

vatech A9

Installation manual

Model : PHT-30CSS

Version : 1.05

- English



vatech

Notice

This manual covers the installation procedures for the **vatech A9 (Model: PHT-30CSS) digital X-ray imaging system**. The Installation Manual and the User Manual are shipped with each hardware unit.

Brand name: vatech A9 (Model: PHT-30CSS)

Manufactured by: VATECH Co., Ltd.

In this manual, "equipment" refers to **vatech A9**.

In abbreviated forms, CBCT, CEPH, and PANO denote Cone Beam Computed Tomography, Cephalo, and Panorama, respectively. They are interchangeably used.

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

Review this manual thoroughly to ensure the proper installation. The **vatech A9** is in 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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Manual Name: vatech A9 (Model: PHT-30CSS) Installation Manual

Version: 1.05

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Important Notes

	<p>The sudden temperature changes inside the X-ray room may cause condensation. Ensure to keep the inside temperature constant for at least an hour before turning on the equipment.</p>
	<p>Ensure to install the equipment on flat ground. If the equipment is not installed parallel to the ground, it may fall or tilt, causing physical injury, property damage, or system malfunction.</p>
	<p>DO NOT push or pull the equipment.</p>
	<p>Only VATECH-authorized technicians shall install the equipment, complying with the proper procedures and regulations stated in this manual.</p>
	<p>Failure to read and understand this manual's information may cause a physical injury, property damage, or equipment failure. Please read each chapter thoroughly 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 conducted by an authorized agent by this installation manual.
- The electrical installation was conducted to 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 normal conditions 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 before the 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 room's current dimensions, 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 in this manual to emphasize information or potential risks to the equipment or user. Ensure that you fully understand each symbol and follow the accompanying instructions.

Please observe all warnings and safety information included in this document to prevent physical injury and damage to the equipment.

 WARNING	WARNING	<p>Indicates that a specific hazard is known to exist which, through inappropriate conditions or actions, may cause:</p> <ul style="list-style-type: none"> • Severe personal injury (to the operator and patient) • Substantial property damage.
 CAUTION	CAUTION	<p>Indicates that a potential hazard may exist that through inappropriate conditions or actions will or can cause:</p> <ul style="list-style-type: none"> • Minor injury • Property damage.
IMPORTANT	IMPORTANT	<p>Indicates that a potential problem may exist that inappropriate conditions or actions can cause:</p> <ul style="list-style-type: none"> • Property damage.
NOTICE	NOTE	<p>Indicates precautions or recommendations that should be used in the operation of the system, specifically:</p> <ul style="list-style-type: none"> • Using this Manual • Notes to emphasize or clarify a point.
	RADIATION	<p>Indicates a possible danger from radiation exposure.</p>
	ESD susceptibility	<p>Indicates that an item is susceptible to damage from electrostatic discharges.</p>

⚠ WARNING

DO NOT touch or hold the sensor or tube head areas while moving, installing, or operating the equipment.

**⚠ WARNING**

DO NOT step on the base unit while installing or operating the equipment.

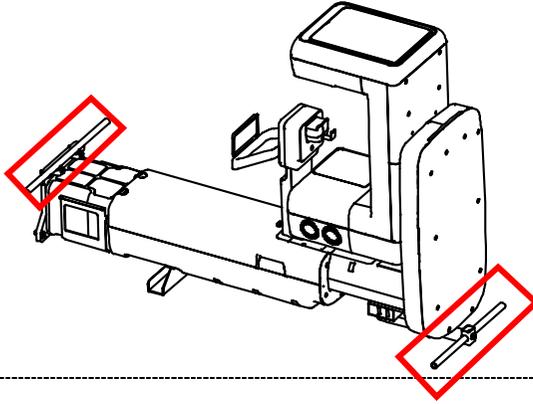
**⚠ WARNING**

DO NOT use an electric drill to fix or remove bolts.
(Use the drill only for drilling wall and floor)



IMPORTANT

vatech A9 has two carrying handles, each located at the top and bottom of the equipment (**see below**). Always hold the handles when moving or lifting the equipment.

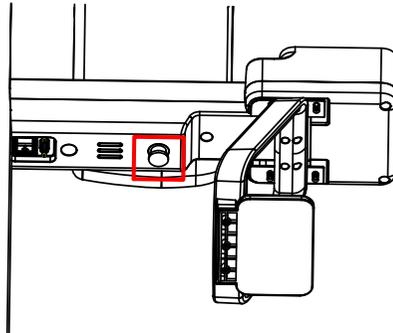


NOTICE

Three installers are required to install the equipment safely.

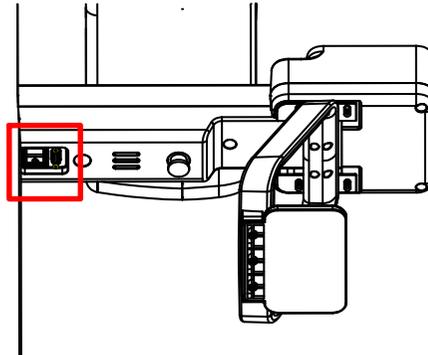
NOTICE

Refer to the image below for the Emergency Stop Switch's location.



NOTICE

Refer to the image below for the Main Power Switch's location.





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 the patient with protective clothing before X-ray imaging. Pregnant women must consult with a doctor before being exposed to an X-ray.



- Make sure to read and fully understand the installation instructions 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 below 10°C(50°F) for more than a couple of hours, allow the equipment to reach room temperature before applying the 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 that are not part of the system: IEC60601-1-1 (3rd edition: 2005).
- Any equipment not approved by VATECH must comply with the applicable standards: IEC 60950-1 (2nd edition: 2005) for IT equipment (Ex: PC) and IEC 60601-1 (3rd edition: 2005) for medical electrical equipment.
- All operators of this equipment are responsible for ensuring that the requirements outlined in IEC 60601-1-1 (3rd edition: 2005): Safety Requirements for Medical Electrical Equipment are fully met to ensure the safety of patients, operators, and the environment.
- DO NOT touch-sensitive areas such as sensors during installation. These areas are indicated at the appropriate 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 Stop 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. The installers are responsible for verifying that all applicable radiation safety requirements are met since they vary depending on the country. It is the installer's responsibility to verify that all applicable radiation safety requirements are met.
- DO NOT install the equipment near other devices.
- DO NOT install the equipment in an area that is exposed to strong electromagnetic fields.
- DO NOT install the equipment in an area where there is the risk of an explosion.
- This system's electrical installation 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.

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 have 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 Main Power Switch)	Main Power Switch
	On (power: connected to the Main Power Switch)	Main Power Switch
	Alternate Current	Label
	Type B Applied Equipment (IEC 60601-1: Degree of protection against leakage current and electric shock: Class 1 equipment)	Label
	Radiation hazard	Label
	The CE symbol indicates that this product complies with the European Directive for Medical Devices 93/42/EEC as amended by 2007/47/EC as a class IIb device.	Label
	Warns ESD hazard.	MCU board / Board package

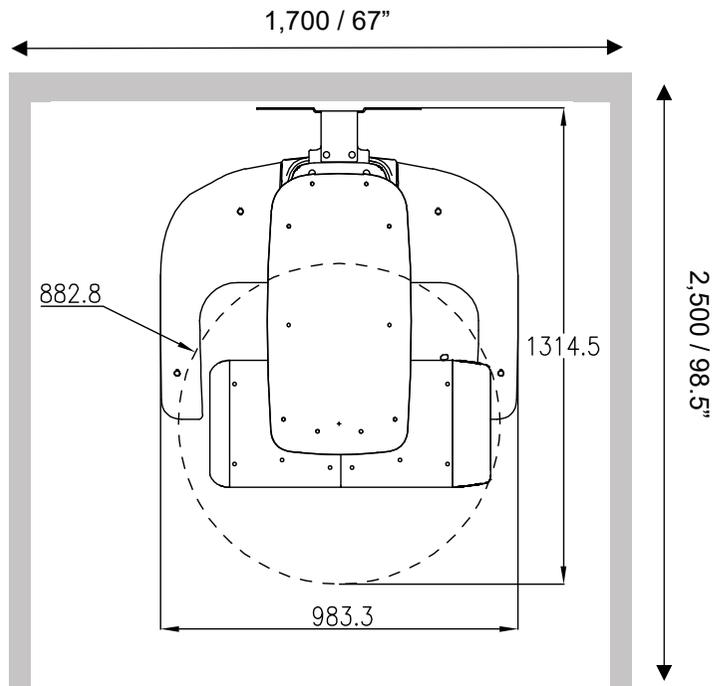
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2. Choosing an Installation Site

2.1 Room Requirements

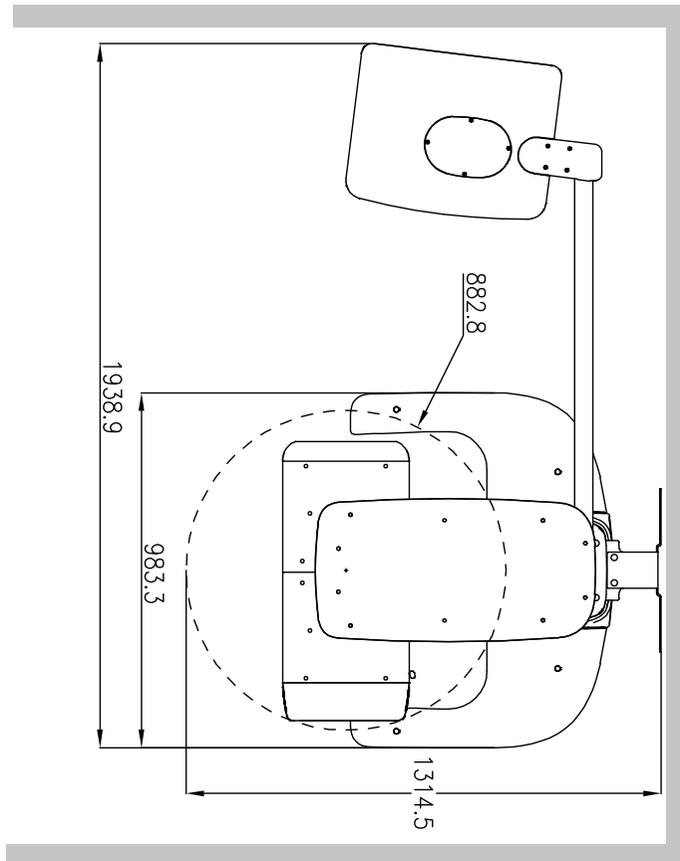
IMPORTANT

- The equipment's location must allow the operator to observe the patient clearly during the imaging.
- The operator must stay close to the patient during the imaging.
- DO NOT install the equipment on a thick carpet.
- Install the equipment on the anti-static floor.
- Install the PC monitor, Emergency Stop Switch, and X-ray Exposure Switch close to the operator so that he/she can use them simultaneously in an emergency.

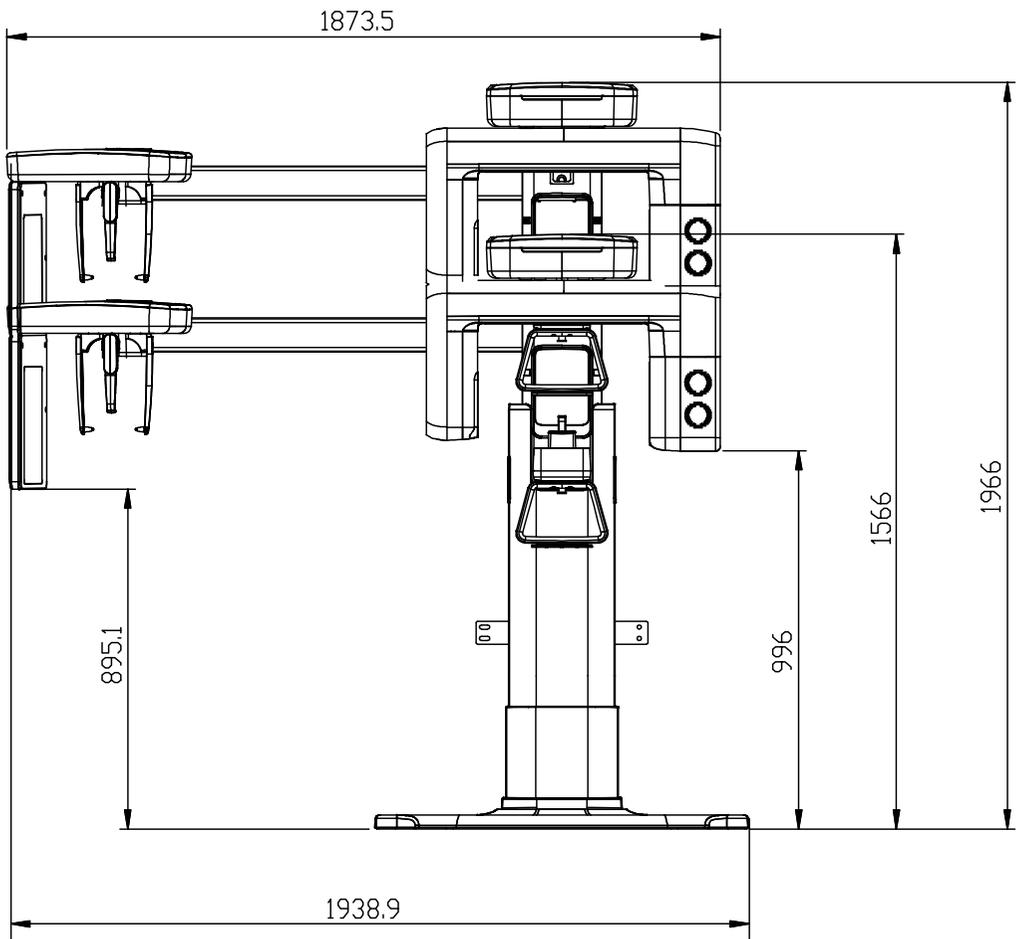


<Without CEPH Unit (optional): 2,500 mm (L) x 1,700 mm (W) or wider >

2. Choosing an Installation Site



<With CEPH Unit (optional): 2,500 (L) x 2,500 mm (W) or wider >



<Ceiling Height: 2,700 mm (H) or higher >

Minimum Space Required

Without CEPH unit	2,500 mm (L) x 1,700 mm (W) x 2,700 mm (H)
With CEPH unit	2,500 mm (L) x 2,500 mm (W) x 2,700 mm (H)

Lead Thickness

≥ 1 mm

The width of the Entrance

The X-ray room door 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/m² (110 lbs. / feet²)

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 PC's warning lamp and imaging status.

2.2 Specifications for Electrical Installation

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

Consult the companion manual for further information: **Volume 3: Specification for Electrical Installation.**

2.3 Electrical Requirement

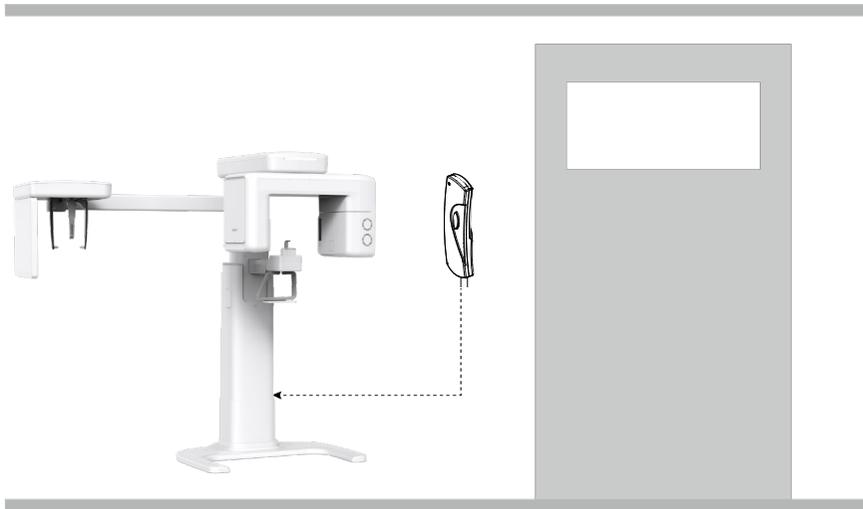
 WARNING	This equipment must be connected to a grounded outlet to fulfill the safety provisions specified in IEC 60364: the 2nd edition (2006) .
 WARNING	Both PC and equipment must use the same power line if they are connected to an MPSO. Whenever not possible, use different power outlets for each device. If a multiple portable socket outlet (MPSO) must be used, ensure that the PC and equipment are connected to the same MPSO.
 WARNING	Use a dedicated power outlet for the power cord. Failure to do so may result in unstable system operations caused by power fluctuations.
NOTICE	It is strongly recommended that you install an AVR. An AVR (automatic voltage regulator) for continuous operation in the event of power fluctuation.

2.4 Exposure Switch Installation Options

You can install The Exposure Switch in three ways, based on how the user decides to operate the equipment. However, we highly recommend our installers install an Exposure Switch following **Option No. 2** to guarantee the operator's safety and the equipment's best performance.

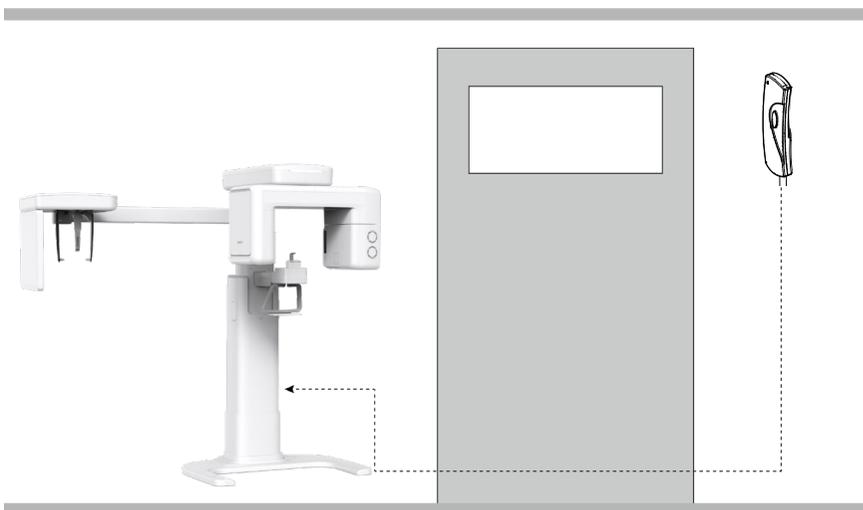
Option No. 1:

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



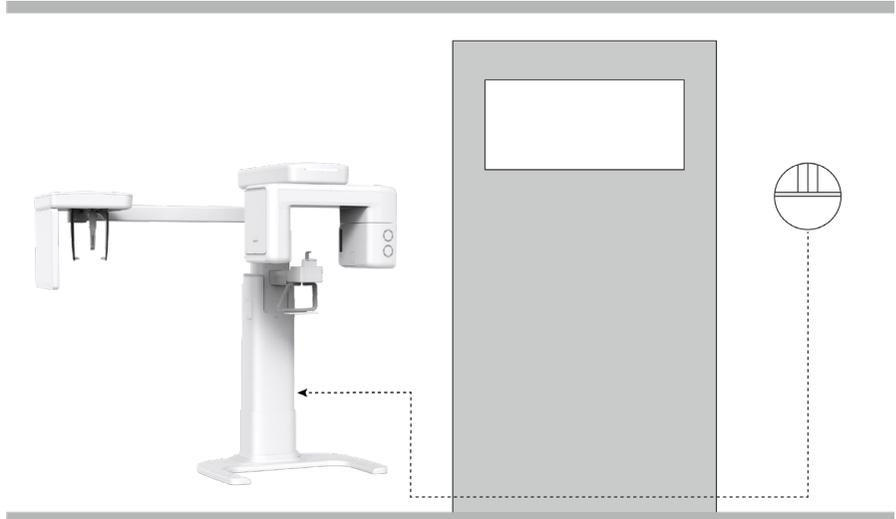
Option No. 2:

The user operates the **Exposure Switch** from outside of the X-ray room. The switch holder is mounted outside the room as well.



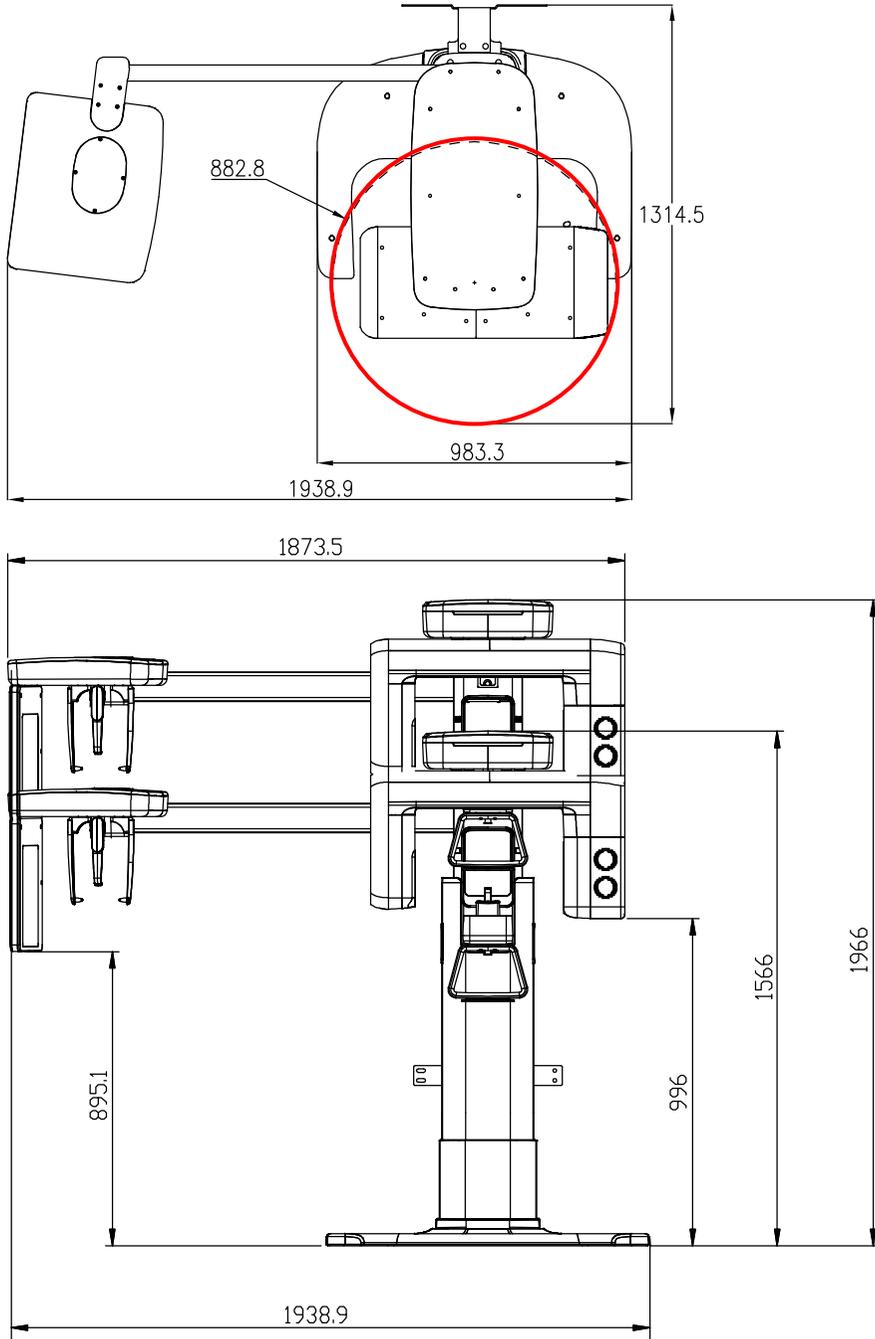
Option No. 3:

The user operates the 3rd party Exposure Switch (not provided by VATECH). In this case, go to **Appendix C Connecting the 3rd party, The Exposure Switch**, for more information.

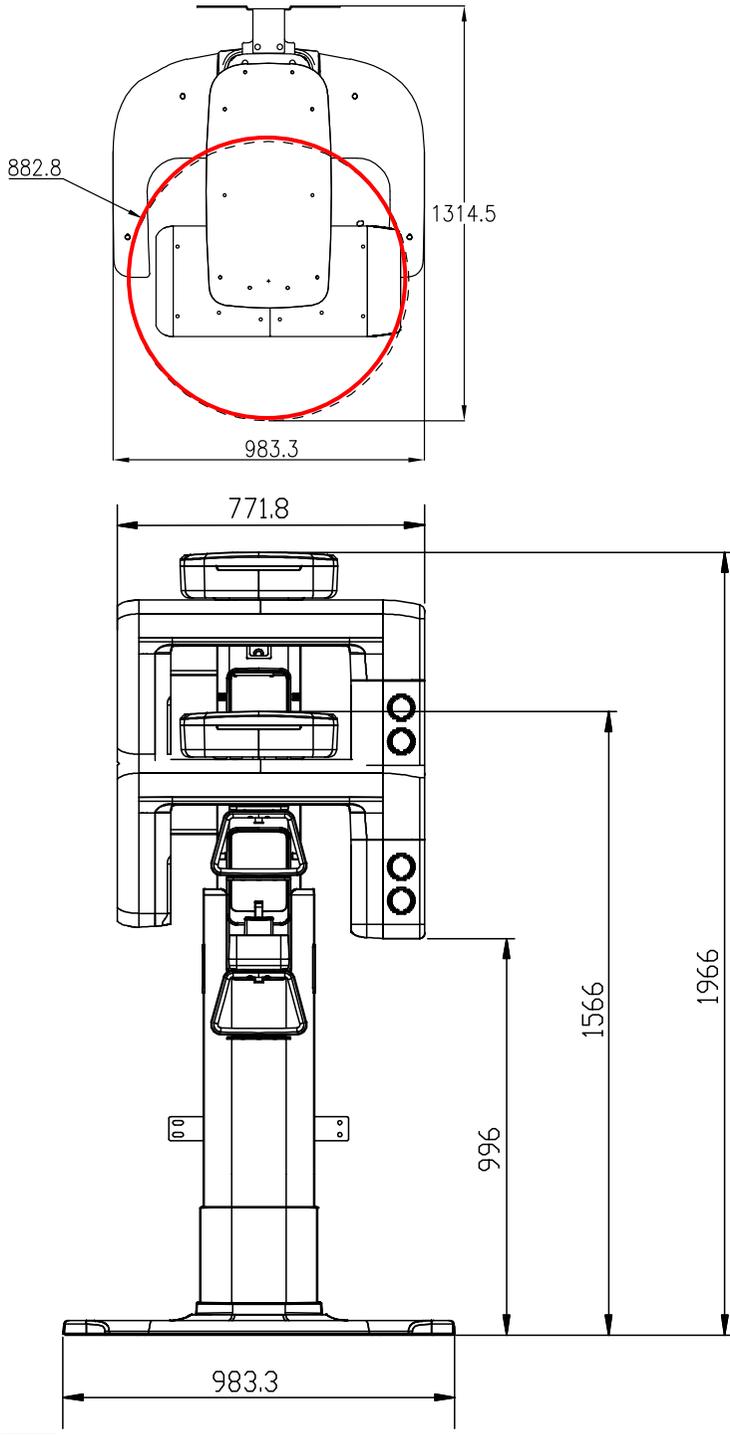


2.5 Installation Versions

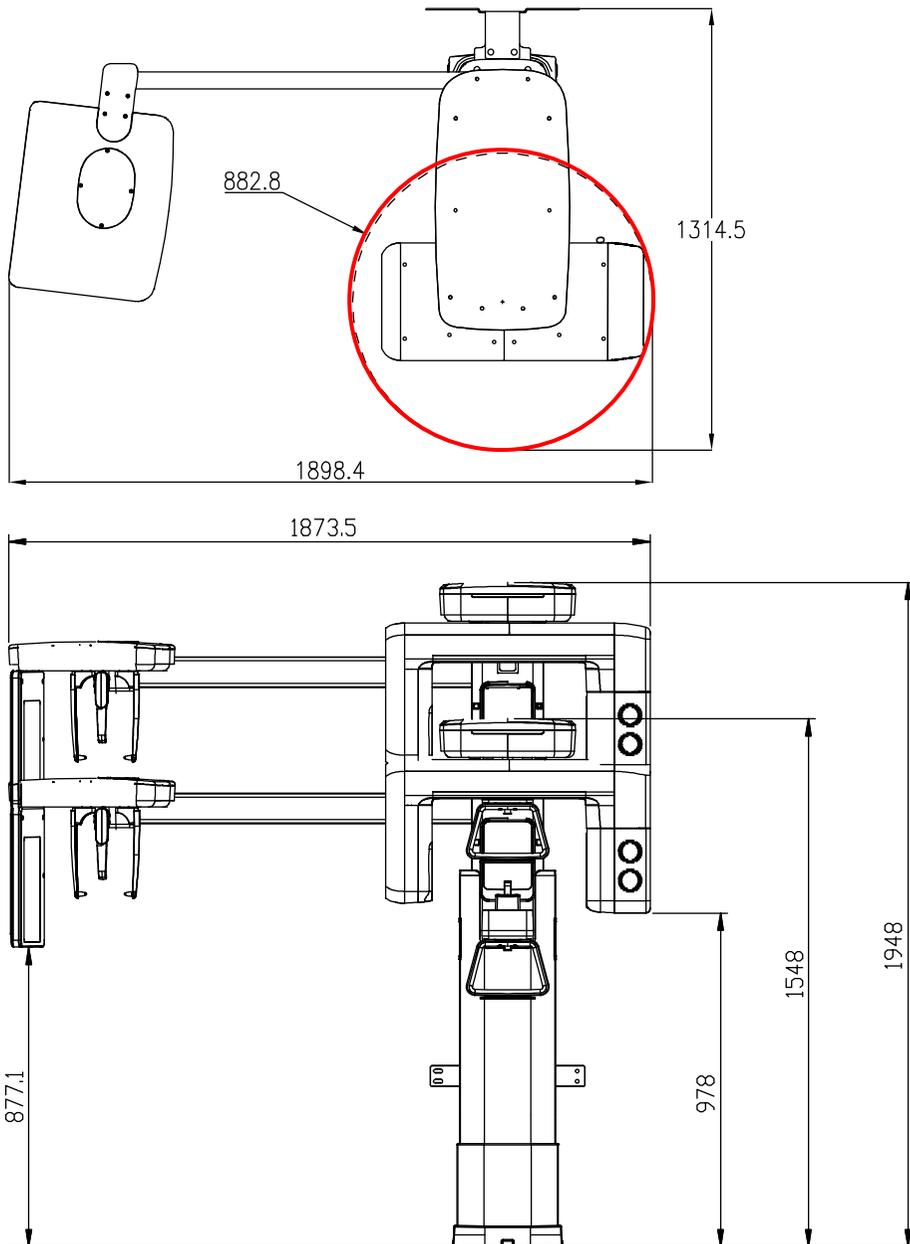
Base Stand Type (with CEPH unit)



