VATECH

PaX-i3D Smart (PHT-30LFO)

Installation Manual | Version 1.0.0

HARDWARE and SOFTWARE

English

innovation inside

"i" stands for 'innovation', one of the core values of VATECH, which aims to expand accessibility of medical solutions to more people.

Notice

This manual covers the installation procedures for the **PaX-i3D Smart** dental X-Ray unit. An installation manual and user manual are shipped with each hardware unit.

Brand name: PaX-i3D Smart (Model: PHT-30LFO)

Manufactured by : VATECH Co., Ltd.

In this manual, Equipment refers to the **PaX-i3D Smart**.

In abberviated forms, **CT, CEPH** and **PANO** denote **Computed Tomography**, **Cephalometric** and **Panoramic**, respectively. They are interchangeably used.

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

Thorough review of this manual is recommended before installation to ensure proper installation of this equipment. The **PaX-i3D Smart** is in steady improvement. The information contained in this manual may be subject to change without notice, justification or notification of the persons concerned.

For further information not covered in this manual or in the accompanying documentation, please contact us with any method listed below:

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E-Mail: gcs@vatech.co.kr

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Address: **13, Samsung 1-ro 2-gil, Hwaseong-si, Gyeonggi-do, Korea**

Important Notes

Moisture could be built up on the equipment from a sudden temperature change inside and outside the installation room. Allow at least an hour before turning ON the equipment to avoid condensation.

CAUTION

1. **In order to avoid improperly balanced equipment, install the device on a flat surface to maintain stability.**
2. **If the equipment is not stable, property damage and/or personal injury may occur.**
3. **Do not push or pull the equipment.**
4. **Equipment should only be installed by an authorized technician, complying with proper installation procedures.**

IMPORTANT

Failure to read and understand the information provided in this manual may result in physical injury, damage to the equipment or equipment failure. Please read each CHAPTER in its entirety and understand the information therein before attempting any of the installation procedures.

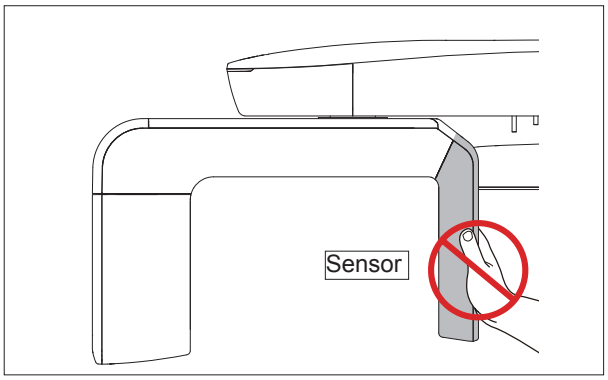
Conventions Used in this Guide

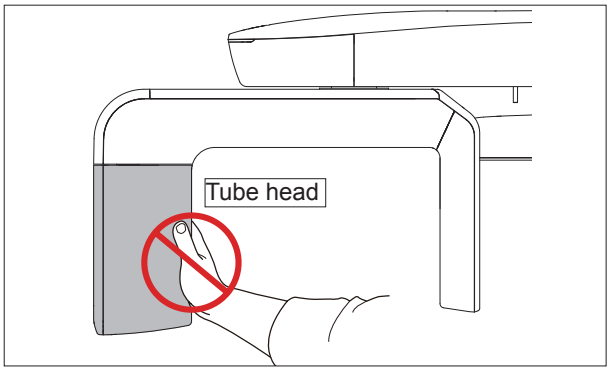
The following symbols are used throughout this manual to emphasize information or indicate a potential risk to the equipment or user. Make sure that you fully understand each symbol and obey the instructions which appear to the right of the symbol.

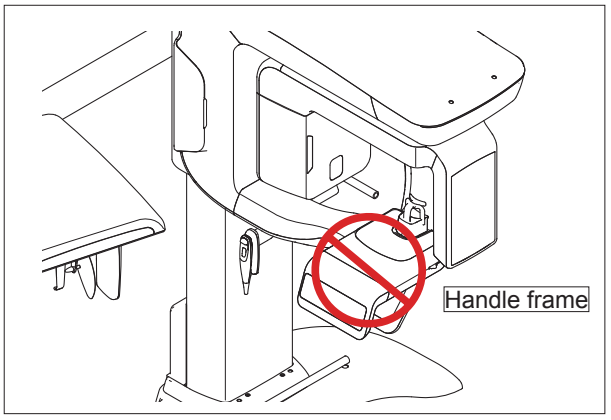
 NOTE	**Notes** help you optimize system performance. Carefully read each note to ensure that the equipment is used to its full potential.
 CAUTION	**Cautions** indicate a situation that demands prompt but careful action, remedy or emergency attention.
 WARNING	**Warnings** indicate information that should be followed with the utmost precision. Failure to comply with warnings may result in severe damage to the equipment and/or physical injuries to the patient or operator.
 X-ray	**Radiation symbols** indicate a possible danger from exposure to radiation.
 IMPORTANT	**Important symbols** indicate a compulsory action or instruction.
	**ESD susceptibility symbols** indicate that an item is susceptible to damage from electrostatic discharges.

WARNING

Never touch or hold the sensor or tube head areas while moving, installing or operating the equipment.

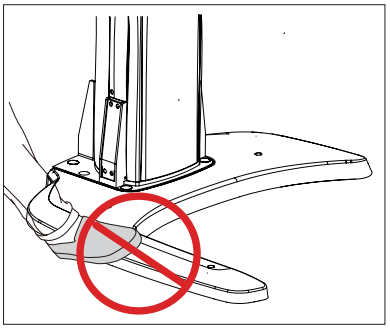






WARNING

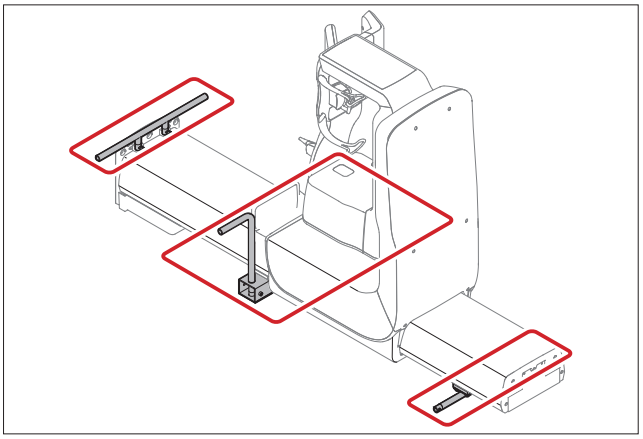
Do not step on the base unit while installing or operating the equipment.



Do not use the electrical power drill during installation unless it is allowed to do so.

IMPORTANT

Recommended holding area during transportation(OK)

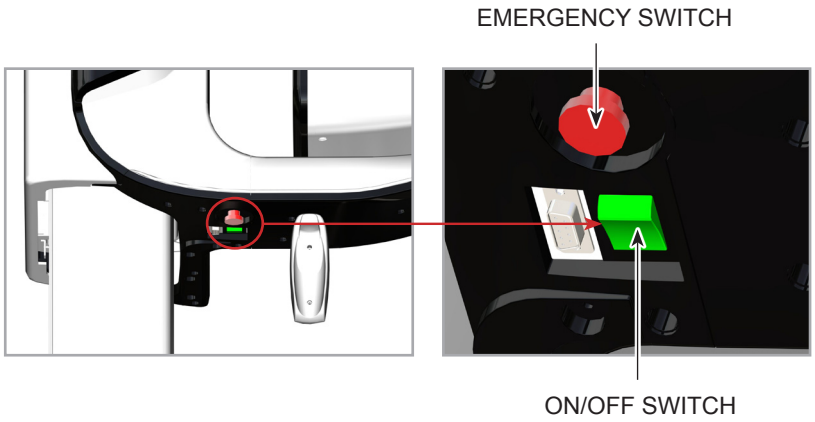


NOTE

Four installers are required to install the equipment safely.

NOTE

Locations of the Power and Emergency Switches



Cautions

1. It is critical that installers read and understand the installation instructions fully before installation.
2. The installer must confirm that the system is installed according to the instructions provided by this manual and perform the appropriate procedures therein.
3. If the equipment has been stored at temperatures of below 10℃ (50℉) for more than a couple of hours, allow the equipment to reach room temperature before applying mains voltage.
4. Installation and related work must only be performed by people authorized by VATECH.
5. Do not connect any items or equipment to this system which are not part of the system: **IEC60601-1-1** (3rd edition: 2005).

6. 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.
7. 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.
8. Never touch sensitive areas such as sensors during installation. These areas are indicated at the applicable stages during the installation procedures.
9. Use of wireless phones may interfere with the operation of this equipment.
10. Use an ESD (electrostatic sensitive device) wrist band during installation and connect it to a ground wire.
11. Touch a ground point to discharge static electricity before handling PCB boards.

IMPORTANT

Installation Site

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

WARNING

Warnings Regarding X-Ray Radiation

1. Failure to install this equipment in an approved location may be dangerous to the patient and operator.
2. Stationary radiation shielding must be installed to protect the operator from radiation.
3. The X-Ray system may cause injury to the patient if improperly used. Obey all federal and municipal standards regarding radiation safety.
4. 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.
5. Operators must provide protective clothing to the patient before X-Ray capturing. Pregnant women must consult with a doctor prior to being exposed to an X-Ray.

IMPORTANT

This equipment complies with the following standards:

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

IEC 60601-1-2:2005 Electromagnetic Interference

IEC 60601-1-3:2005 Radiation Protection

IEC 60601-1:2005 Standards for Medical Electrical Equipment

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

IEC60601-2-7 and IEC60601-2-28: X-Ray Tube Heads

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

1. **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 assemble or modify a medical electrical system by combing it with other equipment**t.
2. Any equipment not provided by VATECH can be connected when the following standards are complied with: IEC 60950-1 and IEC 60601-1
3. The electrical installation shall comply with local code requirements for electro-medical systems: IEC 60364-7-710: 2002.

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1

Introduction

1.1 Manufacturer's Liability

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

- Equipment installation, including software installation, was carried out by an authorized agent in accordance with this installation manual.
- Electrical installation was carried out in accordance with 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 condition in accordance with the user's manual.
- PC Software has been properly used in accordance with the manufacturer's installation instructions and user manuals.

1.2 Customer's Responsibility

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

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

1.3 Marks & Symbols

Symbols	Description	Location
	Alternate current	
	Attention: consult accompanying documents	**Label**
	Dangerous voltage	**Power board**
	Protective earth (Ground)	**Power board**
	Off (power: disconnect from the main switch)	**Main switch**
	On (power: connect to the main switch)	**Main switch**
	TYPE B Equipment	**Label**
	Radiation hazard	**Label**
	EC representative	**Manual**
	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**
	This equipmentis UL-marked according to UL60601-1 and CAN/CSA C22.2 No. 601.1	**Label**
	Address where the equipment was manufactured	**Label**
	This symbol indicates that electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately.	**Label**
	This symbol warns the user to take precautions when dealing with electronic components which are sensitive to static charges	**MCU board packaging**
	This symbol indicates that this equipment is classified as a CLASS 1 LASER PRODUCT in accordance with IEC 60825-1 ED.1 regulations.	**Label**

1.4 Standards and Regulations

A. Standards

This X-Ray equipment complies with the following standards:

IEC/EN/UL 60601-1, IEC/EN 60601-1-1, IEC/EN 60601-1-2, IEC/EN 60601-1-3, IEC/EN 60601-2-7, IEC/EN 60601-2-28, IEC/EN 60601-2-32, IEC/EN 60601-2-44, ISO 9001, ISO 13485

CE 0543

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.

B. Classification: (IEC60601-1 6.1)

Protection against the ingress of water: IEC60529 edition 2.1

Ordinary Equipment: IPX0

Protection against electric shock:

Class I equipment, Type B Applied Parts

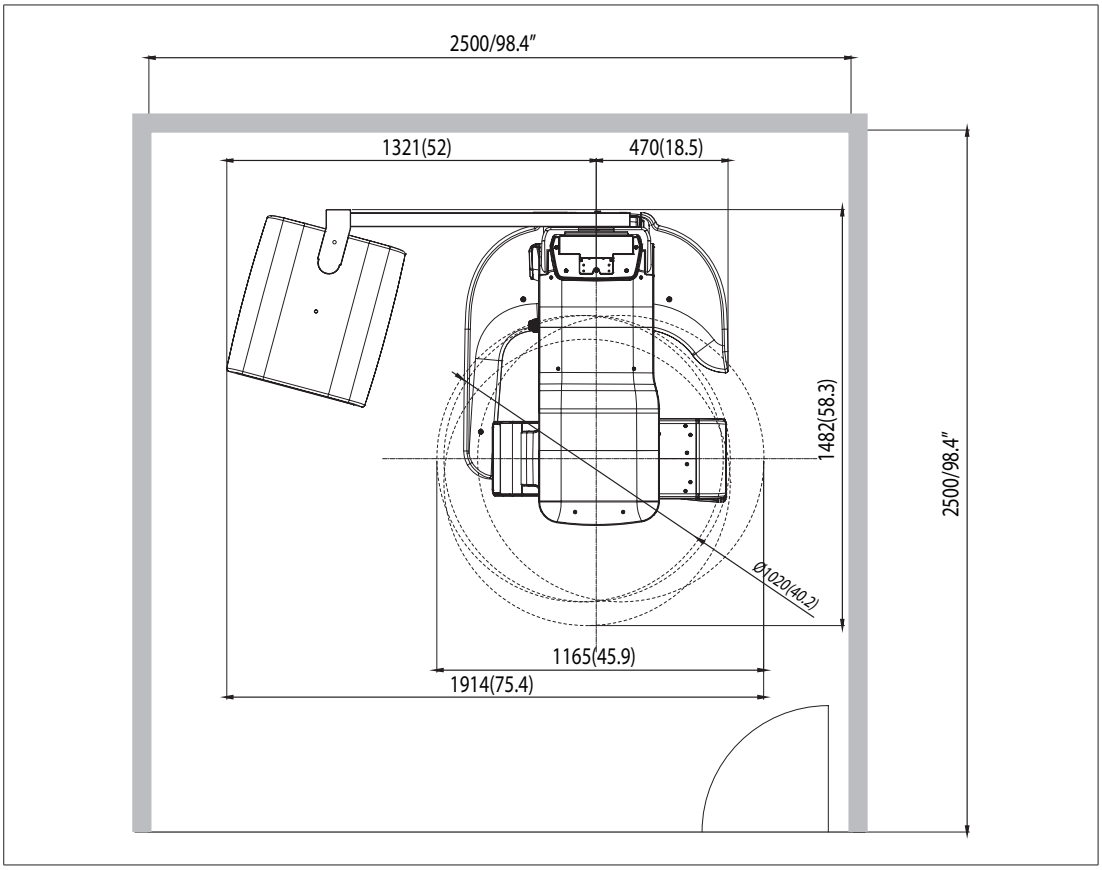
2

Choosing an Installation Site

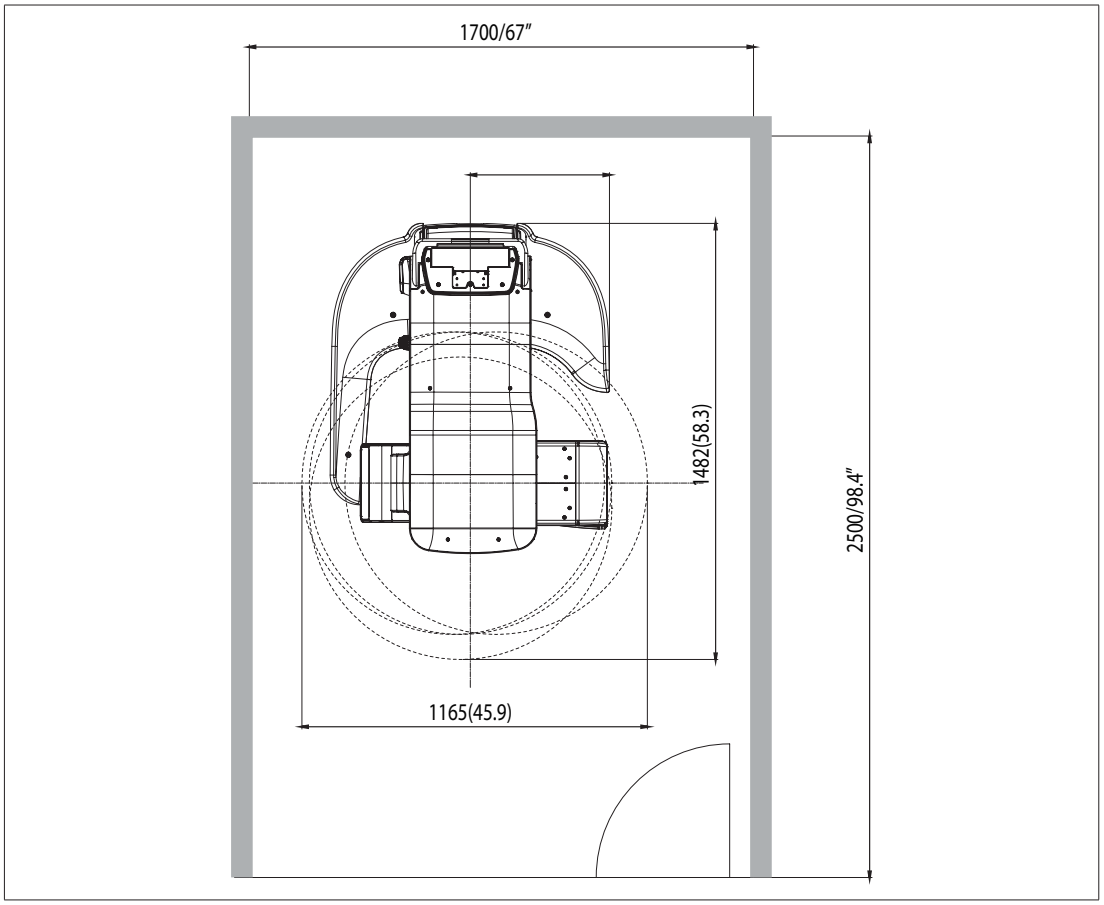
2.1 Room Requirements

IMPORTANT

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

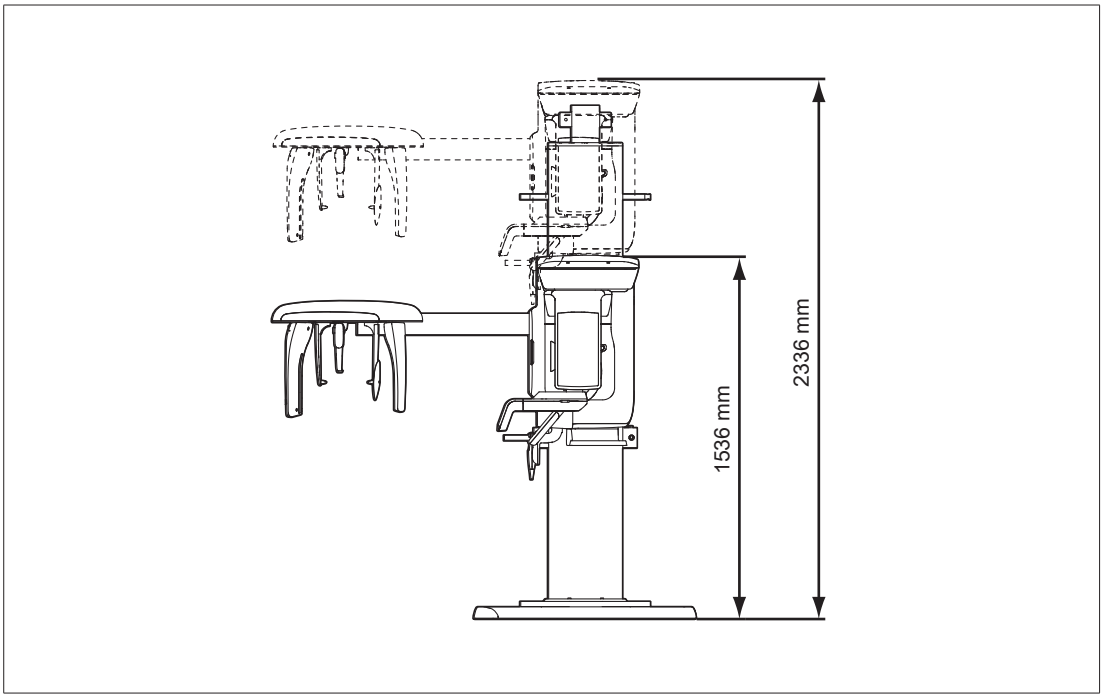


With Cephalometric unit (optional): 2,500mm x 2,500mm/98.4" x 98.4" or wider



Without Cephalometric unit: 2,500mm x 1,700mm/98.4" x 67" or wider

Ceiling Height: ≥2,600mm/103”



Minimum space required:

- **With Cephalometric unit:** 2,500mm(L) x 2,500mm(W) x 2,600mm(H)/98.4"(L) x 98.4"(W) x 103"(H)
- **Without Cephalometric unit:** 2,500mm(L) x 1,700mm(W) x 2,600mm(H)/98.4"(L) x 67"(W) x 103"(H)

IMPORTANT

If the ceiling height is less then 2436mm(=Column Max. height + 100mm), refer to **the Appendix C. Limiting the Column Height** lower the column Max. height.

The system is normally installed beside a wall, and the operator uses the system on the left.

Lead thickness: ≥1 mm

Width of the entrance:

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

Floor area:

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

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

Protection against radiation

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

2.2 Specifications for Electrical Installation

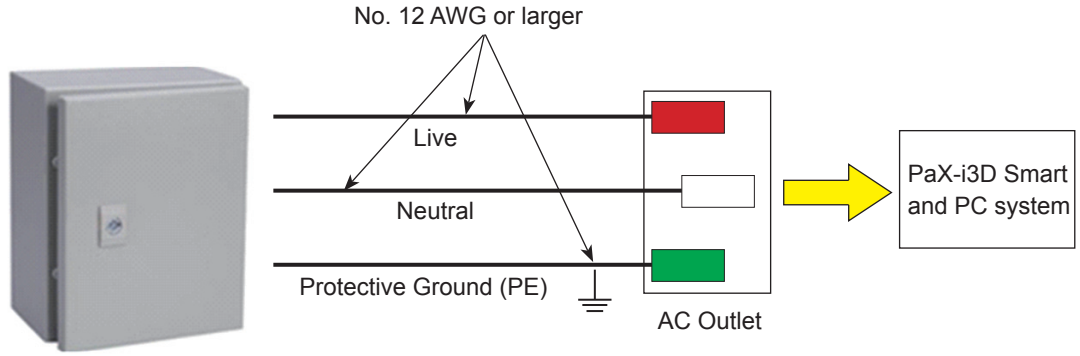
These specifications are based on the **MEIGaN** (Medical electrical installation guidance notes).

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

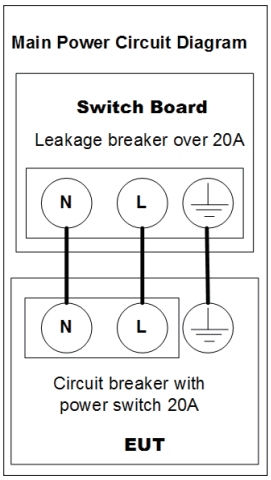
2.3 Electrical Requirements

WARNING	**This equipment must be connected to a grounded outlet to fulfill the safety provisions specified in IEC 60364: the 2nd edition (2006).**
WARNING	**It is mandatory that both PC and equipment use the same power line if connected to an MPSO.** **Whenever possible, use different power outlets for each device. If a multiple portable socket outlet (MPSO) must be used, ensure that the PC and equipment are connected to the same MPSO.**
WARNING	**Use a dedicated power outlet for the power cord. Failure to do so may result in unstable system operation caused by power fluctuations.**
NOTE	**It is strongly recommended that you install an AVR. An AVR (automatic voltage regulator) maintains a constant voltage and allows for continuous operation in the event of a power fluctuation.**

Power supply voltage	AC100-240 V
• The input line voltage depends on the local electrical distribution system. • Allowable input voltage fluctuation requirement: ± 10 %.	
Frequency	50/60 Hz
Phase	single
Power rating (maximum power consumption)	Max.2.2 kVA (during exposure)



Central distribution panel
w/a circuit breaker



1. To assure line voltage quality, a separate 3-core grounded power cable connected directly to central distribution panel with over-current circuit breaker rated for 20/15A must be used.
2. The mains resistance should not exceed 0.5 Ω.
3. This equipment should be connected to the earthed outlet.

2.4 Temperature and Humidity

Operation:

Ambient temperature	10 ~ 35 ℃ (50 ~ 95 ℉)
Relative humidity	30 ~ 75 %
Atmospheric pressure	860 ~ 1060 hPa

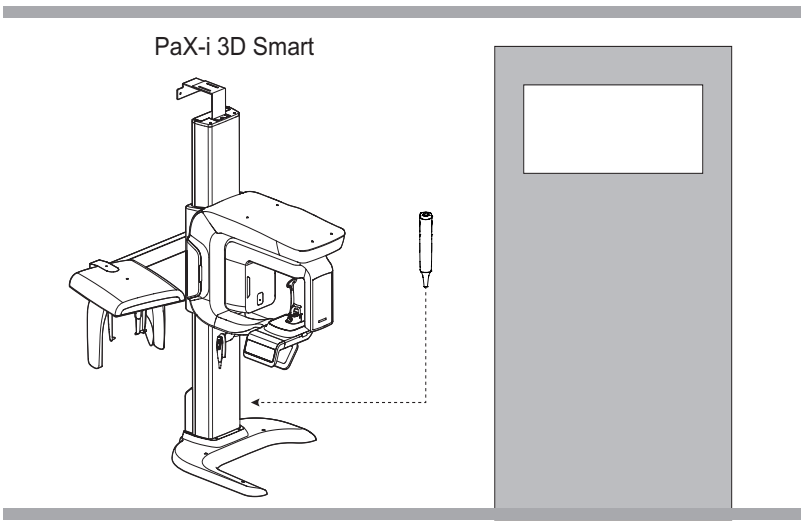
Transportation and storage:

Temperature	-10 ~ 60 ℃ (14 ~ 140 ℉)
Relative humidity	10 ~ 75 % non-condensing
Atmospheric pressure	860 ~ 1060 hPa

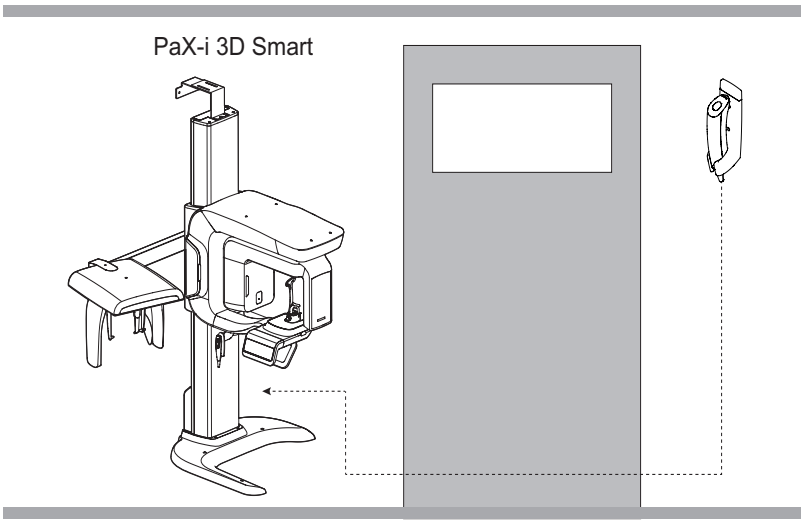
2.5 Exposure Switch Installation Options

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

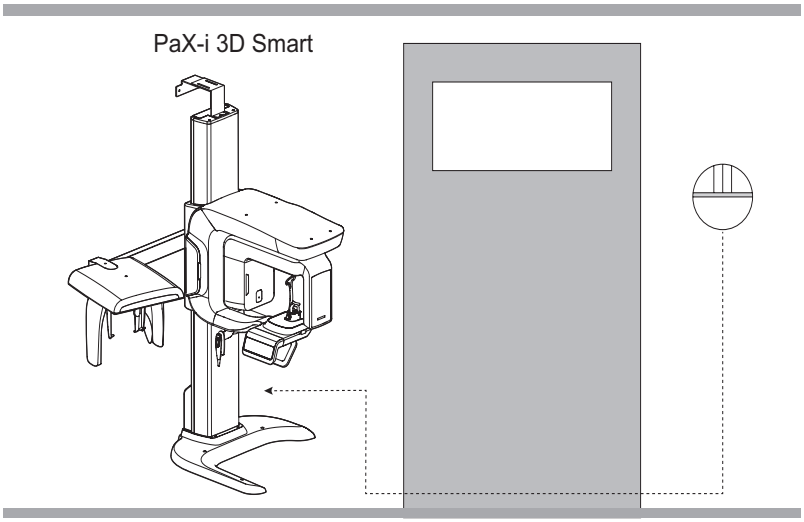
Option No. 1:The user operates the exposure switch from inside the X-Ray room.



