EzRay Air W (Model: VEX-S300W)

Installation Manual | Version 1.0

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 hardware installation procedures for the **EzRay Air W (VEX-S300W)** intra-oral dental X-ray unit. An installation manual and user manual are shipped with each hardware unit.

In this manual, **Equipment** or **System** refers to the **EzRay Air W**.

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 **EzRay Air W** is in steady improvement.

The information contained in this manual may be subject to change without notice, justification or notification of the persons concerned.

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

VATECH Co., Ltd.

Telephone: (+82) 1588-9510

E-Mail: gcs@vatech.co.kr

Manual name: EzRay Air W (Model: VEX-S300W) Installation Manual

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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.

	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.
	Cautions indicate a situation that demands prompt but careful action, remedy or emergency attention.
	Important symbols indicate a compulsory action or instruction.
	Notes help you optimize system performance. Carefully read each note to ensure that the equipment is used to its full potential.
	Radiation symbols indicate a possible danger from exposure to radiation.
	ESD susceptibility symbols indicate that an item is susceptible to damage from electrostatic discharges.

	Warnings Regarding X-ray Radiation ● Failure to install this equipment in an approved location may be dangerous to the patient and operator. ● Stationary radiation shielding must be installed to protect the operator from radiation. ● The X-ray system may cause injury to the patient if improperly used. Obey all federal and municipal standards regarding radiation safety. ● 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	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.
CAUTION	• It is critical that installers read and understand the installation instructions fully before installation. • The installer must confirm that the system is installed according to the instructions provided by this manual and perform the appropriate procedures therein. • If the equipment has been stored at temperatures of below 10℃ (50℉) for more than a couple of hours, allow the equipment to reach room temperature before applying mains voltage. • Installation and related work must only be performed by people authorized by VATECH. • Do not connect any items or equipment to this system which are not part of the system: **IEC60601-1-1**. • Any equipment not approved by VATECH must comply with the applicable standards: **IEC 60950-1** for IT equipment (Ex: PC) and **IEC 60601-1** for medical electrical equipment. • All operators of this equipment are responsible for ensuring that the requirements outlined in **IEC 60601-1-1**: Safety Requirements for Medical Electrical Equipment are fully met to ensure the safety of patients, operators and the environment. • Use an ESD (electrostatic sensitive device) wrist band during installation and connect it to a ground wire. • Touch a ground point to discharge static electricity before handling PCB boards

	Installation site • 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. • This equipment should not be installed in the immediate vicinity of other devices. • Do not install the equipment in an area that is exposed to strong electromagnetic fields. • Do not install this system in an area where there is the risk of an explosion. • The electrical installation of this system shall comply with all local code requirements for electro-medical systems: **IEC 60364-7-710:2002.** • It is strongly recommended that a UPS be installed at the same time as the equipment.
	This equipment complies with the following standards: • **IEC 60601-1** • IEC/EN 60601-1-2 • IEC 60601-1-3 • IEC 60601-1-6 • IEC 60601-2-65 • **ISO 13485** • **21 CFR 1020.30 & 1020.31**

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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.

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 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.

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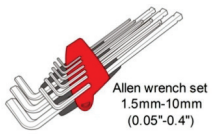
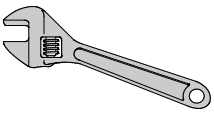
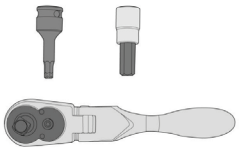
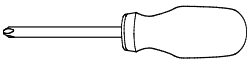
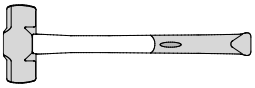
2. Before Installing the Equipment

NOTE	Two installers are required to install the equipment safely.

2.1 Required Tools

The following tools are necessary to install the equipment.

Item	Figure	Size
Wrench set		1.5 mm-10 mm/0.05-0.4”
Monkey wrench		10”
Ratchet wrench		Tips:3mm-8mm/0.12-0.3”
Cross head screw driver w/ magnetic tip		L=200 mm(7.9”)
Spirit level		Type 70/300
Anti-static glove		
Knife		
Tape ruler		5 m

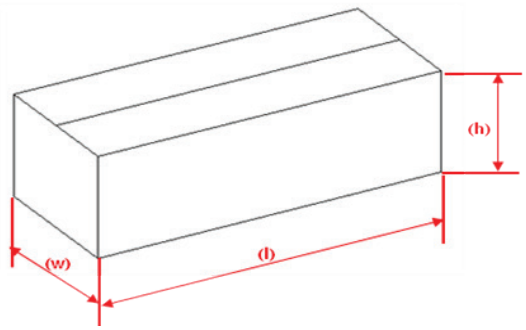
Item	Figure	Size
Marker pen(thick tip)		
Hammer		
Multi-meter		
Hammer drill		
Cutting pliers		

2.2 Unpacking the Boxes

IMPORTANT	Check the packaging for signs of damage visually before opening the package. If it appears damaged, do not open the package and immediately contact the shipping company, agent or VATECH
CAUTION	Wear the ant-static or general-purpose gloves.

Package Size

Item	Size (mm / inch)	Weight(kg/lbs)
Length	1,137 / 44.8”	20.6 kg (45.4 lb)
Width	443 / 17.4”	
Height	416 / 16.4”	

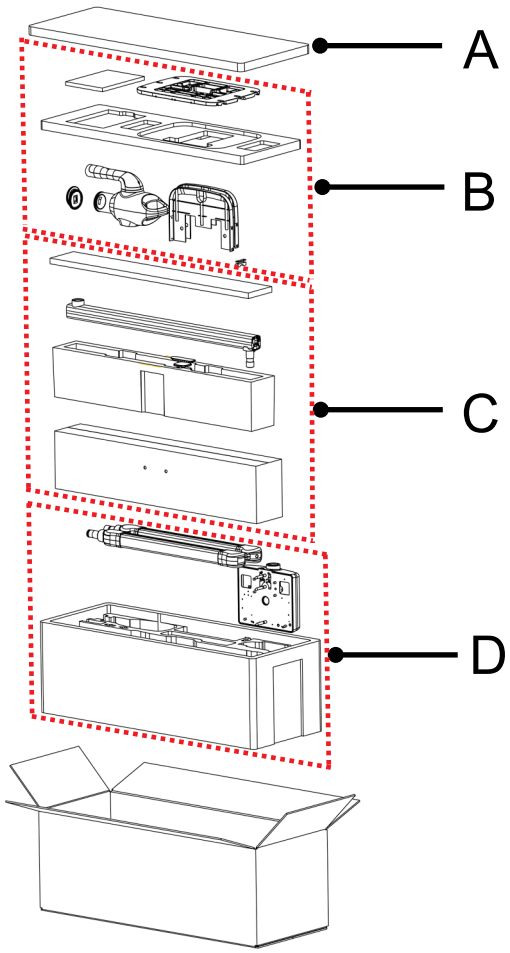


Unpacking the Main Box

1. Move the main box to a convenient place as close as possible to the installation location
2. Remove each box in the following order.

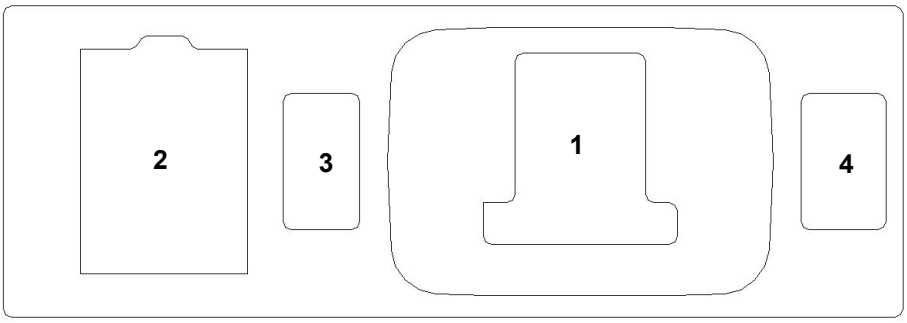
A: Top Cover
B: Upper Box
C: Horizontal Arm Box
D: Lower Box

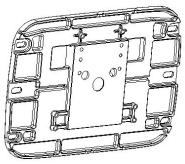
A → B → C → D



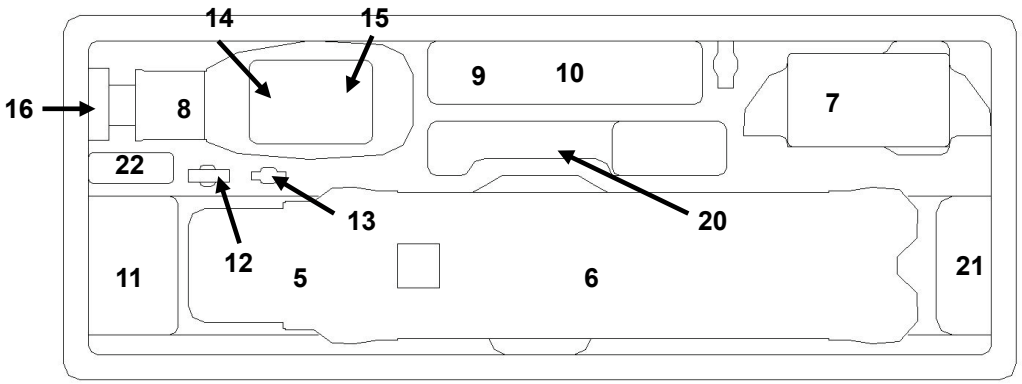
2.3 Checking the Components

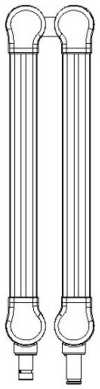
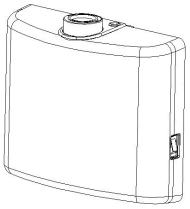
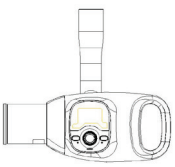
Upper Box (B)

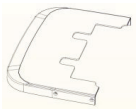


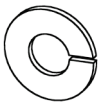
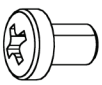
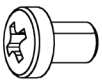
No.	Items	Figure	QTY	Comments	Confirmed
1	Double Stud		1		YES ☐ NO ☐
2	Installation manual		1		YES ☐ NO ☐
3	Anchor Bolt		5		YES ☐ NO ☐
4	Anchor Wrench Bolt		4		YES ☐ NO ☐

