

# X-ERA SMART

## Installation Manual

This Installation Manual describes how to install the X-era Smart (including the assembly and mounting procedures) and provides additional information and safety precautions to be observed during installation.

- It is imperative that you read this Installation Manual prior to installation.
- After reading the manual, store it in a safe place for future reference.

# YOSHIDA

## Preface

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- Items in this manual marked with the  icon are safety precautions. Be sure to read these precautions and observe the information provided before proceeding.
- To maintain the quality of this product, to ensure that it is used effectively and safely, and to prevent unanticipated accidents, faults or damage, be sure to read this manual prior to installation.
- This manual was written in accordance with Article 93 of the Ordinance for Enforcement of the Revised Pharmaceutical Affairs Law. After reading this manual, be sure to keep it in a safe place for future reference.
- Any queries regarding ambiguities or errors found in this manual should be addressed to Yoshida Dental Mfg. Co., Ltd. If your copy contains any collating errors or omissions, the manufacturer will happily provide a replacement copy.
- Notwithstanding the instructions provided in this manual, you should abide by any and all applicable local laws and regulations governing the installation of this product.
- This manual is subject to change without prior notice.

### Disclaimers

Note that the manufacturer accepts no liability whatsoever for the following faults, damage or circumstances:

- Faults or damage arising from installation, relocation, maintenance or adjustment of this product by anyone other than Yoshida Dental or an approved Yoshida Dental installer.
- Faults or damage to this product caused by a third-party product not supplied by Yoshida Dental.
- Faults or damage caused by the use of parts not approved by Yoshida Dental.
- Faults or damage resulting from a failure to observe the information provided in this manual (precautions, installation procedures, environmental requirements for installation, etc.).
- Faults or damage caused by natural events such as fire, earthquake, flooding or lightning strike.
- Faults or damage arising from external causes (water leakage, dust accumulation, etc.)

### PROHIBITED

- Unauthorized copying or reproduction of all or any part of this manual is prohibited.
- It is prohibited to transfer or rent this manual to any personnel or organizations other than the installation personnel or company specified by us.

## Aims of This Manual

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This manual describes the construction procedures and installation procedures required for the correct installation of this product. While this manual should of course be used by the person responsible for the actual product installation, it should also be used as a reference for construction and installation by anyone involved in design, sales and model selection.

This product is a precision instrument. To maintain the quality of this product and to ensure that it is used effectively and safely, installation should only be carried out by Yoshida Dental or by an approved Yoshida Dental installer following appropriate training.

### CAUTION

- Yoshida Dental cannot guarantee the quality of parts supplied by third-party parts suppliers mentioned in this manual. Read the instructions and notes provided by the parts manufacturer carefully before carrying out the product installation in accordance with the key construction requirements.
- Take care not to damage the walls or floor when carrying out the construction and installation work.

## About the Warning Icons

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The symbols used in this manual and on labels affixed to the product, as well as the terms that follow these symbols, are defined below. As a safety precaution, always observe the instructions that accompany these warnings.



: This symbol is used to notify the user of a general, non-specific caution, warning or danger.



### **DANGER**

: This is used to indicate that ignoring this warning poses a direct hazard that could result in death or serious injury, and/or in major property damage and outbreak of fire leading to the complete loss of the equipment.



### **WARNING**

: This is used to indicate that ignoring this warning poses an indirect (potential) hazard that could result in death or serious injury, and/or in major property damage and outbreak of fire leading to the complete loss of the equipment.

The following is an example of indirect hazard:

(E.g.) Ignoring this warning and opening the cover could result in the user touching high-voltage terminals and dying as a result.



### **CAUTION**

: This is used to indicate that ignoring this warning poses a hazard that could result in possible minor injury, moderate property damage, partial loss of the equipment and/or loss of computer data.



### **PROHIBITED**

: This is used to indicate content that is deemed by Yoshida Dental to be prohibited.

## Conventions

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The following explains the notations used in this manual and their meanings:

**NOTE** : Operational notes that are not related to safety issues.

**Additional Information** : Indicates additional information on operation and functions that is not related to safety issues.

**REF.** : Indicates the title and page number of reference information.

### Others

a) In this manual, \* (asterisk) is attached at the end of circuit board numbers. It represents “A” or “B” letter attached when the circuit board is replaced. (e.g.: XE20-01\* represents XE20-01 or XE20-01A.)

# Precautions Concerning the Use of Medical Electrical Equipment (Safety and Accident Prevention)

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1. Equipment should only be operated by qualified personnel.
2. The following must be observed when installing equipment:
  - (1) Install in a location free of moisture.
  - (2) Install in a location where there is no risk of detrimental effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
  - (3) Install in a stable situation and surroundings away from inclines or any exposure to vibrations or impacts (including during transportation).
  - (4) Do not install in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
  - (5) Use the correct power supply frequency, voltage and permitted current (or power consumption).
  - (6) Check the status of battery power supplies (level of discharge, polarity, etc.).
  - (7) Ensure that the equipment is properly grounded.
3. The following items must be checked before the equipment is used:
  - (1) Test all switch contacts, polarities, dial settings and meter readings to confirm that the equipment is operating properly.
  - (2) Check that the equipment is fully grounded.
  - (3) Check that all cables are properly and securely connected.
  - (4) Take great care to ensure that the equipment does not share a power source with other equipment since this can lead to errors in accurate diagnosis and other hazards.
  - (5) Re-inspect any external circuits that come into direct contact with patients.
  - (6) Check any battery power supplies.
4. Note the following during equipment use:
  - (1) Do not exceed the required time or quantity for diagnosis or treatment.
  - (2) Continuously monitor both the equipment and the patient for any abnormalities.
  - (3) When an abnormality is noticed in the equipment or patient, take appropriate measures, such as shutting down the equipment, while also ensuring the safety of the patient.
  - (4) Take care to ensure that the patient does not touch the equipment.
5. Note the following after using the equipment:
  - (1) Return all operating switches, dials and other components to their status prior to use in accordance with the designated procedure before turning off the power.
  - (2) When disconnecting cords, pull out the cord while holding onto the plug body so as not to apply excessive force to the cord itself.
  - (3) Note the following when selecting the equipment storage location:
    - i Store in a location free from moisture.
    - ii Store in a location where there is no risk of detrimental effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
    - iii Store in a stable situation and surroundings away from inclines or any exposure to vibrations or impacts (including during transportation).
    - iv Do not store in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
  - (4) Clean off all accessories, cords, leads and other components and then store in an orderly manner.
  - (5) Always make sure to clean the equipment so that it functions properly the next time it is used.
6. In the event that the equipment should malfunction, do attempt to correct the problem yourself. Clearly indicate that the equipment is not operating properly and await repairs by qualified personnel.
7. Never attempt to disassemble or modify the equipment.
8. Maintenance and Inspection
  - (1) All equipment and components should be inspected regularly.
  - (2) When resuming use of equipment that has been unused for a long period, be sure to check that the equipment operates properly and safely before use.

# Table of Contents

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Preface .....	i
Aims of This Manual .....	i
About the Warning Icons .....	ii
Conventions.....	ii
Precautions Concerning the Use of Medical Electrical Equipment (Safety and Accident Prevention).....	iii
① Requirements for Installation Location Facilities .....	①-1
1. Installation Space (including space for maintenance) .....	①-1
1-1. Unpacking space .....	①-1
1-2. Installation space.....	①-2
For an equipment without a cephalometric unit, equipment with 3D function .....	①-2
For equipment with Cephalometric, equipment with 3D function and Cephalometric. ....	①-3
2. Equipment Requirements for Power, etc. ....	①-4
2-1. Power supply .....	①-4
3. Installation Location Strength Requirements.....	①-5
4. Installation Location (Floor) Levelness Requirements.....	①-5
5. Installation Location Ambient Environmental Requirements .....	①-5
6. Wiring Examples .....	①-6
② Lists of Equipment Components, Consumables, Tools, Measuring Instruments and Jigs .....	②-1
1. Main Components .....	②-1
2. Other Components.....	②-2
3. Consumables .....	②-3
4. Tools.....	②-3
4-1. Standard tools .....	②-3
5. Measuring Instruments.....	②-4
6. Jigs.....	②-5
③ Equipment Installation Procedure and Precautions.....	③-1
1. Safety Precautions .....	③-1
2. Installation Procedure .....	③-3
2-1. Installing the hand switch box.....	③-3
2-2. Installing the main unit.....	③-7
2-2-1. Preparation.....	③-7
2-2-2. Floor mounting.....	③-7
2-2-3. Wall mounting .....	③-14
2-2-4. Leveling .....	③-16
2-2-5. Fixing hole locations .....	③-19
2-2-6. Fixing method for concrete floors .....	③-57

2-2-7. Fixing method for non-concrete floors .....	③-58
3. Basic Installation Example .....	③-59
3-1. Example of fixings for installations on concrete walls or floors.....	③-61
3-2. Example of fixings for installations on non-concrete walls or floors .....	③-75
3-2-1. Dry double floor and light-gauge steel frame partition wall.....	③-75
3-2-2. Conventional wooden construction and partition wall.....	③-116
4. Example of Wall Mounting.....	③-157
5. Radiography wiring: Detailed Example of Mounting.....	③-159
6. X-ray Room: Window Layout Example.....	③-160
<b>④ Equipment Assembly Procedure and Precautions .....</b>	<b>④-1</b>
1. Safety Precautions .....	④-1
2. Assembly Procedures .....	④-3
2-1. X-Axis Motor Mounting .....	④-3
2-2. X-ray Head Mounting.....	④-5
2-3. Checking Horizontal Level.....	④-9
2-4. Head Support Unit Mounting.....	④-10
2-5. Mounting of Other Components and Covers.....	④-11
2-6. Connecting Power Plug.....	④-14
2-6-1. Power plug.....	④-14
2-6-2. Connecting Protective ground wire .....	④-15
2-7. Connecting to the computer.....	④-16
2-7-1. Organizing the cables .....	④-19
2-8. Handling the Sensor.....	④-23
2-9. Cephalometric Unit Mounting.....	④-24
2-10. 3D Sensor Unit Mounting.....	④-33
2-10-1. Removing covers.....	④-33
2-10-2. Installing 3D sensor ASSY .....	④-33
2-10-3. Installing the Motor drive circuit board .....	④-35
2-10-4. Confirming FPD input voltage.....	④-37
2-10-5. Adding the communication cable for 3D.....	④-38
2-10-6. Adjustment of laser beams .....	④-40
2-10-7. Installing 3D head support .....	④-41
2-10-8. Leveling the main unit.....	④-42
2-10-9. Attaching covers .....	④-42
2-11. Software Installation.....	④-43
2-12. Software Installation (for 3D Type only).....	④-57
2-12-1. Installation of CUDA .....	④-57
2-12-2. Installation of Graphics Driver.....	④-64
2-12-3. Installation of GEVPlayer .....	④-67
2-12-4. Installation of DCAM-API .....	④-70
2-12-5. Installation of OnDemand3D (for Server).....	④-72
2-12-6. Installation of OnDemand3D (for Client) .....	④-94
2-13. Setting PCI LAN board .....	④-101

2-14. Installation and Settings of Trophy Windows (for Cephalometric Type only) .....	④-113
2-14-1. For Trophy Windows Version 6.12.12.0-A or earlier .....	④-113
2-14-2. For Trophy Windows Version 6.12.24.0-B or later .....	④-114
2-15. Settings on GEVPlayer (1) (for 3D Type only) .....	④-115
2-15-1. Network Connection Settings .....	④-115
2-15-2. Jumbo Packet Settings .....	④-117
2-15-3. Driver Settings .....	④-119
2-16. Settings on GEVPlayer (2) (for 3D Type only) .....	④-120
2-17. Installation of Channel Correction Table (for 3D Type only) .....	④-125
2-18. Switching the Left / Right Orientation of the Control Panel .....	④-128
⑤ Equipment and Power Source Connection Procedure and Precautions .....	⑤-1
1. Safety Precautions .....	⑤-1
2. Power outlet connection procedure .....	⑤-2
⑥ Checking Procedure and Precautions Prior to Initial Operation .....	⑥-1
1. Safety precautions .....	⑥-1
2. Checklist and Procedure Prior to Initial Operation .....	⑥-2
2-1. Rechecking the connections .....	⑥-2
2-2. Checking for play in the column .....	⑥-2
2-3. Checking the level .....	⑥-2
2-4. Other checks .....	⑥-2
⑦ Initial Operation Implementation Procedure and Precautions .....	⑦-1
⑧ Implementation Procedure for Performance and Safety Checking and Performance Benchmarks .....	⑧-1
1. Safety precautions .....	⑧-1
2. Performance and Safety Checking Items and Performance Benchmarks .....	⑧-2
2-1. Checking the accessories .....	⑧-2
2-2. Checking the test report .....	⑧-2
2-3. Checking the labeling and display .....	⑧-2
2-4. Checklist and performance benchmarks .....	⑧-2
2-5. Calibrations of Collimator Drive and Sensor Drive (For equipment with 3D function and Cephalometric) .....	⑧-7
2-6. Positioning beam operation checking method .....	⑧-9
2-7. Exposure operation checking method .....	⑧-9
2-8. Aging process .....	⑧-10
2-9. Selection of the Equipment .....	⑧-11
2-10. Adjusting the position of X-ray beam (Panoramic) .....	⑧-12
2-11. Adjusting the position of X-ray beam (Cephalometric) .....	⑧-19
2-12. Panoramic fault area checking .....	⑧-27
2-13. Center Alignment of Ear Rings .....	⑧-33
2-14. QA Procedure (Panoramic) .....	⑧-35
2-15. QA Procedure (Cephalometric) .....	⑧-36
2-16. 3D Sensor Adjustment (For equipment with 3D function) .....	⑧-37

2-16-1. Checking the 3D Irradiation Field.....	⑧-37
2-16-2. Adjusting 3D Irradiation Field.....	⑧-38
2-16-3. Pin Adjustment.....	⑧-39
2-16-4. Digital Calibration .....	⑧-42
2-17. Spear Jig Adjustment .....	⑧-45
2-17-1. Position Adjustment of X-ray Head.....	⑧-45
2-17-2. 3D Sensor Position Adjustment (Horizontal Adjustment) .....	⑧-50
2-18. QA Procedure (3D) .....	⑧-51
3. IEC61223-3-4:2000 X-ray Equipment Image Performance Acceptance Testing Report....	⑧-54
⑨ Procedure for Handling Cases where Installation and Disposal are Restricted by Legal Regulations .....	⑨-1
⑩ Other Items Deemed Mandatory by the Manufacturer .....	⑩-1
⑪ CS Mode.....	⑪-1
1. Switching to CS mode.....	⑪-1
2. CS Mode Functions.....	⑪-2
⑫ Error Messages .....	⑫-1
⑬ Specifications .....	⑬-1
⑭ Dimensional Drawings .....	⑭-1
1. Standing position wall-mount: Panoramic type .....	⑭-1
2. Standing position wall-mount short type: Panoramic type .....	⑭-2
3. Standing position wall-mount long type: Panoramic type.....	⑭-3
4. Standing position wall-mount: 3D type.....	⑭-4
5. Standing position wall-mount short type: 3D type.....	⑭-5
6. Standing position wall-mount long type: 3D type .....	⑭-6
7. Standing position base-mount (with an optional base) : Panoramic type .....	⑭-7
8. Standing position base-mount short type (with an optional base) : Panoramic type.....	⑭-8
9. Standing position base-mount long type (with an optional base) : Panoramic type .....	⑭-9
10. Standing position base-mount (with an optional base) : 3D type .....	⑭-10
11. Standing position base-mount short type (with an optional base) : 3D type.....	⑭-11
12. Standing position base-mount long type (with an optional base) : 3D type.....	⑭-12
13. Standing position base-mount (with an optional wide base): Panoramic type.....	⑭-13
14. Standing position base-mount short type (with an optional wide base): Panoramic type ..	⑭-14
15. Standing position base-mount long type (with an optional wide base): Panoramic type ..	⑭-15
16. Standing position base-mount (with an optional wide base): 3D type .....	⑭-16
17. Standing position base-mount short type (with an optional wide base): 3D type .....	⑭-17
18. Standing position base-mount long type (with an optional wide base): 3D type .....	⑭-18
19. Standing position wall-mount: Cephalometric type .....	⑭-19
20. Standing position wall-mount short type: Cephalometric type .....	⑭-20

21. Standing position wall-mount long type: Cephalometric type.....	⑭-21
22. Standing position wall-mount: 3D Cephalometric type .....	⑭-22
23. Standing position wall-mount short type: 3D Cephalometric type.....	⑭-23
24. Standing position wall-mount long type: 3D Cephalometric type .....	⑭-24
25. Standing position base-mount (with an optional base): Cephalometric type.....	⑭-25
26. Standing position base-mount short type (with an optional base): Cephalometric type...	⑭-26
27. Standing position base-mount long type (with an optional base): Cephalometric type ...	⑭-27
28. Standing position base-mount (with an optional base): 3D Cephalometric type .....	⑭-28
29. Standing position base-mount short type (with an optional base): 3D Cephalometric type ...	⑭-29
30. Standing position base-mount long type (with an optional base): 3D Cephalometric type...	⑭-30
31. Standing position base-mount (with an optional wide base): Cephalometric type.....	⑭-31
32. Standing position base-mount short type (with an optional wide base): Cephalometric type ...	⑭-32
33. Standing position base-mount long type (with an optional wide base): Cephalometric type ...	⑭-33
34. Standing position base-mount (with an optional wide base): 3D Cephalometric type..	⑭-34
35. Standing position base-mount short type (with an optional wide base): 3D Cephalometric type ..	⑭-35
36. Standing position base-mount long type (with an optional wide base): 3D Cephalometric type ..	⑭-36
37. Angles of the Image Reception Area and Reference Axis and the Distance between the Focal spot to Image Reception Area .....	⑭-37
38. Inherent Filtration and Total Filtration.....	⑭-38
⑮ Wiring Diagram .....	⑮-1

# ① Requirements for Installation Location Facilities

## 1. Installation Space (including space for maintenance)

### 1-1. Unpacking space

The working space required for unpacking the equipment is shown below.

\* The required space for unpacking must be separate from the installation space.

Unit: (mm)

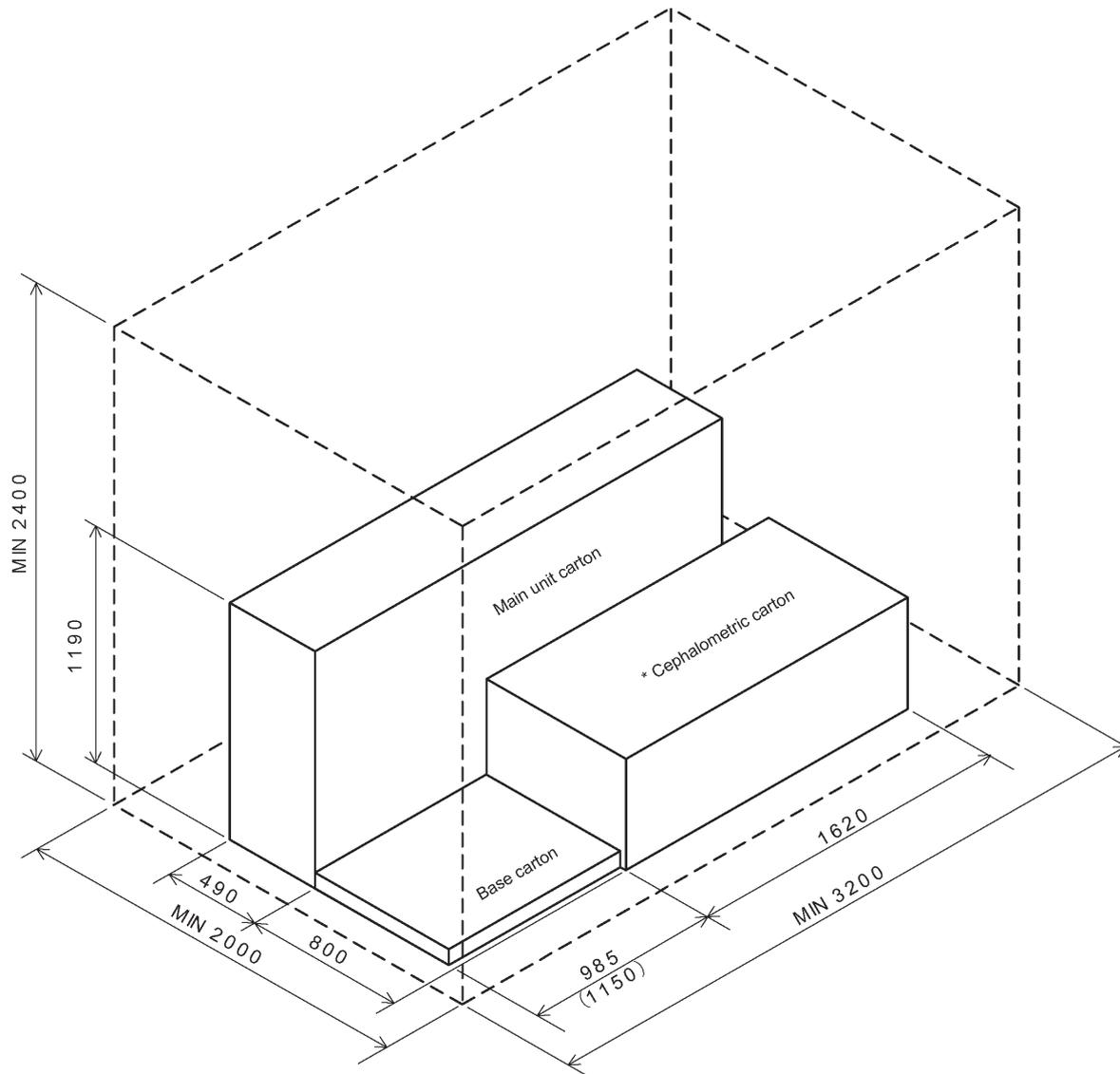


Fig. ①-1 Required space for unpacking

- Carton sizes and weights

Main Unit carton: 2340 x 490 x 1190 (mm) 185 kg (2D Type) , 205 kg (3D Type)

\* Optional

Cephalometric carton: 1620 x 800 x 560 (mm) 70 kg

Base carton: 985 x 770 x 80 (mm) 30 kg

Wide base carton: 1150 x 970 x 80 (mm) 35 kg

Main Unit carton (long type) : 2340 x 490 x 1190 (mm) 190 kg (2D Type) , 210 kg (3D Type)

Main Unit carton (short type) : 2340 x 490 x 1190 (mm) 180 kg (2D Type) , 200 kg (3D Type)

## 1-2. Installation space

The figure below shows the space required to install the equipment.

### For an equipment without a cephalometric unit, equipment with 3D function

Unit: (mm)

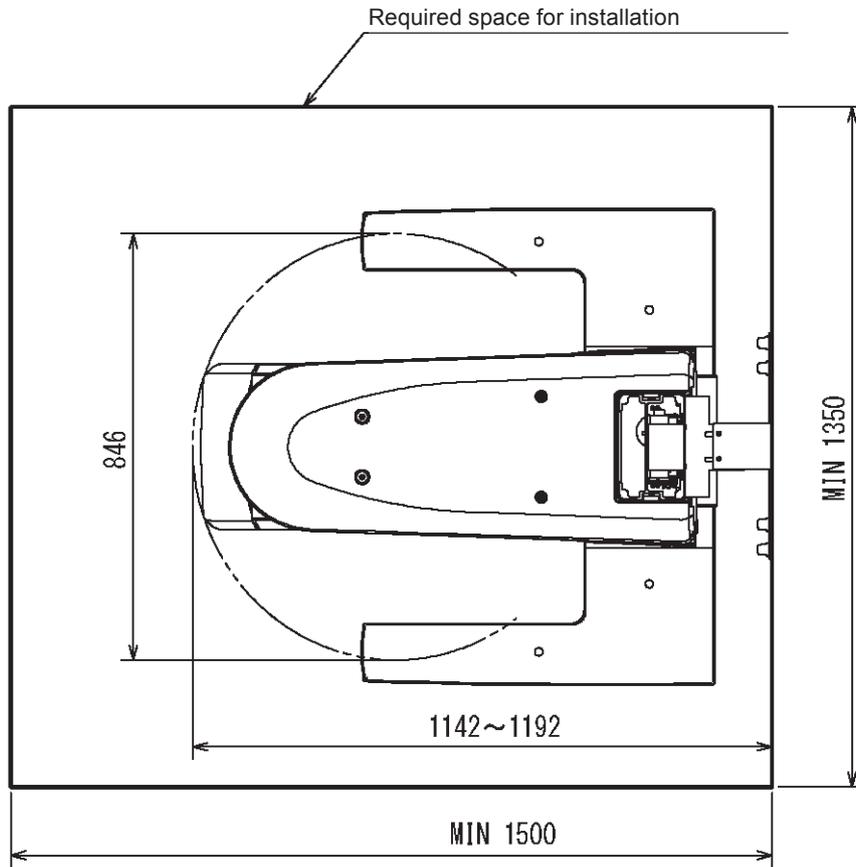


Fig. ①-2 Required space for installation

- Required space for installation (height): 2400 mm (Normal type/Short type)
- Required space for installation (height): 2500 mm (Long type)

#### **⚠ CAUTION**

- The required space for installation is different from the range of product movement.
- Make sure that the equipment does not come in contact with lighting equipments such as fluorescent tubes in the X-ray room.

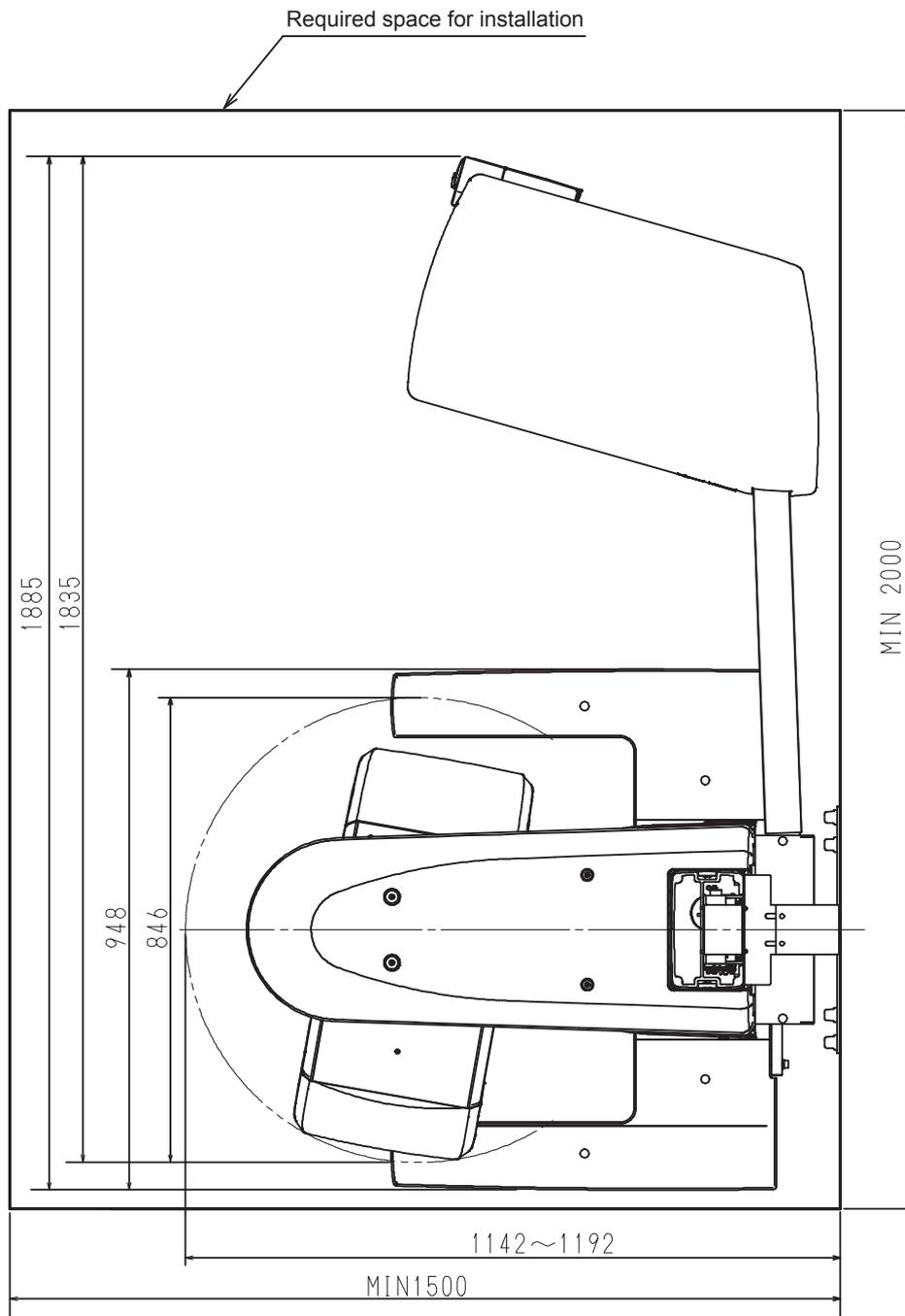


Fig. ①-3 Required space for installation

- Required space for installation (height): 2400 mm (Normal type/Short type)
- Required space for installation (height): 2500 mm (Long type)

**⚠ CAUTION**

- The required space for installation is different from the range of product movement.
- Make sure that the equipment does not come in contact with lighting equipments such as fluorescent tubes in the X-ray room.