Option No. 2: The user operates the exposure switch from outside the X-Ray room. The exposure switch holder is mounted on the wall.

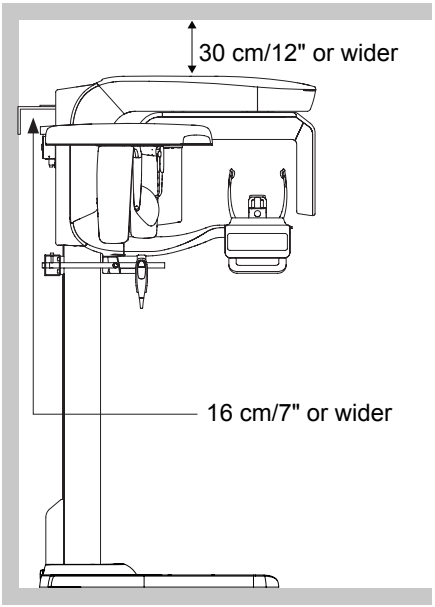


Option No. 3: The 3rd party exposure switch (not VATECH's) is used on demand of the customers. For this scenario, see the Appendix D "Connecting the 3rd party exposure switch" for details.

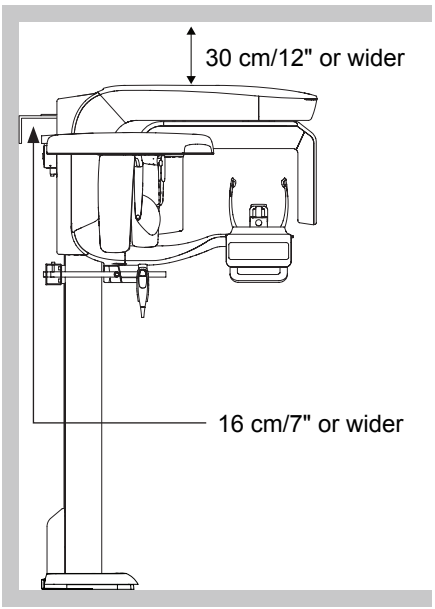


2.6 Installation Versions

Base-mount type



Wall mount type



2.7 Installing the Warning Lamp and Door Interlock Switch

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

- This system can be equipped with a warning lamp and the door interlock switch which are activated when the X-Ray is energized.
- The warning lamp and the door interlock switch are not included with the equipment.
- The warning lamp and the door interlock switch must be installed by a qualified technician.

2.8 Installing the Emergency Stop Switch

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

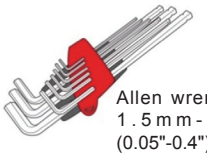
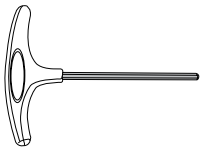
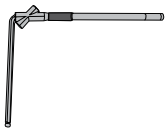
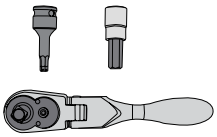
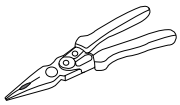
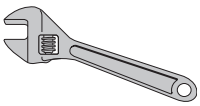
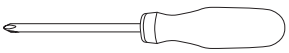
- Install the emergency stop switch along the main power cable in the central distribution panel.
- Install this switch so that it is within easy reach of the operator but cannot be accidentally pressed.
- The switch must be a fool-proof model.

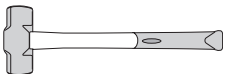
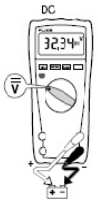
3

Before Installing the System

3.1 Required Tools

The following tools are necessary to install the **PaX-i3D Smart.**

Item	Figure	Size
Wrench set	 Allen wrench set 1.5mm-10mm (0.05"-0.4")	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		
Cross head screw driver w/ magnetic tip		L=200 mm(7.9”)
Spirit level		

Item	Figure	Size
Anti-static glove		
Knife		
Tape ruler		5 m: for wall mounted type
Marker pen(thick tip)		For wall mounted type
Hammer		For wall mounted type
Multi-meter		
Hammer drill		For wall mounted type

3.2 Checking the ShockWatch and TiltWatch Indicators

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

IMPORTANT	**The installers and/or supervisor should check the status indicators on each package before opening the package.**
NOTE	**The ShockWatch and TiltWatch indicators become red if the package has suffered any physical impacts during transportation. However, a red indicator does not necessarily mean that the unit has been damaged.**
	These indicators are affixed only on the main box, which contains the equipment very sensitive to external impacts

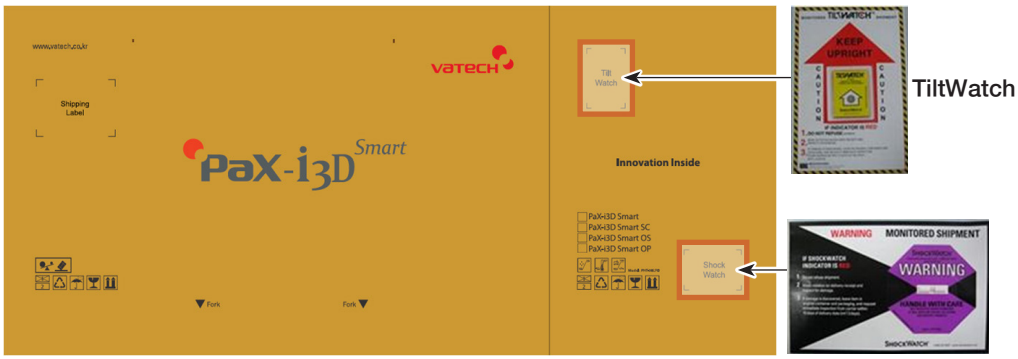
Check the followings before opening each package:

1. These indicators are affixed only on the main box, which contains the equipment very sensitive to external impacts

2. Check the packaging for signs of damage visually.

3. Locate the ShockWatch and TiltWatch indicators and check if they have been activated.

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



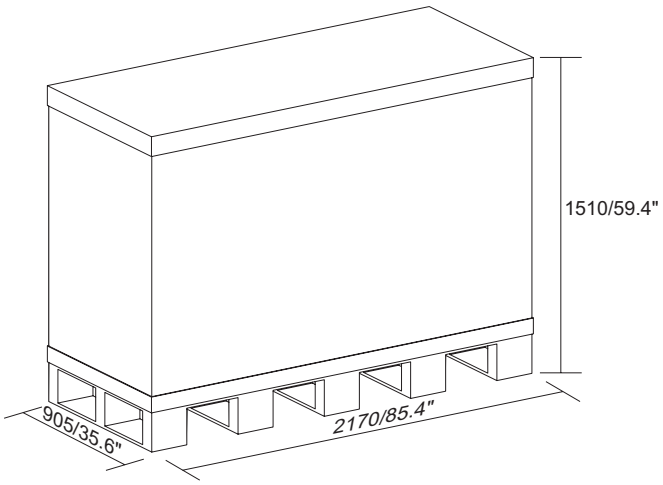
3.3 Unpacking the Boxes

IMPORTANT

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

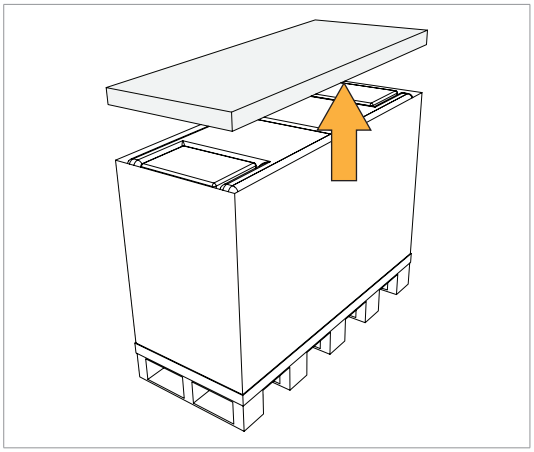
Box No.1: Main box

Components	• Column and Rotating unit assembly • Accessories and parts • PC system(optional)
Size(mm/inch)	2170(L) x 905(W) x 1510(H) / 85.4"(L) x 35.6"(W) x 59.4"(H)
Weight(kg/lbs)	265/584

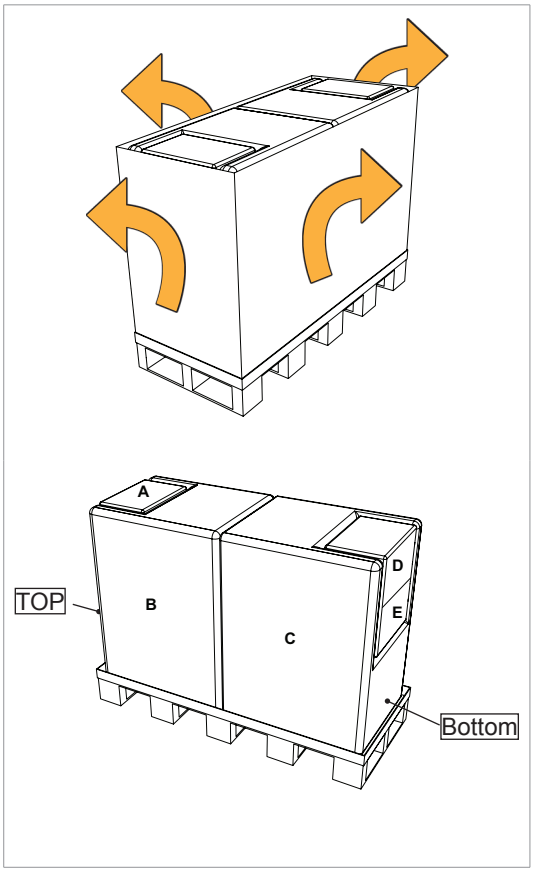


Main box

1. Move the main box to a convenient place as close as possible to the installation location



2. Separate the top cover after removing the strapping bands.



3. Lift up a small distance and remove the side covers.

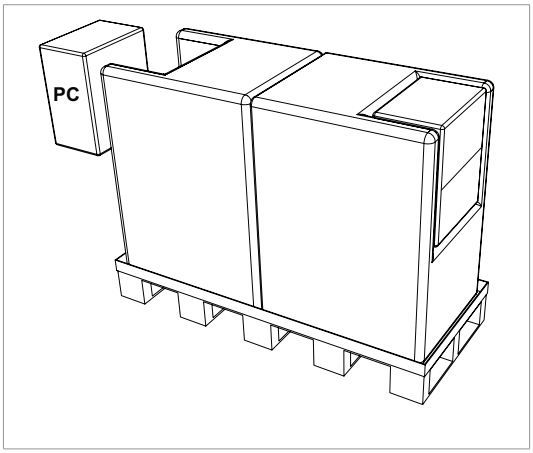
A: PC system (Optional)

B: PE foam

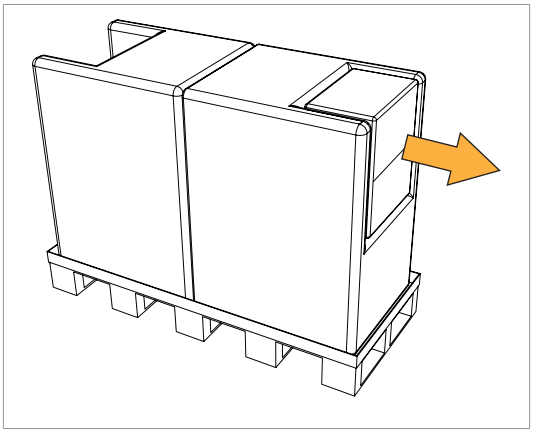
C: PE foam

D: Accessory and part box1

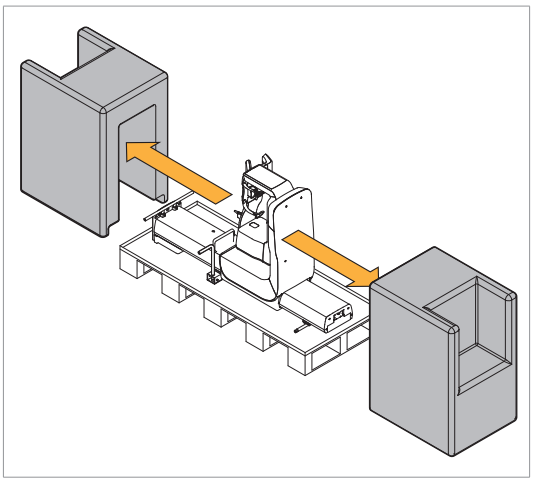
E: Accessory and part box2



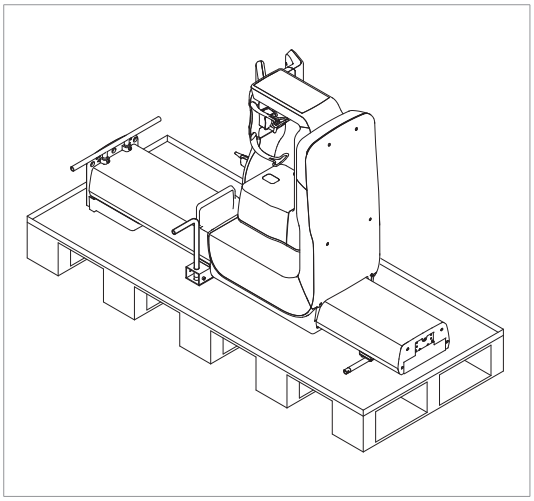
4. Put the PC system(optional) down on the floor.



5. Put the Accessory boxes(D,E) on the floor.



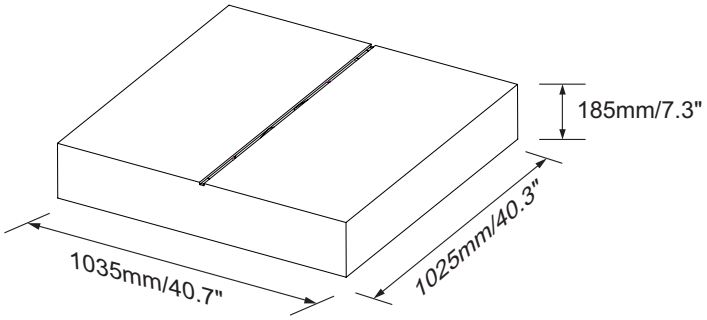
6. Separate 2 side PE(B,C) foams.



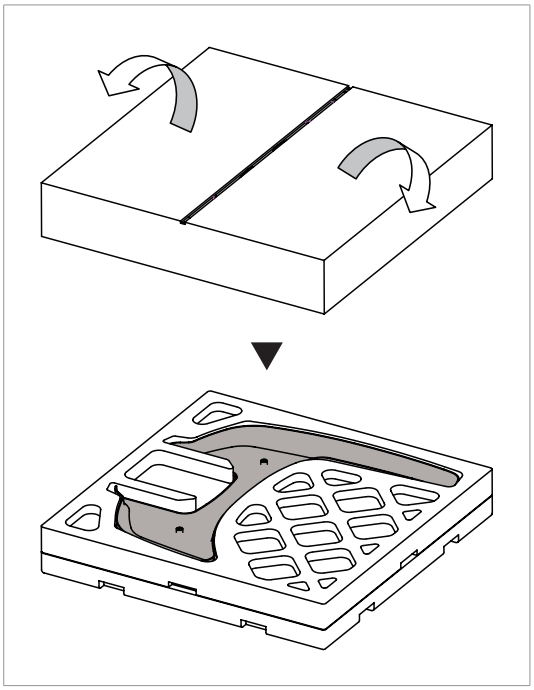
View after the removal of the EPS foams

Box No. 2: Base unit

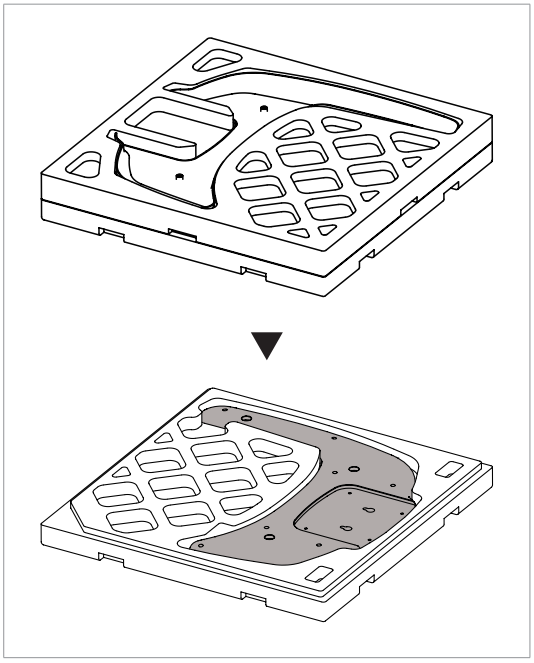
Component	Size(mm/inch)	Weight(kg/lbs)
Base	1035(L) x 1025(W) x 185(H) / 40.7"(L) x 40.3"(W) x 7.3"(H)	47/103



Removing the cover



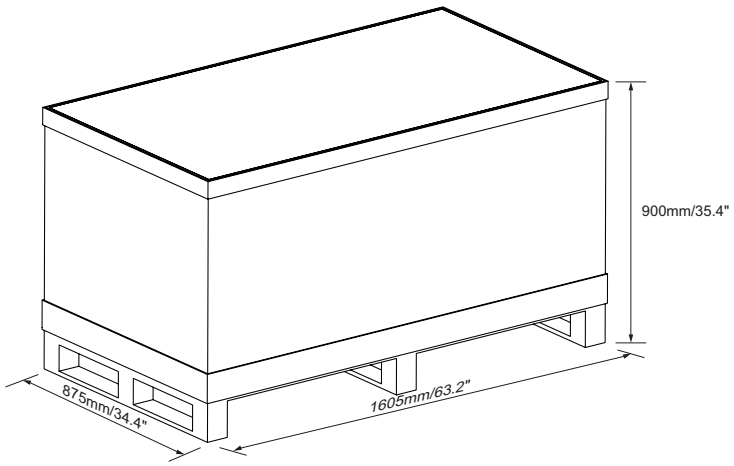
1. Open the box cover, the base cover appears.



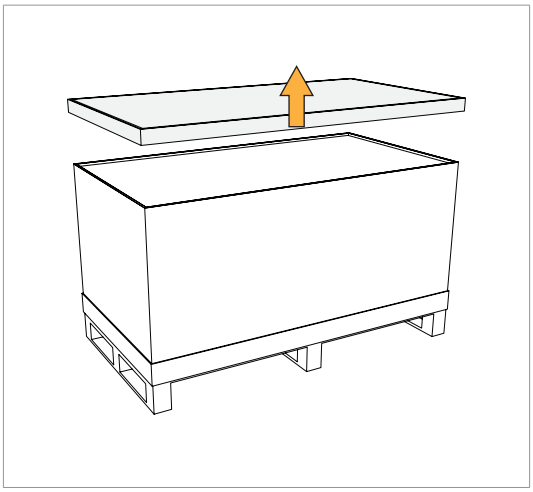
2. Remove the base cover.

Box No. 3: Cephalometric unit (Optional)

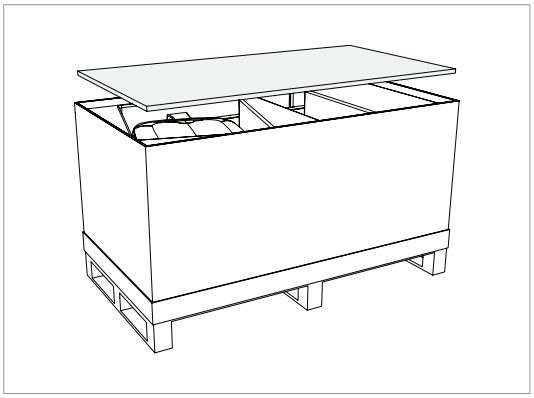
Component	Size(mm/inch)	Weight(kg/lbs)
Cephalometric unit	1605(L) x 875(W) x 900(H) / 63.2"(L) x 34.4"(W) x 35.4"(H)	50/110



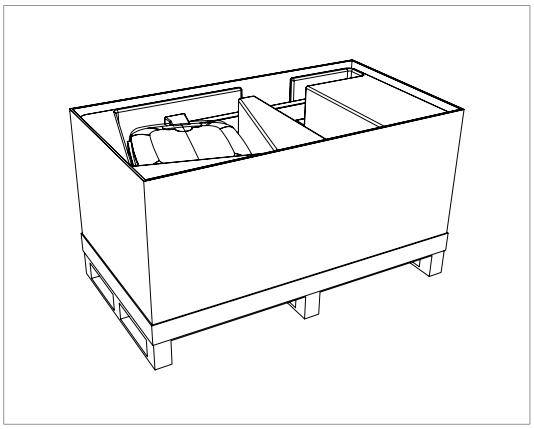
Removing the cover



1. Open the box cover, starting with the top cover.



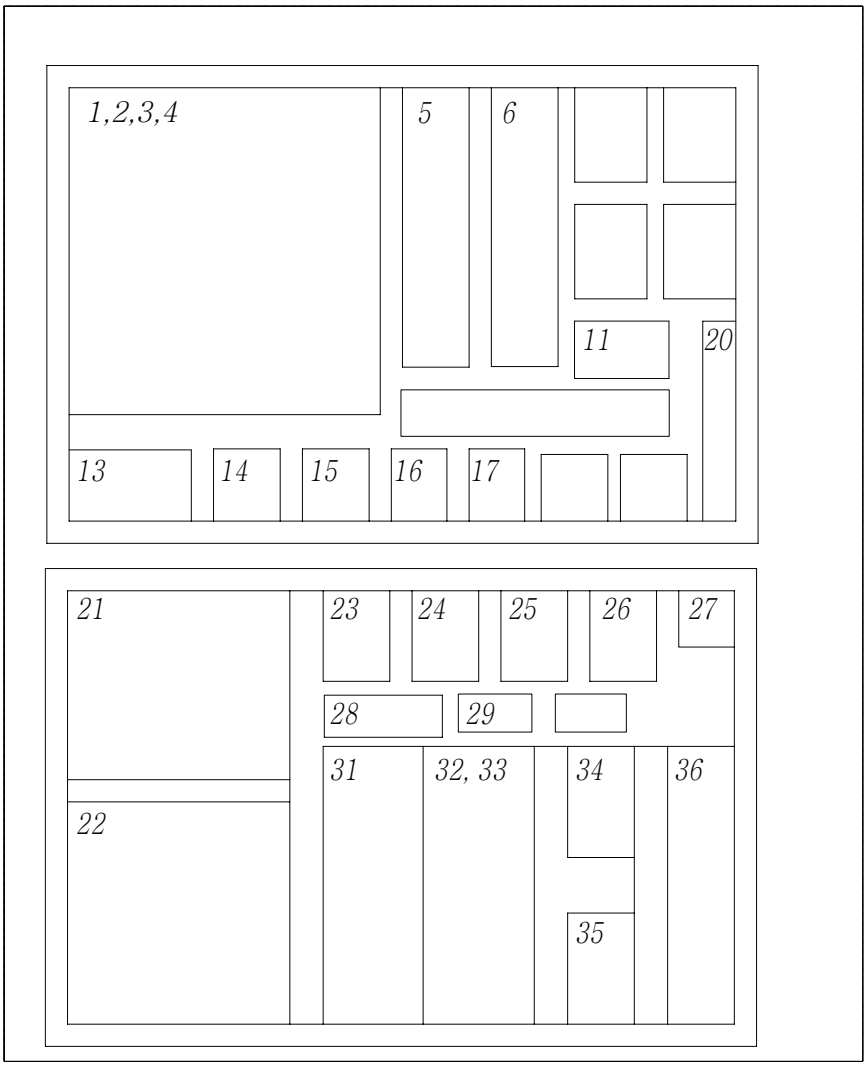
2. Remove the top Styrofoam cover.



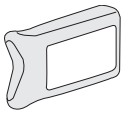
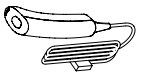
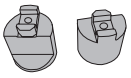
The view after removal of the Styrofoam.

3.4 Checking the Parts

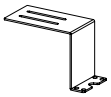
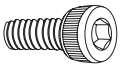
Location layout of the parts and accessories

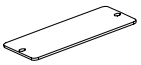
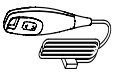
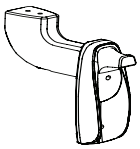


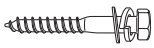
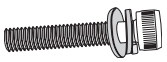
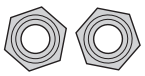
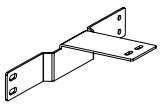
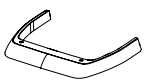
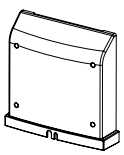
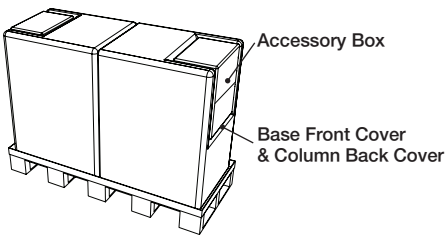
Parts list: In the accessory box

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
1	MANUALS	User		1		Yes ☐ No ☐
		Installation		1		Yes ☐ No ☐
		EasyDent or EzDent-i		1		Yes ☐ No ☐
		Ez3D plus or Ez3D-i		1		Yes ☐ No ☐
	INSTALLATION CD			1		Yes ☐ No ☐
	USB key	Ez3D plus or Ez3D-i		1		Yes ☐ No ☐
2	EXPOSURE SWITCH			1		Yes ☐ No ☐
	EXPOSURE SWITCH HOLDER			1		Yes ☐ No ☐
	DOUBLE SIDED STICKER			1		Yes ☐ No ☐
	SCREWS	M3X16		2		Yes ☐ No ☐
3	PLATE HAND REST CEPH			1	CEPH Option	Yes ☐ No ☐
	BLOCK ACRYL FIX BOLT			2		Yes ☐ No ☐
	KNOBS			2		Yes ☐ No ☐
	HANDREST STICKER			1		Yes ☐ No ☐

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)	
4	ALIGNMENT PLATE			1	Floor Mount (Optional)	Yes ☐	No ☐
5	TEMPLE SUPPORT			1 set		Yes ☐	No ☐
6	ANTI-STATIC GLOVES			1 pair		Yes ☐	No ☐
7~10	Left blank intentionally						
11	PANO BITE COVER			1		Yes ☐	No ☐
12	Left blank intentionally						
13	BITE BLOCK	Normal		1		Yes ☐	No ☐
	BITE BLOCK CAP			2		Yes ☐	No ☐
	CHIN SUPPORT	TMJ/SINUS		1		Yes ☐	No ☐
	CHIN SUPPORT CAP			2		Yes ☐	No ☐
14	CAP: EAR ROD			2+2	CEPH (2: on the equipment)	Yes ☐	No ☐
	SILICON COVER: NASAL POSITIONER			1	CEPH: extra	Yes ☐	No ☐

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)	
15	SILICON COVER	CHINREST		1	CT/PANO	Yes ☐	No ☐
16	SILICON CAP	Black		6		Yes ☐	No ☐
17	BASE CAP			3	Base	Yes ☐	No ☐
18, 19	Left blank intentionally						
20	CABLE TIE			10		Yes ☐	No ☐
21	FRAME GRABBER SYSTEM	Optic cable (10m/32.8”)		1 (2)	If SC type is installed, one additional fiber optic cable is required.	Yes ☐	No ☐
		AG6		1	If PC is supplied, card is already installed	Yes ☐	No ☐
22	COLUMN BRACKET			1		Yes ☐	No ☐
23	WRENCH BOLT	M10 x 25 w/spring and flat washers		6	Assembling Column To Base	Yes ☐	No ☐
24	WRENCH BOLT	M8 x 45		2		Yes ☐	No ☐
25	WRENCH BOLT	M8 x 20 w/spring washer		4		Yes ☐	No ☐
	FLAT WASHER			4		Yes ☐	No ☐

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
26	TRUSS BOLT	M5 x 8		3		Yes ☐ No ☐
27	TRUSS BOLT	M4 x 8		10		Yes ☐ No ☐
28	FLAT HEAD SCREW	3 x 6		2	CEPH	Yes ☐ No ☐
	CEPH ARM COVER			1		Yes ☐ No ☐
29	FLAT HEAD SCREW	5 x 12		4		Yes ☐ No ☐
30	Left blank intentionally					
31	PROTRACTOR			1 set	CEPH	Yes ☐ No ☐
32	Left blank intentionally					
33	UP/DOWN SWITCH			1	Optional	Yes ☐ No ☐
	UP/DOWN SWITCH HOLDER			1		Yes ☐ No ☐
	DOUBLE SIDED SITCKER			1		Yes ☐ No ☐
	SCREWS	M4 x 10		2		Yes ☐ No ☐

Part No.	Items	Specification	Figure	QTY	Comments	Confirmed (OK?)
34	WOOD SCREWS	M8 x 60 (w/flat and spring washers)		2		Yes ☐ No ☐
	WOOD SCREWS	M12 x 70		2		Yes ☐ No ☐
	ANCHOR BOLTS	M8(w/flat and spring washers)		4		Yes ☐ No ☐
35	WRENCH BOLTS	M8 x 25 (w/flat and spring washers)		2		Yes ☐ No ☐
	NUTS	M8		2		Yes ☐ No ☐
36	WALL BRACKET			1		Yes ☐ No ☐
	BASE FRONT COVER			1		Yes ☐ No ☐
	COLUMN BACK COVER			1		Yes ☐ No ☐
37	NOTE	**BASE FRONT COVER & COLUMN BACK COVER location** 				

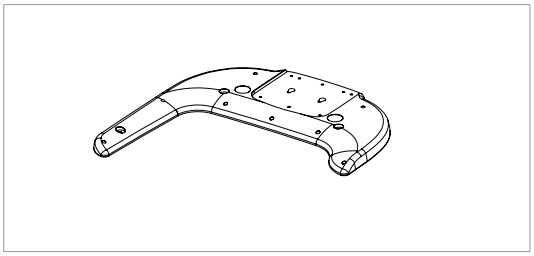
4

Installing the Equipment: Floor Standing (Optional)

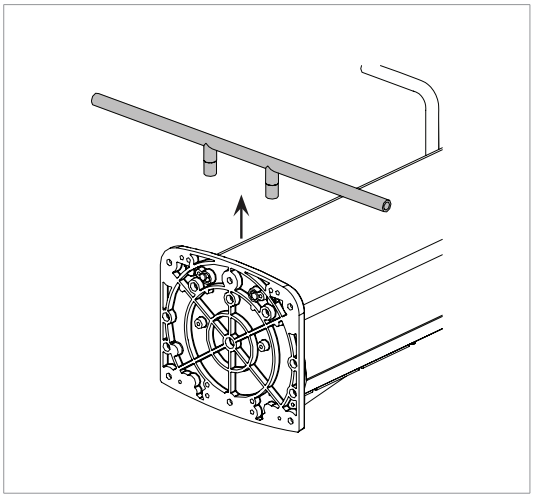
4.1 Assembling the Base and Main Units

NOTE

If the installation site is a concrete floor, go to the section 4.5 Fixing the base (Optional) and do number 1 first, after that turn back 4.1 Assembling the Base and Main Units.