Horizontal Arm Box (C) and Lower Box (D)

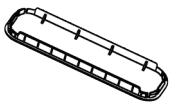
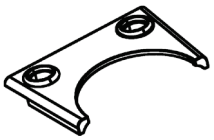
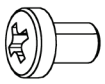
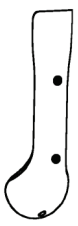


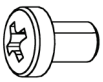
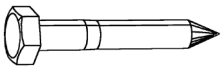
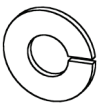
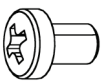
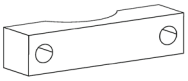
No.	Items	Figure	Qty.	Comments	Confirmed
5	Horizontal Arm		1	3 options: 450mm 600mm 900mm	YES ☐ NO ☐
6	Scissor arm		1	Cable included	YES ☐ NO ☐
7	Power Box Assembly		1		YES ☐ NO ☐
8	X-ray Generator Assembly		1	Cable included	YES ☐ NO ☐

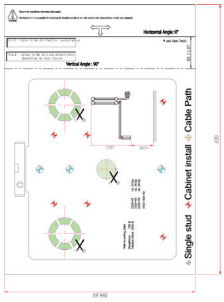
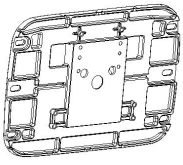
No.	Items	Figure	Qty.	Comments	Confirmed
9	User Manual		1		YES ☐ NO ☐
10	Double Stud Cover		2		YES ☐ NO ☐
11	Remote Exposure Switch Assembly			Remote Exposure Switch Holder included	YES ☐ NO ☐
12	X-ray Generator Arm Bushing		1		YES ☐ NO ☐
13	X-ray Generator Stopper		1		YES ☐ NO ☐
14	Remote Exposure Switch (Doorbell type)		1		YES ☐ NO ☐
15	Remote Exposure Switch Cable (Doorbell type)		1		YES ☐ NO ☐
16	Rectangular Cover 2x3		1		YES ☐ NO ☐
	Rectangular Cover 4x3		1		YES ☐ NO ☐

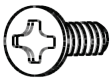
No.	Items	Figure	Qty.	Comments	Confirmed
17	Cable Tie		3		YES ☐ NO ☐
	Wrench Bolt		2	M5 x 20	YES ☐ NO ☐
	Fixing Washer for X-ray Generator Stopper		1		YES ☐ NO ☐
	Fixing Screw for X-ray Generator Stopper		1		YES ☐ NO ☐
20	AC Power Cable		1		YES ☐ NO ☐
	Door Interlock Cable		1		YES ☐ NO ☐
21	Silicone Cap 1 (gray)		2		YES ☐ NO ☐
	Power Box Screw		4		YES ☐ NO ☐
	X-ray Generator Arm Screw Cover 1		1		YES ☐ NO ☐
	X-ray Generator Arm Screw Cover 2		1		YES ☐ NO ☐
22	X-ray Generator Arm Screw Cover 3		1		YES ☐ NO ☐
	Generator Cover Bolt		3		YES ☐ NO ☐

Parts and Accessories List

Part No.	Items	Specification	Figure	Qty.	Confirmed
1	Horizontal Arm Frame Cover	ABS (White)		2	YES☐ NO☐
2	Horizontal Arm Cable Cover	ABS (White)		1	YES☐ NO☐
3	Power Box Cover Deco	ABS (White)		1	YES☐ NO☐
4	Silicone Cap 1 (white)	Silicone		2	YES☐ NO☐
5	Power Box Screw	PH M4 x 6		4	YES☐ NO☐
6	X-ray Generator Arm Bushing	AL		1	YES☐ NO☐
7	X-ray Generator Stopper	-		1	YES☐ NO☐
8	X-ray Generator Arm Cover	-		1	YES☐ NO☐
9	X-ray Generator Arm Screw Cover 1	-		1	YES☐ NO☐
10	X-ray Generator Arm Screw Cover 2	-		1	YES☐ NO☐
11	X-ray Generator Arm Screw Cover 3	-		1	YES☐ NO☐

Part No.	Items	Specification	Figure	Qty.	Confirmed
12	Generator Cover Bolt	PH M3 x 5		3	YES☐ NO☐
13	HEX HEAD WOOD SCREW (for Single Stud)	BN968 DIN571 M10		3	YES☐ NO☐
14	Fixing Washer for X-ray Generator Stopper	Washer SP M3		1	YES☐ NO☐
15	Fixing Screw for X-ray Generator Stopper	PH M3 x 5		1	YES☐ NO☐
16	ANTI ROTATION BLOCK 2	ACETAL (Black)		1	YES☐ NO☐
17	ANTI ROTATION BLOCK STIFFNER	Spc		1	YES☐ NO☐
18	Anchor Wrench Bolt	M8 x 20		4	YES☐ NO☐
19	Anchor	M8 x 30		5	YES☐ NO☐
20	Wrench Bolt	M5 x 20		2	YES☐ NO☐
21	Remote Exposure Switch Assembly	-		1	YES☐ NO☐
22	AC Power Cable	Length: 2 m		1	YES☐ NO☐

Part No.	Items	Specification	Figure	Qty.	Confirmed
23	Drilling Template	Paper (Size: A3)		1	YES☐ NO☐
24	Cable Tie	-		3	YES☐ NO☐
25	Rectangular Cover 2x3	ABS FOV: 2x3 (3x2)		1	YES☐ NO☐
26	Rectangular Cover 4x3	ABS FOV: 4x3 (3x4)		1	YES☐ NO☐
27	Installation Manual	-		1	YES☐ NO☐
28	User Manual	-		1	YES☐ NO☐
29	Double Stud	-		1	YES☐ NO☐

Part No.	Items	Specification	Figure	Qty.	Confirmed
30	Double Stud Cover	ABS (White)		2	YES☐ NO☐
31	Double Stud Cover Screw	FH M4 x 8		8	YES☐ NO☐
32	Remote Exposure Switch (Doorbell type)			1	YES☐ NO☐
33	Remote Exposure Switch Cable (Doorbell type)			1	YES☐ NO☐
34	Door Interlock Cable			1	YES☐ NO☐

3. Installing the Equipment

Before Start

CAUTION

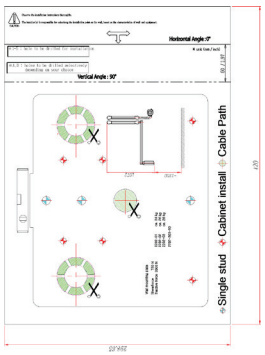
Observe wall properties

During installation, the technician is responsible for the assessment of wall properties and selecting the method of attaching the unit to the wall.

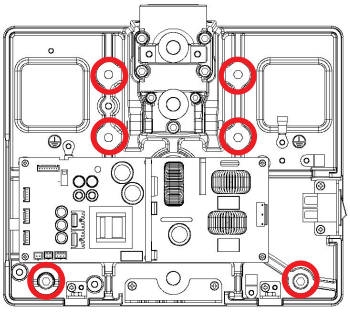
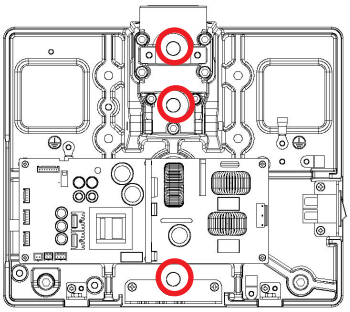
The wall construction must be able to resist a shear load of 76 kg (168 lbs) and tractive force of 204 kg (450 lbs) at each attachment location. Otherwise some additional mounting supports must be used to fulfill this requirement.

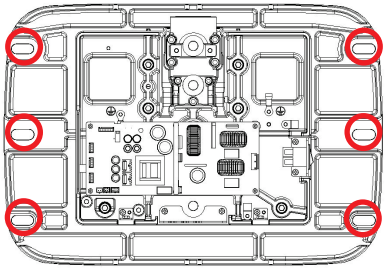
IMPORTANT

- You are advised to plan and study the installation environment carefully in advance before proceeding, since the installation involves drilling the wall. Accurate measurement is of critical importance for successful installation.
- The horizontal arm comes with one of three different lengths, depending on your purchase: L=450 or 600 or 900 mm.
- Proceed marking on the wall after performing thorough simulation several times with the arm provided.
- Ensure that the spirit level should rest only on the location indicated in the figures to obtain the accurate level.

Tape ruler	
Drilling template	
Spirit level	
Marker	

Mounting Overview

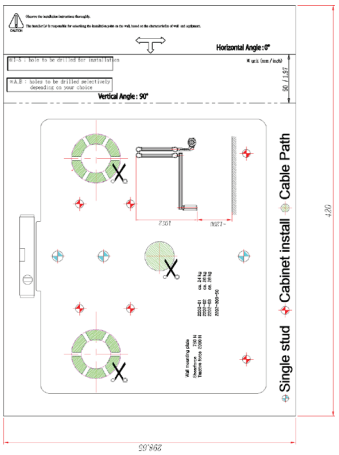
Mounting type	Mounting points on the wall
Cabinet Installation	 Wood wall - Wood screw X 6 (Part No.13) Concrete wall - Anchor X 6 (Part No.19) - Anchor wrench bolt X 6 (Part No.18)
Wall Bracket Installation : Single Stud	 Wood wall - Wood screw X 6 (Part No.13) Concrete wall - Anchor X 6 (No.19) - Anchor wrench bolt X 6 (No. 18)

Mounting type	Mounting points on the wall
Wall Bracket Installation : Double Stud (Optional)	 Wood wall - Wood screw X 6 (Part No.13) Concrete wall - Anchor X 6 (Part No.19) - Anchor wrench bolt X 6 (Part No.18)

3.1 Marking Drill points on the wall

1. Prepare the spirit level.
2. Attach the drilling template (**Part No.23**) temporally.

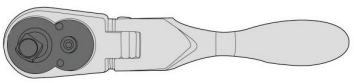
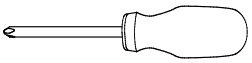
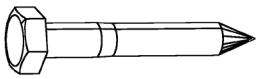
   Place it on the wall and ensure leveling is obtained (The bubble should be placed on the middle).
3. If it is, tape the drilling template temporally at three or four corners.
4. Mark the holes on the wall according to the mounting type and then remove the drilling template.