## 2. Equipment Requirements for Power, etc.

This section describes the various power-supply equipment requirements for one X-era Smart unit.

### 2-1. Power supply

Phases: 1 (single-phase)

Frequency: 50/60 Hz

Voltage: 100±10 V AC (under load)\* 100~120 (VAC) ±10% 200~240 (VAC) ±10%

Input: 2000 (VA)

Power outlet: Grounded outlet (conforming to the standards of different countries or regions) (Apply the grounding work equivalent to requirements of metal wires with ground resistance of 100 Ω or more and pulling strength 0.39 kN or more, or soft copper wires with 1.6 mm diameter or more.)

Apparent Resistance Of Supply Mains :R < 0.3 Ω

\* "Under load" refers to a state where the elevation motor or rotating arm motor are running and X-ray irradiation is in progress (including states involving concurrent operation).

#### CAUTION

- Make sure that between the electrical switchboard and the wall power outlet is single-wired. Confirm with the power distribution specialist or power company that appropriate power distribution equipment is used for the load capacity (2000 VA / 100-120 V, 220-240 V). Confirm that the power voltage of the wall power outlet to which this equipment is to be connected is within the range of ± 10%.
- If the power supply is not within the designated range, consult an electrical equipment specialist or your power company.
- The power outlet for the computer must also be single-phase and power should be supplied from different circuit board from the X-era Smart.

### 3. Installation Location Strength Requirements

#### Installation floor strength

The floor must be able to bear loads of at least 2900 N/m<sup>2</sup>.

Anchor bolt tensile strength: Min. 1680 N/bolt (secured at 4 points)

Concrete strength (compression strength): 21 N/mm<sup>2</sup> (if installed on a concrete floor)

#### Installation wall strength

Tensile strength of the coach screws used to secure the wall-mounting brackets: Min. 1500 N/bolt  
(secured at 4 points)



#### CAUTION

- If concrete anchor bolts are to be used, read the instruction manual and cautionary statement of the anchor bolts before the work operation.

**NOTE** : Concrete anchor bolts and coach screws have different fixing conditions. Therefore, the pull-out strengths are different as well.

**REF.** : See “③ Equipment Installation Procedure and Precautions” for installation examples.

### 4. Installation Location (Floor) Levelness Requirements

Levelness:  $\pm 0.5^\circ$  or less (without 3D function)

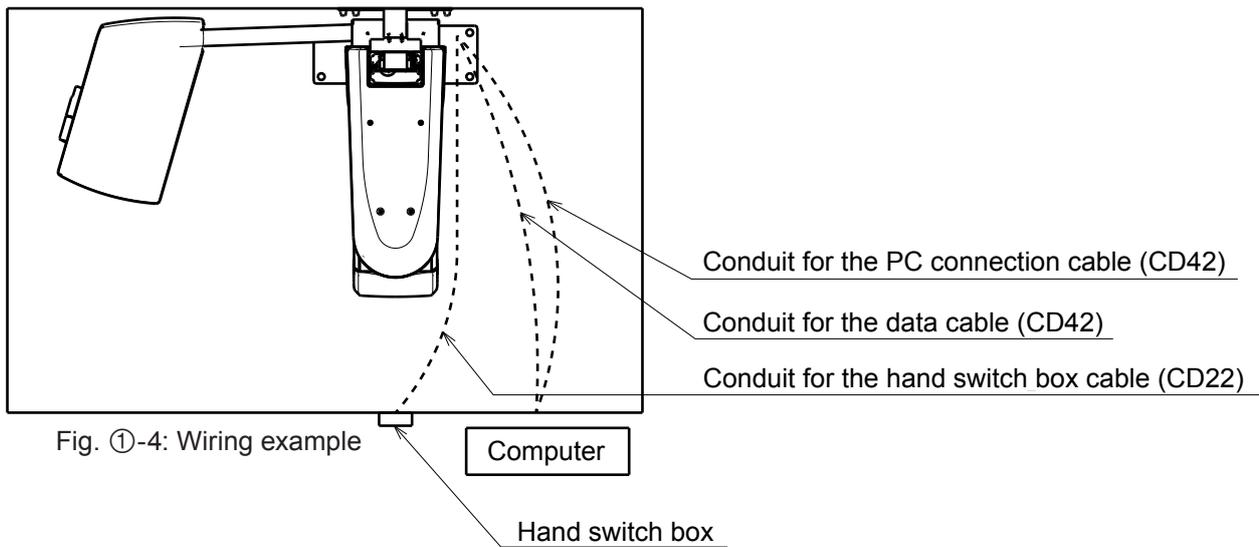
$\pm 0.1^\circ$  or less (with 3D function)

### 5. Installation Location Ambient Environmental Requirements

- Install in a location free of moisture.
- Install in a location where there is no risk of detrimental effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
- Install in a stable situation and surroundings away from inclines or any exposure to vibrations or impacts (including during transportation).
- Do not install in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
- Do not place the developing machine in the X-ray room. If there is no X-ray room, do not place the developing machine near the equipment.
- Do not install this equipment in a place where it is exposed to ambient noise.
- Install this equipment in a place fully fitted with lighting equipments. Install the monitor in a place where it does not get internal or external lights or reflections from them.

## 6. Wiring Examples

- Wiring from inside the X-ray room to outside the room



\* Cable lengths (from the X-era Smart to the connector)

- PC connection cable: 10 m
- Data cable: 10 m
- Hand switch box cable: 10 m (option : 15 m)

### **CAUTION**

- Before installation, check that the cables shown below and their respective connectors can be fitted successfully.
- Locate the X-era Smart and the computer within the reach of the connecting cables.
- Do not attempt to extend the cables.
- Do not remove the plug cover on the end of the data cable until after you have run the cable through the conduit.

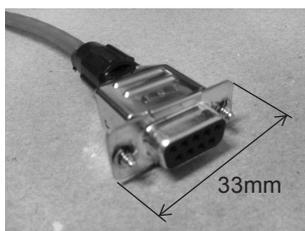


Fig. ①-5: PC connection cable

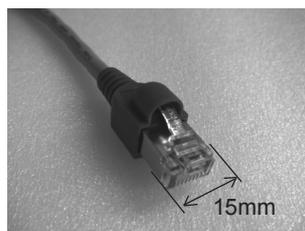


Fig. ①-6: Data cable

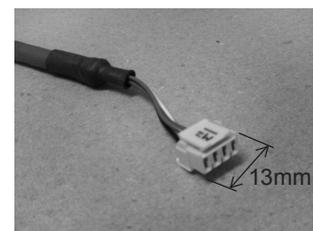
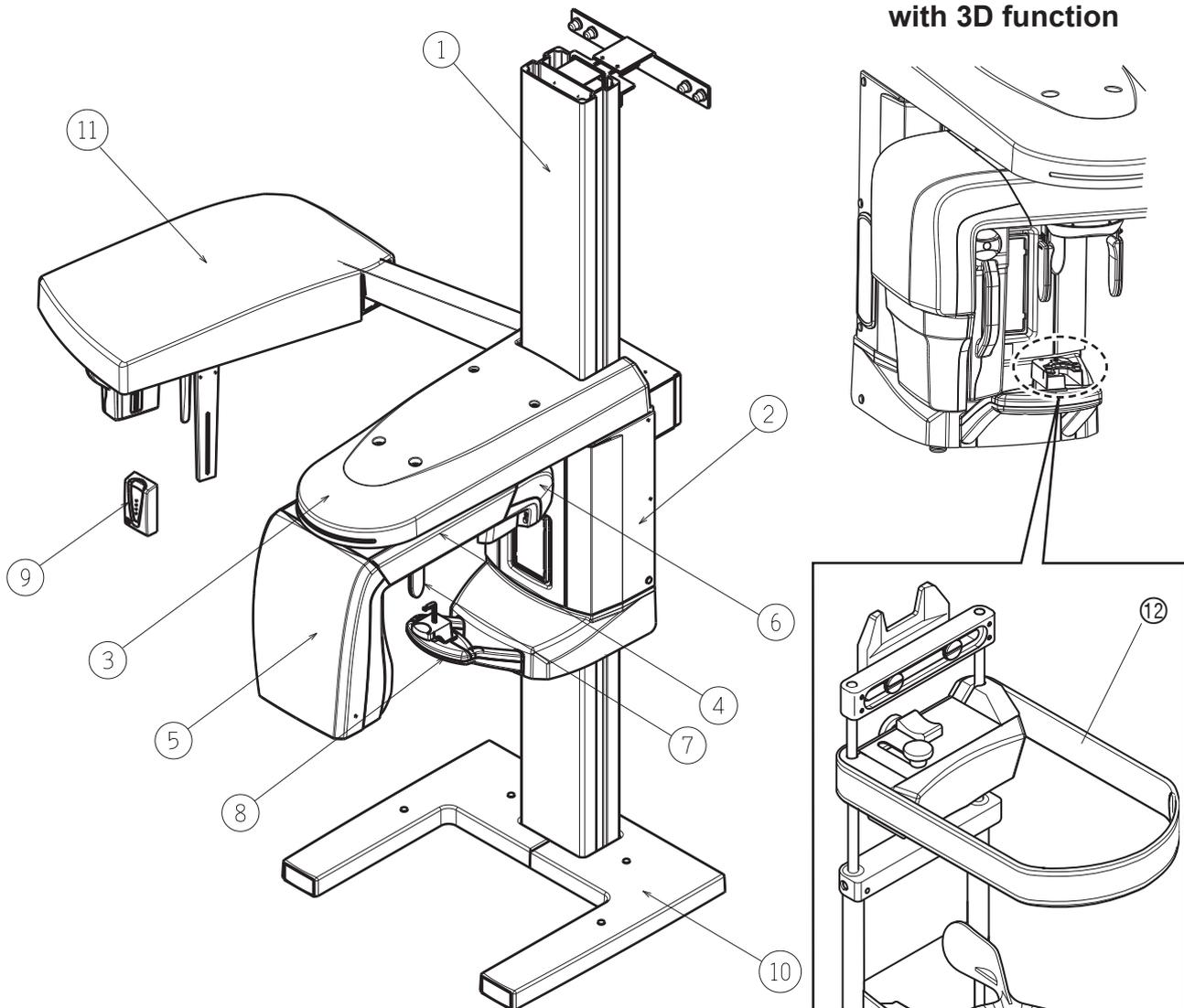


Fig. ①-7: Hand switch box cable

## ② Lists of Equipment Components, Consumables, Tools, Measuring Instruments and Jigs

### 1. Main Components



- ① Column
- ② Slide body
- ③ Driving unit
- ④ Arm unit
- ⑤ Head unit
- ⑥ Sensor
- ⑦ Head support
- ⑧ Chinrest
- ⑨ Hand switch box
- ⑩ Base (optional)
- ⑪ Cephalometric Unit (For equipment with Cephalometric)
- ⑫ Head fixator for 3D image acquisition (with 3D function)

## 2. Other Components

Check that the following components are included in the packaging.

\* If any items are missing, contact Yoshida Dental Mfg. Co., Ltd.

### Documentation

- Instruction Manual (1)
- Certificate of Inspection (1 copy)
- Test Performance Record (1 copy)

### Components

- X-era Smart CD-ROM (1)
- Data cable (1) \* With plug covers on both ends
- PC connection cable (1)
- Adjustment shims (5)
- Column Unit Mounting / Wall Mounting Coach Screws (Nominal Designation: 8 x 38) (8)
- Wall Mounting Coach Screws (Nominal Designation: 8 x 65) (4)
- Anchor bolts for support fixing (4)
- Allen bolts for anchor bolts (4)
- Self-tapping screws for hand switch box fixing (2)
- Self-tapping screws for the hand switch box mounting bracket (2)
- Protective grounding wire (1)
- Spiral tube (1)
- Cable ties (5)
- Additional Protective Grounding Slot Cover (1)

### Attachments

- Chinrest block (1)
- Adapter for edentulous jaws (1)
- TMJ adapter (adult) (1)
- TMJ adapter (child) (1)
- Bite blocks (disposable) (1 pack)
- Bite plate (disposable) (1 pack) \* For equipment with 3D function

### Jigs

- Fixed phantom (1)
- Aluminum Block for Sensor Calibration (1)
- Beam adjustment jig (1)
- QA Phantom for 3D (1) \* For equipment with 3D function
- Calibration Phantom for 3D (1) \* For equipment with 3D function

### CAUTION

- To avoid any risk of damaging the equipment, use only the designated bolts and screws when attaching components.

### 3. Consumables

The consumable items below are used during the equipment installation. Ensure that these are available at hand before installation.

- Clean wipes (for cleaning the cover)  
Recommended product: Clean Boy/Kaneyo Soap or equivalent
- Rags (for cleaning the cover)
- Adhesive Tape

### 4. Tools



#### **CAUTION**

- Read carefully any instructions and precautions provided with tools concerning their correct use when carrying out the installation.

The tools below are used during the equipment installation. Ensure that these are available at hand before installation.

#### 4-1. Standard tools

- No.2 Phillips screwdriver
- Allen wrenches (1.5 - 8 mm)
- Box wrench (5.5 mm)
- Spanners (5.5 - 19 mm)
- Cutting tool such as nippers
- Tool for working with electrical terminals (precision screwdriver, etc.) (blade: 3.5 x 0.5 mm)
- Power drill
- Masonry drill bits (4 mm bit for pilot holes, 12.5 mm bit for anchor bolts)

## 5. Measuring Instruments

### CAUTION

- Read carefully any instructions and precautions provided with measuring instruments concerning their correct use when carrying out the installation.

The measuring instruments below are used during the equipment installation. Ensure that these are provided beforehand.

NOTE : Use only instruments that have been regularly calibrated (at least once every 2 years).

Digital tester (digital multimeter) (analog testers and multimeters cannot be used)

- Measuring instrument type: True RMS type
- Recommended model: Fluke 87 V (Fluke Corporation)  
PC510 (Sanwa Electric Instruments)  
3802 (Hioki E.E. Corp.)  
or equivalent



Fig. ② -1: Fluke 87V

- Required performance

Supported measuring modes	Measurable range	Resolution	Accuracy
AC voltage	0~400 (V)	0.1 V or less	$\pm(0.7\%+2 \text{ dgt})$
DC voltage	0~400 (V)	0.1 V or less	$\pm(0.1\%+1 \text{ dgt})$
AC current	0~400 (mA)	0.1 mA or less	$\pm(1.0\%+2 \text{ dgt})$
DC current	0~400 (mA)	0.1 mA or less	$\pm(0.2\%+2 \text{ dgt})$
Resistance	0~400 ( $\Omega$ )	0.1 $\Omega$ or less	$\pm(0.2\%+1 \text{ dgt})$

### CAUTION

- Using measuring instruments that are not true RMS instruments can result in erroneous measurements. Always use true RMS testers.

Tape measure (retracting)

- Recommended model: Supakon 19 (Tajima Design) or equivalent
- Required accuracy: JIS class 1



Fig. ② -2: Supakon 19

Level

- Recommended model: Spirit level 150 (Niigata Rikensokuhan) or equivalent
- Required accuracy:  $\pm 1.00 \text{ mm/m}$



Fig. ② -3: Spirit Level 150

## 6. Jigs

### CAUTION

- Read carefully any instructions and precautions provided with jigs concerning their correct use when carrying out the installation.

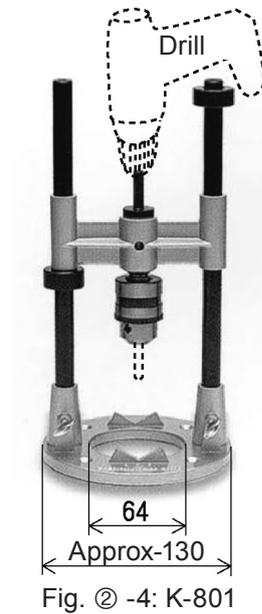
The jigs shown below are used during the equipment installation.

#### Drill guide

(not available as an accessory and should be purchased beforehand)

This jig is used embed (secure) coach screws and adjustment anchors vertically into the floor.

- Recommended model: K-801 (Kanzawa Tekko Co., Ltd) or equivalent



- Jigs supplied with the unit

#### Beam adjustment jig



Fig. ② -5: Beam adjustment jig

#### Aluminum block for sensor calibration



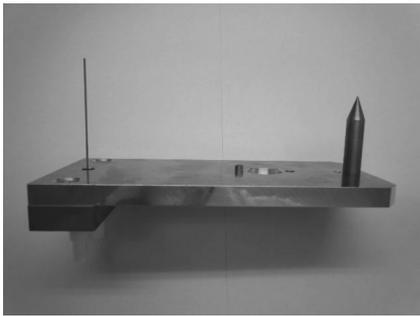
Fig. ② -6: Aluminum block

#### Fixed phantom

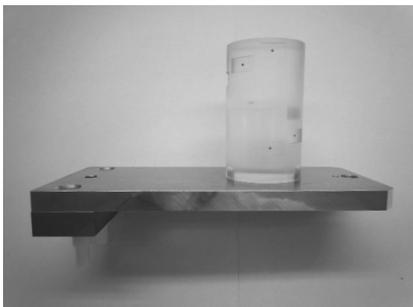


Fig. ② -7: Fixed phantom

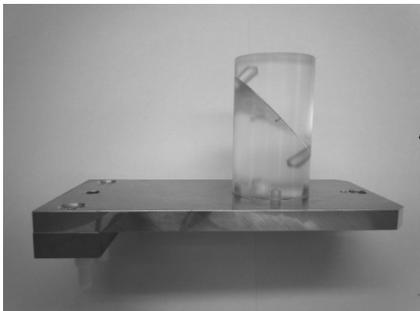
- 3D Adjustment Jig



Needle adjustment Jig



Digital calibration Jig



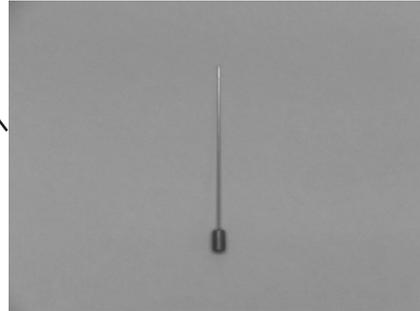
QA image acquisition Jig



Digital level



Stand for 3D adjustment Jig



Needle Phantom



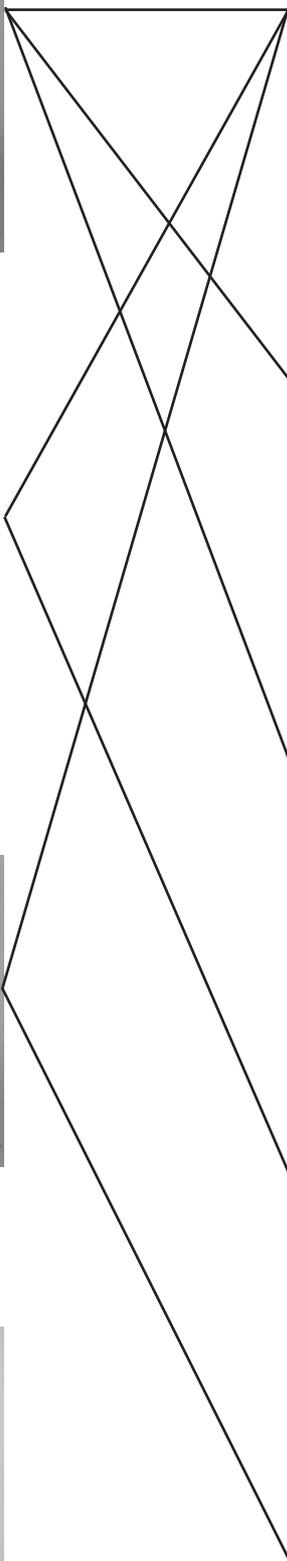
Spear Phantom



Calibration Phantom for 3D



QA Phantom for 3D



## ③ Equipment Installation Procedure and Precautions

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### 1. Safety Precautions

To ensure that accidents, equipment damage and other unforeseen situations do not arise during installation, observe the precautions below when installing the equipment.

\* Any queries regarding ambiguities in these precautions should be addressed to Yoshida Dental Mfg. Co., Ltd.

#### **WARNING**

- As this product is heavy equipment, all necessary precautions should be taken to avoid accidents during transportation and installation.
- Installation work should be carried out by at least 2 persons.
- When moving or operating this equipment during installation, care should be taken to ensure that it does not tip over. Check also that there are no obstacles around the equipment.
- When erecting the main body, make sure that there is no obstruction within the range of movement of this equipment for hoisting and arm rotations.
- During installation, always ensure that the power cord is unplugged from the power outlet when no power supply is required, and take great care to avoid electric shocks or similar accidents.
- Take particular care to avoid personal injury when attaching the equipment components.
- To avoid electric shocks, burns and other accidents when connecting or disconnecting power plugs or electrical connectors inside the equipment, always ensure that the power switch and the circuit breakers in the room are set to OFF.
- When approaching moving parts (elevation unit, rotating arm, etc.), provide supports for the moving parts where necessary to prevent accidents.
- Put in place measures to prohibit persons not involved in the installation work from entering the site.
- Take particular care when the installation work requires a hand, foot or other body part to be placed underneath a heavy object.
- Do not place the film processor in the X-ray room. Film processors emit gas which might erode the X-ray equipment and cause critical harm.
- Do not touch high-voltage parts such as the switching power source, X-ray control circuit board, and X-ray head when turning the power on as it might cause electrification.

#### **CAUTION**

- Install in a location free of moisture.
- Install in a location where there is no risk of adverse effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
- Beware of impacts when transporting the unit.
- Install the unit in a place with no tilts, vibrations or impacts.
- Do not install in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
- Means must be provided that allow the operator and patient to communicate both visually and aurally.
- Ensure that the equipment is correctly grounded.  
Apply the grounding work equivalent to requirements of metal wires with ground resistance of 100  $\Omega$  or more and pulling strength 0.39 kN or more, or soft copper wires with 1.6 mm diameter or more.

## CAUTION

- Always turn off the power to the X-era Smart and the computer when connecting to the computer.
- The computer should be set up outside the X-ray room.
- Ensure that the computer is also correctly grounded.
- Use a common grounding point for both the X-era Smart and the computer (shared protective grounding).
- Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.
- Drilling holes in the floor or wall to fix the X-era Smart in place will generate noise and vibration. Where necessary, use ear protectors or install noise barriers or similar measures to counter the effects of the noise and vibration on the surrounding area and the workers themselves.
- When using concrete anchor bolts, be sure to read the instructions provided with the anchor bolts.
- To minimize the level of harm should an injury occur, do not carry out installation work alone.
- Pay attention to your surroundings and give appropriate signals before commencing work.
- When placing heavy objects in a temporary location, take care to ensure that they are stable.
- To avoid injury to workers, do not concurrently carry out work above another worker.
- Do not insert your finger into drilled holes.
- When using power switches, always give appropriate signals to the other workers.
- Do not install this equipment in a place where it is exposed to ambient noise.
- Install this equipment in a place fully fitted with lighting equipments. Install the monitor in a place where it does not get internal or external lights or reflections from them.
- When the equipment is not fixed to the floor or wall, or when the floor or wall does not have sufficient strength, vibrations during image acquisition might adversely influence the quality of the image. Properly fix the equipment to the floor and wall and reinforce them as necessary.

## 2. Installation Procedure

Carry out the installation work in accordance with the procedure below.

### 2-1. Installing the hand switch box

#### CAUTION

- Install the hand switch box outside the X-ray room.
- Install the hand switch box in a location from which the patient is visible and the X-ray exposure switch can be pressed.

- (1) Remove the Phillips pan-head machine screw (M4 x L8 with spring and flat washers) from the underside of the hand switch box and remove the hand switch box cover.

Tool used: No. 2 Phillips screwdriver

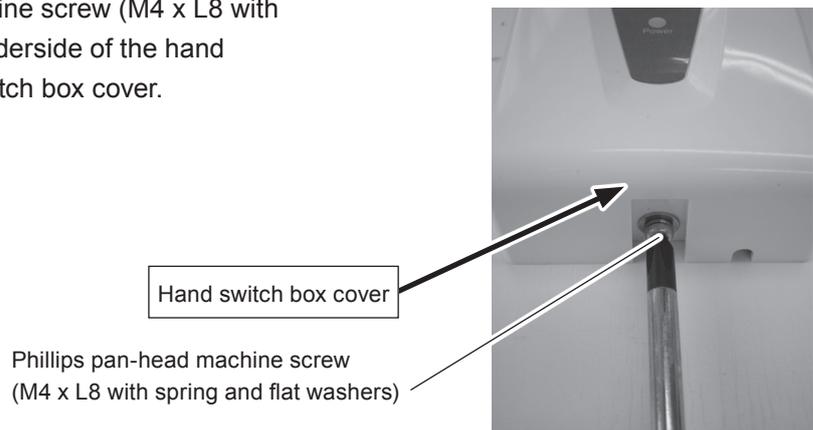


Fig. ③ -1: Removing the screw

- (2) Attach the wall-mounting bracket to the wall and secure it in place using 2 pan-head self-tapping screws (M4 x L10). Adjust the bracket so that the hole drilled in the wall lines up with the notch in the metal plate.

Tool used: No. 2 Phillips screwdriver

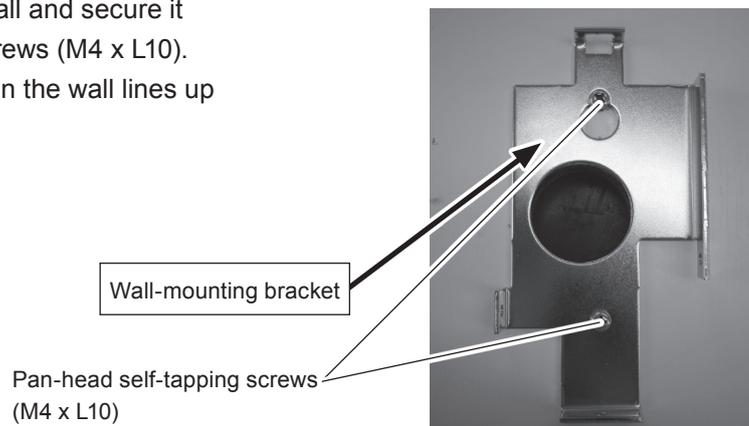


Fig. ③ -2: Fixing the bracket

- (3) Secure the cable that runs up the wall to the wall-mounting bracket. To secure the cable, use a nylon clip (AB-3N) and secure the clip using a Phillips pan-head machine screw (M4 x L8 with spring and flat washers). The cable should be secured roughly 85 mm from the connector.

Tool used: No. 2 Phillips screwdriver

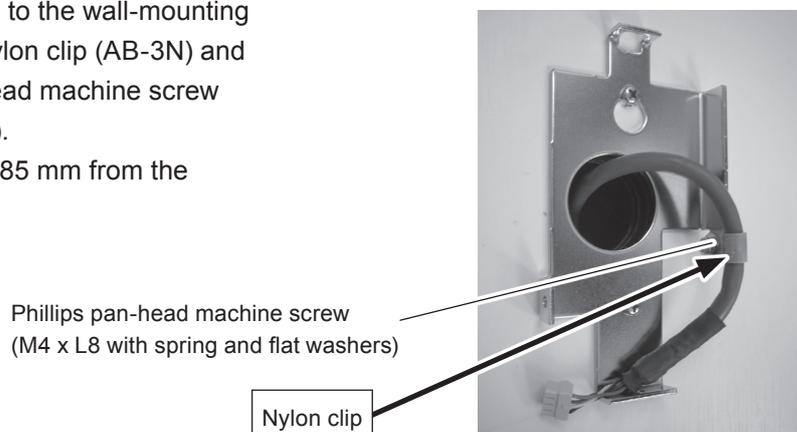


Fig. ③ -3: Securing the cable-1

**Additional Information :** Guide to cable fixing locations

As the figures on the right show, if you secure the cable so that the heat-shrunk tubing on the cable is aligned with the edge of the wall-mounting bracket, the distance from the nylon clip to the connector is roughly 85 mm.