1. Put the base on the floor near the installation location.

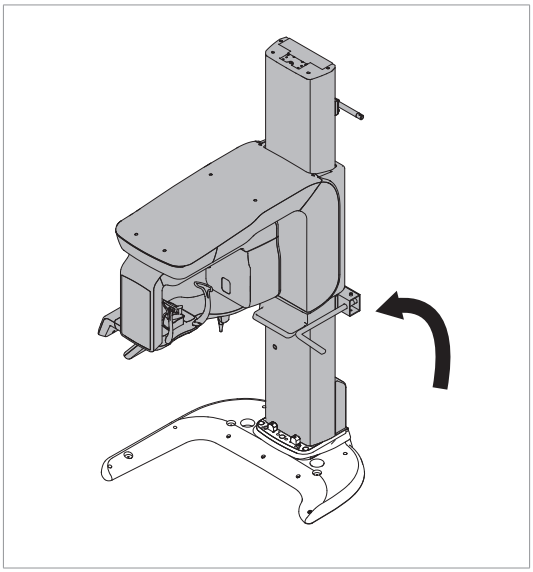


2. Remove the carrying handle at the bottom of the column unit.

CAUTION

Be careful not to damage the cables. Especially, the fiber optic cable is very sensitive to the external impact.

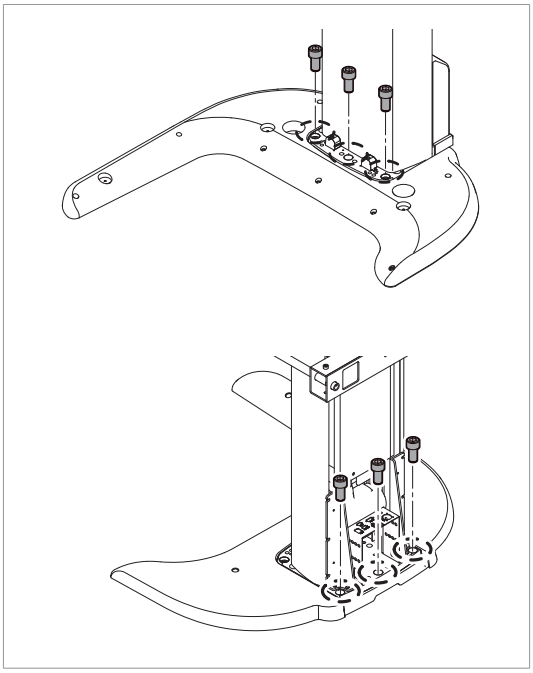
Allen wrench		6 mm/0.24”



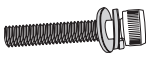
3. Erect the equipment in an upright position on the base.

CAUTION

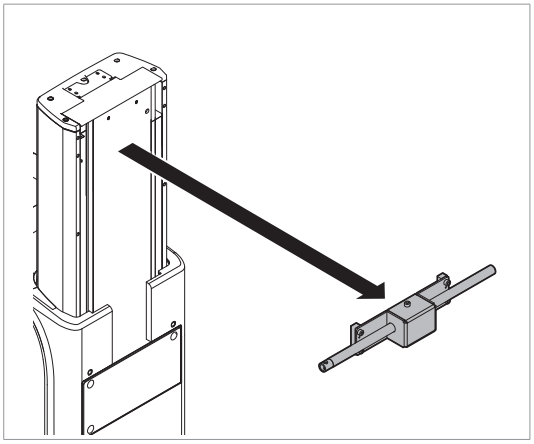
Be careful not to damage the cables. Before erecting the equipment, keep them clear of the equipment



4. Fix the column unit to the base unit**.**

Allen wrench	8 mm/0.31”	
WRENCH BOLT	M10 x 25 w/spring and flat washers Part No.: 23 6 PCS	

Removing the Transportation Handle



1. Move the equipment to installation location as close as possible.

2. Remove the upper carrying handle.

Allen wrench	6 mm/0.24”	

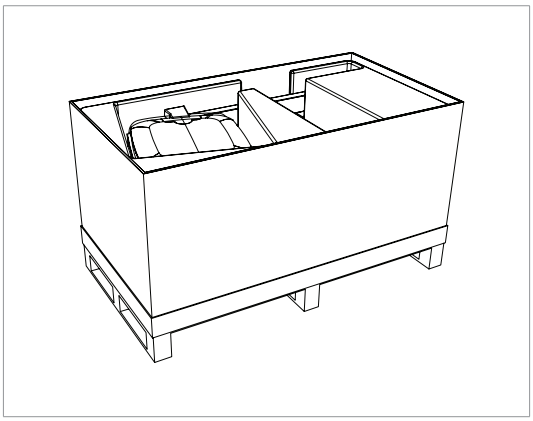
CAUTION

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

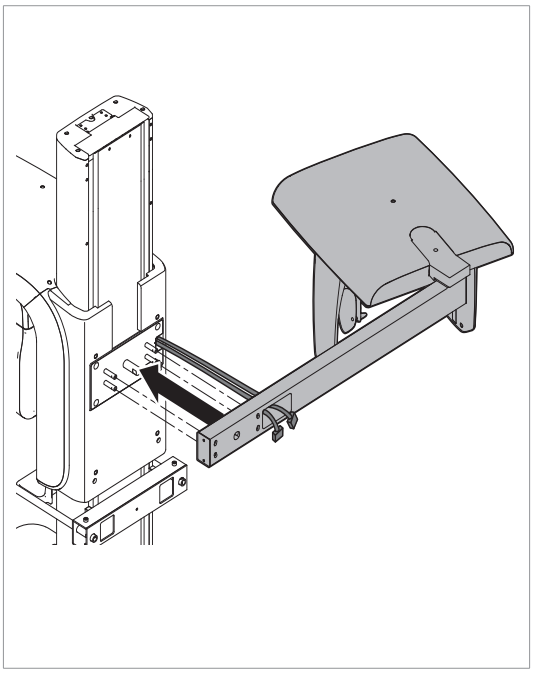
4.2 Installing the CEPH Unit (Optional)

WARNING

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



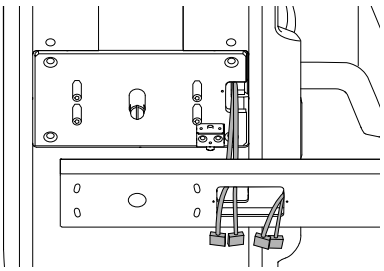
1. Now it is assumed that the CEPH box has already been opened.

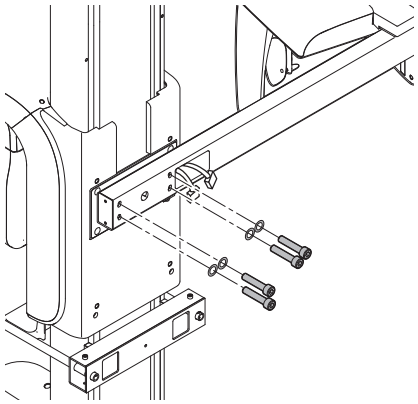


2. **Move and** mount the CEPH unit on the main unit carefully, while observing the insertion state of 4 studs.

IMPORTANT

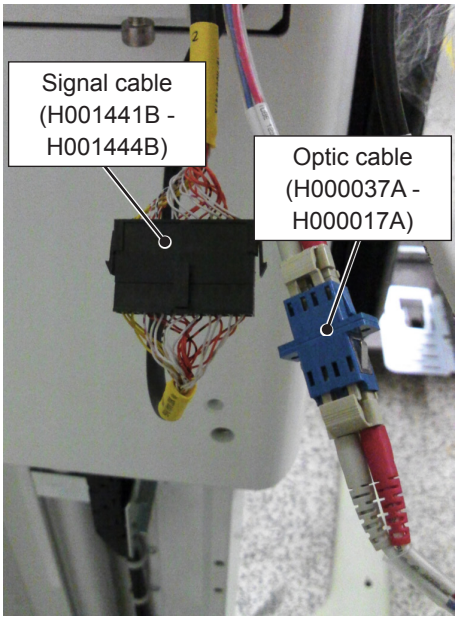
Make sure the CEPH cables from the equipment go through the CEPH arm hole.





3. Assemble the CEPH unit by using four wrench bolts and flat washers.

Wrench bolts w/ spring washer	M8 x 20 Part No.: 25 4 PCS	
Flat washer		
Allen wrench	6 mm/0.24”	



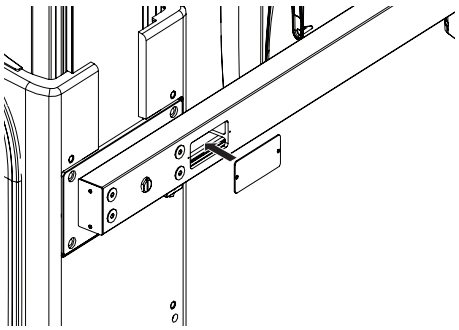
SC CEPH

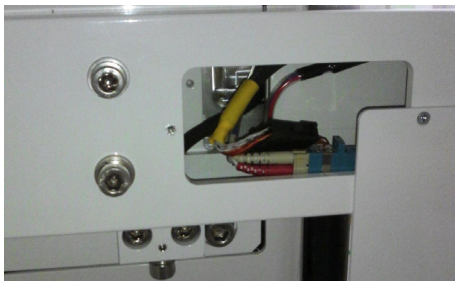
4. Connect the cables as shown in the figure.

CAUTION

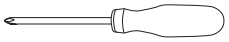
When handling fiber optic cable,

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

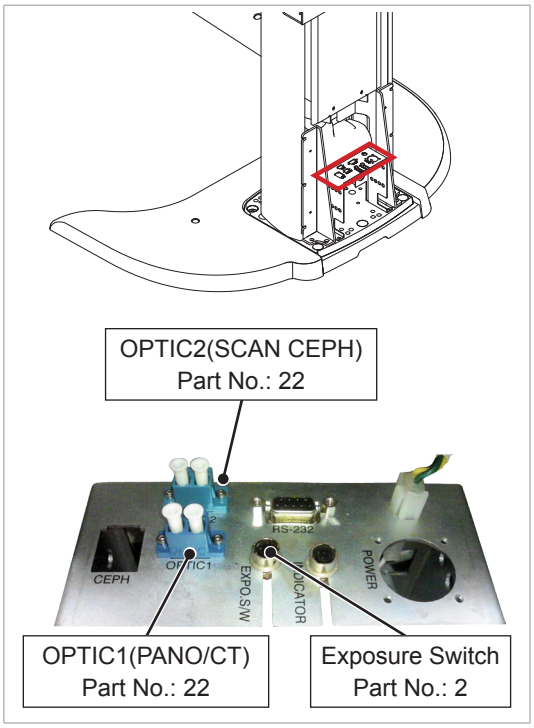




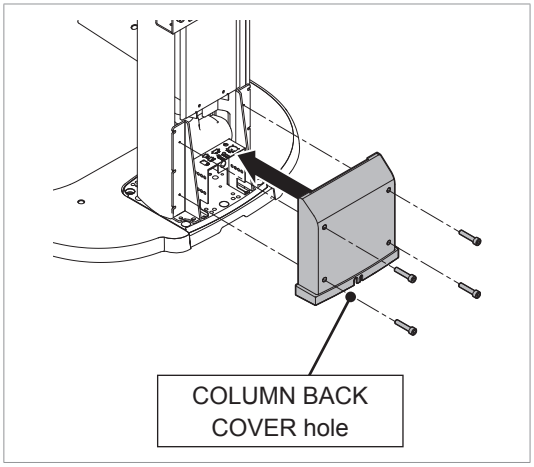
5. Put the cables inside the CEPH Arm and assemble the CEPH arm cover by using two flat head screw.

CEPH ARM COVER	Part No. 28	
FLAT HEAD SCREW	M3 x 6 Part No. 28 2 PCS	
Cross head screw driver w/ magnetic tip	6 mm/0.24”	

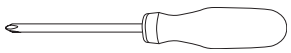
4.3 Connecting the Cables to the Equipment



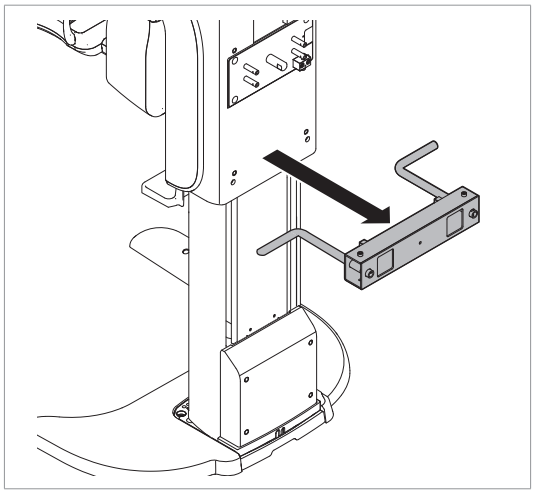
1. Connect the cables in the back of the column as shown in the figure.



2. Assemble the COLUMN BACK COVER with four truss bolts. Ensure the cables go through the COLUMN BACK COVER holes.

Truss bolts	M4 x 8 Part No.: 27 4 pcs	
Cross head screw driver with magnetic tip		

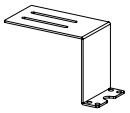
4.4 Installing the Wall and Column Brackets

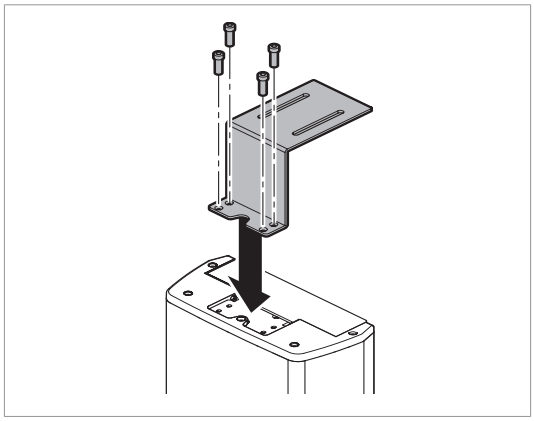


1. Remove the middle carrying handle.

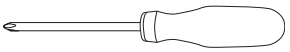
2. Move the equipment to installation site near the wall.

3. Prepare the column bracket

COLUMN BRACKET	Part No.: 22	

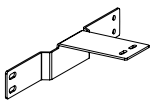


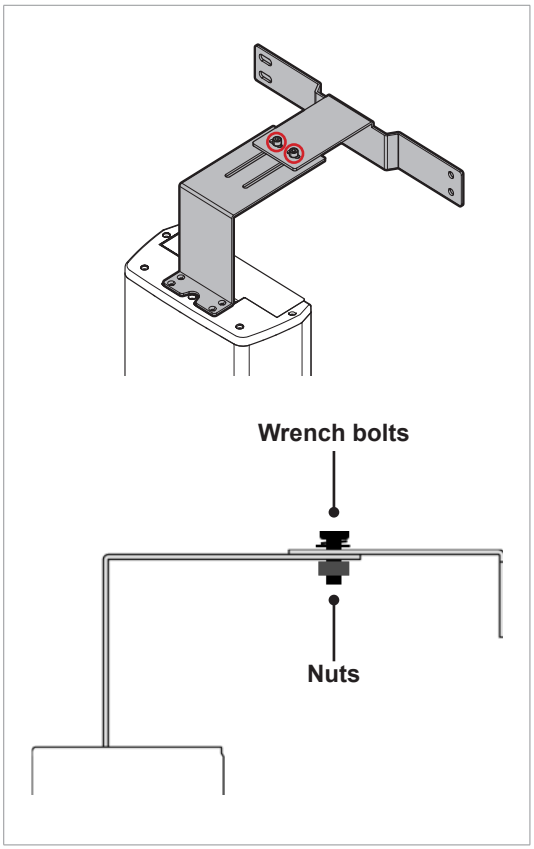
4. Assemble the column bracket to the top of the column with four flat head screws.

FLAT HEAD SCREWS	M5 x 12 Part No.: 29 4 PCS	
Cross head screw driver with magnetic tip		

Combining column and wall brackets

1. Prepare the wall bracket.

WALL BRACKET	Part No.: 36	



Marking 4 points on the wall

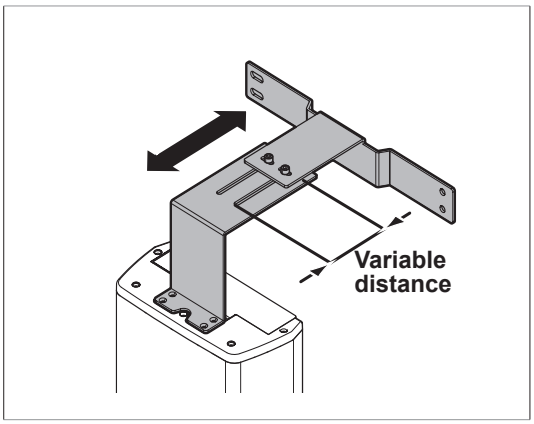
2. Combine the column and wall brackets in the following manner with the 2 wrench bolts.

Allen wrench	6 mm/0.24”	
Monkey wrench		
WRENCH BOLTS	M8 x 25 w/ spring and flat washers Part No.: 35 2 PCS	
NUTS	Part No.: 35 2 PCS	

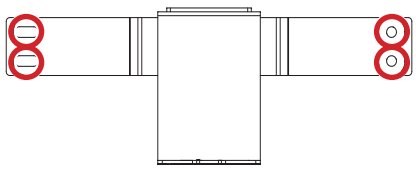
CAUTION

Do not tighten the bolts fully yet.

1. Move the equipment to the installation site as close as possible



2. Adjust the distance between the wall and equipment by moving it slightly, so that the wall bracket touches the wall.

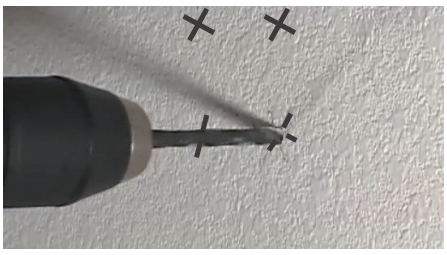


On the wall

3. Mark 4 anchor bolts locations on the wall.

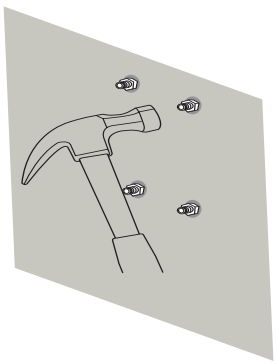
Marker	

Drilling on the wall

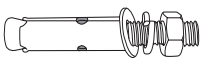
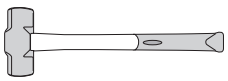


1. Drill the wall holes of size 10.5 mm x 30 mm (depth) using the concrete hammer drill.

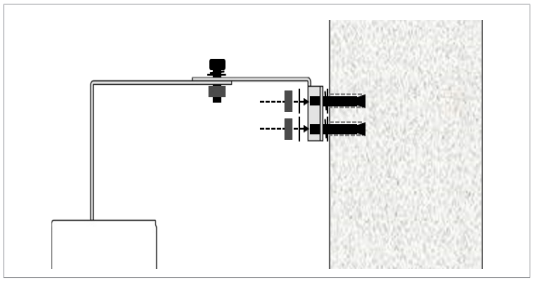
2. Remove the debris and clean the holes using the dust pump.



3. Anchor the bolts with the hammer.Verify that the anchors are secured

WRENCH BOLTS	M8 Size Part No.: 34 Wall: 4 PCS	
Hammer drill		

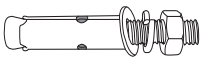
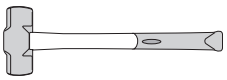
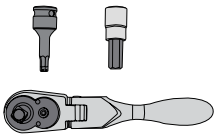
Combining the equipment with the anchor bolts

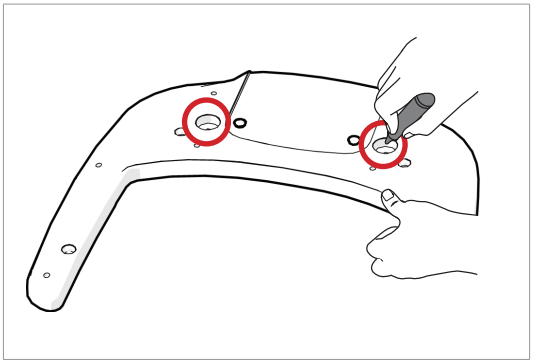


1. Place the equipment properly in its position and secure it with the nuts.

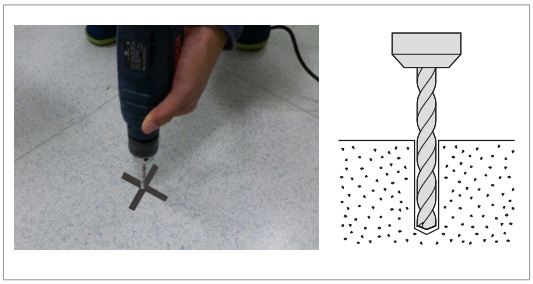
4.5 Fixing the base (Optional)

Concrete floor

Anchor bolts	M8 Size Part No. : 34 2PCS	
Hammer drill	L=200mm7.9	
Hammer		
Ratchet wrench		

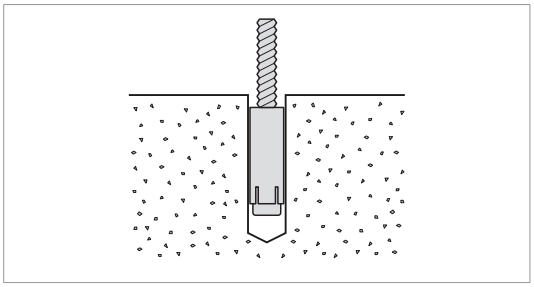


1. Before installing the equipment, put the base unit on the installation site and mark 2 locations on the floor.

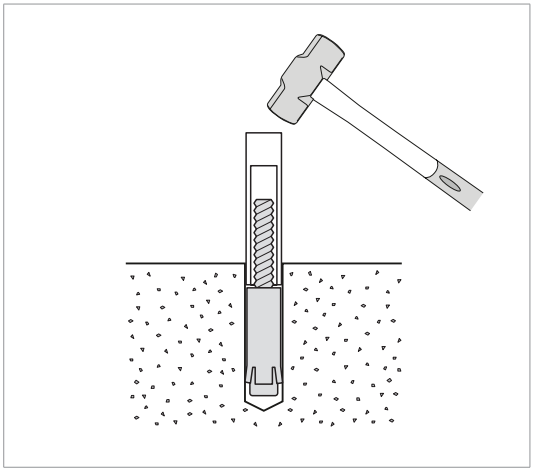


2. Drill the floor holes of size 12mm x 30mm (depth) using the concrete hammer drill.

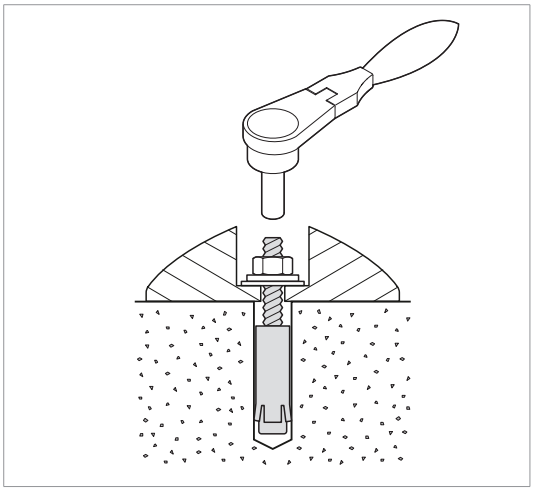
3. Remove the debris and clean the holes using the dust pump.



4. Remove nuts and washers, put the anchor bolts into the holes.



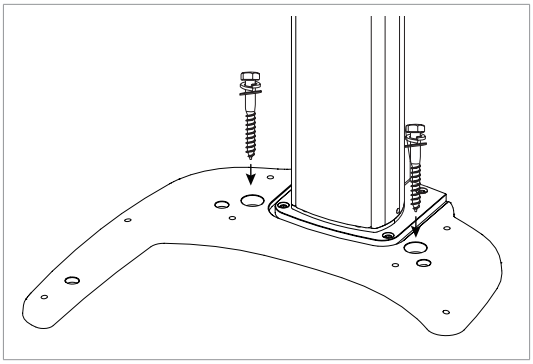
5. Secure the anchor bolts with the hammer.



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

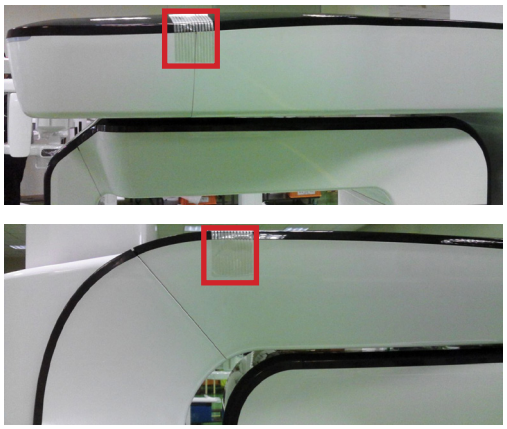
Wooden floor

Wood screws	M12 x 70 Part No.: 34 2 PCS	
Hammer drill	L=200mm7.9	



1. Secure the base unit using the wood screws.

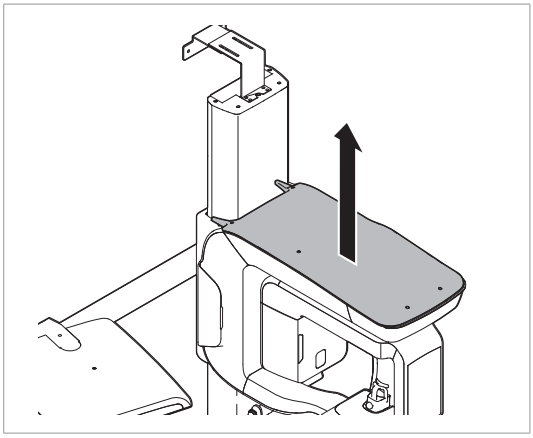
4.6 Removing the Transportation Safety Bolts



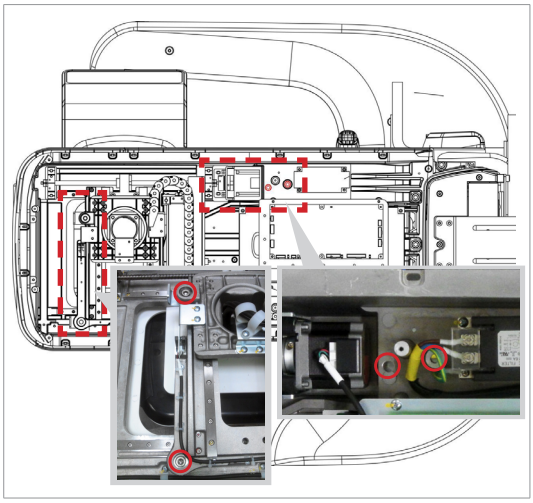
1. Remove the semi-clear tape on the both sides

CAUTION

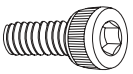
Be careful not to scratch the cover.