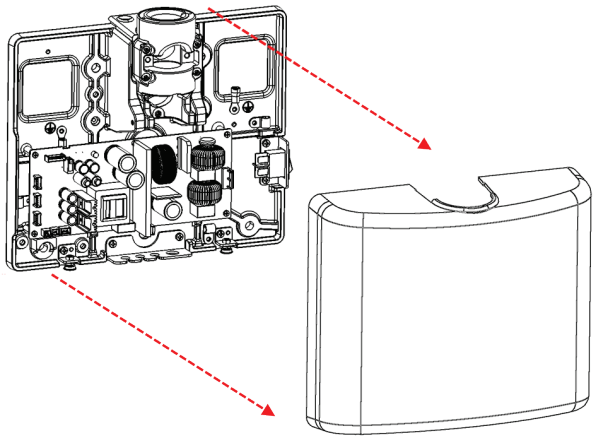
3.2 Installing the Power Box Assembly

3.2.1 Mounting the Power Box Assembly (For wood walls)

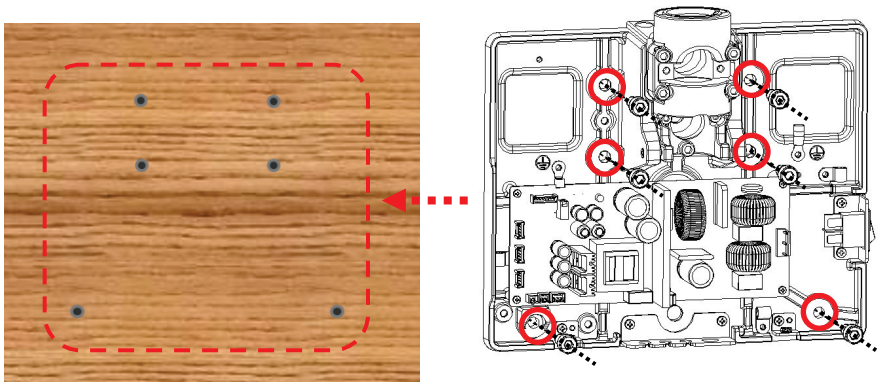
Cabinet Installation Type

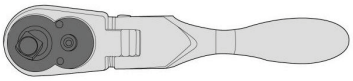
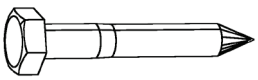
RATCHET WRENCH		
Cross head screw driver w/ magnetic tip	L=200 mm (7.9”)	
HEX HEAD WOOD SCREW	Part No.: 13 Size: BN M10 Qty.: 6 ea	
Power Box Assembly	Cables included	

1. Remove the front cover of the Power Box Assembly.



2. Attach the Power Box Base to the wall with six wood screws (M10).



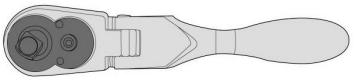
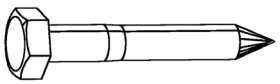
RATCHET WRENCH		
HEX HEAD WOOD SCREW	Part No.: 13 Size: BN M10 Qty.: 6 ea	

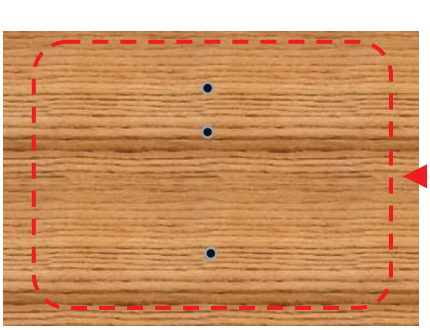
IMPORTANT

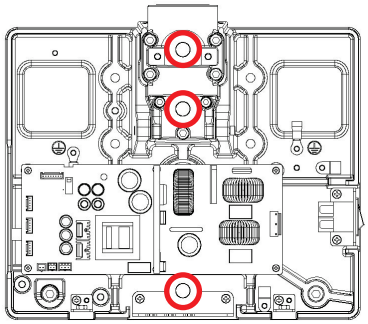
DO NOT tighten the screws at this time.

Wall Mount Type - Single Stud

1. Perform the step 1 in the **Cabinet Installation Type** section.
2. Attach the Power Box Base to the wall with three wood screws.

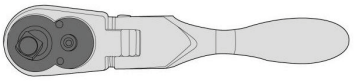
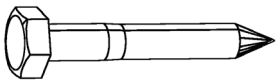
RATCHET WRENCH		
HEX HEAD WOOD SCREW	Part No.: 13 Size: BN M10 Qty.: 3 ea	

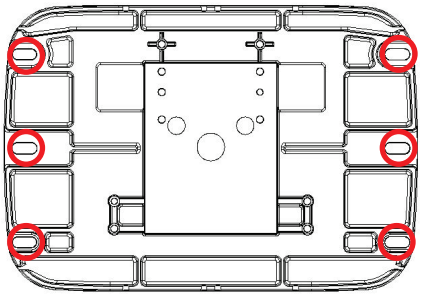




Wall Mount Type - Double Stud (Optional)

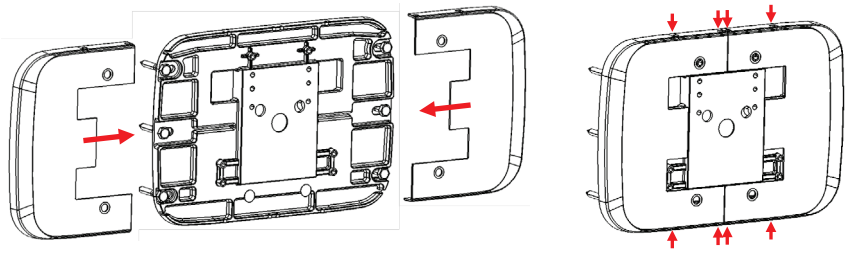
1. Perform the step 1 in the **Cabinet Installation Type** section.
2. Attach the Double Stud Frame to the wall with six wood screws.

RATCHET WRENCH		
HEX HEAD WOOD SCREW	Part No.: 13 Size: BN M10 Qty.: 6 ea	

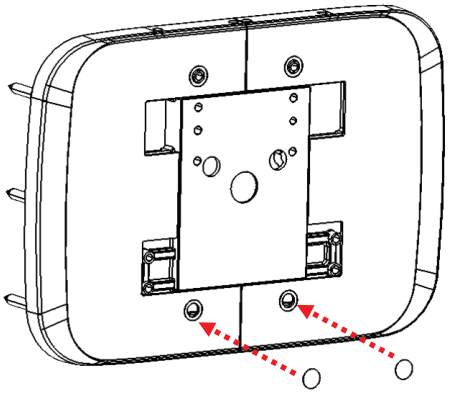


3. Assemble the Double Stud Covers with eight flat head screws (M4 x 8).

Double Stud Cover Screw	Part No.: TBD Size: M4 x 8 Qty.: 8 ea	

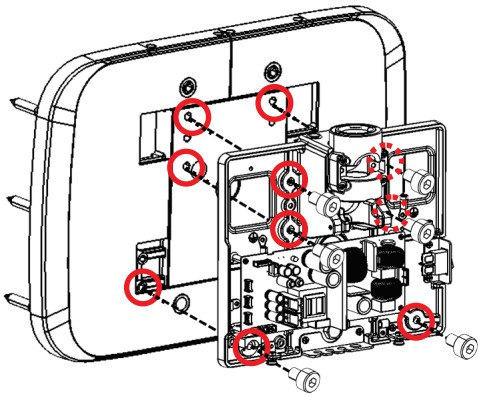


4. Attach two double stud stickers on each Double Stud Cover.



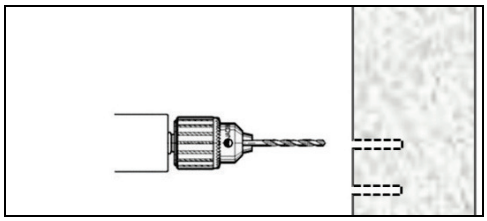
5. Attach the Power Box Base to the Double Stud Frame with six wrench bolts (w/ spring and flat washer).

Allen wrench	7”	
Wrench bolt	Part No.: 18, w/spring and flat washer Size: M8 x 20 Qty.: 6 ea	

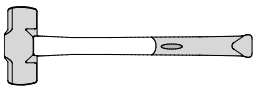


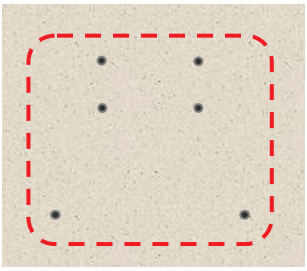
3.2.2 Mounting the Power Box Assembly (For Concrete walls)

1. Drill the marked points using the hammer drill.



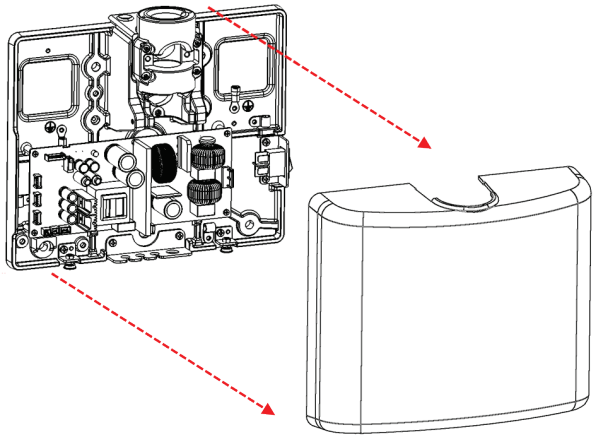
2. Remove the debris and clean the holes using the dust pump.
3. Anchor the bolts (**Part No.19**) with the hammer.

