

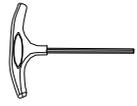
1. Prepare the Spirit Level.
2. Turn the Rotating Unit clockwise so that the X-ray tube head faces the front as shown in the figure.

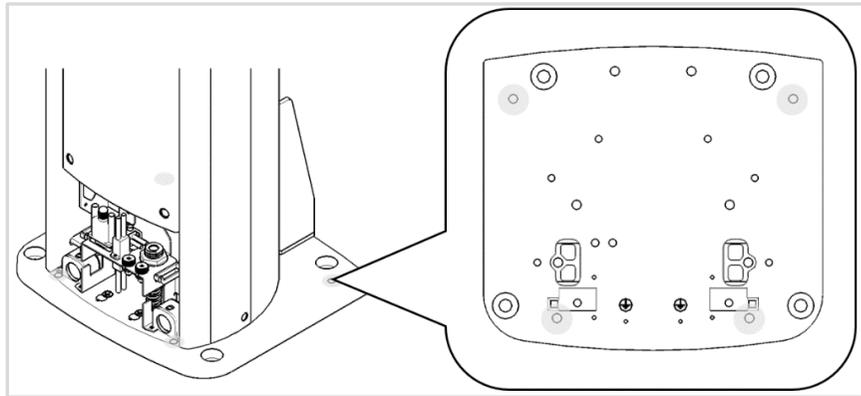


3. Remove the column front case

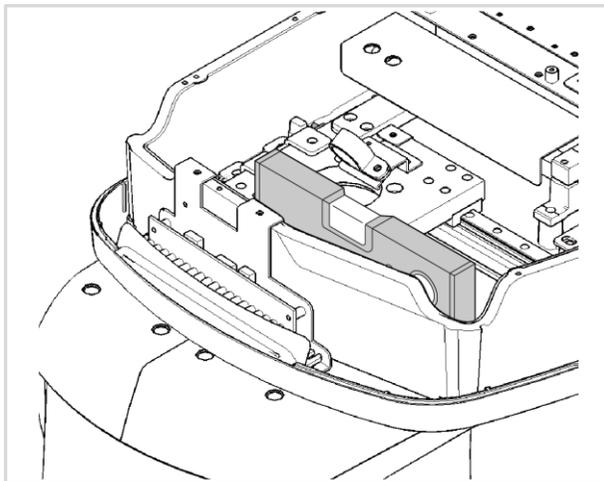
## 5. Installing the Equipment: Wall Mount

- Put the set screws into the four holes and turn them clockwise with the hex wrench until they touch the aligning plate.

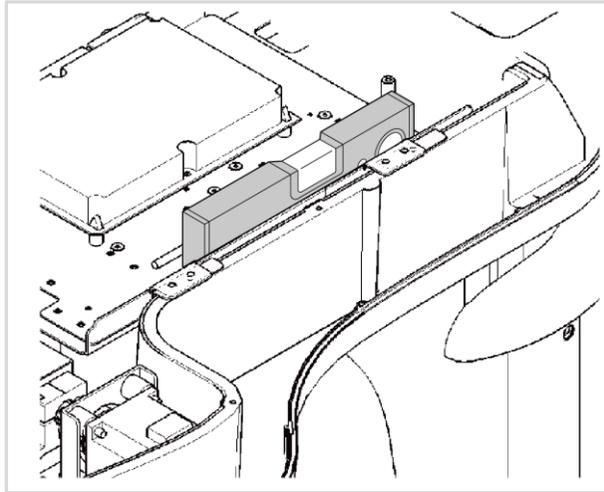
T-shaped Hex Wrench	8 mm / 0.3"	
Set Screw	M10 x 20 (Part No. 30)	



- Put the Spirit Level on the location as shown in the figure.

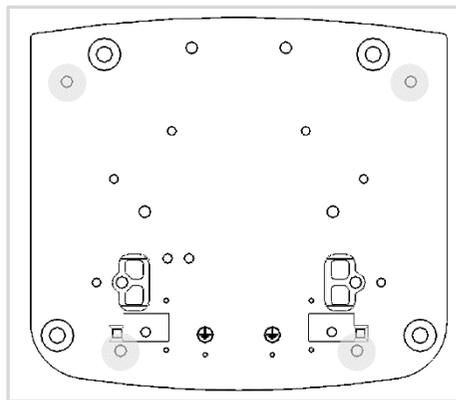


**Leveling Right and Left**



#### Leveling the Front and Back

6. Assemble the vertical top cover.
7. Turn each set screw clockwise or counterclockwise to make the equipment level while another person monitors the level indicator.

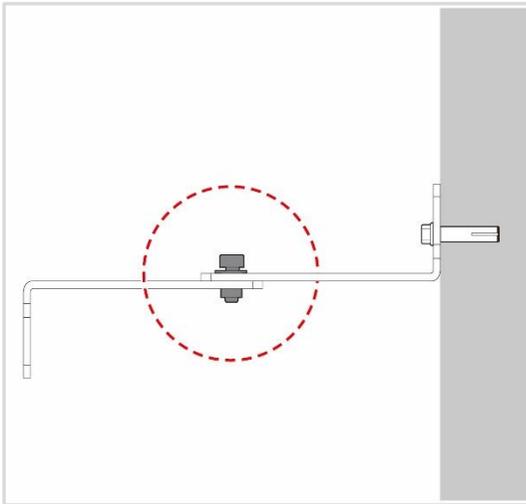


8. Assemble the column front case

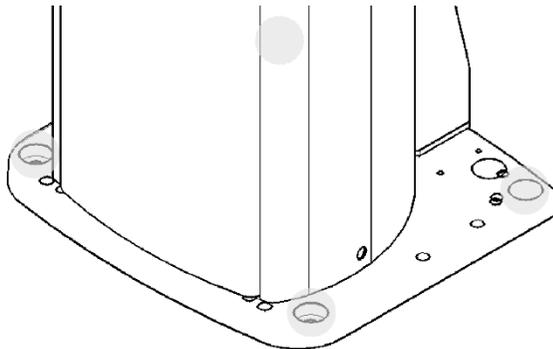
## 5.8 Tightening the Bolts

1. Tighten the joint bracketbolts.

Allen Wrench	6 mm / 0.24"	
Monkey Wrench	n/a	
Allen Wrench	8 mm / 0.3"	



2. Tighten the nuts in the anchored bolts on the floor.



## 6. Completing Miscellaneous Works

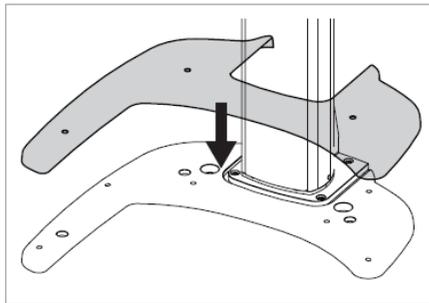
### 6.1 Assembling Base Cover (Optional)

#### NOTICE

When removing the semi-transparent tape, be careful not to scratch the surface of the equipment.

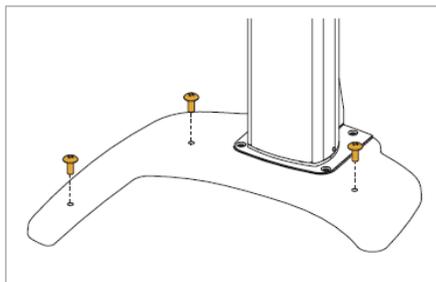
1. Assemble the base cover.

Base Cover



2. Fix the base cover with 3 truss bolts.

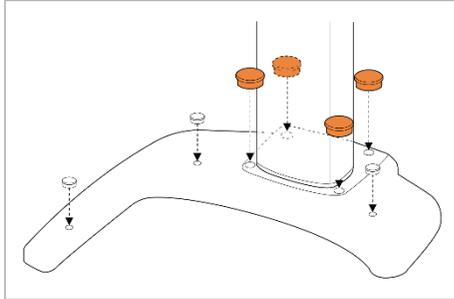
Truss Bolt	M5 x 8 (Part No. 26)	
Cross Head Screw Driver w/ Magnetic Tip	6 mm / 0.24"	



## 6. Completing Miscellaneous Works

3. Cover the holes. (Cap1: 3, Cap2: 6)

Base Caps 1	(Part No. 17)	
Base Caps 2	(Part No. 17)	



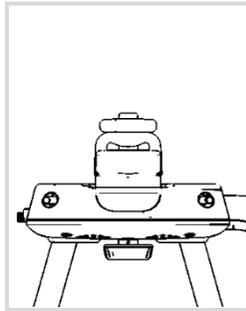
## 6.2 Assembling the Temple Supports and the Chinrest

### IMPORTANT

Assembling the Temple Supports and the Bite Block should be done after Acquiring a test image is completed

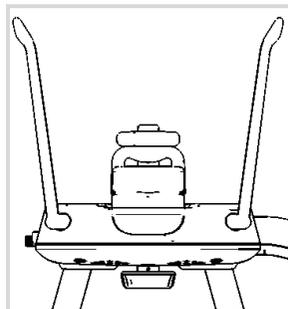
1. Insert the normal Chinrest and the normal Bite Block into the unit.

Chin Block-High	(Part No.7)	
Chin Bite	(Part No. 12)	
Chin Bite 2	(Part No. 12)	



2. Insert the Temple Supports.

Temple Supports	1 set (Part No. 5)	
Cap Ear Rods	1 set (Part No. 5)	

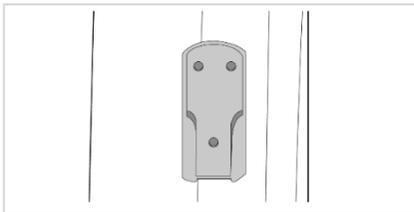


### 6.3 Installing the Switch Holders

Up / Down Switch Holder	(Part No. 2)	
Up / Down Switch	Optional (Part No. 2)	
Exposure Switch Holder	(Part No. 2)	
Double-Sided Sticker	(Part No. 2)	
Screws	M3X16 (Part No. 2)	

#### Up / Down Switch Holder

1. Peel out the papers on the double-sided sticker.



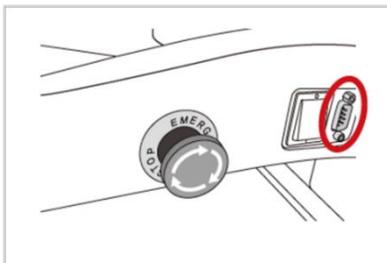
2. Attach the switch support to a suitable height on the left of the column.

#### Exposure Switch Holder

1. Locate the Exposure Switch Holder with a sticker and three screws.
2. Install the Exposure Switch Holder on the wall at the appropriate height using three screws.

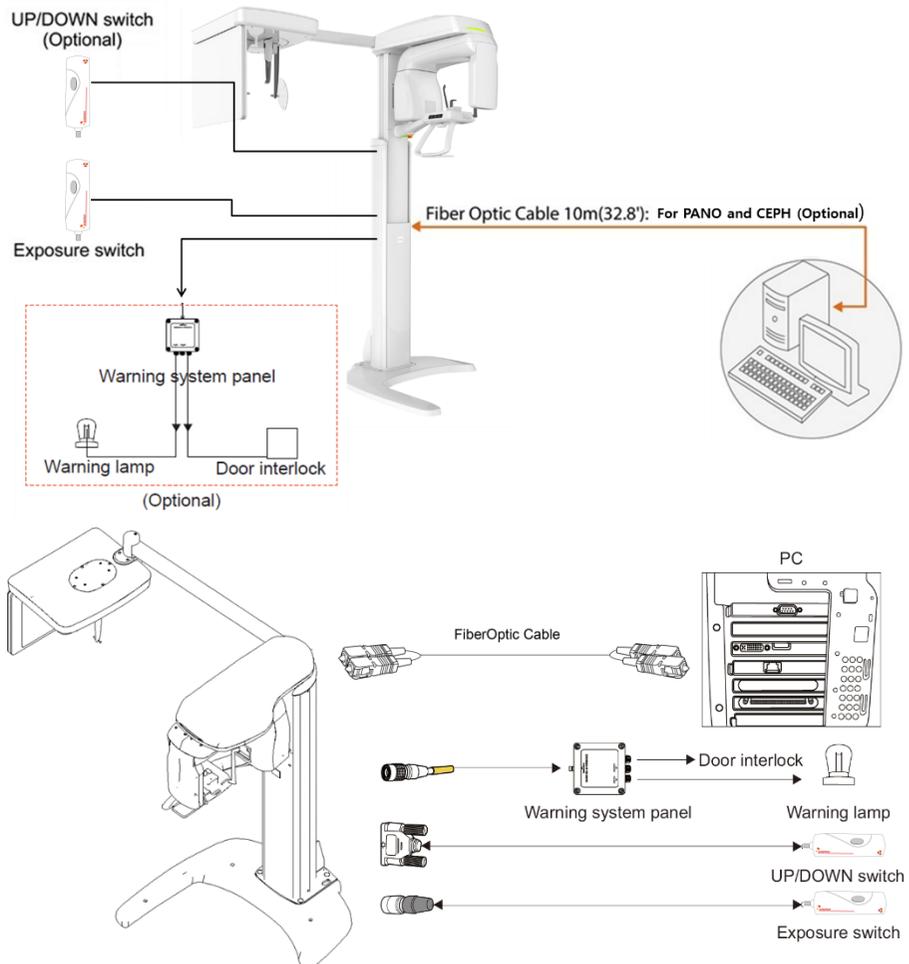
#### Up / Down Switch

When the installation of the Up/Down switch is completed, connect it to the following location.