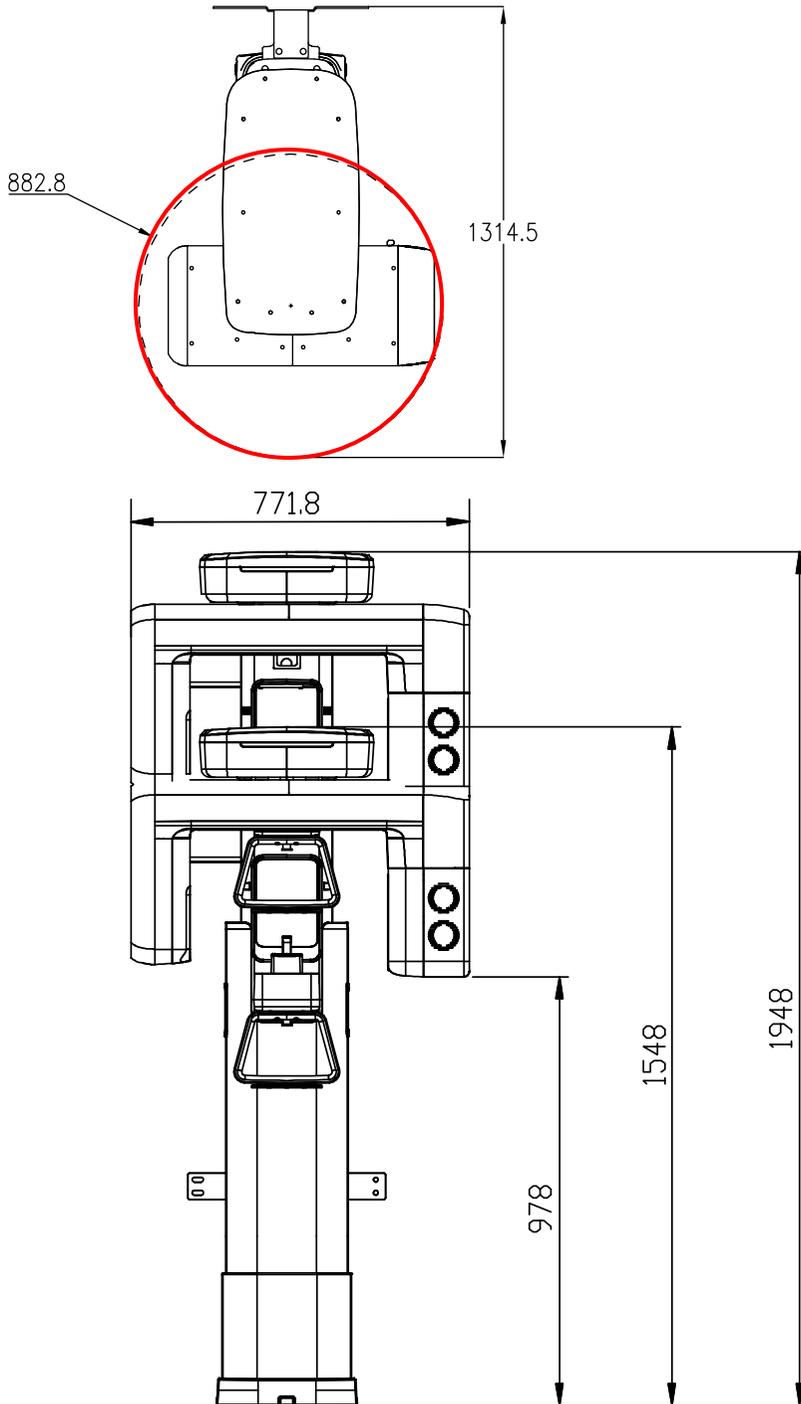
Base stand Type (without CEPH unit)



Non-Base stand Type (with CEPH unit)



Non-Base stand Type (without CEPH unit)



2.6 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, activated when the X-ray is energized.
- The warning lamp and Door Interlock Switch are not included with the equipment.
- The warning lamp and the Door Interlock Switch must be installed by a qualified technician.

2.7 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.

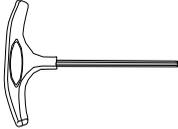
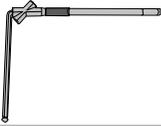
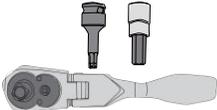
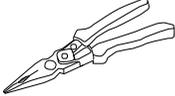
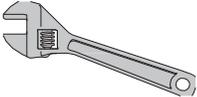
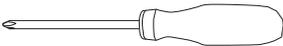
3. Before Installing the System

IMPORTANT

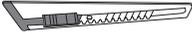
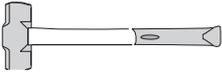
Before or during the installation, ensure to go over checklists from No.3 to No.6 in **Appendix E. Installation Checklist.**

3.1 Required Tools

The following tools are required to install the **vatech A9**.

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
Cross Head Screwdriver w/ Magnetic Tip		L = 200 mm (7.9")
Spirit Level		N/A

3. Before Installing the System

Item	Figure	Size
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

VATECH carefully inspects all equipment before shipping. But installers are strongly recommended to check the conditions of the ShockWatch and TiltWatch before opening the package, as well as the package's overall condition.

IMPORTANT

The installers and supervisors must check the conditions of indicators on each package before opening it.

NOTICE

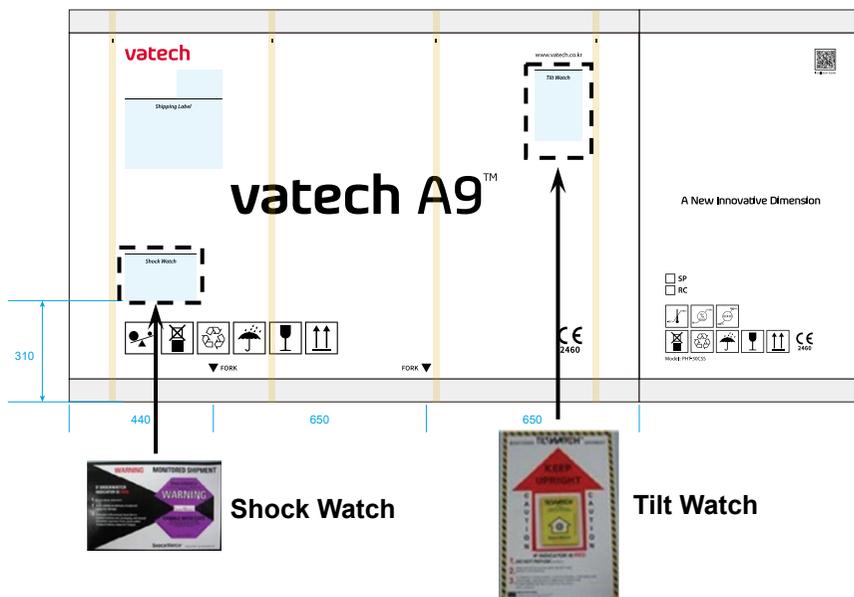
- The **ShockWatch** and **TiltWatch** are affixed only to the main box, which contains the equipment.
- The **ShockWatch** and **TiltWatch** turn red as the package receives a shock during transportation. However, the color change does not necessarily mean that the equipment has been damaged.

Check the following before opening each package:

1. Inspect all packages for external damages.
2. Find the **ShockWatch** and **TiltWatch** (see the image below), which are affixed to the main box that contains the equipment, and check if their color has changed.

IMPORTANT

If you see that the **ShockWatch** and **TiltWatch** have been activated or find damage on the package, do not open it, and contact your VATECH service representative.



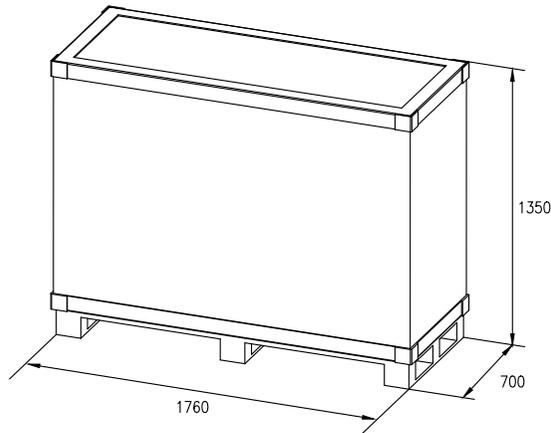
3.3 Unpacking Boxes

NOTICE

- All packages and Styrofoam used to ship this equipment are recyclable.
- Return the package to your **VATECH** Service Representative or dispose of it following the legal regulations of your country.

3.3.1 Box No. 1 - Main Box

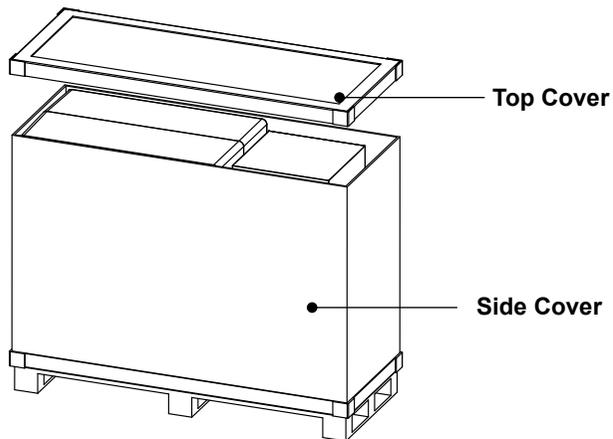
Component	Size (mm / inch)	Weight (kg/lbs.)
<ul style="list-style-type: none"> ▪ Column and Rotating Unit Assembly ▪ Accessories and Parts ▪ PC System (Optional) ▪ Monitor (Optional) 	1760 (L) x 700 (W) x 1350 (H) / 69.29 (L) x 27.56 (W) x 53.15 (H)	221 / 487



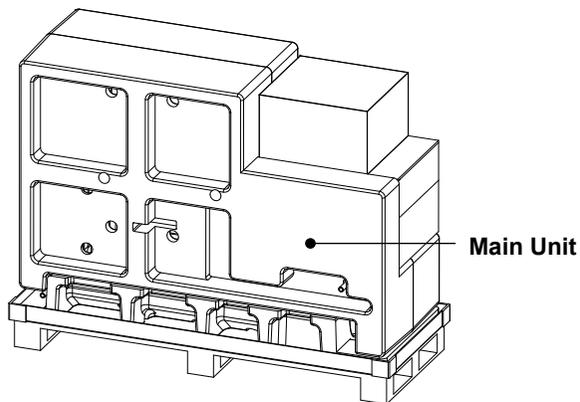
Removing the Cover

To remove the main box cover:

1. Move the **main box** to a convenient place close to the installation site.
2. Remove the strapping bands around the box and lift the top cover.



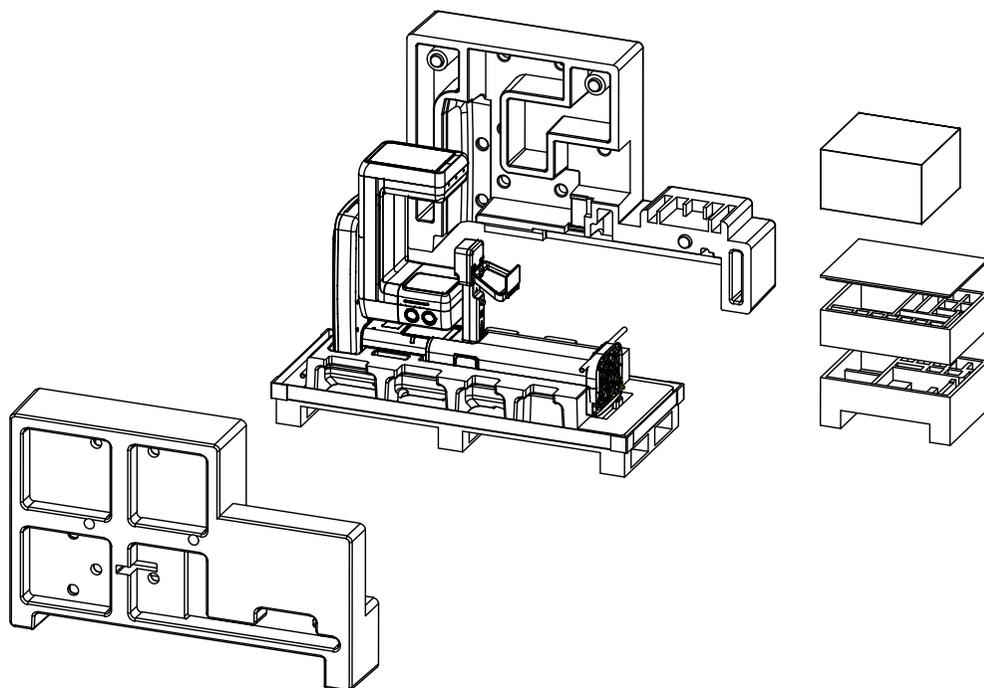
3. After removing the side cover, the main box shall look like the image below.



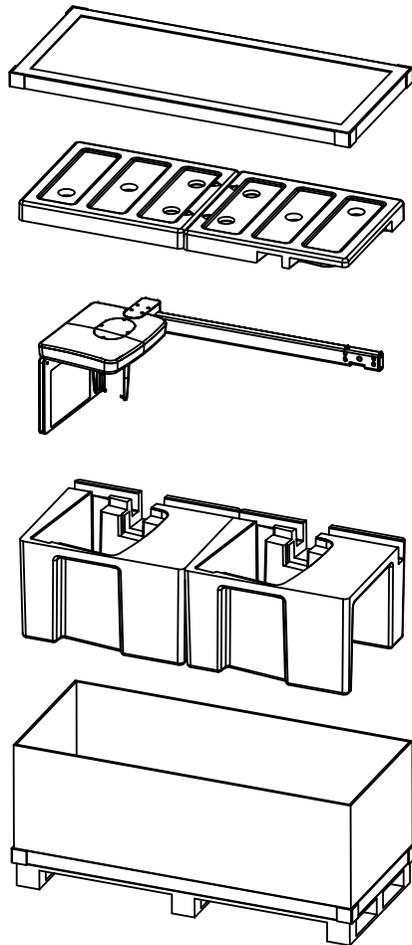
While one installer is removing the side cover, another installer must hold the box to prevent the main unit from falling.

3. Before Installing the System

4. Remove the plastic wrap covering the box with a cutter
5. Remove foams covering the Main Unit and open the accessory box, as shown in the image below.

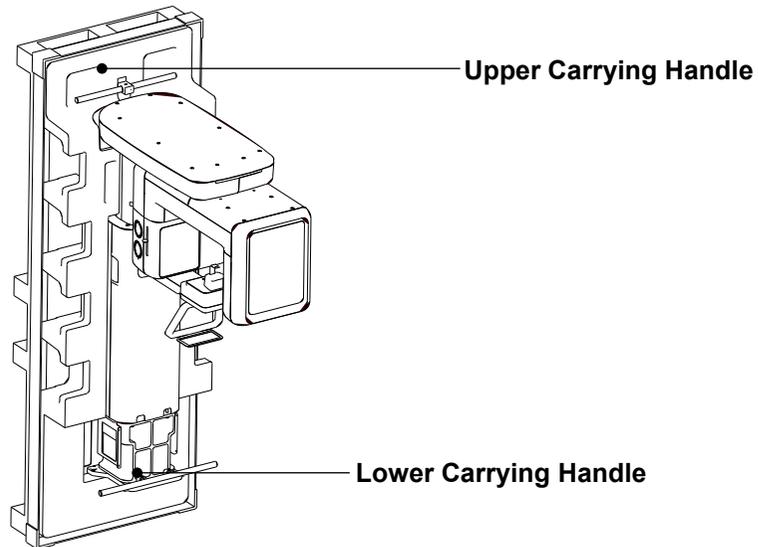


- CEPH Box Configuration

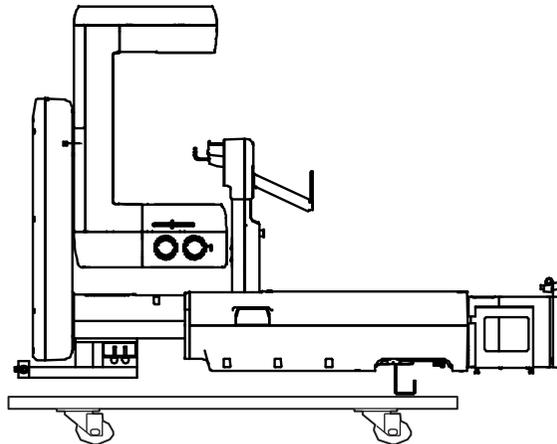


Transportation

1. Pull out the Main Unit from the pallet using the carrying handles as in the image below. (There are two handles attached to the top and bottom of the unit)

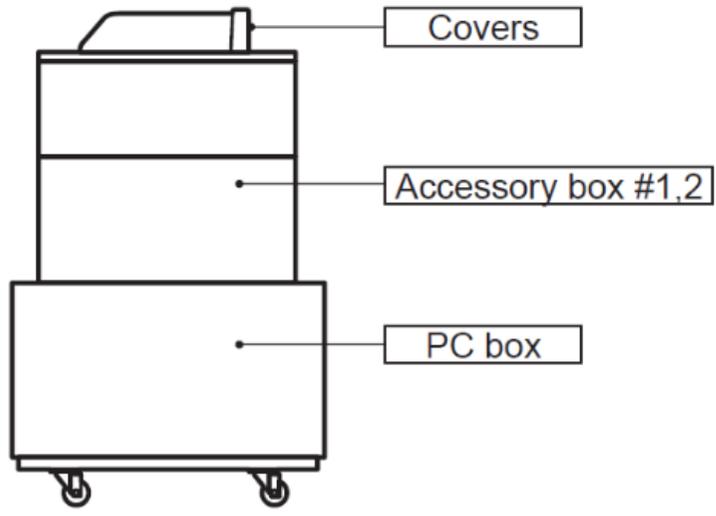


2. Put the main unit with the EPS (Main Base) on a Transport Dolly and move it to the installation site.



IMPORTANT

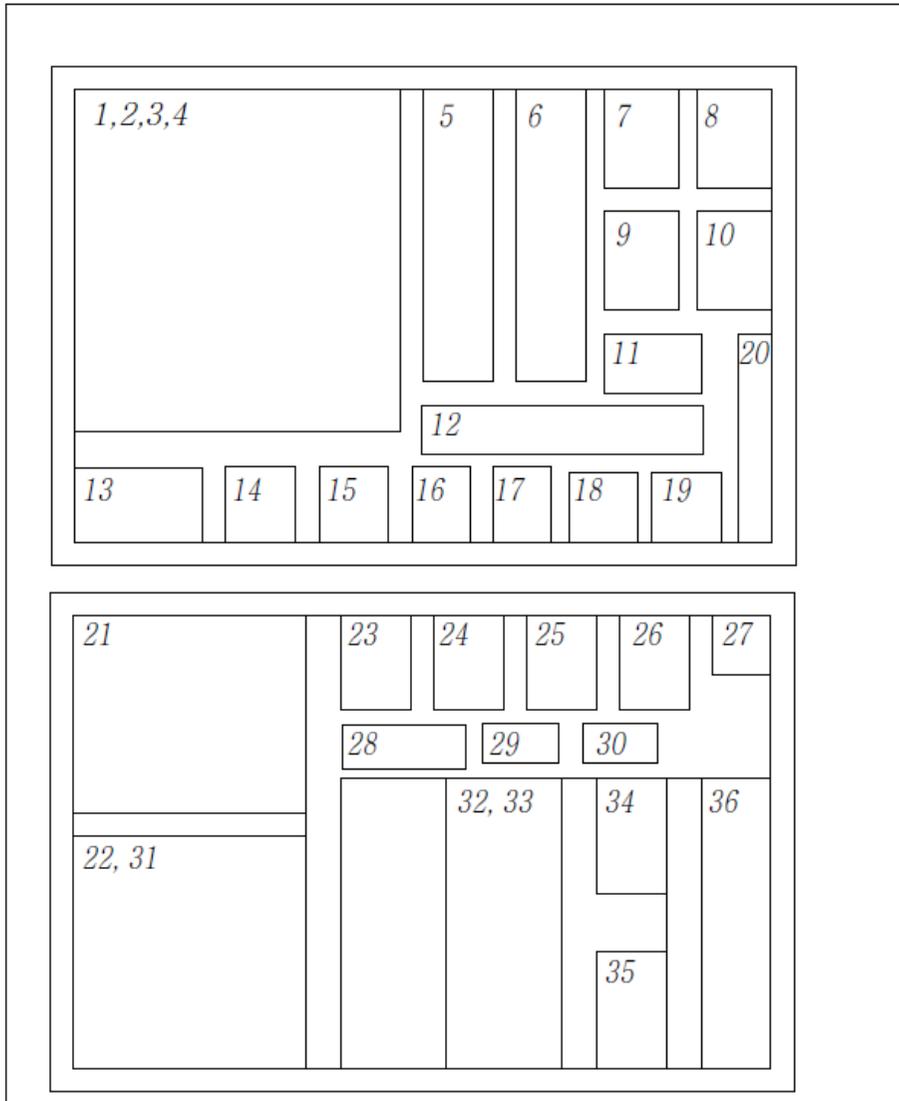
- When placing the Main Unit on the dolly, make sure that the center of the mass indicator is aligned with the center of the dolly.
- If you move the unit manually, make sure that the person holding the upper handle takes the lead.



<Transportation Example>

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	For EzDent-i	Yes <input type="checkbox"/> No <input type="checkbox"/>
		3D Viewer Manual		1	For Ez3D-i	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Installation USB			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	3D / 2D Viewer License Key			1	EzDent-i & Ez3D-i	Yes <input type="checkbox"/> No <input type="checkbox"/>
	SP Sticker			1	For Pano Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Exposure Switch			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	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 8		3		Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Carpus Plate			1	CEPH Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Handrest Sticker			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Alignment Plate			1	Floor Mount Option	Yes <input type="checkbox"/> No <input type="checkbox"/>

3. Before Installing the System

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
5	Left Blank Intentionally					
6	Anti-Static Gloves			1 pair		Yes <input type="checkbox"/> No <input type="checkbox"/>
7	Chinrest	Special		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
8	Left Blank Intentionally					
9	Chinrest	Normal		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
10	Left Blank Intentionally					
11	Sanitary Vinyl Cover	For Normal Bite		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
12	Bite /Block	Normal		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Deep*		1	*Available only in some Asian countries.	Yes <input type="checkbox"/> No <input type="checkbox"/>
		Special A		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Special B		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
13	Left Blank Intentionally					
14	Cap	For Ear Rods		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"/>
15	Left Blank Intentionally					
16	Silicon Cap	White		14		Yes <input type="checkbox"/> No <input type="checkbox"/>
17	Base Cap	White Silicon		4	Base Option	Yes <input type="checkbox"/> No <input type="checkbox"/>

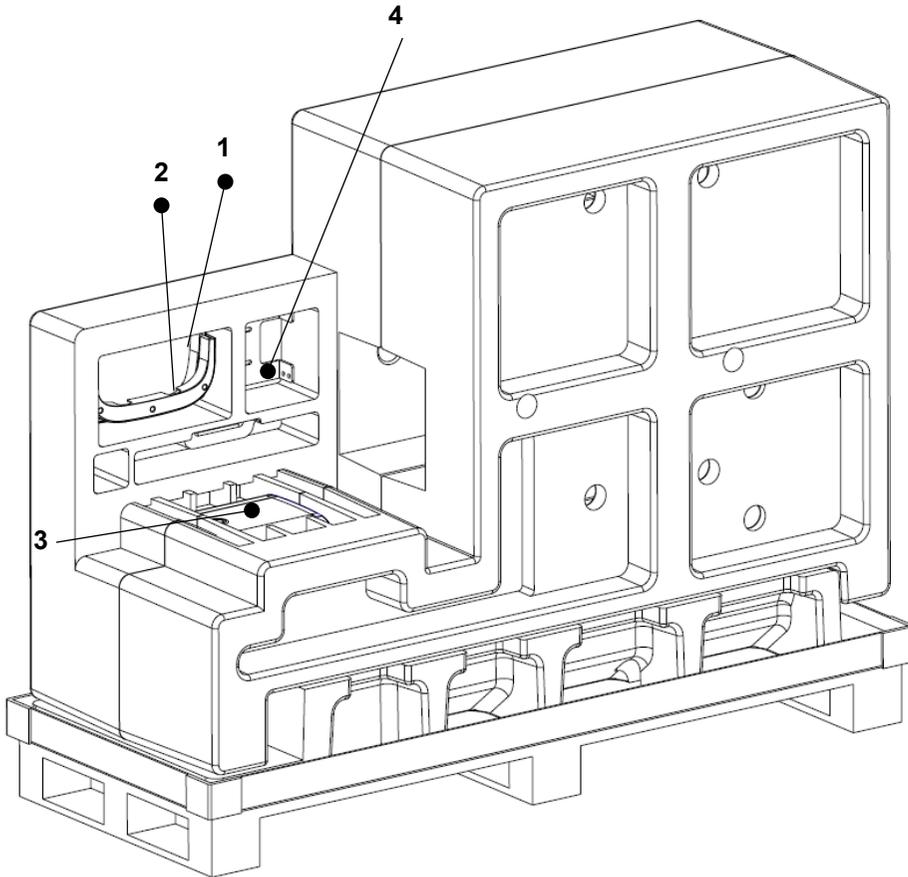
Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
18	Terminal Cap	White Silicon		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
19	Left Blank Intentionally					
20	Cable Tie			10	-	Yes <input type="checkbox"/> No <input type="checkbox"/>
21	Cable	Ethernet Cable		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Ethernet Card			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
22	Protractor			1	-	Yes <input type="checkbox"/> No <input type="checkbox"/>
23	Wrench Bolt	M10 x 25 w/ Spring and Flat Washer		4	Base Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
24	Wrench Bolt	M8 x 20		2	Base Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
25	Wrench Bolt	M8 x 20		4	Ceph Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
	C_E_Washer			4	Ceph Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
26	Truss Bolt	M4 x 6		13	Base Option	Yes <input type="checkbox"/> No <input type="checkbox"/>
27	Pan Head Screw	M4 x 6		11		Yes <input type="checkbox"/> No <input type="checkbox"/>
28	Ceph Cover	-		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Washer Head Screw	M3 x 6		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
29	Flat Head Screw	M4 x 8		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
30	Socket Set Screw	M10 x 15		4	Floor Mount Option	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"/>