Hammer		
Anchor bolt	Part No.: 19 Size: M8 x 30 Qty.: 6 ea	



ex) Cabinet Installation Type

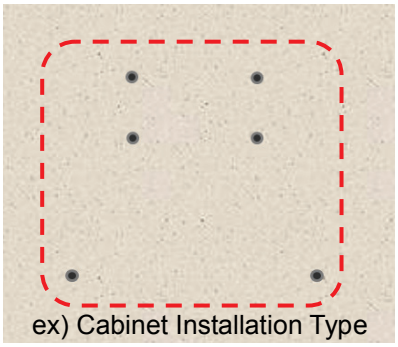
4. Remove the front cover of the Power Box Assembly.



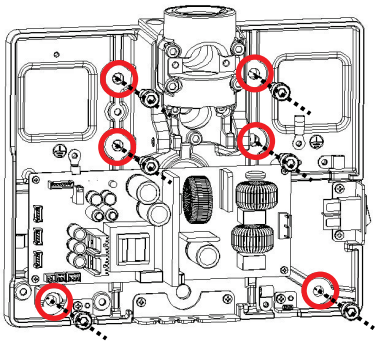
5. Attach the Power Box Base to the anchors with six anchor wrench bolts.

IMPORTANT	DO NOT tighten the bolts completely until after leveling is completed.

Allen wrench	7”	
Anchor wrench bolts	Part No.: 18 Size: M8 x 20 Qty.: 6 ea	

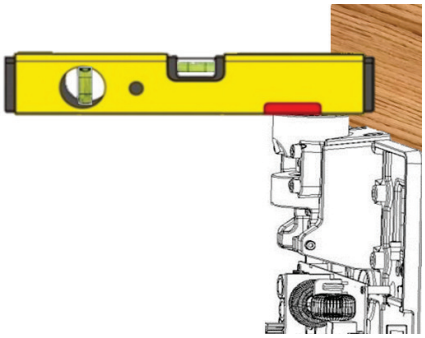


ex) Cabinet Installation Type



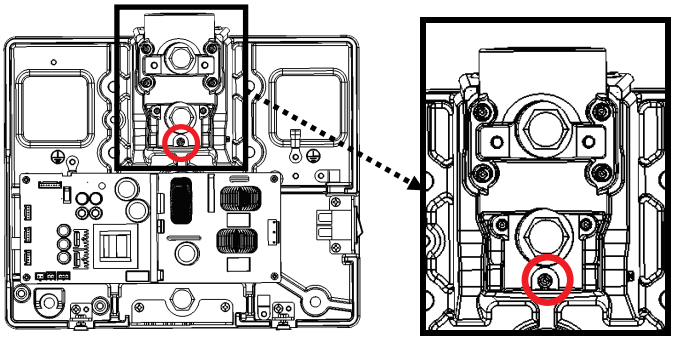
3.2.3 Leveling the Power Box Assembly: Front/Rear

1. Place the spirit level on the position as shown in the figure.



2. To adjust the horizontality (level), loosen one wrench bolt by using the wrench.
3. Adjust the headless wrench bolt until the bubble on the spirit level is placed in the middle.

Allen wrench	5 mm	

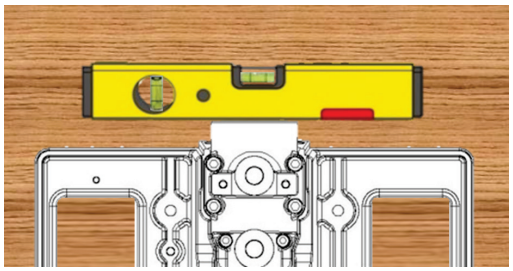


NOTE

Since the Power Box Assembly is shipped with one bolt tightened, they are required to be loosened prior to leveling it.

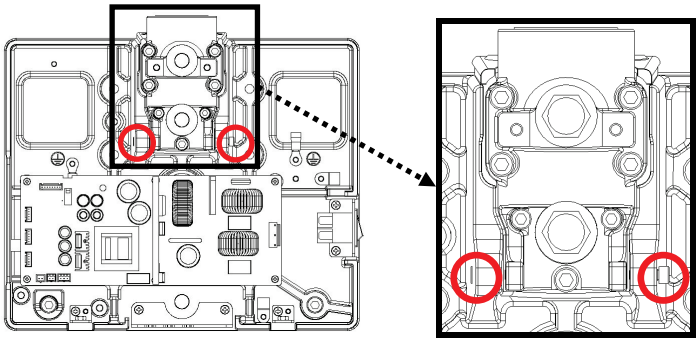
3.2.4 Leveling the Power Box Assembly: Left/Right

1. Place the spirit level on the position as shown in the figure.



2. After placing the spirit level on its position, adjust the 2 bolts until the bubble on the spirit level is placed in the middle.

Allen wrench	3 mm	

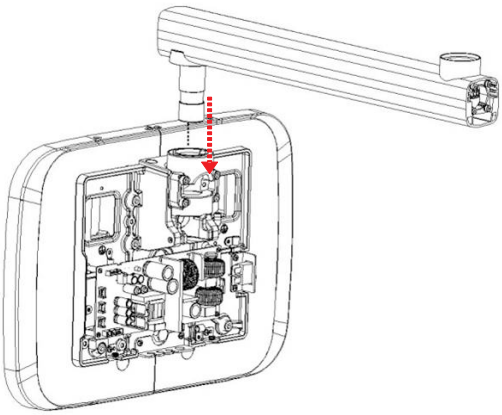


3.3 Installing the Horizontal Arm

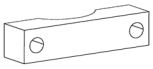
IMPORTANT	**The length of the horizontal arm:** L= 450, 600, and 900 mm Depending on arm's length, the height where control unit is to be installed is of critical importance.

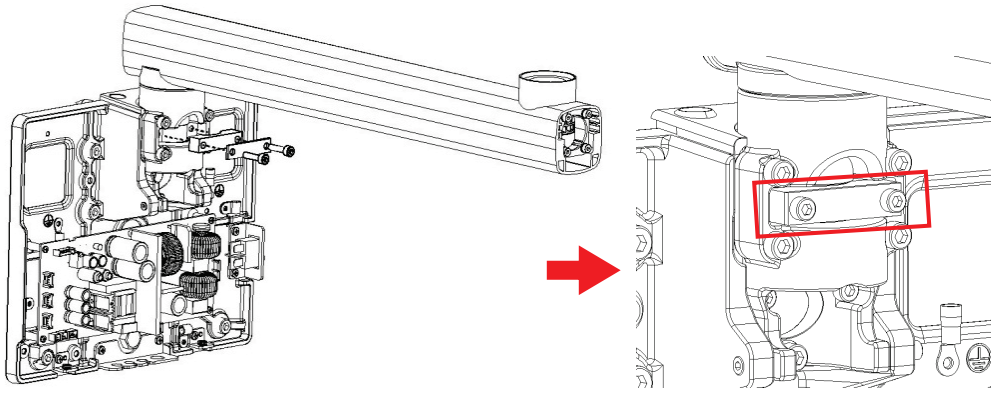
NOTE	The installation procedures are the same regardless of the arm's length.

1. After pulling out the cables through the opening, insert the horizontal arm into the hole on the Power Box Assembly.



2. Fix the block assembly using the anti-rotation block2 (**Part No. 2**), anti-rotation block stiffner (**Part No. 3**) and wrench bolts (**Part No. 12**).

Allen wrench	3 mm	
Horizontal arm	Cable included	
ANTI ROTATION BLOCK2	Part No.:16 Qty.: 1 ea	
ANTI ROTATION BLOCK STIFFNER	Part No.: 17 Qty.: 1 ea	
WRENCH BOLT	Part No.: 20, w/spring and flat washer Size: M5 x 20 Qty.: 2 ea	

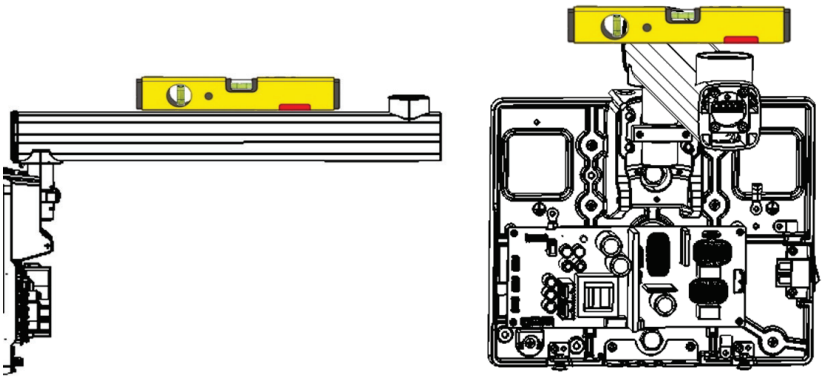


IMPORTANT

Make sure that the Horizontal Arm moves easily. If not, slightly loosen the wrench bolts.

3.3.1 Leveling the Horizontal Arm

1. Place the spirit level on the position as shown in the following figures.



<Front/Rear> **<Left/Right>**

2. Check if the bubble on the spirit level is placed in the middle.
3. If it is not in the middle, follow the same procedures in ‘3.2.3 Leveling the Power Box Assembly: Front/Rear’ and ‘3.2.4 Leveling the Power Box Assembly: Left/Right’.

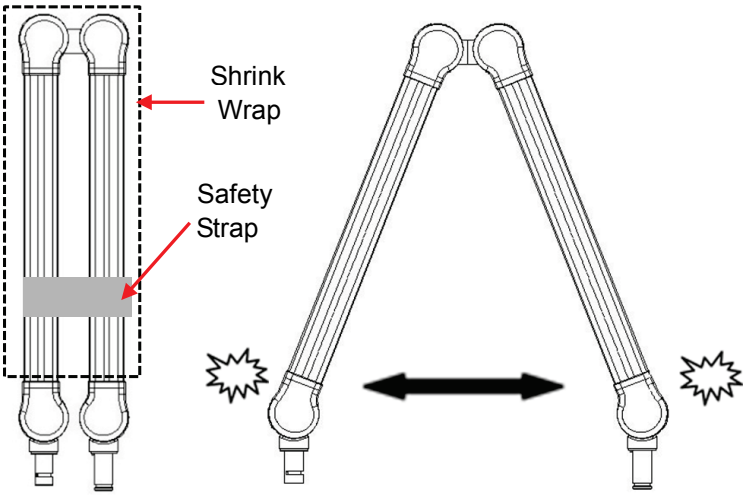
3.4 Installing the Scissor Arm

WARNING

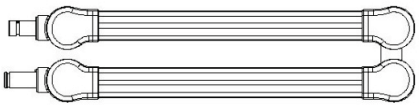
Scissor arm can cause injury during installation.