2. Remove the vertical frame cover.



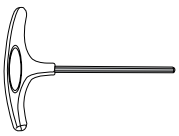
3. Remove four safety bolts.

Wrench bolts	M 8	
Allen wrench	6 mm/0.24”	

4. Remove two column fixing bolts.

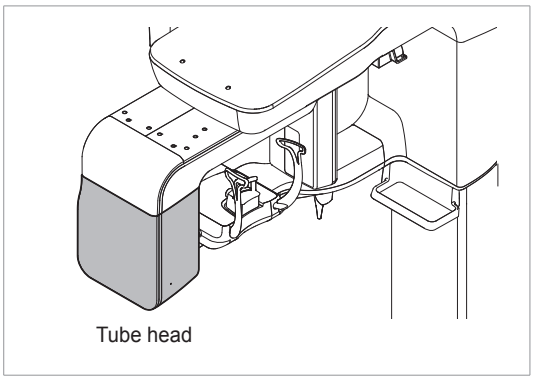
Allen wrench	5 mm/0.2"	

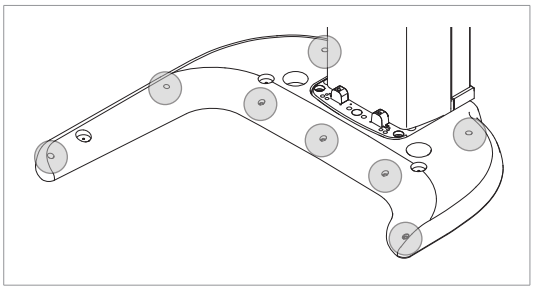
4.7 Leveling the Equipment

 8mm / 0.3"	T-shaped hex wrench
	Spirit level

IMPORTANT

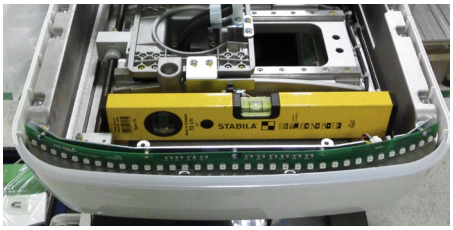
Ensure that the spirit level should restonly on the locations indicated in the following figures to obtain the accurate center.


Tube head

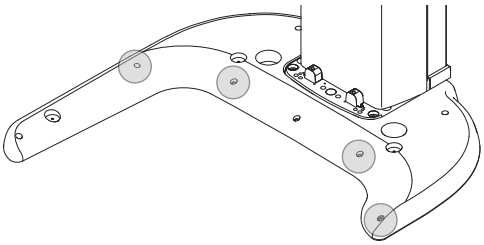


1. Prepare the spirit level.
2. Position the rotating unit so that the X-Ray tube head faces the front.
3. Turn all eight screws on the base plate unit clockwise until they touch the ground.

Leveling right and left

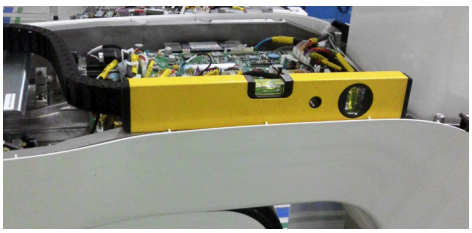


1. Place the spirit level, as shown in the figure..

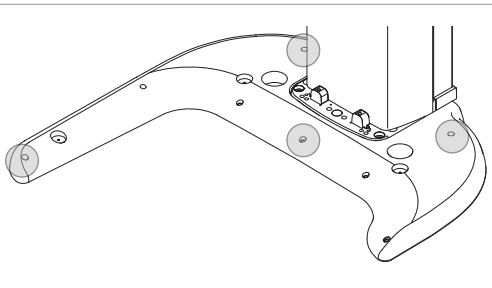


2. Adjust the base until the bubble on the spirit level centers in the middle, by turning left and right screws clockwise or vice versa.

Leveling the front and back

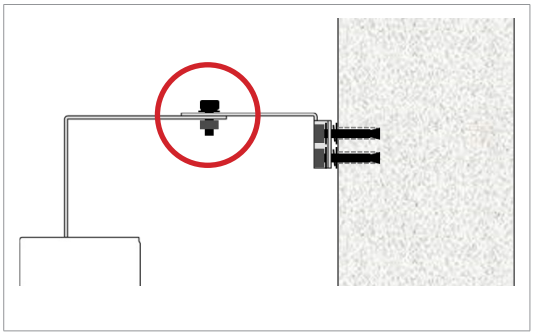


3. Place the spirit level on the vertical frame, as shown in the following figure.

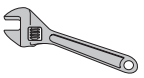


4. Adjust the screws until bubble of spirit level centers (level), by turning the front and/or back screws clockwise or vice versa.

4.8 Tightening the Bolts firmly



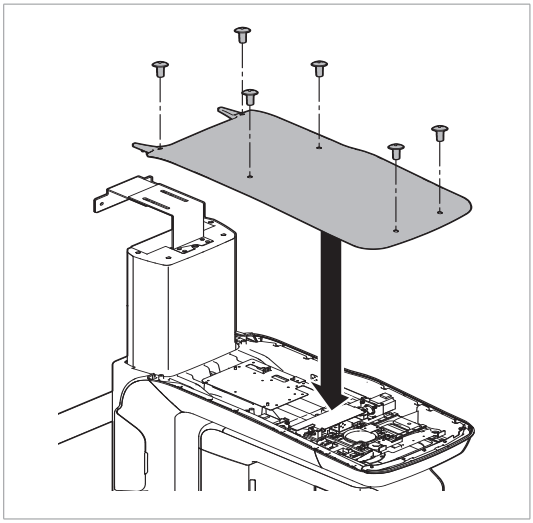
1. Tighten the joint bracket bolts.

Allen wrench	6 mm/0.24”	
Monkey wrench		

5

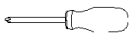
Completing Miscellaneous Works

5.1 Assembling Various Covers

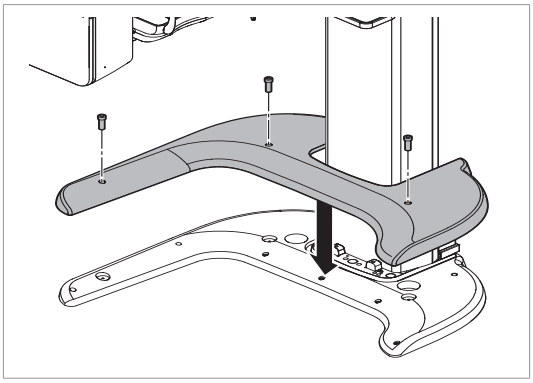


Vertical frame cover

1. Assemble the vertical frame cover and fix it with six truss bolts (Part No.: 27).

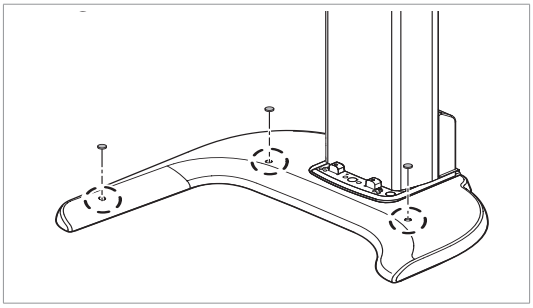
Truss Bolts	M4 x 8 Part NO . : 27 6 PCS	
Cross head screw driver w/ magnetic tip	L=200 mm/7.9	

2. Put the six hole caps on the vertical frame cover holes(Part No.:16).

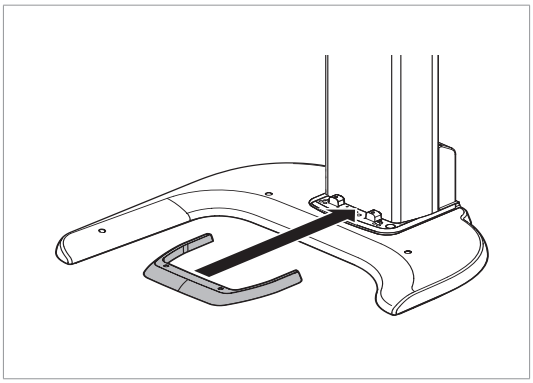


Base cover(optional)

1. Assemble the base cover and fix it with three truss bolts(Part No: 26).



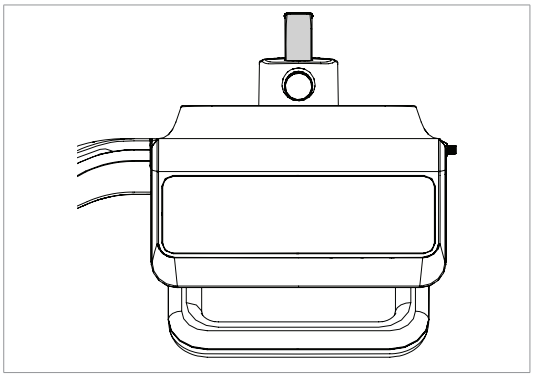
2. Cover 3 holes on the base with three silicon caps(Part No: 17)



Base front cover

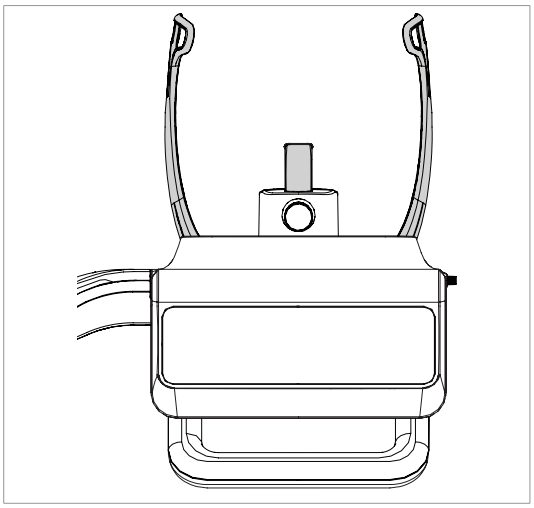
1. Assemble the base front cover to the column.

5.2 Assembling Temple and Chin Supports



1. Insert the normal bite block into the chinrest.

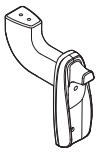
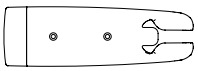
BITE BLOCK: NORMAL	Part No.: 13 1 PCS	



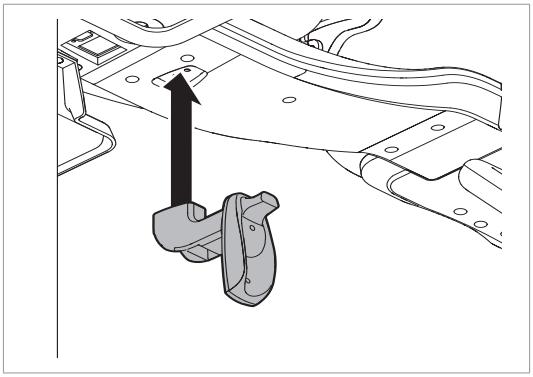
2. Insert the temple supports and ear rod caps.

TEMPLE SUPPORT	Part No.: 5 2 PCS(R, L)	

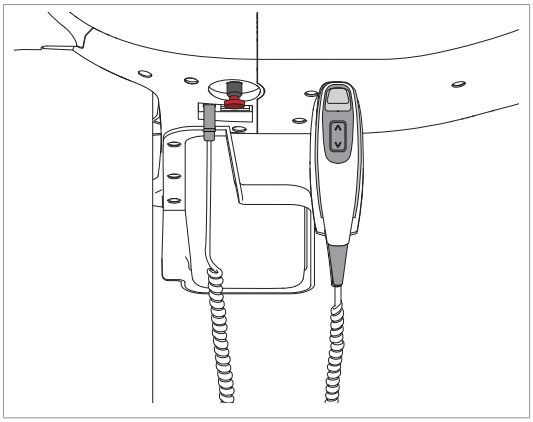
5.3 Installing the Switch Holders

UP/DOWN SWITCH HOLDER (Optional)	Part No.:33 1 PCS	
EXPOSURE SWITCH HOLDER	Part No.:2 1 PCS	

UP/DOWN switch holder



1. Assemble the UP/DOWN switch holder on the bottom of the handle frame with two truss bolts(M4 x 10).



2. Connect the UP/DOWN switch(Optional, Part No.:33) to the unit and hang it on the switch holder.

Exposure switch holder

1. Locate the exposure switch holder(Part No.:2) with a sticker and two screws.
2. Install the switch holder on the wall at the appropriate height using two screws.

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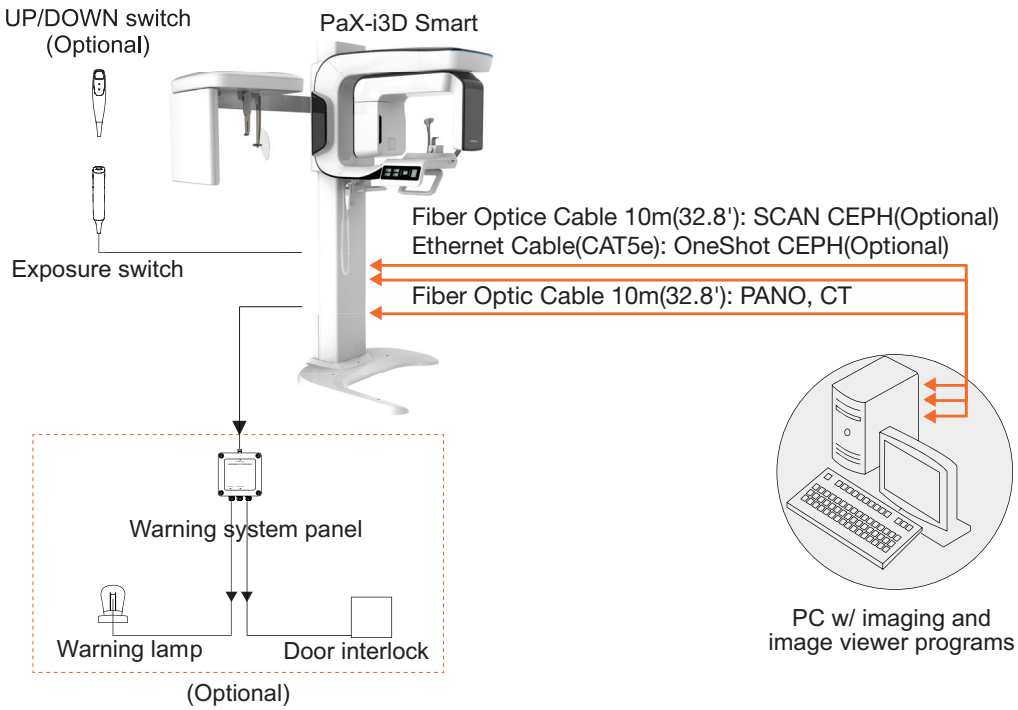
6

Setting up PC

6.1 Direct Connection Diagram



Fiber Optic Cable & Ethernet cable: Used to transfer image data to the PC.

Warning system panel: Used to provide a visible indicator: light when the equipment is irradiating X-Ray

6.2 The Recommended PC Requirements

1. **It is mandatory to ensure that the PC system configuration is compatible with the PC system requirements for the imaging and image viewer software.**
2. **Since image quality may be deteriorated from lack of resources, observe the requirement guideline specified the following tables.**
3. **The PC components shall be approved by UL/CSA**
4. **The PC shall be grounded well protectively**
5. **The multiple portable socket-outlets shall not be placed on the floor**
6. **In case the equipment is to be installed in area with an unstable electric power supply, use of the AVR (automatic voltage regulator) is strongly recommended to keep the line voltage stable**

The PC system provided with the PaX-i3D Smart undergoes the rigorous test for software compatibility before shipping. Therefore any later changes to the hardware and/or software may cause malfunction

Item	HP	LENOVO
CPU	Intel Xeon E5-1607 3GHz 1600 4C or Faster	Intel Xeon E5-1607 3GHz 1066 or Faster
RAM	16GB DDR3-1600 ECC RAM	16GB DDR3 1600MHz UDIMM
Hard disk drive	1TB SATA 1st HDD	1TB SATA 1st HDD
Graphics board	ZOTAC NVIDIA Geforce GTX780 Ti AMP! D5 3GB	ZOTAC NVIDIA Geforce GTX780 Ti AMP! D5 3GB
Ethernet interface	Broadcom 5761 Gigabit Ethernet	Intel 82579 Gigabit Ethernet
Serial Port (RS232)	HP Serial Port Adapter Kit	1 (On Board)
Power supply	≥ 600 Watts (90 % Efficiency)	≥ 610 Watts (85 % efficient)
Slots	2 PCI Express Gen3 x 16 slots 1 PCI Express Gen3 x 8 slot 1 PCI Express Gen2 x 8 slot 1 PCI Express Gen2 x 4 slot 1 PCI slot	2 PCI Express Gen3 x 16 slot 1 PCI Express Gen3 x 16 slot (x4 Electrical) 1 PCI Express Gen2 x 4 slot 1 PCI slot
CD/DVD drive	DVD-ROM, DVD+/-RW, Blu- Ray	DVD-ROM DVD R/W, Blu-Ray R/W Multi-card reader
Monitor	19” 1280 x 1024 screen resolution	19” 1280 x 1024 screen resolution
Operating system	Windows 7 Professional 64-Bit	Windows 7 Professional 64-Bit
Recommended system	Z420	S30

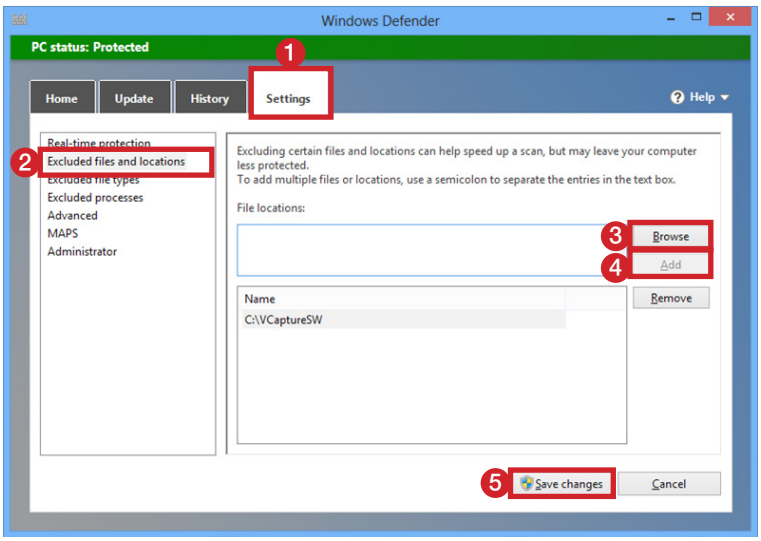
IMPORTANT

It is mandatory to meet the PC system requirements specified in the table above.

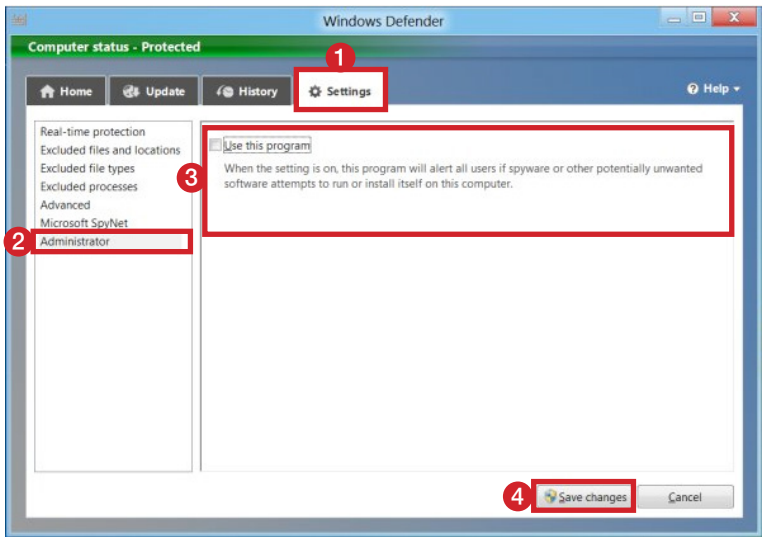
In Windows 8, disable Windows Defender. ⚠ When Windows Defender is not enabled, Windows 8 is not protected from malware and virus.

To Disable Windows Defender (Windows 8)

1. Open the Start screen, type **Windows Defender** in the search box.
2. Click on the **Windows Defender** icon to start Windows Defender on the search result.
3. **Settings** tab → **Excluded files and locations** → Click **Browse** and navigate to **C:\VCaptureSW** → click **Add**.



Or, **Settings** tab → **Administrator** → Uncheck the **Use this program** check box to disable Windows Defender.

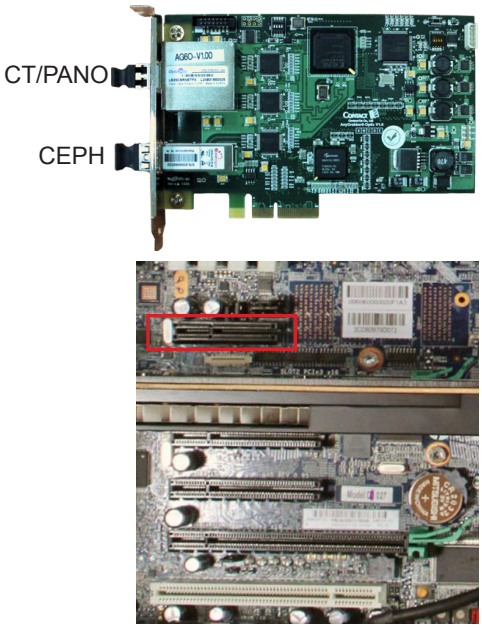


4. Click the **Save changes** button to confirm the changes.

6.3 Installing the Internal Peripherals

CAUTION	**Allow enough time to dissipate remnant energy after unplugging the power cord from the main outlet or PC.**
IMPORTANT	**If the PC system is supplied with the equipment, the peripherals are already installed inside the PC. Disregard this section**
	Whenever handling the fiber optic frame grabber board: **1. Wear the ant-static glove.**  **2. Do not wear the likes of a thick jacket.**
NOTE	**The following figures and descriptions are based on the PC model Z420 from HP.**

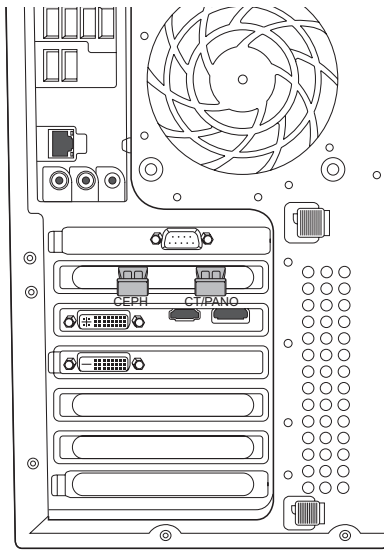
Installing the fiber optic frame grabber board



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

CAUTION

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



The end result after the peripheral installation

4. Put the slot holder back to its initial position. The end result after the peripheral installation

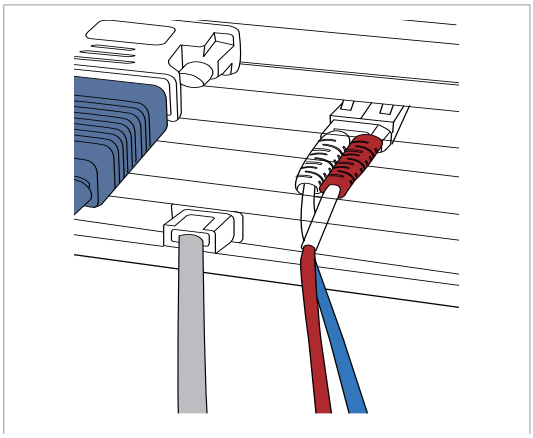
6.4 Connecting the Cables to PC

NOTE

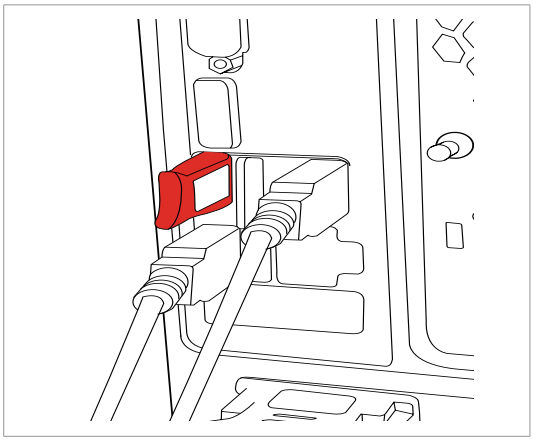
Always check the cable condition visually. Surprisingly, unexpected errors affecting image acquisition arise from the bad cable or its bad contact condition.

Connect the regular cables for PC: keyboard, mouse, and video in advance.

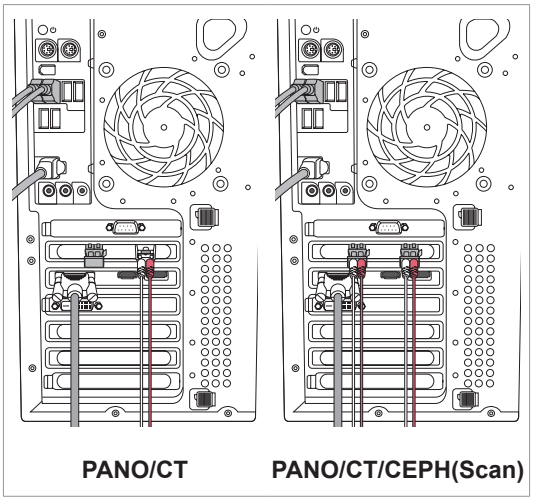
The following figures and descriptions are based on the PC model Z420 from HP.



1. Connect the fiber optic cable (Part No.: 21)



2. Insert the 3D viewer USB key(Part No.:1) into a USB port.



PANO/CT PANO/CT/CEPH(Scan)

The end result after connections are finished

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7

Setting up PC's Environment Variables

NOTE

If the PC system is supplied with the equipment, the PC's Environment Variables are already set on the PC. Disregard this section

7.1 Before Beginning

IMPORTANT

The PC system supplied with the equipment is intended to be used as an image acquisition only. For the purpose of the PC server for image management, use of a different PC is strongly recommended.

The programs related to acquisition, viewing and manipulation of images should be installed on the formatted PC, where no other program(s) except the operating system (OS) is present.

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.

Ensure that the emergency stop switch is in OFF position prior to starting with the installShield installation

Before InstallShield installation, ensure that the video card driver installed on PC is the most up-to-date version. To check this, go to the website of the graphic card manufacturer.

7.2 Checking PC BIOS Settings

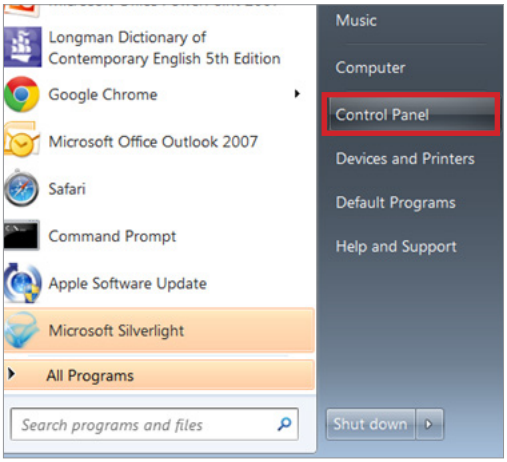
1. The PC is shipped, with its BIOS settings, as specified in the Appendix **E: Checking PC BIOS Settings.**

   Before proceeding to the next sections, check the BIOS status.