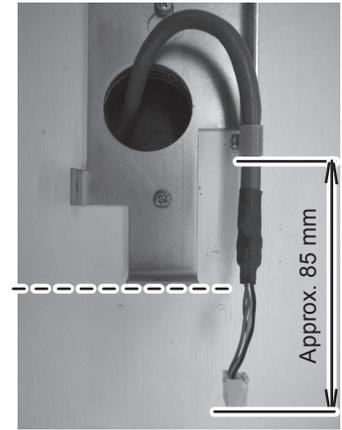


Fig. ③ -4: Cable fixing location

**⚠ CAUTION**

- Run the cable so that it stays below the dotted line in the figure on the right. If the cable runs above the dotted line, it will interfere with the hand switch box circuit board (XE20-07\*) connector when the cover is attached so that the cover does not sit flush against the wall.

Hand switch box circuit board

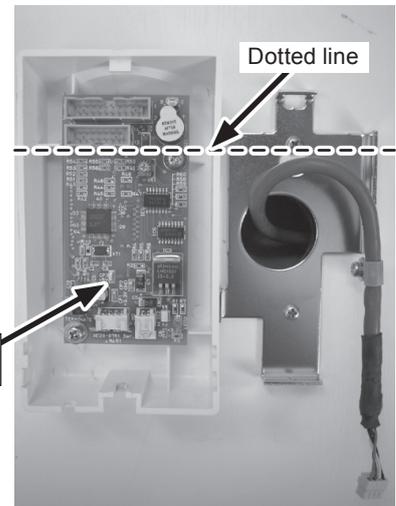


Fig. ③ -5: Running the cables

(4) Secure the hand switch cable to the wall-mounting bracket.

To secure the cable, use a nylon clip (AB-2N) and secure the clip using a Phillips pan-head machine screw (M4 x L8 with spring and flat washers).

The cable should be secured roughly 150 mm from the connector.

Tool used: No. 2 Phillips screwdriver

Nylon clip

Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

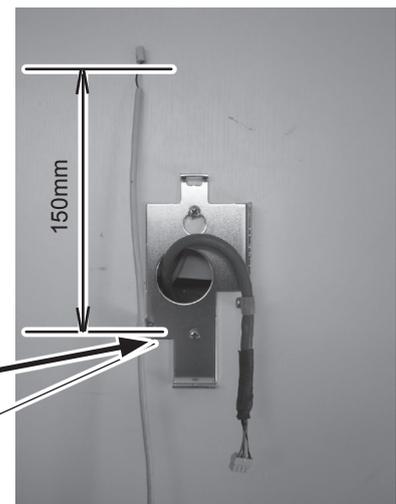


Fig. ③ -6: Securing the cable - 2

- (5) Plug the cable connectors into the hand switch box circuit board (XE20-07\*). (Use connectors No.M1 and No.M2.) Run the hand switch box cables so that they do not overlap with the cover is attached, as shown in the figure on the right.

Hand switch box circuit board (XE20-07\*)

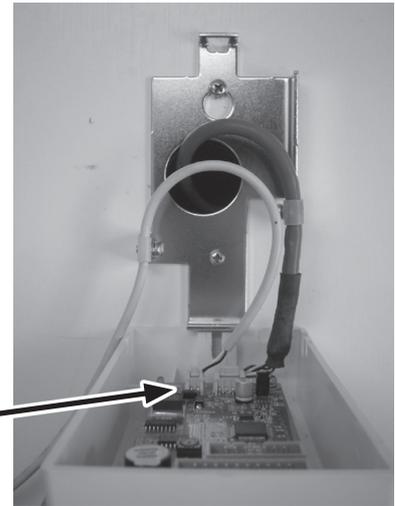


Fig. ③ -7: Attaching the cover - 1

- (6) Attach the hand switch box cover so that it slots down over the catches on the wall-mounting bracket.

Hand switch box cover



Fig. ③ -8: Attaching the cover - 2

**⚠ CAUTION**

- Take care not to pinch the cables.

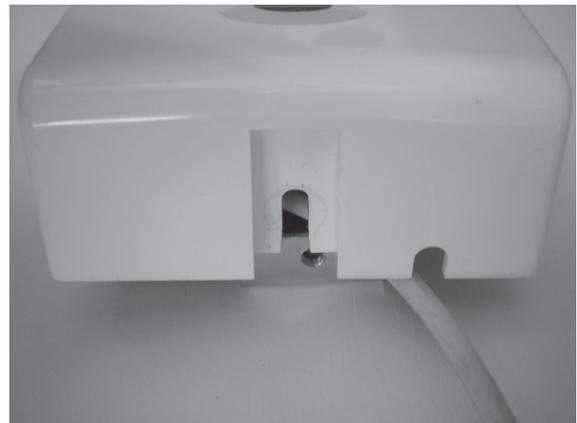


Fig. ③ -9: Attaching the cover - 3

(7) Screw a Phillips pan-head machine screw (M4 x L8 with spring and flat washers) into the bottom of the hand switch box.

Tool used: No. 2 Phillips screwdriver

Hand switch box cover  
 Phillips pan-head machine screw  
 (M4 x L8 with spring and flat washers)

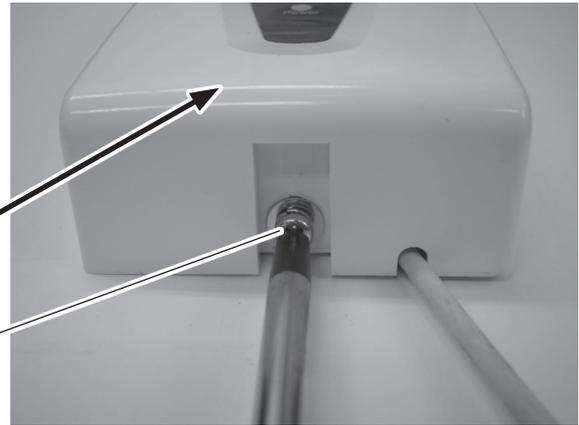


Fig. ③ -10: Securing the cover

(8) Secure the hand switch mounting bracket somewhere close to the hand switch box using two self-tapping screws (M3 x L10).

Tool used: No. 2 Phillips screwdriver

Hand switch mounting bracket  
 Self-tapping screws  
 (M3 x L10)



Fig. ③ -11: Securing the hand switch mounting bracket

**Additional Information :** Adjusting the buzzer volume

You can adjust the buzzer volume by turning the volume resistor (VR1) on the hand switch box circuit board (XE20-07\*).  
 (Set to the lowest setting at shipment.)

Tool used: Precision screwdriver

Rotation direction	Volume
Clockwise	High
Counterclockwise	Low

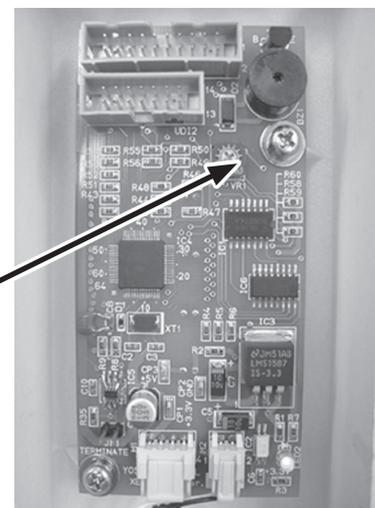
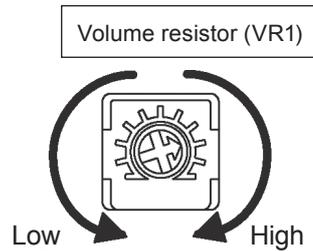


Fig. ③ -12: Volume adjustment

## 2-2. Installing the main unit



### CAUTION

- To ensure that the X-era Smart does not tip over, always fix the column to the floor prior to installation.

### 2-2-1. Preparation

Check that the floor satisfies the requirements given in “3. Installation Location Strength Requirements” and “4. Installation Location (Floor) Levelness Requirements” in “① Requirements for Installation Location Facilities”.

**REF.** : See “3. Basic Installation Example”.

**Additional Information** : Weight of the main unit: 185 kg (Normal type)  
180 kg (Short type)  
190 kg (Long type)

### 2-2-2. Floor mounting

(1) Open the main unit carton.

Tool used: Nippers

No. 2 Phillips screwdriver

#### **Additional Information** :

Open the carton in an area with sufficient space, such as outside the X-ray room, and then carry the column to the installation location.

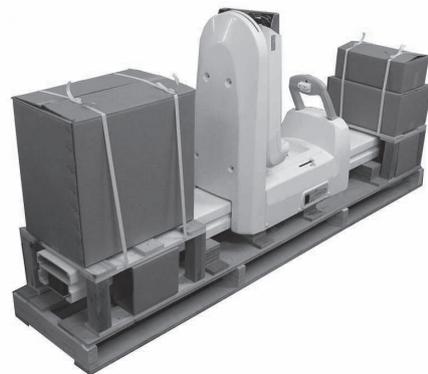


Fig. ③ -13: Main unit carton exterior

(2) Assemble the wall-mounting bracket and secure it temporarily using two Allen bolts (M8 x L20 with spring and flat washers).

Tool used: 6 mm Allen wrench

Allen bolts  
(M8 x L20 with spring and flat washers).

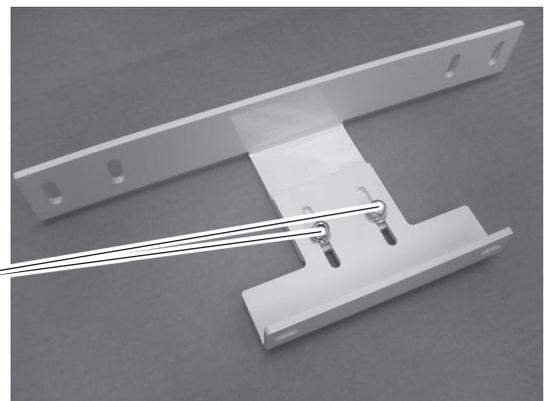


Fig. ③ -14: Wall-mounting bracket

- (3) Secure the wall-mounting bracket to the column with two Allen bolts (M8 x L25 with spring and flat washers).

Tool used: 6 mm Allen wrench

Wall-mounting bracket

Allen bolts  
(M8 x L25 with spring and flat washers).

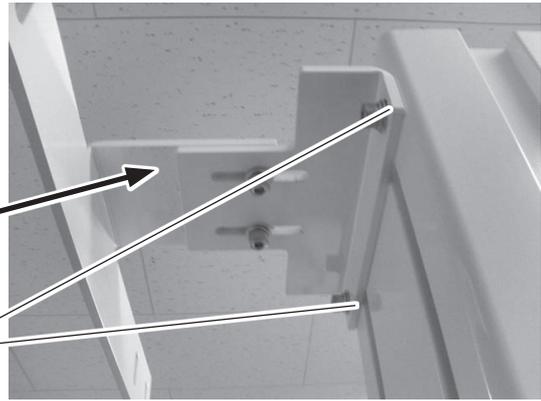


Fig. ③ -15: Temporarily secured wall-mounting bracket

**Additional Information :**

The fixing points are at the top of the column. Use a stool or stepladder to attach the bracket. Tighten the fixing bolts fully once level adjustment has been completed.

- (4) Erect the main unit and fix it on the floor.

**CAUTION**

- When erecting the main unit, beware not to break the parts on the main unit.
- When holding the main unit upright, hold the underside of the slide body and take care to avoid hitting the column against anything.
- Take care to avoid inflicting injury with the corners of the components while assembling the equipment.

a. Optional base not used

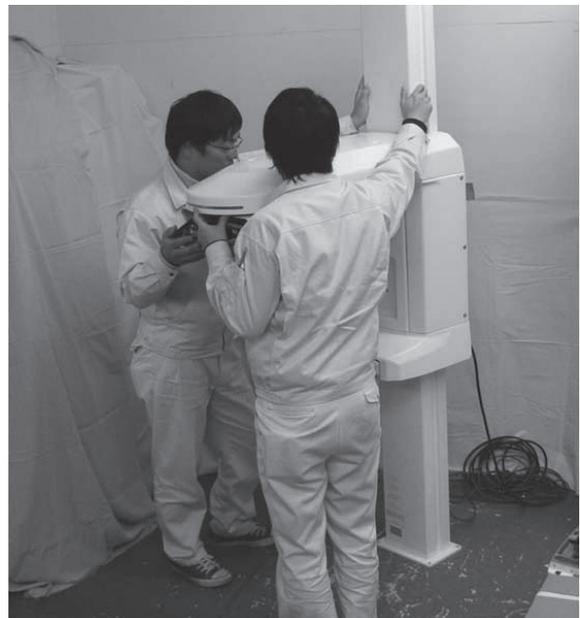


Fig. ③ -16: Installing the main unit - 1



Fig. ③ -17: Installing the main unit - 2

On concrete floors

Determine the location in which the X-era Smart will be installed and then embed the anchor bolts in the fixing locations.

**REF.** : For the locations of the floor drilling points, refer to the following:

- “2-2-5. a-1. Fixing hole location measurements (Standing position wall-mount: Panoramic type)” (P.③-19),
- “2-2-5. a-2. Fixing hole location measurements (Standing position wall-mount short type: Panoramic type)” (P.③-20),
- “2-2-5. a-3. Fixing hole location measurements (Standing position wall-mount long type: Panoramic type)” (P.③-21),
- “2-2-5. a-4. Fixing hole location measurements (Standing position wall-mount: 3D type)” (P.③-22) ,
- “2-2-5. a-5. Fixing hole location measurements (Standing position wall-mount short type: 3D type)” (P.③-23),
- “2-2-5. a-6. Fixing hole location measurements (Standing position wall-mount long type: 3D type)” (P.③-24),
- “2-2-5. e. Floor fixing hole locations (wall-mounted)” (P.③-55)

Fix the column to the floor using four Allen bolts.

**REF.** : For information on the floor fixing method, see: “2-2-6. Fixing method for concrete floors”.

**REF.** : See “3. Basic Installation Example” for installation examples.

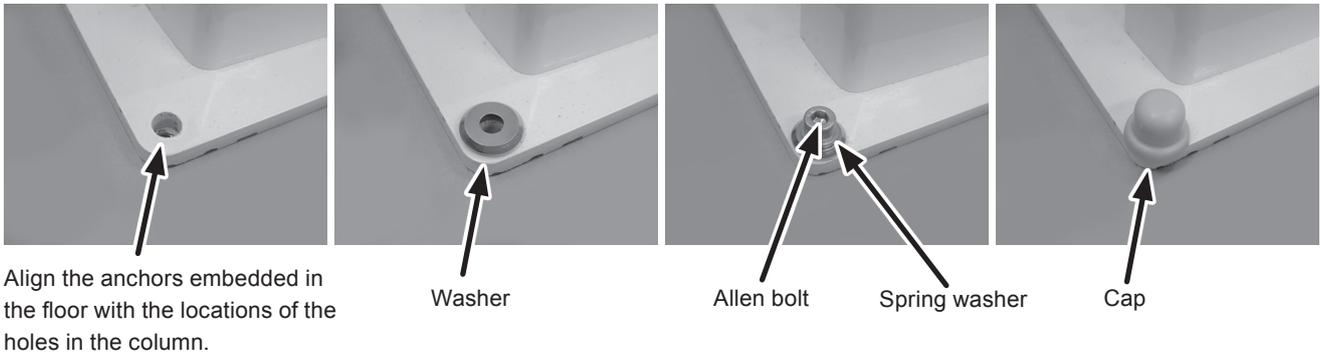
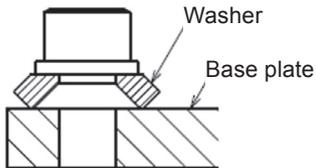


Fig. ③ -18: Column fixing method A

**NOTE** : Fix the washer making the flat surface upward.



On non-concrete floors

Determine the location in which the X-era Smart will be installed and then drill the vertical holes in the fixing locations.

**REF.** : For the locations of the floor drilling points, refer to the following:

- “2-2-5. a-1. Fixing hole location measurements (Standing position wall-mount: Panoramic type)” (P.③-19),
- “2-2-5. a-2. Fixing hole location measurements (Standing position wall-mount short type: Panoramic type)” (P.③-20),
- “2-2-5. a-3. Fixing hole location measurements (Standing position wall-mount long type: Panoramic type)” (P.③-21),
- “2-2-5. a-4. Fixing hole location measurements (Standing position wall-mount: 3D type)” (P.③-22) ,
- “2-2-5. a-5. Fixing hole location measurements (Standing position wall-mount short type: 3D type)” (P.③-23),
- “2-2-5. a-6. Fixing hole location measurements (Standing position wall-mount long type: 3D type)” (P.③-24),
- “2-2-5. e. Floor fixing hole locations (wall-mounted)” (P.③-55).

Fix the column to the floor using four coach screws.

**REF.** : For information on the floor fixing method, see: “2-2-7. Fixing method for non-concrete floors”.

**REF.** : See “3. Basic Installation Example” for installation examples.

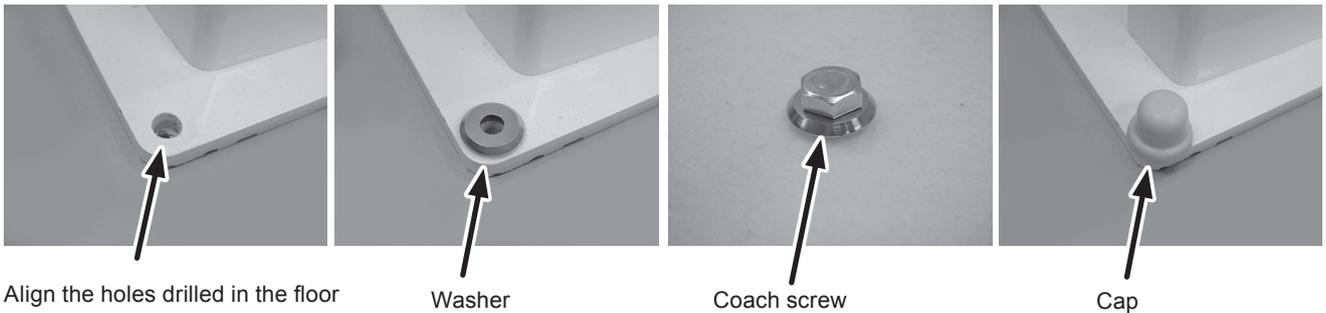


Fig. ③ -19: Column fixing method B

**NOTE** : Fix the washer making the flat surface upward.

b. Optional base used

Stand the column on the base and secure it in place using 4 Allen bolts (M8 x L20 with spring and flat washers).

Tool used: 6 mm Allen wrench

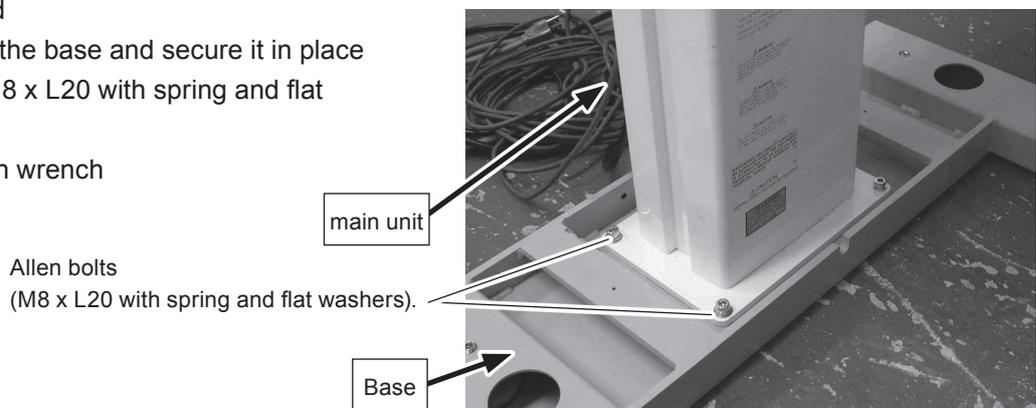


Fig. ③ -20: Fixing the column to the base

Determine the location in which the X-era Smart will be installed and then drill the vertical holes in the fixing locations.

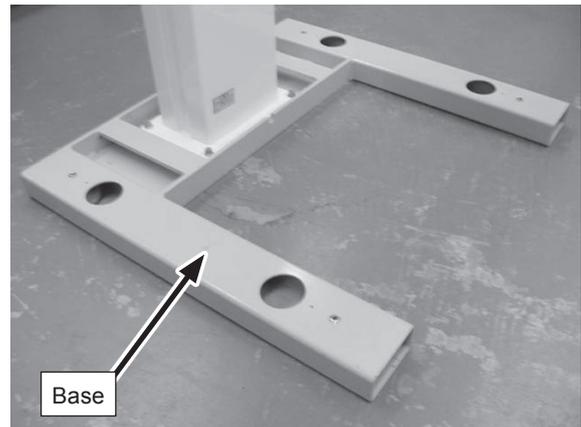


Fig. ③ -21: Optional base

**REF.** : For the locations of the floor drilling points, refer to the following:

“2-2-5. b-1. Fixing hole location measurements (Standing position base-mount (with an optional base) : Panoramic type)” (P.③-25),

“2-2-5. b-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : Panoramic type)” (P.③-26),

“2-2-5. b-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : Panoramic type)” (P.③-27),

“2-2-5. b-4. Fixing hole location measurements (Standing position base-mount (with an optional base) : 3D type)” (P.③-28),

“2-2-5. b-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : 3D type)” (P.③-29),

“2-2-5. b-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : 3D type)” (P.③-30),

“2-2-5. b-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base): Panoramic type)” (P.③-31),

“2-2-5. b-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Panoramic type)” (P.③-32),

“2-2-5. b-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Panoramic type)” (P.③-33),

“2-2-5. b-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base): 3D type)” (P.③-34),

“2-2-5. b-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D type)” (P.③-35),

“2-2-5. b-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D type)” (P.③-36),

“2-2-5. f. Floor fixing hole locations (base-mounted)” (P.③-55),

“2-2-5. g. Floor fixing hole locations (wide base-mounted)” (P.③-56).

Fix the base to the floor using four coach screws.

**REF.** : For information on the floor fixing method, see: “2-2-7. Fixing method for non-concrete floors”.

**REF.** : See “3. Basic Installation Example” for installation examples.

Fit the base cover onto the base and secure it in place using 4 Phillips countersunk machine screws (M4 x L12 with built-in setup washer). Then attach the connector caps.

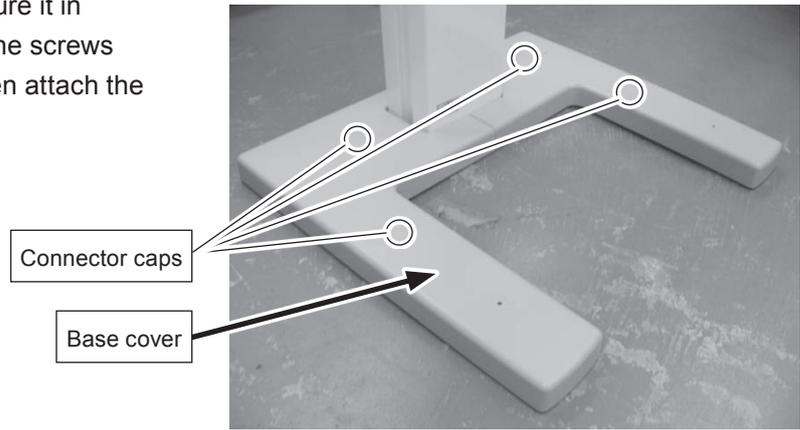


Fig. ③ -22: Attaching the base cover

c. In case of Cephalometric

c-1. When an optional base is not used

First, fix a support column to the floor. Refer to “2-2-2. Floor mounting” on how to fix the support column. After fixing the support column, place a floor positioning accessory plate. Use anchor bolts or coach screws to fix.

**⚠ CAUTION**

- Note the size of the bolts of this particular usage is different from those used in other parts.



Fig. ③ -23: Floor positioning accessory plate

**REF. :** Positions of holes on the floor:

- “2-2-5. c-1. Fixing hole location measurements (Standing position wall-mount: Cephalometric type)” (P.③-37),
- “2-2-5. c-2. Fixing hole location measurements (Standing position wall-mount short type: Cephalometric type)” (P.③-38),
- “2-2-5. c-3. Fixing hole location measurements (Standing position wall-mount long type: Cephalometric type)” (P.③-39)
- “2-2-5. c-4. Fixing hole location measurements(Standing position wall-mount: 3D Cephalometric type)” (P.③-40),
- “2-2-5. c-5. Fixing hole location measurements(Standing position wall-mount short type: 3D Cephalometric type)” (P.③-41),
- “2-2-5. c-6. Fixing hole location measurements(Standing position wall-mount long type: 3D Cephalometric type)” (P.③-42)
- “2-2-5. h. Floor fixing hole locations (cephalometric)” (P.③-56).

c-2. When an optional base is used

First, fix a support column to the base. Refer to “2-2-2. Floor mounting” on how to fix the support column. After fixing the base, fix the cephalo unit stabilizer on the back of the optional base (4 x Allen bolts M8 x L35 with spring washer).

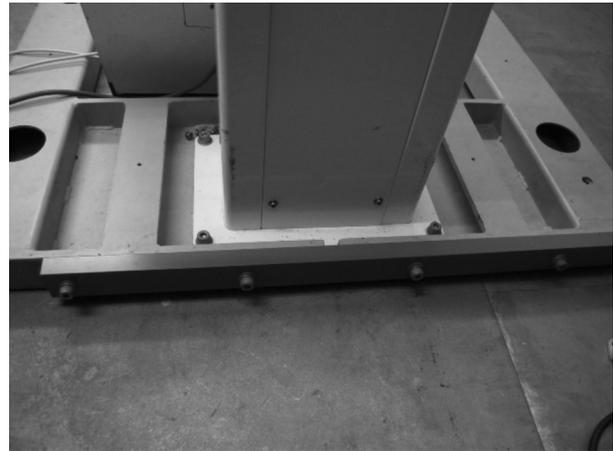


Fig. ③ -24: Cephalo unit stabilizer

**REF. : Positions of holes on the floor:**

- “2-2-5. d-1. Fixing hole location measurements (Standing position base-mount (with an optional base): Cephalometric type)” (P.③-43),
- “2-2-5. d-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base): Cephalometric type)” (P.③-44),
- “2-2-5. d-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base): Cephalometric type)” (P.③-45),
- “2-2-5. d-4. Fixing hole location measurements (Standing position base-mount (with an optional base): 3D Cephalometric type)” (P.③-46)
- “2-2-5. d-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base): 3D Cephalometric type)” (P.③-47),
- “2-2-5. d-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base): 3D Cephalometric type)” (P.③-48),
- “2-2-5. d-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base): Cephalometric type)” (P.③-49),
- “2-2-5. d-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Cephalometric type)” (P.③-50),
- “2-2-5. d-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Cephalometric type)” (P.③-51),
- “2-2-5. d-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base): 3D Cephalometric type)” (P.③-52),
- “2-2-5. d-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)” (P.③-53),
- “2-2-5. d-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)” (P.③-54),
- “2-2-5. f. Floor fixing hole locations (base-mounted)” (P.③-55),
- “2-2-5. g. Floor fixing hole locations (wide base-mounted)” (P.③-56).

### 2-2-3. Wall mounting

Secure the wall-mounting bracket to the wall using 4 anchor bolts or coach screws\*.

\* The following coach screws are supplied within the box. Choose the right screws according to the condition of the wall.