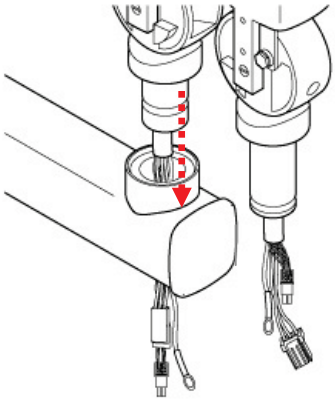
DO NOT remove the safety strap and shrink wrap for scissor arm until the installation is completed.

When you remove the strap and shrink wrap, the scissor arm will be opened by its spring tension. This can cause injury to personnel or damage to equipment.

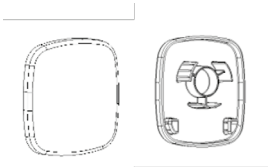


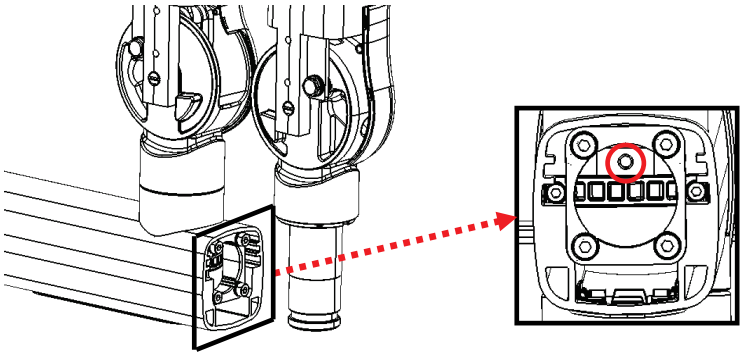
1. Insert the cable and the scissor arm into the opening on the horizontal arm

Scissor arm	Cable included	

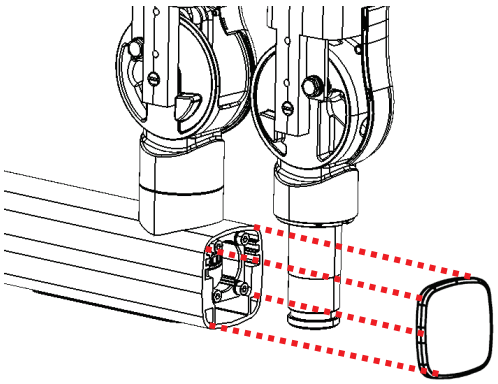


2. Tighten the wrench bolt in the the Horizontal Arm Frame End, and cover the Frame End with the Horizontal Arm Frame Cover (**Part No.1**).

Horizontal Arm Frame Cover	Part No.: 1 Qty.: 2 ea	 Front Rear



<Location of the hole to tighten the wrench bolt>

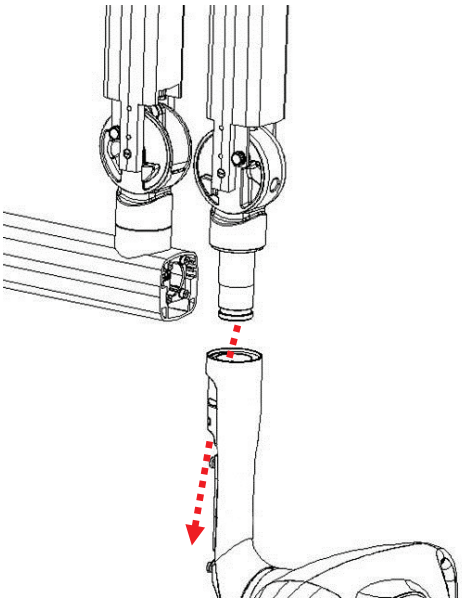


<Tightening the wrench bolt and covering the Frame End>

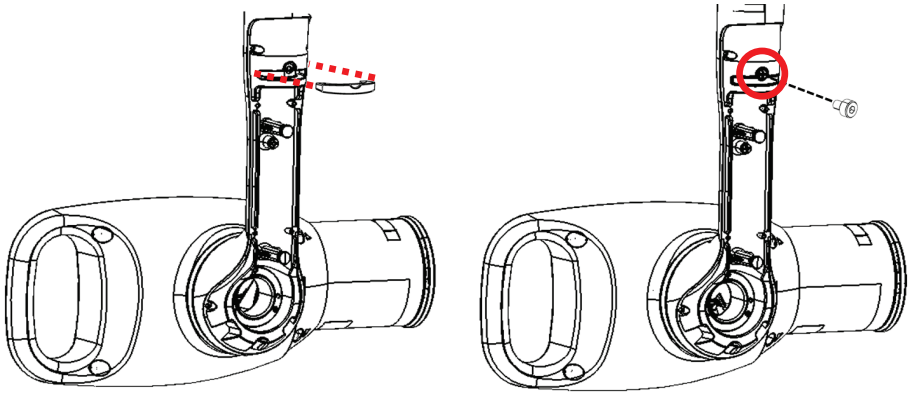
3.5 Installing the X-Ray Generator Assembly

CAUTION	Handle the X-Ray tube head with care when installing the X-Ray tube head.

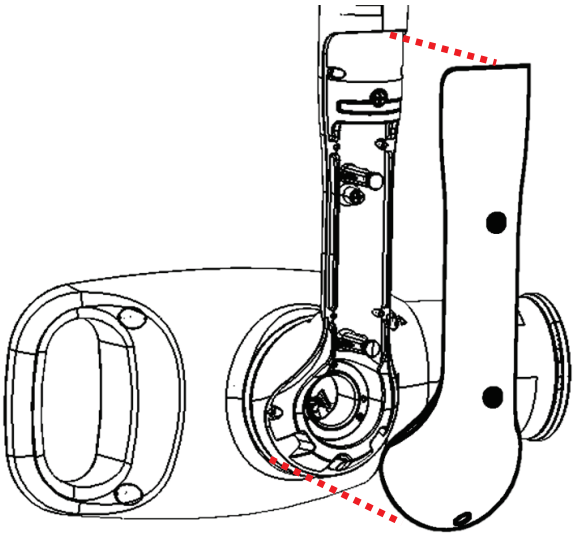
1. Attach the the X-ray Generator Assembly to the scissor arm while making sure that the cables from the Scissor Arm go through the X-Ray Generator Arm's hole.



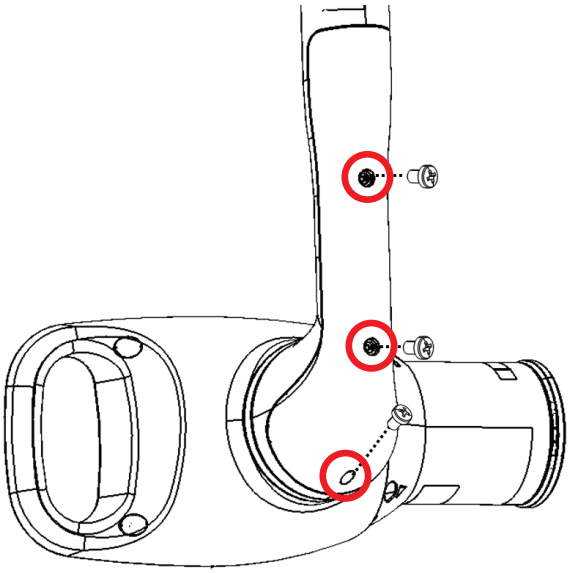
2. For information about connecting cables, please see '3.6.4 Cabling between the Scissor Arm and the X-ray Generator' on *page 38*.
3. Attach the stopper to the rear top of the X-ray Generator Arm, and tighten the bolt above the attached stopper.



4. Cover the rear side of the X-ray Generator Arm with the X-ray Generator Arm Cover.

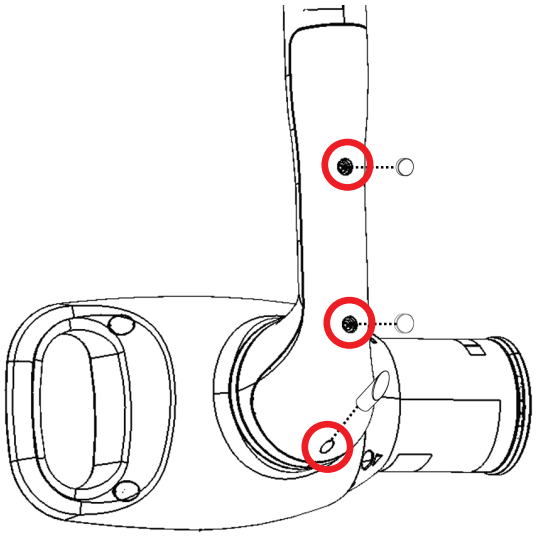


5. Tighten three bolts on the rear cover of the X-ray Generator Arm.



6. Cover three holes with caps (Part No. 9, 10).

GENERATOR ARM COVER CAP1	Part No.: 9 Qty.: 1 ea	
GENERATOR ARM COVER CAP2	Part No.: 10 Qty.: 1 ea	
GENERATOR ARM COVER CAP3	Part No.: 11 Qty.: 1 ea	



3.6 Connecting the Cables

Whenever handling the cables and electronic board:

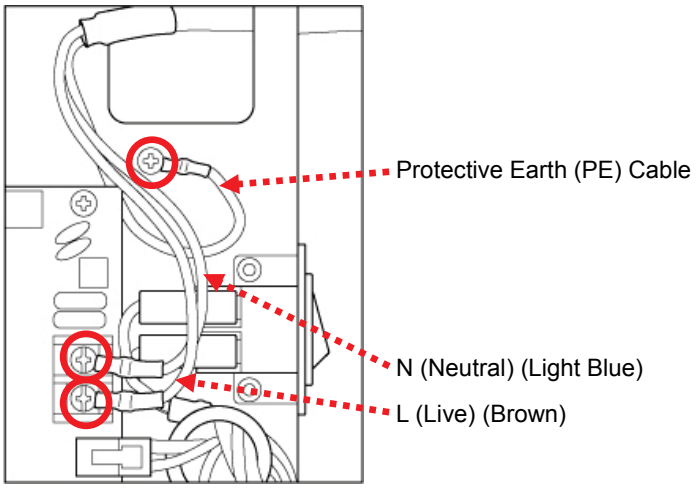
1. Wear the ant-static gloves.