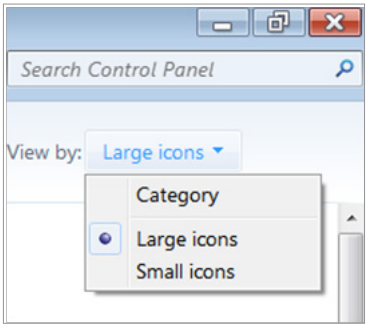
7.3 Turning the firewall off

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

1. From the desktop, click **Start** → **Control Panel**

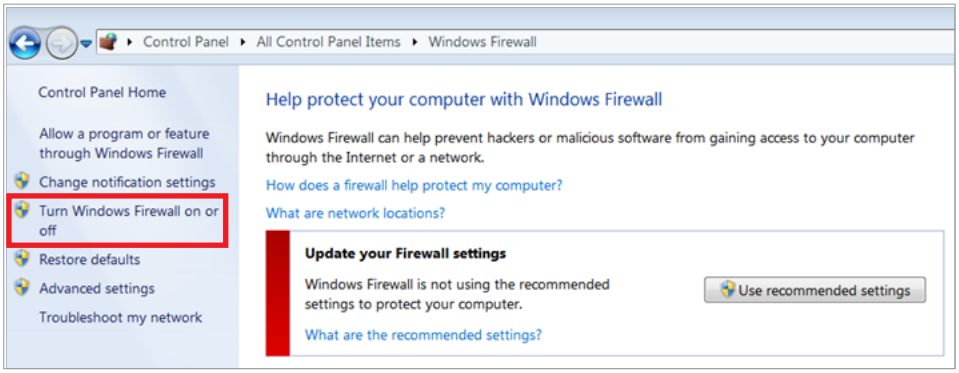


2. Click the **View by** field on the upper right corner and select **Large icons**.

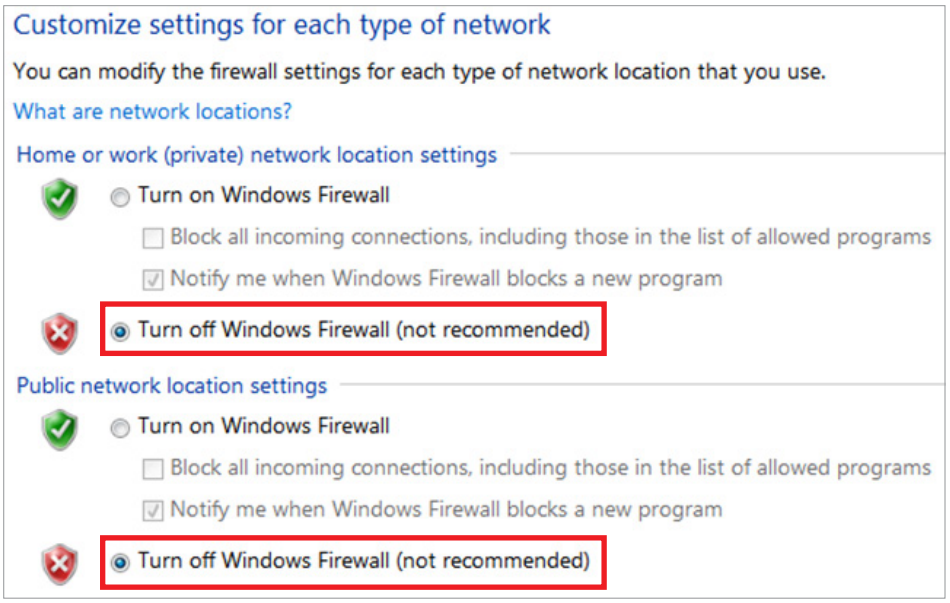


3. Double click on the Windows Firewall.

4. Select the **Turn Windows Firewall on or off**.



5. Select the **Turn off Windows Firewall** for both settings: Work and Public networks.



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

7.4 Setting up the Power Mangement Options

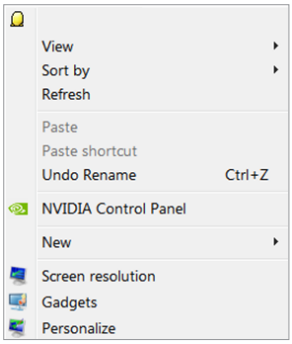
The following statements are based on the windows 7 environment. Depending on the operating system employed, the figures on your system may appear different slightly.

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

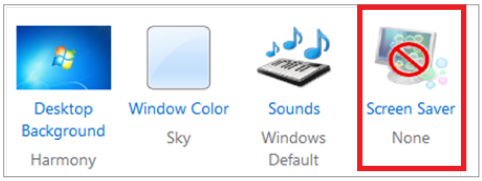
Disabling the screen saver

From the desktop,

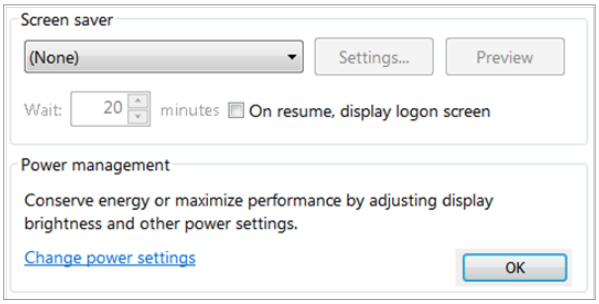
1. Click the right mouse button and select **Personalize**.



2. Locate and click the screen saver.



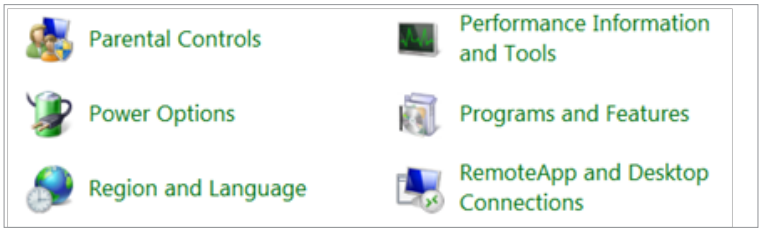
3. Select **None** in the pull-down menu.



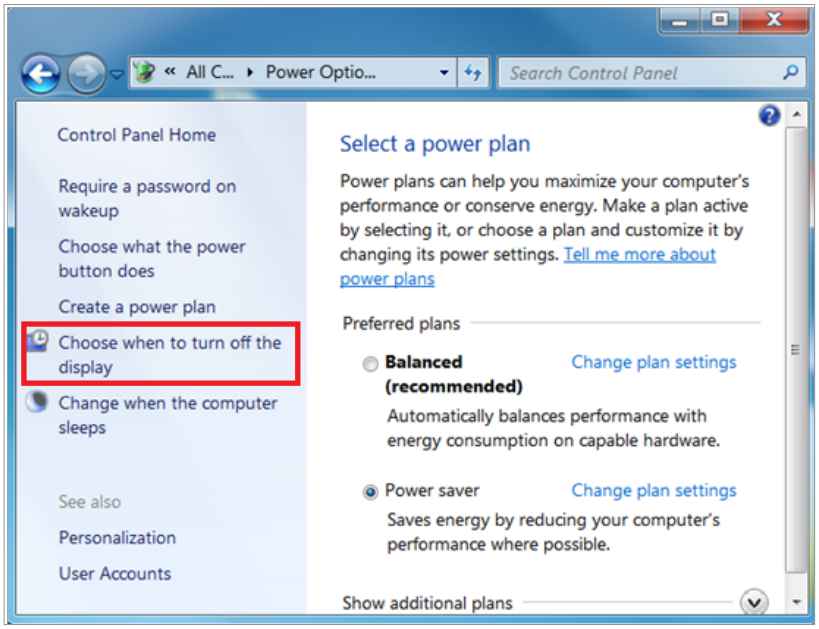
4. Click **OK**.

Selecting the power options: monitor and system

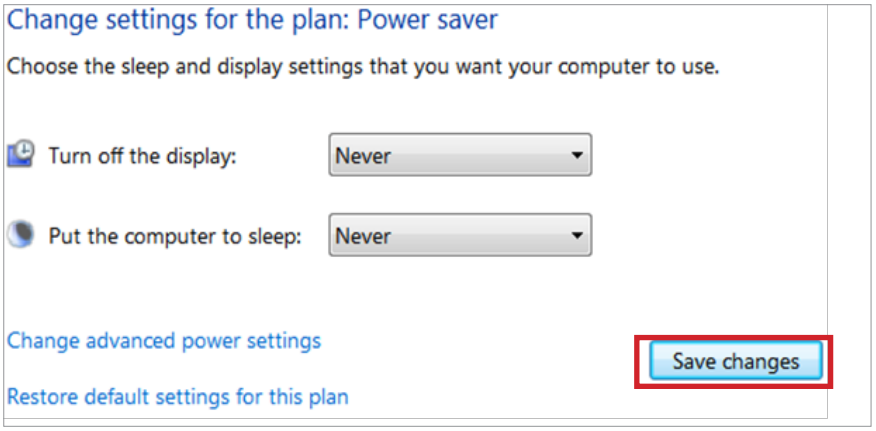
1. Go to the **Control Panel**.
2. Double click on the **Power Options** icon.



3. Select "**Choose when to turn off the display**".



4. Select "**Never**" for both fields.

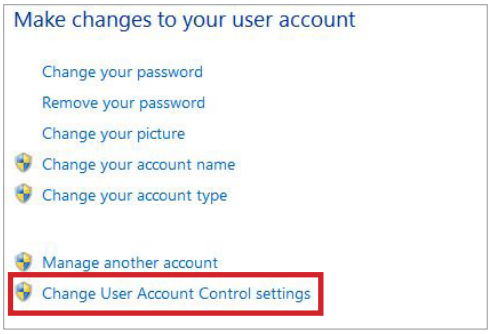


5. Click "**Save changes**".

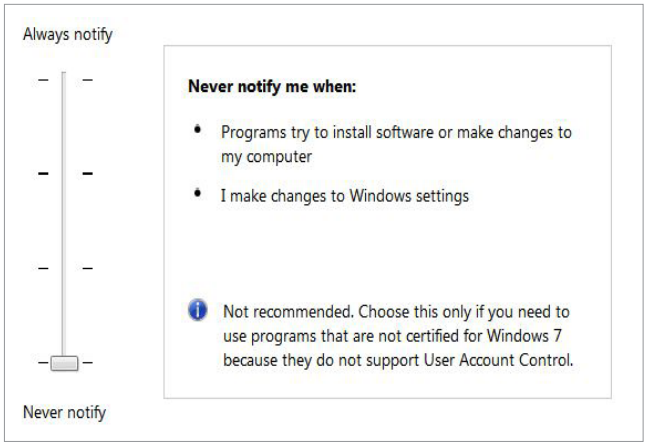
7.5 Turning off the User Account Control

1. Open the control panel of Windows.
2. Click the **User Account** icon.

3. Click on the **'Change User Account Control settings'**.



4. Disable the UAC by moving the slider bar down to the bottom, **Never notify.**



5. Click **'OK'** and restart the PC.

7.6 Setting Folder exclusions with Anti-virus Software

IMPORTANT

1. **Set the virus scan exception for the files and folder related to this equipment.**
2. **Do not run the memory-resident background programs unrelated to the equipment.**
3. **Running the virus scan is recommended to be performed only when equipment is idle.**
4. **Turn the firewall off.**
5. **Always use the blank USB drive, whenever possible.**

Some files used by the PaX-i3D Smart are incorrectly recognized as virus(es)/trojan(s) by anti-virus software. If you are using anti-virus software on your PC, you must exclude those files from all scans performed by the anti-virus software.

For the PaX-i3D Smart, the following folder and files should be excluded with the virus scan.

Files	Path
C:\Program Files\Vatech	C:\VCaptureSW

For example:	Suppose the Anti-virus program from McAfee is running in the background. **Note:** The procedure to set folder exclusions is similar for most anti-virus programs.

1. Open the McAfee Anti-Virus program, and select the "VirusScan".
2. Right-click on the "On-Access Scan" menu option, and left-click on the "Properties" tab.
3. Select the "**All Processes** → **Detection** → **Exclusions**" menu option, and choose the "**Add**" menu button.
4. Navigate to the folder or the files you want to designate an exclusion path for, and select the check box to "Also Exclude Subfolders". Click "OK" when complete, and exit McAfee for the path exclusion to be complete.

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8

Installing Software

NOTE

If the PC system is supplied with the equipment, the software is already installed. Disregard this section.

8.1 Before Beginning

Ensure that the emergency stop switch is in OFF position prior to starting installShield installation.

The image viewer program such as EasyDent or the one from the 3rd party should be installed in advance of the InstallShield installation. For the information on their installation procedures, refer to their respective manuals.

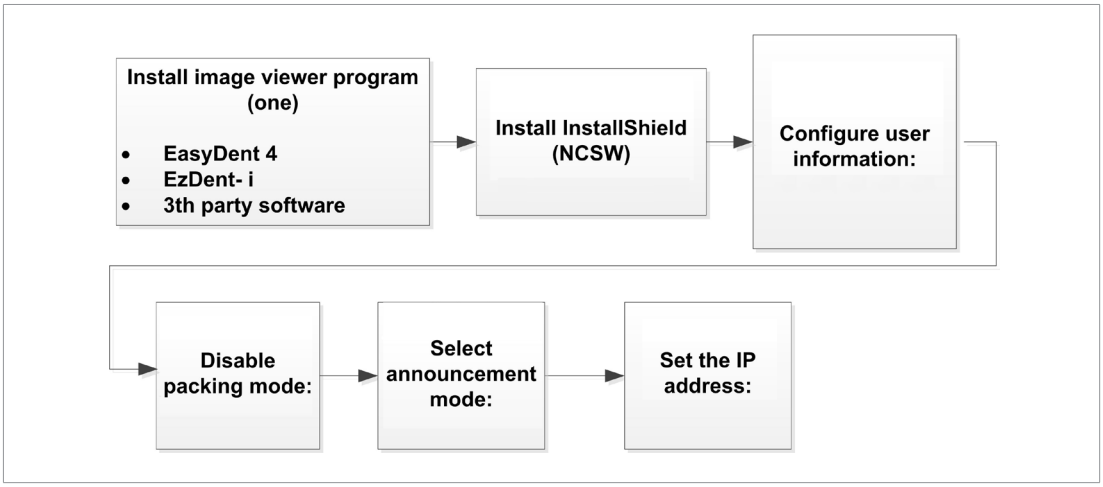
IMPORTANT

Before InstallShield installation, ensure that the video card driver installed on PC is the most up-to-date version. To check this, go to the Website: www.nvidia.com

Perform virus scan for the PC and InstallShield program with the anti-virus program prior to proceeding with its installation.

Do not install the programs irrelevant to image acquisition and view together with imaging program on the same PC. There may be subtle conflicts between them.

8.2 Software Installation Flow



8.3 Installing Image Viewer Program

IMPORTANT

One of the image viewer programs among :EasyDent4, EzDent- i, or 3th party program must be installed at this time. For the details on the installation procedures, refer to the corresponding manual.

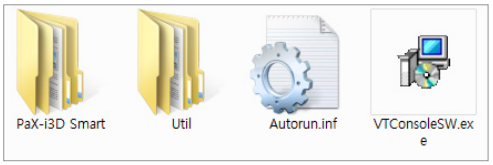
8.4 Installing the installShield

NOTE

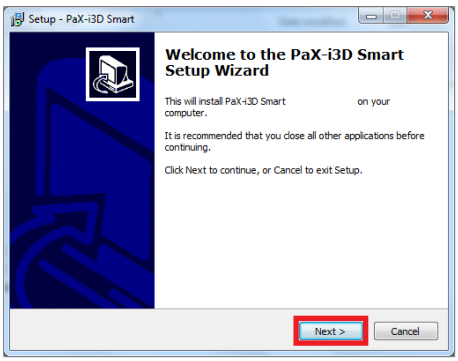
A brief leaflet on the InstallShield installation is included in the CD case.

The sensor type (CT and CEPH:if installed) of the equipment is checked in the this manual.

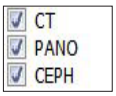
1. Turn On the PC and Equipment if they are not yet.
2. Insert the CD into CD-ROM drive. and then **perform virus scan for PC and Install CD**
3. Go to the InstallShield folder. Then run **VTConsoleSW.exe**



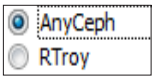
4. The following screen will appear and click **Next**.



5. Select the equipment mode: **PaX-i3D Smart** and click **Next**.
6. Select the modality and click **Next**. Note that if the CEPH feature comes with the equipment, also check the **CEPH**.



7. Select the CT sensor type: **WidePano** and click **Next**.
8. Select the PANO sensor type: **WidePano** and click **Next**.
9. (Optional) Select the **CEPH** sensor: **Anyceph**(Scan type) or **RTroy**(Oneshot type) and click **Next**.



10. Select the default port number: **COM4.**

IMPORTANT

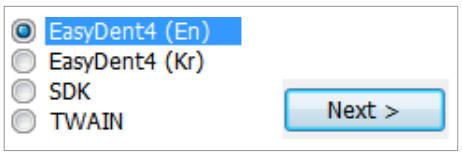
Select the port No.: COM4

The same COM port No. should be used between the equipment and PC.

And click **Next**.

11. Select the language and click **Next**.
12. Select the third-party software in use and click **Next**.

When EasyDent4 is installed, select EasyDent4, when EzDent-i is installed, select **SDK**.



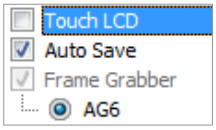
EzsyDent4

EzDent-i

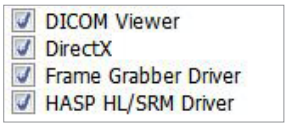
Click **Next** to continue.

13. Select the check boxes according the product options: **Touch LCD, Auto Save** and **Frame Grabber Type**.

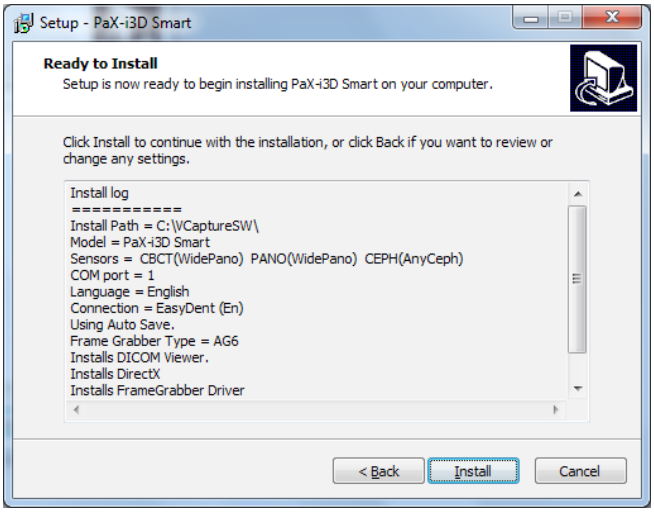
Note that, when the Auto Save is checked, the image data acquired saved automatically



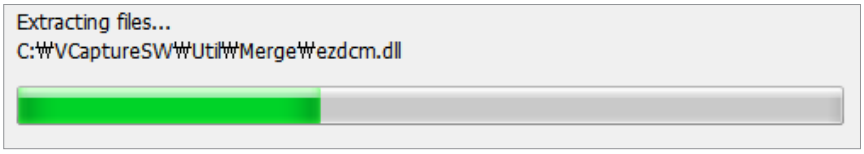
14. Select the drivers to be installed. For the first time installation, select all.



15. The following figure displays the information entered so far. If necessary, you can modify it by clicking **Back** button.

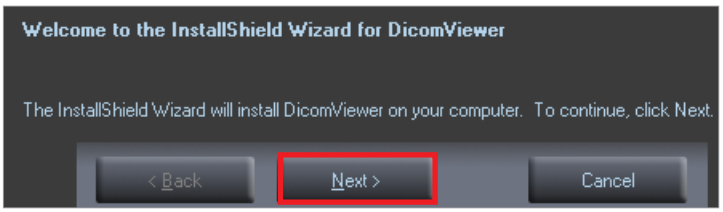


Click Install to continue.

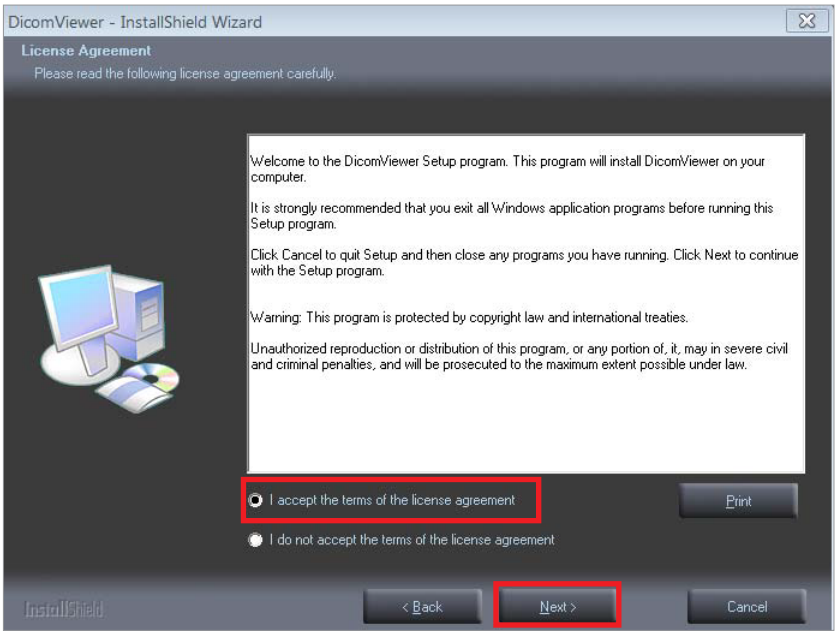


Installing the DICOM viewer

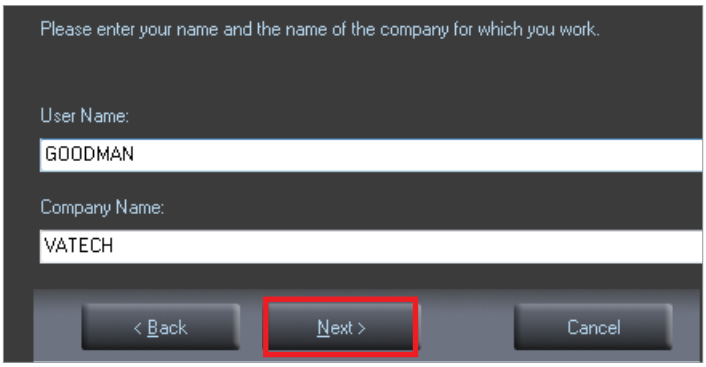
1. Click **Next** to install DICOM viewer.



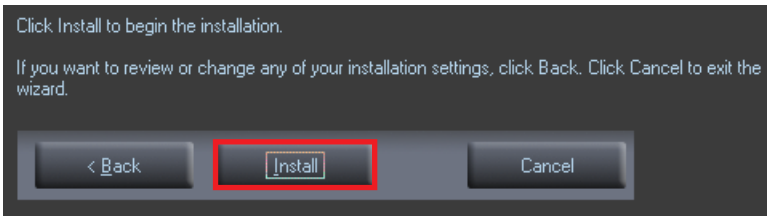
2. Select “I accept the terms of the license agreement” and click **Next**.

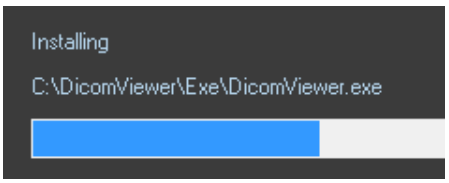


3. Enter the names of user and clinic and click **Next**.

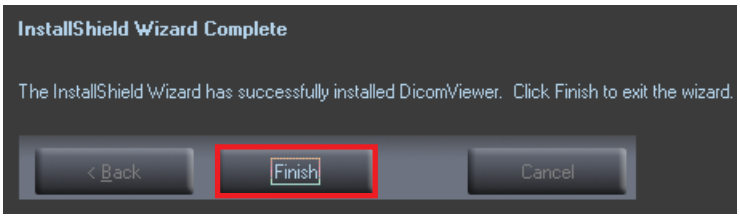


4. From the following screen, click **Install**.





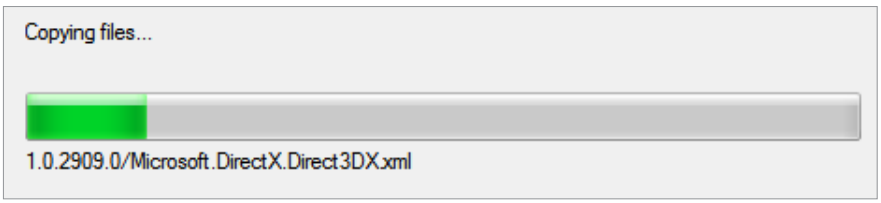
5. Click **Finish** to finish.



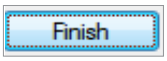
Installing the DirectX

1. Now installing the **DirectX**: select “I accept the agreement”.

2. Click **Next** to continue. Now installing…

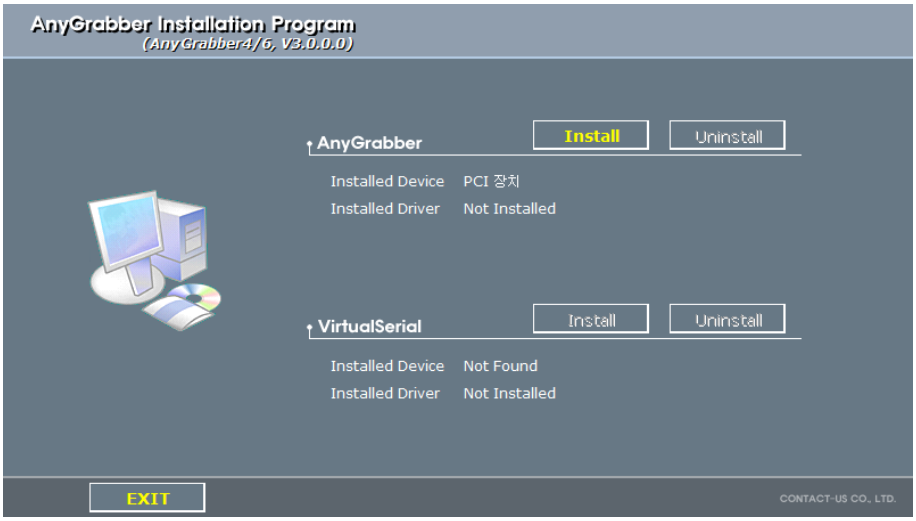


3. Click **Finish**.



Installing fiber optic frame grabber driver(AG6)

1. Select the language.
2. Click **Install** to install AnyGrabber card driver and VirtualSerial driver.

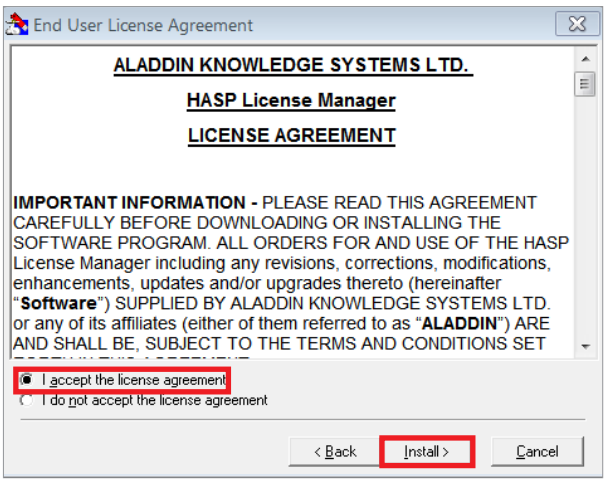


3. If Windows Security pop-up window appears, click '**Install'**
4. When the system restart required dialog box appears, click **Yes** or click **No** and restart the system later

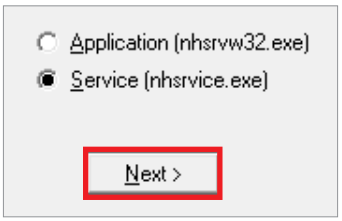
Installing the HASP License Manager

1. From the welcome message, click **Next**.

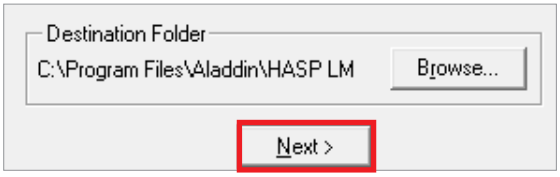
2. Select “I accept license agreement”, followed by **Install**.



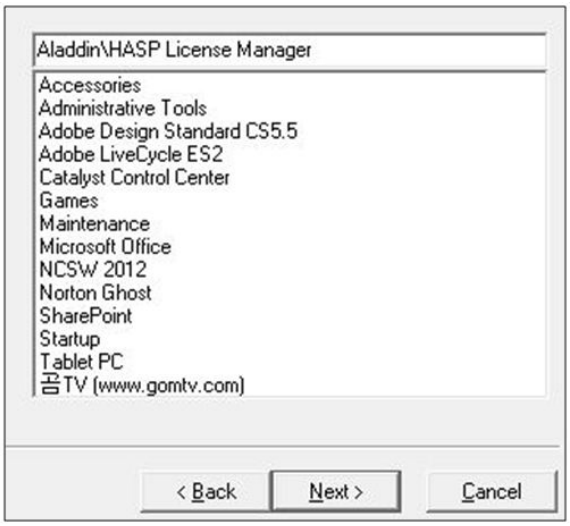
3. Leave as default from the following message.



4. Select the folder where the files are copied to and click **Next**.



5. Select the program group. Leave it at default and click **Next**.



6. Click **'Yes'** to restart the program.

IMPORTANT

Ensure that the program should be restarted, with the HASP key being inserted into the USB port on PC.