- 8 x 38 mm
- 8 x 65 mm

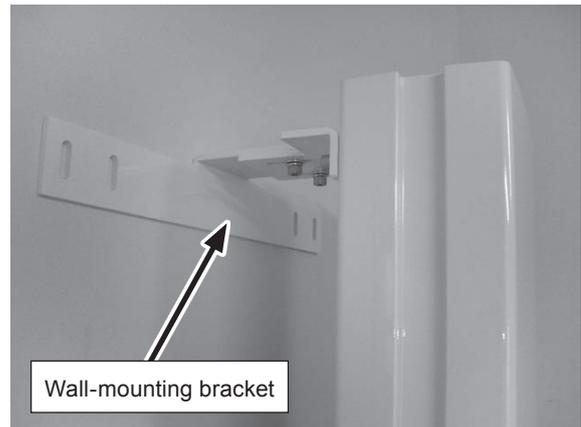


Fig. ㉓ -25: Wall fixing method

**REF.** : For the locations of the wall drilling points, refer to the following:

- “2-2-5. a-1. Fixing hole location measurements (Standing position wall-mount: Panoramic type)” (P.㉓-19),
- “2-2-5. a-2. Fixing hole location measurements (Standing position wall-mount short type: Panoramic type)” (P.㉓-20),
- “2-2-5. a-3. Fixing hole location measurements (Standing position wall-mount long type: Panoramic type)” (P.㉓-21),
- “2-2-5. a-4. Fixing hole location measurements (Standing position wall-mount: 3D type)” (P.㉓-22),
- “2-2-5. a-5. Fixing hole location measurements (Standing position wall-mount short type: 3D type)” (P.㉓-23),
- “2-2-5. a-6. Fixing hole location measurements (Standing position wall-mount long type: 3D type)” (P.㉓-24),
- “2-2-5. b-1. Fixing hole location measurements (Standing position base-mount (with an optional base) : Panoramic type)” (P.㉓-25),
- “2-2-5. b-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : Panoramic type)” (P.㉓-26),
- “2-2-5. b-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : Panoramic type)” (P.㉓-27),
- “2-2-5. b-4. Fixing hole location measurements (Standing position base-mount (with an optional base) : 3D type)” (P.㉓-28),
- “2-2-5. b-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : 3D type)” (P.㉓-29),
- “2-2-5. b-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : 3D type)” (P.㉓-30),
- “2-2-5. b-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base): Panoramic type)” (P.㉓-31),
- “2-2-5. b-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Panoramic type)” (P.㉓-32),
- “2-2-5. b-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Panoramic type)” (P.㉓-33),
- “2-2-5. b-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base): 3D type)” (P.㉓-34),
- “2-2-5. b-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D type)” (P.㉓-35),
- “2-2-5. b-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D type)” (P.㉓-36),
- “2-2-5. c-1. Fixing hole location measurements (Standing position wall-mount: Cephalometric type)” (P.㉓-37),
- “2-2-5. c-2. Fixing hole location measurements (Standing position wall-mount short type: Cephalometric type)” (P.㉓-38),
- “2-2-5. c-3. Fixing hole location measurements (Standing position wall-mount long type: Cephalometric type)” (P.㉓-39),
- “2-2-5. c-4. Fixing hole location measurements (Standing position wall-mount: 3D Cephalometric type)” (P.㉓-40),
- “2-2-5. c-5. Fixing hole location measurements (Standing position wall-mount short type: 3D Cephalometric type)” (P.㉓-41),

“2-2-5. c-6. Fixing hole location measurements(Standing position wall-mount long type: 3D Cephalometric type)” (P.㉓-42),

“2-2-5. d-1. Fixing hole location measurements (Standing position base-mount (with an optional base): Cephalometric type)” (P.㉓-43),

“2-2-5. d-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base): Cephalometric type)” (P.㉓-44),

“2-2-5. d-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base): Cephalometric type)” (P.㉓-45),

“2-2-5. d-4. Fixing hole location measurements (Standing position base-mount (with an optional base): 3D Cephalometric type)” (P.㉓-46),

“2-2-5. d-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base): 3D Cephalometric type)” (P.㉓-47),

“2-2-5. d-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base): 3D Cephalometric type)” (P.㉓-48),

“2-2-5. d-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base): Cephalometric type)” (P.㉓-49),

“2-2-5. d-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Cephalometric type)” (P.㉓-50),

“2-2-5. d-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Cephalometric type)” (P.㉓-51),

“2-2-5. d-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base): 3D Cephalometric type)” (P.㉓-52),

“2-2-5. d-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)” (P.㉓-53),

“2-2-5. d-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)” (P.㉓-54),

**Additional Information** : The fixing points are at the top of the column. Use a stool or stepladder to attach the bracket. Tighten the fixing bolts fully once level adjustment has been completed.

## 2-2-4. Leveling

### A. For other than equipment with 3D function

(1) Use a level on the front and sides of the column to check whether the pillar is tilted in any direction. If any tilt is found, adjust the column angle.

- Leveling method for the standard model  
Loosen the fixing bolts in the wall-mounting bracket and then loosen the floor fixing bolts. Then adjust the level by slipping the adjustment shims supplied under the column and retightening the bolts.
- Leveling method when the optional base is used  
Loosen the fixing bolts in the wall-mounting bracket and then loosen the floor fixing bolts. Then adjust the level by turning the adjusters on the optional base with an Allen wrench to raise or lower the adjusters. Then retighten the fixing bolts.



Fig. ③ -26: Checking for column lean



Fig. ③ -27: Checking for column lean

Adjuster

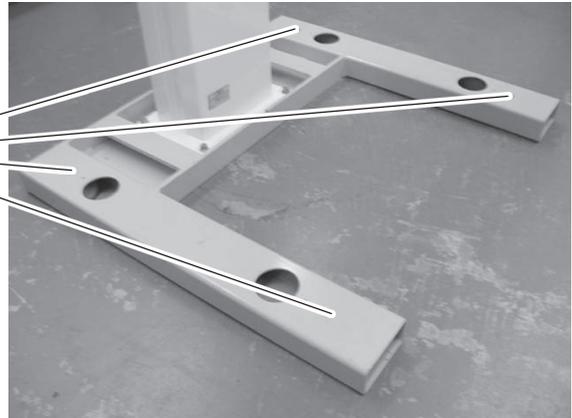


Fig. ③ -28: Leveling

(2) After confirming that the equipment is level, tighten the fixing bolts in the wall-mounting bracket.

Tool used: 6 mm Allen wrench

Allen bolts  
(M8 x L20)

Allen bolts  
(M8 x L25)

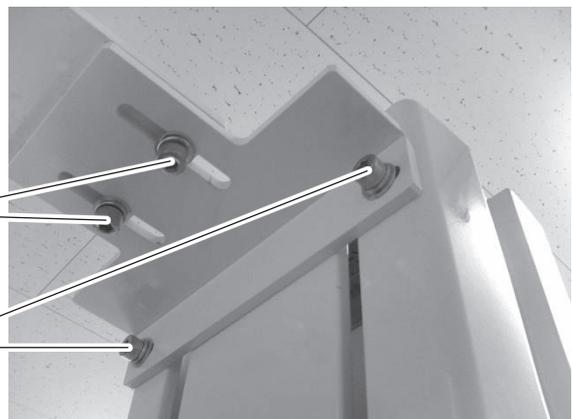


Fig. ③ -29: Securing the wall-mounting bracket

## B. For equipment with 3D function

(1) 1. When erecting a column, check the horizontal level using the digital level. Use a level on the front and sides of the column to check whether the pillar is tilted in any direction. If the tilt is more than 90 degrees +/- 1 degree, adjust the level.

- Leveling method for the standard model  
Loosen the fixing bolts in the wall-mounting bracket and then loosen the floor fixing bolts. Then adjust the level by slipping the adjustment shims supplied under the column and retightening the bolts.
- Leveling method when the optional base is used  
Loosen the fixing bolts in the wall-mounting bracket and then loosen the floor fixing bolts. Then adjust the level by turning the adjusters on the optional base with an Allen wrench to raise or lower the adjusters. Then retighten the fixing bolts.



Fig. ③ -30: Checking for column lean (sides)



Fig. ③ -31: Checking for column lean (front)

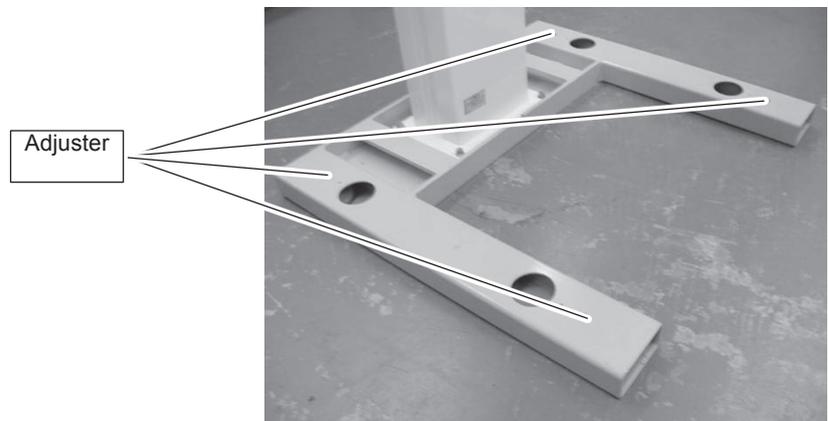


Fig. ③ -32: Leveling

(2) After confirming that the equipment is level, tighten the fixing bolts in the wall-mounting bracket.

Tool used: 6 mm Allen wrench

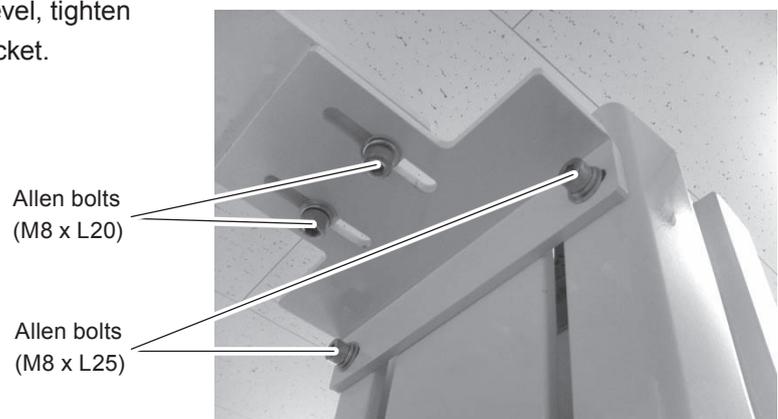


Fig. ③ -33: Securing the wall-mounting bracket

(3) After mounting the drive unit, confirm the unit's horizontal levelness in all directions using digital level gauge.

When checking horizontal levelness, turn the arm around (three positions in figure below) and make sure that the head is at the same horizontal levelness at any position.

Horizontal Levelness: If the unit is slanted by more than  $\pm 0.1$  degree, follow the preceding procedure to make adjustments.

[Checking Levelness in Horizontal  
(Left-Right) Direction]

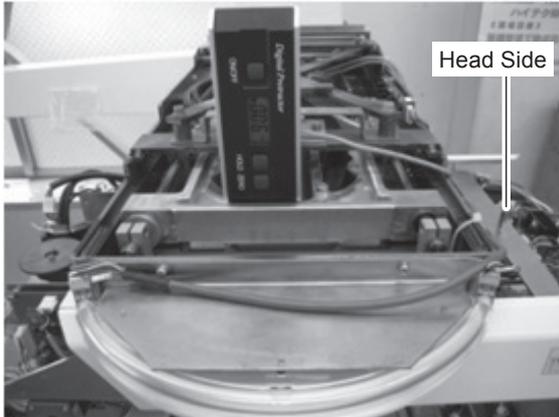


Fig. ③ -34: Checking Levelness in Horizontal  
(Left-Right) Direction 1

[Checking Levelness in Longitudinal  
(Front-Back) Direction]

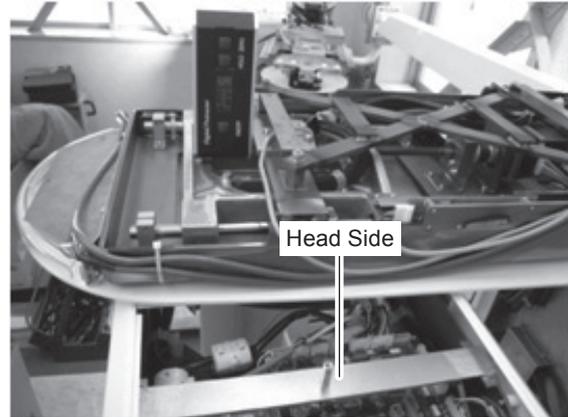


Fig. ③ -37: Checking Levelness in Longitudinal  
(Front-Back) Direction 1

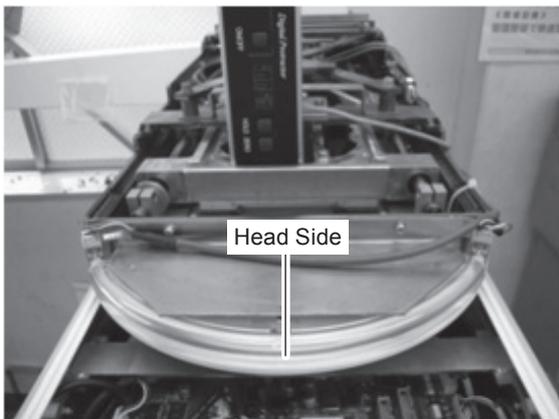


Fig. ③ -35: Checking Levelness in Horizontal  
(Left-Right) Direction 2

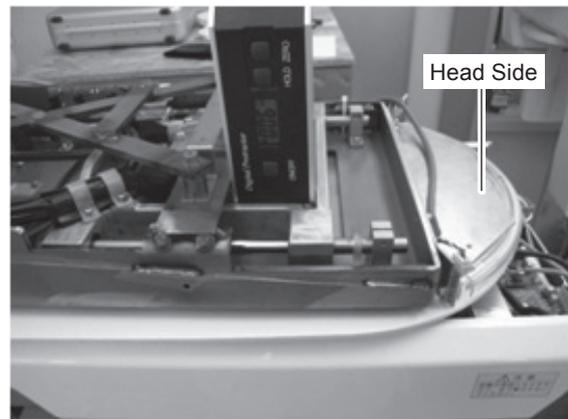


Fig. ③ -38: Checking Levelness in Longitudinal  
(Front-Back) Direction 2

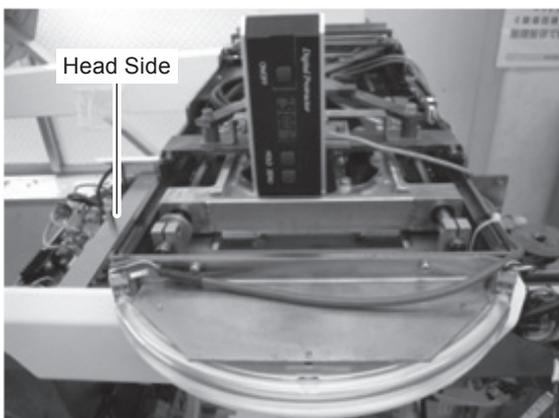


Fig. ③ -36: Checking Levelness in Horizontal  
(Left-Right) Direction 3

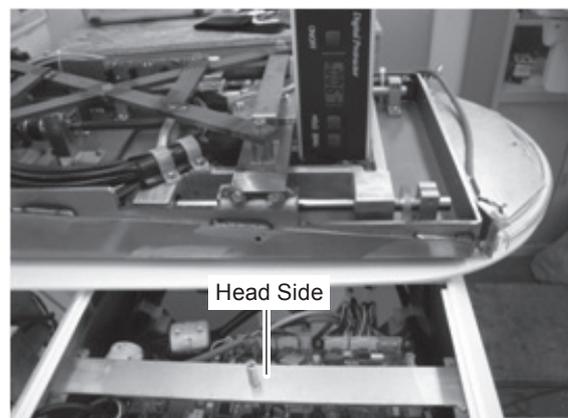


Fig. ③ -39: Checking Levelness in Longitudinal  
(Front-Back) Direction 3

## 2-2-5. Fixing hole locations

### a-1. Fixing hole location measurements (Standing position wall-mount: Panoramic type)

Unit: mm

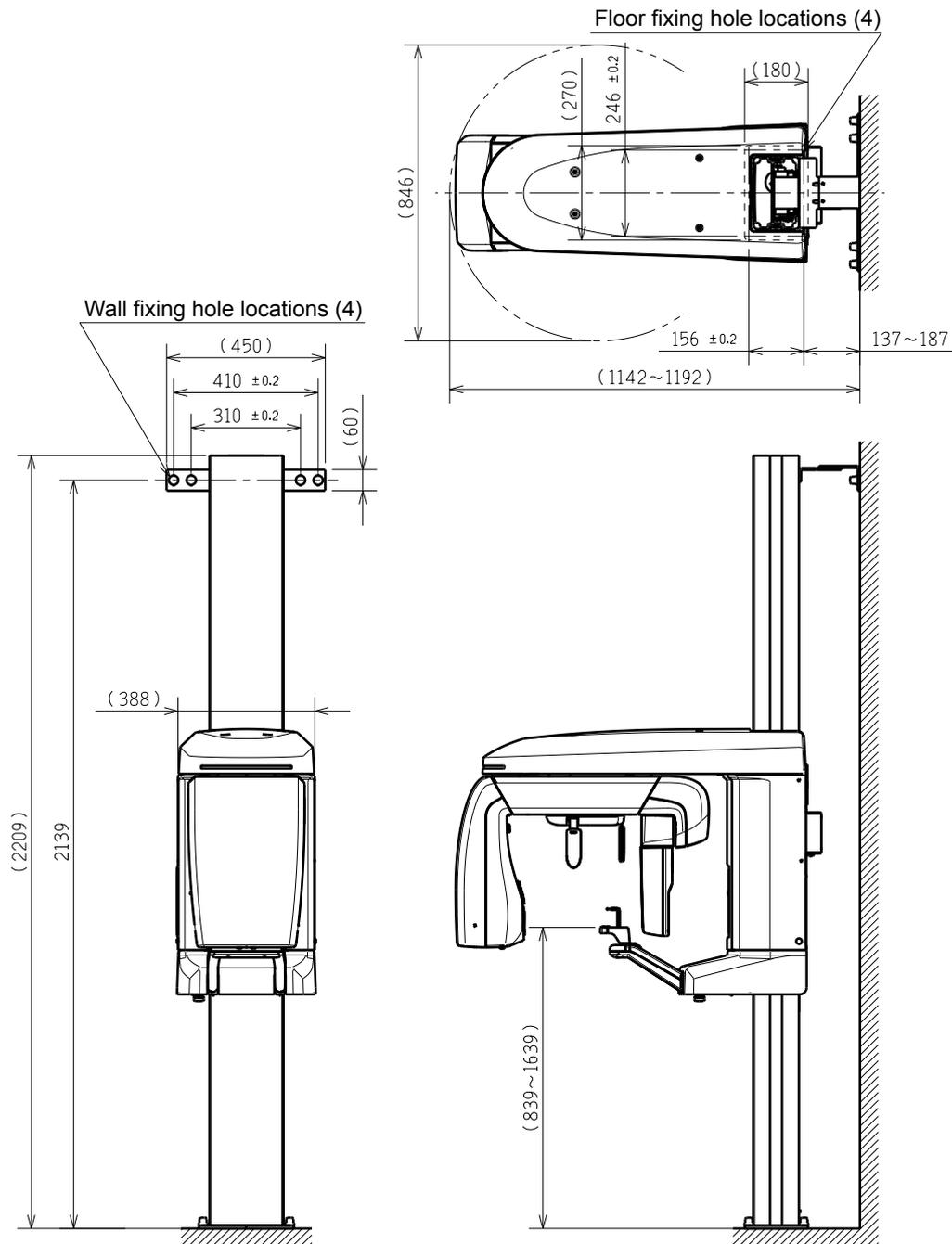


Fig. ③ -40: Fixing hole location measurements (Standing position wall-mount: Panoramic type)

a-2. Fixing hole location measurements (Standing position wall-mount short type: Panoramic type)

Unit: mm

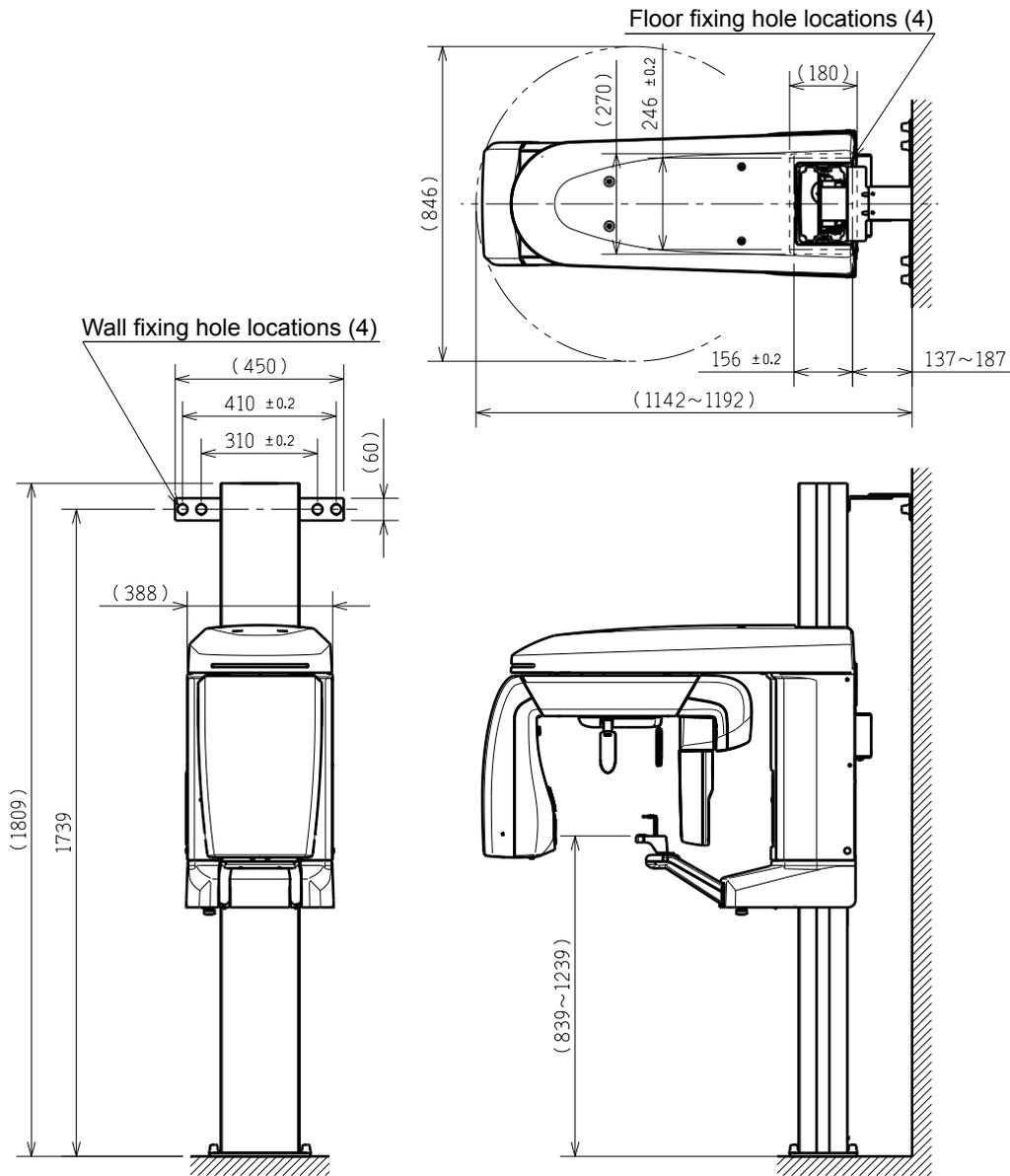


Fig. ③ -41: Fixing hole location measurements  
(Standing position wall-mount short type: Panoramic type)

a-3. Fixing hole location measurements (Standing position wall-mount long type: Panoramic type)

Unit: mm

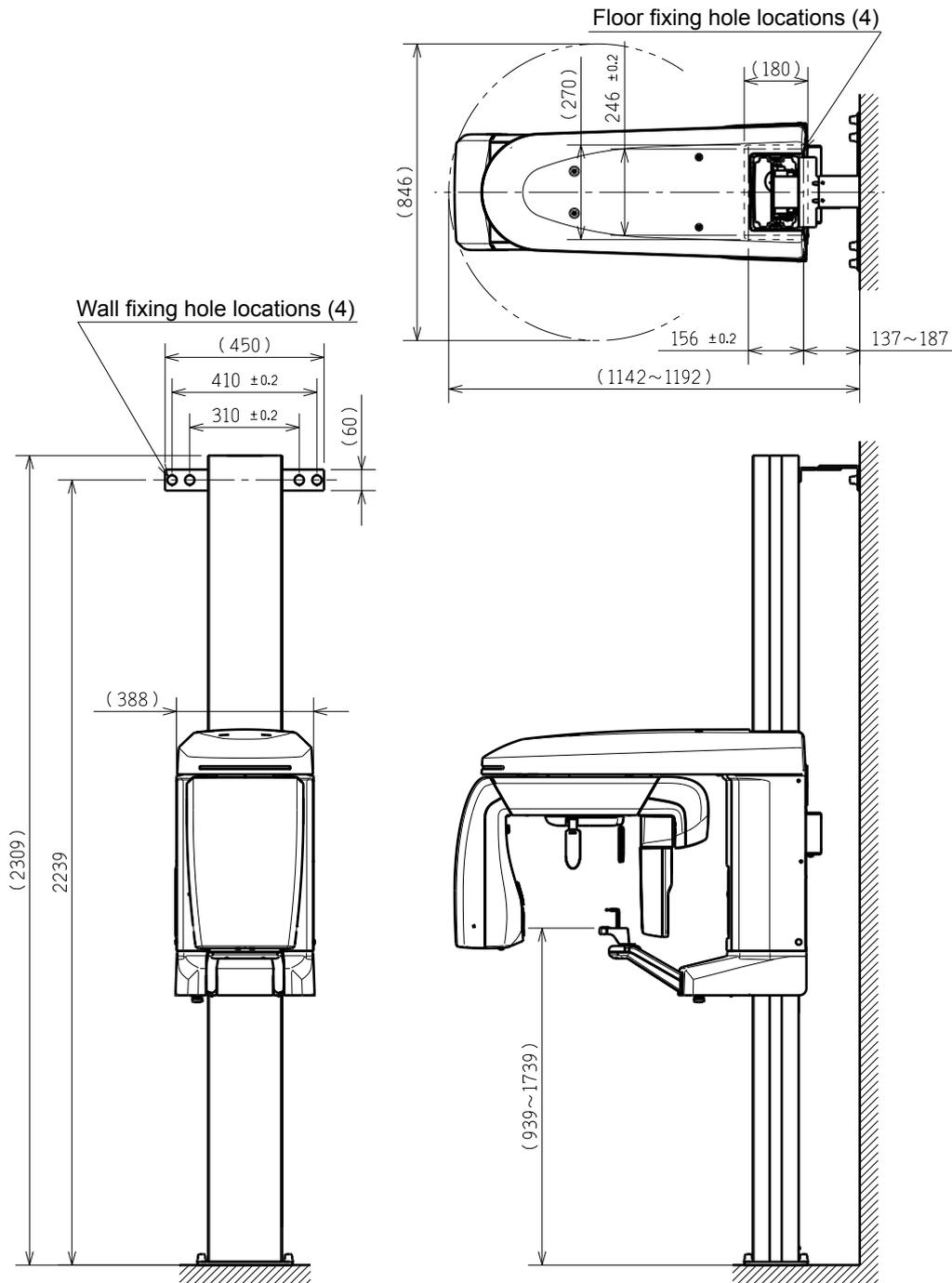


Fig. ③ -42: Fixing hole location measurements  
(Standing position wall-mount long type: Panoramic type)

a-4. Fixing hole location measurements (Standing position wall-mount: 3D type)