2. DO NOT wear a thick jacket.

Always ensure that the cables are connected firmly. Bad connection could cause deterioration of image quality.

3.6.1 Connecting the Power Cord

1. Connect the N (Neutral) and L (Live) Connectors of the permanently power cord to the terminal blocks, and Protective Earth (PE) Cable to the Protective Earth Conductor.

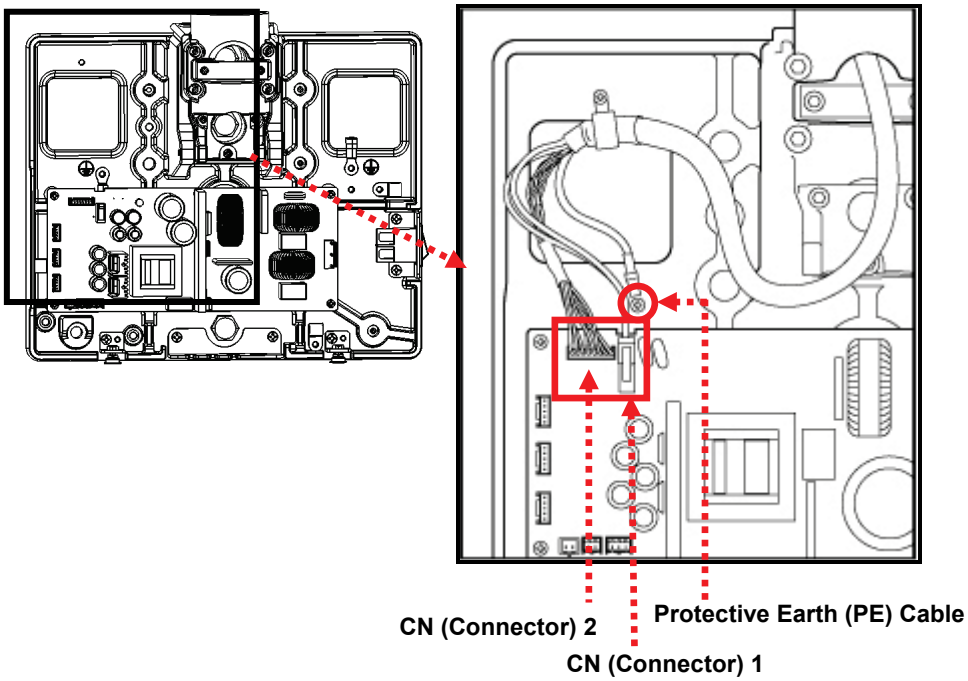


3.6.2 Connecting Horizontal Arm Cables

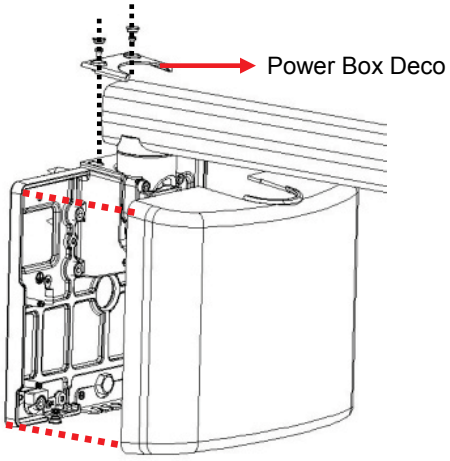
NOTE

1. Cable Name: H001624 (L=450 mm) / H001625 (L=600 mm)
   H001626 (L=900 mm)
2. The installation procedures are the same, regardless of the horizontal arm length.

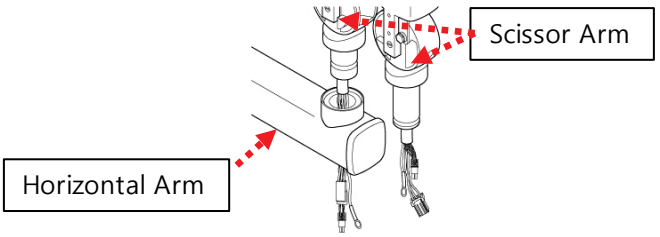
1. Connect the cable **H001624** with the Connector 1, 2 on the Power Box Board, and the Protective Earth (PE) Cable on the PE Conductor.



2. Cover the Power Box Base with the Power Box Cover, and tighten two bolts with the Power Box Deco.

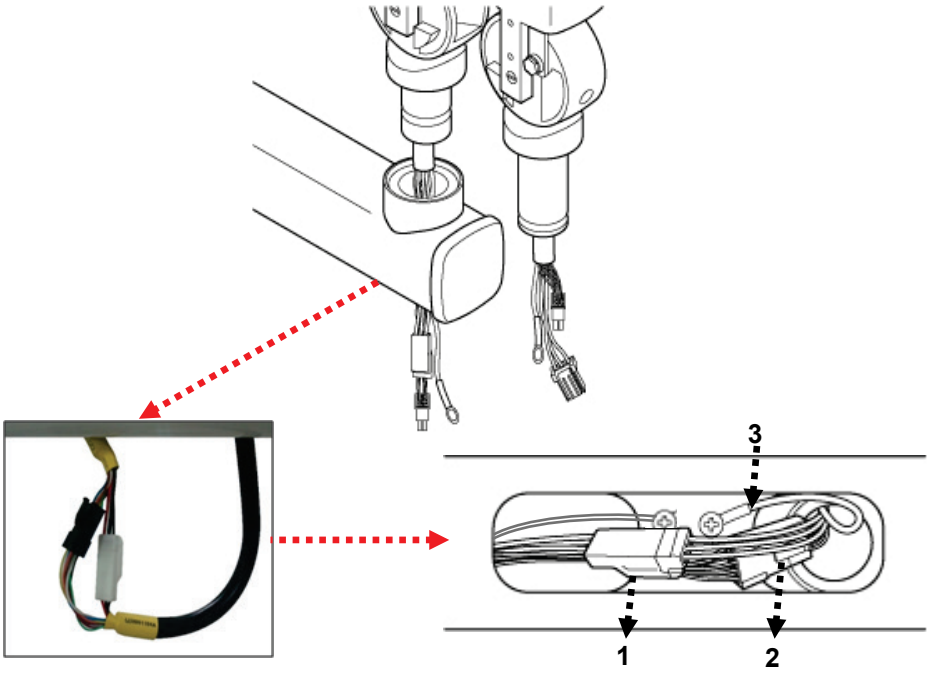


3.6.3 Cabling between the Scissor arm and horizontal arm.



CAUTION	During cable installation, avoid any cable kinks and maintain the proper bending. Ensure that cables are not caught in the cover.

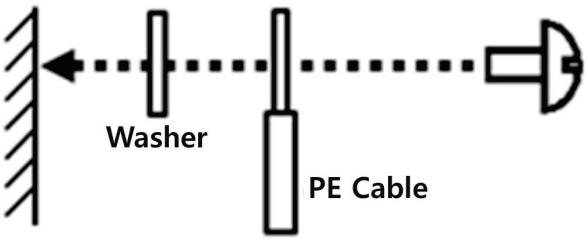
1. Connect the cables from the horizontal arm and scissor arm.



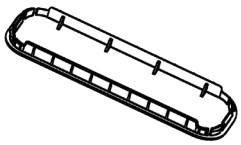
1. **White connector (3-pin) ↔ White connector (3-pin)**
2. **Black connector (8-pin) ↔ Black connector (8-pin)**
3. **Protective Earth (PE) Cable from the Scissor Arm**

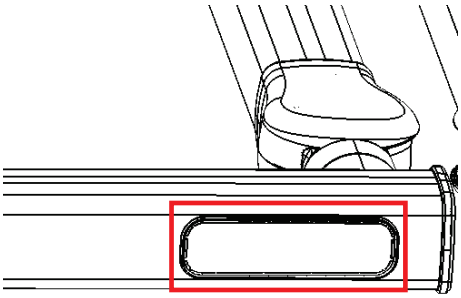
IMPORTANT

When you connect the **Protective Earth (PE) Cables** to the **PE conductor** by using the truss head screw, please refer to the illustration below.

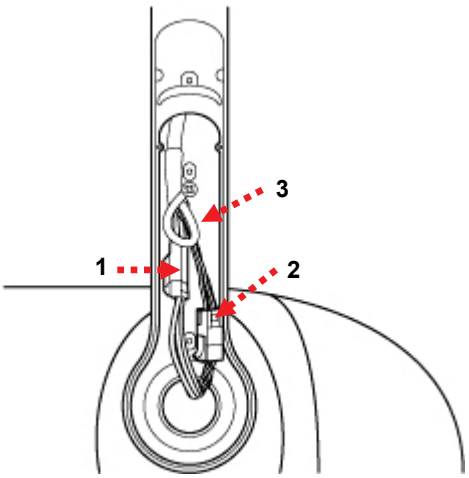


2. Arrange the cables and cover the horizontal arm opening with the HORIZONTAL LOWER COVER (**Part No.2**).

HORIZONTAL ARM CABLE COVER	Material: ABS (White) Part No.: 2 Qty.: 1 ea	



3.6.4 Cabling between the Scissor Arm and the X-ray Generator



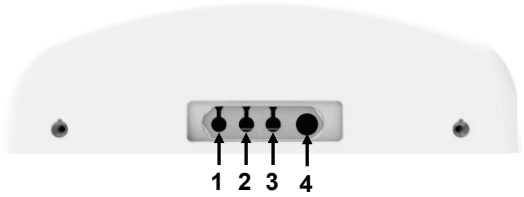
1. **White connector (3-pin) ↔ White connector (3-pin)**
2. **Black connector (8-pin) ↔ Black connector (8-pin)**
3. **Protective Earth (PE) Cable from the Scissor Arm**

3.6.5 View After Completion

3.6.6 Remote Exposure Switch and Power Cable Connections

There are four connectors on the bottom of the Power Box Assembly as described below.