Installing Microsoft Visual C++ 2008 Redistributable

1. From the welcome message. click **Next**.
2. Select **"I have read and accept the license terms."** and click Install.
3. Click **Finish** to exit Setup.

Finalizing Installation

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

Verifying that all Components are Properly Installed

1. Locate the file: **PaX-i3D Smart_Install_Log.txt** on the desktop.

2. Open it to check the file. You can find out that all components are installed.
3. Go to the section **8.5 Setting up the User-specific Information**.

8.5 Setting up the User-specific Information

NOTE

Go to the corresponding section for set-up instructions, based on the viewer program (EazyDent4 or EzDent- i (SDK)) installed on PC.

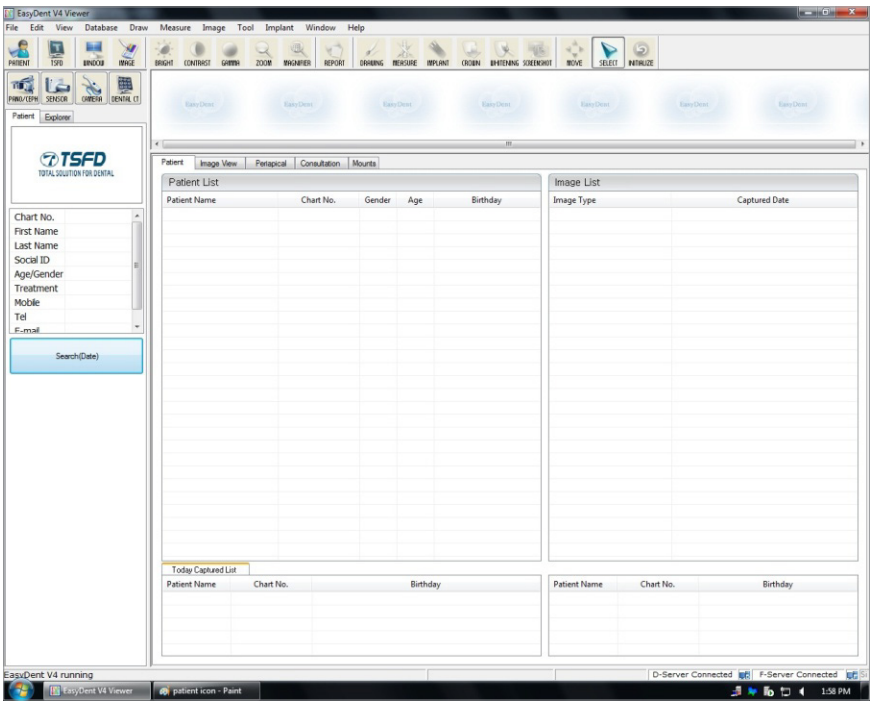
EasyDent4: section 8.5.1 When EasyDent4 is installed

EzDent- i : section 8.5.2 When EzDent -i is installed

8.5.1 When EasyDent4 is installed

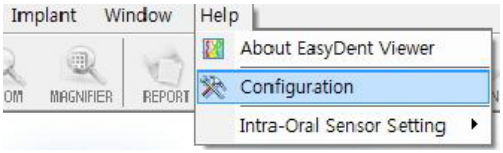
Running the image viewer

1. Run the image viewer. On your desktop, double-click **EasyDent** or click **Start** → **All Programs** → **EasyDent**. The **EasyDent** main window will be displayed.



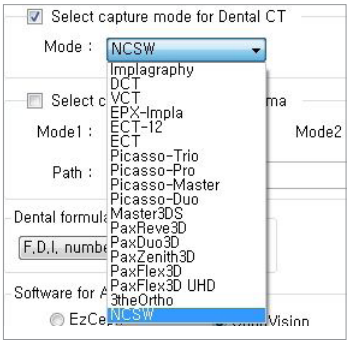
Interfacing EasyDent with imaging program(one-time linking)

1. From the main screen of EasyDent, click the **Help** menu and select **Configuration**.



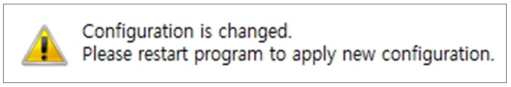
2. Click the **Program** tab.

3. Check ' **Select capture mode for Dental CT'** select the **NCSW.**

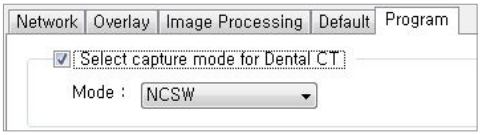


4. Click **Apply**

5. When the following message appears, click **OK** to restart the program.



6. Re-run the EasyDent program and check the change has been reflected.



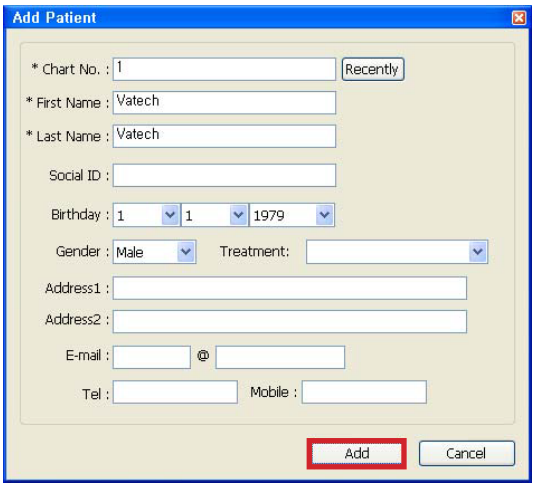
Creating a new patient record

NOTE

For the further details on this subject, refer to the accompanying EasyDent manual.

1. Click the **Patient icon** ( ) on the upper left corner of the EasyDent's main GUI window.

The following dialog box will open.

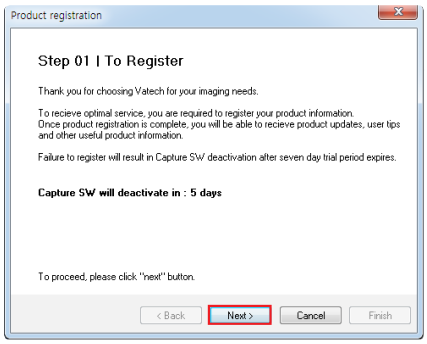


2. Enter the required patient information. **Chart Number**, **First Name** , and **Last Name** are required fields which must be filled in. All other fields are optional, but it is recommended that they be filled in.
3. Click **Add** to save the patient record.

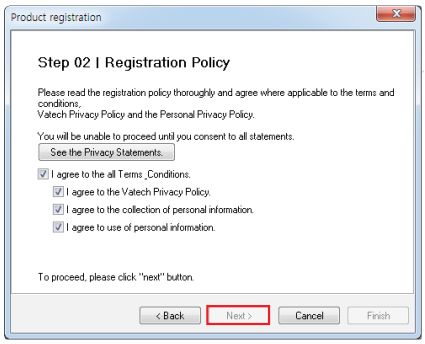
Product Registration

Registration window will be displayed in case of executing the imaging program initially.

1. Click **Next** to proceed.



2. Check the **Terms and Conditions** and click **Next**.

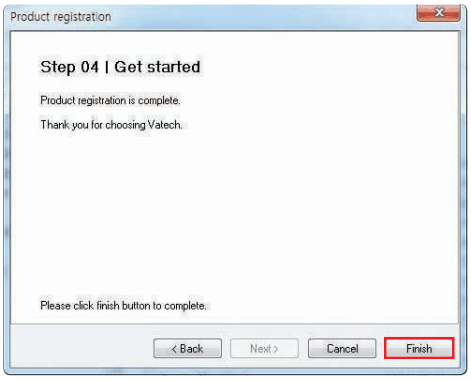


3. Enter the required information and click **Next**.

For the console PC connected to the internet, go to no. 4. And for the console PC not connected to the internet, go to no. 5.

For the console PC connected to the internet

4. Click **Finish**.

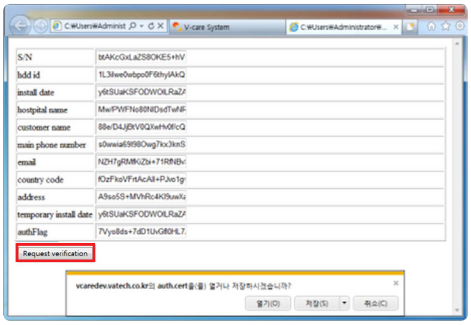


For the console PC not connected to the internet

5. Click **Download file** to download and save the file (html type) into a memory device.

6. Execute the file which is in the memory device from the internet connected PC.

7. Click **Request verification**.



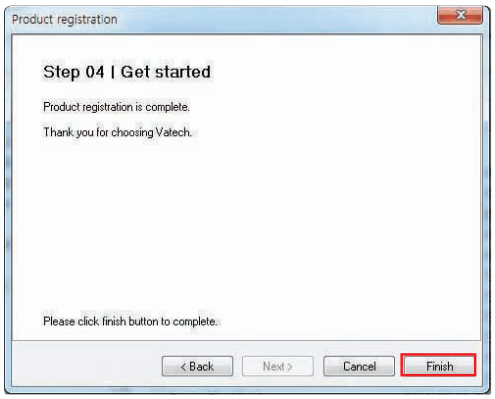
8. Download **auth.cert** file.

9. Copy the downloaded **auth.cert** file to the console PC.

10. Click Upload Verification file to upload **auth.cert** file.

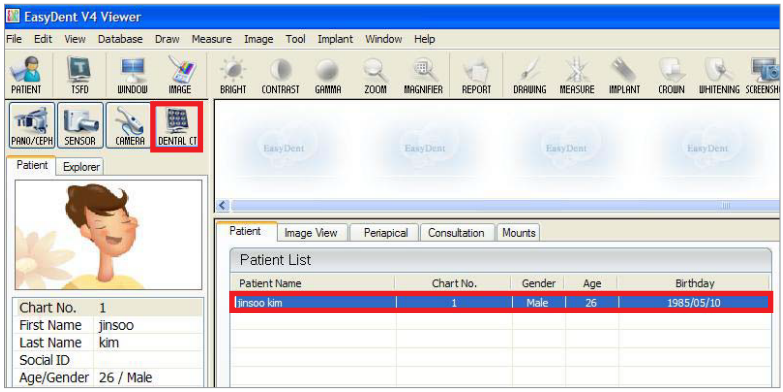
11. Click **Next**.

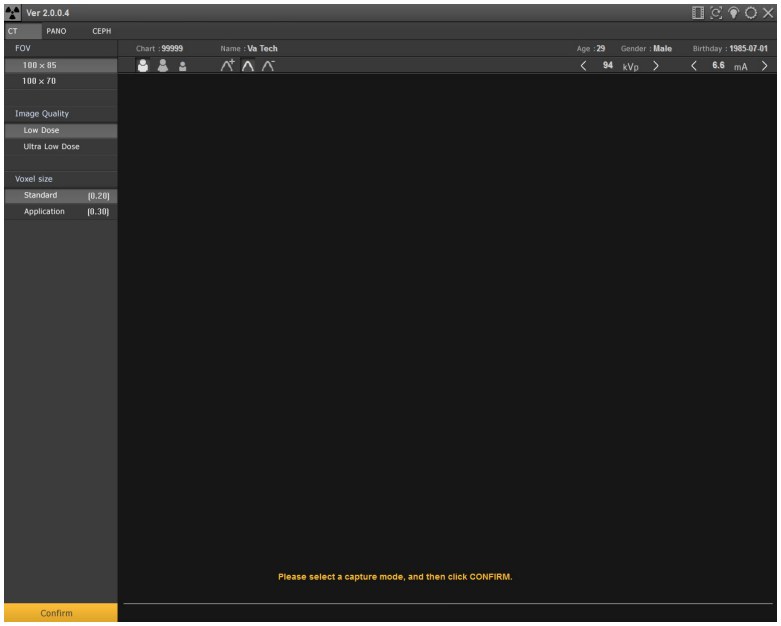
12. Click **Finish**.



Initiating the Imaging Program

1. First, click the patient information in the patient list, and click the **Dental CT** icon ( ) in the upper left corner of the EasyDent's main window to open the imaging program.





NOTE

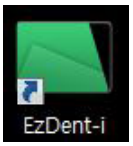
The error code E033, indicating that the equipment is still in the packing mode, should disappear when the command to exit the packing mode is executed. See the section 'Disabling the packing mode' to disable packing mode.

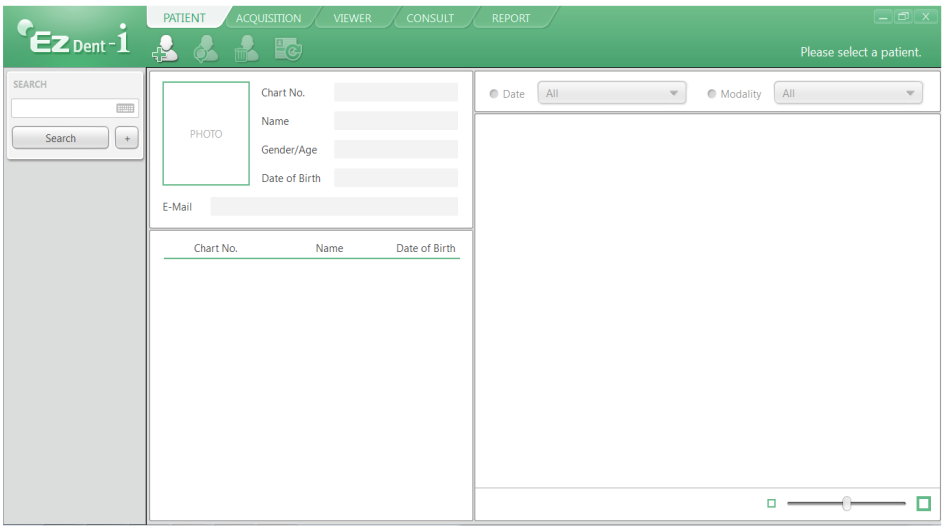
2. Proceed to the section **8.5.3 Configuring the parameters**.

8.5.2 When EzDent -i is installed

Running the image viewer

1. Run the image viewer. On your desktop, double-click **EzDent-i icon.** Its main window will be displayed.



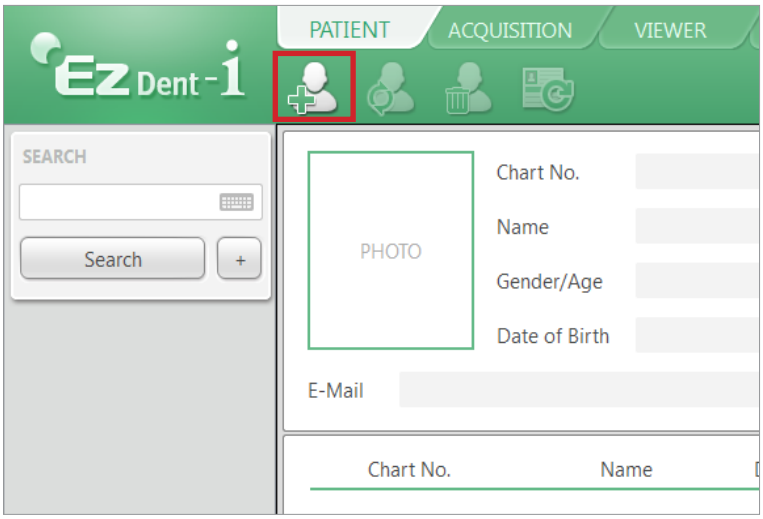


Creating a new patient record

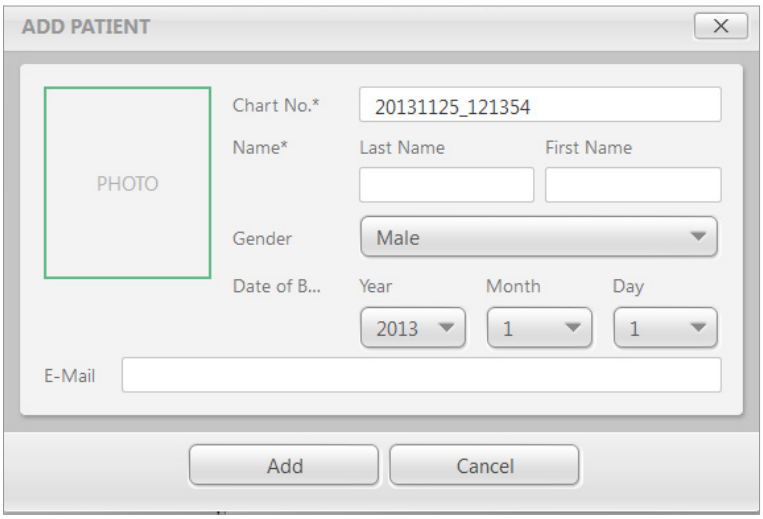
NOTE

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

1. Click the **[Add Patient]** button from the **PATIENT** tab.



2. Enter the required patient information. Chart Number, the patient's name and E-mail address are required fields which 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.

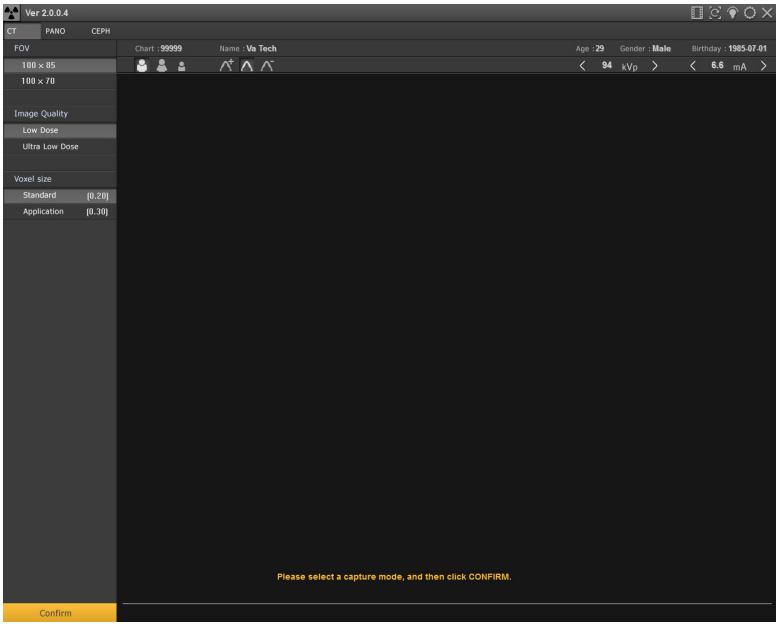
Initiating the Imaging Program

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

NOTE

The imaging mode selection buttons in the left pane may appear different, depending on the equipment's capacity to acquire image.

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



NOTE

The error code E033, indicating that the equipment is still in the packing mode, should disappear when the command to exit the packing mode is executed. See the section 'Disabling the packing mode' to disable packing mode.

3. Proceed to the section **8.5.3 Configuring the parameters**..

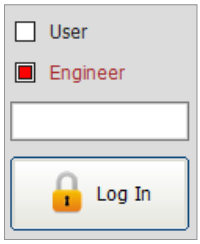
8.5.3 Configuring the parameters

IMPORTANT

The following information should be entered, in accordance with the user requirements

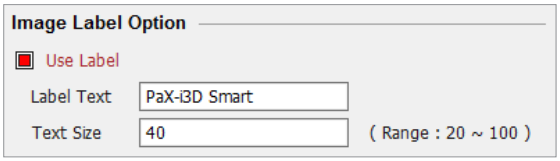
1. From the main GUI window, click the icon highlighted by the red box.

2. Select **Engineer** and type the password('vatech') and then click **Log In**.

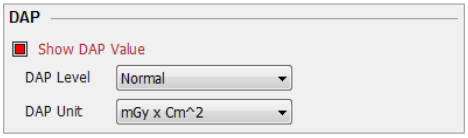


3. Click **User** tab.

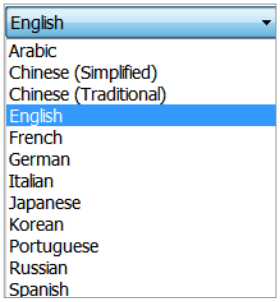
4. Set the Label name in the **Image Label Option**. When **Use Label** is checked, the character string in **Label Text** field is displayed on the left of the image. By default, the equipment name is displayed.



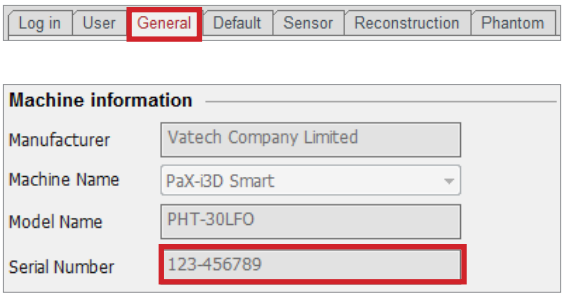
5. Set the **DAP**(Dose Area Product) **Level** and **DAP Unit** for the unit which are displayed on the screen.



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

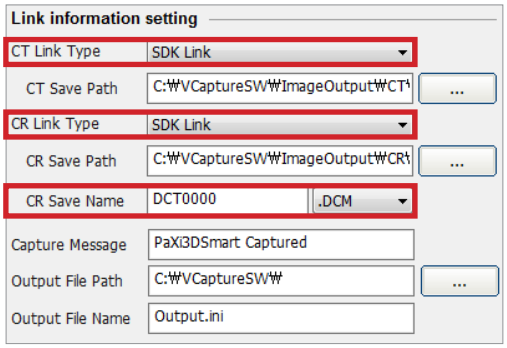


7. Click **General** tab and type the serial number of the equipment in the **Machine information**.



8. In the **Link Information setting**, configure Link type and file extension as follows.

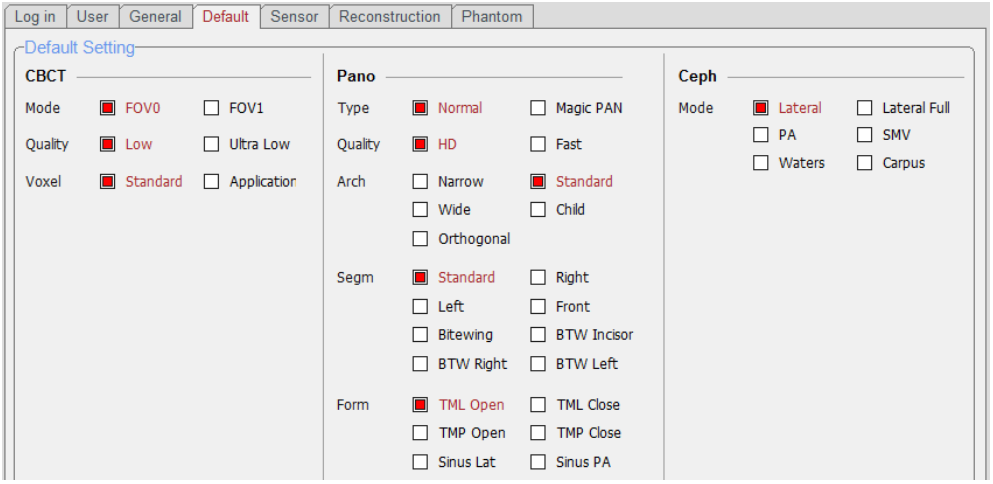
Fields	EasyDent 4 is used	EzDent -i is used
CT/CR Link Type	**Default**	**SDK Link**
CR Save Name	**Default**	**.DCM**



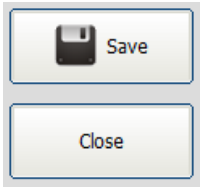
9. Click **Default** tab and configure the user-defined parameters.

NOTE

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



10. Click **Save** button if changes occurred.



Disabling the packing mode

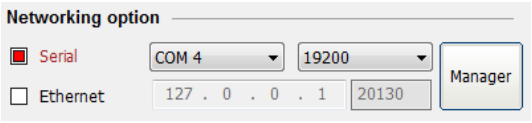
IMPORTANT

PaX-i3D Smart has a unique feature— packing mode— built in the system to prevent the unit from being damaged while shipping and transporting. Thus it is in the packing mode by factory default. The unit is required to exit the packing mode at this step for successful installation.

CAUTION

Unless the packing mode disabled, no operation will happen even after the equipment is turned on.

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



NOTE

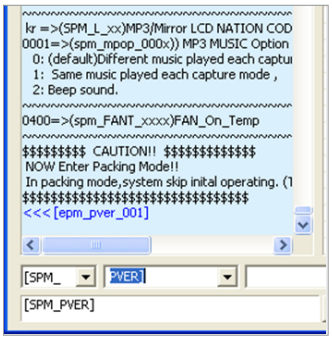
If an error has occurred during connection, make sure the COM port setting is correct as follows:

1) Run Device Manager.

2) Check the COM port assigned to **CONTACT-US Virtual Serial Port** under **Ports(COM & LPT)**.

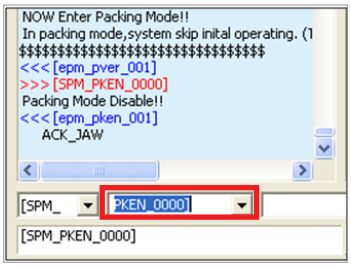
3) If necessary, chang e the COM port in the **Networking option** and click **Save**.

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



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

   Note: to re-enter the packing mode, use the command: **PKEN_0001**].



5. Click **Exit** button and terminate the control panel.
6. ***Exit the imaging program (main GUI)***: **important!**
7. **Reset the equipment to take the changes into effect**

Selecting an Announcement Mode: Music or Beep (Optional)

When the need to select an announcement between music and beep arises, take following procedures.

Commands specifications:

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

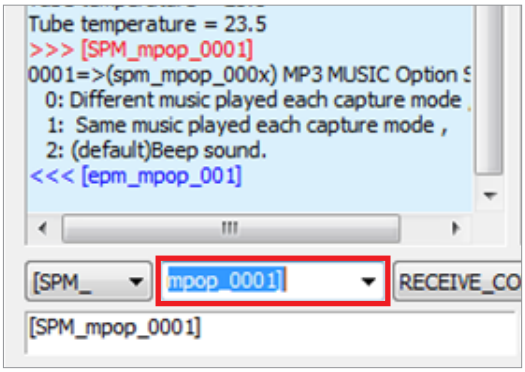
1. Send the command in accordance with the command specification, as specified in the table above.

   Here are some examples.

   Default mode: 0002(b eep) for each imaging mode.

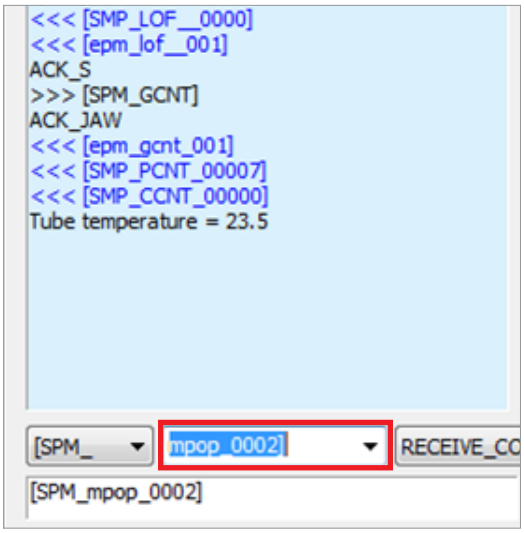
   When the same music announcement is desired for CT and PANO imaging modality.

   Enter the command **[SPM_MPOP_0001]** in the command field, followed by **Send**.



When the same beep announcement is desired for CT and PANO imaging modality.

Enter the command **[SPM_MPOP_0002]** in the command field, followed by **Send**.



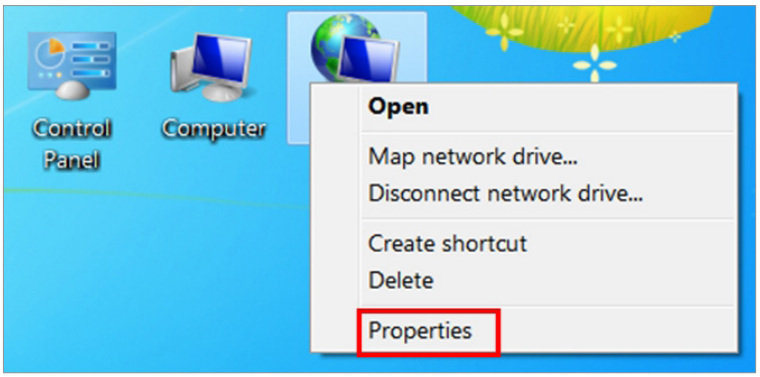
Finalizing the Parameters Settings

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

8.6 Setting Up the IP Address for the OS CEPH Sensor (Optional)

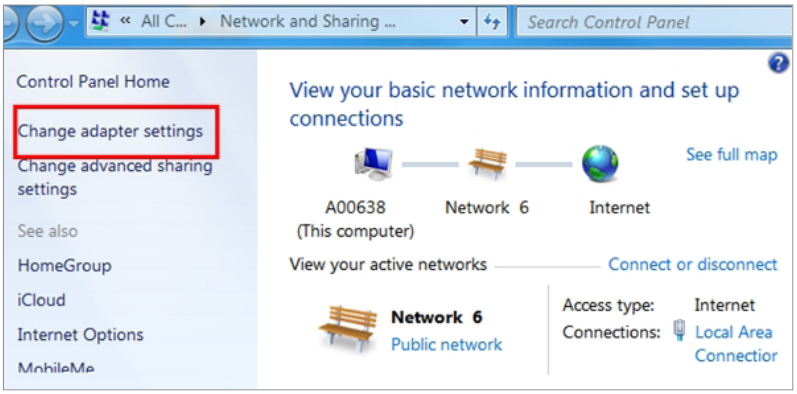
In order for the OS CEPH sensor to communicate with the PC, the proper IP address should be set on the PC. The following screenshots are taken in the Windows 7.