Unit: mm

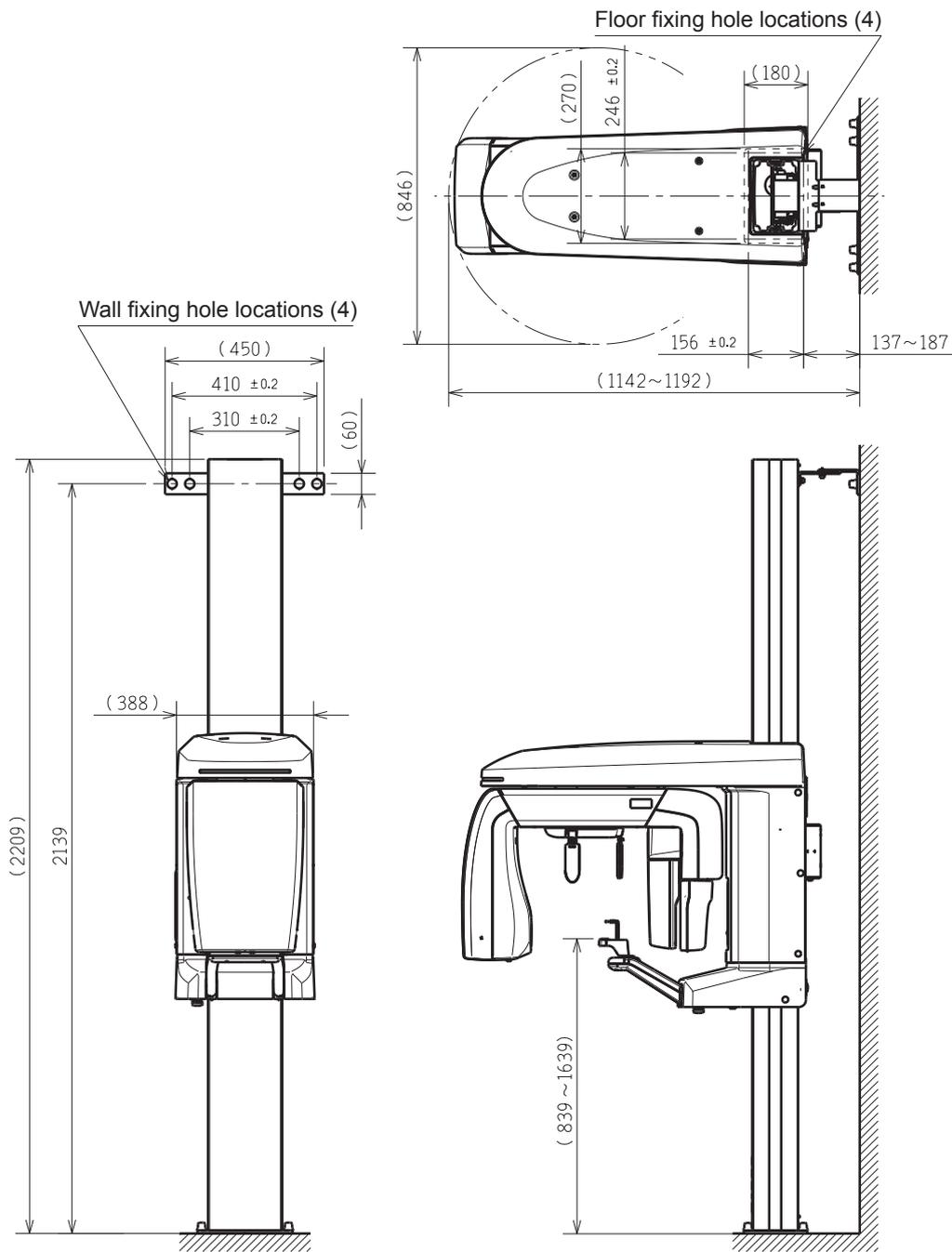


Fig. ③ -43: Fixing hole location measurements (Standing position wall-mount: 3D type)

a-5. Fixing hole location measurements (Standing position wall-mount short type: 3D type)

Unit: mm

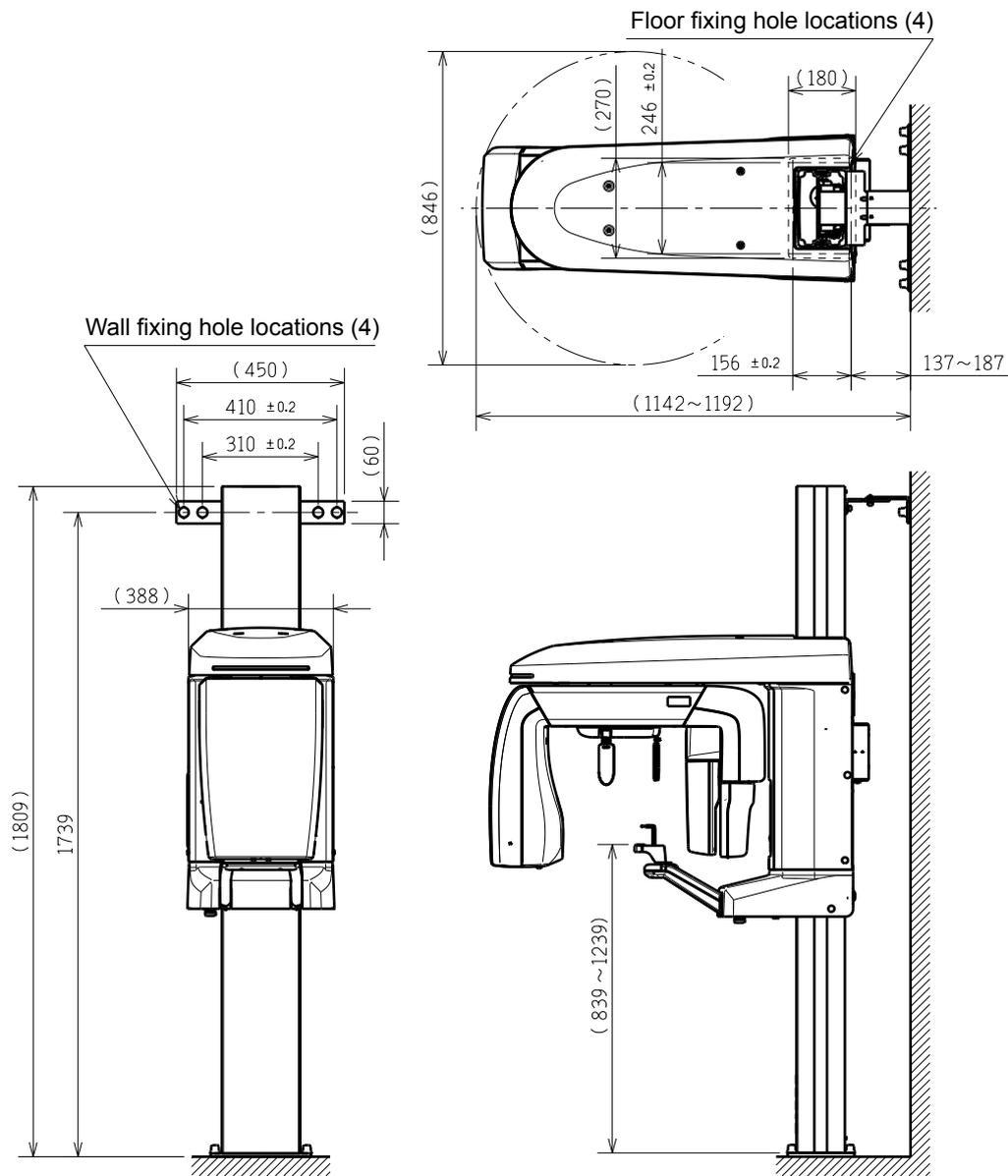


Fig. ㉓ -44: Fixing hole location measurements (Standing position wall-mount short type: 3D type)

a-6. Fixing hole location measurements (Standing position wall-mount long type: 3D type)

Unit: mm

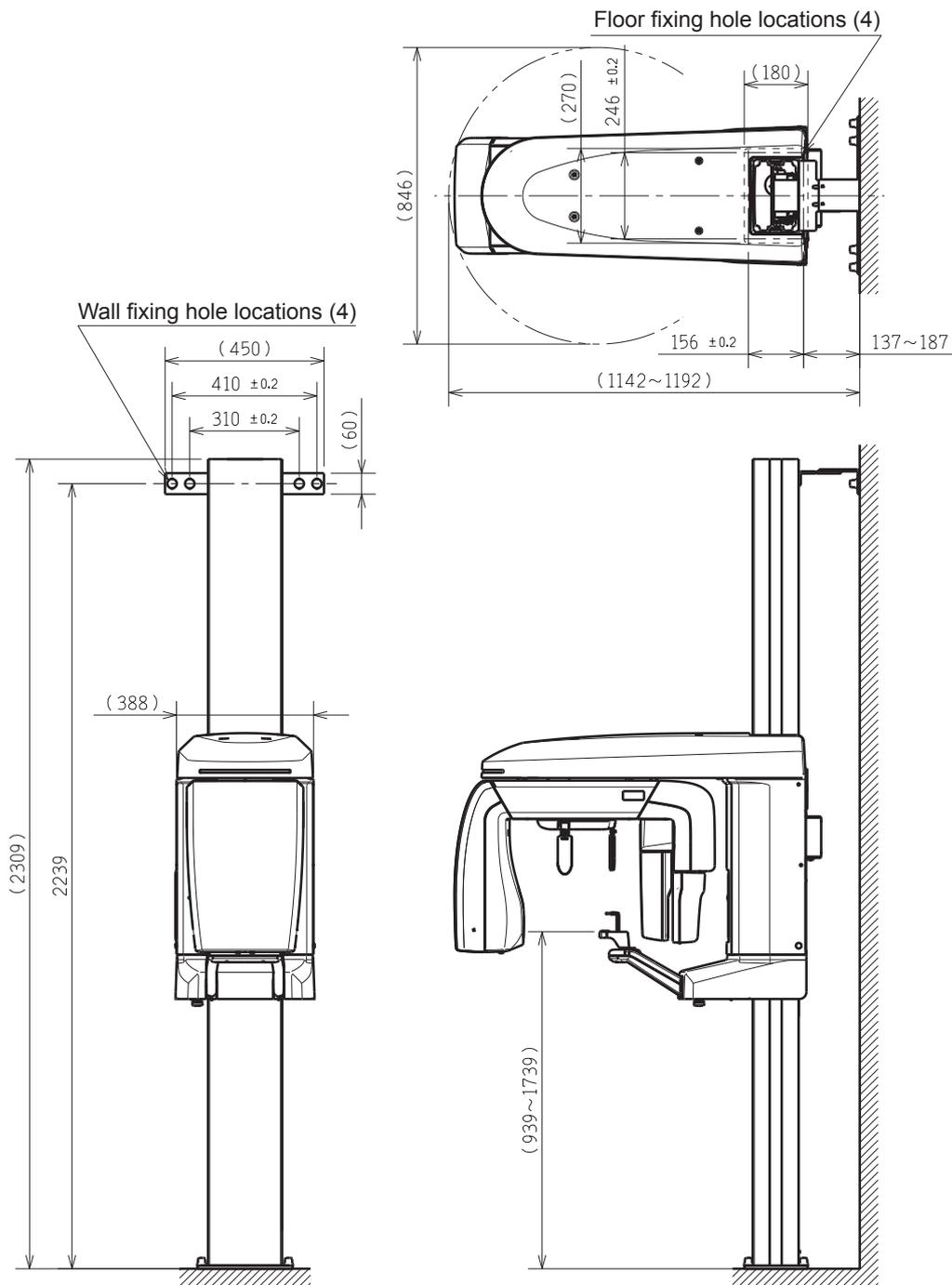


Fig. ③ -45: Fixing hole location measurements (Standing position wall-mount long type: 3D type)

b-1. Fixing hole location measurements (Standing position base-mount (with an optional base) : Panoramic type)

Unit: mm

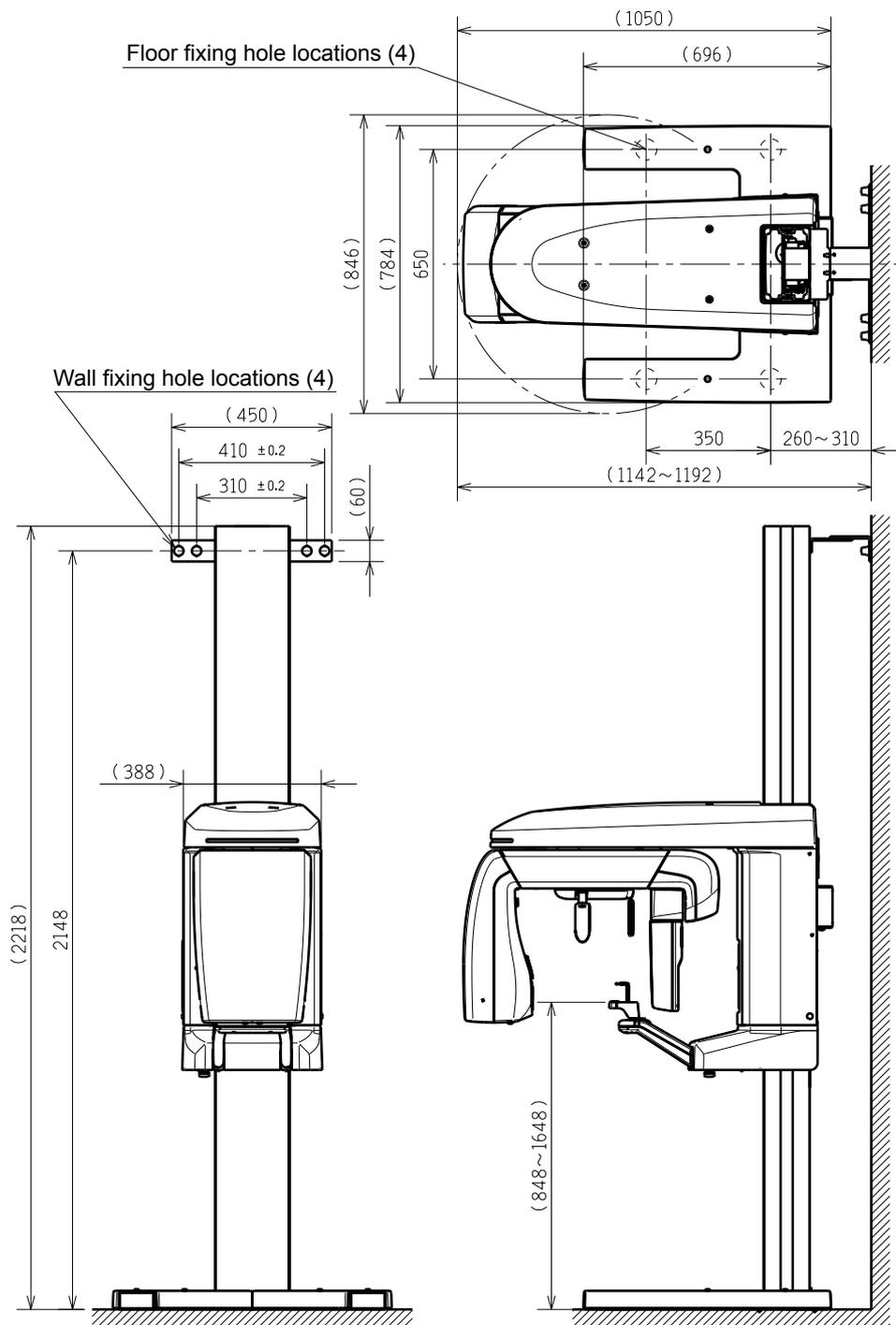


Fig. ③ -46: Fixing hole location measurements  
(Standing position base-mount (with an optional base) : Panoramic type)

b-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : Panoramic type)

Unit: mm

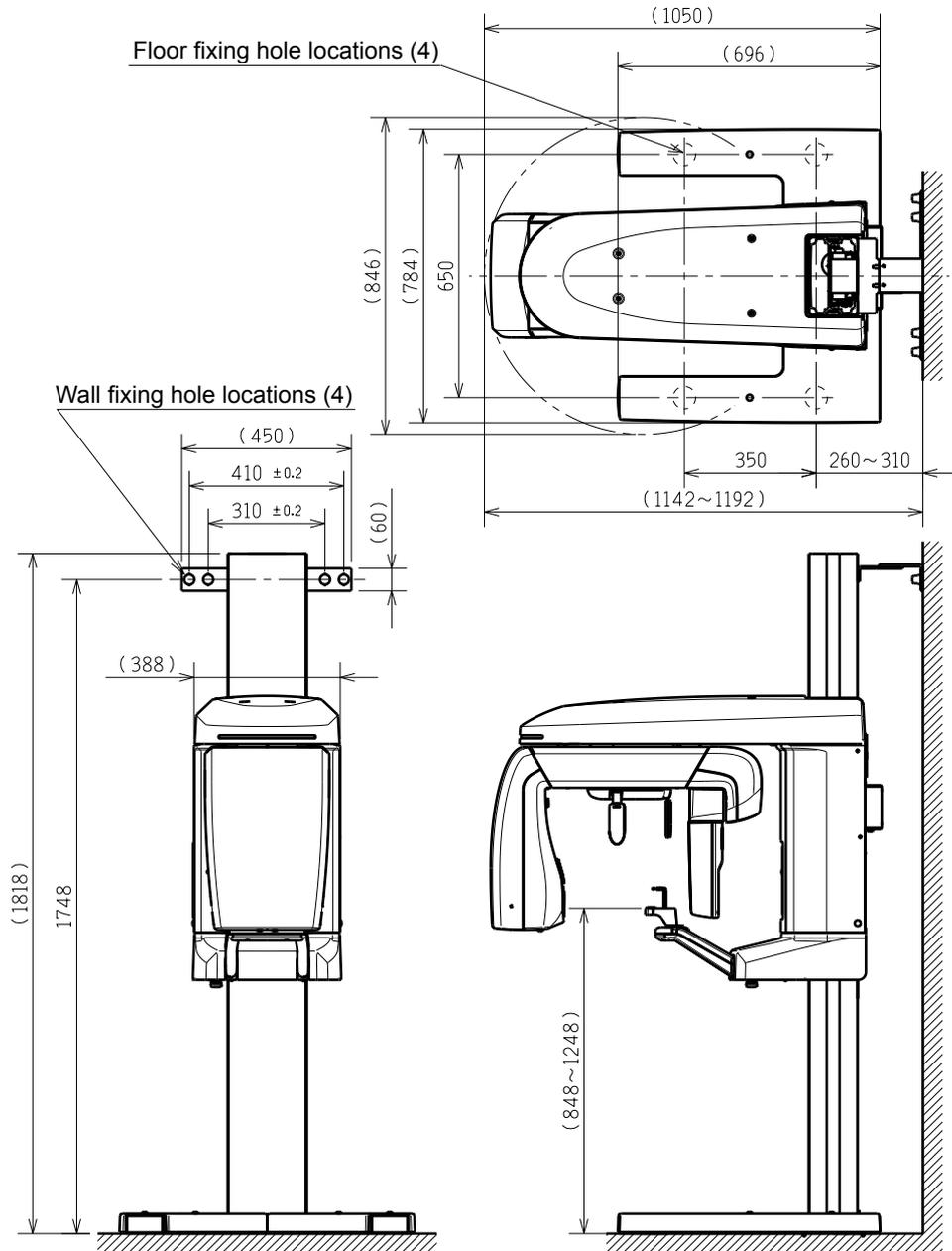


Fig. ③ -47: Fixing hole location measurements  
(Standing position base-mount short type (with an optional base) : Panoramic type)

b-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : Panoramic type)

Unit: mm

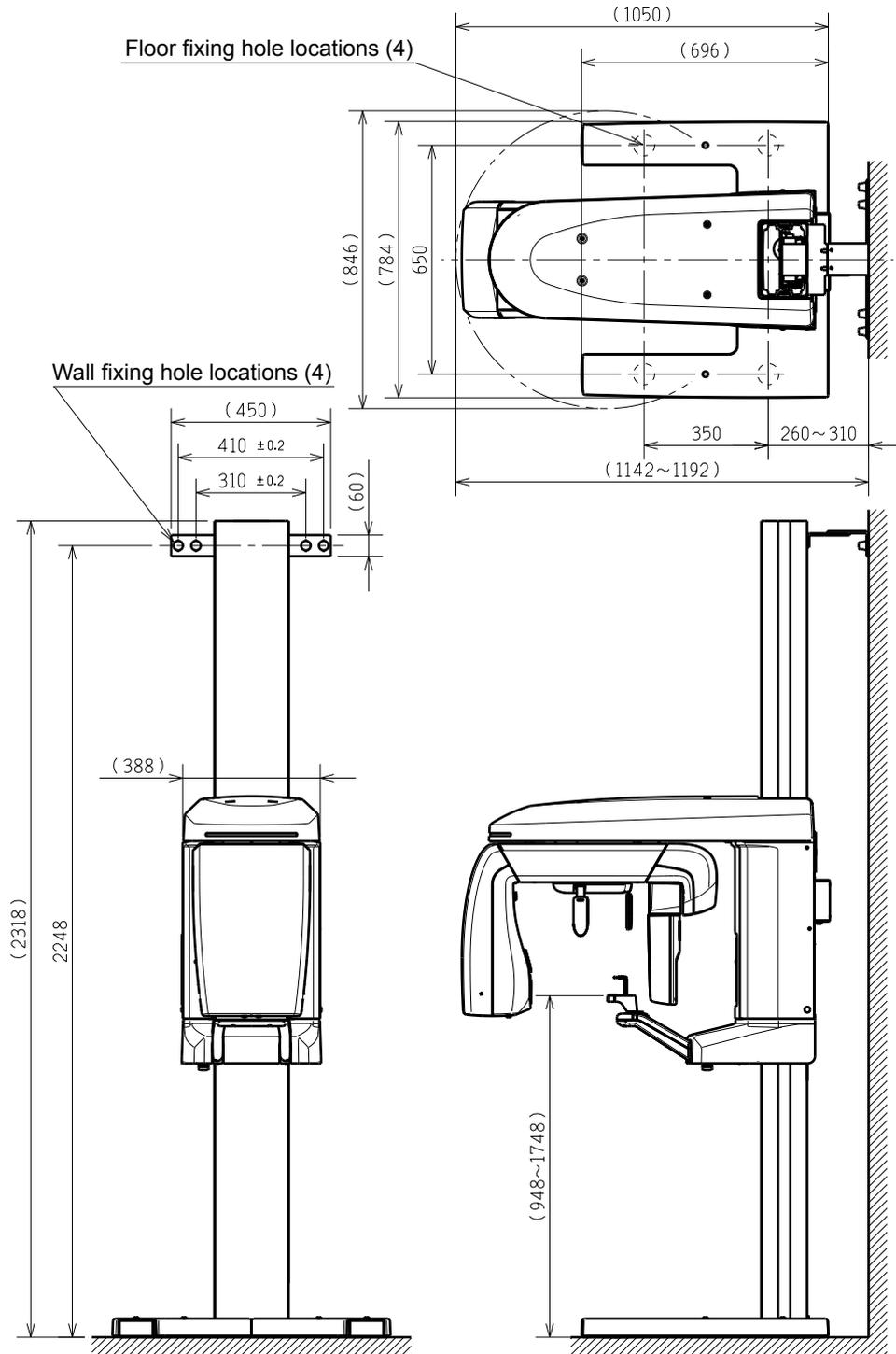


Fig. ③ -48: Fixing hole location measurements  
(Standing position base-mount long type (with an optional base) : Panoramic type)

b-4. Fixing hole location measurements(Standing position base-mount (with an optional base) : 3D type)

Unit: mm

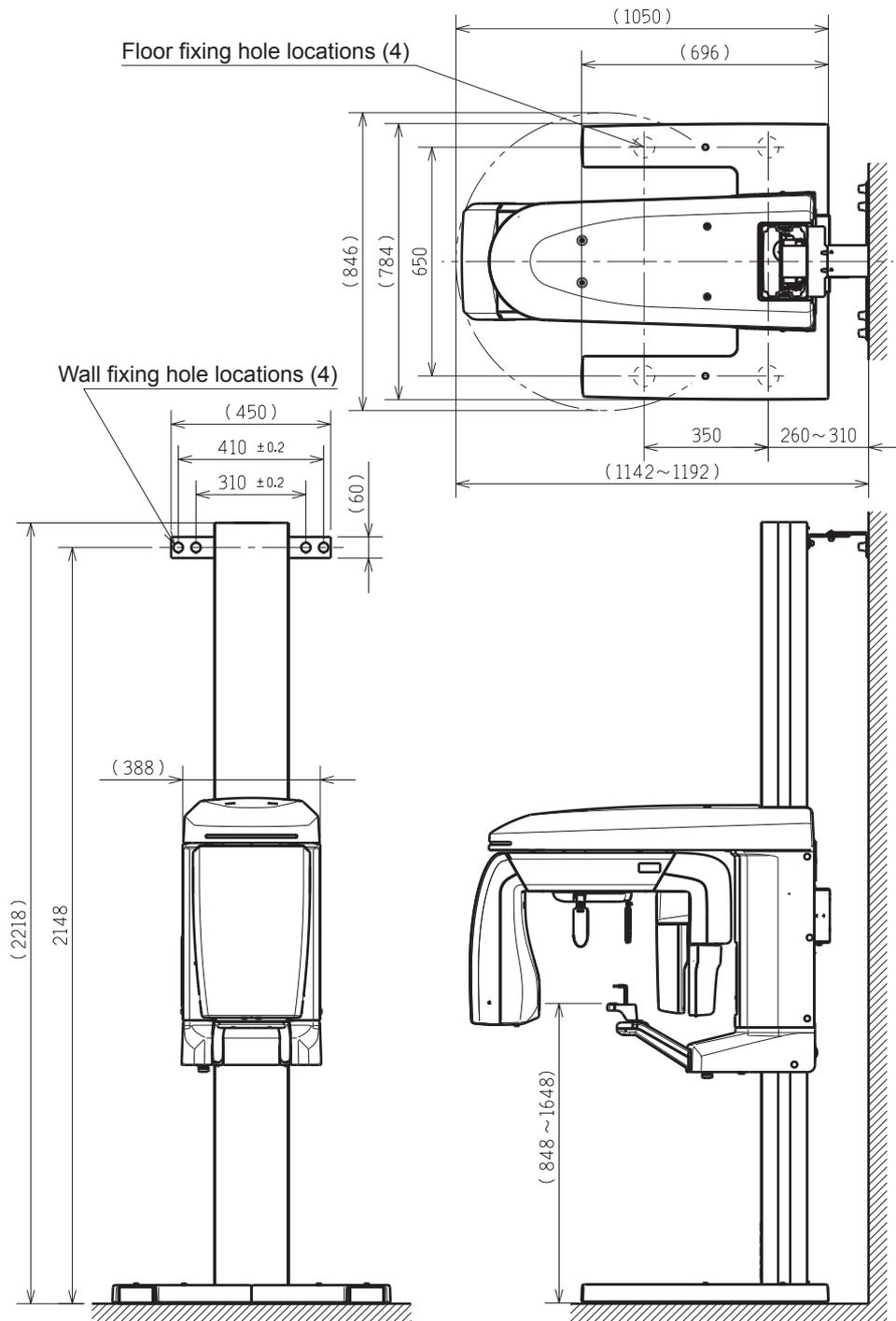


Fig. ③ -49: Fixing hole location measurements  
(Standing position base-mount (with an optional base) : 3D type)

b-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base) : 3D type)

Unit: mm

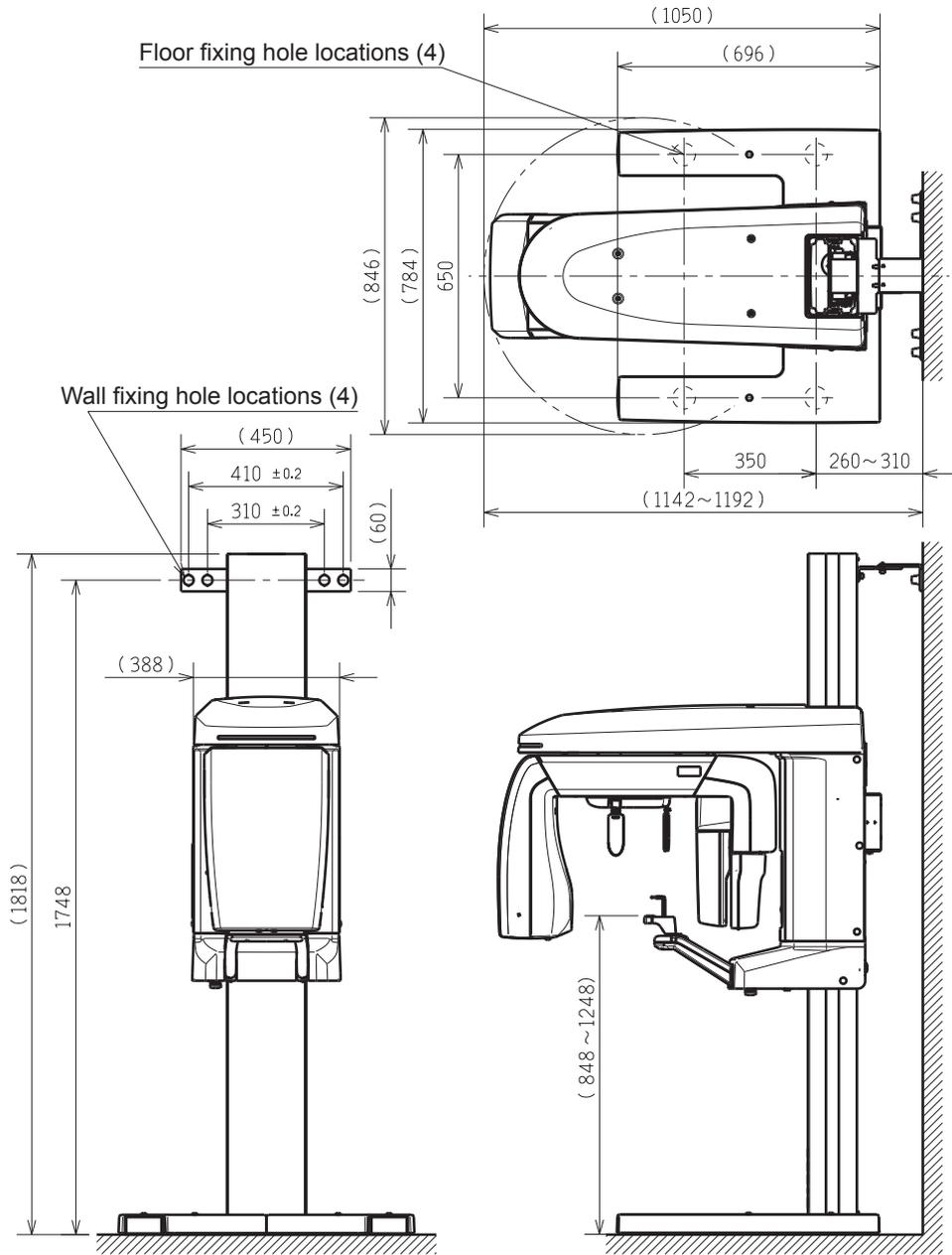


Fig. ㉓ -50: Fixing hole location measurements  
(Standing position base-mount short type (with an optional base) : 3D type)

b-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base) : 3D type)