- **Connector 1, 2, 3:** Remote Exposure Switch Connectors
- **Connector 4:** AC Power Cable Connector



The standard and optional **Remote Exposure Switches**, and the **Door Interlock Cable** are connected to the **Connector 1, 2, and 3**. Please check all seven possible options in the table below.

Option No.	Description	Connector 1	Connector 2	Connector 3	Connector 4
Option 1	Press (1).	(1) Remote Exposure Switch **(Standard)**	N/A	N/A	AC Power Cable **(Option)**
Option 2	Press (1) **and** (2) at the same time.	(1) Remote Exposure Switch **(Standard)**	N/A	(2) Remote Exposure Switch **(Option)**	AC Power Cable **(Option)**

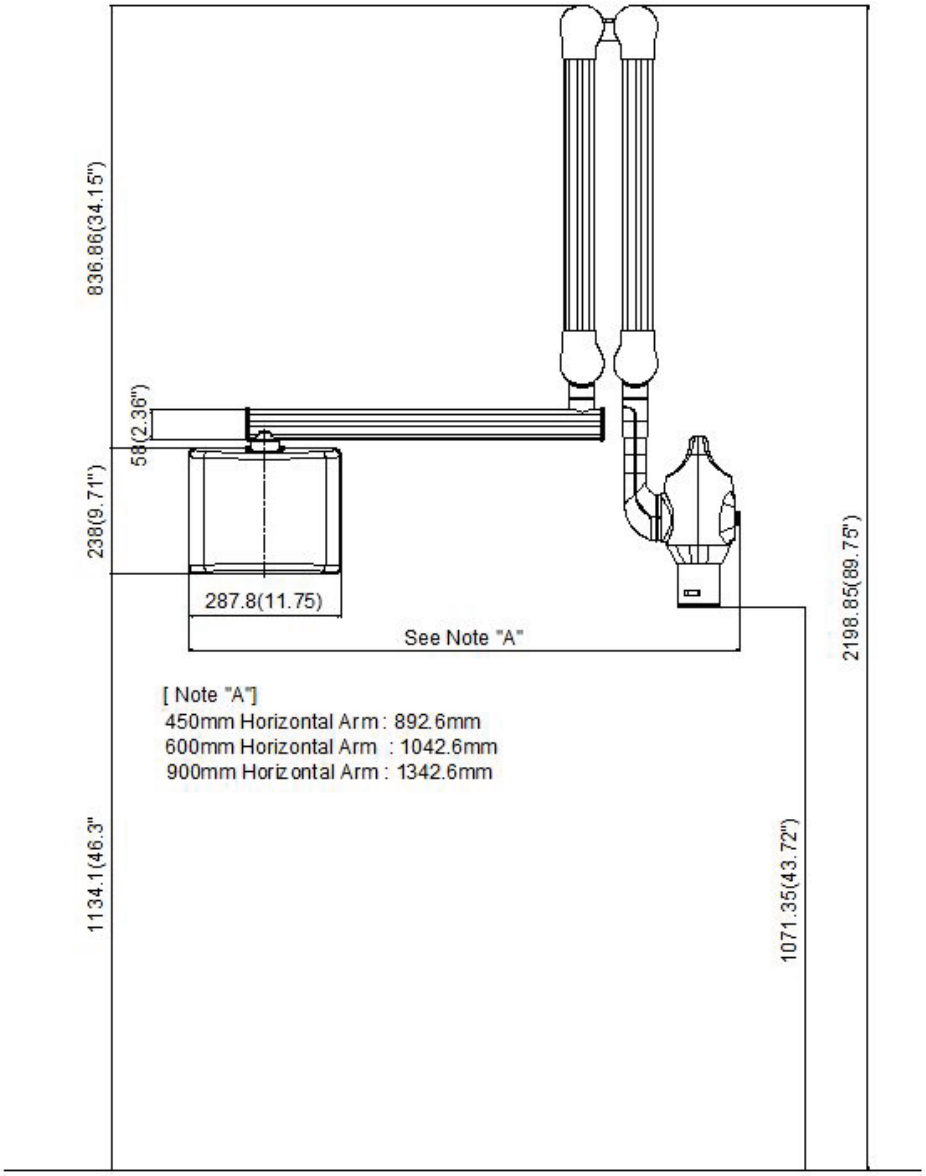
Option No.	Description	Connector 1	Connector 2	Connector 3	Connector 4
Option 3	Press (1) **and** (2) at the same time.	(1) Remote Exposure Switch **(Standard)**	N/A	(2) Remote Exposure Switch (Doorbell type) **(Option)**	AC Power Cable **(Option)**
Option 4	Press (1).	(1) Remote Exposure Switch **(Standard)**	N/A	(2) Door Interlock Cable **(Option)**	AC Power Cable **(Option)**
Option 5	Press (1) **or** (2).	(1) Remote Exposure Switch **(Standard)**	(2) Remote Exposure Switch **(Option)**	N/A	AC Power Cable **(Option)**
Option 6	Press (1) **or** (2).	(1) Remote Exposure Switch **(Standard)**	(2) Remote Exposure Switch (Doorbell type) **(Option)**	N/A	AC Power Cable **(Option)**

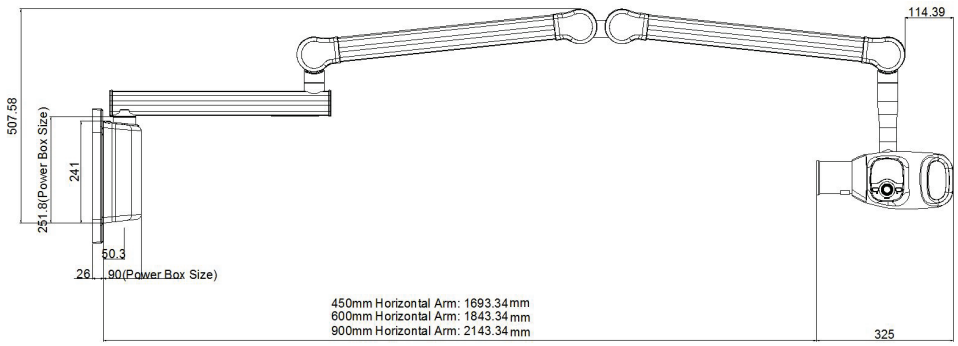
Option No.	Description	Connector 1	Connector 2	Connector 3	Connector 4
Option 7	Press (2) **and** (3) at the same time. (1): Not used in this option.				AC Power Cable **(Option)**
		(1) Remote Exposure Switch **(Standard)**	(3) Remote Exposure Switch (Doorbell type) **(Option)**	(2) Remote Exposure Switch (Doorbell type) **(Option)**	

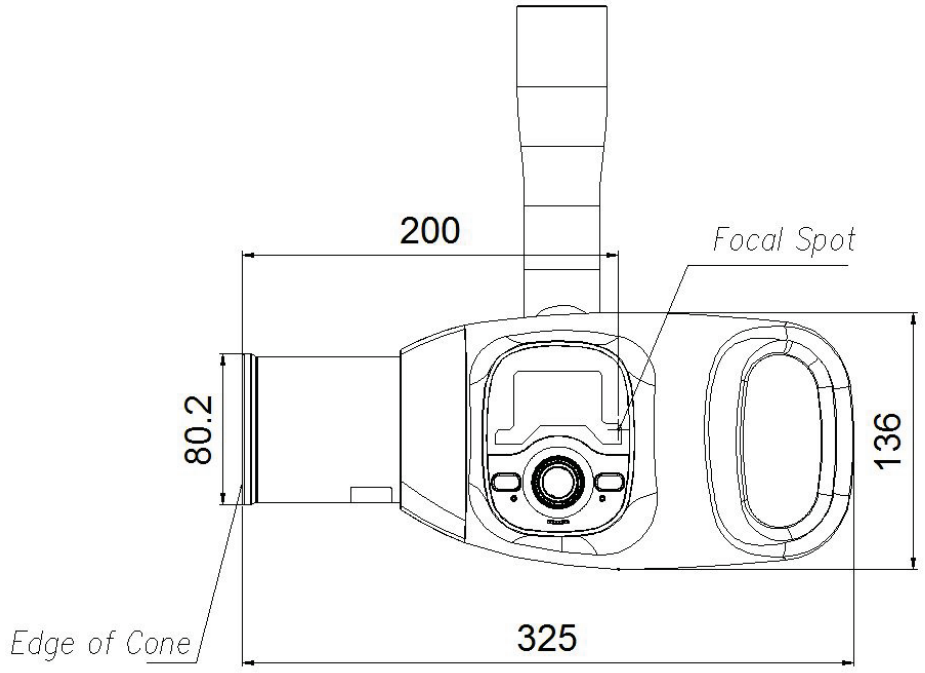
4. Product Specifications

4.1 Mechanical Specifications

Dimensions




114.39
507.58
251.8(Power Box Size)
241
50.3
26
90(Power Box Size)
450mm Horizontal Arm: 1693.34mm
600mm Horizontal Arm: 1843.34mm
900mm Horizontal Arm: 2143.34mm
325


200
Focal Spot
80.2
136
Edge of Cone
325

Item		Dimension (mm)	Weight (kg)
Total Weight (900mm) (including Power Box Assembly and X-ray Generator Assembly)	With folded Scissor Arm	1342.6mm	15.45
	With unfolded Scissor Arm (maximum)	2455.5mm	
Total Weight (600mm) (including Power Box Assembly and X-ray Generator Assembly)	With folded Scissor Arm	1042.6mm	14.6
	With unfolded Scissor Arm (maximum)	2155.5mm	
Total Weight (450mm) (including Power Box Assembly and X-ray Generator Assembly)	With folded Scissor Arm	892.6mm	14.15
	With unfolded Scissor Arm (maximum)	2005.5mm	
Power Box Assembly		287.8(W) x 238.0(L)	1.6
Total Arm Assembly (900 mm)	With folded Scissor Arm	1069.3(W) x 879.0(L) x 54.4(H)	11.45
	With unfolded Scissor Arm (maximum)	2330.0(W) x 330.4(L) x 54.4(H)	
Total Arm Assembly (600 mm)	With folded Scissor Arm	769.3(W) x 879.0(L) x 54.4(H)	10.6
	With unfolded Scissor Arm (maximum)	2030.0(W) x 330.4(L) x 54.4(H)	
Total Arm Assembly (450 mm)	With folded Scissor Arm	619.3(W) x 879.0(L) x 54.4(H)	10.15
	With unfolded Scissor Arm (maximum)	1880.0(W) x 330.4(L) x 54.4(H)	
Scissor Arm Assembly		790.5(W) x 168.4(L) x 54.4(H)	7.8
Horizontal Arm Assembly 450mm		529.0(W) x 54.4(L) x 58.2(H)	2.35
Horizontal Arm Assembly 600mm		679.0(W) x 54.4(L) x 58.2(H)	2.8