1. From the desktop, click the right button of the mouse on the Network icon.



2. Double click the Properties.

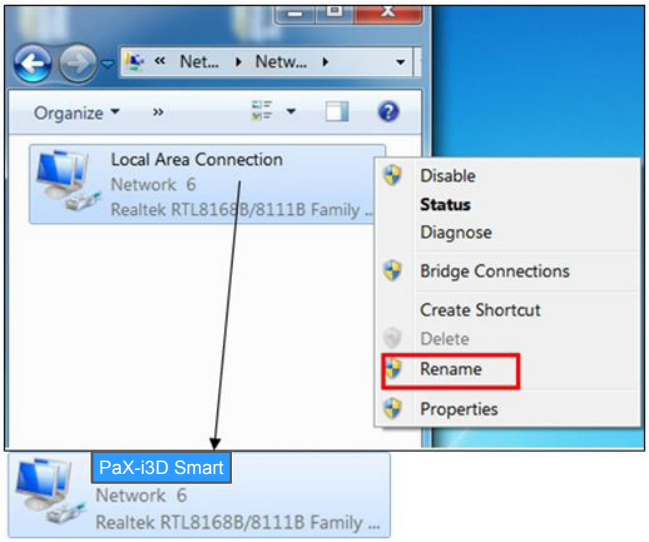
3. Select the “Change adapter settings”.



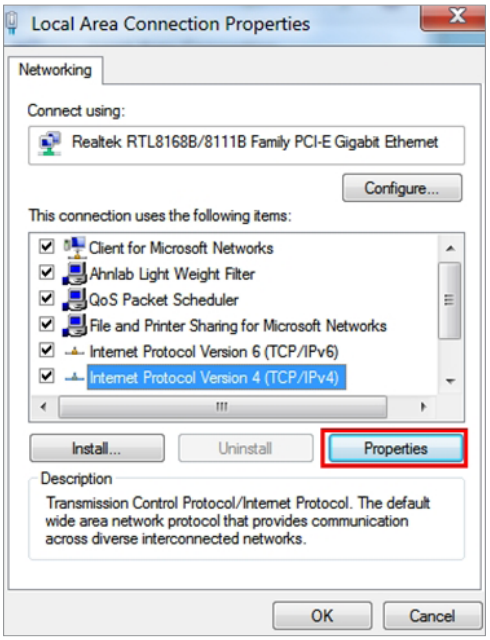
4. Click the right mouse button on the **Local Area Connection** and select the **Rename** to change its network name to **PaX-i3D Smart.**

NOTE

Connection name can be arbitrary. But a meaningful one is preferred.
For example, the equipment name or the hospital name.



5. From the following figure, select the **Internet Protocol Version 4** and click **Properties.**

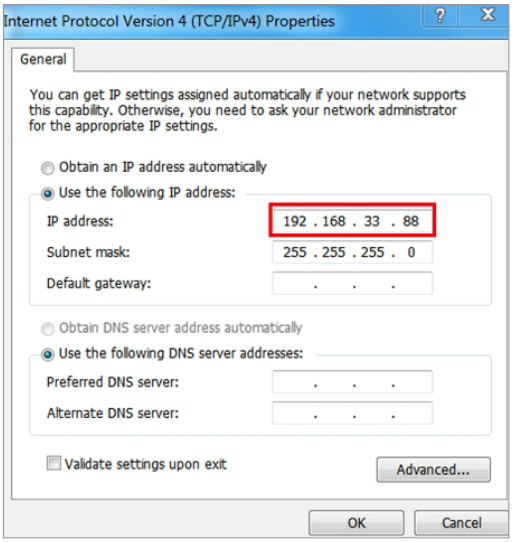


6. To set the new IP address.

   6-1. Move to Use the following IP address.

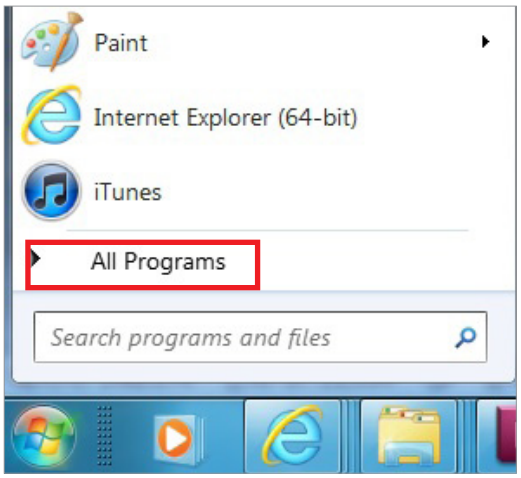
   6-2. Enter the IP address: 192.168.33.88 and leave the other fields at the default.

   6-3. Click OK.

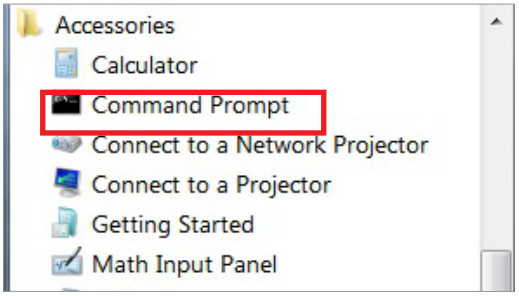


7. Reset the PC and equipment.

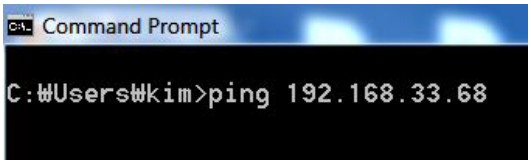
8. Open the "Start" menu and then click "All Programs" bar.



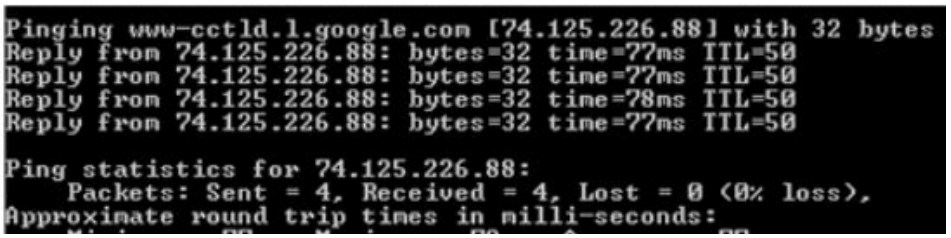
9. Click **"Accessories"** and then **"Command Prompt"**.



10. From the console, type “PING 192.168.33.88” and press **“Enter”** key.



11. Ensure that "Reply from <IP address>" is displayed, then the ping test was successful and the connection is properly functioning.



9

Acquiring a Test Image

9.1 Aligning the collimator

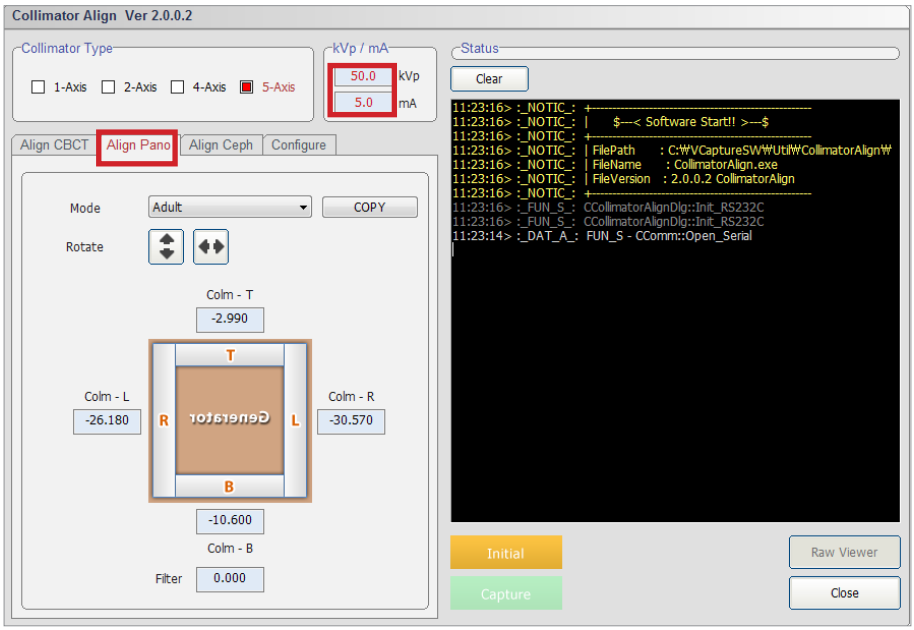
9.1.1 PANO collimator Alignment

Adult mode Alignment

1. Remove the Temple support and Normal bite block from the unit
2. Run **CollimatorAlign.exe**.

NOTE

Path: C\VCaptureSW\Util\CollimatorAlign\CollimatorAlign.exe

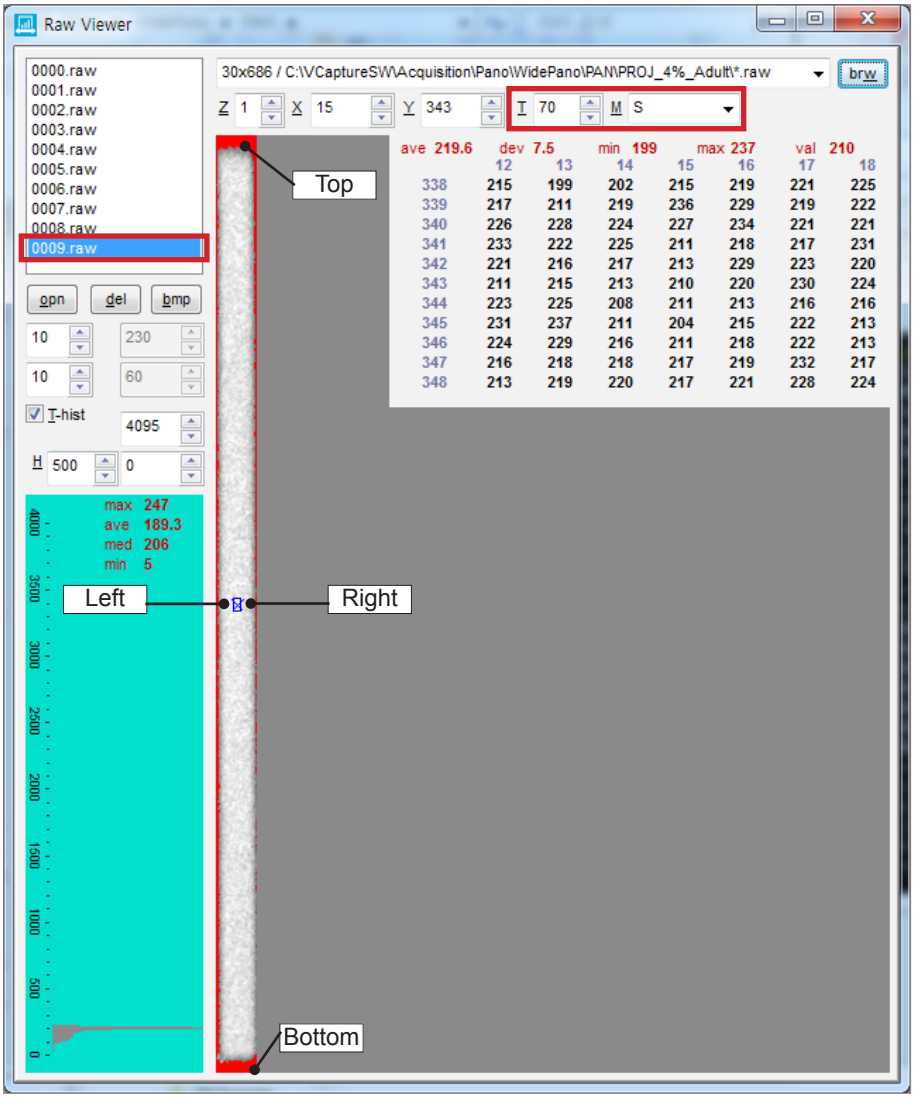


3. Click **Align Pano** tab.
4. Type **50** kVp, **5.0** mA in the KVp/mA filed.
5. Click **Initial** and wait until the system is initialized.
6. Click **Capture** when it is enabled.
7. When Align Sequence window appears, press the X-ray exposure switch

X-ray

Stay outside of the X-ray shielding room during the exposure.

8. When **Raw Viewer** window appears, release the X-ray exposure switch.

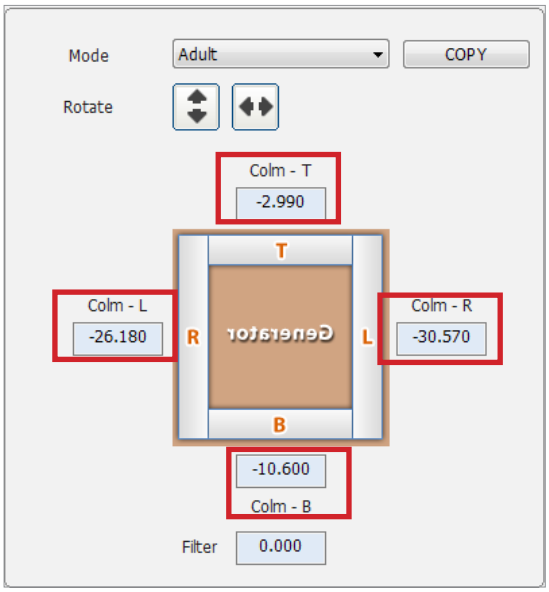


9. Select **0009.raw** in the raw file list.
10. Type **70** in the **T** box
11. Select **S** in the **M** box.

12. Make sure that the result meets the PANO collimator alignment standard.

	Permitted value (Red pixels covered by collimator)
Top	10~35 pixels
Bottom	10~25 pixels
Left	2~4 pixels
Right	2~4 pixels

13. If the red pixel count is out of the permitted value, change the collimator position values.



NOTE

- **0.1(mm) is approximately 3 pixels.**
- **To close the 4 axis collimator, decrease the collimator position values.**

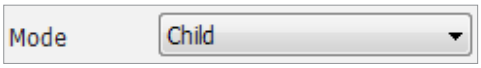
  To open the 4 axis collimator, increase the collimator position values.

14. Do the steps 5 through 12 until the top/bottom/left/right red pixel count is within the permitted value.

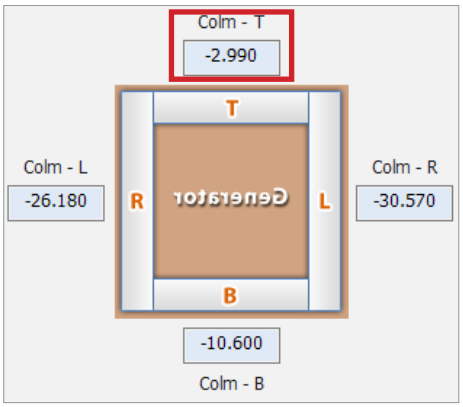
15. When the Collimator Alignment is completed, click **COPY** to save the Adult mode collimator position value as Child mode default value.

Child mode Alignment

1. Select **Child** in the **Mode** drop-down list box.



2. Subtract -3.0(mm) from Adult mode Top position value and type the calculation value in the **Colm-T** box. Ensure the other values(for Bottom/Left/Right) are the same as Adult mode values and do not change these values.



NOTE

If the Adult alignment Top value is -2.990, type -5.990 in the Colm-T box.

(-2.990 - 3.000= -5.990)

3. Click **Initial** and wait until the system is initialized.
4. Click **Capture** when it is enabled.
5. When Align Sequence window appears, press the X-ray exposure switch

X-ray

Stay outside of the X-ray shielding room during the exposure.

6. When **Raw Viewer** window appears, release the X-ray exposure switch.
7. Select **0009.raw** in the raw file list.
8. Type **90** in the **T** box
9. Select **S** in the **M** box.
10. Make sure that the result meets the PANO collimator alignment standard.
11. Click **Close** to exit the Collimator Align program.

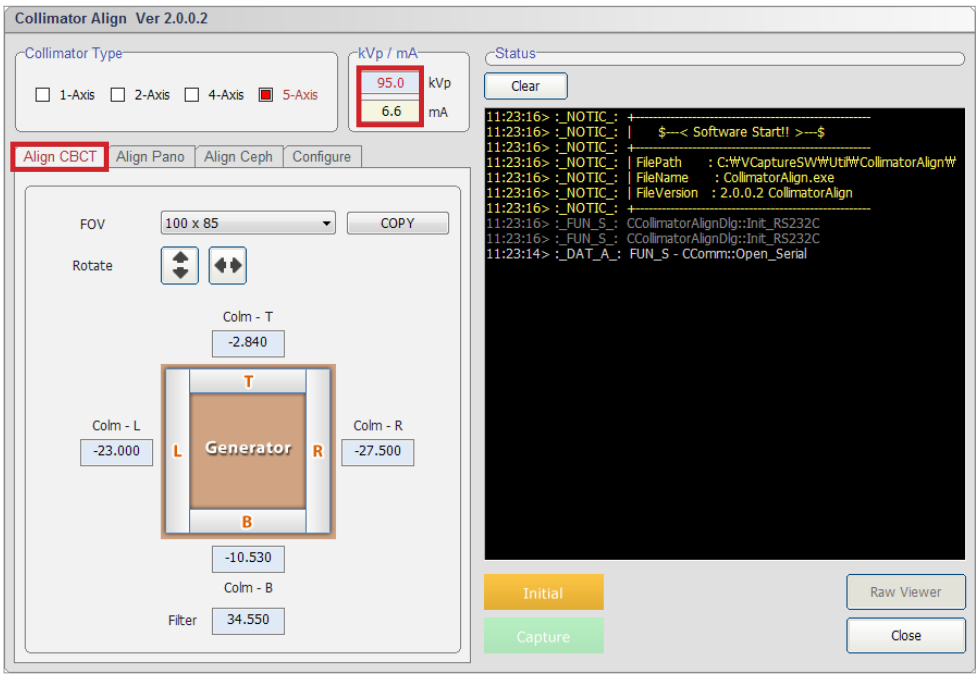
9.1.2 CBCT collimator Alignment

Left/Right Alignment

1. Remove the Temple support and Normal bite block from the unit
2. Run **CollimatorAlign.exe**.

NOTE

Path: C\VCaptureSW\Util\CollimatorAlign\CollimatorAlign.exe



3. Click **Align CBCT** tab.
4. Type **95** kVp, **6.6** mA in the KVp/mA filed.
5. Click **Initial** and wait until the system is initialized.
6. Click **Capture** when it is enabled.
7. When Align Sequence window appears, press the X-ray exposure switch

X-ray

Stay outside of the X-ray shielding room during the exposure.

8. When **Raw Viewer** window appears, release the X-ray exposure switch.

9. Select **0008.raw** in the raw file list.

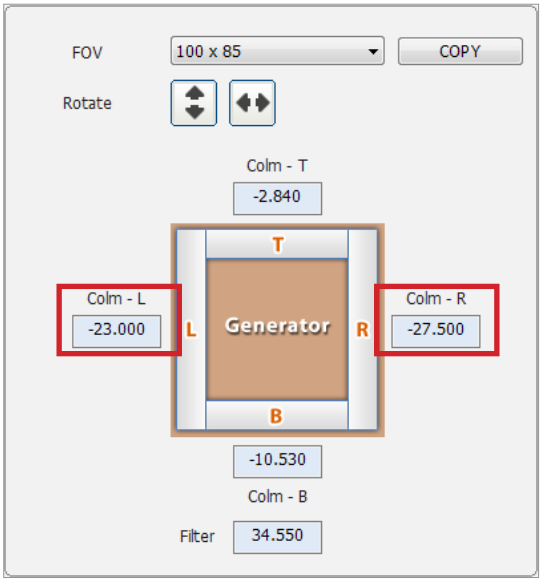
10. Type **95** in the **T** box

11. Select **S** in the **M** box.

12. Make sure that the result meets the CBCT Left/Right collimator alignment standard.

	Permitted value (Red pixels covered by collimator)
Left	2~4 pixels
Right	2~4 pixels

13. If the red pixel count is out of the permitted value, change the left/right collimator position value



NOTE

- **0.1(mm) is approximately 3 pixels.**
- **To close the 4 axis collimator, decrease the collimator position values.**

  To open the 4 axis collimator, increase the collimator position values.

14. Do the steps 5 through 12 until the left/right red pixel count is within the permitted value.

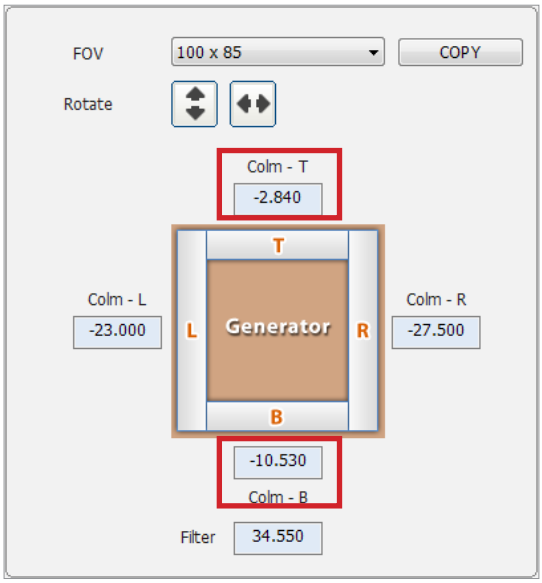
15. When the lef/right Collimator Alignment is completed, add 0.4(mm) to left/right collimator position value each and capture the image again

Top/Bottom Alignment

1. In the **Raw Viewer**, select **0008.raw** in the raw file list.
2. Type **75** in the **T** box
3. Make sure that the result meets the CBCT Top/Bottom collimator alignment standard.

	Permitted value (Red pixels covered by collimator)
Top	10~15 pixels
Bottom	10~15 pixels

4. If the red pixel count is out of the permitted value, change the top/down collimator position value and capture the image again.



NOTE

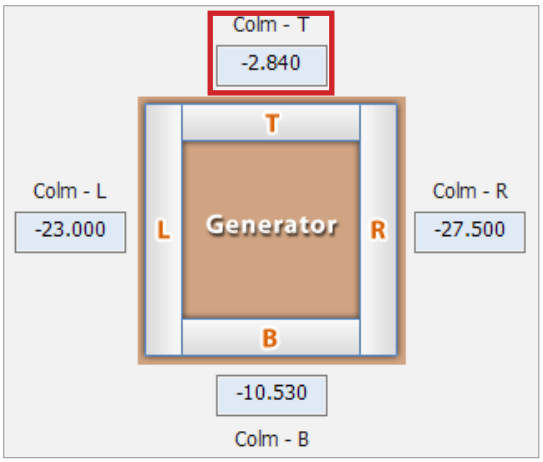
- **0.1(mm) is approximately 3 pixels.**
- **To close the 4 axis collimator, decrease the collimator position values.**

  To open the 4 axis collimator, increase the collimator position values.

5. When the Collimator Alignment is completed, click **COPY** to save the 100 x 85 FOV alignment value as FOV 100 x 70 default value.

6. Select **100 x 70** in the **FOV** drop-down list box.

7. Subtract -7.1(mm) from FOV 10 x 85 Top position value and type the calculation value in the **Colm-T** box. Ensure the other values(for Bottom/Left/Right) are the same as FOV 100 x 85 values and do not change these values.



NOTE

If the Adult alignment Top value is -2.840, type -9.940 in the Colm-T box.

(-2.840 - 7.100= -9.940)

8. Click **Initial** and wait until the system is initialized.

9. Click **Capture** when it is enabled.

10. When Align Sequence window appears, press the X-ray exposure switch

X-ray

Stay outside of the X-ray shielding room during the exposure.

11. When **Raw Viewer** window appears, release the X-ray exposure switch.

12. Select **0009.raw** in the raw file list.

13. Type **75** in the **T** box

14. Select **S** in the **M** box.

15. Make sure that the result meets the CBCT Top collimator alignment standard.

16. When the Collimator Alignment is completed , click **Close** to exit the Collimator Align program.

9.2 Acquiring the test image

1. Perform the test image acquisition after the software is installed.
2. Acquire a test image using the phantom jig. For the further details about the image acquisition, refer to the accompanying user manual.

NOTE

For other issues related to the image, refer to the section(s) regarding to X-Ray alignment in the accompanying technical manual

10

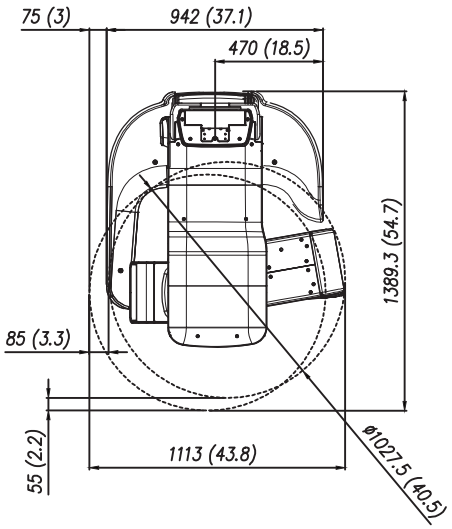
Technical Specifications

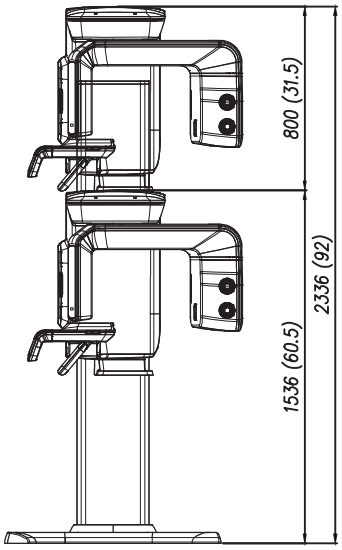
Mechanical Specifications

ItemW	Description		
Weight	without CEPH unit	Without Base	167 kg (368.2 lbs)
		with Base	220 kg (485 lbs)
	with CEPH unit (scan type)	Without Base	202 kg (445.3 lbs)
		with Base	255 kg (562.2 lbs)
Total Height		Max. 2336 mm (92 inch)	
Vertical Column Movement		Max. 700 mm (Max. 27.6 inch)	
Dimension (Length x Width x Height)	without CEPH unit	1113 (L) x 1389(W) x 2336 (H) mm 43.8(L) x 54.7(W) x 92(H) inch	
	with CEPH unit (scan type)	1882 (L) x 1400 (W) x 2336 (H) mm 74.1(L) x 55.1(W) x 92(H) inch	
	with CEPH unit (oneshot type)	1882 (L) x 1400 (W) x 2336 (H) mm 74.1(L) x 55.1(W) x 92(H) inch	
Type of installation		Base stand / Wall mount	

Dimension of equipment

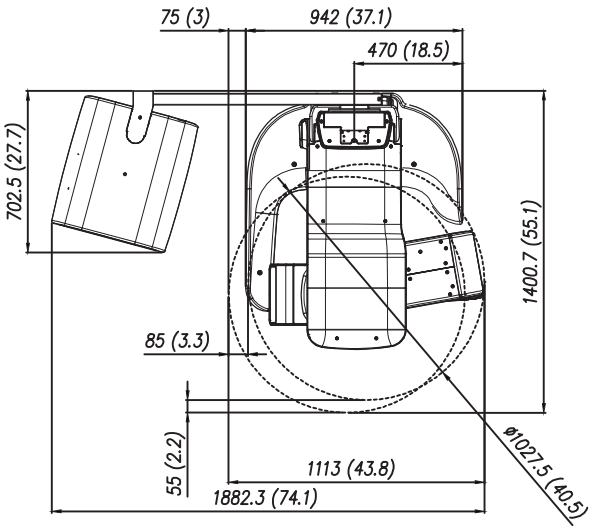
PANO/CT

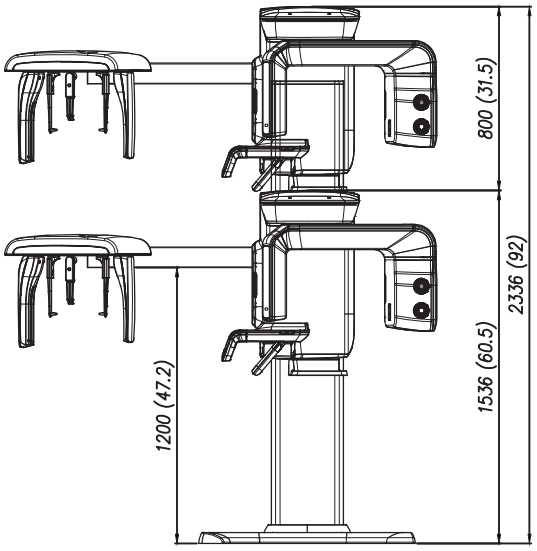




[Unit : mm]

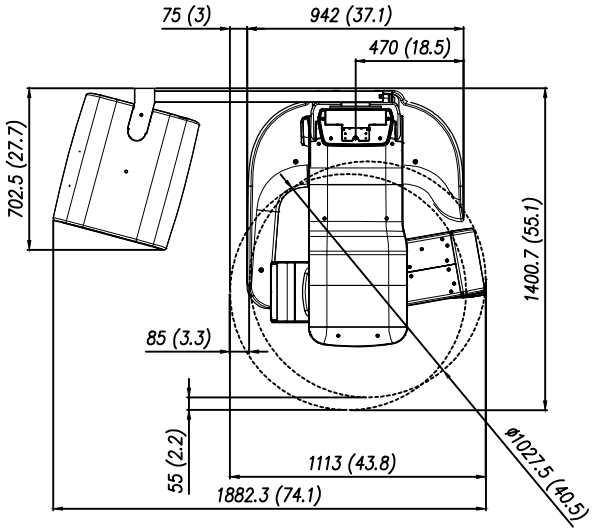
PANO/CT/CEPH

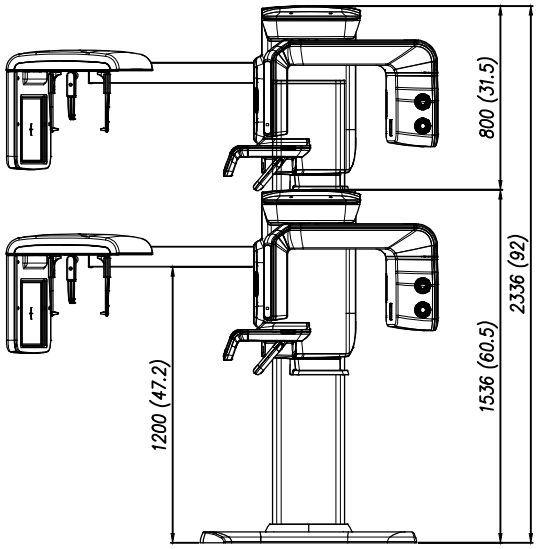




[Unit : mm]

PANO/CT/CEPH (OneShot type)





[Unit : mm]

Electrical Specifications

Item	Description
Power supply voltage	AC100-240 V ± 10 %. (Free voltage)
Frequency	50/ 60 Hz (Single phase)
Power rating	Max.2.2 kVA ± 10 %.