Unit: mm

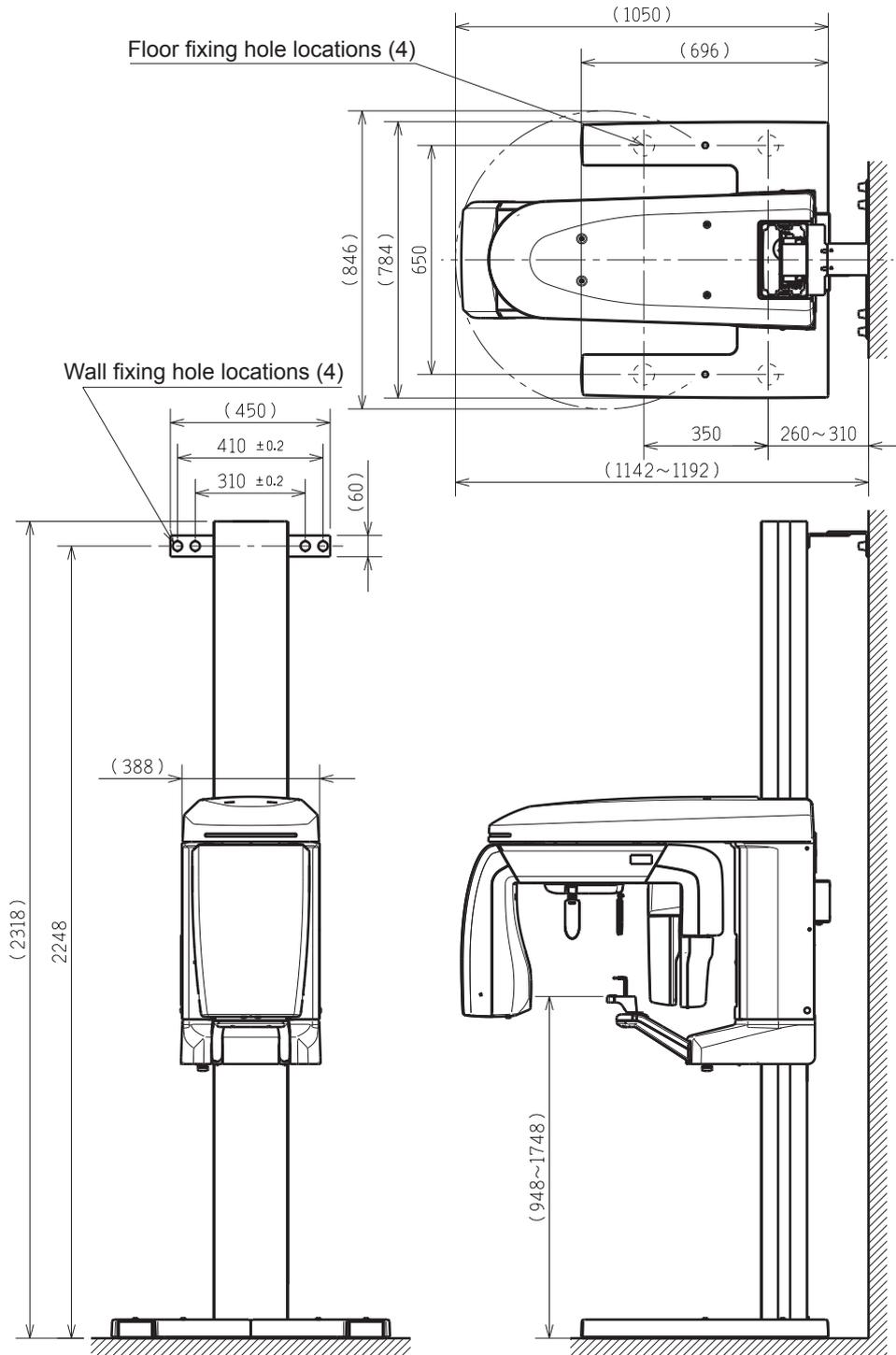


Fig. ③ -51: Fixing hole location measurements  
(Standing position base-mount long type (with an optional base) : 3D type)

b-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base): Panoramic type)

Unit: mm

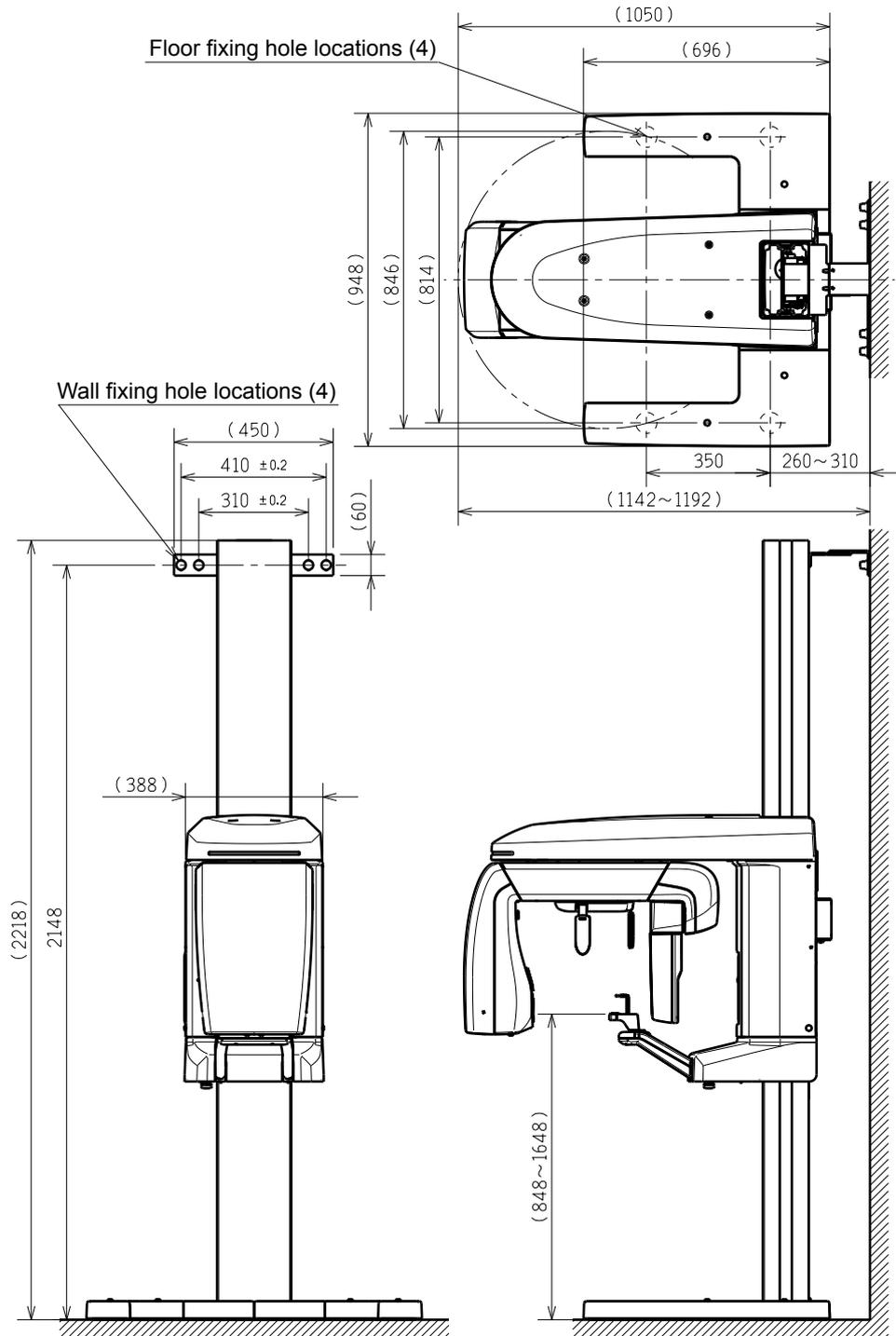


Fig. ③ -52: Fixing hole location measurements  
(Standing position base-mount (with an optional wide base): Panoramic type)

b-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Panoramic type)

Unit: mm

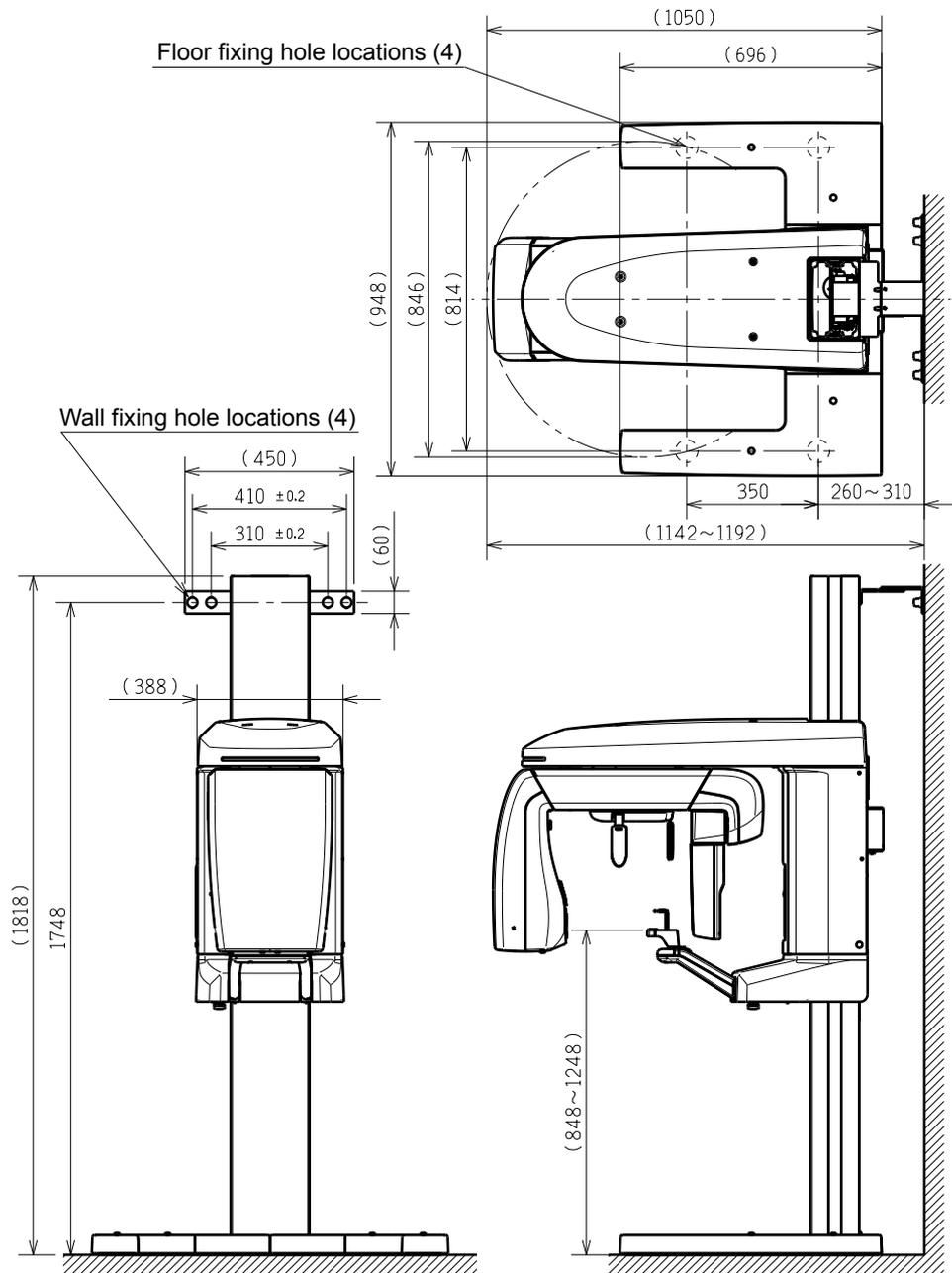


Fig. ③ -53: Fixing hole location measurements  
(Standing position base-mount short type (with an optional wide base): Panoramic type)

b-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Panoramic type)

Unit: mm

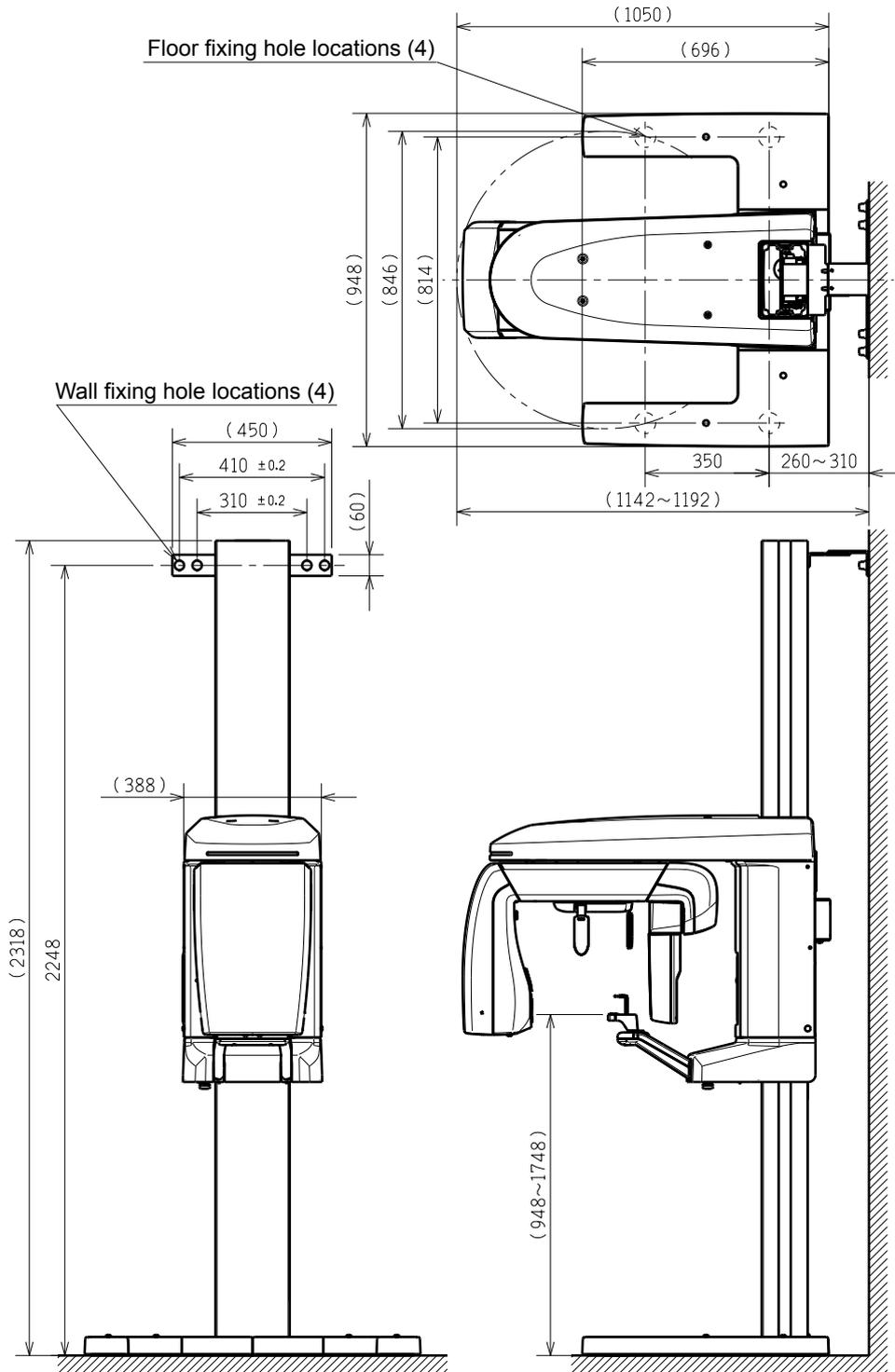


Fig. ③ -54: Fixing hole location measurements  
(Standing position base-mount long type (with an optional wide base): Panoramic type)

b-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base): 3D type)

Unit: mm

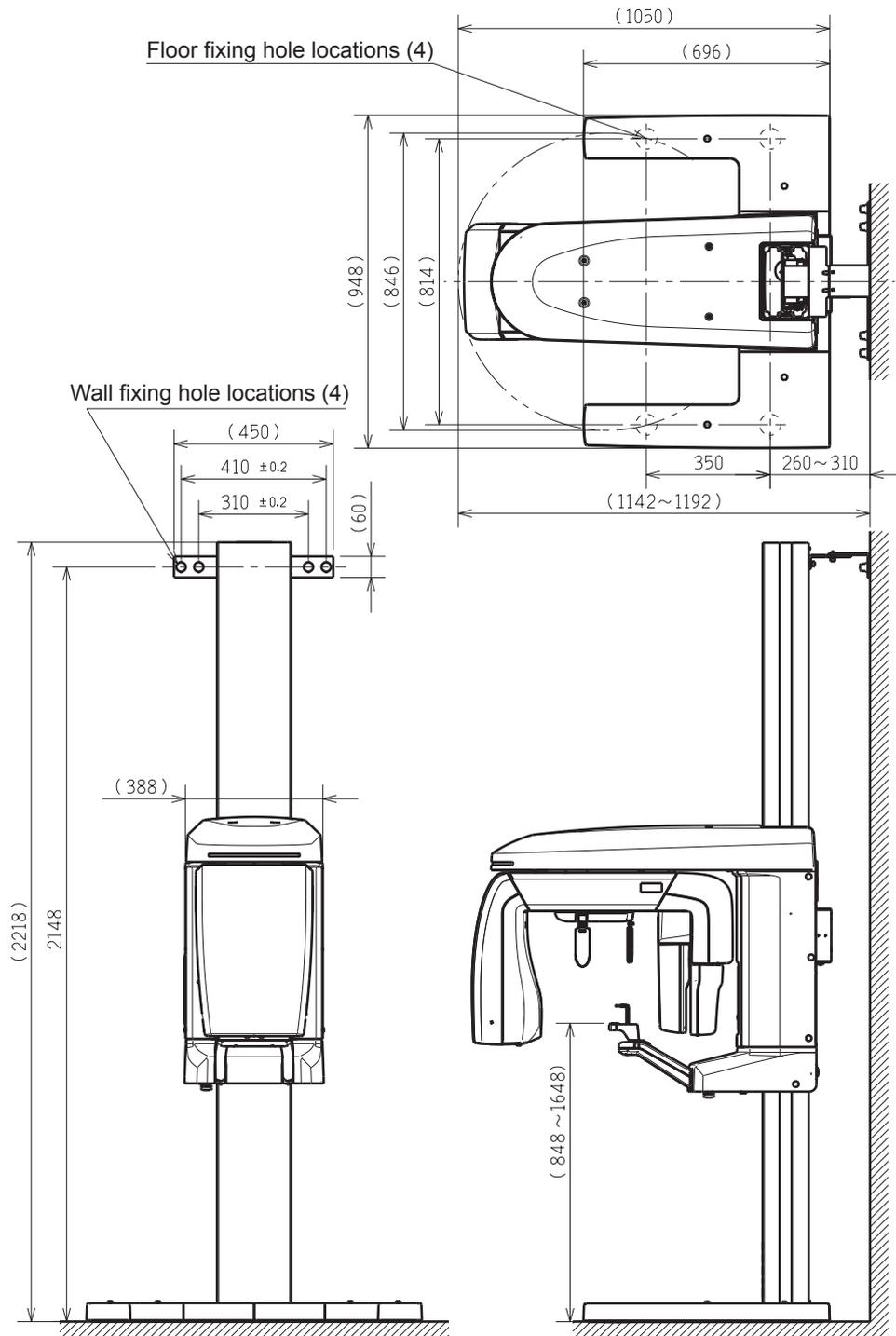


Fig. ③ -55: Fixing hole location measurements  
(Standing position base-mount (with an optional wide base): 3D type)

b-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D type)

Unit: mm

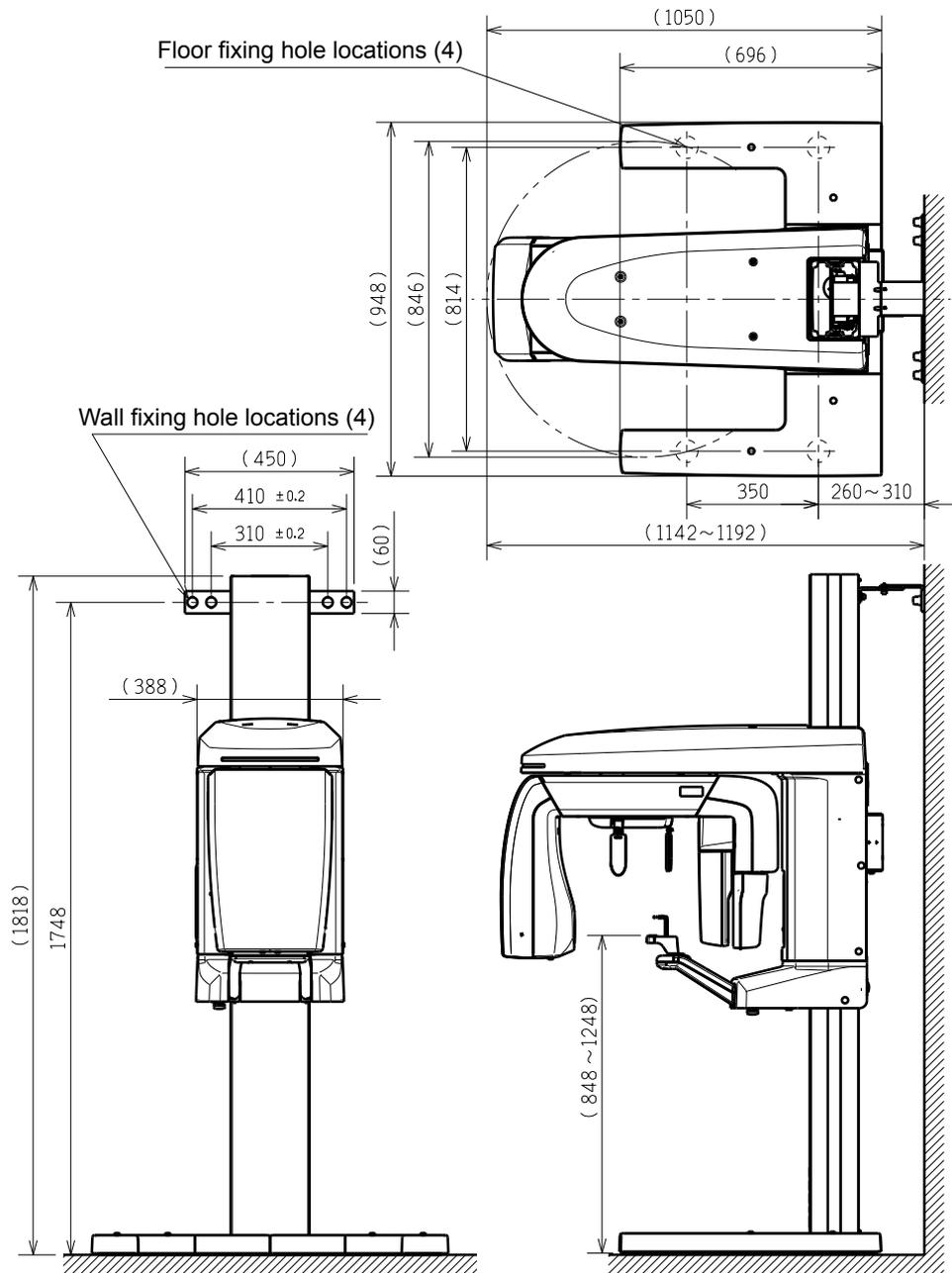


Fig. ③ -56: Fixing hole location measurements  
(Standing position base-mount short type (with an optional wide base): 3D type)

b-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D type)

Unit: mm

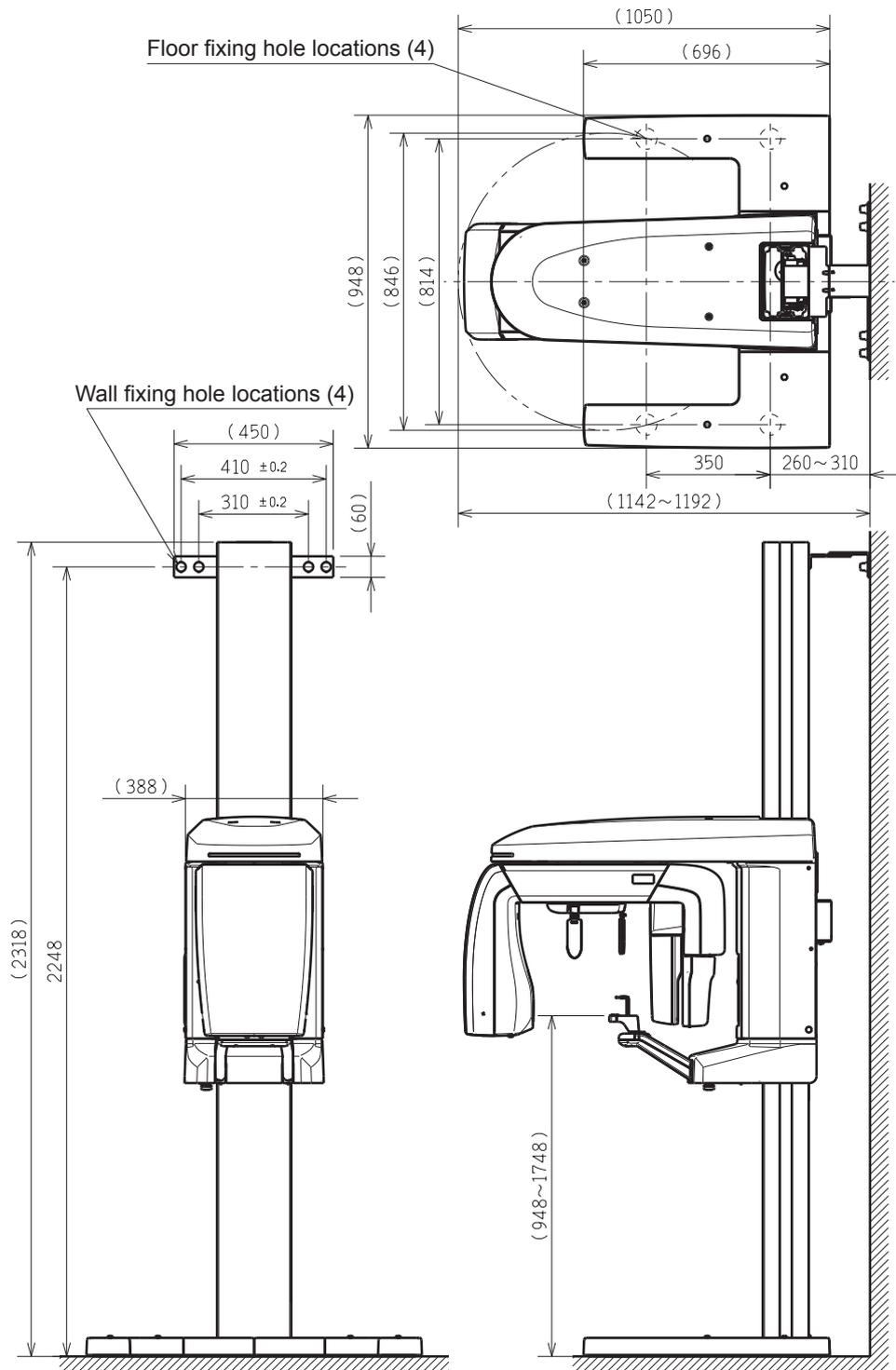


Fig. ③ -57: Fixing hole location measurements  
(Standing position base-mount long type (with an optional wide base): 3D type)

c-1. Fixing hole location measurements (Standing position wall-mount: Cephalometric type)