## 7. Setting up PC

### 7.1 Direct Connection Diagram



**Fiber Optic Cable** - Used to transfer image data to the PC.

**Warning System Panel** - Used to provide a visible indicator: Light on when the equipment is irradiating X-ray.

## 7.2 The Recommended PC Requirements

### IMPORTANT

- It is mandatory to ensure that the PC system configuration is compatible with the PC system requirements for the imaging and image viewer software.
- Since image quality may be deteriorated from lack of resources, observe the requirement guideline specified in the following tables.
- The PC components shall be approved by UL/CSA.
- The PC shall be grounded well protectively.
- The multiple portable socket-outlets shall not be placed on the floor.
- In case the equipment is to be installed in an area with an unstable electric power supply, it is strongly recommended to use the AVR (automatic voltage regulator) to keep the line voltage stable.
- The PC system provided with the **PaX-i Plus / Insight** undergoes the rigorous test for software compatibility before shipping. Therefore, any later changes to the hardware and/or software may cause malfunction.

### ■ PaX-i Plus

Item	Specifications
CPU	Intel Core™ i3-7100 3.9GHz 3MB Cache, 2cores
Chipset	Intel Q270 Chipset
RAM	2X4GB DDR4-2400 DIMM NECC UNB
Hard disk drive	500GB SATA 7200 1st HDD
Graphics board	Integrated Intel HD 630 Graphics
Ethernet interface	Integrated Intel I219LM Gigabit Network Intel Ethernet I210-T1 PCIe x1 Gb NIC(Optional)
Serial Port (RS232)	1 (Onboard)
Power supply	≥ 400 Watts (93% Efficiency)
Slots	2 PCI Express x 1 Slot 2 PCI Express x 16 Slots
CD/DVD Drive	DVD RW
Operating System	Windows 10 Professional 64 bit

## ■ PaX-i Insight

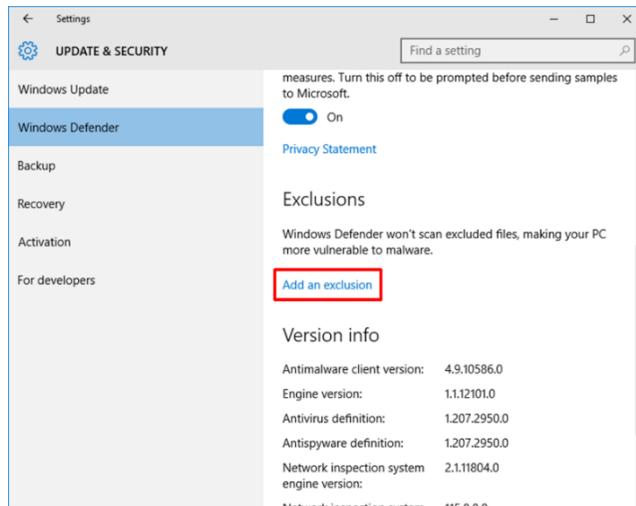
Item	Specifications
CPU	Intel Core™ i5-7500 3.4 2133 4C CPU
Chipset	Intel C236 Chipset
RAM	16GB DDR4-2400 nECC (2X8GB) Unbuffered RAM
Hard disk drive	1TB SATA 7200 1st HDD
Graphic board	NVIDIA GTX 1050Ti
Ethernet interface	Integrated Intel® I218LM PCIe GbE Controller
Serial Port (RS232)	PCIe type RS232 Port
Power supply	400W (90% efficiency)
Slots	2 PCIe Gen3 x 16 slot
	1 PCIe Gen3 x 8 slot
	1 PCIe Gen2 x 4 slot
	1 PCIe Gen2 x 1 slot
	1 PCIe 32bit/33MHz
CD/DVD drive	DVD RW
Operating system	Windows 10 Professional 64 bit

### Disabling Windows Defender

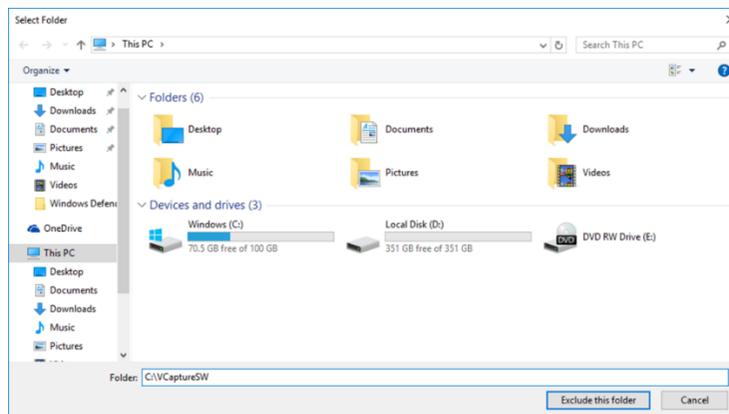
1. Open the Start screen, type **Windows Defender** in the search box.
2. Click the **Windows Defender** icon to start Windows Defender on the search result.
3. Click the **Settings** icon.



4. On the Settings window, click **Add an exclusion** in the **Exclusions** section.



5. On **Select Folder** window, type **C:\VcaptureSW** in the folder field and click **Exclude this folder**.



## 7.3 Installing the Internal Peripherals



Allow enough time to dissipate remnant energy after unplugging the power cord from the main outlet or PC.

### IMPORTANT

- Disregard this section in case the PC system is supplied with the equipment. (The peripherals have already been installed inside the PC.)
- Whenever handling the fiber optic frame grabber board:



1. Wear the anti-static glove.



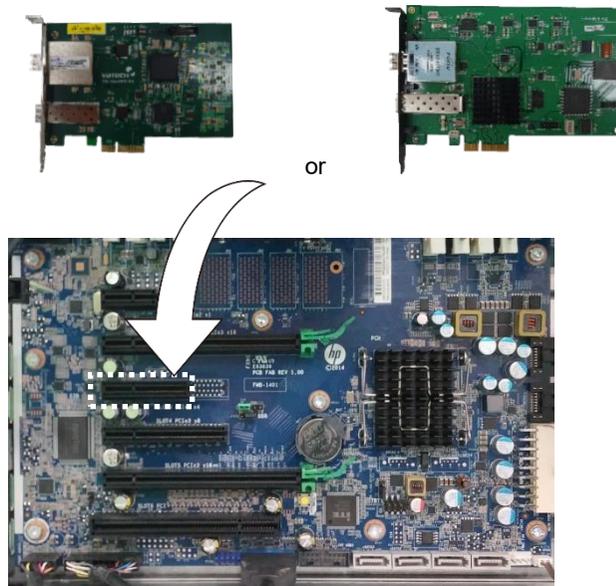
2. Do not wear the likes of a thick jacket.

### NOTICE

The following figures and descriptions are based on the PC model Z440 from HP.

### Installing the Fiber Optic Frame Grabber Board

1. Unplug the power cable from the back of the PC and wait for a while.
2. Open the PC cover.
3. Insert the fiber grabber board (Part No. 21) carefully into that PCIe2 x 4 slot and lock it.



Double-check the locking status between the board and its holder after the board is installed. A bad insertion of the board into the PC slot could cause failure for Dark calibration data acquisition or noisy image acquisition.

4. Put the slot holder back to its initial position.

## 7.4 Connecting the Cables to PC

### NOTICE

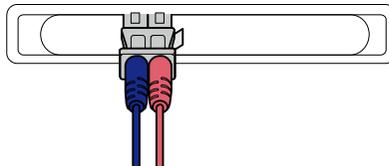
- Always check the cable condition visually. Surprisingly, unexpected errors affecting image acquisition arise from the bad cable or its bad contact condition.
- Connect the regular cables for PC: keyboard, mouse, and video in advance.
- The following figures and descriptions are based on the recommended PC system described in **7.2 The Recommended PC Requirements**.

Fiber Optic Cable	(Part No. 21)	
EzDent-I USB Key	(Part No. 1)	

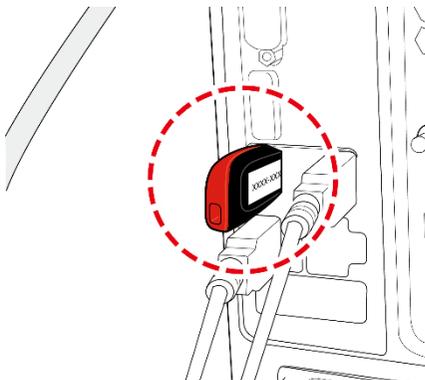
1. Remove the caps of the fiber optic cable.



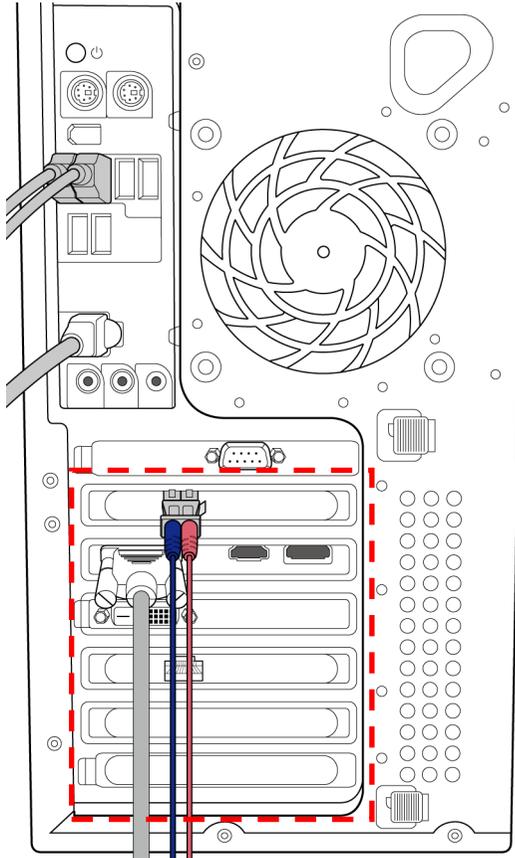
2. Connect the Fiber Optic Cable.



3. Insert the EzDent-i USB Key into a USB port.



4. Confirm the result after connections are as same as below.



**NOTICE**

The illustrations may differ from the actual product.

## 8. Setting up PC's Environment Variables

### NOTICE

Disregard this section in case the PC system is supplied with the equipment. (The environment variables of the PC have already been set on the PC.)

### 8.1 Before Beginning

#### IMPORTANT

- Ensure that the Emergency Stop Switch is in the OFF position before starting with the InstallShield installation.
- Do not install the programs irrelevant to image acquisition and view on the same PC. There may be subtle conflicts between them, leading to the malfunction.
- The PC system supplied with the equipment is intended to be used as an image acquisition only. For the PC server for image management, it is strongly recommended to use a different PC.
- The programs related to the acquisition, viewing, and manipulation of images should be installed on the formatted PC, where no other program(s) except the operating system (OS) is present.
- Before InstallShield installation, ensure that the video card driver installed on the PC is the most up-to-date version. To check this, go to the website of the graphics card manufacturer.

#### Checking PC BIOS Settings

Generally, the PC is shipped, with its BIOS settings, as specified in **Appendix E: Checking PC BIOS Settings**. Before proceeding to the next sections, check the BIOS status.

In case the BIOS settings have not been configured in advance or the settings are different, however, please follow the steps below.

1. Reboot the PC and go into the BIOS setting mode.
2. Set the variables as in the table below.

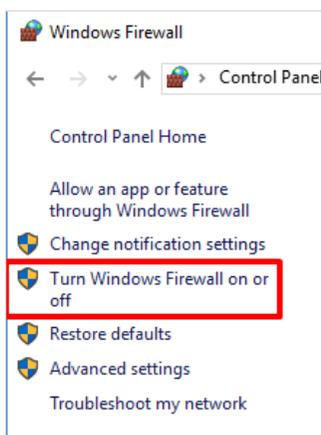
PC BIOS default			
Main Menu	Sub1 Menu	Sub2 Menu	Setup Value
Advanced	Power Options	Runtime Power Management	[Disable]
Advanced	Power Options	Idle Power Savings	[Normal]
Advanced	Power Options	Enhanced Halt State (C1E)	[Disable]

- When you update the BIOS settings, the “Enhanced Halt State (C1E)” option will be displayed.

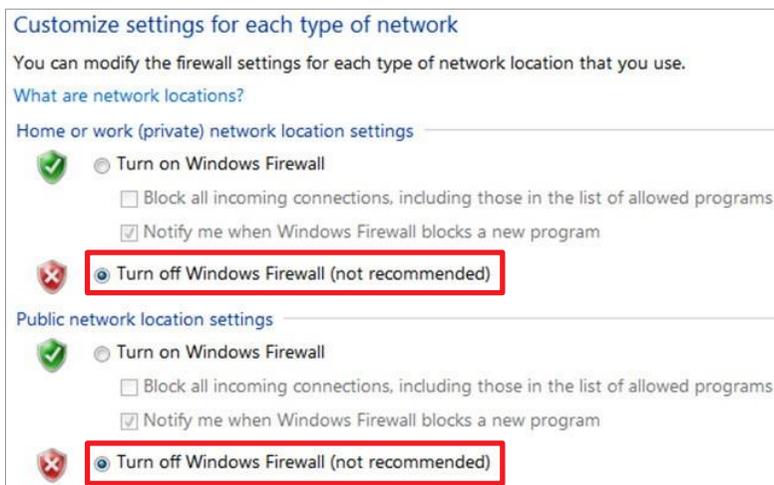
## 8.2 Turning off the Firewall

The LAN port and/or local IP may be blocked by the Windows Firewall property, leading to interruptions in imaging acquisition and data transmission. For this reason, it is required to disable the Windows Firewall by using the following procedures.

1. Open the Start screen, type **Windows Firewall** in the search box.
2. Click the **Windows Firewall** icon to start the Windows Firewall on the search result.
3. On the Windows Firewall screen, click the **Turn Windows Firewall on or off**.



4. Select the **Turn off Windows Firewall** for both **Home or work (private)** and **Public** network location settings.