3. Before Installing the System

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
32	Wall Mount Cap	Silicon		12		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wall Mount Cap	Silicon		5	For the USA only	Yes <input type="checkbox"/> No <input type="checkbox"/>
	UP / DOWN Switch Sheet			2		Yes <input type="checkbox"/> No <input type="checkbox"/>
33	UP / DOWN Switch			1	Optional	Yes <input type="checkbox"/> No <input type="checkbox"/>
	UP / DOWN Switch Holder			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	UP / DOWN Switch Sticker			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Flat Head Screw	M3 x 8		3		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Middle Wall Bracket			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wrench Bolt	M8 x 25 (2 Sems)		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Nut	M8		2		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wall Mount Cap	Silicon		4		Yes <input type="checkbox"/> No <input type="checkbox"/>
34	Wood Screw	M12 x 70		2	For Wood	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Anchor Bolt	5/16 x 60 w/ Spring and Flat Washers		4	For Concrete	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wood Screw	M8 x 60		4 (USA: 8)	For Wood	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Spring Washer	M8		4 (USA: 8)	For Concrete	Yes <input type="checkbox"/> No <input type="checkbox"/>

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
	Flat Washer	M8		4 (USA: 8)	For Concrete	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Flat Anchor Bolt	M8 x 30		4 (USA: 8)	For Concrete	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Hex Bolt	M8 x 15		4 (USA: 8)	For Concrete	Yes <input type="checkbox"/> No <input type="checkbox"/>
35	Wrench Bolt	M8 x 20 w/ Spring and Flat Washers		2	For Wall Bracket	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Nut	M8		2	For Wall Bracket	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wrench Bolt	M8 x 15 w/ Spring and Flat Washers		4	For Wall Bracket	Yes <input type="checkbox"/> No <input type="checkbox"/>
36	Wall Bracket	-		1	For the USA only	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Wall Bracket	-		1	All countries except the USA	Yes <input type="checkbox"/> No <input type="checkbox"/>

Another location



Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
1	Base Top Cover Rear	-		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Base Top Cover Front	-		1		Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Column Rear Cover			1		Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Column Bracket	-		1		Yes <input type="checkbox"/> No <input type="checkbox"/>

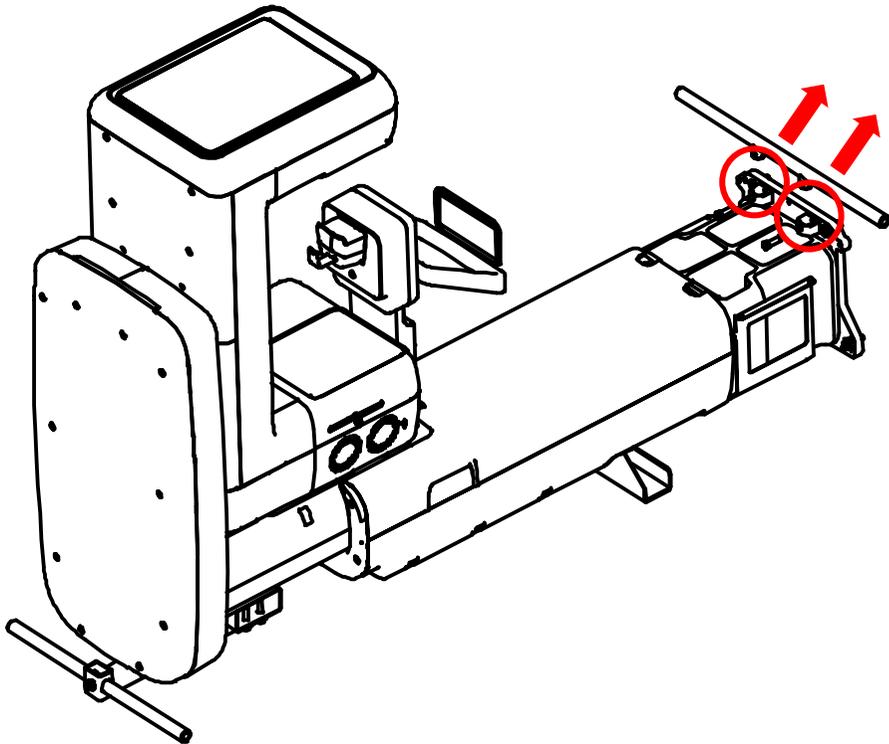
4. Installing the Equipment: Base Stand (Optional)

4.1 Assembling the Base and the Main Unit

To assemble the base and the main unit:

1. Remove bolts on the lower carrying handle using an Allen Wrench.

Required Tool	Allen Wrench	6 mm / 0.24"	
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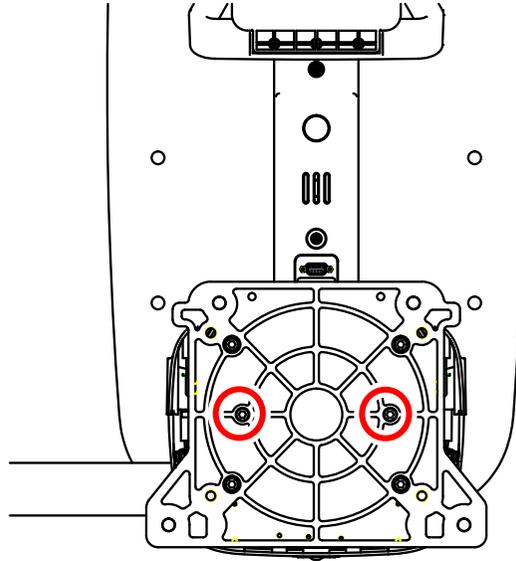


NOTICE

If you are installing the equipment on a concrete floor, go to **4.4 Fixing the base (Optional)** and completing step 1 first. Then return to the **4.1 Assembling the Base and Main Unit**.

4. Installing the Equipment: Base Stand (Optional)

- Put two wrench bolts into the holes (**see below**) and loosely tighten them with an Allen Wrench to connect the Base Unit to the Column Unit.



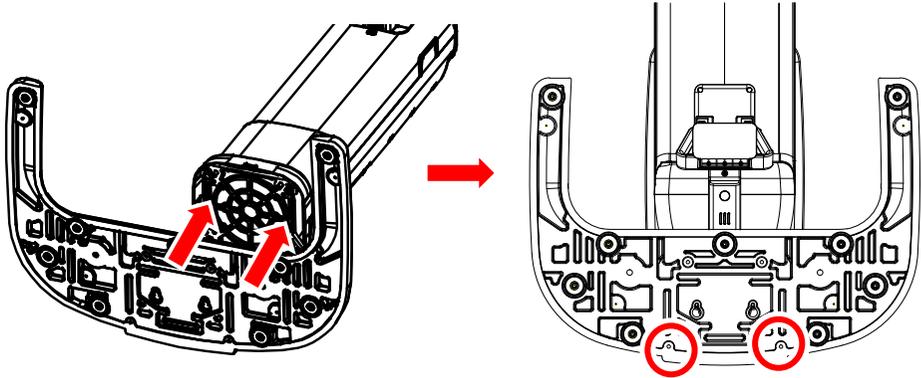
Required Tool	Allen Wrench	6 mm / 0.24"	
Parts and Accessory	Wrench Bolt	M8 x 20 - 2 pcs (Part No. 24)	

IMPORTANT

Put the bolts into the holes until about 15 mm are left outside.

4. Installing the Equipment: Base Stand (Optional)

3. Connect the Base Unit to the Column Unit using the two bolts provided. Insert the bolts into the locations indicated in the image below.

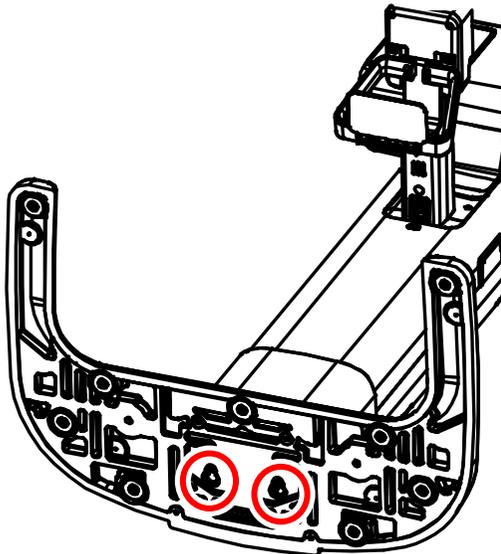


! CAUTION

Hold the base unit to keep it from falling.

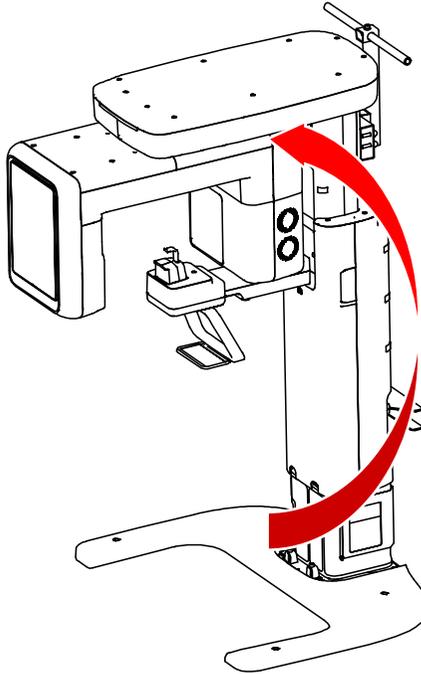
4. Tighten them with an Allen Wrench to connect the Base Unit to the Column Unit.

Required Tool	Allen Wrench	6 mm / 0.24"	
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4. Installing the Equipment: Base Stand (Optional)

5. Lift the equipment slowly using the upper carrying handle.

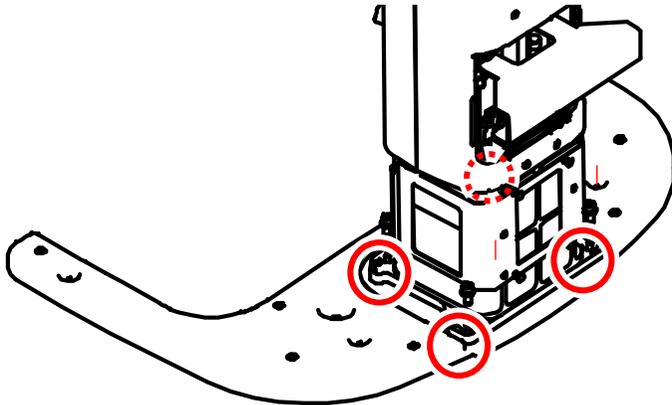


⚠ CAUTION

Keep the cables away when erecting the equipment.

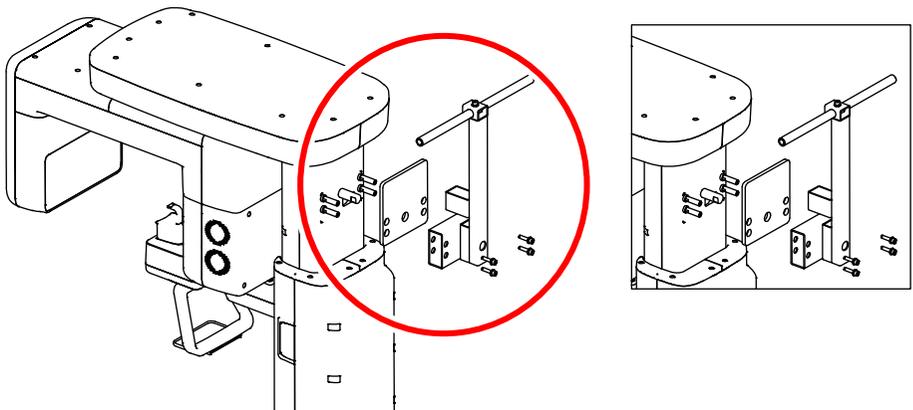
6. Insert a Wrench Bolt into each hole at four corners of the Column Unit. Tighten them with an Allen Wrench to fix the Column Unit on the Base.

Required Tool	Allen Wrench	6 mm / 0.24"	
Parts and Accessory	Wrench Bolt	M10 x 25 w/ Spring and Flat Washers – 4 pcs (Part No. 23)	



7. Remove the top carrying handle using an Allen Wrench.

Required Tool	Allen Wrench	6 mm / 0.24"	
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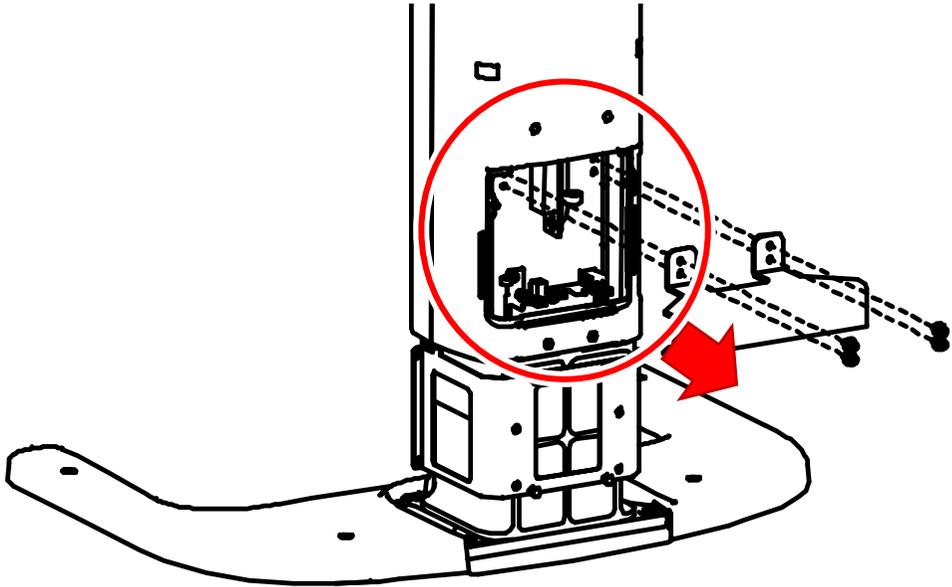


CAUTION

All four Wrench bolts, loosely tightened in steps 4 and 6, must be tightened at this step.

8. Loosen the four bolts with an Allen Wrench and remove the part attached to the Column.

4. Installing the Equipment: Base Stand (Optional)



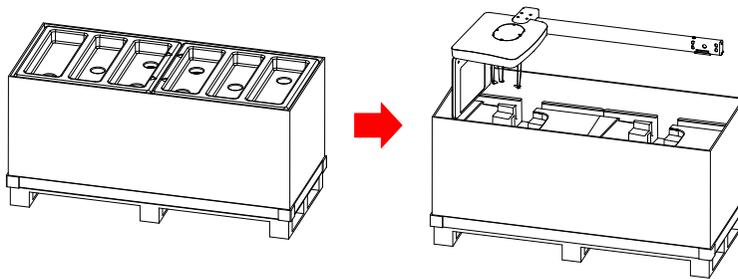
4.2 Installing the CEPH Unit (Optional)



WARNING

DO NOT hold the areas of the collimator, sensor, and tube head.

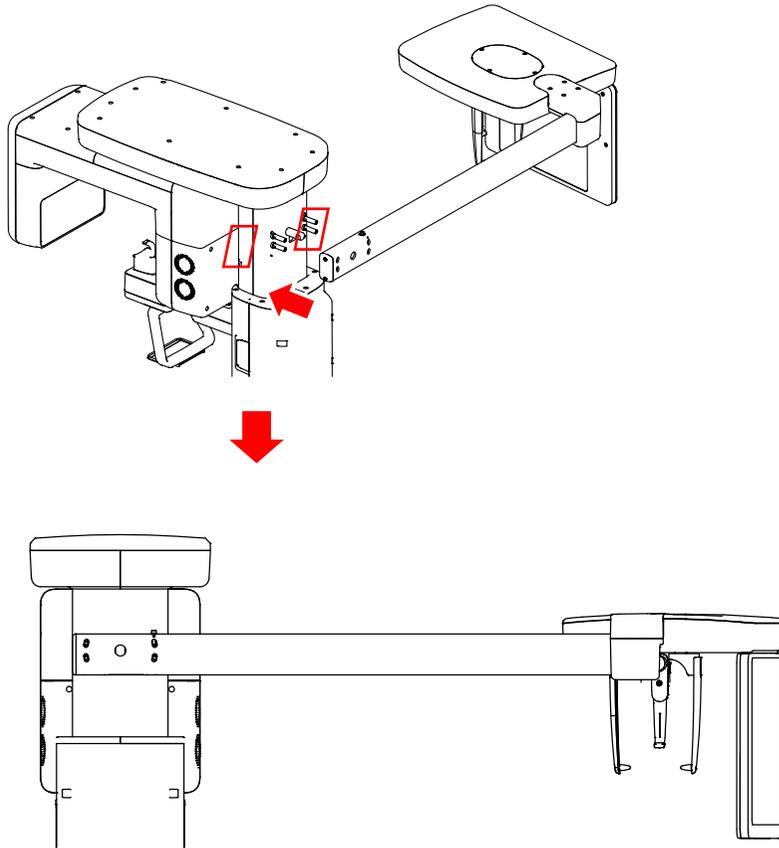
1. Open the CEPH box and take out the components.



1. Remove the plastic wrap covering the Column Unit and the CEPH cable.

4. Installing the Equipment: Base Stand (Optional)

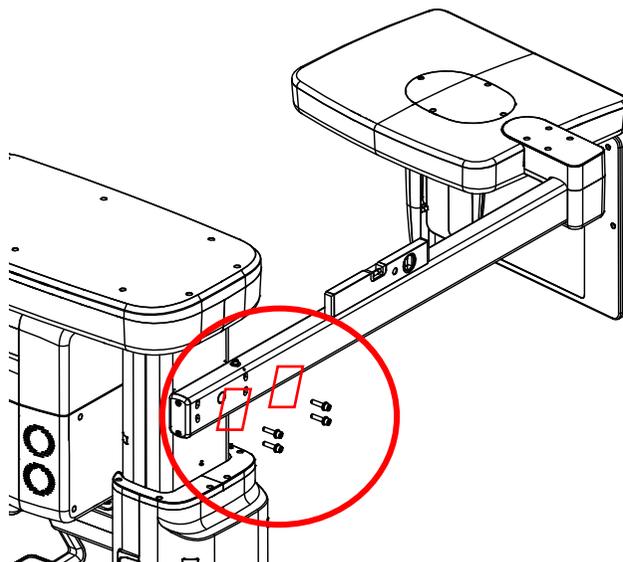
2. Push the CEPH arm in the direction indicated below. Ensure that all four studs come through holes.



3. Put the four wrench bolts into each hole and tighten with an Allen Wrench to fix the CEPH arms on the Main Unit.

Required Tool	Allen Wrench	6 mm / 0.24"	
	Allen Wrench	8 mm / 0.31"	
Parts and Accessory	Wrench Bolt (w/ C E Washer)	M8 x 20 - 4 pcs (Part No. 25)	
	C_E_Washer	4 pcs (Part No. 25)	

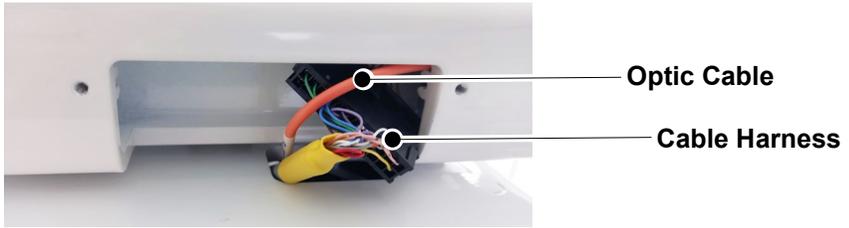
4. Installing the Equipment: Base Stand (Optional)



IMPORTANT

(If necessary) Place the Sprit level on the CEPH arm and adjust the M8 x 20 bolts.

4. Connect the Fiber Optic Cable and the Cable Harness.

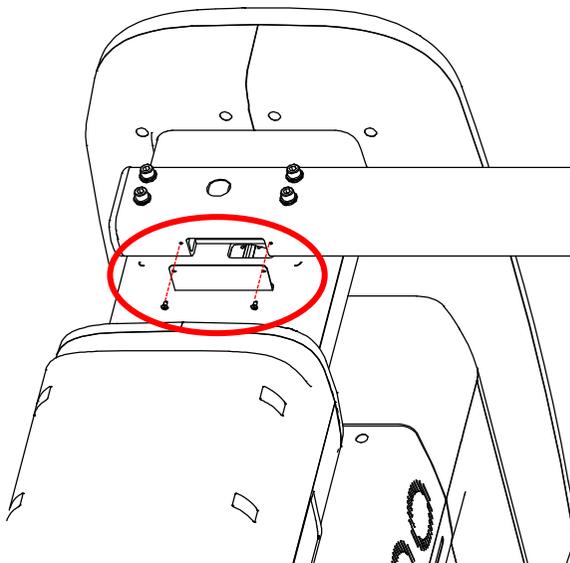


! CAUTION

- When managing the fiber optic cable,
- DO NOT bend, pull, or crush it.
 - Ensure to remove the fiber optic cable before connecting it.
 - DO NOT touch the cable's tip.
 - Insert the fiber optic cable until you hear a 'click' sound.

5. Assemble the Cable Cover using the two bolts provided.

Parts and Accessory	Washer Head Screw	M3 x 6 - 2 pcs (Part No. 28)	
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4.3 Installing the Wall and Column Brackets

Assembling the Column Bracket



WARNING

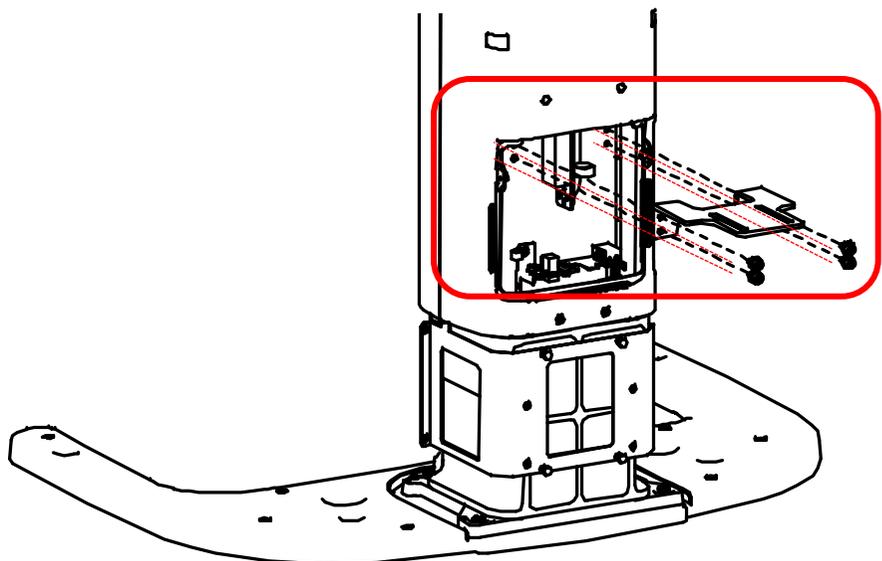
The column bracket must be installed. Otherwise, the equipment may vibrate during scanning.

1. Move the equipment close to the wall selected for the installation.
2. Remove the plastic wrap covering the Column Unit with a cutter.
3. Prepare the Column Bracket.

Parts and Accessory	Column Bracket	-	
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4. Assemble the column bracket on the back of the Column Unit using the four Wrench Bolt provided.

Required Tool	Allen Wrench	6 mm / 0.24"	
Parts and Accessory	Wrench Bolt	M8 x 15 w/ Spring and Flat Washers - 4 pcs (Part No. 35)	



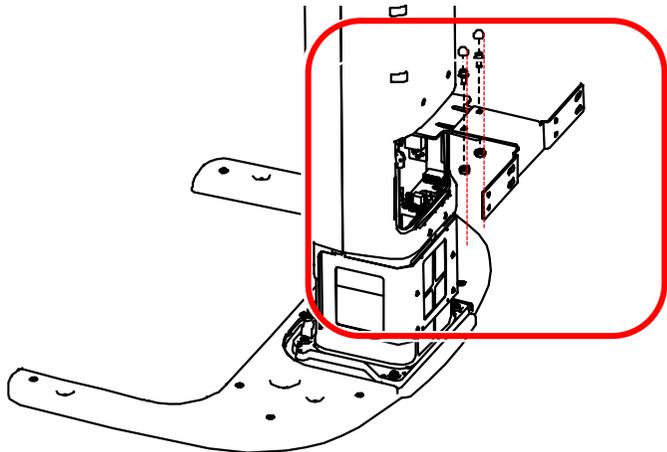
Combining Column and Wall Brackets

1. Prepare the Wall Bracket.

Parts and Accessory	Wall Bracket	-	
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2. Connect the Wall Bracket to the Column Bracket previously assembled in the Column Unit's back, using two bolts and nuts provided.

Required Tool	Allen Wrench	6 mm / 0.24"	
	Monkey Wrench	-	
Parts and Accessory	Wrench Bolt	M8 x 20 w/ Spring and Flat Washers (Part No. 35) - 2 pcs	
	Nut	M8 - 2 pcs (Part. No. 35)	

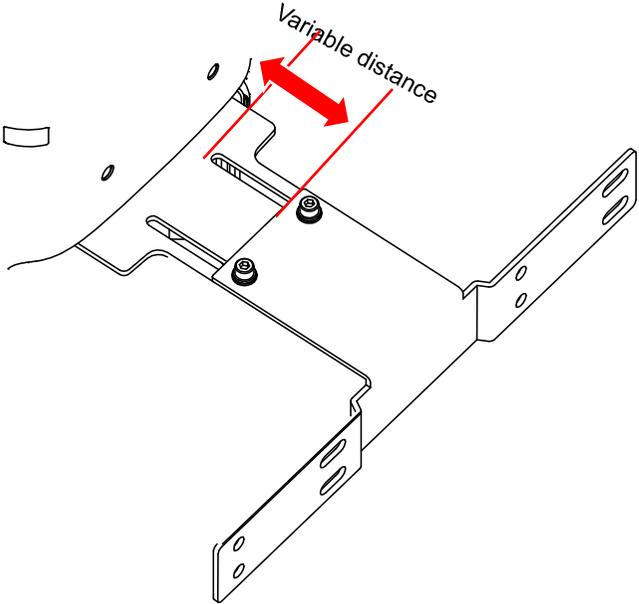


DO NOT tighten the bolts fully yet.

4. Installing the Equipment: Base Stand (Optional)

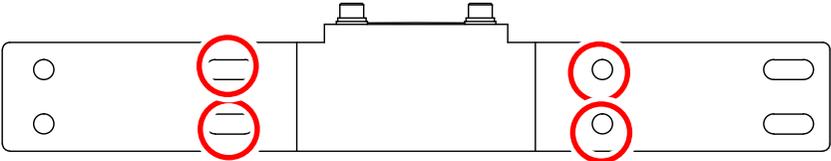
Marking Points on the Wall

- 1. Move the equipment close to the installation site.
- 2. Move the wall bracket until it touches the wall.



- 3. Mark the anchor bolt locations on the wall.

Required Tool	Marker	N/A	
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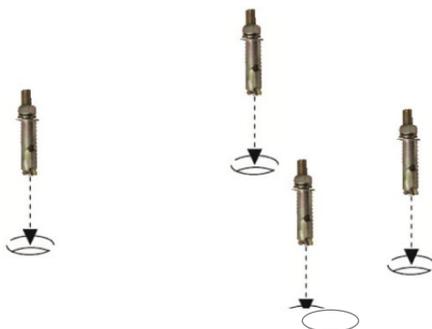
Drilling on the Wall

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.