Item			Dimension (mm)	Weight (kg)
Horizontal Arm Assembly 900mm			979.0(W) x 54.4(L) x 58.2(H)	3.65
X-ray Generator Assembly			325.0(W) x 298.9(L) x 215.3(H)	2.4
X-ray Beam Limiting Device	X-ray Beam Area (mm)	Round Type	FOV: < ⌀ 60	0.013
		Rectangular Type	FOV: 20 x 30 (30 x 20), 40 x 30 (30 x 40)	0.013
	SSD(Source to Skin Distance) (mm)		Min. 200	-

4.2 Technical Specifications

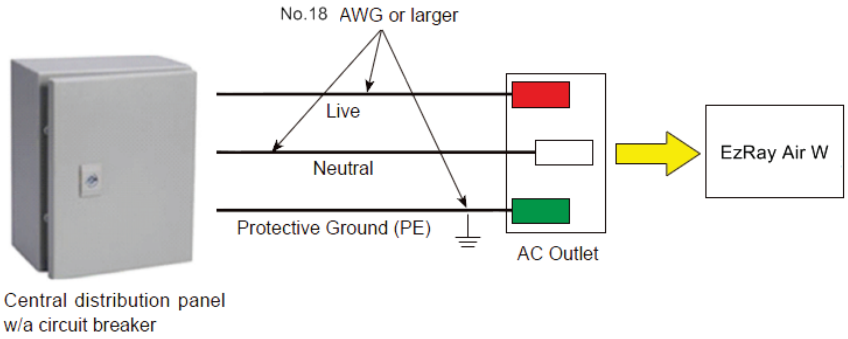
X-ray Generator

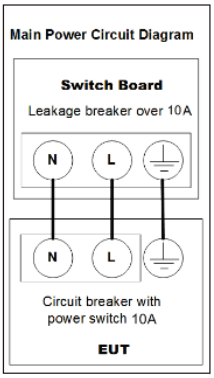
Item		Description
High Voltage Generator (Assembly)	Model	DG-S0102V1
	Rated output power	Max. 0.2 kW
	Duty Cycle	1:60 or more (Exposure time: Interval time)
	Cooling Protection	Thermistor ≥ 60 °C
	Inherent Filtration	1.8 mm Al / 65 kV
	Total Filtration	Min. 1.5 mm Al
	Type	Inverter Type
	Tube Voltage	55-65 kV
	Tube Current	1.0-3.0 mA
X-ray Tube	Manufacturer	VATECH Co., Ltd.
	Model	V1-650304 (Stationary Anode type)
	Focal spot size	0.4 mm (IEC 60336)
	Anode heat contents	0.8 kJ
	Maximum Anode Heat Dissipation	200 W
	Target Material	Tungsten
	Target Angle	12.5°
	Inherent Filtration	Min. 1.5 mm Al
	X-ray Coverage	70 mm at SID 200 mm
	Tube Voltage	Max. 65 kV
	Tube Current	Max. 3.0 mA

4.3 Electrical Specifications

Item	Description
Power Supply Voltage	100-240 V ~
Frequency	50/60 Hz (Single phase)
Power Rating	Max. 350 VA
Tube Voltage	65 kV fixed (± 3 %)
Tube Current	• Option A: 2.5 mA • Option B: 3.0 mA
Accuracy Error	< kVp +10 %, < mA + 20 %, < s + 5 % or 20 ms

- The input line voltage depends on the local electrical distribution system.
- Allowable input voltage fluctuation requirement: ± 10 %
- Mode of operation: Continuous operation with intermittent loading 60 times the exposure time wait before next exposure can begin.





4.4 Environmental Specifications

Item		Description
During operating	Temperature	10 ~ 35 ℃
	Relative humidity	30 ~ 75 %
	Atmospheric pressure	860 ~ 1060 hPa
Transport and storage	Temperature	-10 ~ 60 ℃
	Relative humidity	10 ~ 75 % non-condensing
	Atmospheric pressure	860 ~ 1060 hPa

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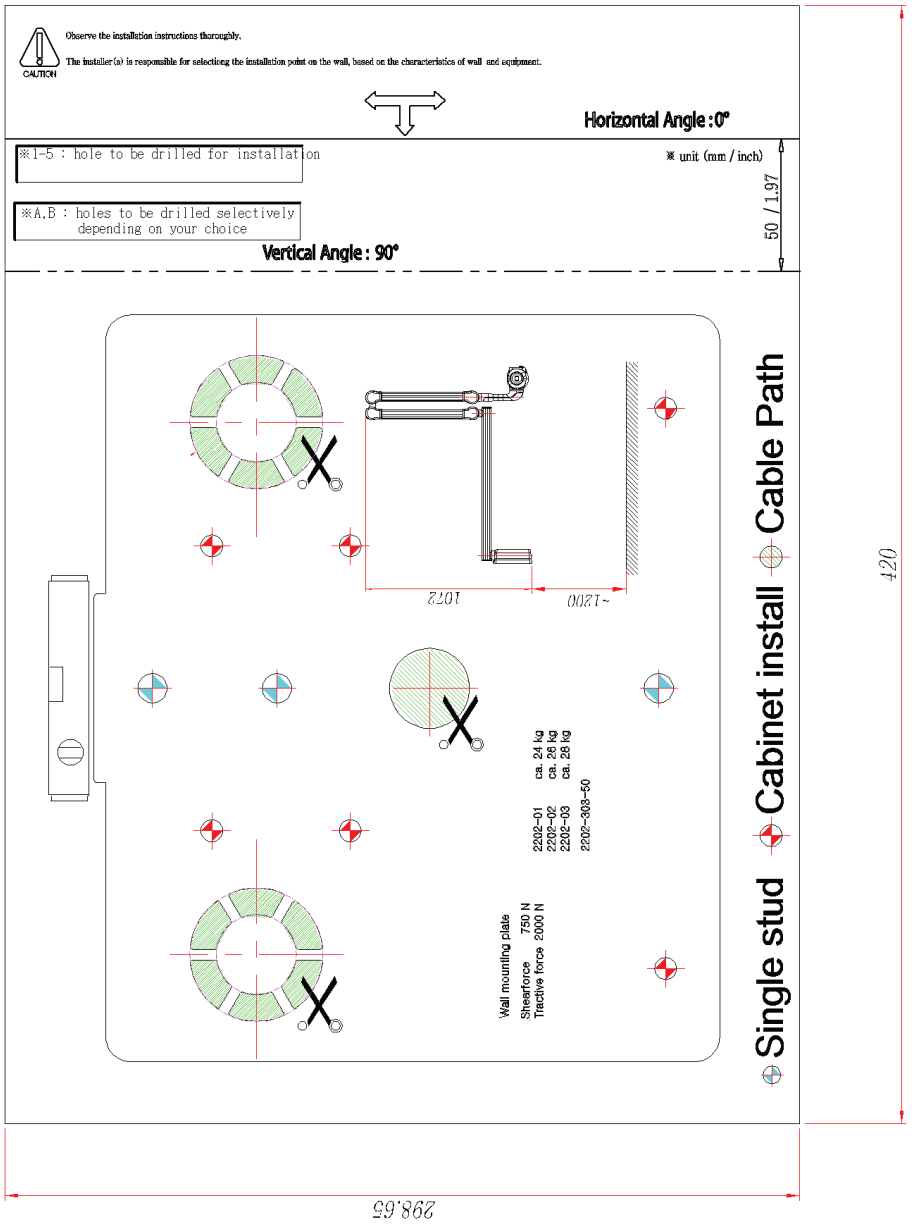
Appendix

Drilling Template



Installation Checklist

1. **General information:**

Information about the equipment purchaser (Customer)	
Name of Clinic or Hospital	
Address	
Phone	
E-Mail	

Information about the equipment seller (Dealer)	
Name of dealer	
Phone	
E-Mail	
Web site	

2. **Installation information:**

Installation information	
Names of installers	
Scheduled date of installation	
Date of installation	
Model	
Serial No.	

3. **While installing equipment**

While installing equipment	Yes	No
Are installers careful with any sensitive parts while carrying equipment?	☐	☐
Did installers perform installations, according to manual?	☐	☐
Did installer make sure harness and equipment are well connected and not damaged?	☐	☐
Did the equipment be well balanced?	☐	☐

4. **After installation**

After installation Checklist	Yes	No
Is it OK after checking visually the equipment?	☐	☐
Does the each arm move smoothly?	☐	☐
Does the arms (horizontal and scissor) drop down by itself?	☐	☐
Does the LED on the front of the equipment display normally?	☐	☐
Does the equipment supply the power normally?	☐	☐
Does the test image look satisfactory?	☐	☐

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Manufactured by VATECH Co., Ltd.

Tel: (+82) 1588 9510

Email: gcs@vatech.co.kr

Website: www.vatech.co.kr

Head Quarters Address: 13, Samsung 1-ro 2-gil, Hwaseong-si, Gyeonggi-do, 18449, Korea

Factory Address: 13, Samsung 1-ro 2-gil, Hwaseong-si, Gyeonggi-do, 18449, Korea

CE 0434	**The CE symbol grants this product compliance to the European Directive for Medical Devices 93/42/EEC as amended by 2007/47/EC as a class IIb device.**
EC REP	**Authorized EU Representative: Vatech Dental Manufacturing Ltd. Suite 3, Ground Floor, Chancery House, St. Nicholas Way, Sutton, SM1 1JB UK** **Tel: (+44) 0208 652 1900, (+44) 0208 643 7109** **Fax: (+44) 0208 652 1909**

VATECH Co., Ltd.

Postal Code: 18449
13, Samsung 1-ro 2-gil, Hwaseong-si, Gyeonggi-do, Korea

www.vatech.co.kr