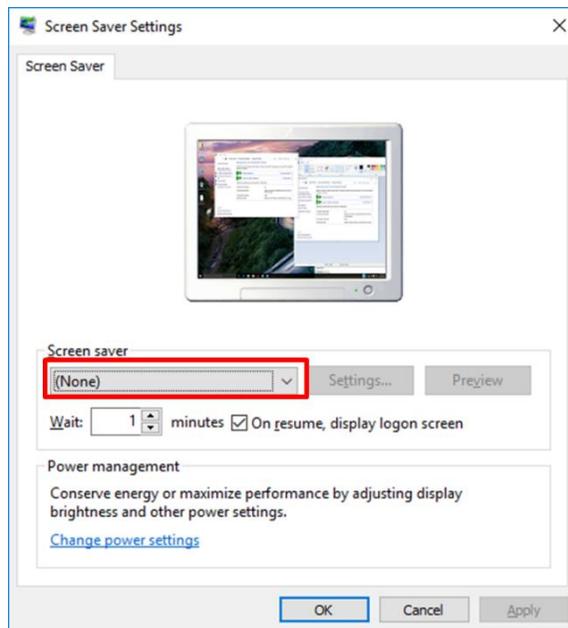
5. Click **OK** to apply the settings.

### 8.3 Setting up the Power Management Options

To avoid disruptive and abnormal operation while acquiring an image, it is required to reconfigure some parameters on the Windows operating system.

#### Disable the Screen Saver

1. Open the Start screen, type **Screen Saver** in the search box.
2. On-Screen Saver Settings screen, select **(None)** in the pull-down menu.



3. Click **OK** to apply the settings.

### Selecting the Power Options: Monitor and System

1. Open the Start screen, type **Power Options** in the search box.
2. Click **Choose when to turn off the display**.



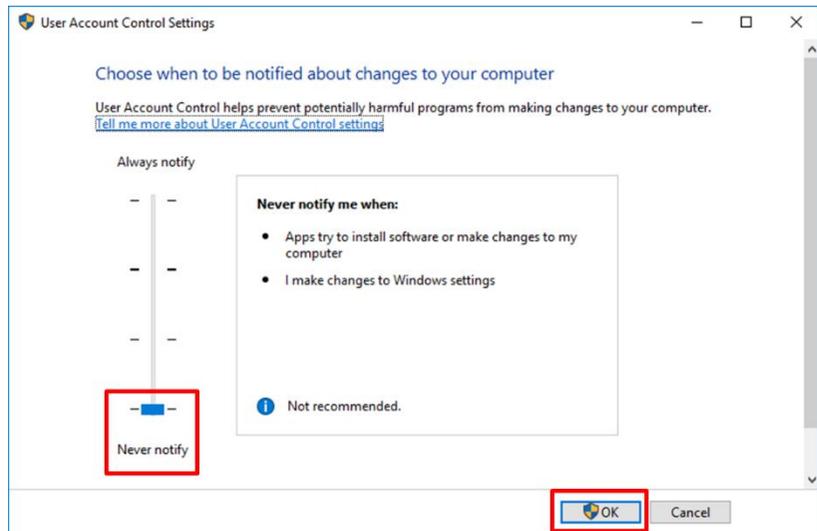
3. Select **Never** for both **Turn off the display** and **Put the computer to sleep** fields.



4. Click **Save changes** to apply the settings.

## 8.4 Turning off the User Account Control

1. Open the Start screen, type **User Account Control** in the search box.
2. Disable the UAC by moving the slider bar down to the bottom, **Never notify**. Then, click **OK** to apply change settings.



## 8.5 Setting Folder Exclusions with Anti-Virus Software

### IMPORTANT

- Set the virus scan exception for the files and folders related to this equipment.
- Do not run the memory-resident background programs unrelated to the equipment.
- It is recommended to run the virus scan only when the equipment is idle.
- Turn the firewall off.
- Always use the blank USB drive whenever possible.

Some files used by the **PaX-i Plus / Insight** are incorrectly recognized as viruses/trojans by anti-virus software. If you are using anti-virus software on your PC, you must exclude those files from all scans performed by the anti-virus software.

For the **PaX-i Plus / Insight**, the following folders and files inside for relevant software should be excluded from the virus scan.

Path	Software
C:\Program Files\Vatech	EzDent-i
C:\VCaptureSW	Console Software

### NOTICE

- Suppose the anti-virus program from McAfee is running in the background.
- The procedure to set folder exclusions is similar for most anti-virus programs.

1. Open the McAfee anti-virus program and select the **VirusScan**.
2. Right-click the **On-Access Scan** menu option and left-click the **Properties** tab.
3. Select the **All Processes** → **Detection** → **Exclusions** menu option and choose the **Add** menu button.
4. Navigate to the folders or the files you want to designate an exclusion path for and select the checkbox to **Also Exclude Subfolders**.
5. Click **OK** when completed and exit McAfee for the path exclusion to be completed.

## 9. Installing Software

### NOTICE

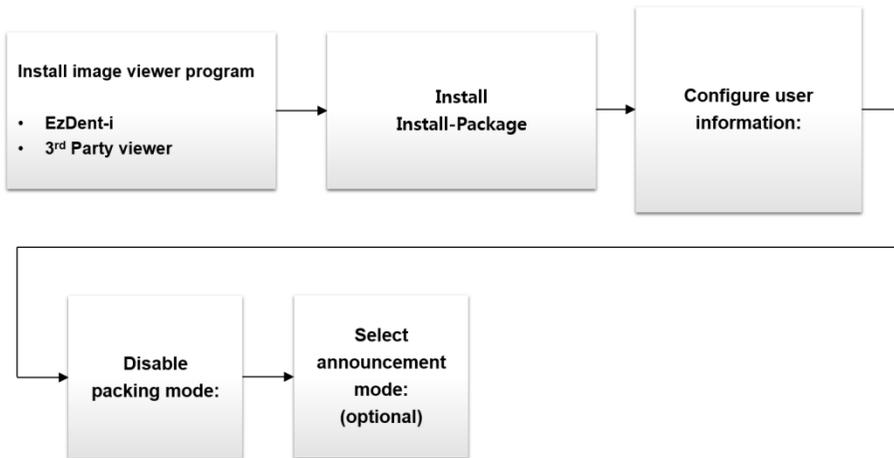
Disregard this section in case the PC system is supplied with the equipment. (The software has already been installed.)

### 9.1 Before Beginning

#### IMPORTANT

- Ensure that the Emergency Stop Switch is in the OFF position before starting with the InstallShield installation.
- Do not install the programs irrelevant to image acquisition and view on the same PC. There may be subtle conflicts between them, leading to the malfunction.
- The image viewer program such as **EzDent-i** or the one from the 3rd party should be installed in advance before the InstallShield installation. For the information on their installation procedures, refer to the corresponding manuals.
- Before InstallShield installation, ensure that the video card driver installed on the PC is the most up-to-date version. To check this, go to the Website: [www.nvidia.com](http://www.nvidia.com).
- Perform a virus scan for the PC and InstallShield program with the anti-virus program before proceeding with its installation.

## 9.2 Software Installation Flow



## 9.3 Installing Image Viewer Program

**IMPORTANT**

One of the image viewer programs among **EzDent-i** or 3<sup>rd</sup> party program must be installed at this time. For the details on the installation procedures, refer to the corresponding manuals.

## 9.4 Installing the InstallShield

The InstallShield installation information is included in the USB drive provided as an accessory.  
Please check the serial number.txt (eg 047-011752.txt) file.

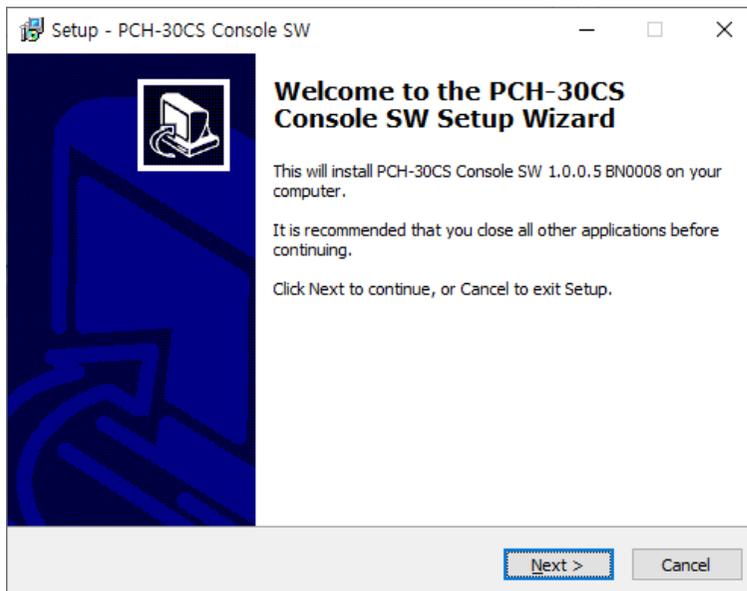
### NOTICE

항목명	형식(단, 키보드, 호기(문), 자동입력)
Ez3D Plus Sha	None
Ez3D Plus Prot	None
Ez3D Plus Pre	None
Ez3D I	None
Model	PaX-i
Modality	PIANO
CT Sensor Type	None
Pano Sensor Type	AutoPano-3DHD
Cash Sensor Type	None
Frame Grabber Type	Ethernet
Additional Option 1	None
Additional Option 2	DirectX

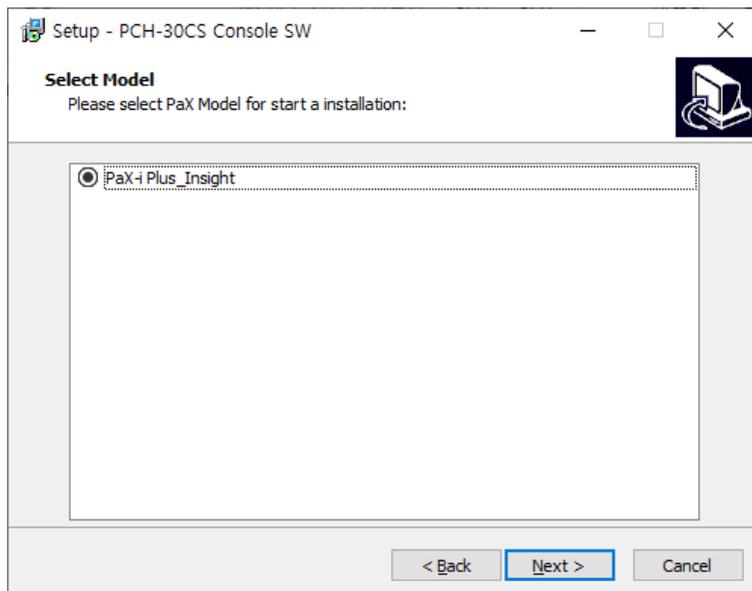
1. Turn on the PC and the equipment if they are not yet.
2. Insert the CD into the CD-ROM drive or connect the USB drive to the USB connector and then **perform a virus scan for the PC before installing the CD.**
3. Go to the InstallShield folder and run **Setup.exe**.



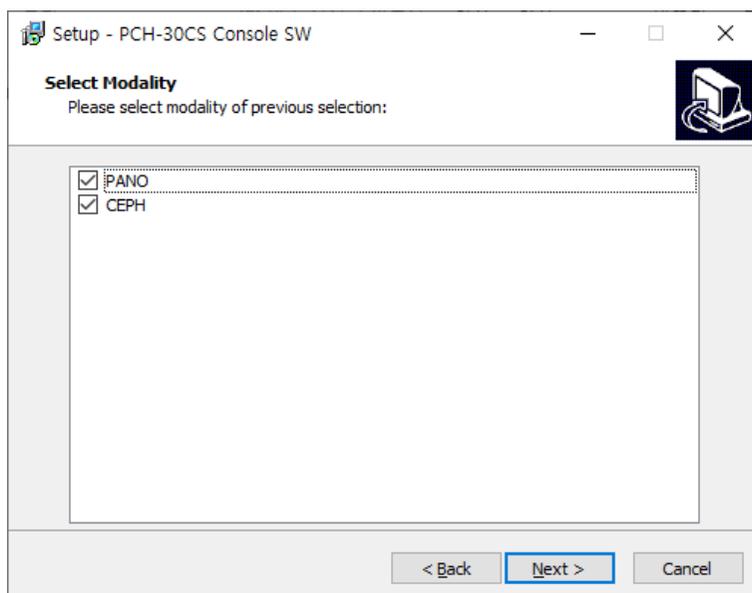
4. The following screen will appear. Click **Next**.



5. Check the equipment model (PaX-i Plus\_Insight) and click Next



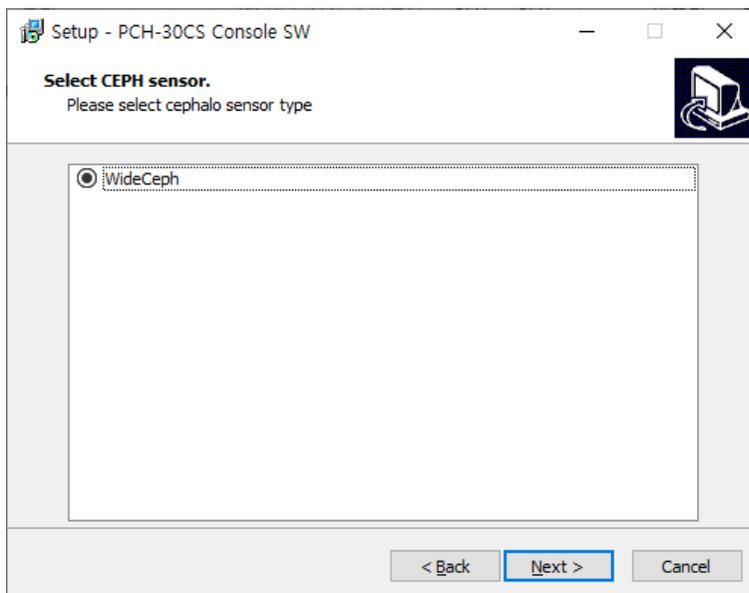
6. Make sure that all modalities are checked as the following. If the equipment does not include the CEPH feature, uncheck the CEPH option, and then click Next.