Required Tool	Hammer	N/A	
Parts and Accessory	Flat Anchor Bolt	M8 x 30 (Part. No. 34) - 4 pcs	



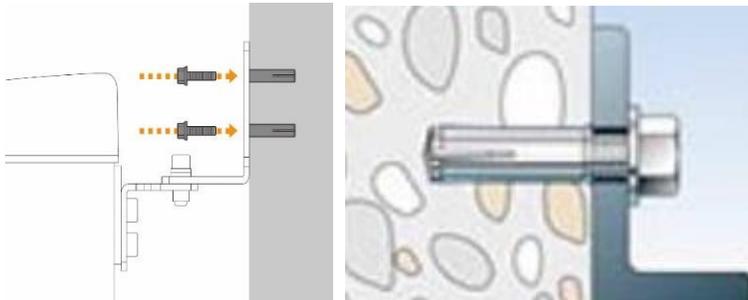
4. Using the hammer, insert an EHS tool into the inner bolt.

Required Tool	Hammer	N/A	
Parts and Accessory	EHS tool	EAW H 8 x 30	

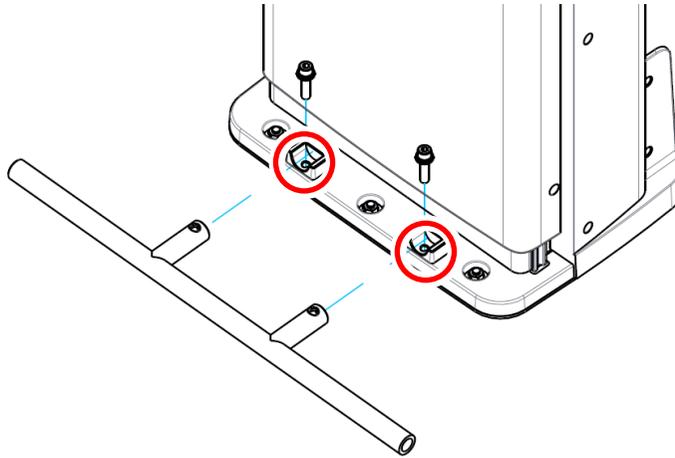
Combining the Equipment with the Anchor Bolts

1. Place the equipment on the alignment plate while observing four Hex bolts appropriately inserted through each hole.

Required Tool	Torque wrench	Spanner type	
Parts and Accessory	Hex Bolt	M8 x 15 (Part. No. 34)	
	Spring washer	M8 (Part. No. 34)	
	Flat washer	M8 (Part. No. 34)	



2. Remove the Lower carrying handle.

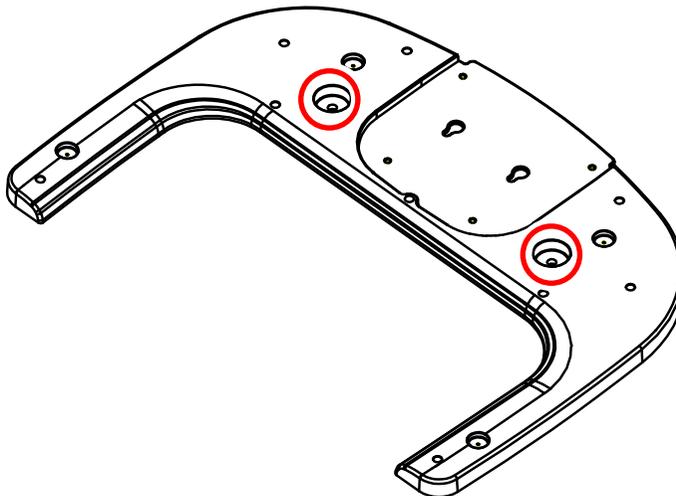


4.4 Fixing the Base (Optional)

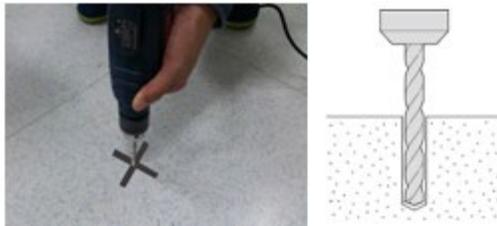
Concrete Floor

Required Tool	Hammer Drill	L = 200 mm (7+-.9")	
	Ratchet Wrench	Tips: 3 mm - 8 mm (0.12" - 0.3")	
	Hammer	N/A	
Parts and Accessory	Anchor Bolt	5/16 x 60 w/ Spring and Flat Washers - 2 pcs (Part No. 34)	
	Spring washer	M8 - 2 pcs (Part No. 34)	

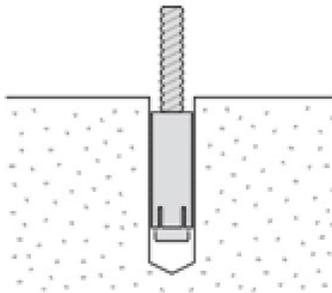
1. Place the Base Unit on the floor where you plan to install the equipment. And mark two locations to insert anchor bolts. (**see below**)



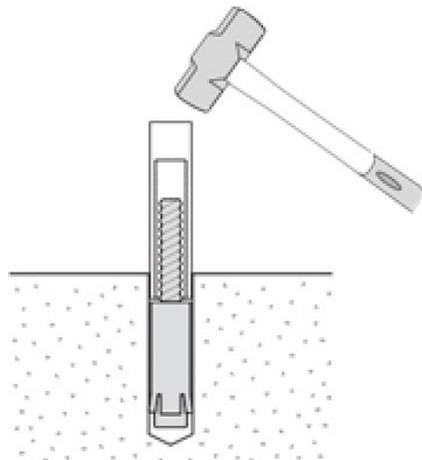
2. Drill the floor holes of size 12 mm x 30 mm (depth) using the concrete hammer drill.



3. Remove the debris and clean the holes using the dust pump.
4. Remove nuts and washers, and put the anchor bolts into the holes.

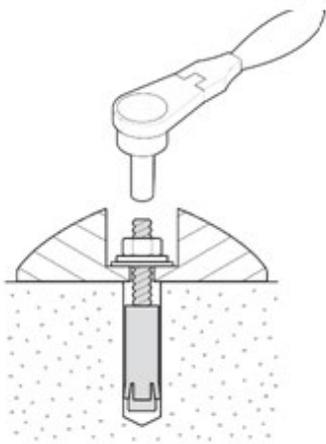


5. Secure the anchor bolts with the hammer.



4. Installing the Equipment: Base Stand (Optional)

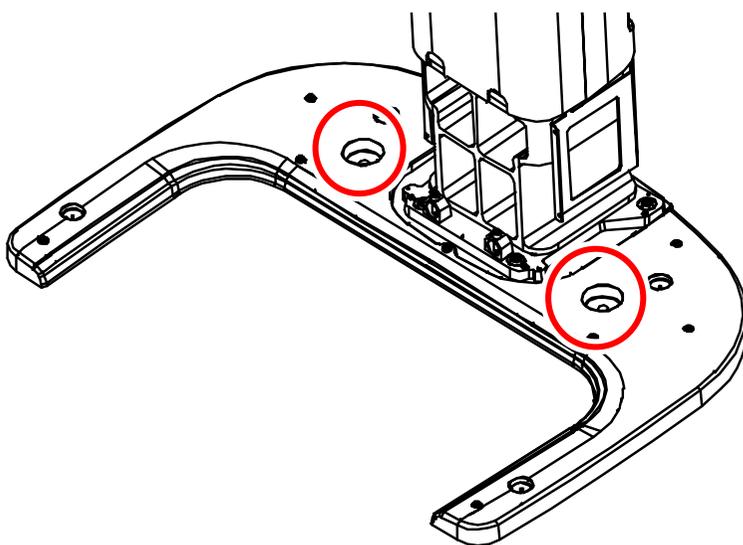
6. Place the base unit combined equipment in the proper position, and lock the nuts and washers using a ratchet wrench.



Wooden Floor

Required Tool	Hammer Drill	L = 200 mm (7.9")	
Parts and Accessory	Wood Screws	M12 x 70 – 2 pcs (Part No. 34)	

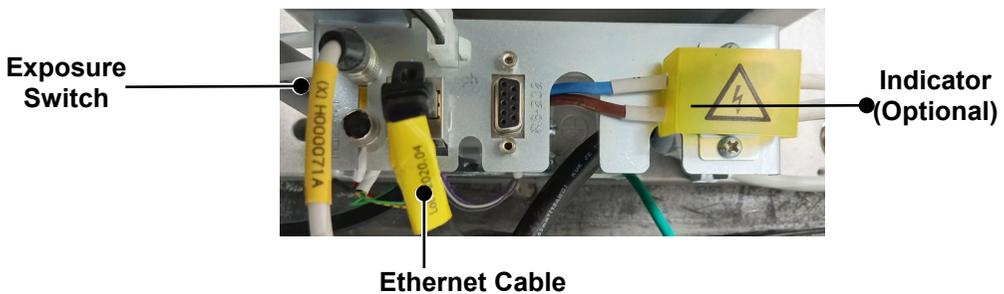
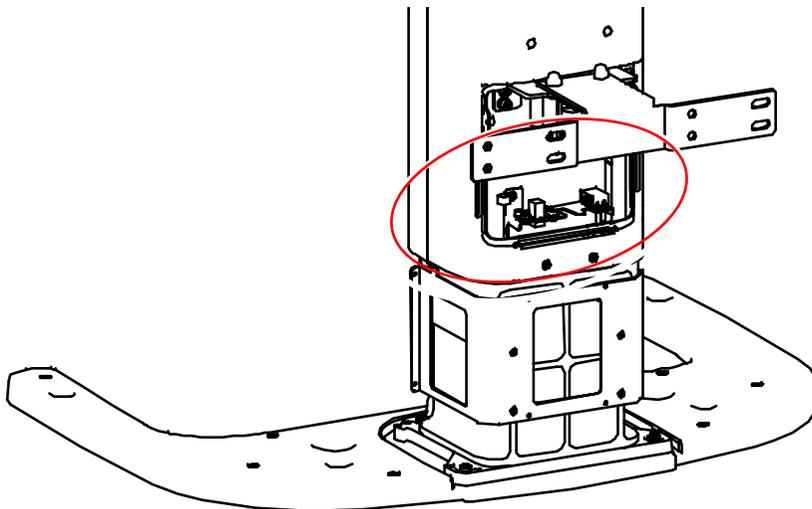
1. Secure the base unit using the wood screws provided.



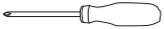
4.5 Connecting the Cables to the Equipment.

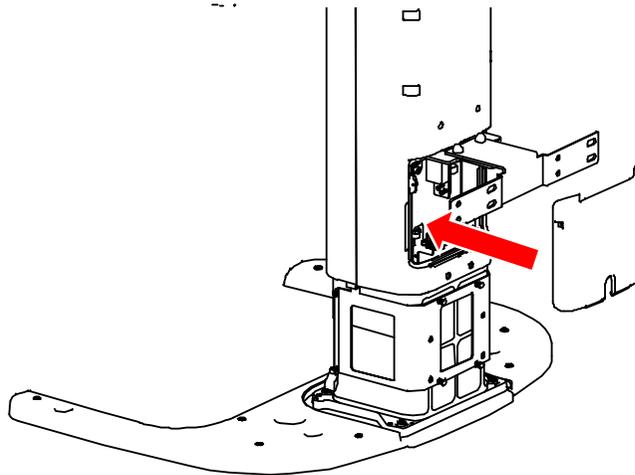
1. Connect the Ethernet and other cables in the back of the Column Unit, as shown in the figure.

Parts and Accessory	Ethernet Cable	(Part No. 21)	
	Cable Tie	(Part No. 20)	
	Exposure Switch	(Part No. 2)	



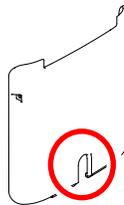
2. Assemble the Column Rear Cover with two truss bolts and a screwdriver. (see below)

Required Tool	Cross Head Screwdriver w/ Magnetic Tip	L = 200 mm (7.9")	
Parts and Accessory	Column Rear Cover	-	
	Truss Bolt	M4 x 6 – 2 pcs (Part No. 27)	



NOTICE

Ensure that all cables (connected in step 1) come out of the hole located at the Column Rear Cover's center.



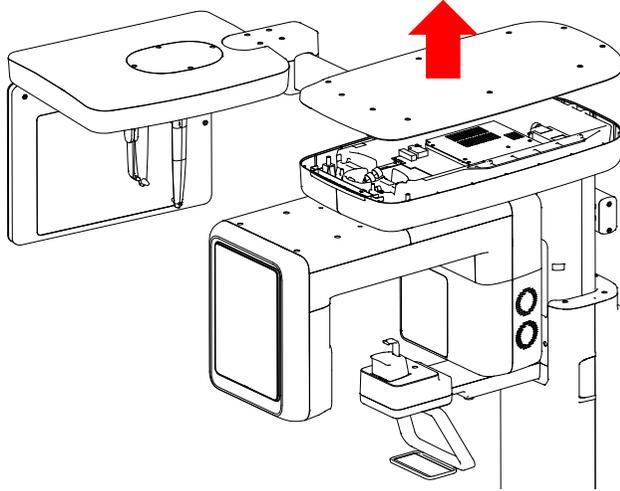
NOTICE

Use the Cable Tie (Part No. 20) to tie the cables before putting the Column Rear Cover.



4.6 Removing the Transportation Safety Bolts

1. Lift the Vertical Frame Unit Cover, as shown in the figure.



2. Remove two Safety Bolts (**see important**) along with their tags.

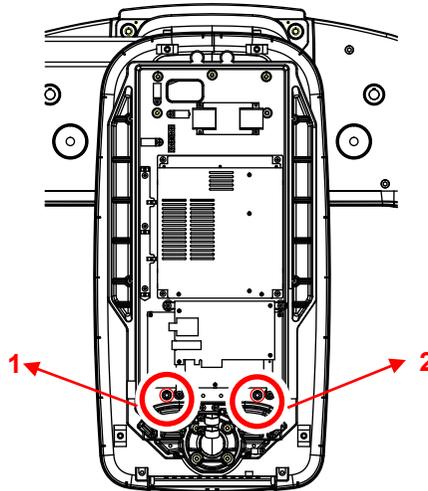
Required Tool	Allen Wrench	6 mm / 0.24"	
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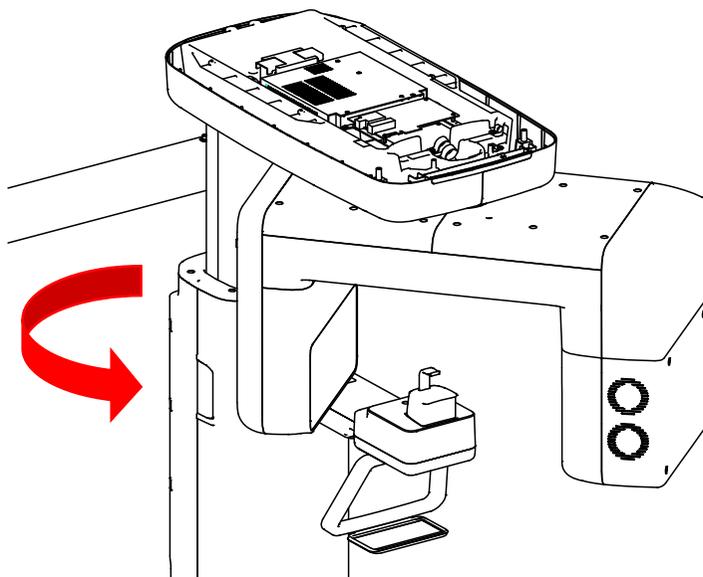
Avoid damaging the cables when you are removing the safety bolts.



The Safety Bolts are located inside the Vertical Frame Unite, as indicated in the image below.



3. Turn the Rotator Unit clockwise (DO NOT place back the Vertical Frame Cover yet.)



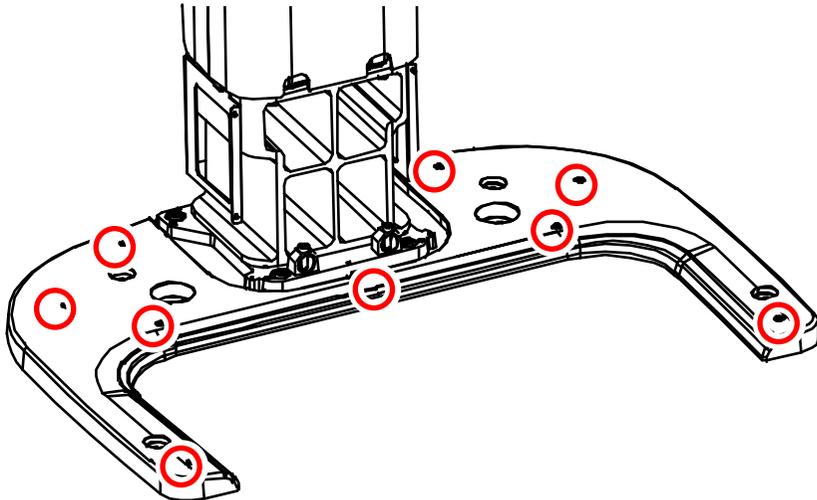
4.7 Leveling the Equipment

Required Tool	T-shaped Hex Wrench	8 mm / 0.3"	
	Spirit Level	N/A	

IMPORTANT

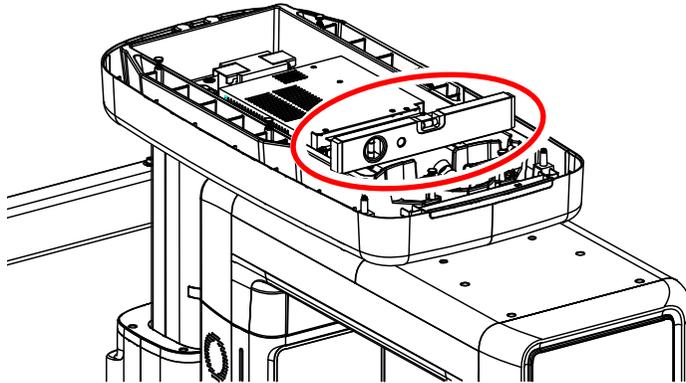
Ensure to place the Spirit Level on the indicated locations in this manual for an accurate reading.

1. Prepare a Spirit Level.
2. Turn the Rotating Unit clockwise so that the X-ray tube head faces the front.
3. Turn all nine screws in marked locations clockwise.

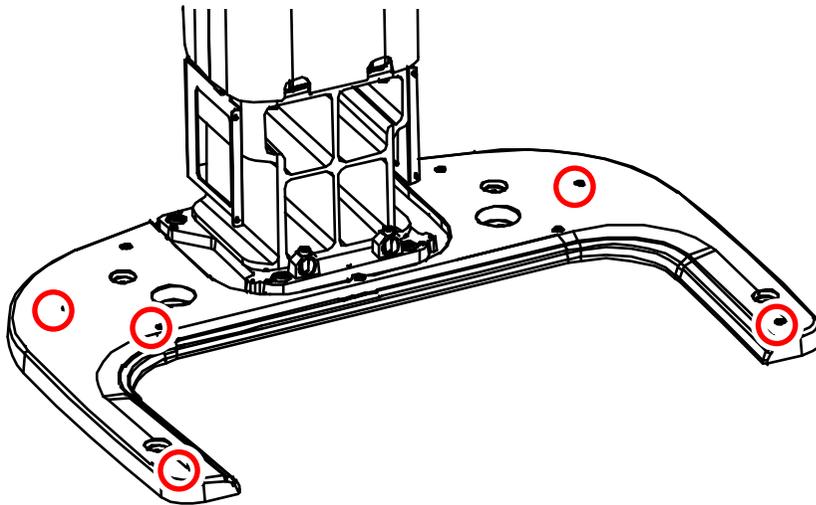


Leveling Right and Left

1. Place the Spirit Level horizontally, as shown in the image.

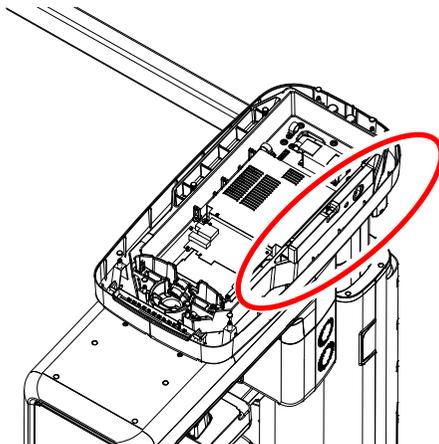


2. Turn Screws in marked locations left and right until the Sprit Level bubble comes to the center.

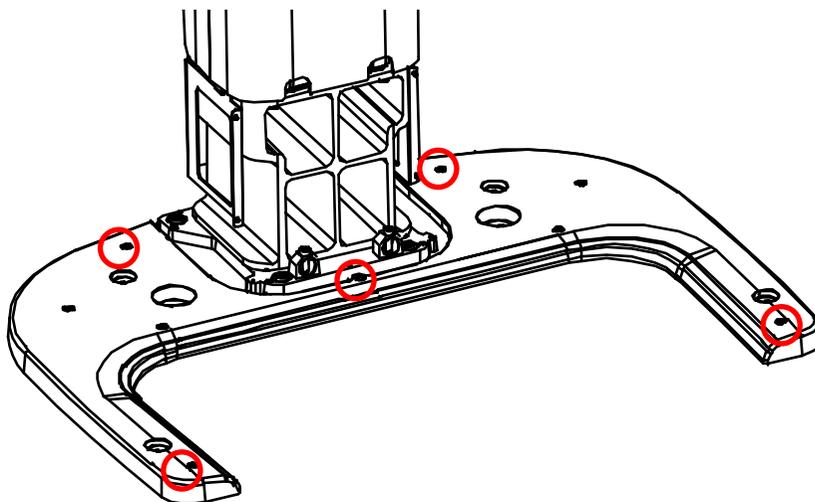


Leveling the Front and Back

1. Place the Spirit Level vertically, as shown in the image.



2. Turn Screws in marked locations left and right until the Spirit Level bubble comes to the center.

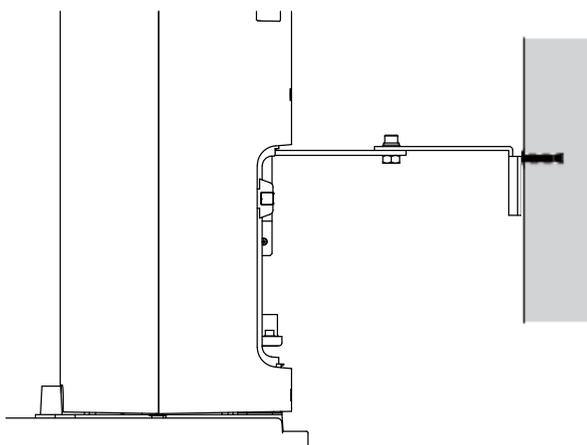


3. When leveling the equipment is completed, ensure to tighten all eight Screws until they no longer move.

4.8 Tightening the Bolts

1. Tighten two bolts conjoining the column and wall brackets.

Required Tool	Allen Wrench	6 mm / 0.24"	
	Monkey Wrench	N/A	

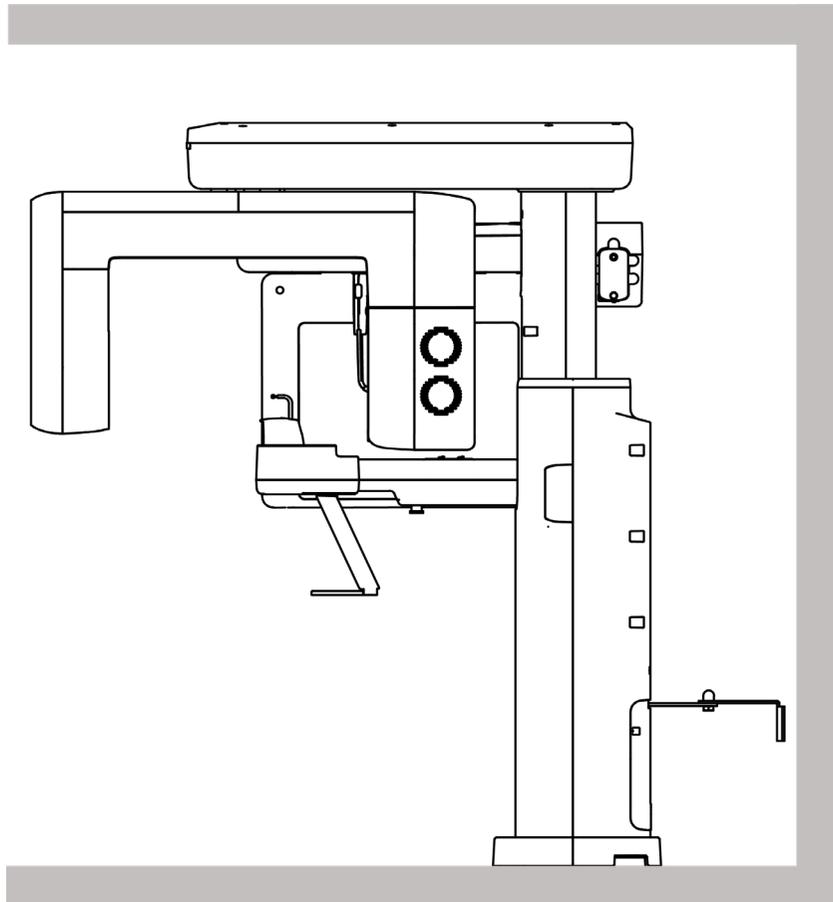


5. Installing the Equipment: Wall Mount

5.1 Installing the Equipment

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

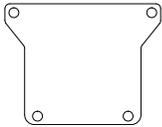
Accurate marking is of critical importance for a successful installation.

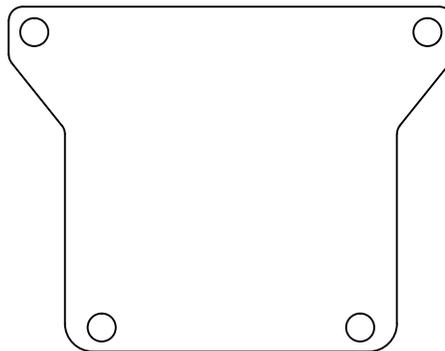
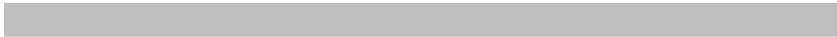


Installation Overview

Marking Points on the Floor

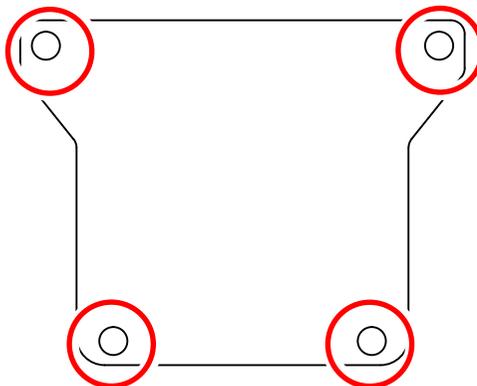
1. Put the aligning plate on the floor near the wall where you plan to install the equipment, as shown in the figure.

Parts and Accessory	Alignment Plate	(Part No. 4)	
----------------------------	-----------------	--------------	---



2. Mark 4 anchor bolt holes on the floor.

Required Tool	Marker	N/A	
----------------------	--------	-----	---



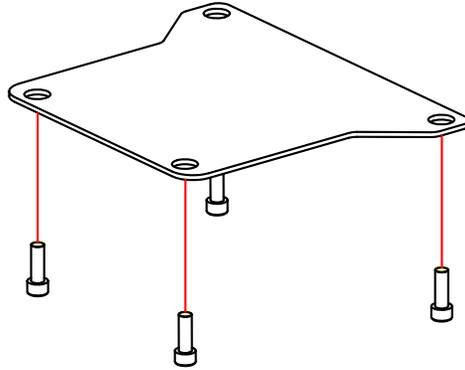
Drilling the Floor

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 anchor bolts into the holes and attach them with the hammer. Verify that the anchors are secured.