- The input line voltage depends on the local electrical distribution system.
- Allowable input voltage fluctuation requirement: ± 10 %.

Environmental Specifications

Item		Description
During operating	Temperature	10 ~ 35 ℃ (50 ~ 95 ℉)
	Relative humidity	30 ~75 %
	Atmospheric pressure	860 ~ 1060 hPa
Transport and storage	Temperature	-10 ~ +60 °C(14~ 140 ℉)
	Relative humidity	10 ~ 75% non-condensing
	Atmospheric pressure	860 ~ 1060 hPa

Appendix

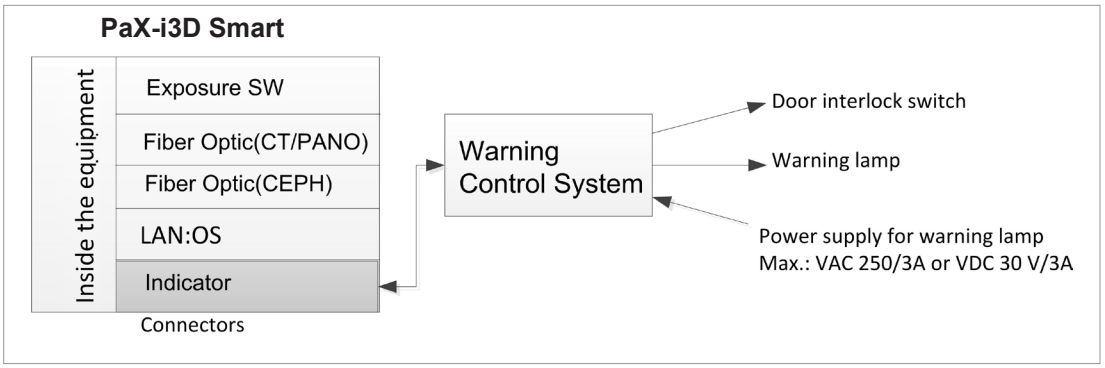
A. Installing the Warning Lamp and Door Interlock Switch

Requirements:

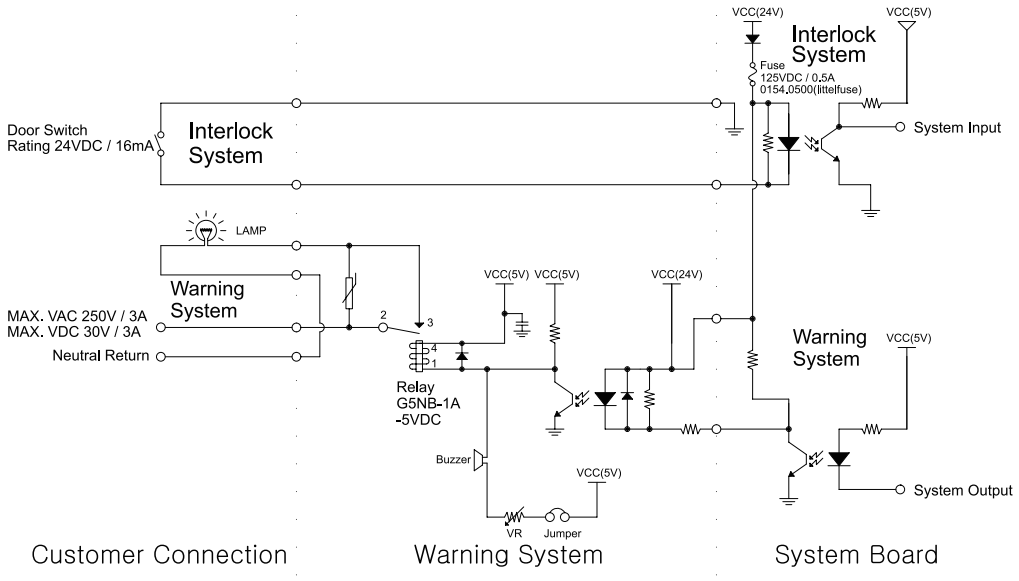
1. The warning control system shall be connected to the ERB (earth reference bar) of the room that it is associated with.
2. The switching arrangements, location, height, and number of illuminated warning signs shall be agreed with the local radiation protection advisor (RPA).(customer)
3. A fluorescent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

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

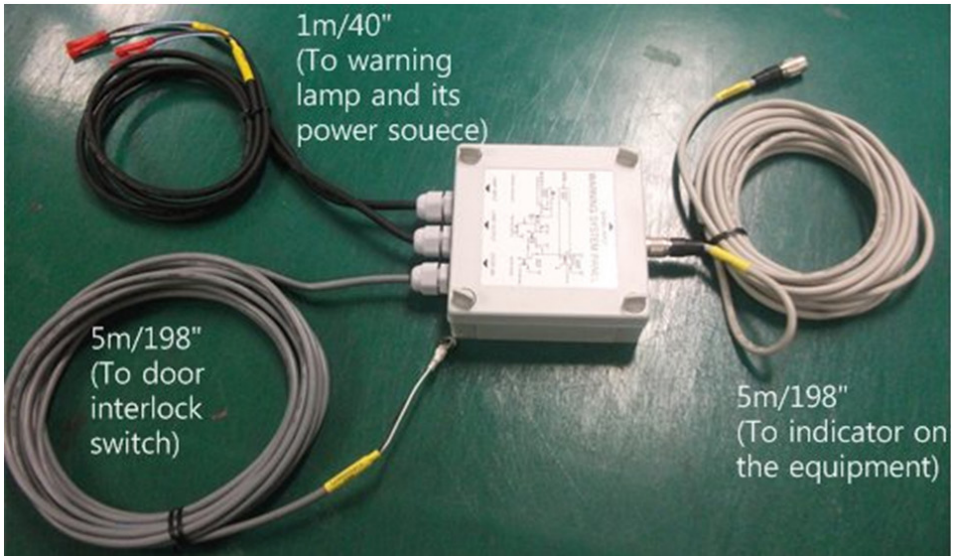
Block diagram:



Schematic diagram:



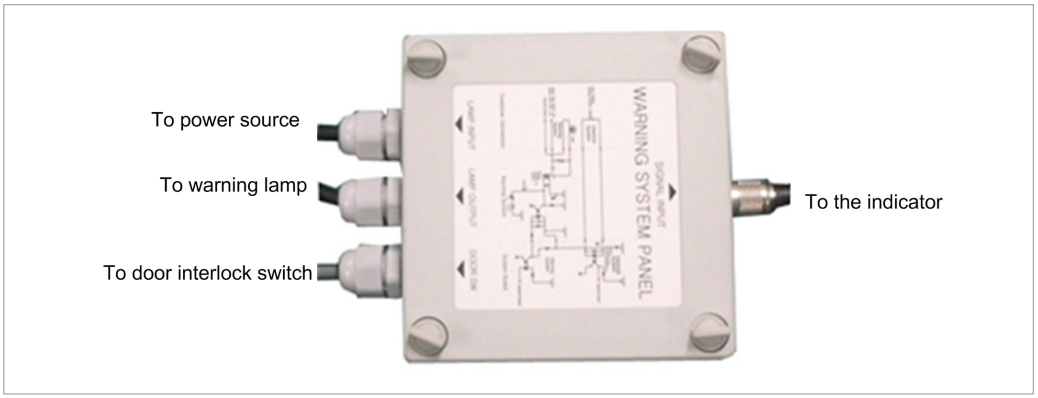
Components supplied:



Procedures:

The individual cable length:

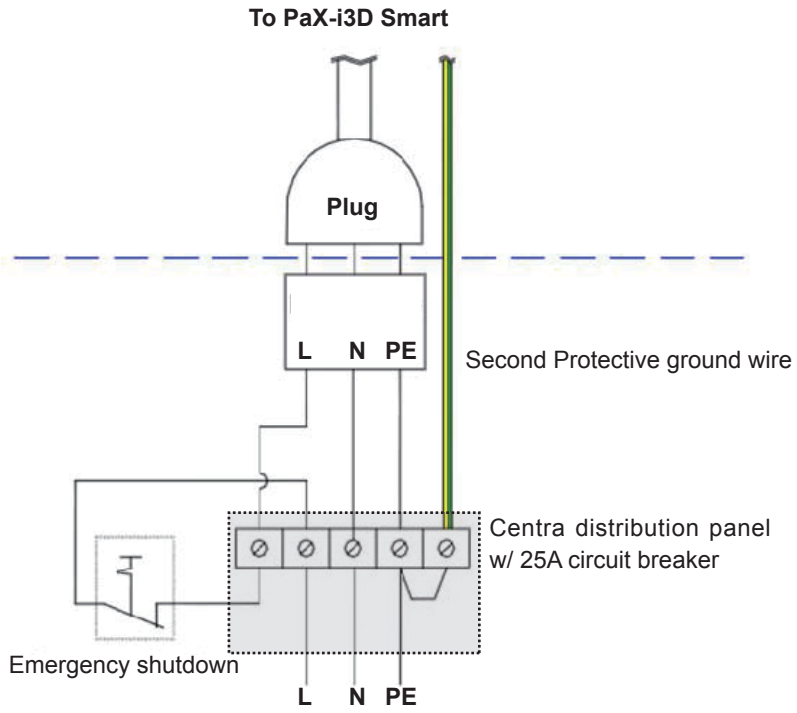
- Signal cable: 5m/198”
- Door interlock cable: 5m/198”
- Warning lamp: 1m/40”
- Power source cable: 1m/40”



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

B. Installing the Emergency Switch

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



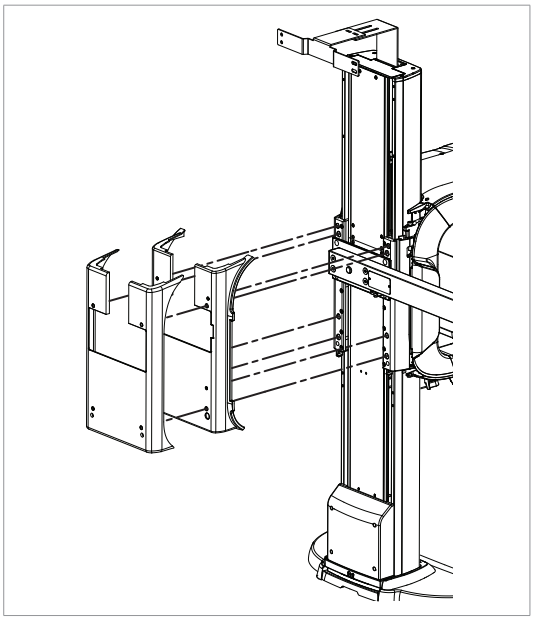
1. The cable sizes: N, L and PE≥ 12 AWG(3 x 4 mm^2).
2. The cable to emergency switch shall be the same size as the power cable itself.
3. Install the socket connector terminal for the 2nd protective ground wire.

C. Limiting the Column Height

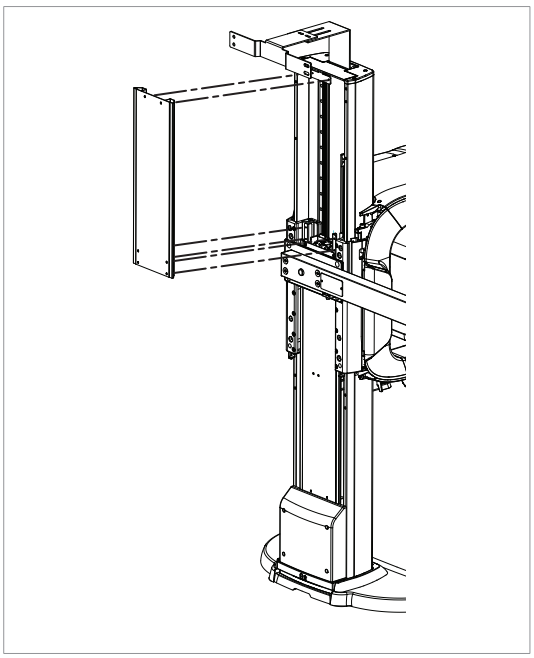
This section explains how to limit the column height within permissible range.

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

Removing the column covers



2. Remove the moving column back cases as shown in the figure



3. Remove the column rear-top cover as shown in the figure.

Determining the height

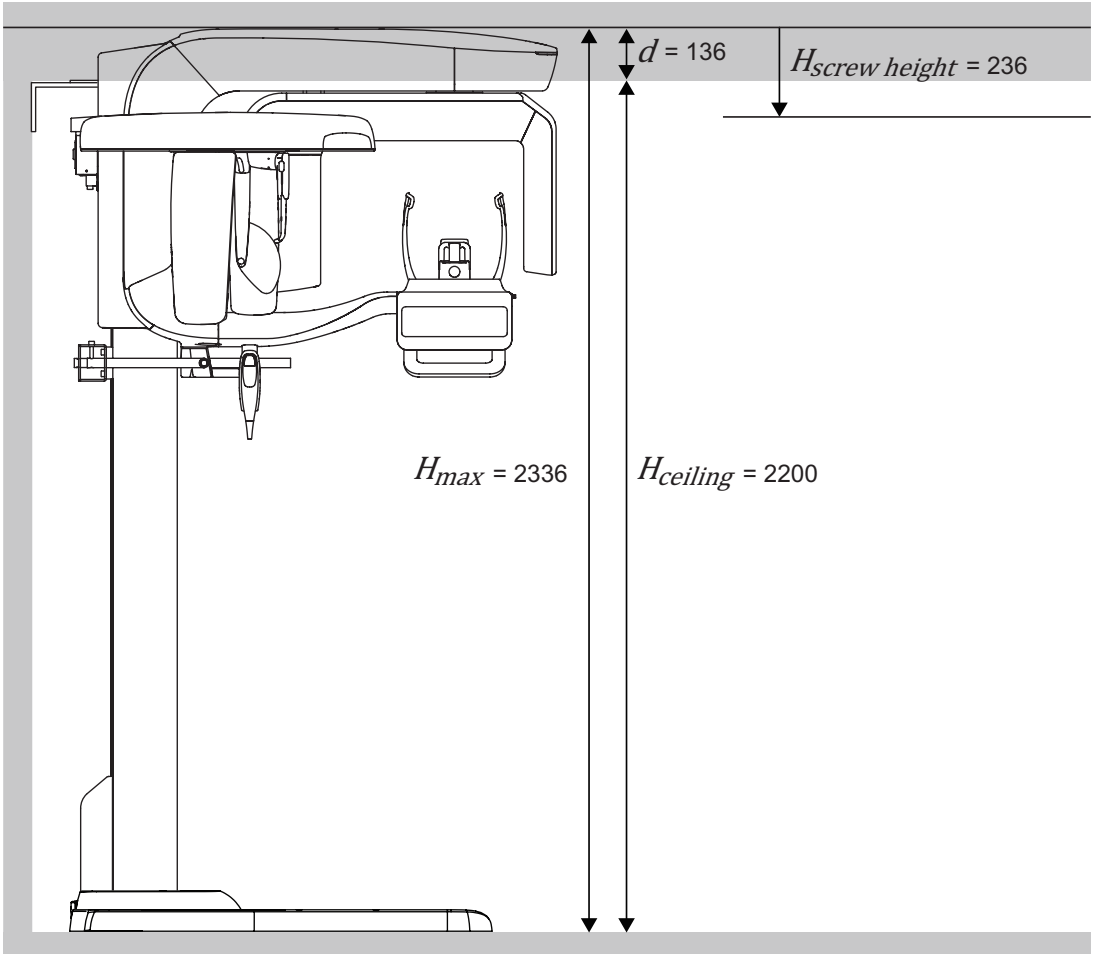
1. Determine the screw height using the following formula.

$h_{screw\ height} = 100mm - d$

- 100mm: the minimum desired distance between ceiling and the top of the equipment when the column is fully extended
- d = H ceiling - H Max = H ceiling - 2336mm

Ex) If H ceiling is 2200mm, H screw height value is calculated as follows:

- d = H ceiling - H Max = 2200mm - 2336mm = -136mm
- H screw height = 100mm - d = 100mm + 136mm = 236mm



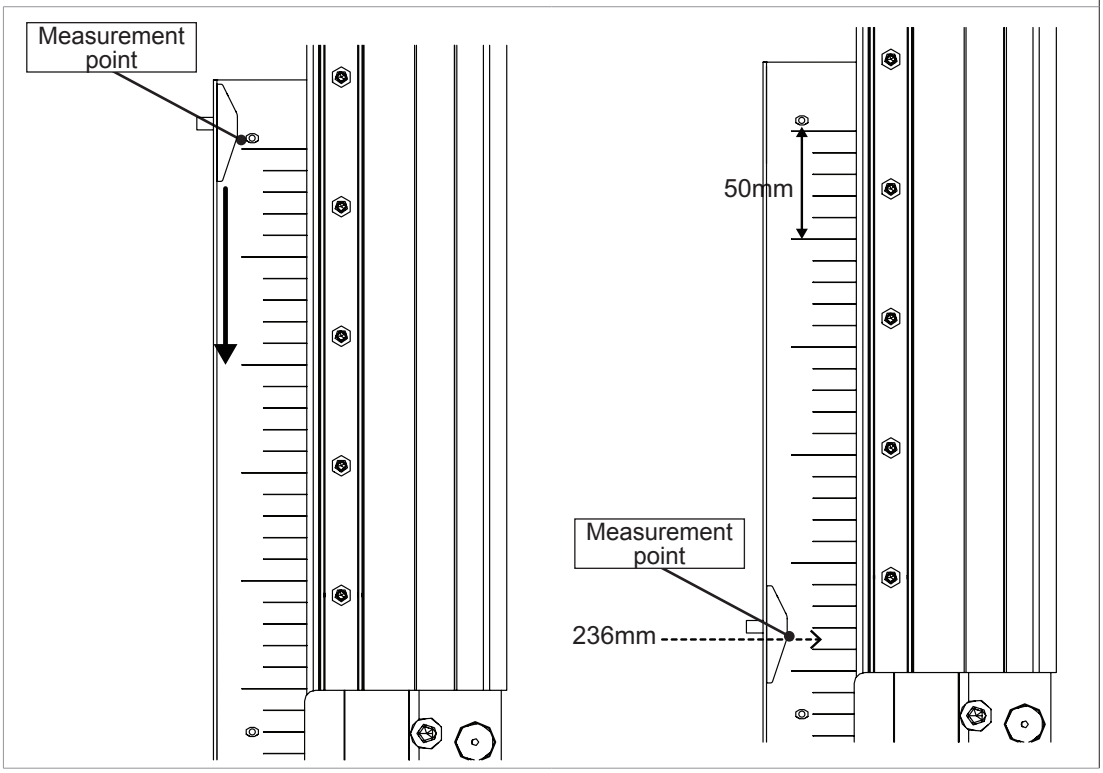
Adjusting the screw height

We know the screw height is 236mm from the previous example. So we will move the screw from the default (current) position to new one.

1. Loosen the bolt halfway **(important!).**

IMPORTANT

<u>Do not</u> unscrew completely the bolt or it could drop into the column, causing a big trouble to retrieve it out.



2. Looking up the scale, slide the screw down to new location (236mm) and fix it back.

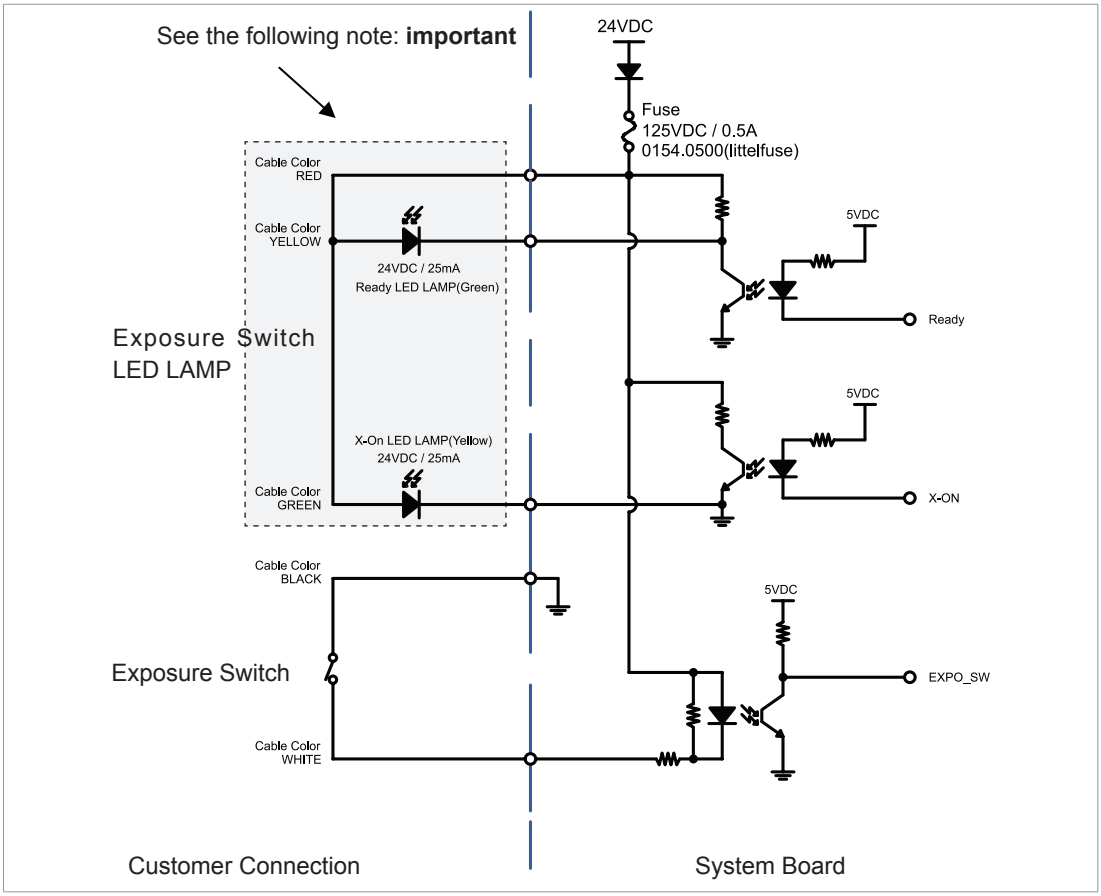
3. Put the covers back in reverse order and fix them with the bolts

D. Connecting the Third-party Exposure Switch(Optional)

This section explains on 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.



Note: tape the end of each unused wire to prevent the wires from causing an inadvertent short circuit

E. Checking PC BIOS Settings

Lenovo PC BIOS Setup

PC Model : Lenovo S30

PC BIOS default			
Main Menu	**Sub1 Menu**	**Sub2 Menu**	**Setup Value**
Devices	Network Setup	Boot Agent	[Disable]
Power	Enable Power Saving		[Disable]
Power	Automatic Power On	Wake on LAN	[Disable]
Advanced	CPU Setup	Hyper Threading Technology	[Disable]

HP PC BIOS Setup

PC Model : HP Z420

PC BIOS default			
Main Menu	**Sub1 Menu**	**Sub2 Menu**	**Setup Value**
Security	Network Service Boot		Disable
Power	OS Power Management	Run Time Power anagement	Disable
Power	Automatic Power On	Idle Power Saving	Normal
Power	Automatic Power On	USB Wake on Device	Disable
Advanced	Device Option	S5 Wake on LAN	Disable

F. Installation checklist

1. General information:

Customer

Information about the equipment purchaser	
Name of Clinic or Hospital	
Address	
Phone	
E-Mail	
Web site	

Dealer

Information about the equipment seller	
Name of dealer	
Address	
Phone	
E-Mail	
Web site	

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?	☐	☐
Is the freight elevator available?	☐	☐
Is the security guard, if any, notified of the installation in advance?	☐	☐
Are two installers, including the helpers, available to move and unload the equipment?	☐	☐

4. Before installation:

Site check list

	Yes	No
Is the room large enough?. At minimum, with CEPH unit 2,200 mm x 2200 mm x 2,600 mm/ 87” x 87” x 103. Without CEPH unit, 2,200 mm x 1,400 mm x 2,600 mm/ 87” x 55” x 103”	☐	☐
Is the door entrance wider than 800mm (32”)?	☐	☐
Is a radiation protection plan in place?	☐	☐
Does equipment and PC use same dedicated circuit?	☐	☐
Does the electrical input conditions to installation site meet the MEIGaN requirements?	☐	☐
Is the local Network IP address of clinic 192.168.33.xx?	☐	☐
Is compressor or air conditioner suction located right next to X-ray Room?	☐	☐
Is the floor flat and level?	☐	☐
Is the carpet on the floor? If so, remove it	☐	☐

Before opening Boxes

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

After opening Boxes

	Yes	No
Did installers make sure there are not any scratches or broken surface on equipment?	☐	☐
Are all accessories and cases included in the box?	☐	☐
Have you read the installation manual out in its entirety Before starting installation?	☐	☐
Did installer take pictures after opening the boxes?	☐	☐
Did installer make sure there are not any suspicious holes or scratches on the box after opening?	☐	☐

5. While installing equipment

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

6. After installation

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

7. Software compatibility

	Yes	No
Anti-virus software installed?	☐	☐
A firewall installed? If yes, indicate software or hardware	☐ **Type :**	☐
Are the third-party software installed? If yes, indicate name(s) and versions	☐	☐
Are they compatible with software from VATECH? If No, indicate name(s) and versions	**Version :**	

8. Eletrical requirements:

	Yes	No
Is the circuit breaker installed and tested in distribution panel for over-current protection w/ 20A?	☐	☐
Is internal line impedance checked? $Z_{input} \leq 0.5\Omega$	☐	☐
Does equipment and PC use same dedicated circuit?	☐	☐

9. Network Configuration:

	Yes	No
Is network configured with 1 Gbit/s of CAT5?	☐	☐
Is the equipment connected with network?	☐	☐
Is the network installation company identified?	☐	☐
What is the TCP/IP address assigned?	Address :	
What is the subnet masking address?	Address :	
Is there DHCP server?	☐	☐

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CE 0543

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 II b device.

EC REP

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