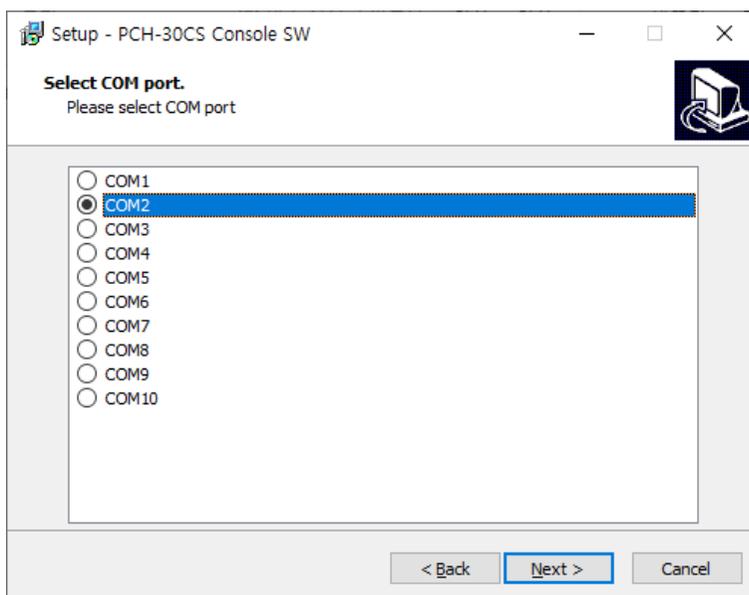
7. Make sure that “I2Pano or WidePano” is selected in the Pano sensor type selection window and then click Next.



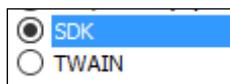
8. (Optional) Confirm that the “WideCeph” is selected in the CEPH sensor type selection window and click Next.



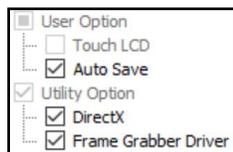
9. Select **COM2** for the default port number and click **Next**.



10. Select the language and click **Next**.
11. Select the 3<sup>rd</sup> party software in use and click **Next**. when **EzDent-i** is installed, select **SDK**. Then, click **Next** to continue.



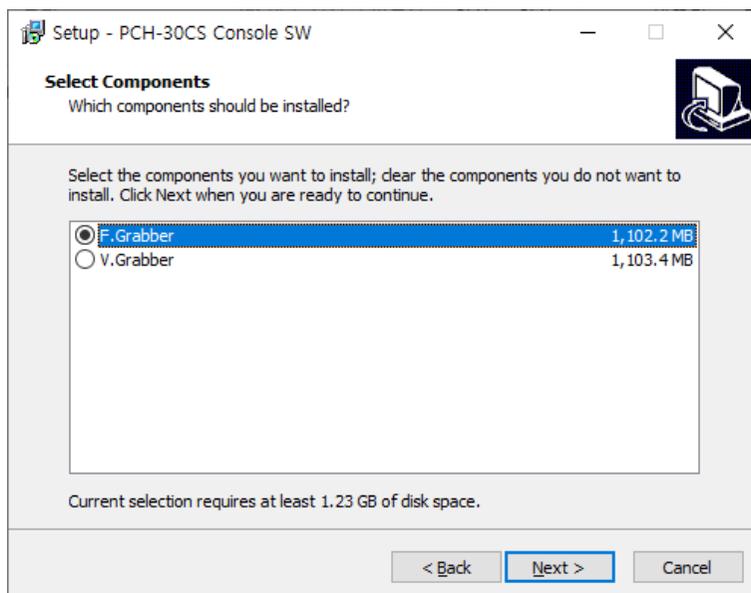
12. Check the options according to the product specifications.



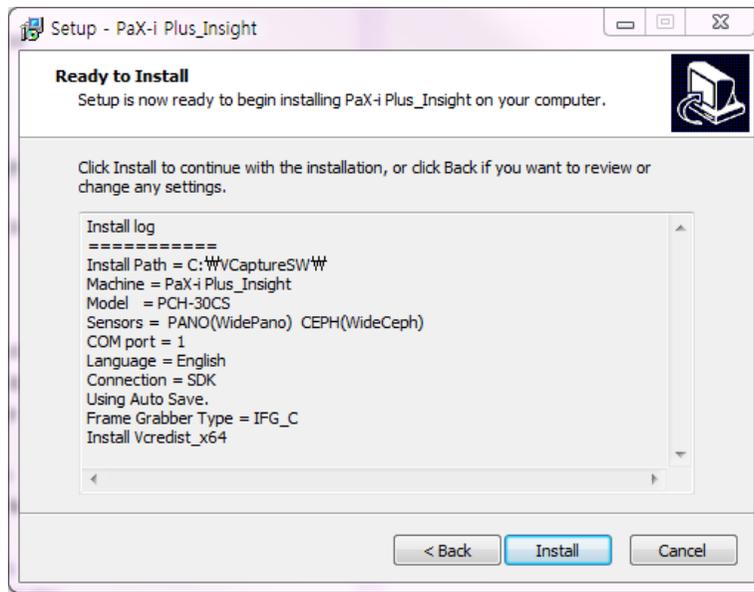
### NOTICE

When the AutoSave is checked, the image data acquired saved automatically.

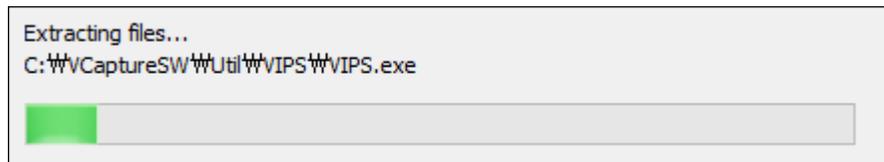
13. Select the components according to the product specifications.



14. Confirm that the following drivers are selected. For the first-time installation, select all.
15. You can check the information entered so far with the **Ready to Install** window. If necessary, you can modify it by clicking **Back**.

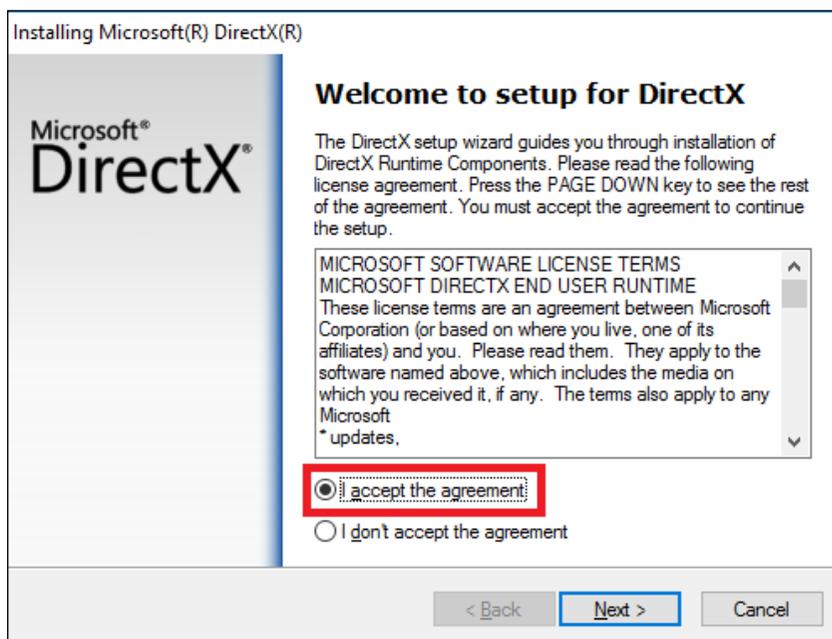


16. When the information is confirmed, click **Install** to continue.

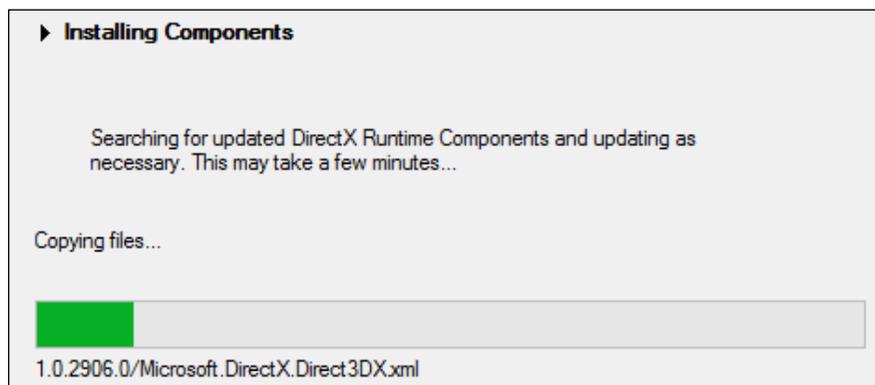
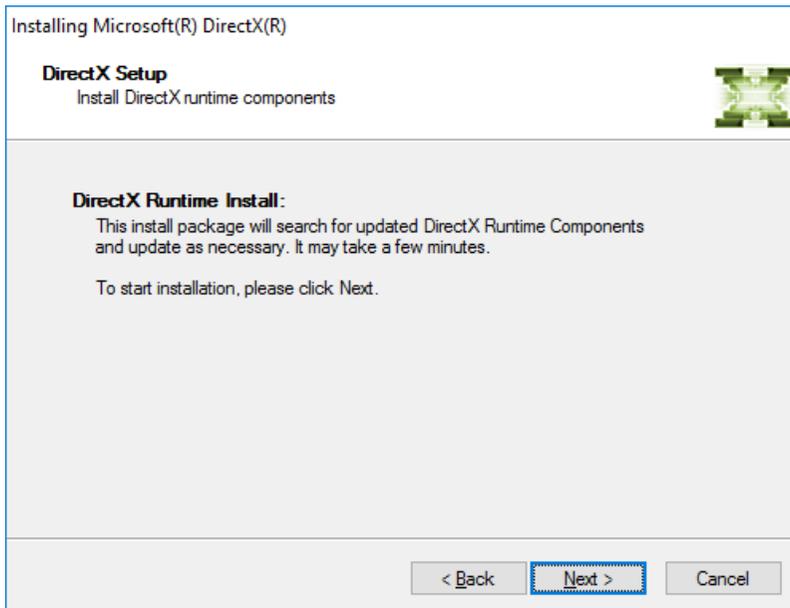


### Installing the DirectX

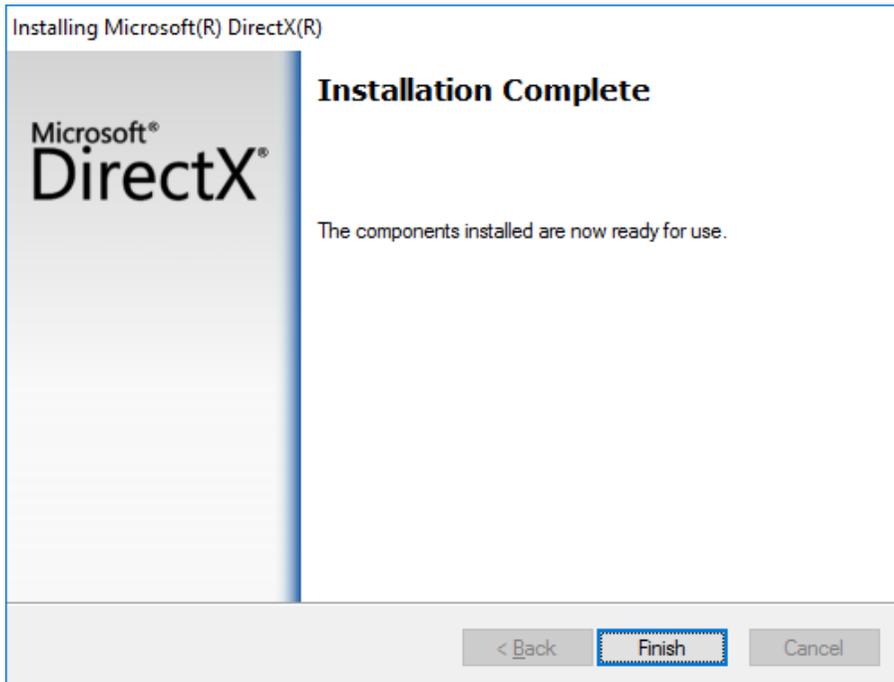
1. InstallShield will continue to DirectX® installation process. Select **“I accept the agreement”** in the Welcome window.



2. Click **Next** to start the installation.



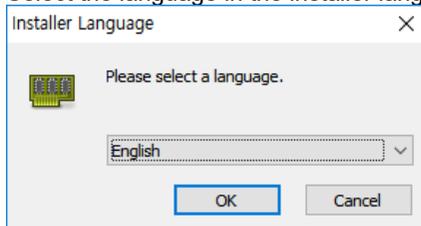
3. Click **Finish** to exit the wizard.