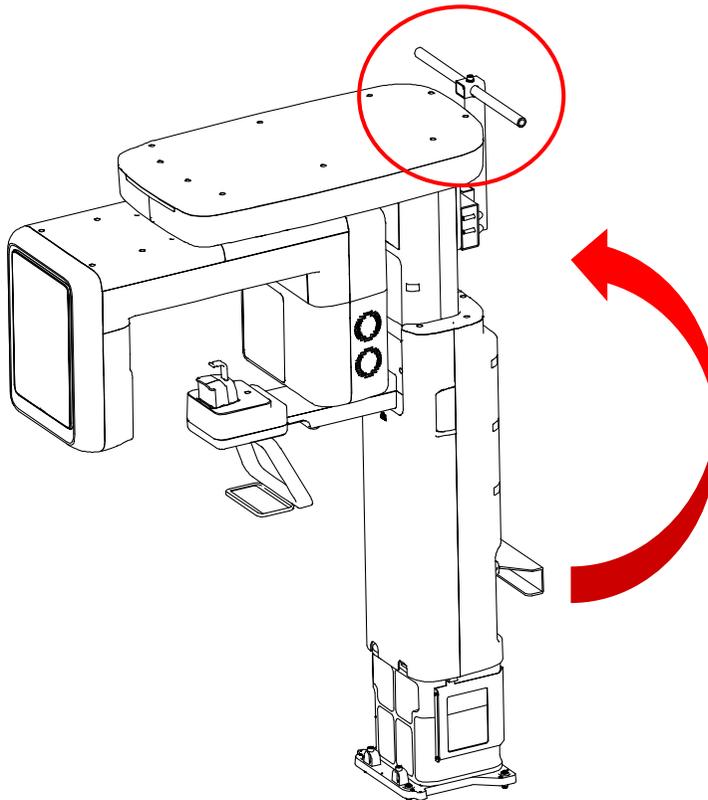
Required Tool	Hammer Drill	L = 200 mm (7.9")	
Parts and Accessory	Anchor Bolt	5/16 x 60 w/ Spring and Flat Washers - 4 pcs (Part No. 34)	

Combining the Equipment with the Anchor Bolts

1. Insert an Anchor Bolt into each hole on the Alignment Plate.



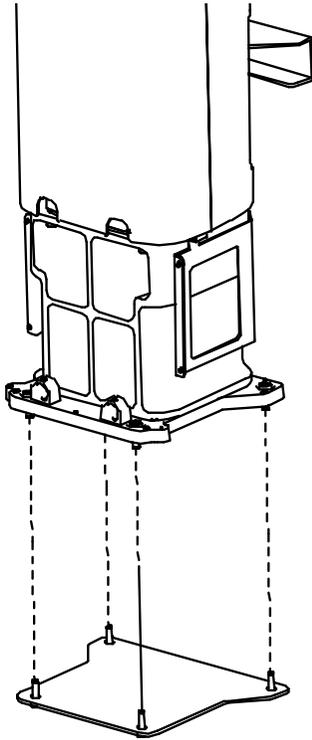
2. Grab the upper carrying handle and lift the equipment slowly until it stands on the floor, as shown in the image below.



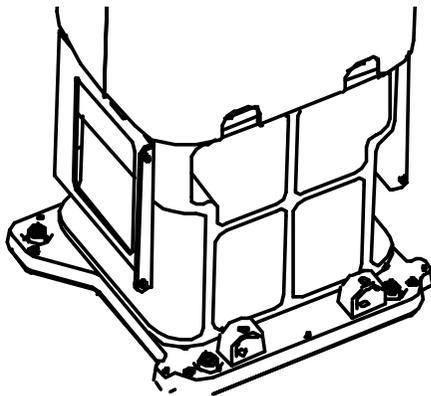
Be careful not to damage the cables before erecting the equipment. Keep them clear of the equipment.

5. Installing the Equipment: Wall Mount

3. Place the equipment over the Alignment Plate to insert each Anchor Bolt into a corresponding hole on the Column Bottom.



4. Place the washers and nuts on Anchor Bolts. Tighten each nut loosely with a fastener.



IMPORTANT

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

5.2 Installing the CEPH Unit (Optional)

Please refer to section **4.2 Installing the CEPH Unit (Optional)**.

5.3 Installing the Wall and Column Brackets

Please refer to section **4.3 Installing the Wall and Column Brackets**.

5.4 Connecting the Cables to the Equipment

Please refer to section **4.5 Connecting the Cables to the Equipment**.

5.5 Removing the Transportation Safety Bolts

Please refer to section **4.6 Removing the Transportation Safety Bolts**.

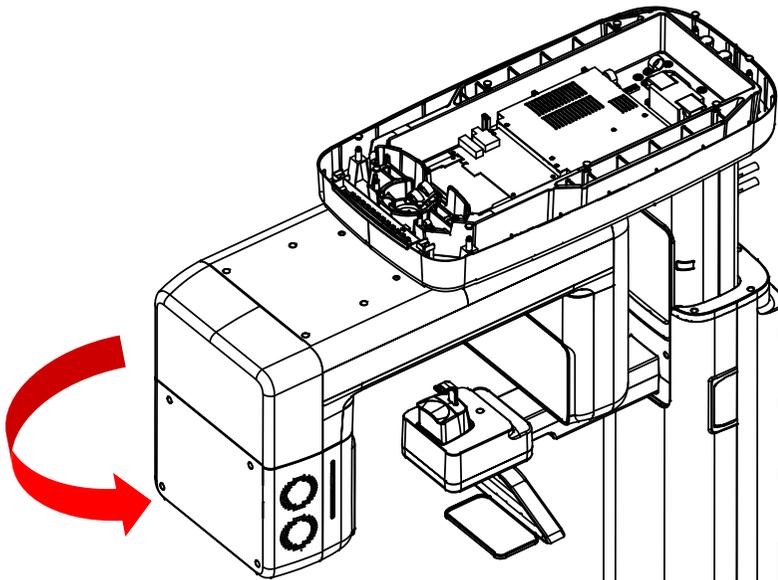
5.6 Leveling the Equipment

Required Tool	T-shaped Hex Wench	8 mm / 0.3"	
	Spirit Level	N/A	

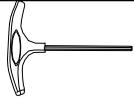
IMPORTANT

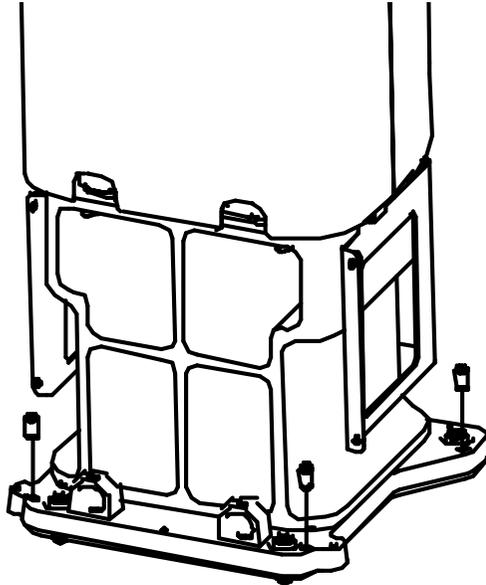
Ensure to place the Spirit Levels only on the following figures' locations for an accurate reading.

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.

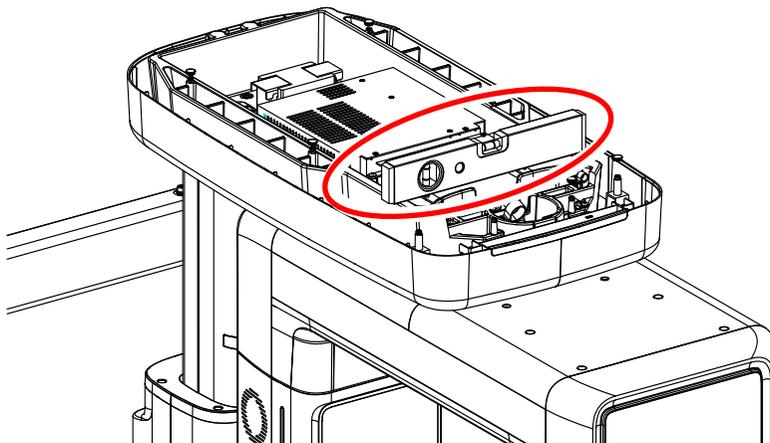


- Put the set screws into the four holes and turn them clockwise with the hex wrench until they touch the aligning plate.

Required Tool	T-shaped Hex Wrench	8 mm / 0.3"	
Parts and Accessory	Set Screw	M10 x 15 – 4 pcs (Part No. 30)	

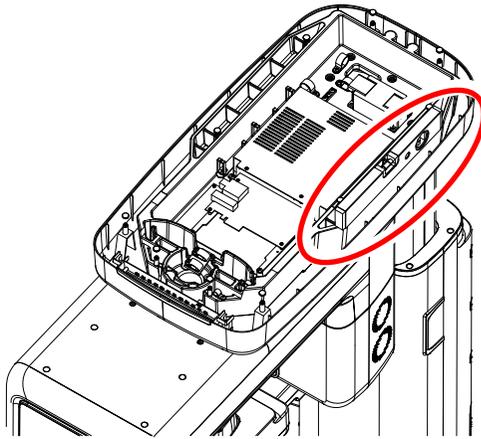


- Place the Spirit Level, as shown in the figure.

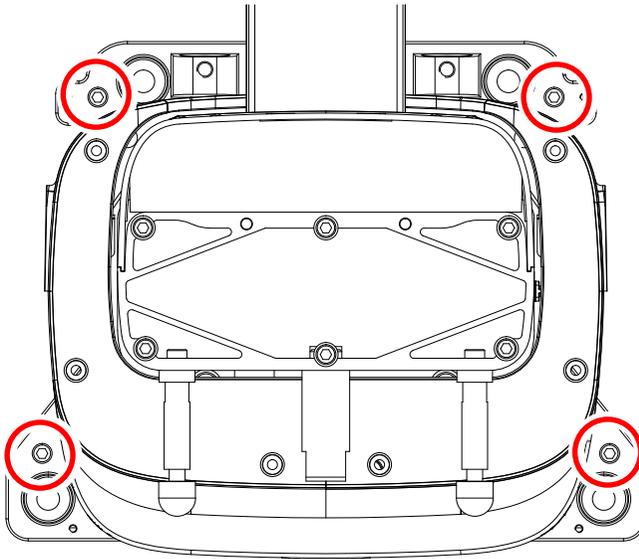


5. Installing the Equipment: Wall Mount

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



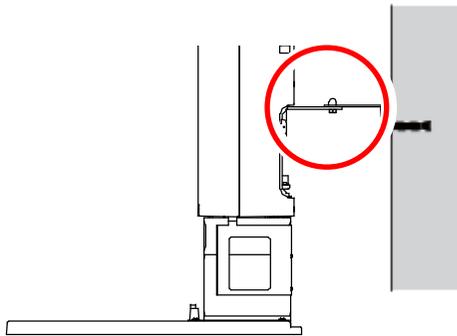
6. Tighten the nuts in the anchored bolts on the floor.



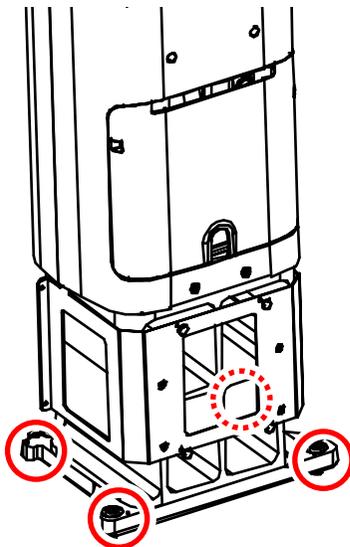
5.7 Tightening the Bolts

1. Tighten two bolts conjoining the Column and wall bracket.

Required Tool	Allen Wrench	6 mm / 0.24"	
	Monkey Wrench	N/A	



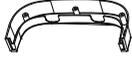
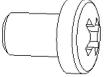
2. Tighten the nuts in the anchored bolts.



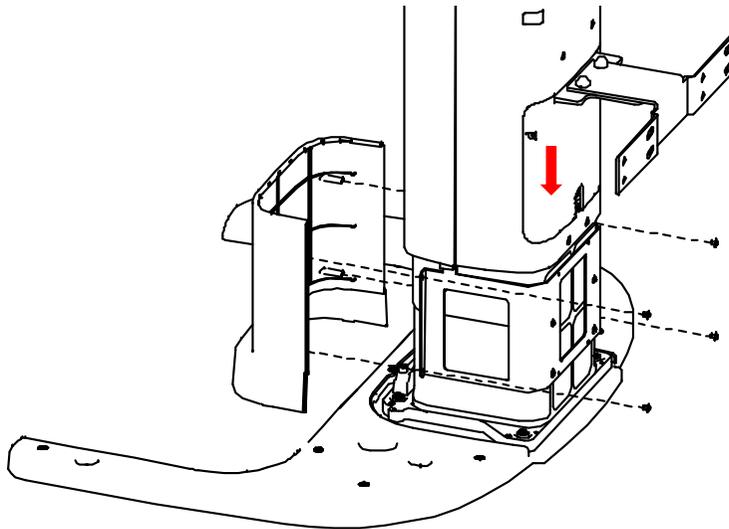
6. Completing Miscellaneous Works

6.1 Assembling Various Covers

Base Top Cover Front

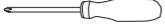
Required Tool	Cross Head Screwdriver w/ Magnetic Tip	L = 200 mm (7.9")	
Parts and Accessory	Base Top Cover Front	-	
	Pan Head Screw	M4 x 6 – 4 pcs (Part No. 27)	
	Silicon Cap (White)	4 pcs (Part No. 16)	

1. Assemble the Base Top Cover Front in front of the Column Unit with 4 truss bolts and a screwdriver. (**see below**)

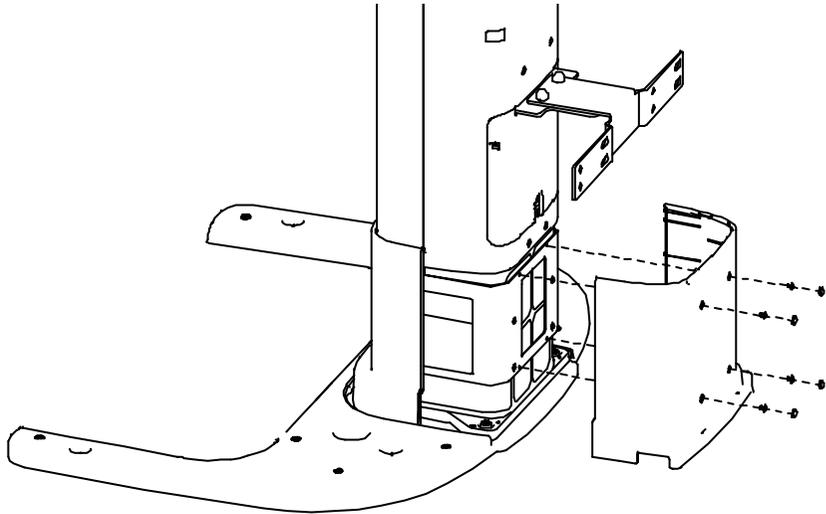


2. Put a silicon cap (white) into each hole to complete the step.

Base Top Cover Rear

Required Tool	Cross Head Screwdriver w/ Magnetic Tip	L = 200 mm (7.9")	
Parts and Accessory	Base Top Cover Rear	-	
	Pan Head Screw	M4 x 6 – 4 pcs (Part No. 27)	
	Silicon Cap (White)	4 pcs (Part No. 16)	

1. Assemble the Base Top Cover Rear in the Column Unit's back with two truss bolts and a screwdriver. (see below)



2. Put a silicon cap (white) into each hole to complete the step.

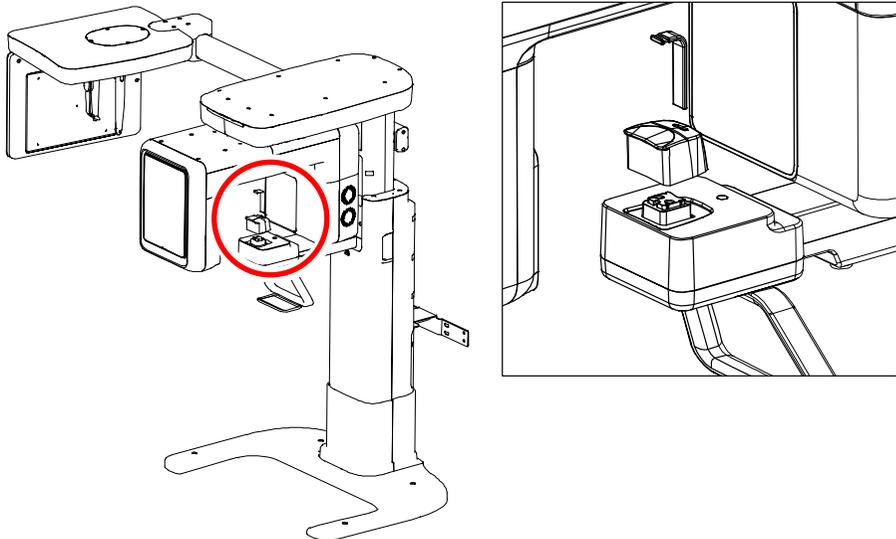
6.2 Assembling the Chinrest and Bite

IMPORTANT

Must complete assembling the Temple Supports and the Bite Block after acquiring a test image.

1. Insert the normal Chinrest and the normal Bite Block into the unit. (see below)

Parts and Accessory	Chinrest (Normal)	1 pc (Part No. 9)	
	Bite (Normal)	1 pc (Part No. 12)	

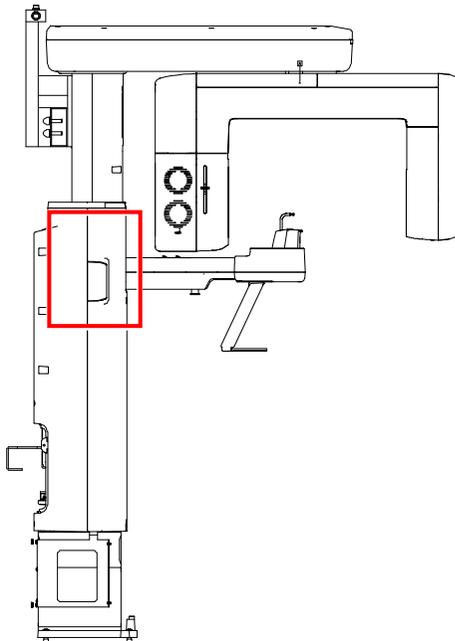


6.3 Installing the Switch Holders

Parts and Accessory	UP / DOWN Switch Holder	1 pc (Part No. 33)	
	UP / DOWN Switch	Optional - 1 pc (Part No. 33)	
	Flat Head Screw	M3 x 8 – 3 pcs (Part No. 33)	
	Sticker	(Part No. 33)	

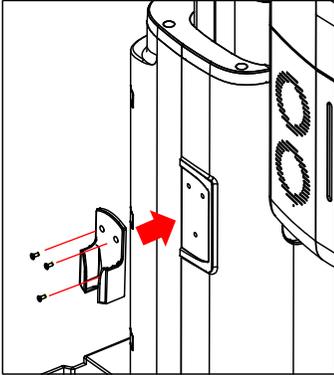
UP / DOWN Switch / Switch Holder

1. Choose a place where you want to install a UP/DOWN Switch Holder (You can install the holder on either the left or right side of the equipment).

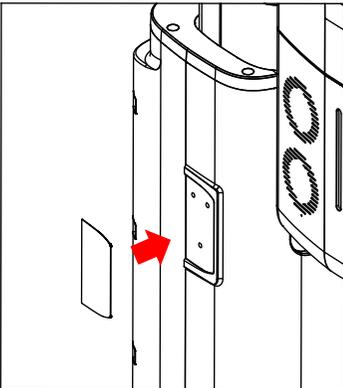


6. Completing Miscellaneous Works

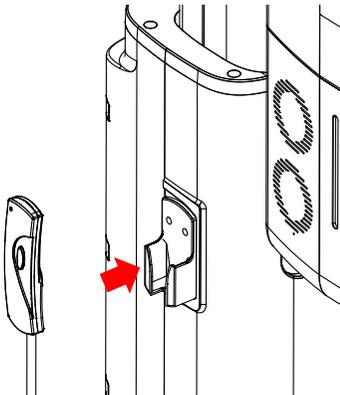
2. Assemble the UP/DOWN Switch Holder: Insert three Truss Bolts into holes on the holder (see below) and tighten them with a crosshead screwdriver until they no longer move.



3. Attach a sticker on the other side of the equipment where you did not install the UP/DOWN Switch Holder

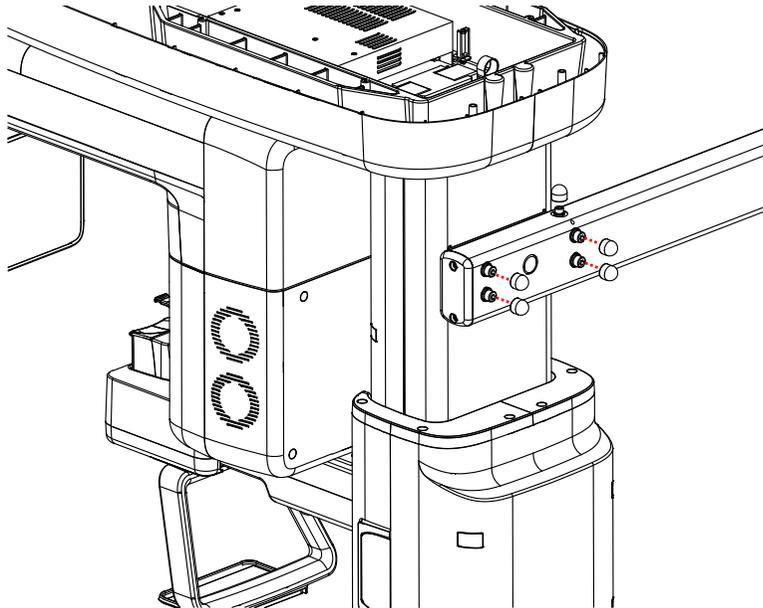


4. Hang the UP/DOWN Switch on the holder.



6.4 Installing the real miscellaneous works

1. Tighten the Wrench Bolts connecting the CEPH Arm (**see below**) until they no longer move.
2. Put a Silicon Cap on each bolt's top.

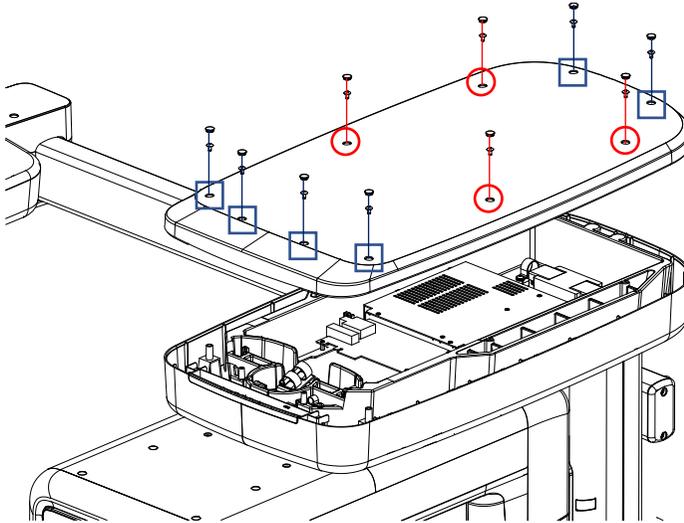


6. Completing Miscellaneous Works

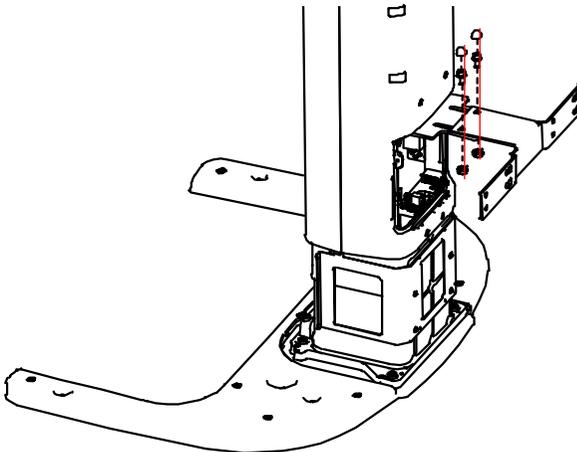
3. Assemble the Vertical Top Cover with six Pan Head Screws and four Truss Bolts; once all bolts are tightened, put a Silicon Cap into each hole where a bolt is inserted.

(Pan Head Screws are marked with a square, and Truss Bolts are marked with a circle.)

Parts and Accessory	Pan Head Screw	M4 x 6 (Part No. 27)	
	Truss Bolt	M4 x 6 (Part No. 27)	

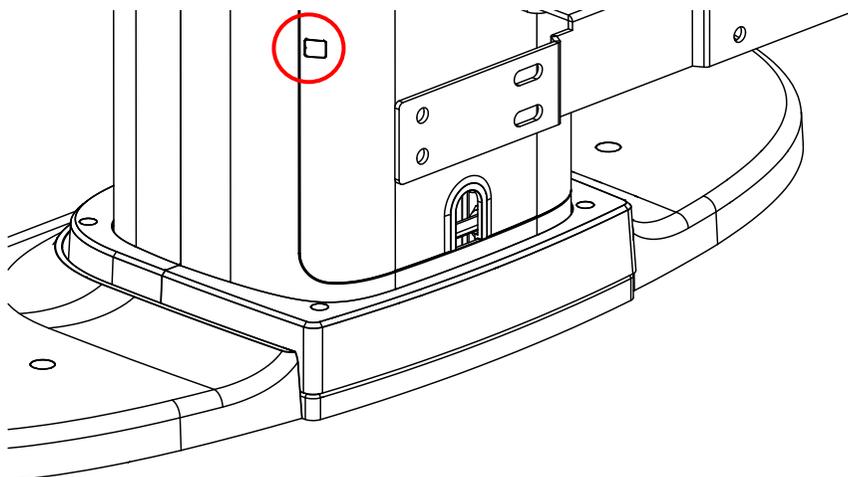


4. Put two Silicon caps on the bolt's top connecting the Joint Bracket.



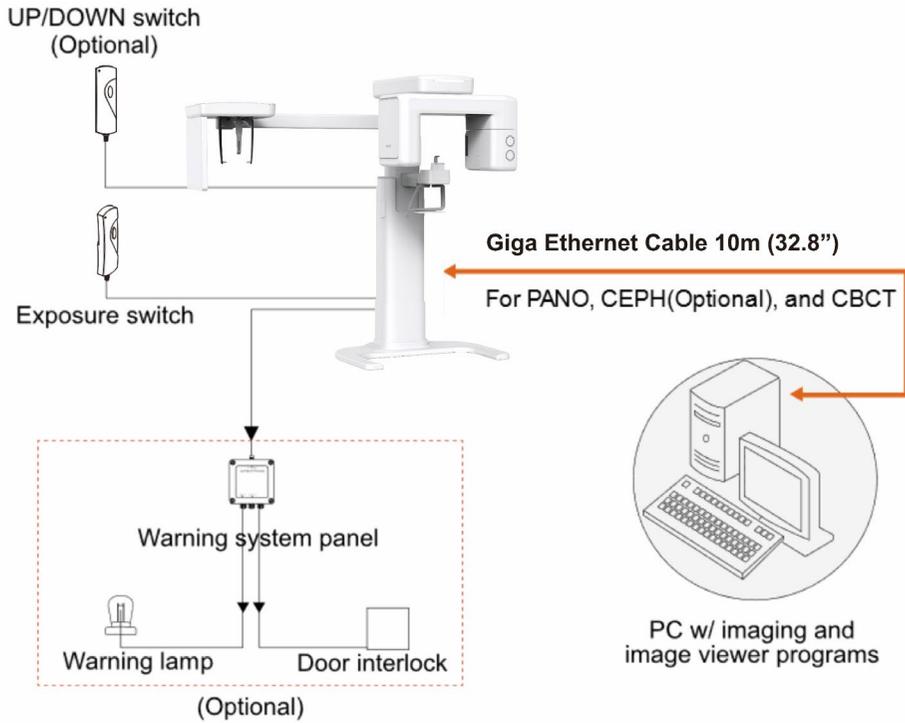
5. Insert two terminal caps on the Column Rear Cover.

Parts and Accessory	Terminal Cap	2 pc (Part No. 18)	
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7. Setting up PC

7.1 Direct Connection Diagram



Giga Ethernet Cable - transfers image data to the PC.

Warning System Panel - provides a visible indicator: Light on when the equipment is irradiating X-ray.