Unit: mm

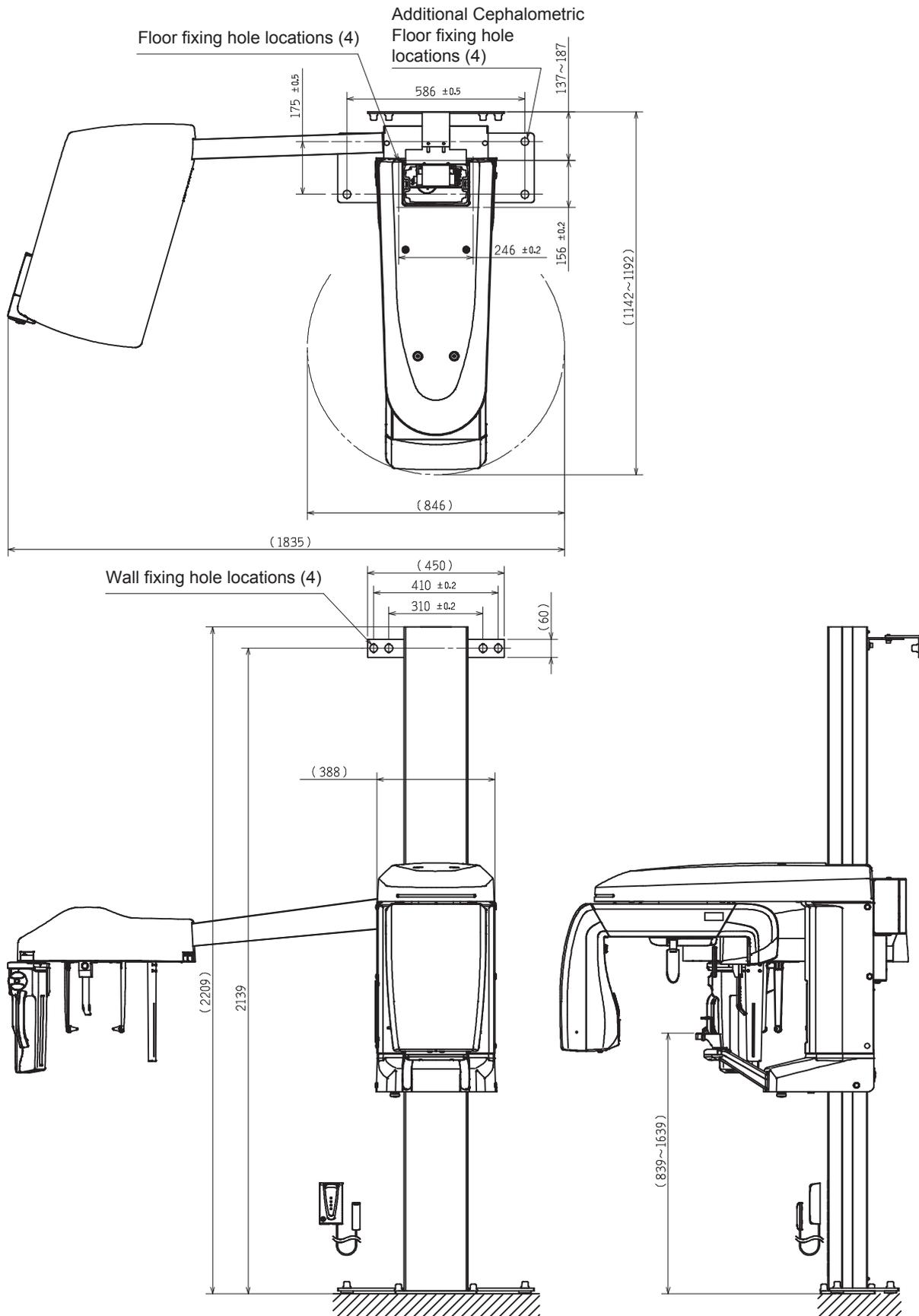


Fig. ③ -58: Fixing hole location measurements (Standing position wall-mount: Cephalometric type)

c-2. Fixing hole location measurements (Standing position wall-mount short type: Cephalometric type)

Unit: mm

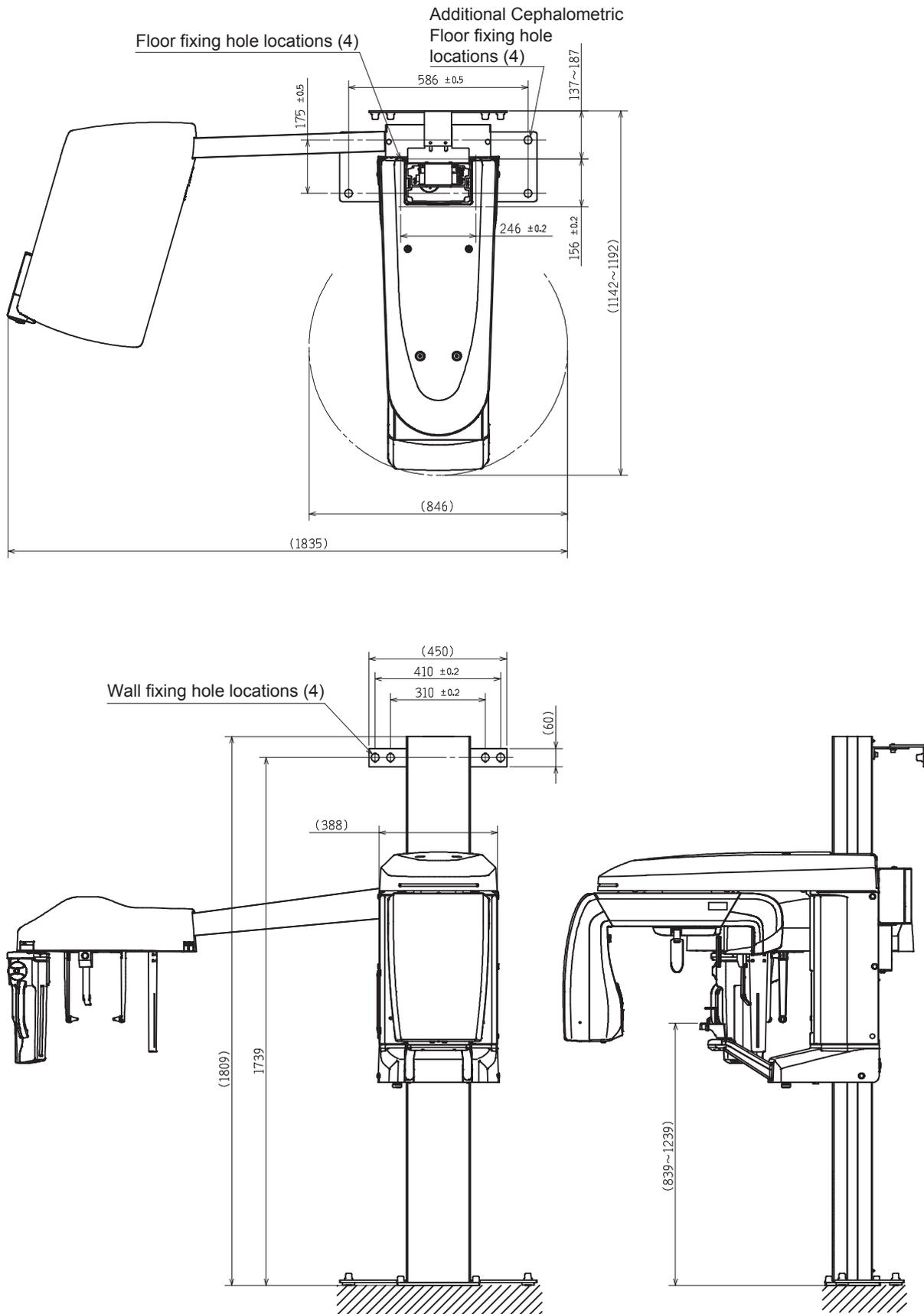


Fig. ③ -59: Fixing hole location measurements  
(Standing position wall-mount short type: Cephalometric type)

c-3. Fixing hole location measurements (Standing position wall-mount long type: Cephalometric type)

Unit: mm

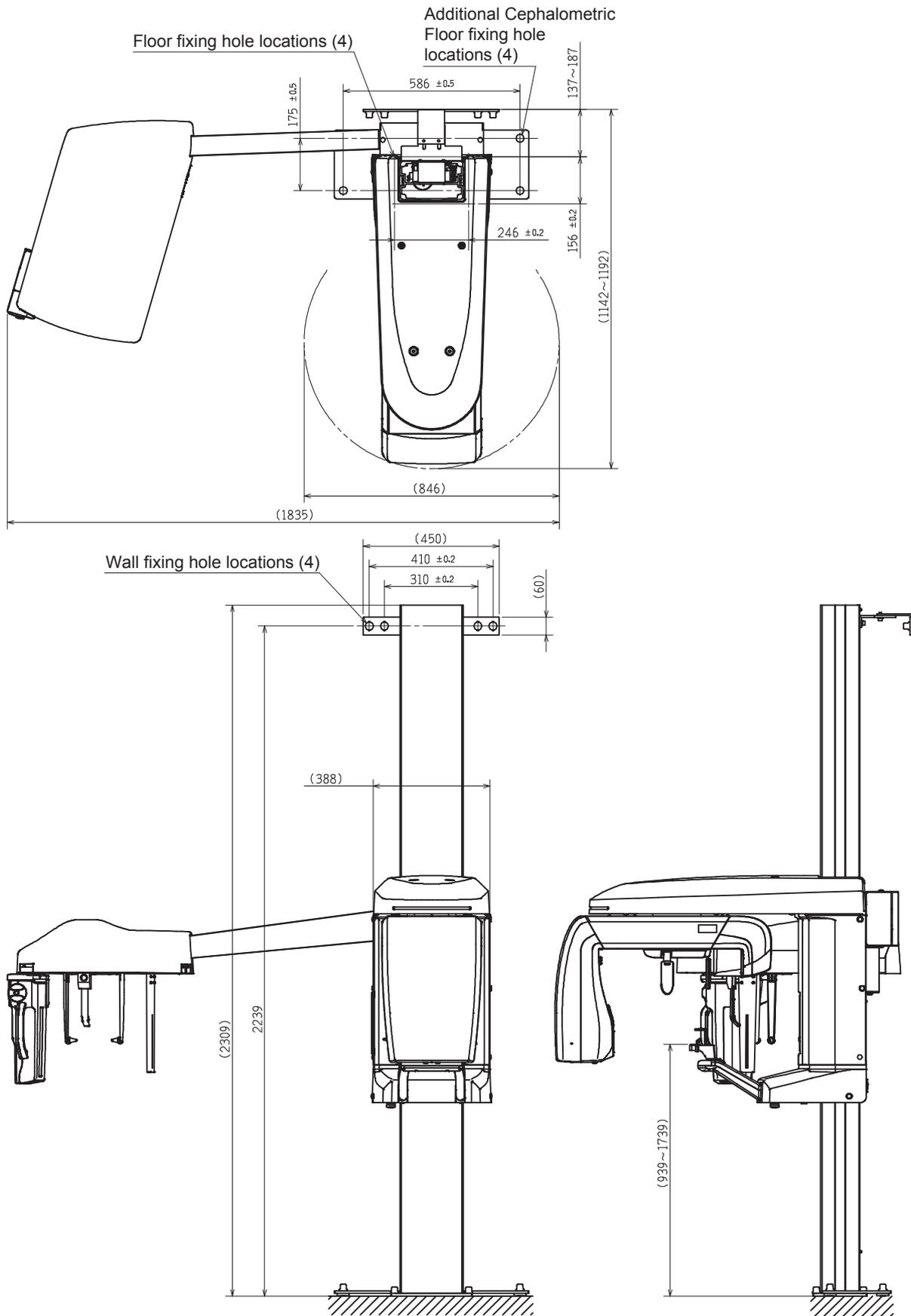


Fig. ③ -60: Fixing hole location measurements  
(Standing position wall-mount long type: Cephalometric type)

c-4. Fixing hole location measurements(Standing position wall-mount: 3D Cephalometric type)

Unit: mm

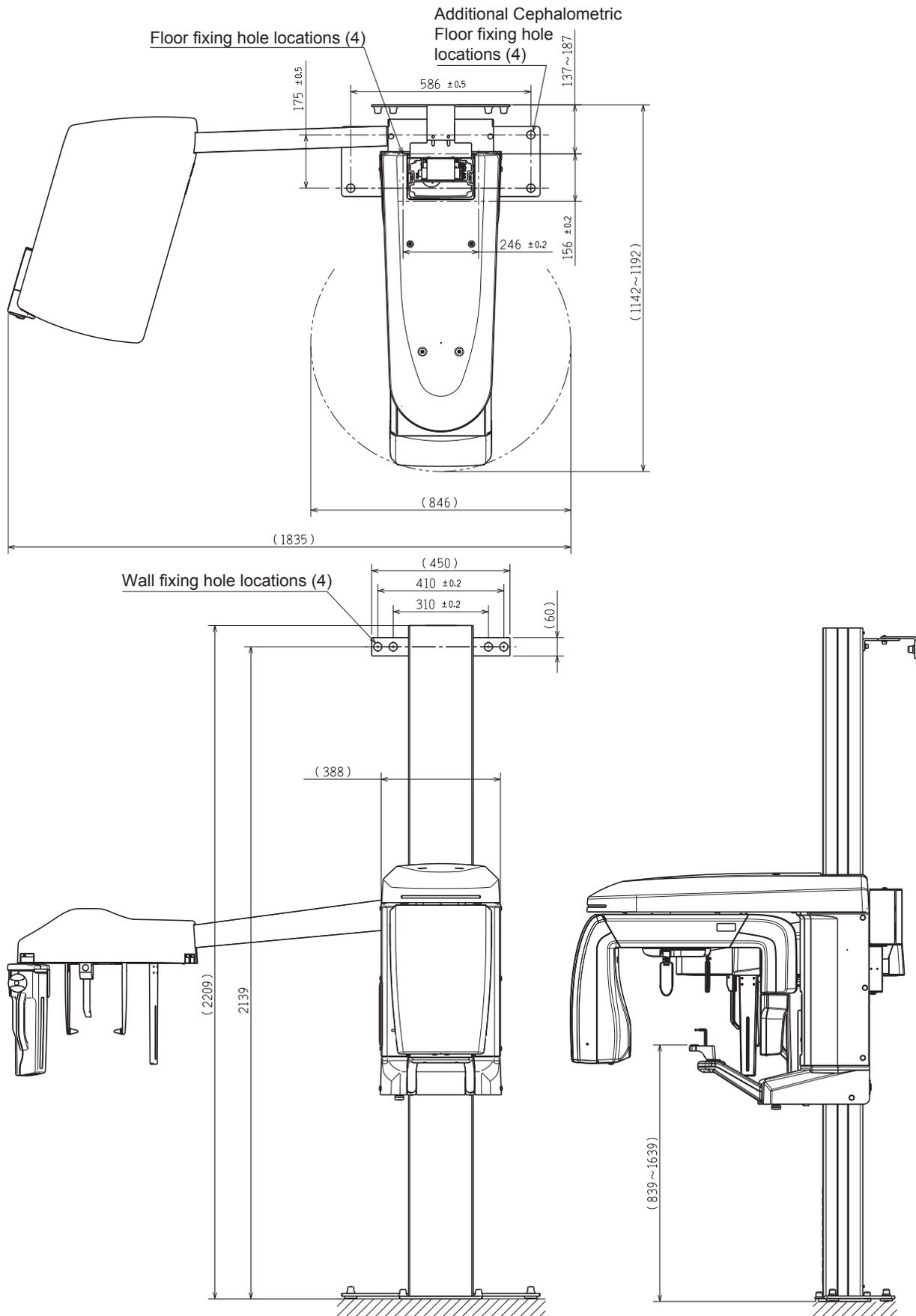


Fig. ③ -61: Fixing hole location measurements (Standing position wall-mount: 3D Cephalometric type)

c-5. Fixing hole location measurements(Standing position wall-mount short type: 3D Cephalometric type)

Unit: mm

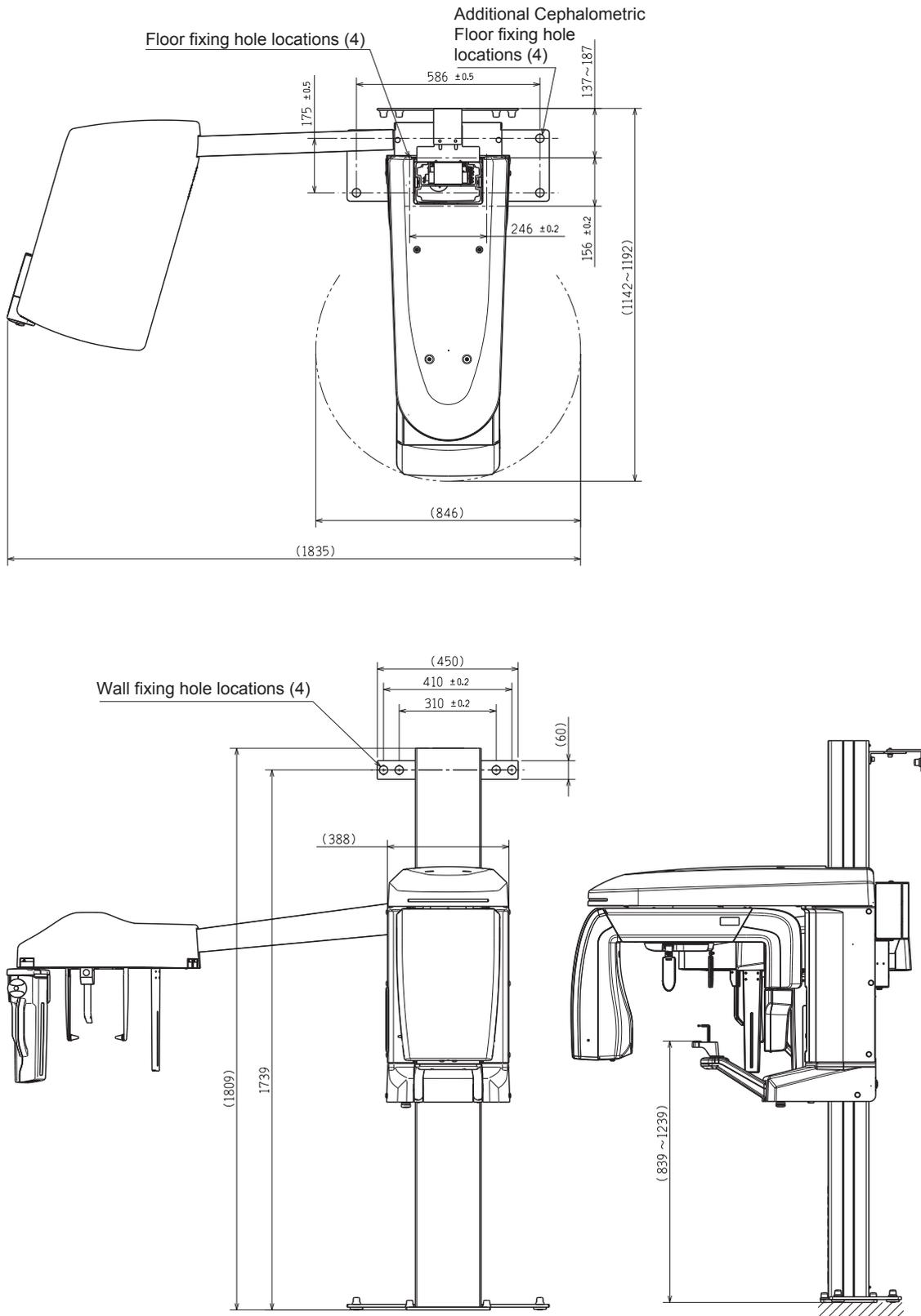


Fig. ③ -62: Fixing hole location measurements  
(Standing position wall-mount short type: 3D Cephalometric type)

c-6. Fixing hole location measurements(Standing position wall-mount long type: 3D Cephalometric type)

Unit: mm

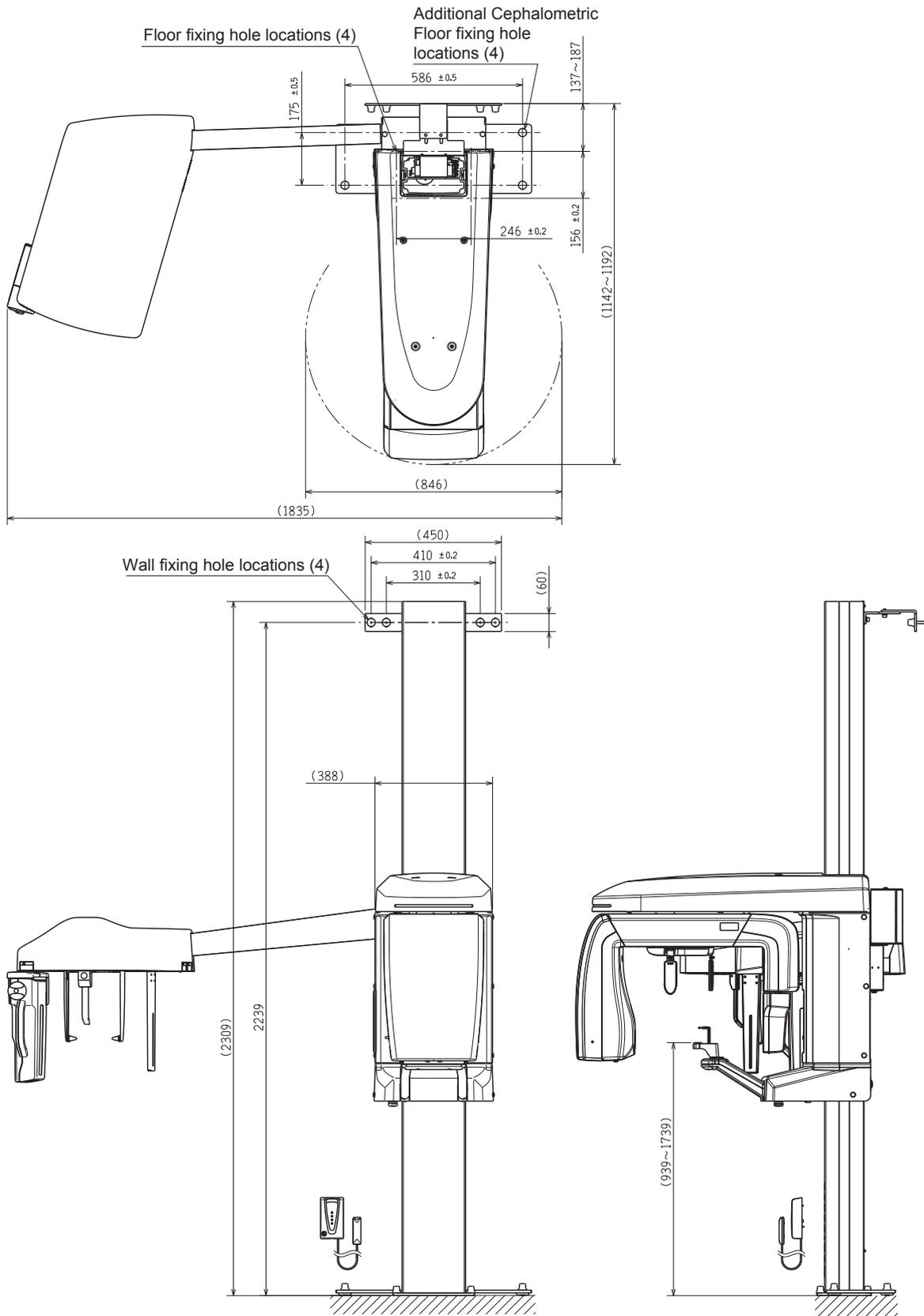


Fig. ③ -63: Fixing hole location measurements  
(Standing position wall-mount long type: 3D Cephalometric type)

d-1. Fixing hole location measurements (Standing position base-mount (with an optional base):  
Cephalometric type)

Unit: mm

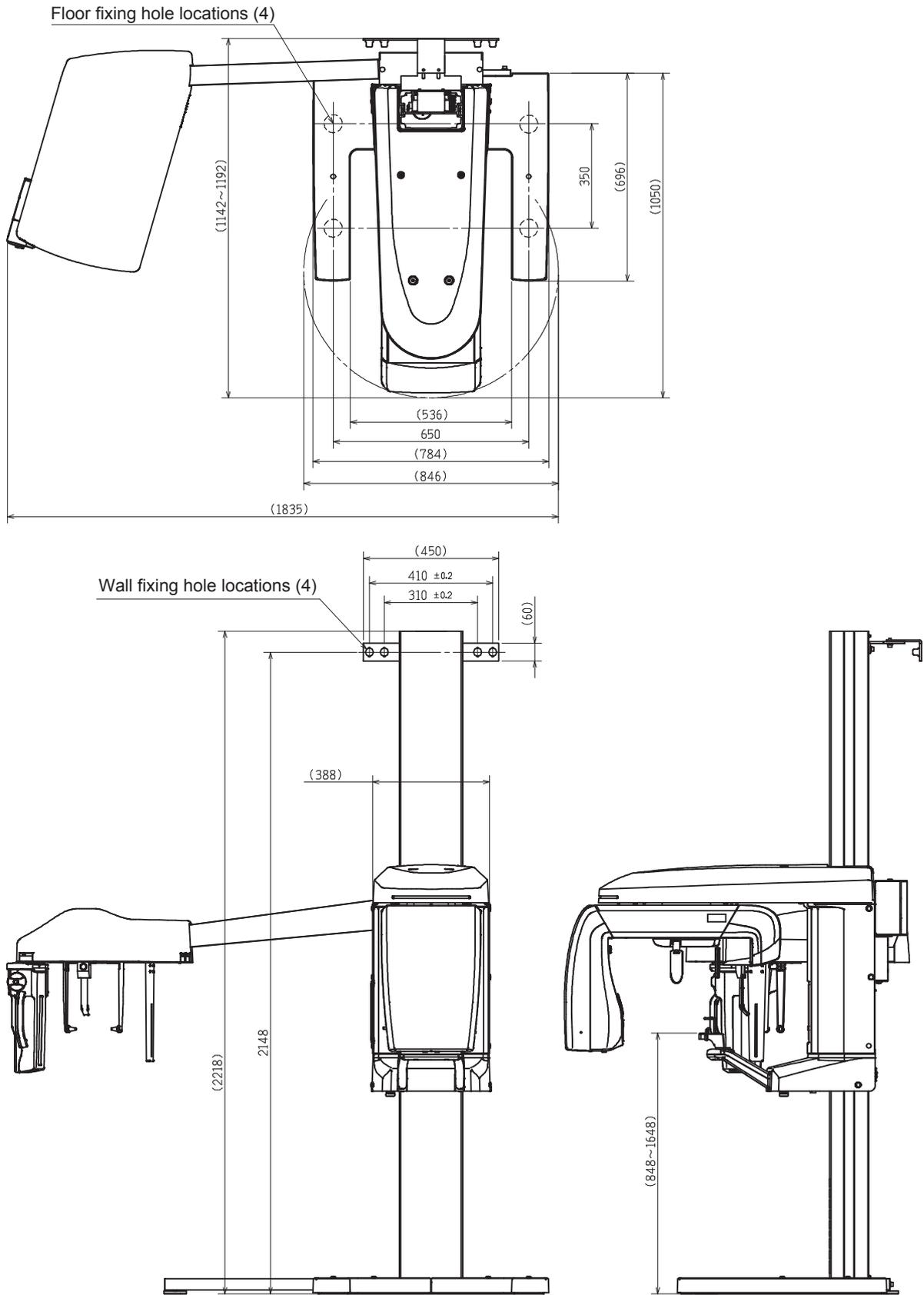


Fig. ③ -64: Fixing hole location measurements  
(Standing position base-mount (with an optional base): Cephalometric type)

d-2. Fixing hole location measurements (Standing position base-mount short type (with an optional base): Cephalometric type)