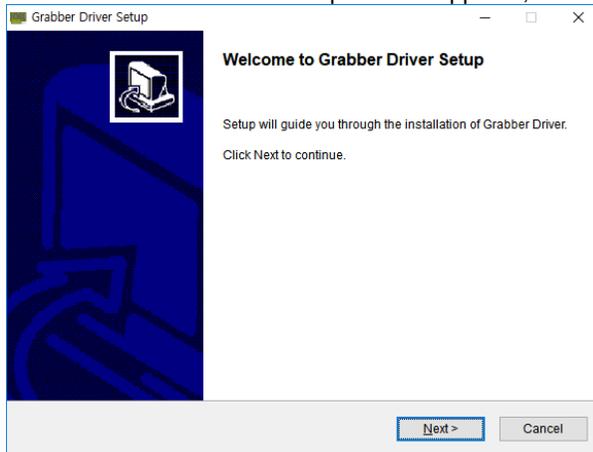
## Installing the Frame Grabber (Virtual Serial 1.x)

### <Electron Grabber>

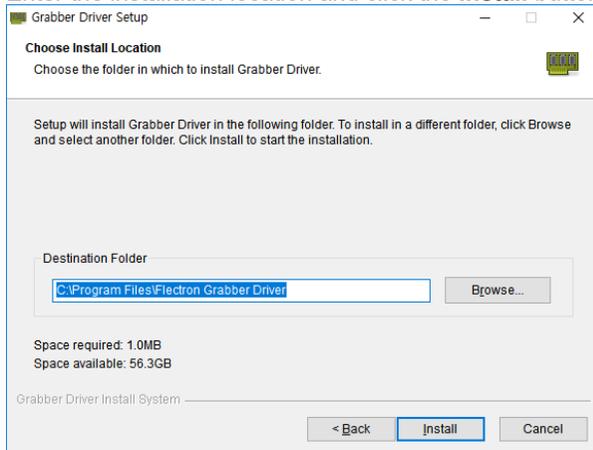
1. After completing the Direct X® installation, Grabber Driver Setup will be started. Select the language in the installer language window and press the **OK** button.



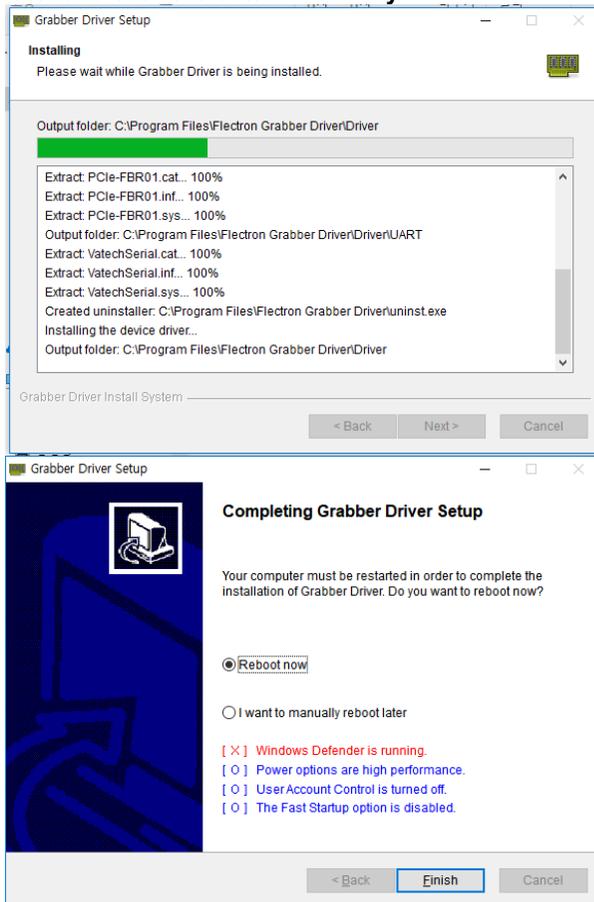
2. When the Grabber Driver Setup window appears, click the **Next** button.



3. Enter the installation location and click the **Install** button.



- The "Installing" window will appear and disappear, and the Completing Grabber Driver Setup window will appear. Choose the **Reboot now** or **I want to reboot later** and **click the button manually**.



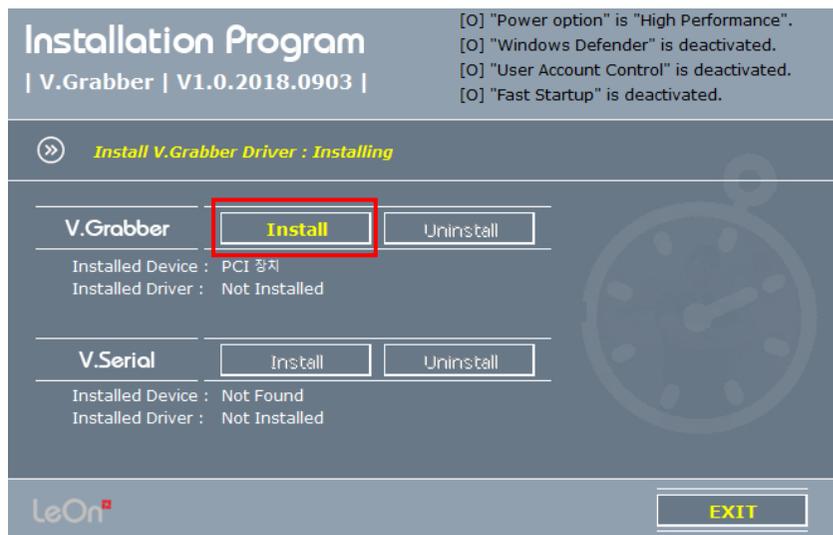
**NOTICE**

If an error occurs during installation, it will be displayed in red font color below. If no abnormality is found, it is displayed in blue font color.

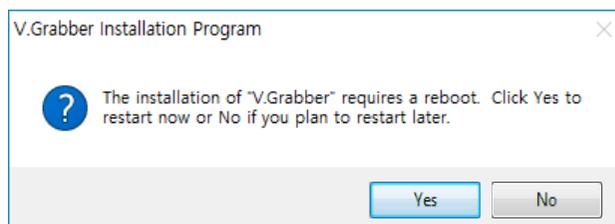
- [ X ] Windows Defender is running.
- [ O ] Power options are high performance.
- [ O ] User Account Control is turned off.
- [ O ] The Fast Startup option is disabled.

**<V.Grabber-OCS >**

- 1) After completing the Direct X® installation, the installation program will be started. Select the language in the installer language select window and press the **OK** button.
- 2) Press the V.Grabber's **Install** button.

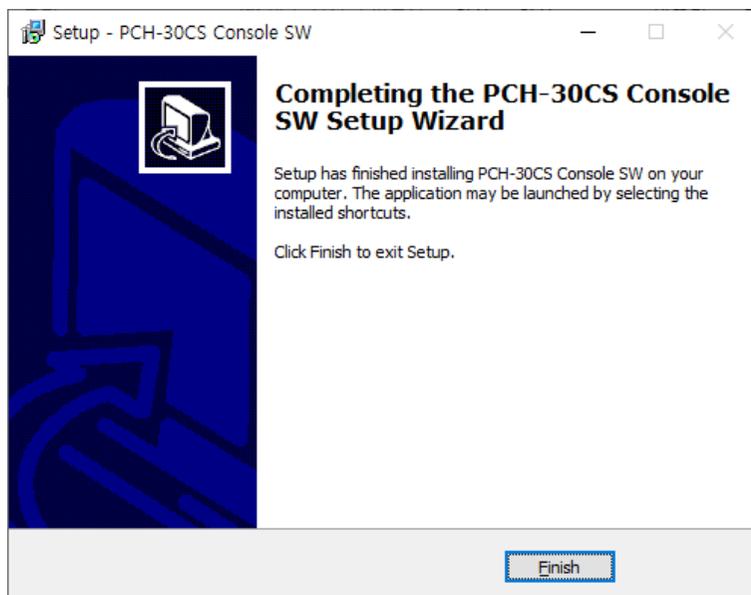


- 3) The installation is completed and the V.Grabber Installation Program window appears. Click the **Yes** button to immediately reboot, or the **NO** button to reboot later.



### Finishing Installation

1. The installation has just been completed. Click **Finish** and restart PC.



### Verifying that All Components are Properly Installed

1. Locate the file: **PaX-i Plus\_Insight\_Install\_Log.txt** on the desktop.
2. Open it to check the file. You can find out that all components are installed.
3. Go to section **9.5 Setting up the User Information**.

### Uninstalling Software

1. Open the Start screen, type **Uninstall a Program** in the search box.
2. Find the programs you want to uninstall and double-click the program to uninstall.
3. When you are asked if you want to continue, click **Yes** or **OK** and follow the prompts to finish the uninstallation.

## 9.5 Setting up the User Information

### NOTICE

Go to the corresponding section for set-up instructions, based on the viewer program (EzDent-i (SDK)) installed on PC.

EzDent-i: Refer to section 9.5.1 when EzDent-i is installed.

### NOTICE

The automatic interworking function is activated only when using the Console program with automatic interworking function and EzDent-i program. If it is not able to use the automatic interworking function, or if it needs to set it manually after the automatic interworking, follow the procedure below.

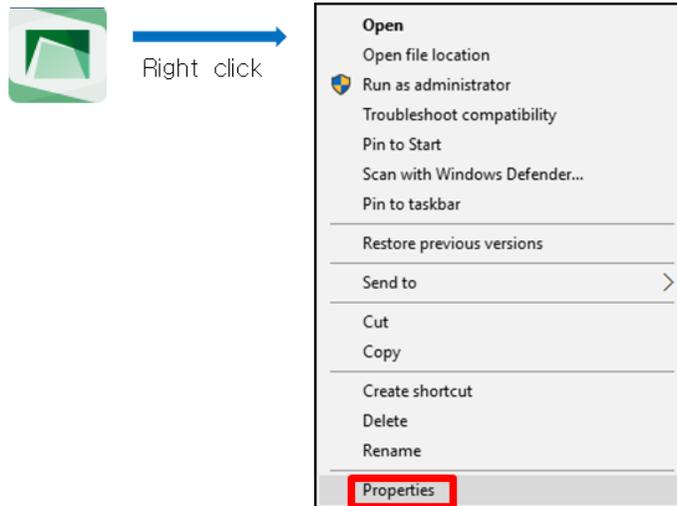
### Running EzDent-i as an Administrator

### NOTICE

Because of the different levels of authority between Console Software and EzDent-i, the program may not run properly.

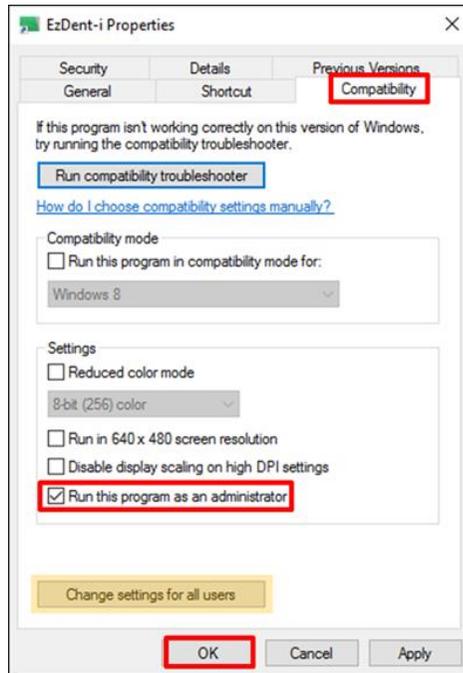
Configure the EzDent-i to run as an administrator before running the program to avoid the problem.

1. Right-click the **EzDent-i** icon and click **Properties** to open the properties dialog box.



2. Click the **Compatibility** tab, select **Run this program as an administrator** in the **Settings** section and click **OK** to apply the settings.

(In case there are multiple log-in users to the computer and it needs to apply the settings to all users on the computer, utilize **Change settings for all users** button.



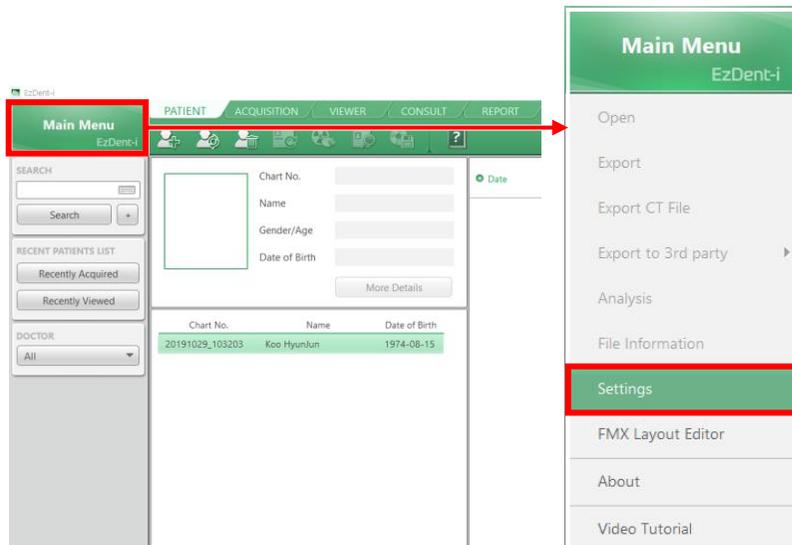
## 9.5.1 Setting EzDent-i

### Setting the Imaging Acquisition Options

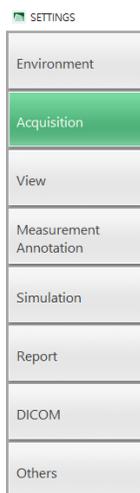
1. Start EzDent-i on your PC.



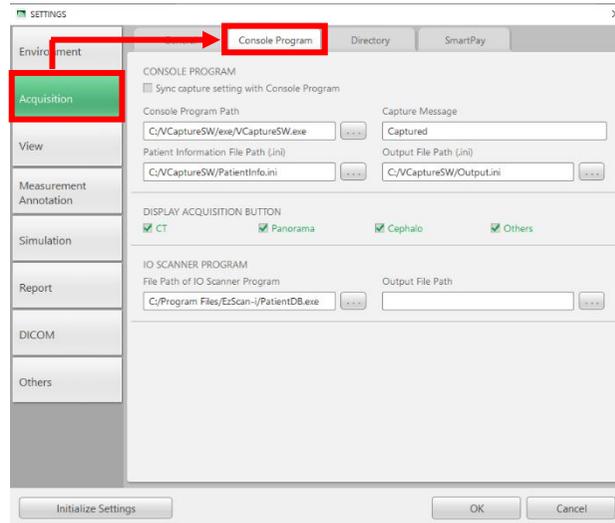
2. Click **Main Menu**, then select **Settings**.