7.2 The Recommended PC Requirements

IMPORTANT

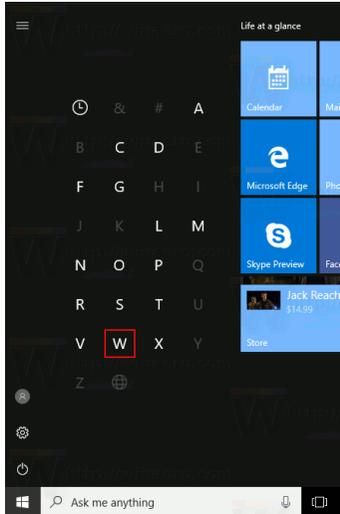
- It is mandatory to ensure that the PC system configuration is compatible with the imaging and image viewer software's PC system requirements.
- Since image quality may deteriorate from lack of resources, observe the requirement guideline specified in the following tables.
- The PC components shall 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 **vatech A9** undergoes a rigorous test for software compatibility before shipping. Therefore, any later changes to the hardware and software may cause malfunction.

Item	Specifications
CPU	Intel® Core i3-9100 3.6 4C
RAM	16 GB (2 x 8 GB) DDR4-2666 UDIMM NECC Memory APJ
HDD	1 TB SATA 7200 rpm 3.5 in WKS
Graphics board	GEFORCE GTX1050 Ti DUAL D5 4G
Ethernet Interface	Intel Ethernet I210-T1 PCIe x1 Gb NIC or LS-PCIE-EX210AT
Serial Port (RS232)	HP Serial Port Adapter Kit
Power Supply	500 W internal power module, up to 90% efficiency, active PFC
Slots	M.2 PCIe x1 2230 (for WLAN) M.2 PCIe x4 2280/2230 Combo (for storage) PCI Express v3.0 x1 PCI Express v3.0 x16 (wired as x4) PCI Express v3.0 x16
CD/DVD drive	DVD-ROM, DVD+/-RW, Blu-Ray
Monitor	19" 1280x1024 screen resolution
Operating System	Windows 10 Professional 64-Bit OS
Recommended System	HP Z1G5

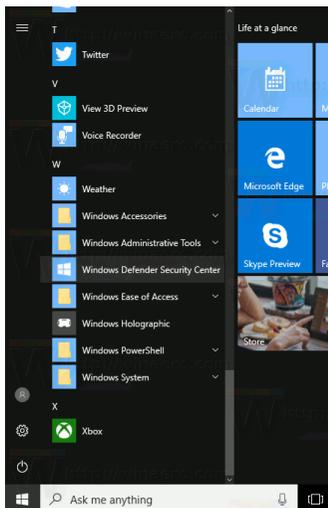
*. If an ethernet card is not installed on your PC, purchase an Ethernet card separately.

Add an exclusion to Windows Security

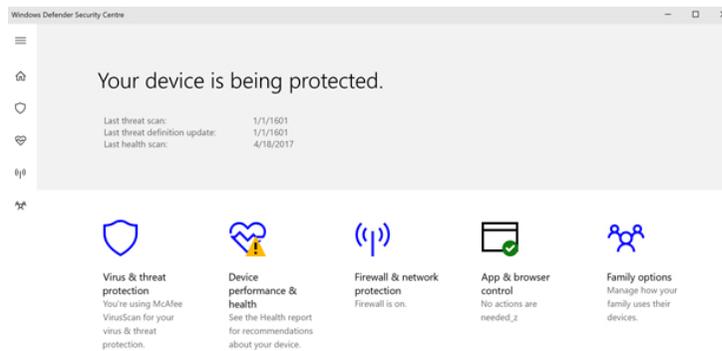
1. Open the Start screen, and type **W** in the search box.



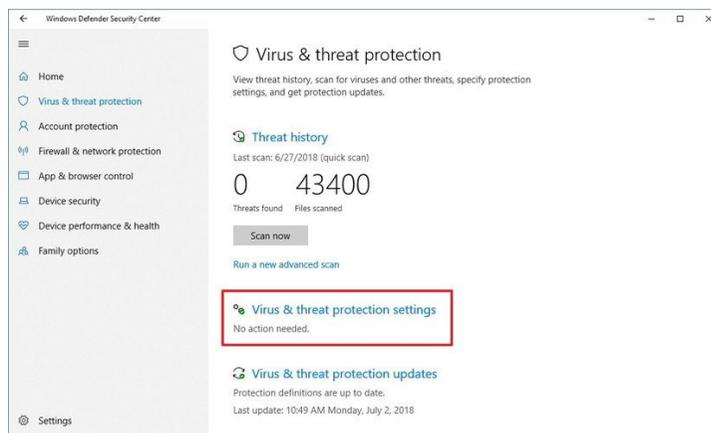
2. Click the **Windows Defender Security Center** icon to start Windows Defender Security Center on the search result.



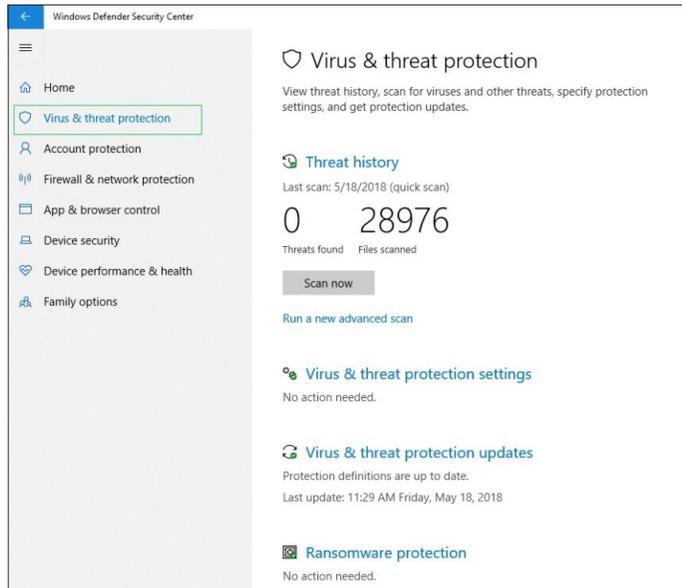
3. The start page comes with the following sections: Virus & threat protection, Device performance & health, Firewall & Network protection, and Family options.
4. Click on the Virus & threat protection icon.



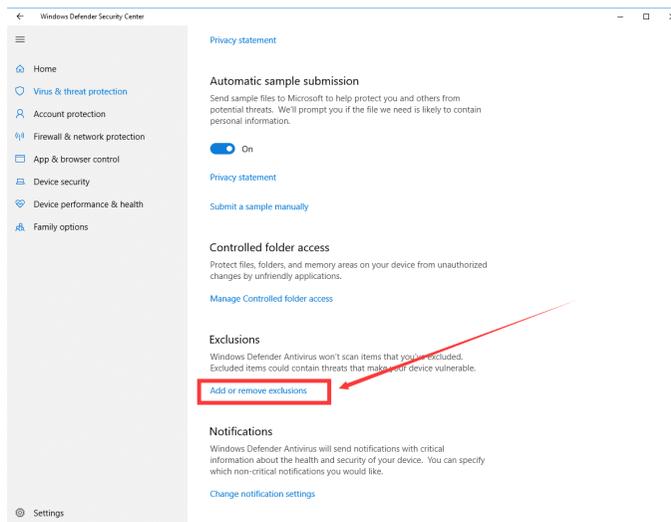
5. Click on the link **Virus & threat protection settings**.



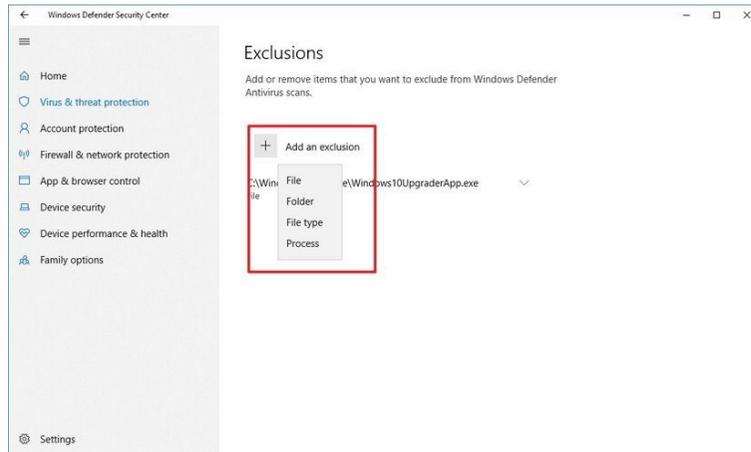
6. Scroll down to **Exclusions**.



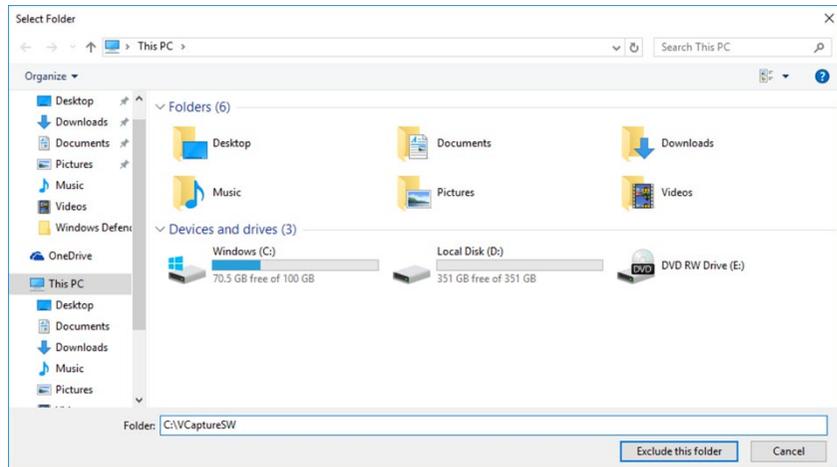
7. Click on the link **Add or remove exclusions**.



8. The following page will open.



9. Click on the **Add an exclusion** button.
10. On the **Select Folder** window, type **C:\VcaptureSW** in the folder field and **click Exclude this folder**.



7.3 Connecting the Cables to PC

IMPORTANT

Ensure to prepare a PCIe Ethernet Card (1 Gbps \leq) before connecting the Giga ethernet cable to the PC.

IMPORTANT

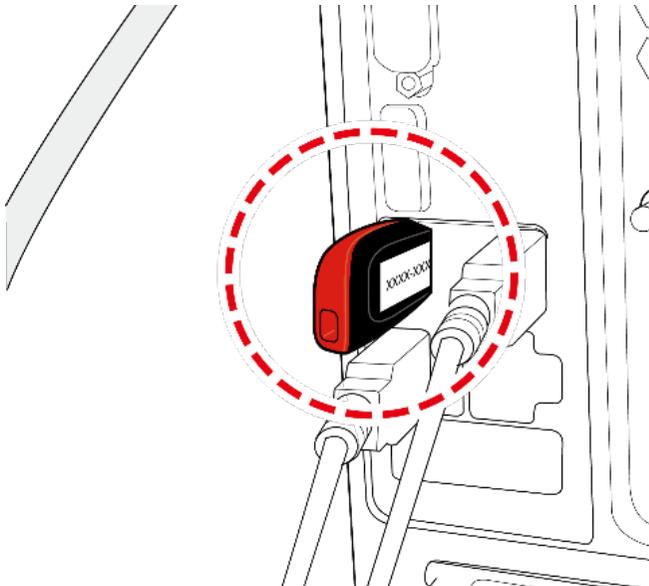
Ensure to connect the Giga ethernet cable to PCIe Ethernet Card only. If you connect the cable to a place other than the designated card, it shall cause a system problem.

NOTICE

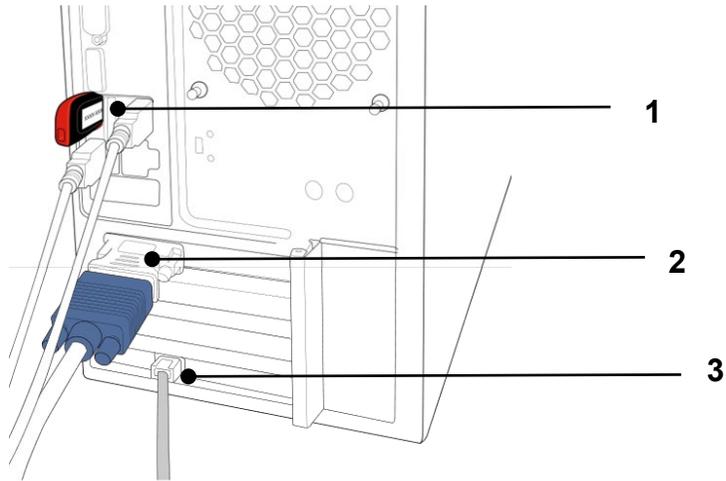
- Always check the cable condition visually. The bad cable or bad connection environment may lead to unprecedented errors.
- Connect the regular cables for the PC: keyboard, mouse, and video in advance.

Parts and Accessory	Giga Ethernet Cable	1 pc (Part No. 21)	
	License Key	1 pc (Part No. 1)	

1. Insert the 3D viewer License Key into a USB port.



2. Check if the License Key, Video Output, and Giga Ethernet Cable are connected, as shown in the image below.



No.	Item
1	3D viewer License Key
2	Video output
3	Giga Ethernet Cable (Inserted into PCIe Ethernet Card)

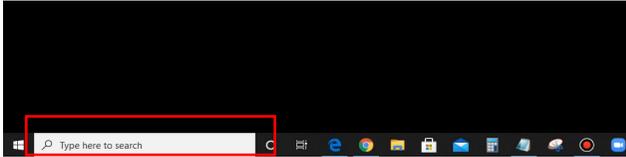
NOTICE

The illustrations may differ from the actual product.

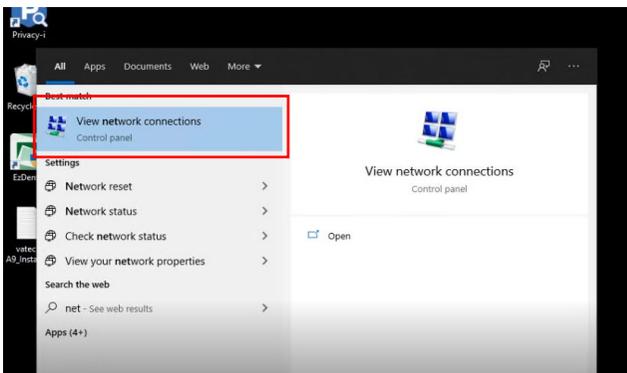
7.4 Setting up the G-Ethernet Grabber

Entering the IP address

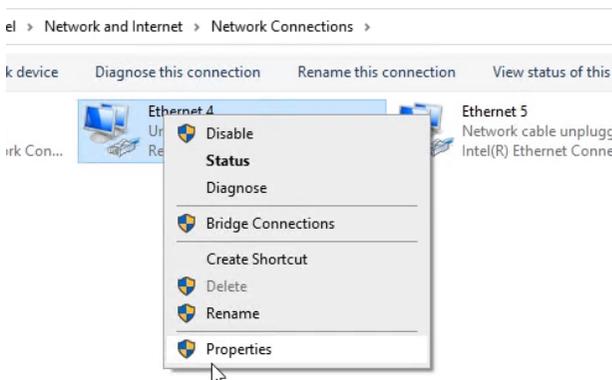
1. Enter “**network**” in the search box.



2. Click “**View network connections**”



3. Rename the network (e.g., **vatech A9**).
And right-click the ethernet driver and select “**properties.**”

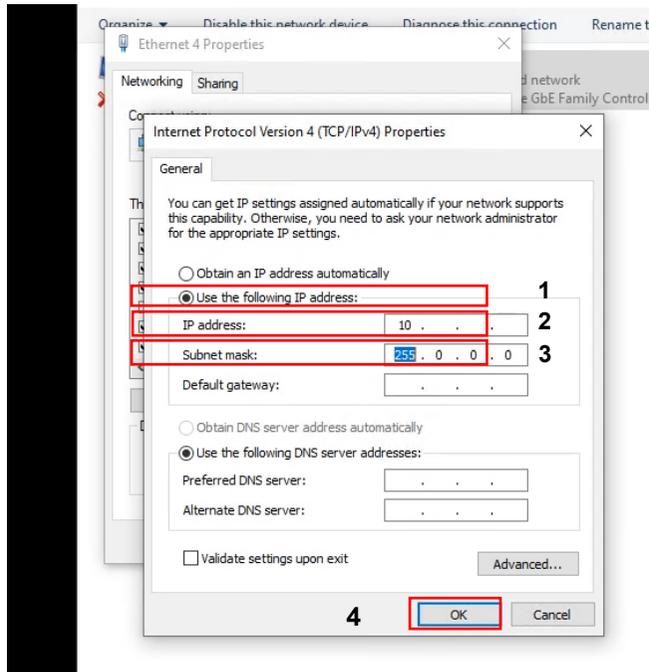


4. Select **Internet Protocol Version 4**. Then click **“Properties.”**
5. **[Important]** Select **“Use the Following IP Address.”** Then enter the given IP Address and Subnet Mask. (**see the note below**).

IMPORTANT

Enter the following numbers for the IP and subnet mask.

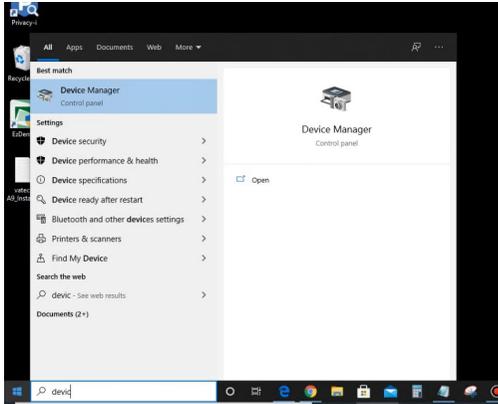
- **IP Address:** 10.100.200.100
- **Subnet Mask:** 255.255.255.0



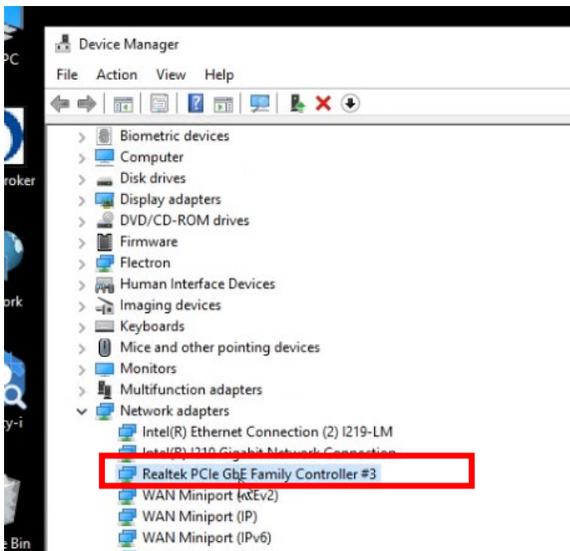
6. Click **“OK”** for the next step.

Setting up the device

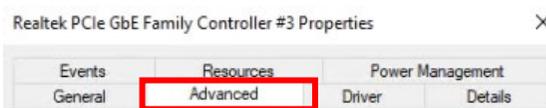
1. Return to the search box and enter the **device manager**.



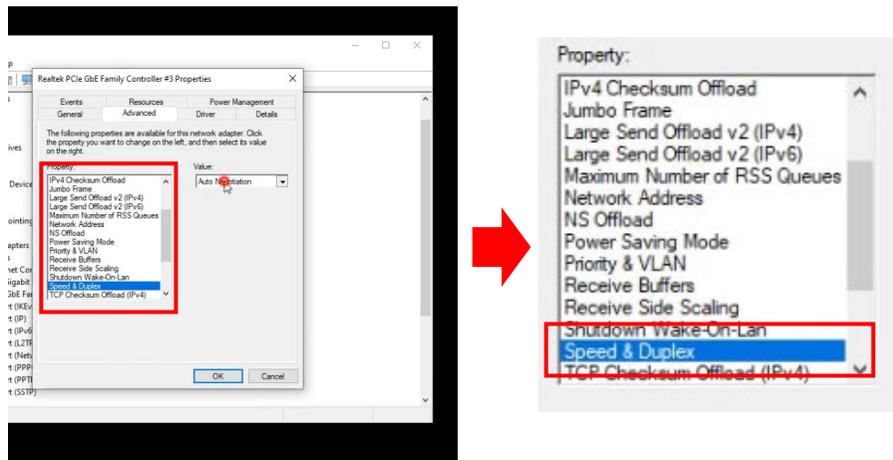
2. Select the **Network adapter** and right-click the ethernet driver, and click the **Properties**.



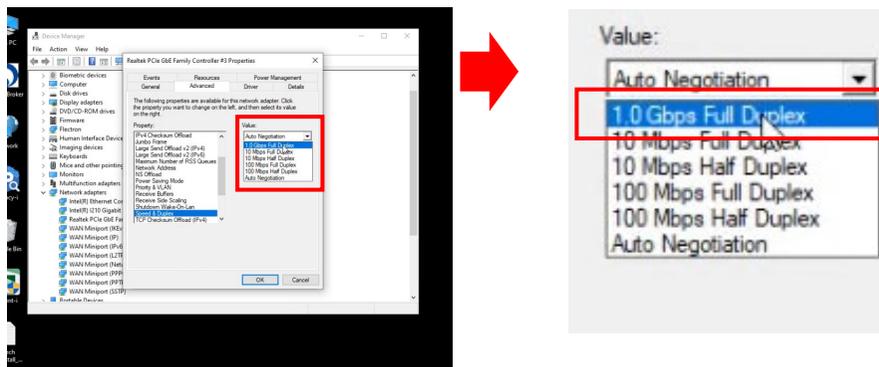
3. Select the **“Advanced”** tab.



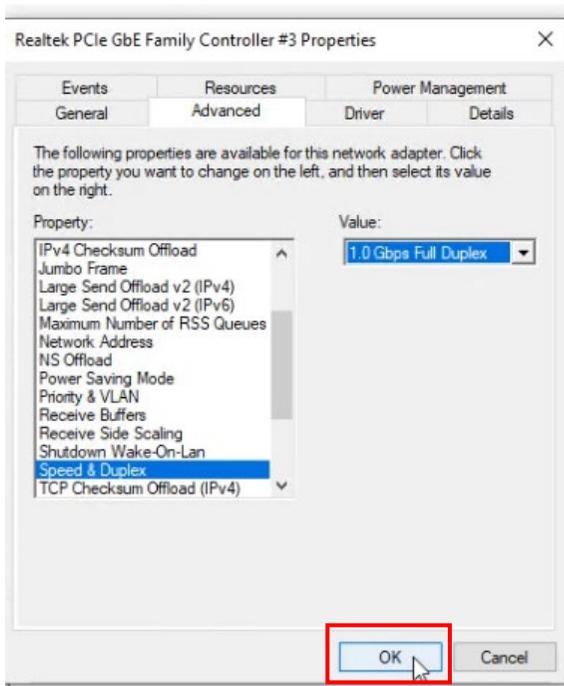
4. On the tab, scroll down until you find the “**Speed & Duplex**,” then click it.



5. Click the arrow icon on the Value and select “**1.0 Gbps Full Duplex**.”



6. **[Important]** Before clicking “OK,” ensure that the pop-up looks as the below



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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 for 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 control 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

The PC is shipped, with its BIOS settings, as specified in **Appendix D. 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, perform the following steps.

1. Reboot the PC and go to BIOS setting mode.
2. Set the variables as shown in the following table.

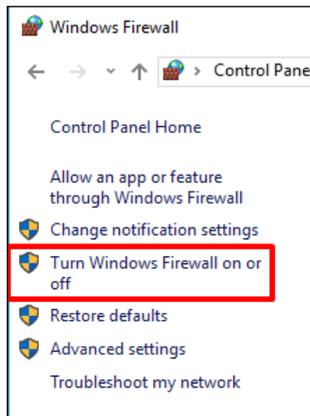
PC BIOS default			
Main Menu	Sub1 Menu	Sub2 Menu	Setup Value
Advanced	Power Options	Runtime Power Management	[Disable]
Advanced	Power Options	Idle Power Savings	[Normal]
Advanced	Power Options	Enhanced Halt State (C1E)	[Disable]

- When you update the BIOS settings, the "EnhancedHalt State (C1E)" option will be displayed.

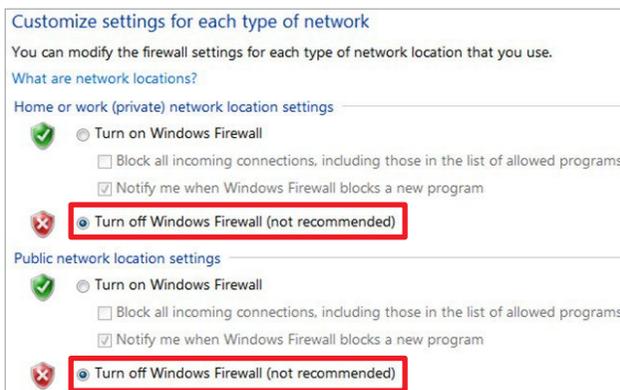
8.2 Turning off the Firewall

The LAN port and 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, and 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.



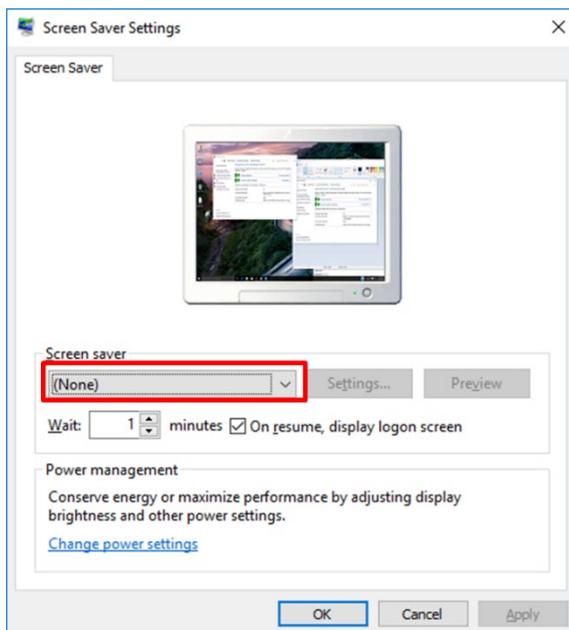
5. Click **OK** to apply the settings.

8.3 Setting up the Power Management Options

To avoid disruptive and abnormal operations while acquiring an image, you must reconfigure some Windows operating system parameters.

Disable the Screen Saver

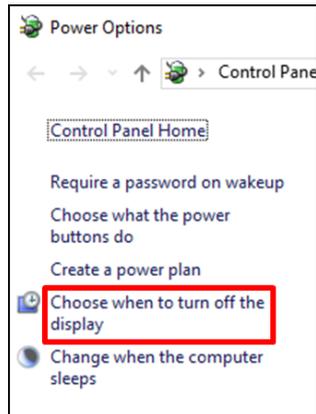
1. Open the Start screen, and type **Change screen saver** in the search box.
2. Click the **Change screen saver** icon to start the **Screen Saver Settings** on the search result.
3. On-Screen, on the Saver Settings screen, select **(None)** in the pull-down menu.



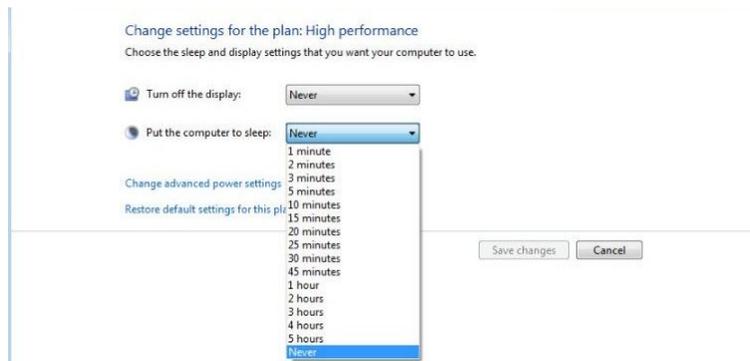
4. Click **OK** to apply the settings.

Selecting the Power Options: Monitor and System

1. Open the Start screen, and type **Power Options** in the search box.
2. Click the **Power Options** icon to start the **Power Options** on the search result.
3. Click **Choose when to turn off the display**.