3. In setting widow, click **Acquisition**.



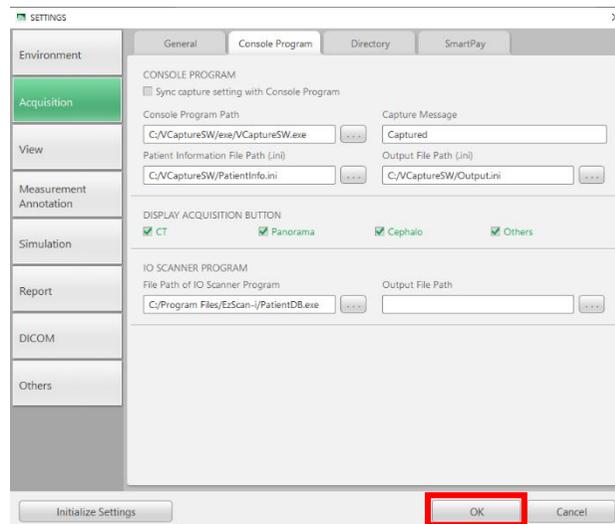
4. In the Acquisition tab, click **Console Program**.



In the **Console Program** tab, check:

- whether “Sync capture setting with console program” is selected
- Console software path
- Patient information file path
- Display acquisition button.

5. Click **OK** and restart the computer to apply the new setting.



## Creating a New Patient Information

### NOTICE

For the features not explained in this section, go to the EzDent-i user manual.

1. Click the **Add Patient** from the **PATIENT** tab.



2. Enter the required fields (\*) in the patient information:

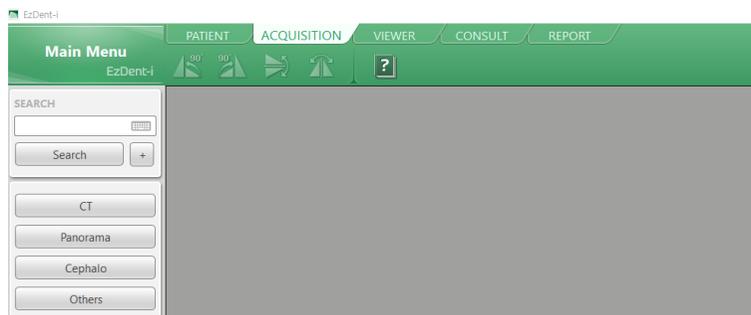
- Chart number
- First name
- Last name

the rest of the fields are optional, but it is recommended that you fill them in.

3. Click **Add** to save the patient record.

## Initiating the Imaging Program

1. Click the **Acquisition** tab. The imaging mode selection menu appears in the left pane (see below).

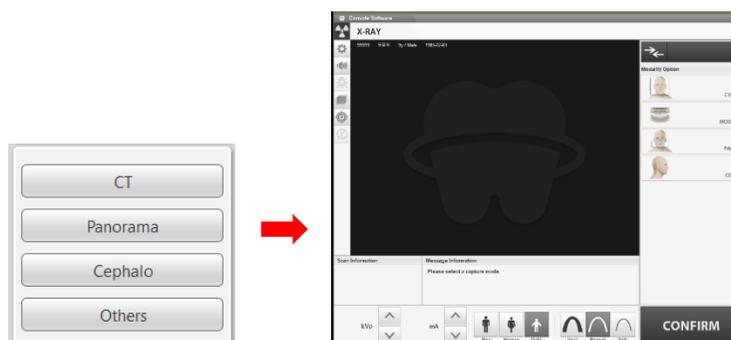


### NOTICE

The imaging mode selection menu may differ due to your equipment's option (CEPH or non-CEPH) or the Display option you selected in the setting menu.

DISPLAY ACQUISITION BUTTON  
 CT     Panorama     Cephalo     Others

2. Select an imaging mode from the menu. Based on your selection, the console software window appears.



### NOTICE

If the equipment is still in packing mode, the error code E001 appears. Go to 9.5.2 Setting Console Software > **Disabling the Packing Mode** to disable packing mode.

3. Proceed to the section **9.5.2 Setting Console Software**.

## 9.5.2 Setting Console Software

### Configuring the Parameters

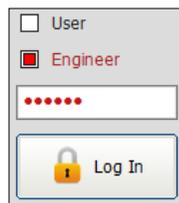
#### IMPORTANT

The following information should be entered by the user requirements.

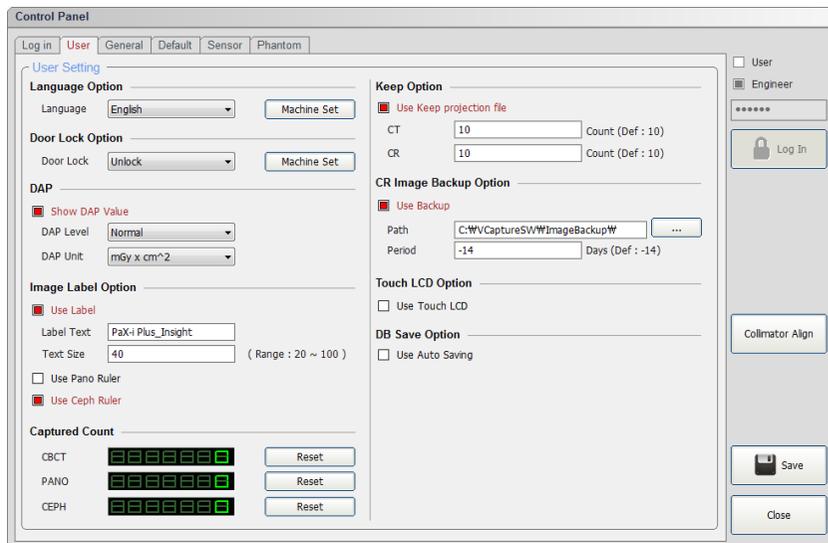
- From the main GUI window, click the settings icon in the upper right corner.



- Log in** the tap will be open by default. On the right side of the screen, select **Engineer** and type the password ('vatech') and then click **Log In**.



- Click the **User** tab.



4. Select **Use Label** in the **Image Label Options** section. When selected, the character string in the **Label Text** field is displayed. By default, the equipment model name is displayed.

**Image Label Option**

Use Label

Label Text

Text Size  ( Range : 20 ~ 100 )

5. Set the **DAP** (Dose Area Product) **Level** and **DAP Unit** for the unit which is displayed on the screen.

**DAP**

Show DAP Value

DAP Level

DAP Unit

6. In the **Language Option**, change the language if necessary and click **Machine Set**.

English

- Arabic
- Chinese (Simplified)
- Chinese (Traditional)
- English
- French
- German
- Italian
- Japanese
- Korean
- Portuguese
- Russian
- Spanish

7. Click the **General** tab and type the serial number of the equipment in the **Machine information**.

**Control Panel**

Log in User **General** Default Sensor Phantom

**General setting**

**Machine information**

Manufacturer

Machine Name

Model Name

Serial Number

- In the **Patient Information Setting**, configure Link Type and File Path as shown below.

**Patient Information Setting**

CT Link Type: PatientInfo File

File Path: C:\#V\CaptureSW\#

File Name: PatientInfo.ini

CR Link Type: PatientInfo File

File Path: C:\#V\CaptureSW\#

File Name: PatientInfo.ini

- In the **Database & Linking**, configure Link Type and File Extension as follows.

Fields	When EzDent-i is used
CT / CR Link Type	SDK Link
CR Save Name	DCM

**Database & Linking**

CT Link Type: SDK Link

Save Path: C:\#V\CaptureSW\#ImageOutput\#CT#

CR Link Type: SDK Link

Save Path: C:\#V\CaptureSW\#ImageOutput\#CR#

Save Name: DCT0000 .DCM

Capture Message: PaXBDSmart Captured

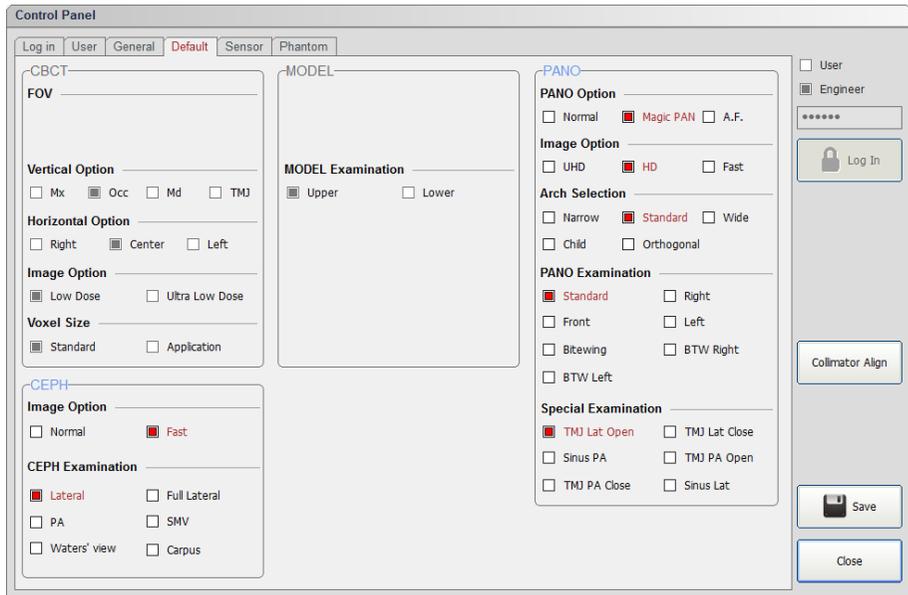
Output File Path: C:\#V\CaptureSW\#

Output File Name: Output.ini

- Click the **Default Set** tab and configure the user-defined parameters.

**NOTICE**

The default feature can be modified, according to the user's requirement.



- Click **Save** if changes occurred.



### Disabling the Packing Mode

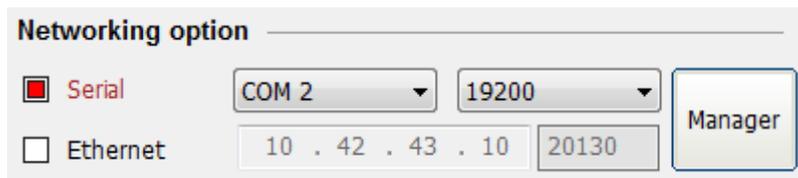


Unless the packing mode is disabled, the equipment will not operate even after it is turned on.



**PaX-i Plus\_Insight** has a unique feature— packing mode— built into the system to prevent the unit from being damaged while shipping and transporting. Thus, it is in the packing mode by factory default. Disabling the packing mode at this step is required for a successful installation.

1. Click the **General** tab in the control panel.
2. In the **Networking option**, select the **Serial** checkbox and set Serial port and baud rate as follows and then click **Manager**.



If an error has occurred during connection, make sure the COM port setting is correct as follows:

- 1) Run Device Manager.
- 2) Check the COM port assigned to virtual serial port under **com0com – serial port emulators**.
  - ▼ com0com - serial port emulators
    - com0com - bus for serial port pair emulator 0 (COM2 <-> COM100)
    - com0com - serial port emulator
    - com0com - serial port emulator
- 3) If necessary, change the COM port in the Networking option and click Save.

3. Enter the command **PVER]** to verify the current mode. Note that the equipment is now in packing mode.



## 9. Installing Software

4. Enter the command **PKEN\_0000**] to exit the packing mode. Now note that the equipment is out of the packing mode.

```
NOW Enter Packing Mode!!
In packing mode,system skip initial operating. (1
#####
<<< [epm_pver_001]
>>> [SPM_PKEN_0000]
Packing Mode Disable!!
<<< [epm_pken_001]
ACK_JAW
```

[SPM\_ PKEN\_0000]

[SPM\_PKEN\_0000]

5. Click the **Exit** button and terminate the control panel.
6. Exit the imaging program and restart the equipment to take the changes into effect.

### NOTICE

If you want to return to the packing mode, enter **PKEN\_0001]** on the command window.

### Selecting an Announcement Mode (Optional)

When selecting an announcement between music and beep arises, take the following procedures.

**Commands specifications:**

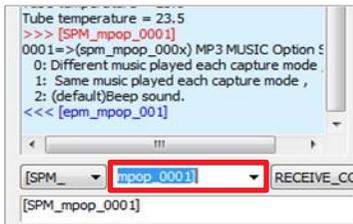
Command format: [SPM_MPOP_XXXX]			
XXXX	Imaging Modes	Announcement Mode	Division
0000	PANO/CEPH	Music	Different for each mode
0001	PANO/CEPH	Music	The same for each mode
<b>0002 (Default)</b>	PANO/CEPH	Beep	The same for each mode

1. Send the command by the command specification, as specified in the table above. Refer below for some examples.

Default mode: 0002(beep) for each imaging mode.

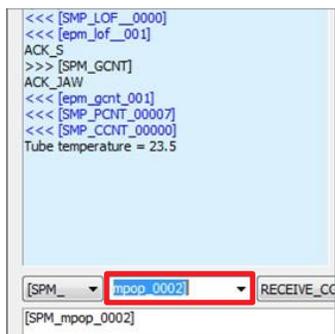
#### < When the same Music Announcement is desired for PANO and CEPH imaging modality >

: Enter the command [SPM\_MPOP\_0001] in the command field, followed by **Send**.



#### < When the same Beep Announcement is desired for PANO and CEPH imaging modality >

: Enter the command [SPM\_MPOP\_0002] in the command field, followed by **Send**.



### Finalizing the Console Software Settings

1. Click the **Exit** → **Close** button and terminate the control panel.
2. **(Important!) Exit the imaging program (main GUI) and restart the equipment to take the changes into effect.**

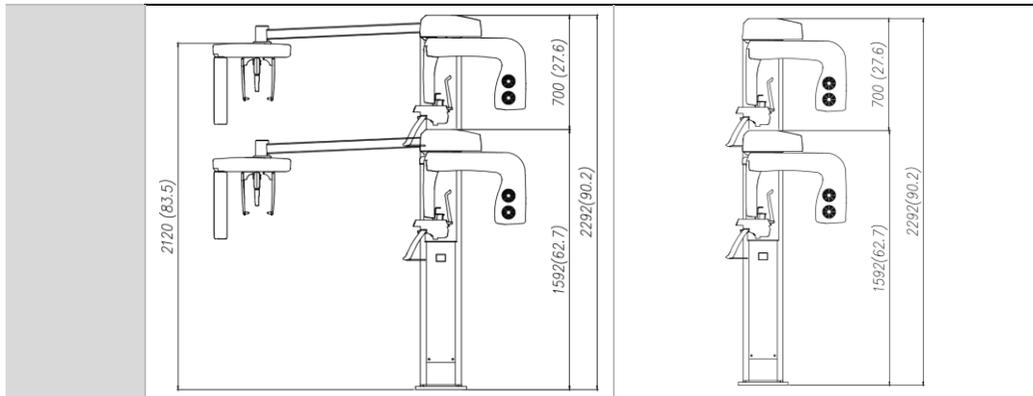
# 10. Technical Specifications

## 10.1 Mechanical Specifications.

Dimensions (unit = mm)

	With CEPH Unit	Without CEPH Unit
With Base		
Without Base		
Without Base		

## 10. Technical Specifications



Item		Description
Weight	Without CEPH unit	95 kg (209.4 lbs. – without Base)
		135 kg (297.6 lbs. – with Base)
	With CEPH unit	120 kg (264.5 lbs. - without Base)
		160 kg (352.7 lbs. - with Base)
Total Height	Without Base	Max. 2292 mm
	With Base	Max. 2320 mm
Dimensions during operation (Length x Width x Height)	Without CEPH unit	970 mm (L) x 1333 mm (W) x 2292 mm (H) (without Base)
		990 mm (L) x 1333 mm (W) x 2320 mm (H) (with Base)
	With CEPH unit	1905 mm (L) x 1333 mm (W) x 2292 mm (H) (without Base)
		1905 mm (L) x 1333 mm (W) x 2320 mm (H) (with Base)
Rotating Unit Vertical Movement		Max. 700mm
Installation type		Base Stand / Wall Mount (Default: Wall Mount type)
Packing Box Organization		Main Box, CEPH Box (Optional), Base Box (Optional)

## 10.2 Environmental Specifications

	Item	Description
During Operating	Temperature	10 ~ 35 °C
	Relative humidity	30 ~ 75 %
	Atmospheric pressure	860 ~ 1060 hPa
During Transport and Storage	Temperature	-10 ~ 60 °C
	Relative humidity	10 ~ 75 %
	Atmospheric pressure	860 ~ 1060 hPa

## 10.3 Reconstruction Time

PANO Option	Reconstruction Time
Insight PAN	Approximately 1 minute

- *Reconstruction time exists for PaX-I Insight only.*
- *The above data is obtained from a computer system which is based on HP Z440 and GeForce GTX1060 6GB*
- *Image reconstruction time varies depending on computer specifications and/or working conditions.*

# Appendix

## A. Installing the Warning Lamp and Door Interlock Switch

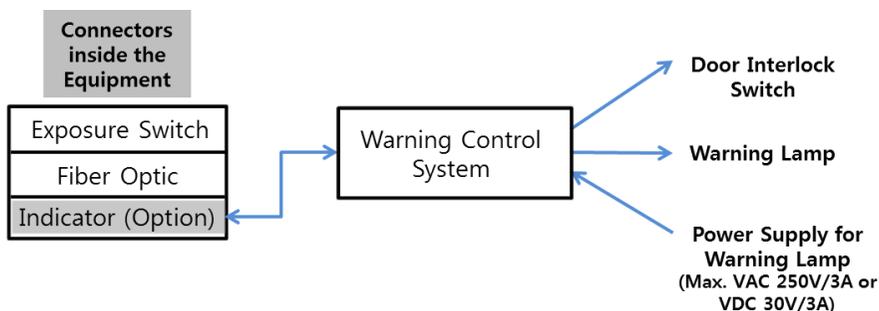
### Requirement

1. The warning control system shall be connected to the ERB (earth reference bar) of the room that it is associated with.
2. The switching arrangements, location, height, and several illuminated warning signs shall be agreed with the local radiation protection advisor (RPA). (customer)
3. A fluorescent lamp shall not be used in the 'X-rays on' sign.
4. The customer shall be responsible for the proper installations for the warning control system, including the lamp and door interlock switch, based on the MEIGaN guideline.

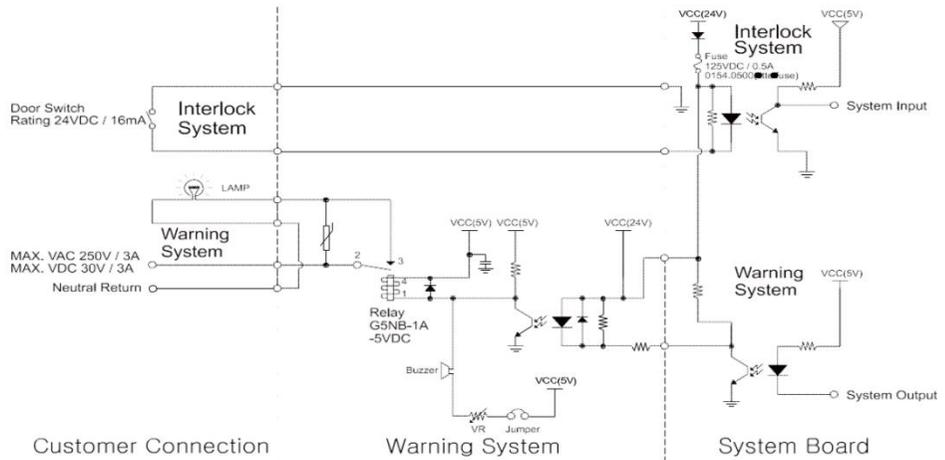
MEIGaN: Medical Electrical Installation Guidance Notes

5. Pre-installation planning is crucial to the successful installation of these devices.
6. For further details, refer to the accompanying volume: Specification for Electrical Installation

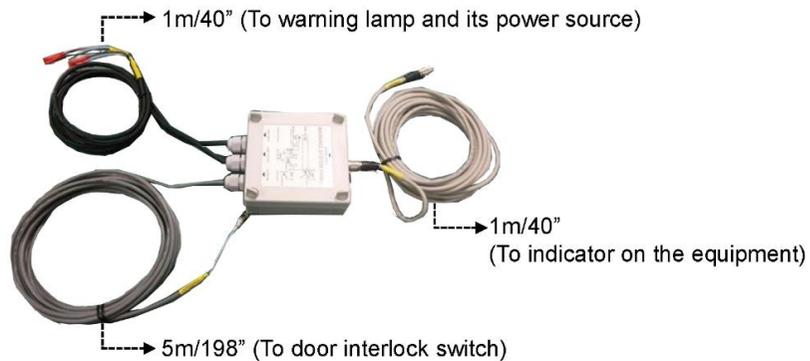
### Block Diagram



## Schematic Diagram



## Components Supplied



## Procedures

<The individual cable length:>

- Signal Cable: 5m/198"
- Door interlock cable: 5m/198"
- Warning lamp: 1m/40"
- Power source cable: 1m/40"

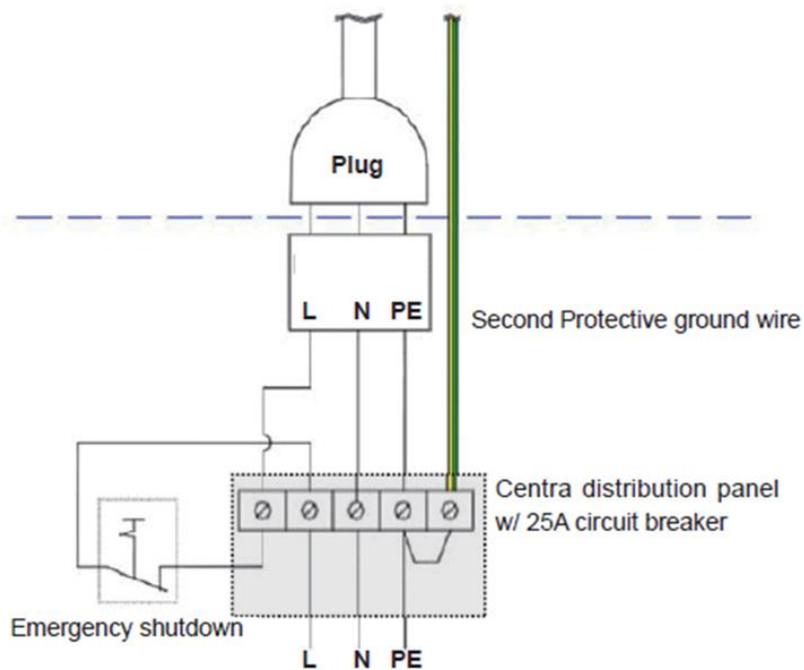


1. Prepare the Warning System Panel (Part No. 28)
2. Install the Warning System Panel at the proper height after taking each cable length into account.
3. Connect the warning lamp (not provided).
4. Connect the door interlock switch (not provided).
5. Connect the power source for the warning lamp.

## B. Installing the Emergency Stop Switch

- Install the **Emergency Stop Switch** on the power cable line.
- Install this switch so that it is easy to reach in the emergency case but can't be pushed by mistake.
- The switch shall be a type of mistake-proof.
- The switch is not supplied.]
- The switch shall be installed at a height of 1.2 to 1.5 meters (47 to 60").

### To the equipment



1. The cable sizes: N, L, and PE  $\geq$  12 AWG (3 x 4 mm<sup>2</sup>).
2. The cable to **Emergency Stop Switch** shall be the same size as the power cable itself.
3. Install the socket connector terminal on the 2nd protective ground wire.

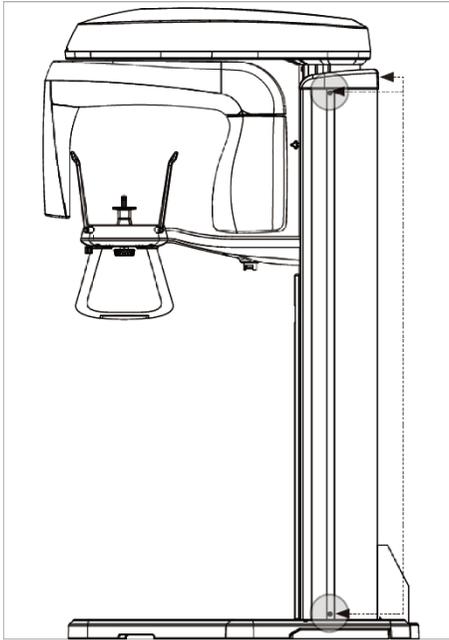
## C. Limiting the Column Height

This section explains how to limit the column height within the permissible range.

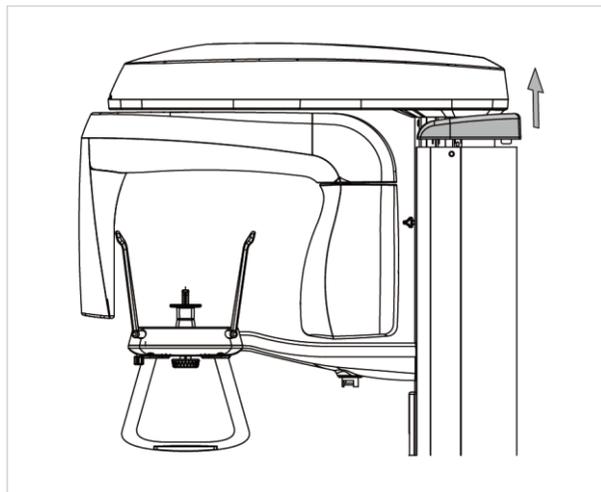
1. Measure the ceiling height in the X-ray shield room:  $H_{\text{ceiling}}$

### < Removing the column covers >

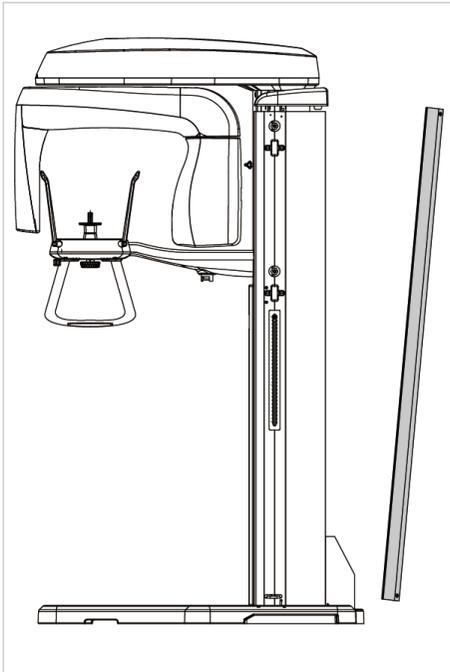
2. Remove three Fixing Bolts as shown in the figure.