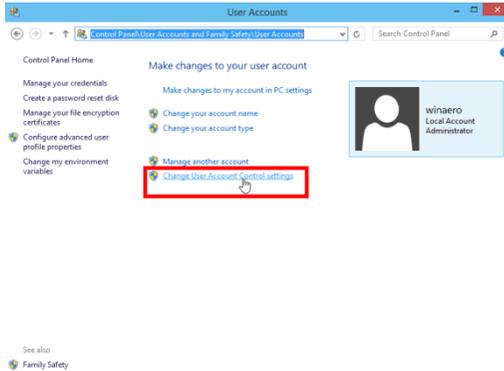
4. Select **Never** for both **Turn off the display** and **Put the computer to sleep** fields.



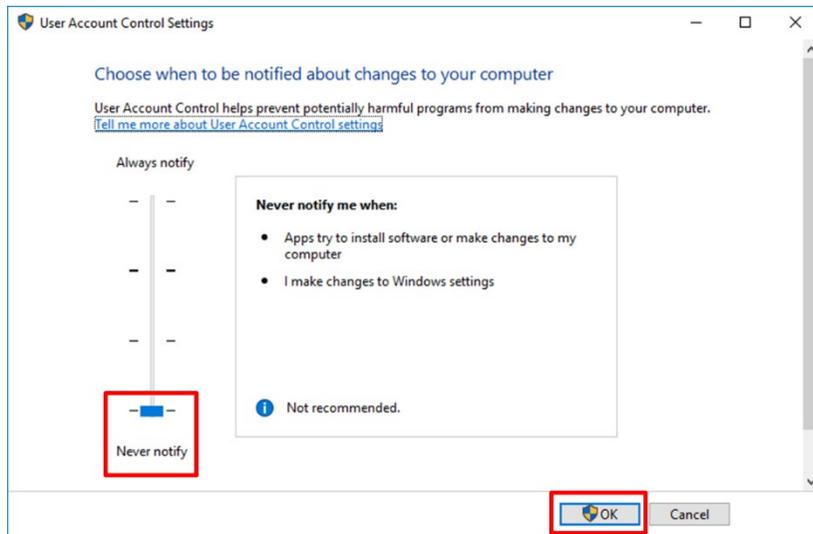
5. Click **Save changes** to apply the settings.

8.4 Turning off the User Account Control

1. Open the Start screen, and type **User Account Control** or **UAC** in the search box.
2. Click **Change User Account Control Settings** in the search results.



3. Disable the UAC by moving the slider bar down to '**Never notify.**' Then click **OK** to apply change settings.



NOTICE

You may be asked to confirm your selection or enter an administrator password.

4. Reboot your computer for the change to take effect.

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 a blank USB drive if possible.

Some files used by the **vatech A9** 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 **vatech A9**, the following folders and files inside for relevant software should be excluded from the virus scan.

Path	Software
C:\Program Files\Vatech	Ez3D-i/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 to most anti-virus programs.

1. Open the McAfee anti-virus program and select **VirusScan**.
2. Right-click the On-Access Scan menu option and left-click the Properties tab.
3. Select the All Processes à Detection à 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 Exclude Subfolders.
5. Click **OK** when completed and exit McAfee for the path exclusion to be completed.

9. Installing Software

NOTICE

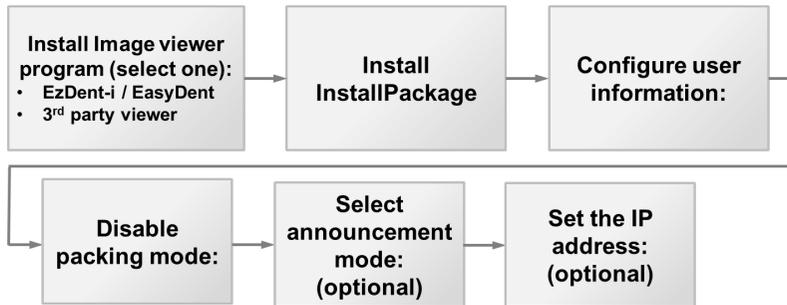
Skip this section if the PC system is shipped with your equipment. (In this case, the software has already been installed.)

9.1 Before Beginning

IMPORTANT

- Ensure that the Emergency Stop Switch is off before starting with the InstallShield installation.
- DO NOT install the programs irrelevant to image acquisition and view on the same PC. There may be conflicts between them, leading to system 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.
- 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.
- Perform a virus scan for the PC and InstallShield program before proceeding with its installation.

9.2 Software Installation Flow



9.3 Installing the Image Viewer Program

IMPORTANT

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

9.4 Installing the InstallShield

NOTICE

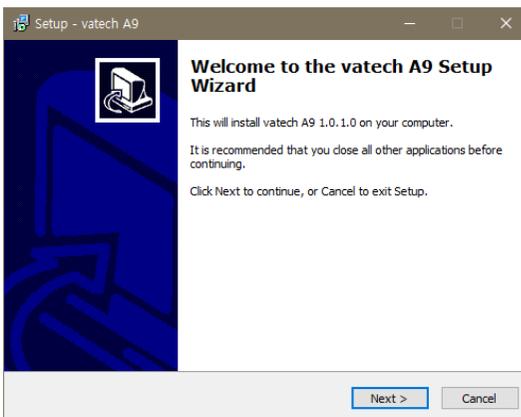
The InstallShield installation information is included in the USB drive provided as an accessory.
Please check the serial number.txt (e.g., 047-011752.txt) file.

Property Name	Value
EsSD Plus SW	None
EsSD Plus Prot	None
EsSD Plus Pre	None
EsSD I	None
Model	PAX-i
Modality	PANO
CT Sensor Type	None
Pano Sensor Type	AnyPano-1(HK)
Cash Sensor Type	None
Frame Grabber Type	Ethernet
Additional Options 1	None
Additional Options 2	DirectX

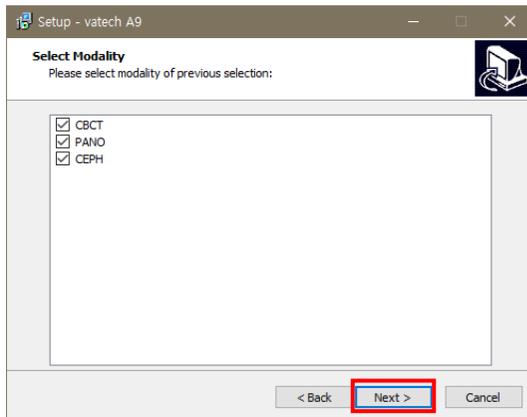
1. Ensure that both the PC and the equipment are turned on.
2. Insert the USB drive into the USB connector and **perform a virus scan for the PC before installing the InstallShield.**
3. Go to the InstallShield folder and run **Setup.exe**.



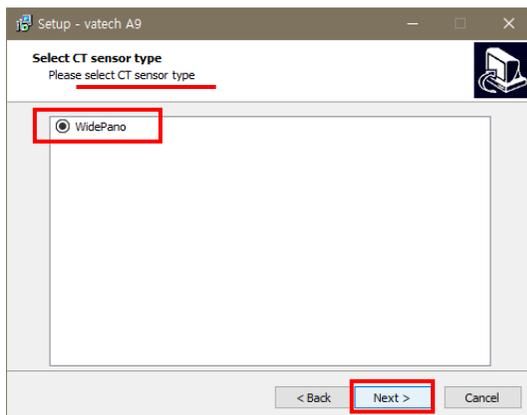
4. When the pop-up for setup appears, click **Next**.



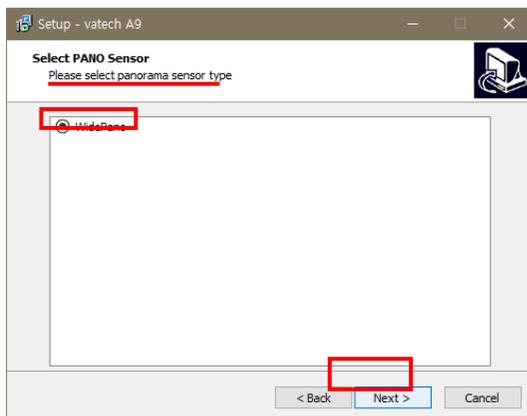
5. Confirm that all modalities are checked as below. If the CEPH feature is not included in your equipment, uncheck the CEPH option. Then click **Next**.



6. Confirm that the "WidePano" is selected for the CBCT sensor and click **Next**.

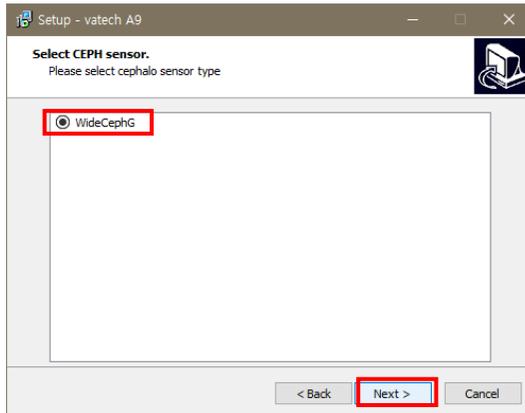


7. Confirm that the "WidePano" is selected in the PANO sensor and click **Next**.

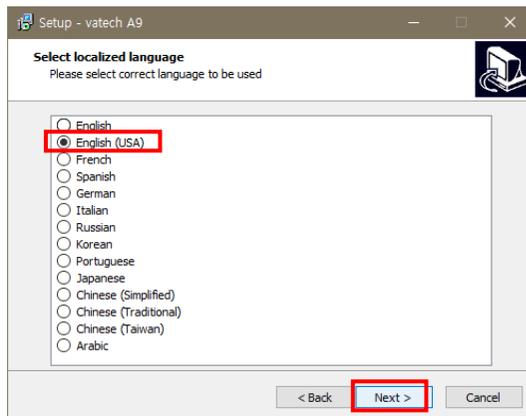


9. Installing Software

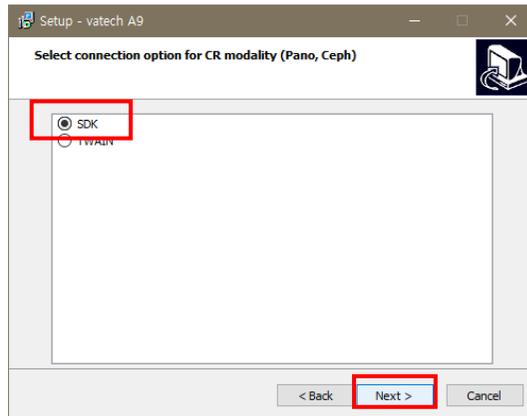
- (Optional) Select **WideCeph G** for the CEPH sensor type and click **Next**.



- Select the language for the equipment and click **Next**.

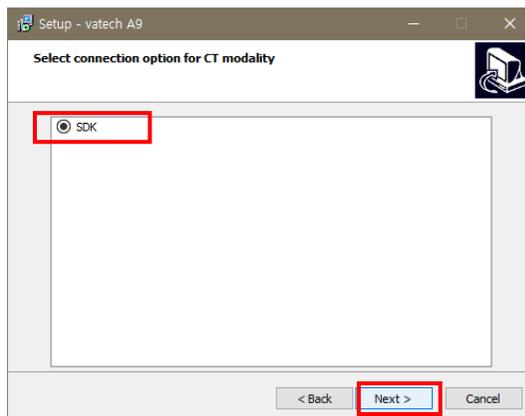


10. Select the connection for CR modality (Pano, Ceph) and click **Next** to continue.

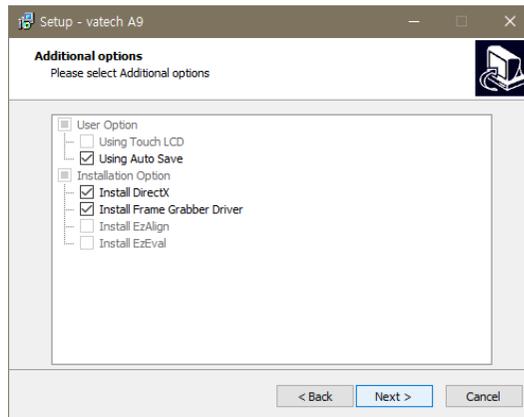
**NOTICE**

Select the SDK if **EzDent-i** has been installed.

11. Select the connection option for CBCT modality and click **Next** to continue.



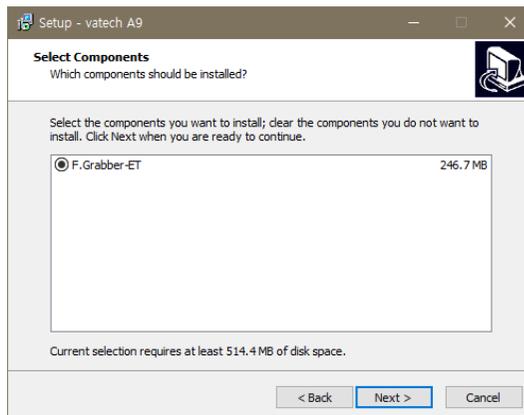
12. Confirm that your **User Option** and **Installation Option** are selected as per the image below. For the first-time installation, check all installation options provided.



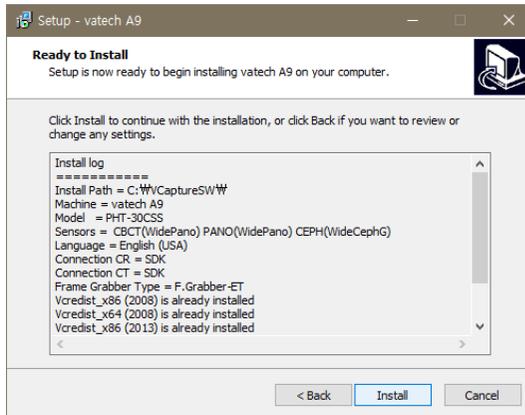
NOTICE

When AutoSave is checked, the system saves the image data automatically.

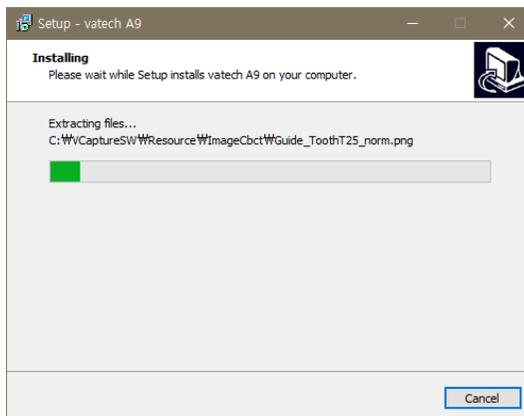
13. Check **F.Grabber-ET** on the window and click **NEXT**.



14. On the **Ready to Install** window, confirm that the information you have entered is correct. If you need to make a change, click **Back** to return to the previous window.

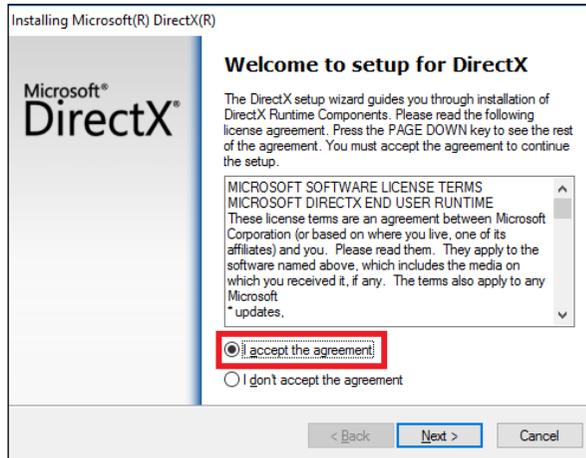


15. Click **Install** to complete the installation when all information is confirmed.

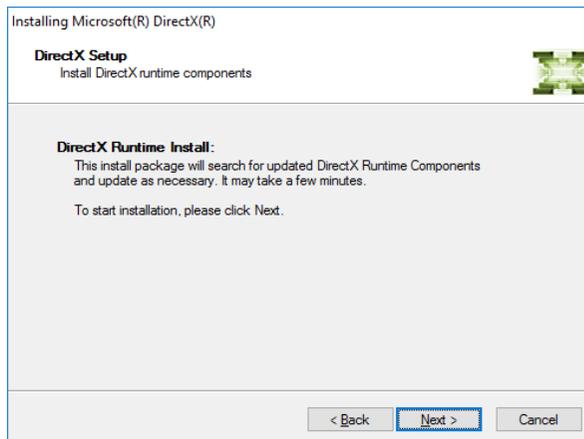


Installing the DirectX

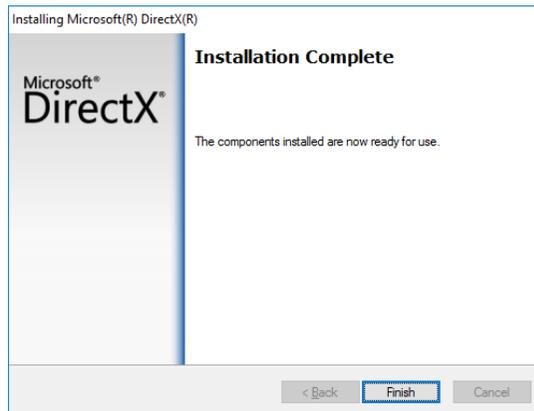
1. After completing the DICOM viewer installation, the DirectX® installation will be started. Select **"I accept the agreement"** in the Welcome window.



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

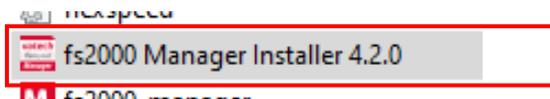


3. Click **Finish** to exit the wizard.

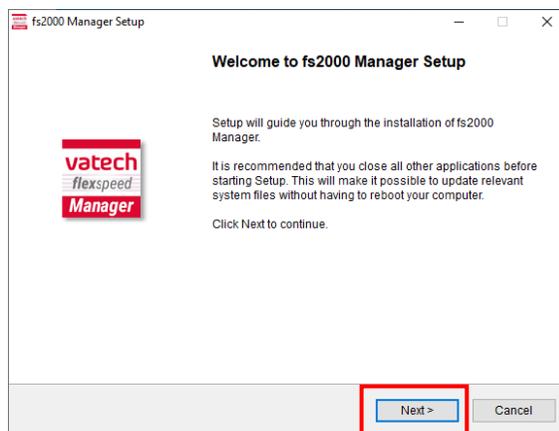


Installing fs2000 Manager

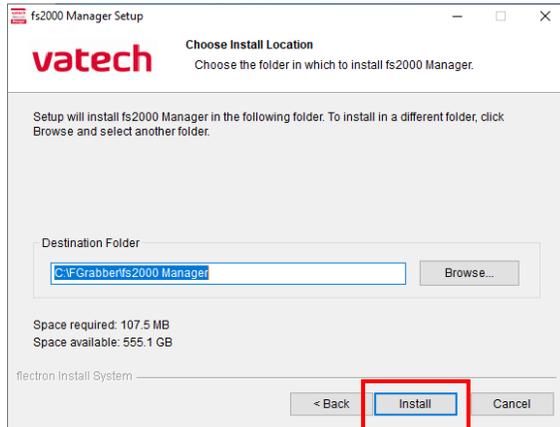
1. Select the fs2000 manager installer from the program list.



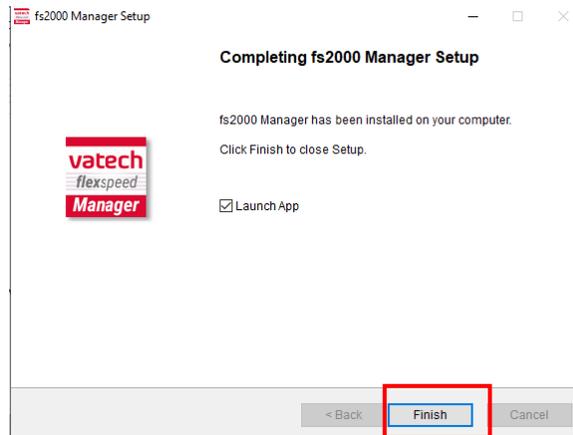
2. Click **Next** to proceed with the installation.



3. Select the Destination Folder and click **Install**.



4. Click Finish to finalize the program installation.



9.5 Setting up the User-specific Information

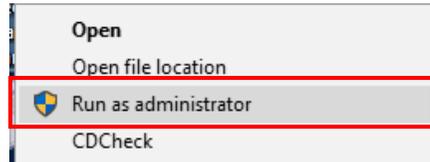
NOTICE

See the corresponding section for setup instructions based on the viewer program (EzDent-i (SDK)) installed on the PC.

- EzDent- i: Refer to Section 9.5.2 when the EzDent-i is installed.

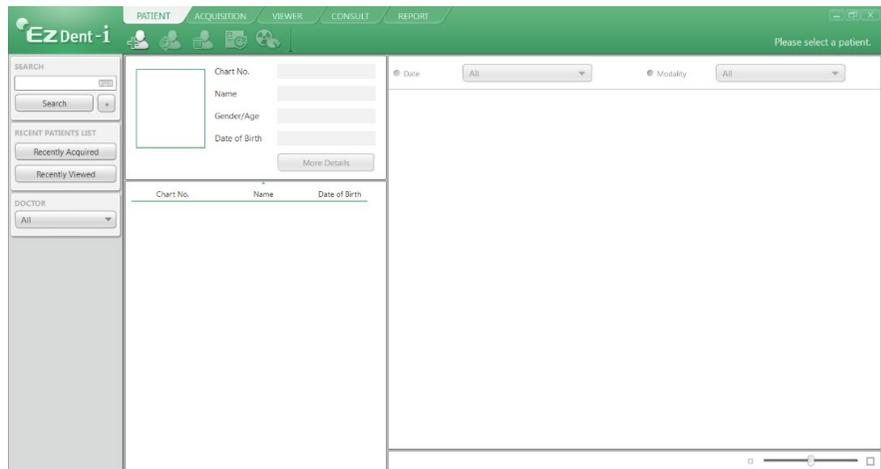
NOTICE

This program must be run in administrator mode.



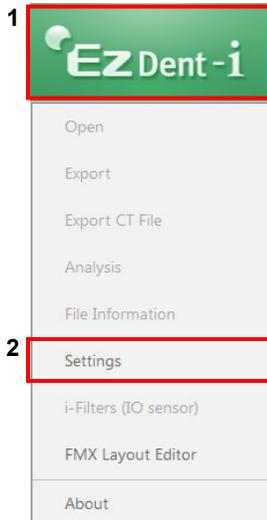
9.5.1 Running the Image Viewer

1. Run the image viewer. On your desktop, double-click the **EzDent-i** icon. The **EzDent-i**'s main window is displayed as follows.

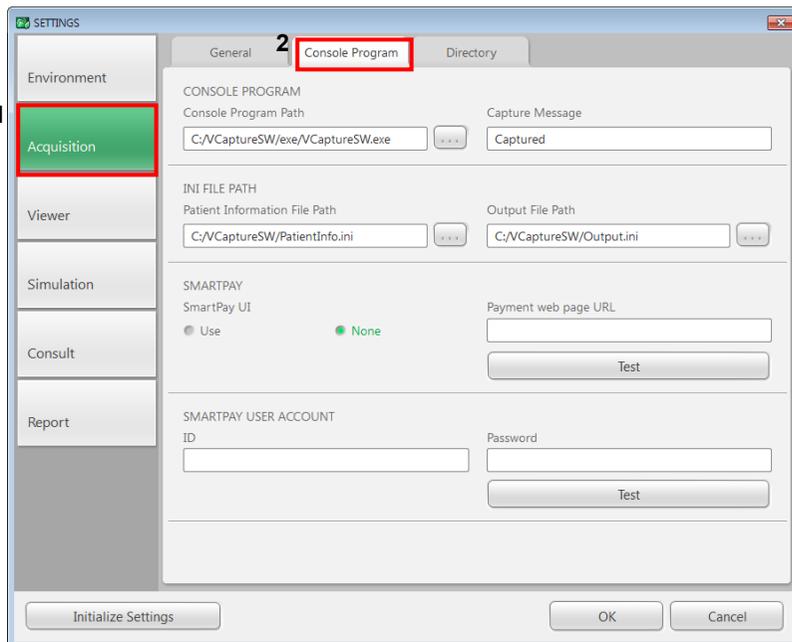


9.5.2 Interfacing the EzDent-i with Imaging Program (One-time Linking)

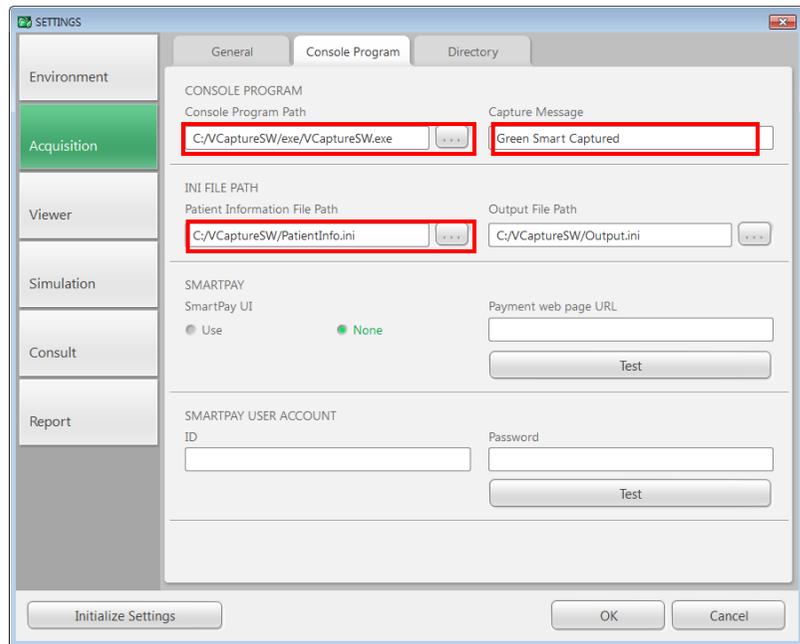
1. On the main screen of the **EzDent-i**, click **EzDent-i** → **Setting**.



2. Click **Acquisition** → **Console Program**.



3. Make sure that the console program settings are as follows:
 - Console Program Path: C:/VCaptureSW/exe/VCaptureSW.exe
 - Capture Message: **vatech A9** Captured
 - Patient Information File Path: C:/VCaptureSW/PatientInfo.ini



4. Click **OK** and restart the program to apply the settings.

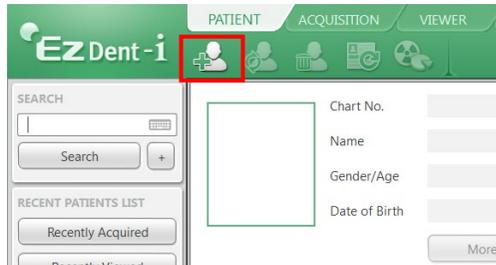


9.5.3 Creating a New Patient Record

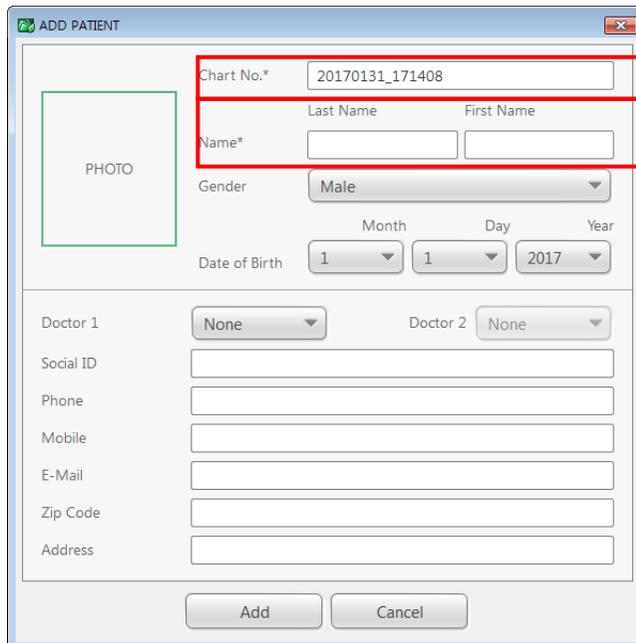
NOTICE

For further details on this subject, refer to the accompanying EzDent-i Manual.

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



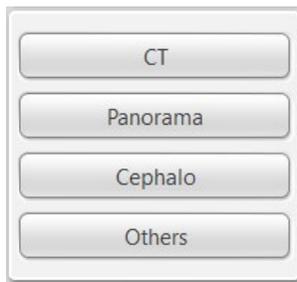
2. Enter the required patient information. **Chart Number, First Name, and Last Name** are required fields that must be filled in. All other fields are optional, but it is recommended that they be filled in.