1. Remove the Column Rear-Top Cover as shown in the figure.



2. Remove the side cover.

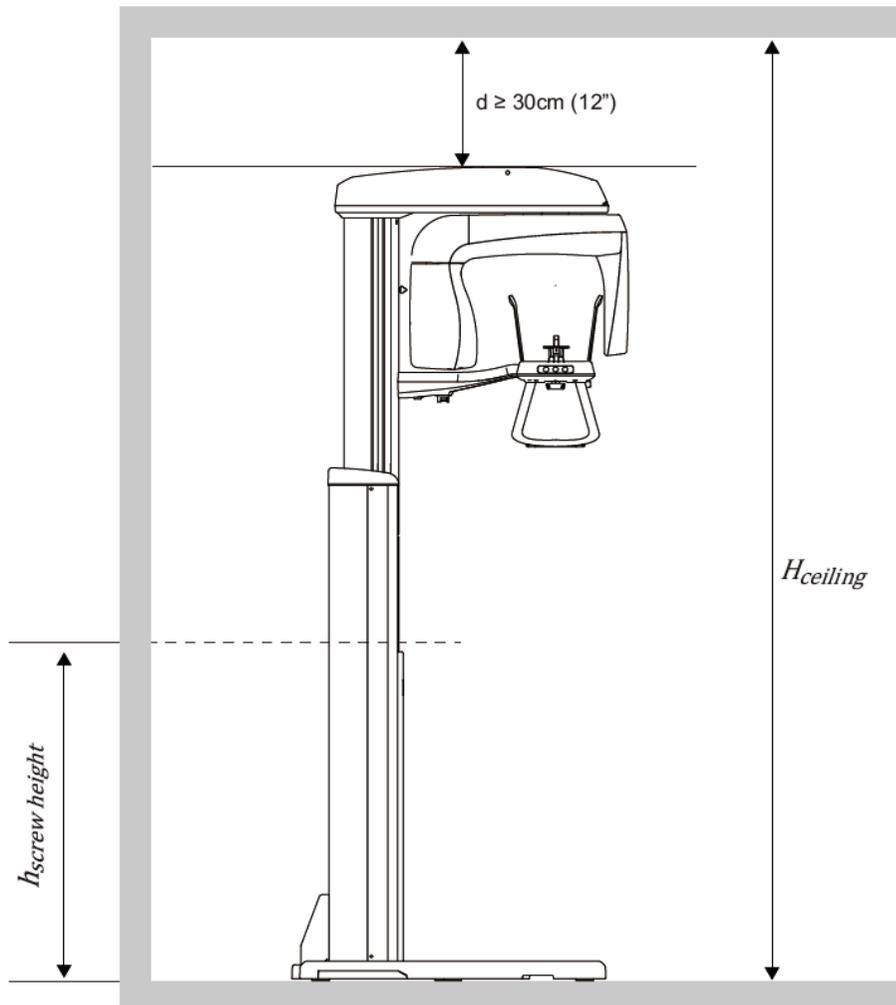


### Determining the Height

Calculate the adjustment bolt position by using the following formula.

$H_{\text{screw height}} = H_{\text{ceiling}} - d$ , where  $d$  is the minimum distance, 30 cm (12") between the ceiling and the top of the equipment (when the equipment is fully loaded).

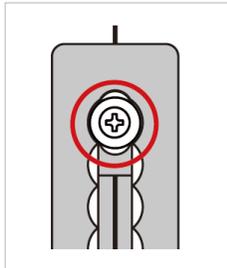
(e.g. If  $d = 30$  cm,  $H_{\text{ceiling}} = 250$  cm (99"),  $H_{\text{screw height}} = H_{\text{ceiling}} - d = 250 - 30 = 220$  cm. Accordingly, set the height to this level by using the height adjustment bolt).



### Adjusting the Screw Height

We know the  $H_{\text{screw}}$  height is 220 mm from the previous example. So, we will move the screw from the default (current) position to the new one.

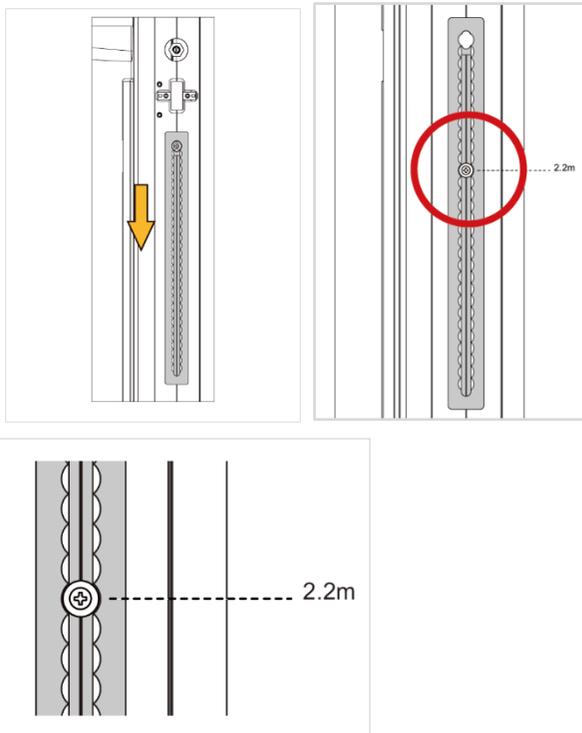
1. Loosen two bolts halfway (**important!**).



#### **IMPORTANT**

Do not unscrew completely the bolt. If not, it could drop into the column and may cause big trouble to retrieve it out.

2. Looking up the scale, slide the Limit Block down to a new location ( $H_{\text{screw height}} = 220$  mm) and fix it back.



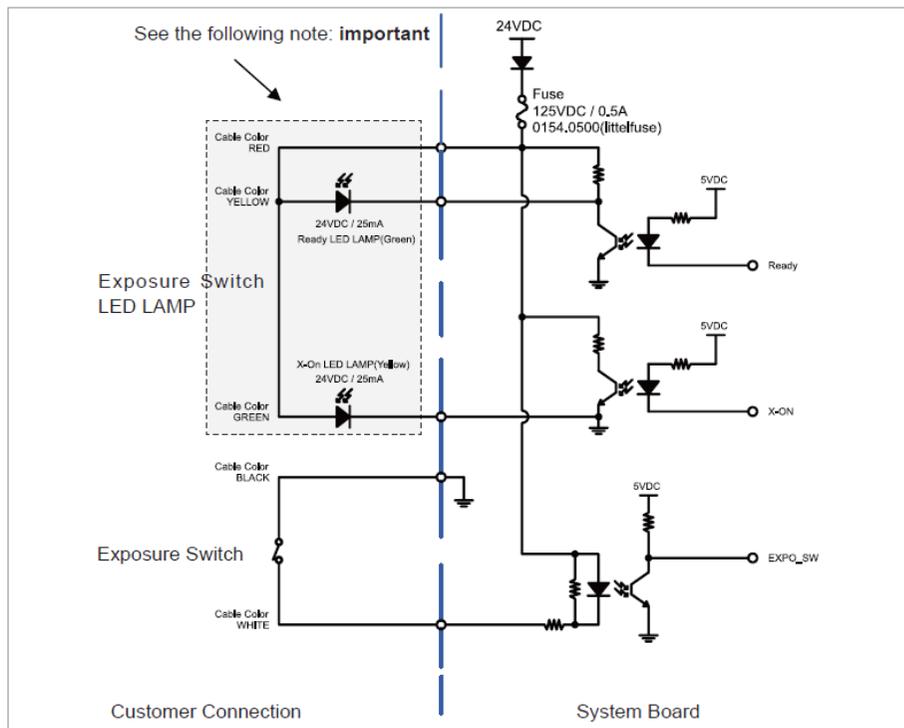
3. Put the covers back in reverse order and fix them with the bolts.

## D. Connecting the 3<sup>rd</sup> party Exposure Switch (Optional)

This section explains how to connect the third-party **Exposure Switch** with the equipment from **VATECH**.

### < How to >

1. Cut the **Exposure Switch** cable provided with the equipment.
2. According to the following schematic diagram, rewire the cables.
3. Double-check the wiring before use.



### NOTICE

Tape the end of each unused wire to prevent the wires from causing an inadvertent short circuit

## E. Checking PC BIOS Settings

< HP PC BIOS Setup >

PC Model: HP Z440

PC BIOS default			
Main Menu	Sub1 Menu	Sub2 Menu	Setup Value
Advanced	Power Options	Runtime Power Management	[Disable]
Advanced	Power Options	Idle Power Savings	[Normal]
Advanced	Power Options	Enhanced Halt State (C1E)	[Disable]

## F. Installation Checklist

### 1. General Information:

#### Customer

Information about the Equipment Purchaser	
Name of Clinic or Hospital	
Address	
Phone	
E-Mail	
Website	

#### Dealer

Information about the Equipment Seller	
Name of Dealer	
Address	
Phone	
E-Mail	
Website	

**2. Installation Information:**

Address of Installation Site	
Names of Installers	
Scheduled Date of Installation	
Date of installation	
Model	
Serial No.	

**3. System Delivery to Site:**

	Yes	No
Did you review and identify the delivery route and method for equipment in advance?	<input type="checkbox"/>	<input type="checkbox"/>
Is the freight elevator available?	<input type="checkbox"/>	<input type="checkbox"/>
Is the security guard, if any, notified of the installation in advance?	<input type="checkbox"/>	<input type="checkbox"/>
Are two installers, including the helpers, available to move and unload the equipment?	<input type="checkbox"/>	<input type="checkbox"/>

#### 4. Before Installation:

##### Site Check List

	Yes	No
Is the room large enough? At minimum, with CEPH unit: 2,805 mm (L) x mm 2,233 (W) x 2,420 mm (H) / 111" x 88" x 96" Without CEPH unit: 1,890 mm (L) x 2,233 mm (W) x 2,420 mm (H) / 75" x 88" x 96"	<input type="checkbox"/>	<input type="checkbox"/>
Is the door entrance wider than 800mm (32")?	<input type="checkbox"/>	<input type="checkbox"/>
Is a radiation protection plan in place?	<input type="checkbox"/>	<input type="checkbox"/>
Do equipment and PC use the same dedicated circuit?	<input type="checkbox"/>	<input type="checkbox"/>
Does the electrical input condition to the installation site meet the MEIGaN requirements?	<input type="checkbox"/>	<input type="checkbox"/>
Is the local Network IP address of clinic 192.168.33.xx?	<input type="checkbox"/>	<input type="checkbox"/>
Is a compressor or air conditioner suction located right next to X-ray Room?	<input type="checkbox"/>	<input type="checkbox"/>
Is the floor flat and level?	<input type="checkbox"/>	<input type="checkbox"/>
Is the carpet on the floor? If so, remove it.	<input type="checkbox"/>	<input type="checkbox"/>

##### Before Opening Boxes

	Yes	No
Did the delivery company carry and handle with caution?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installers take pictures of boxes before opening?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installer make sure there are not any suspicious holes or scratches on the box?	<input type="checkbox"/>	<input type="checkbox"/>
Is the ShockWatch indicator red?	<input type="checkbox"/>	<input type="checkbox"/>
Is the TiltWatch indicator red?	<input type="checkbox"/>	<input type="checkbox"/>

After Opening Boxes

	Yes	No
Did the installers make sure there are not any scratches or broken surface equipment?	<input type="checkbox"/>	<input type="checkbox"/>
Are all accessories and cases included in the box?	<input type="checkbox"/>	<input type="checkbox"/>
Have you read the installation manual out in its entirety before starting the installation?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installer take pictures after opening the boxes?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installer make sure there are not any suspicious holes or scratches on the box after opening?	<input type="checkbox"/>	<input type="checkbox"/>

**5. While Installing Equipment**

	Yes	No
Are the installers careful with any sensitive parts while carrying equipment?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installers make sure that various cables, especially optic cables, are not coiled too much?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installers perform installations, according to the manual?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installers not touch or place pressure on sensors while installing?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installer make sure harness and equipment are well connected and not damaged?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installers check if the emergency button (switch) is working properly?	<input type="checkbox"/>	<input type="checkbox"/>
Did the equipment be well balanced?	<input type="checkbox"/>	<input type="checkbox"/>

## 6. After Installation

	Yes	No
Does the chin rest successfully initialize after turning on the system?	<input type="checkbox"/>	<input type="checkbox"/>
Are the cables organized well?	<input type="checkbox"/>	<input type="checkbox"/>
Is it OK after checking visually the equipment?	<input type="checkbox"/>	<input type="checkbox"/>
Is the normal voice message audible during system initialization after turning on the system?	<input type="checkbox"/>	<input type="checkbox"/>
Does the LED on the front of the equipment turn green?	<input type="checkbox"/>	<input type="checkbox"/>
Do the equipment Up/Down switch works properly?	<input type="checkbox"/>	<input type="checkbox"/>

## 7. Software Compatibility

	Yes	No
Is the Anti-virus software installed?	<input type="checkbox"/>	<input type="checkbox"/>
Is the firewall installed? If yes, indicate software or hardware.	<input type="checkbox"/>	<input type="checkbox"/>
	Type:	
Is the 3 <sup>rd</sup> party software installed? If yes, indicate the name(s) and versions.	<input type="checkbox"/>	<input type="checkbox"/>
Are they compatible with software from <b>Vatech</b> ®? If No, indicate the name(s) and versions.	Version:	

## 8. Electrical Requirements:

	Yes	No
Is the circuit breaker installed and tested in the distribution panel for over-current protection w/ 20A?	<input type="checkbox"/>	<input type="checkbox"/>
Is internal line impedance checked? ( $Z_{input} \leq 0.5\Omega$ )	<input type="checkbox"/>	<input type="checkbox"/>
Do equipment and PC use the same dedicated circuit?	<input type="checkbox"/>	<input type="checkbox"/>

**9. Network Configuration:**

	Yes	No
Is the network configured with 1 Gbit/s of CAT5?	<input type="checkbox"/>	<input type="checkbox"/>
Is the equipment connected to the network?	<input type="checkbox"/>	<input type="checkbox"/>
Is the network installation company identified?	<input type="checkbox"/>	<input type="checkbox"/>
What is the TCP/IP address assigned?	Address:	
What is the subnet masking address?	Address:	
Is there a DHCP server?	<input type="checkbox"/>	<input type="checkbox"/>



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The CE symbol grants this product compliance to the European Directive for Medical Devices 93/42/EEC as amended by 2007/47/EC as a class IIb device.

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# PaX-i Insight<sup>TM</sup>

# PaX-i Plus<sup>TM</sup>