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

9.5.4 Initiating the Imaging Program

1. Click the **ACQUISITION** tab. The imaging mode selection buttons appear.



NOTICE

The imaging mode selection buttons in the left menu may appear differently, depending on the equipment's capacity for acquiring images.

2. Select the imaging mode. Then, the main GUI in the selected imaging mode appears.

NOTICE

The error code **E033** indicates that the equipment is still in packing mode. It should disappear after the command for disabling the packing mode has been executed. For details, refer to '**Disabling the Packing Mode**' on *page 136*.

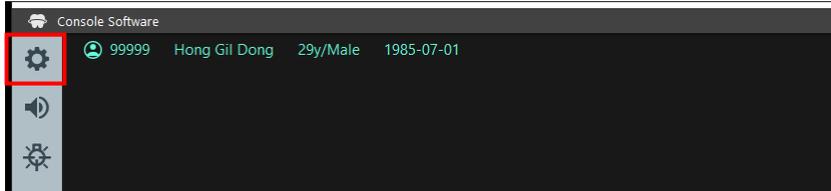
3. Proceed to section **9.5.5, Configuring the Parameters**.

9.5.5 Configuring the Parameters

IMPORTANT

The following information should be entered by the user requirements.

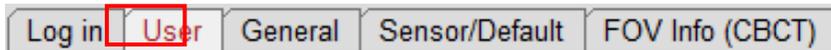
1. From the main GUI window, click the settings icon() in the upper left corner.



2. **Log in** 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**.



3. Click on the **User** tab.

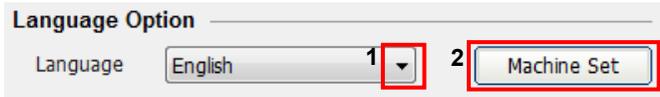


4. The User Settings are displayed as shown in the following figure.

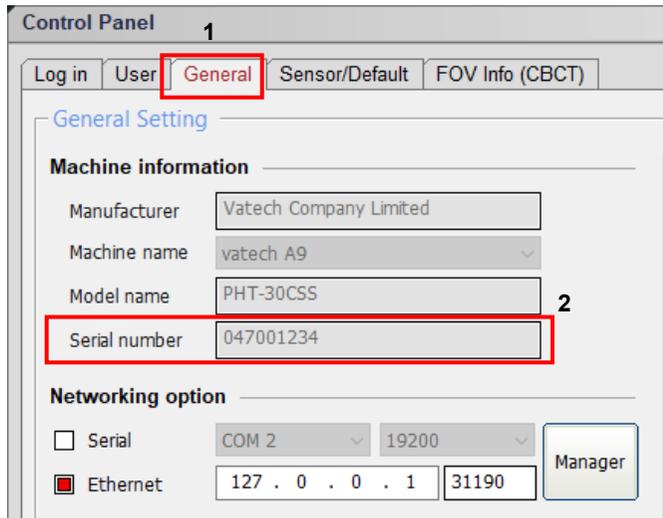
5. In the **Image Label Option**, check that the **Label Text** and Text Size are displayed the same as below.

6. In the **DAP**, check that the DAP Level and DAP Unit are displayed in the following figure.

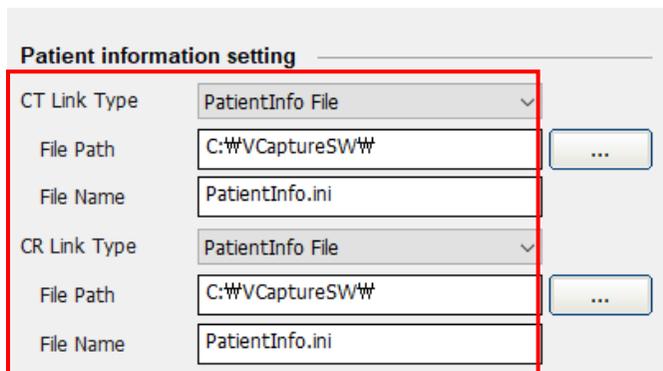
- In the **Language Option**, the default language setting is English. If necessary, change the language setting from the drop-down list and click **Machine Set**.



- Click on the **General** Tab and type the equipment's serial number in the **Machine information**.



- In the **Patient Information Setting**, configure the Link Type, File Path, and File Name, as shown in the following figure.



10. In the **Link Information Setting**, configure the Link Type and File Extension as below.

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

Link information setting

CT Link Type: SDK Link

CT Save Path: C:\#VCaptureSW#\ImageOutput#\CT ...

CR Link Type: SDK Link

CR Save Path: C:\#VCaptureSW#\ImageOutput#\CR ...

CR Save Name: Image .DCM

Capture Message: vatech A9 Captured

Output File Path: C:\#VCaptureSW#\ ...

Output File Name: Output.ini

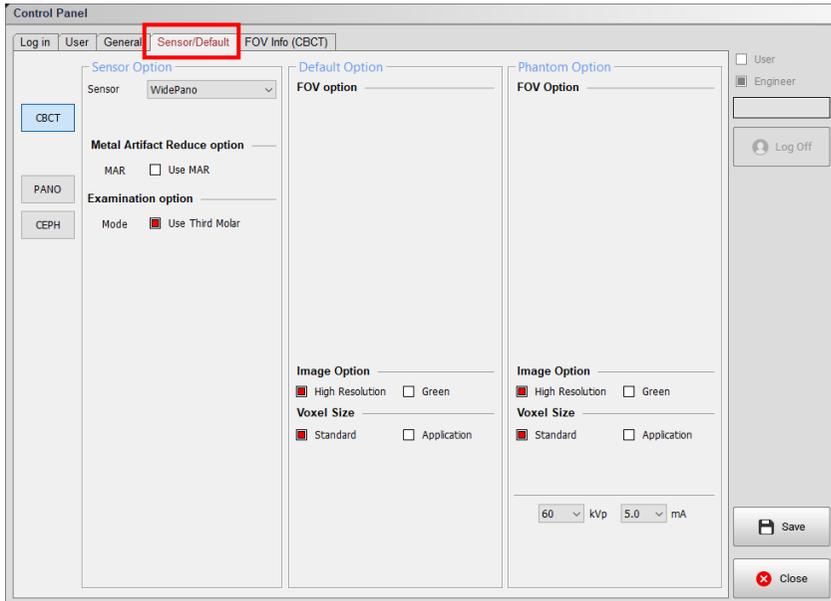
Save

Close

11. Click on the **Sensor / Default tab** and configure the user-defined parameters.

NOTICE

The default features can be modified according to the user's requirements.



12. Click **Save** if changes occurred.



Disabling the Packing Mode**IMPORTANT**

vatech A9 has the Packing Mode built into the system to prevent the unit from being damaged while shipping and transporting. Since the mode is automatically turned on upon shipping, the installer must disable the Packing Mode before turning on the equipment.

CAUTION

The equipment does not operate even after the power is turned on if the packing mode is not properly disabled.

1. Click on the **General** Tab on the Control Panel.
2. The Networking option enables the Ethernet checkbox and sets **Ethernet IP** and **Port** as below, and then clicks **Manager**.

Networking option

Serial COM 2 19200

Ethernet 127 . 0 . 0 . 1 31190

Manager

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

```

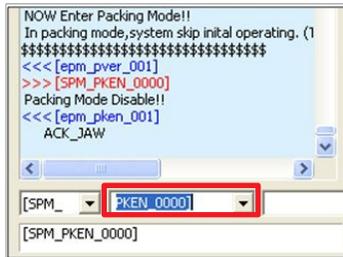
~~~~~
kr =>(SPM_L_XX)MP3/Mirror LCD NATION COD
0001=>(spm_mpop_000x)) MP3 MUSIC Option
0: (default)Different music played each captu
1: Same music played each capture mode ,
2: Beep sound.
~~~~~
0400=>(spm_FANT_XXX)FAN_On_Temp
~~~~~
$$$$$$$$ CAUTION!! $$$$$$$$$$
NOW Enter Packing Mode!!
In packing mode,system skip inital operating. (1
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
<<< [epm_pver_001]

```

[SPM_] PVER]

[SPM_PVER]

4. Enter the command **PKEN_0000**] to exit the packing mode. Now note that the equipment is out of 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_] [SPM_PKEN_0000]

NOTICE

Use the command **PKEN_0001**] to re-enter the packing mode.

5. Click **Exit** and terminate the Control Panel.
6. **[Important] Exit the imaging program (main GUI).**
7. Reboot the system for the changes to take effect.

Selecting an Announcement Mode: Music or Beep (Optional)

If selecting an announcement between music and beep is necessary, perform the following procedures.

Command specifications:

Command format: [SPM_MPOP_XXXX]			
XXXX	Imaging Modes	Announcement Mode	Division
0000	CT/PANO	Music	Different for each mode
0001	CT/PANO	Music	Same for each mode
0002 (Default)	CT/PANO	Beep	Same for each mode

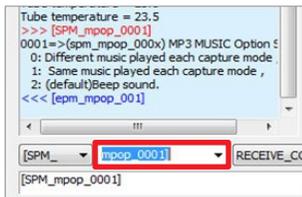
- Send the command by the command specification, as specified in the table above.

Here are some examples.

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

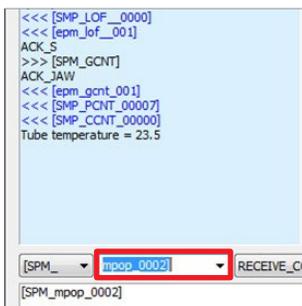
< When the same Music Announcement is desired for CT and PANO imaging modality >

Enter the command [SPM_MPOP_0001] in the command field.



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

Enter the command [SPM_MPOP_0002] in the command field.



Finalizing the Parameter Settings

1. Click **Exit** → **Close** and terminate the Control Panel.
2. **[Important]** Exit the imaging program (main GUI).

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10. Technical Specifications

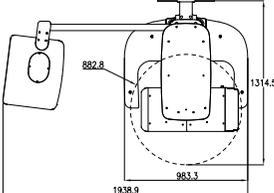
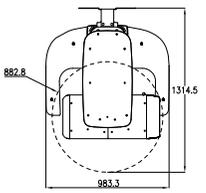
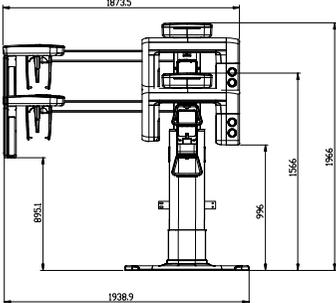
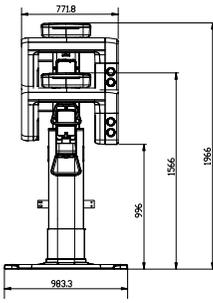
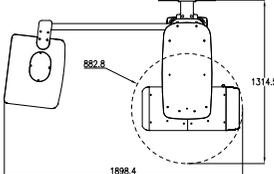
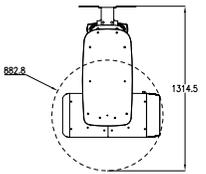
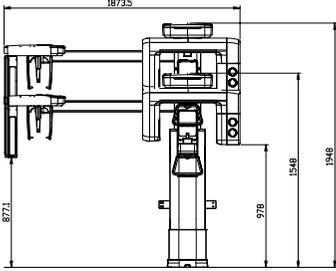
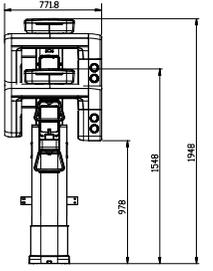
10.1 Mechanical Specifications

Dimensions (unit = mm)

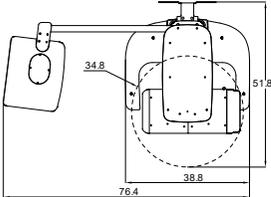
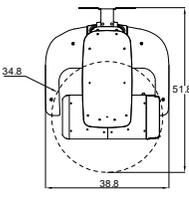
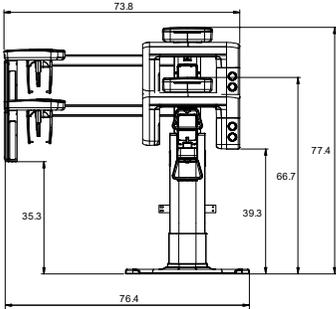
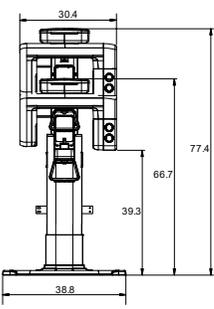
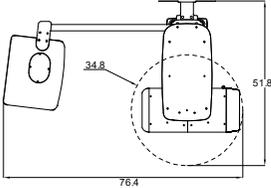
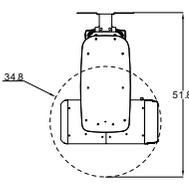
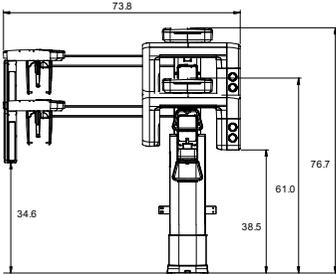
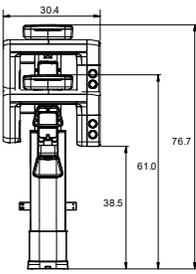
Item		Description
Weight	Without CEPH unit	108.3 kg (238.76 lbs. - without Base)
		160.5 kg (353.84 lbs. – with Base)
	With CEPH unit	134.3 kg (296.08 lbs. - without Base)
		186.5 kg (411.16 lbs. - with Base)
Total Height	Without Base	Max. 1948 mm (76.7")
	With Base	Max. 1966 mm (77.4")
Dimensions during operation (Length x Width x Height)	Without CEPH unit	Without Base: 882.8 (L) x 1314.5 (W) x 1948.0 (H) (mm) 34.8 (L) x 51.8 (W) x 76.7 (H) (")
		With Base: 983.3 (L) x 1314.5 (W) x 1966.0 (H) (mm) 38.8 (L) x 51.8 (W) x 77.4 (H) (")
	With CEPH unit	Without Base: 1898.4 (L) x 1314.5 (W) x 1648.0 (H) (mm) 76.4 (L) x 51.8 (W) x 76.7 (H) (")
		With Base: 1938.9 (L) x 1314.5 (W) x 1966.0 (H) (mm) 76.4 (L) x 51.8 (W) x 77.4 (H) (")
Installation Type		Base Stand / Wall Mount (Default: Wall Mount type)
Packing Box Organization		Main Box, CEPH Box (Optional), Base Box (Optional)

10.2 Drawing Dimensions

English

Unit = mm	With CEPH	Without CEPH
<p>Top view (With Base)</p>		
<p>Front View (With Base)</p>		
<p>Top view (Without Base)</p>		
<p>Front View (Without Base)</p>		

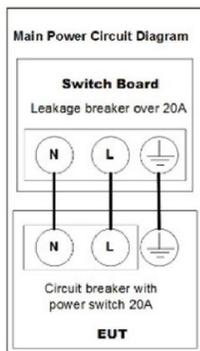
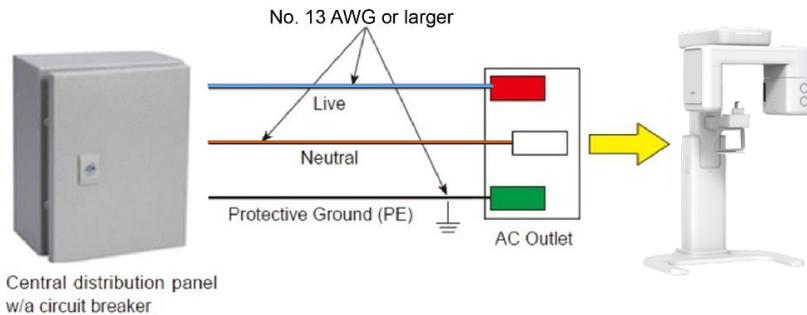
10. Technical Specifications

Unit = inch	With CEPH	Without CEPH
Top view (With Base)		
Front View (With Base)		
Top view (Without Base)		
Front View (Without Base)		

10.3 Electrical Specifications

Item	Description
Power supply voltage	100 - 240 V ~
Frequency	50 / 60 Hz
Power rating	1.7 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 operations) – needs waiting time (at least 60 times the exposure time) before the next exposure begins.



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 ohm at 100 V and 0.19 ohm at 240 V.
- This equipment should be connected to the earthed outlet.

10.4 Environmental Specifications

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

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Appendix

A. Installing the Warning Lamp and Door Interlock Switch

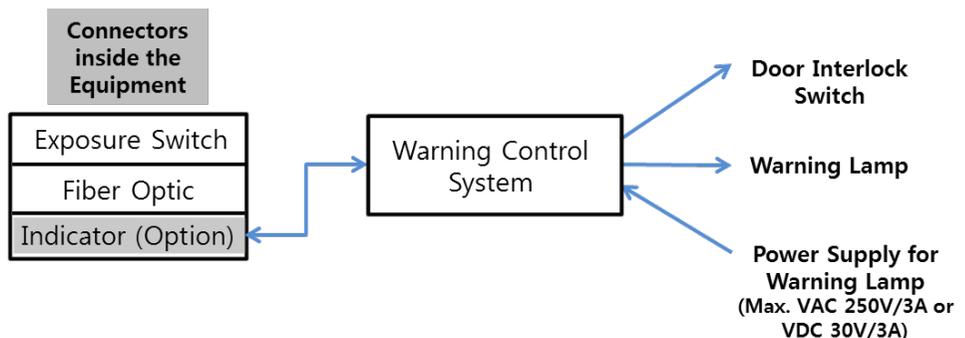
Requirement

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 upon 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 installation of the warning control system, including the lamp and door interlock switch, based on the MEIGaN guideline.

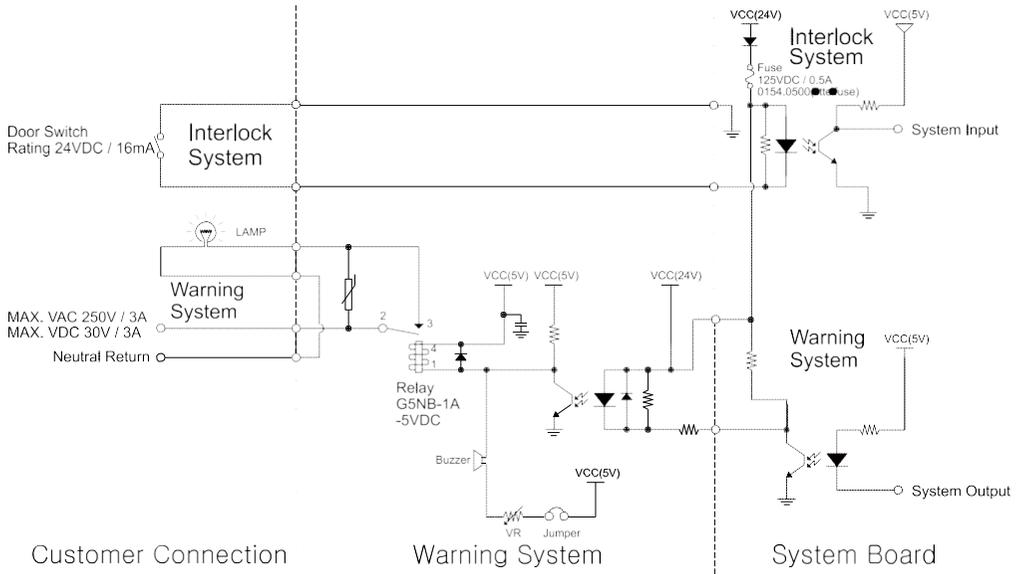
MEIGaN: Medical Electrical Installation Guidance Notes

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

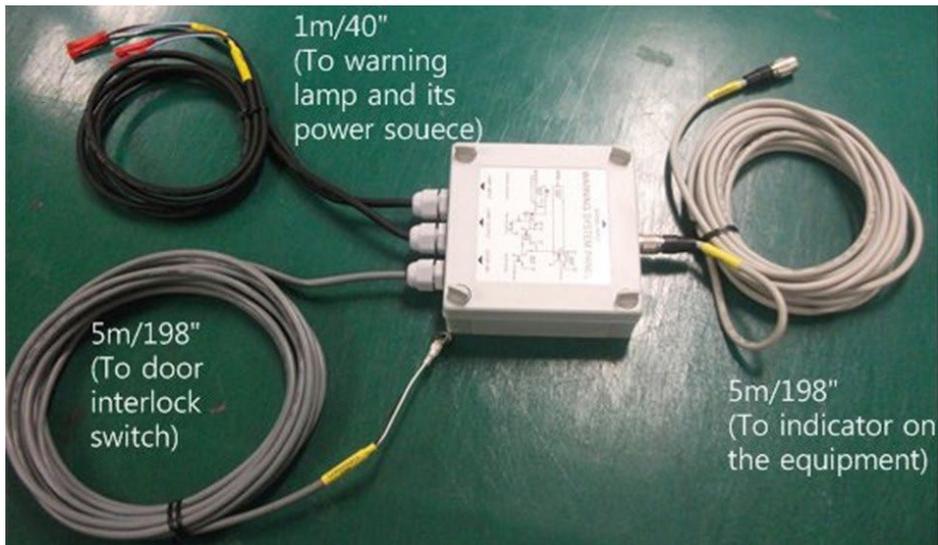
Block Diagram



Schematic Diagram



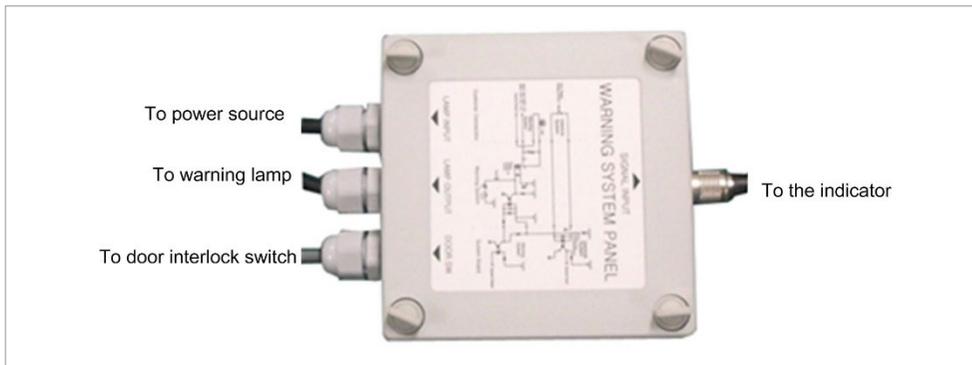
Components Supplied



Procedures

<The individual cable length>

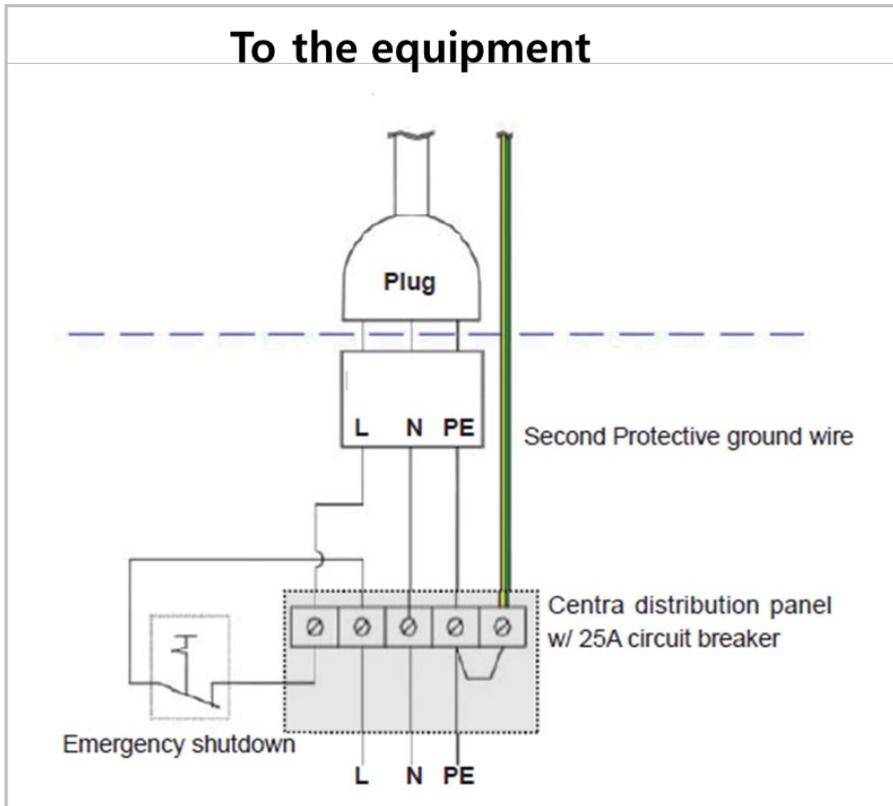
- Signal Cable: 5 m / 198"
- Door interlock cable: 5 m / 198"
- Warning lamp: 1 m / 40"
- Power source cable: 1 m / 40"



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 an emergency but cannot 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").



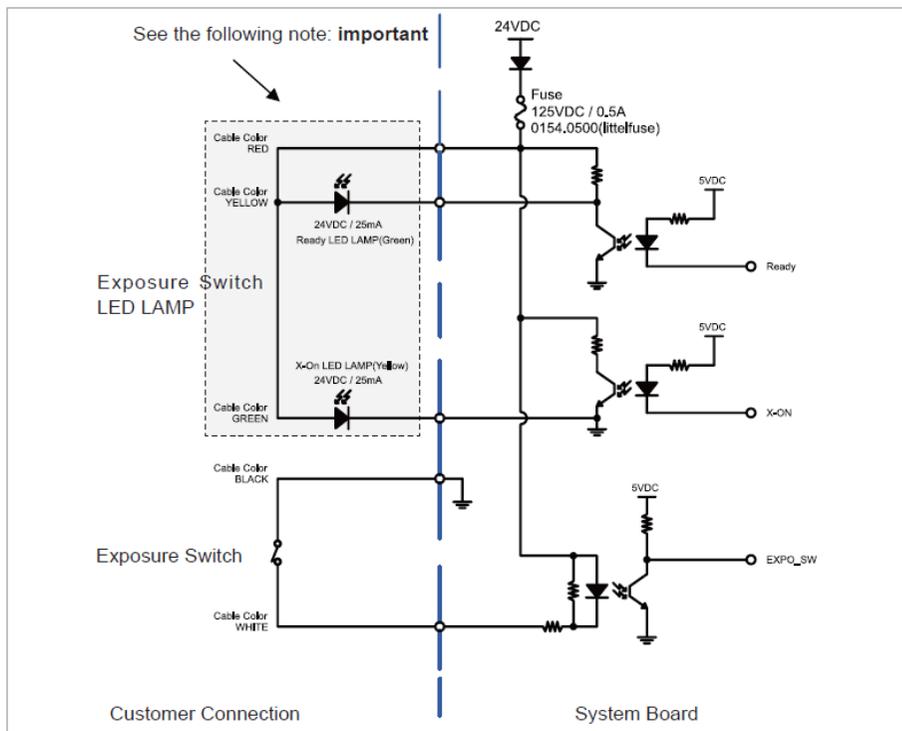
1. The cable sizes are N, L, and PE ≥ 12 AWG ($3 \times 4 \text{ mm}^2$).
2. The cable to **Emergency Stop Switch** shall be the same size as the power cable itself.
3. Install the socket connector terminal for the 2nd protective ground wire.

C. Connecting the 3rd 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

D. Checking PC BIOS Settings

< HP PC BIOS Setup >

PC Model: HP Z1

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]

E. 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, Without CEPH unit : 2,500 mm (L) x 1,700 mm (W) x 2,700 mm (H) With the CEPH unit : 2,500 mm (L) x 2,500 mm (W) x 2,700 mm (H)	<input type="checkbox"/>	<input type="checkbox"/>
Is the door entrance wider than 800 mm (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 the 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 the boxes before opening them?	<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 were not any suspicious holes or scratches on the box after opening it?	<input type="checkbox"/>	<input type="checkbox"/>

5. While Installing Equipment

	Yes	No
Are 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 touch or place pressure on the sensors while installing?	<input type="checkbox"/>	<input type="checkbox"/>
Did the installer make sure the 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 visually checking 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"/>
Does the Up/Down switch work properly?	<input type="checkbox"/>	<input type="checkbox"/>

7. Software Compatibility

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

8. Electrical Requirements:

	Yes	No
Is the circuit breaker installed and evaluated 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 a 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.

vatech A9

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