Unit: mm

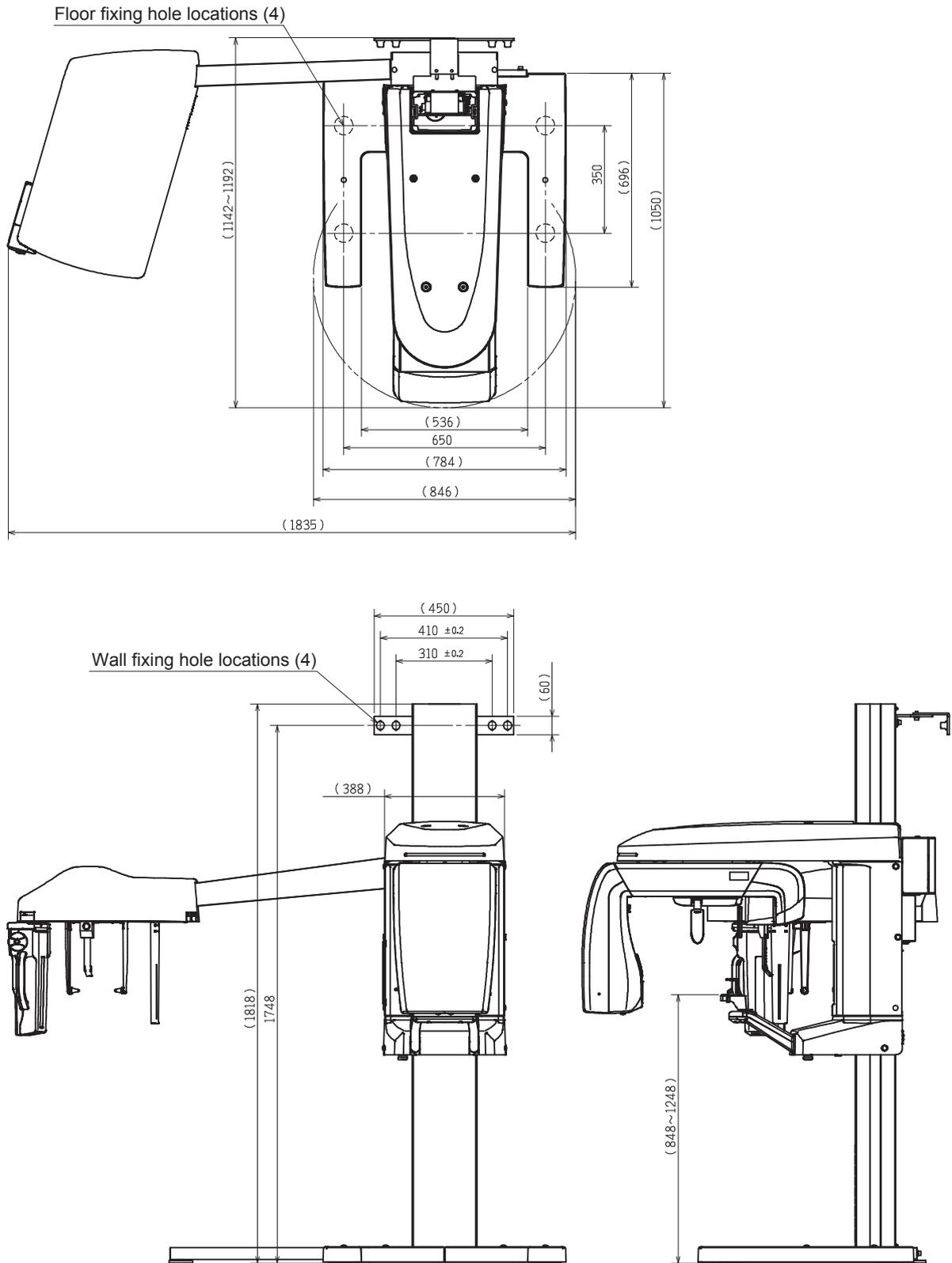


Fig. ③ -65: Fixing hole location measurements  
(Standing position base-mount short type (with an optional base): Cephalometric type)

d-3. Fixing hole location measurements (Standing position base-mount long type (with an optional base): Cephalometric type)

Unit: mm

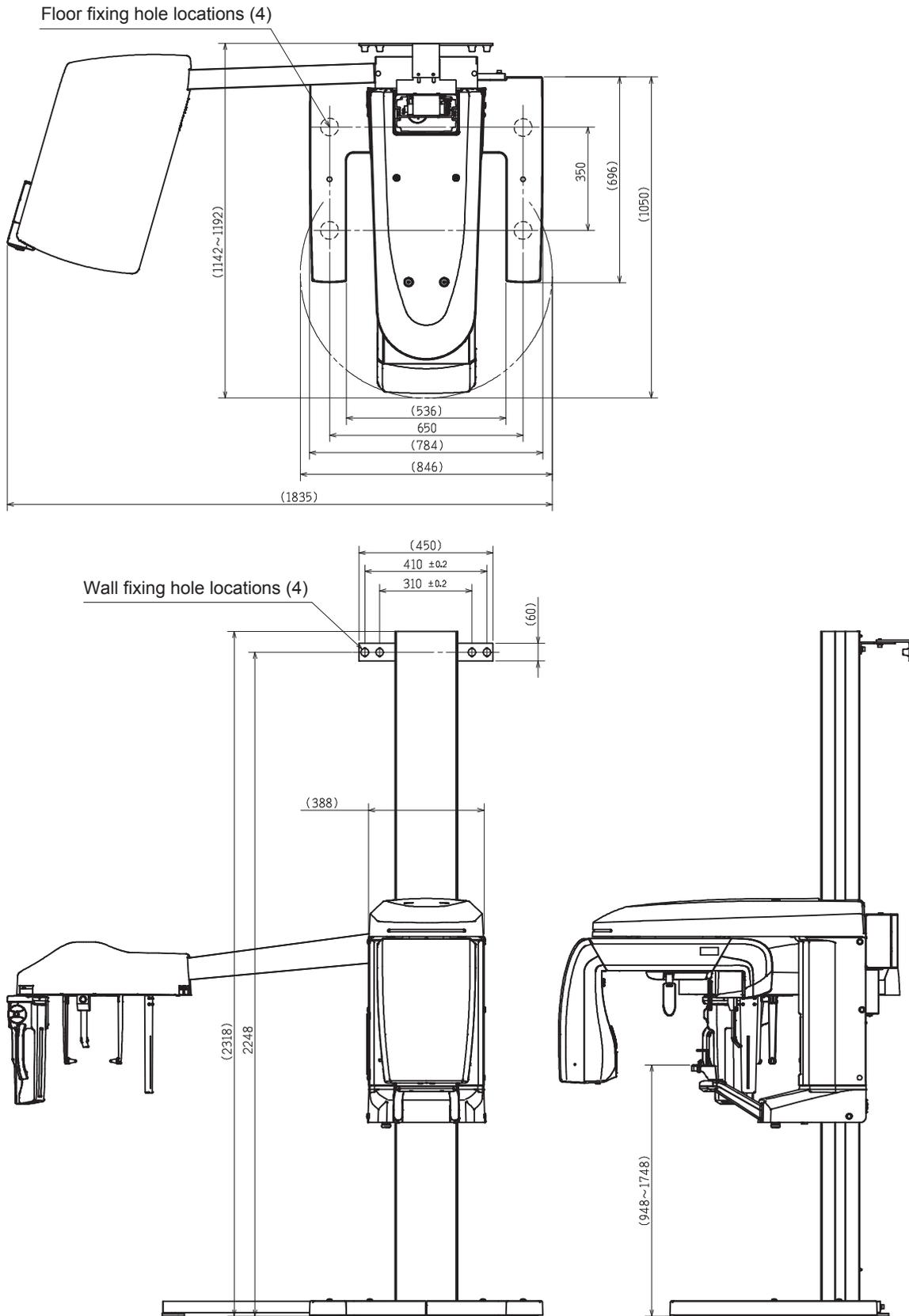


Fig. ③ -66: Fixing hole location measurements  
(Standing position base-mount long type (with an optional base): Cephalometric type)

d-4. Fixing hole location measurements (Standing position base-mount (with an optional base):  
3D Cephalometric type)

Unit: mm

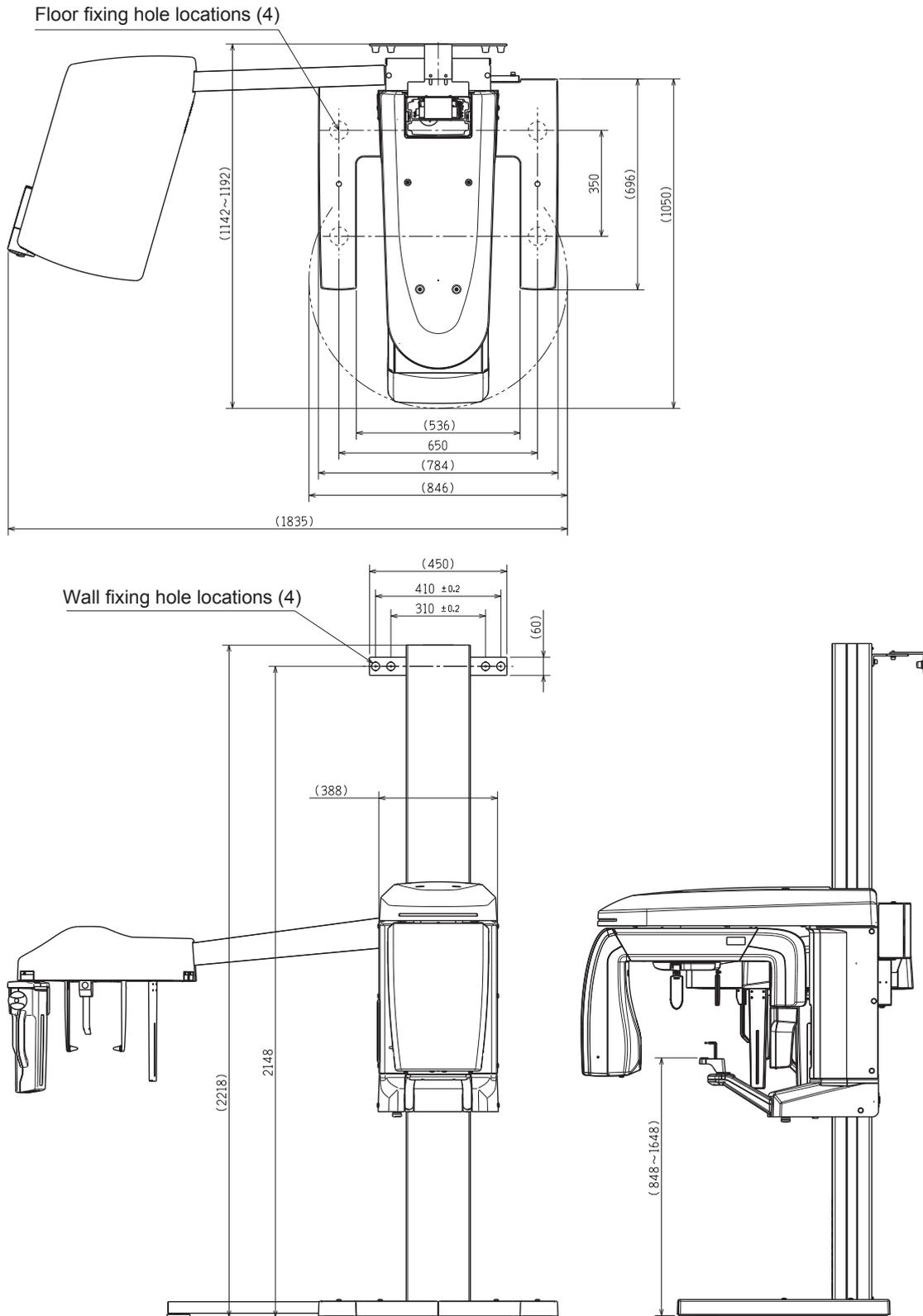


Fig. ③ -67: Fixing hole location measurements  
(Standing position base-mount (with an optional base): 3D Cephalometric type)

d-5. Fixing hole location measurements (Standing position base-mount short type (with an optional base):  
3D Cephalometric type)

Unit: mm

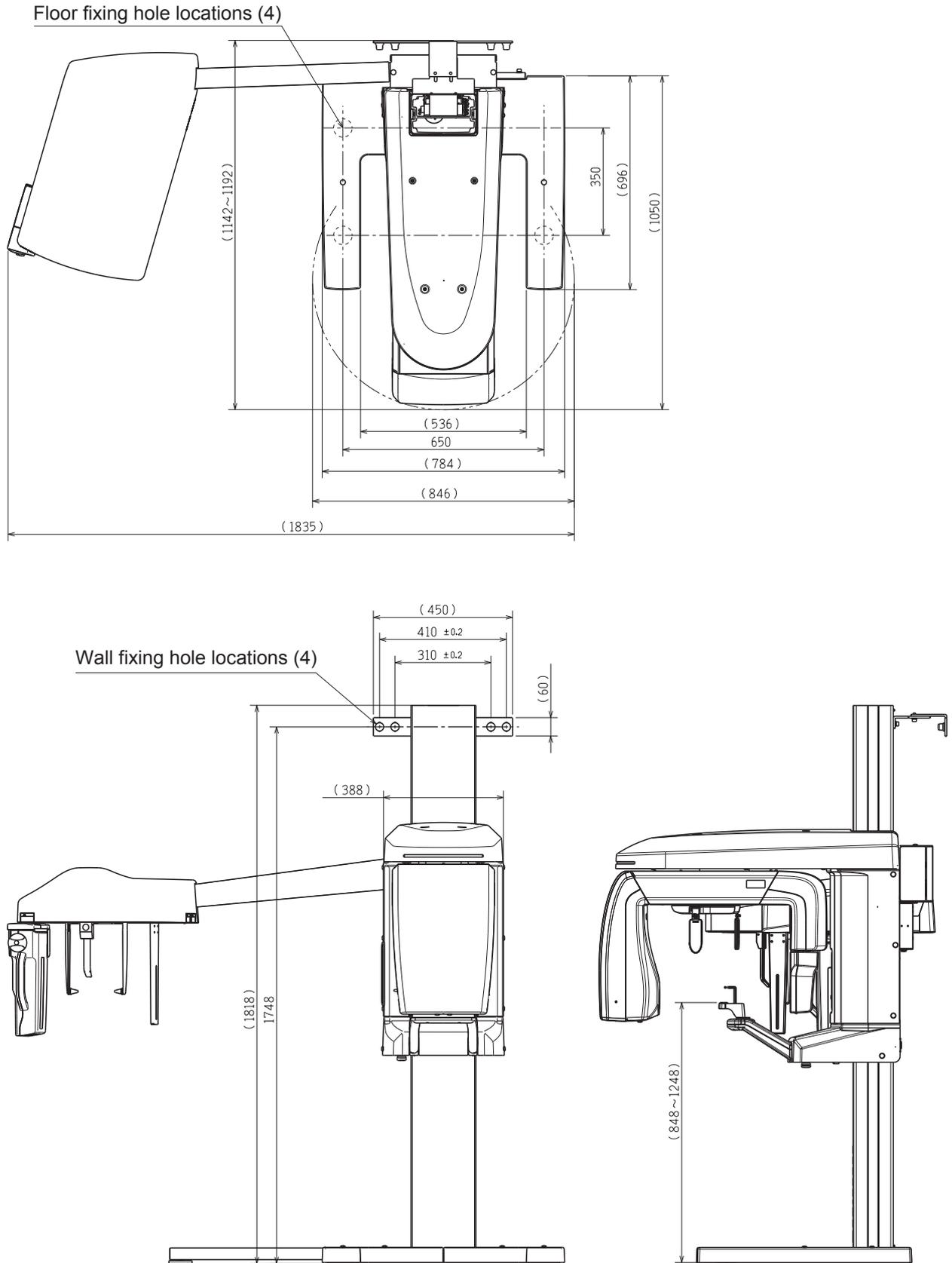


Fig. ③ -68: Fixing hole location measurements  
(Standing position base-mount short type (with an optional base): 3D Cephalometric type)

d-6. Fixing hole location measurements (Standing position base-mount long type (with an optional base): 3D Cephalometric type)

Unit: mm

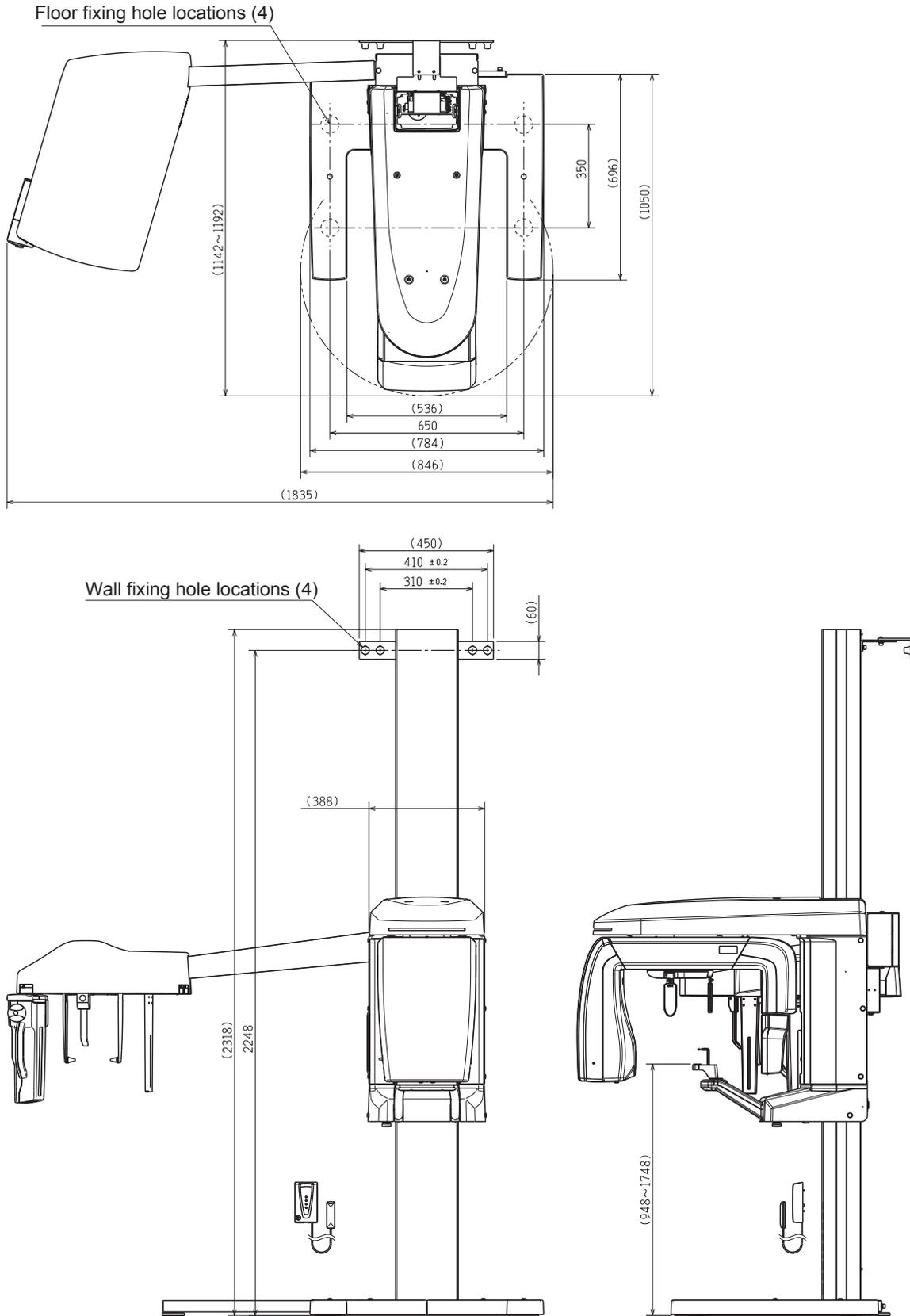


Fig. ③ -69: Fixing hole location measurements  
(Standing position base-mount long type (with an optional base): 3D Cephalometric type)

d-7. Fixing hole location measurements (Standing position base-mount (with an optional wide base):  
Cephalometric type)

Unit: mm

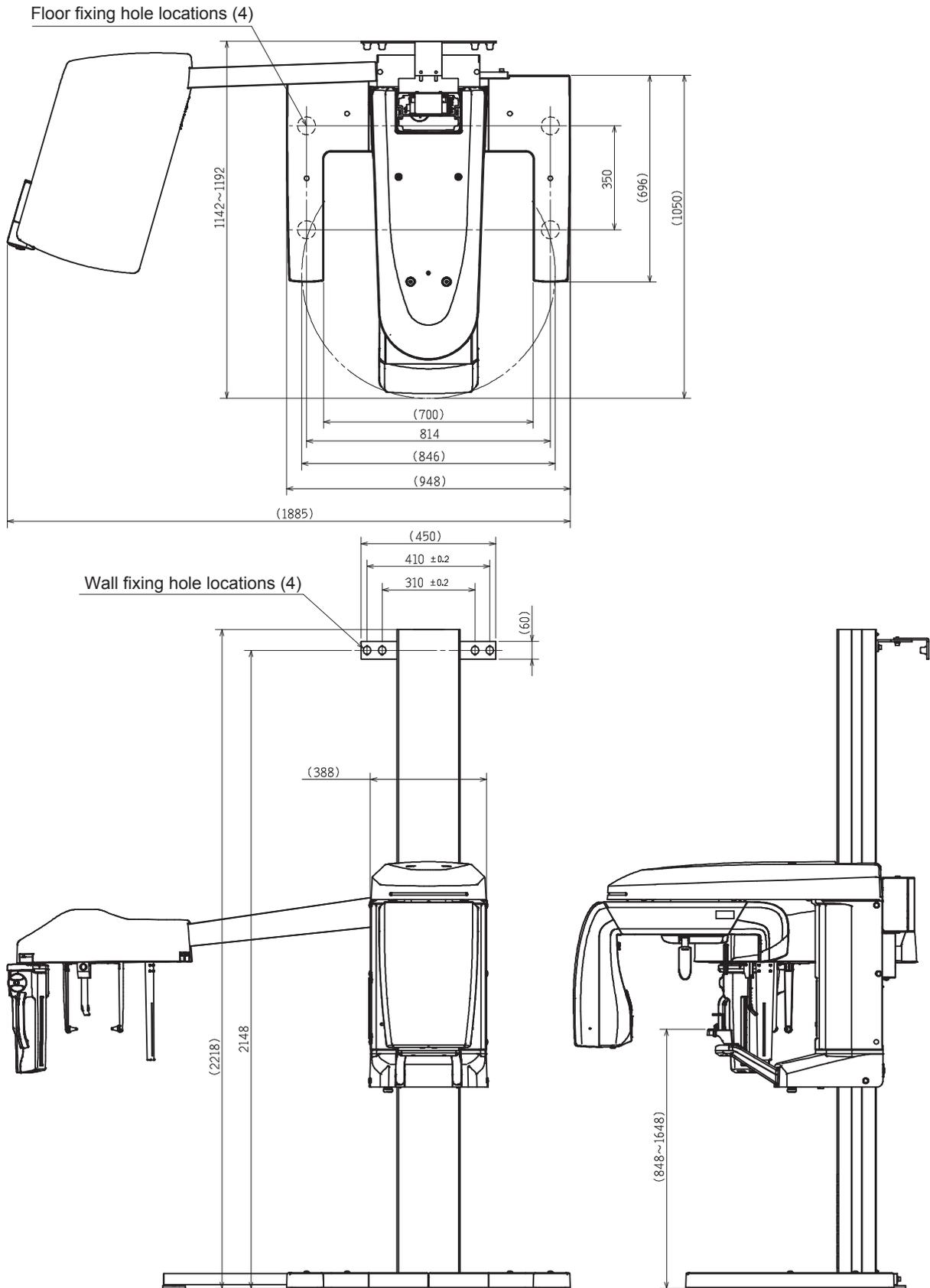


Fig. ③ -70: Fixing hole location measurements  
(Standing position base-mount (with an optional wide base): Cephalometric type)

d-8. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): Cephalometric type)

Unit: mm

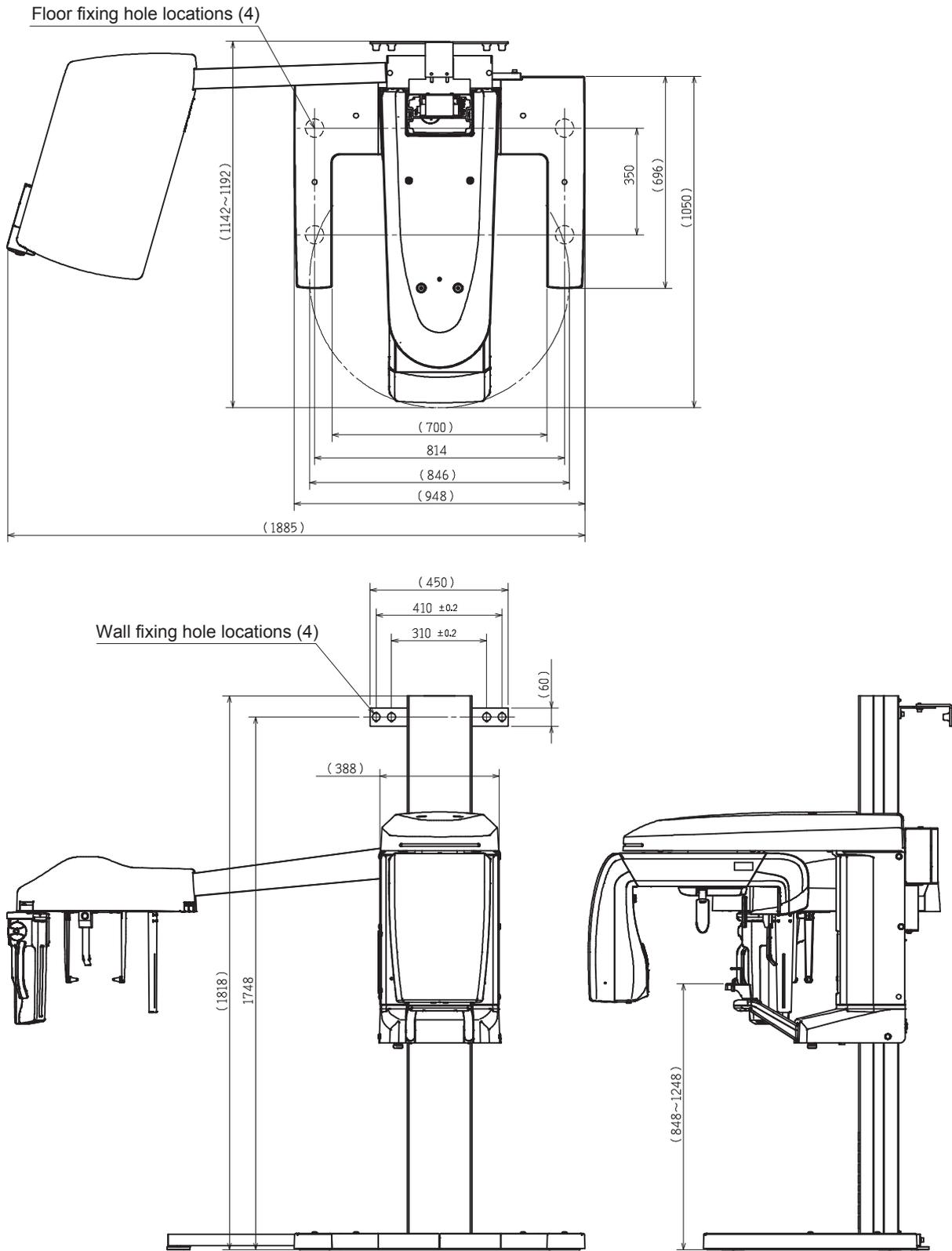


Fig. ③ -71: Fixing hole location measurements  
(Standing position base-mount short type (with an optional wide base): Cephalometric type)

d-9. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): Cephalometric type)

Unit: mm

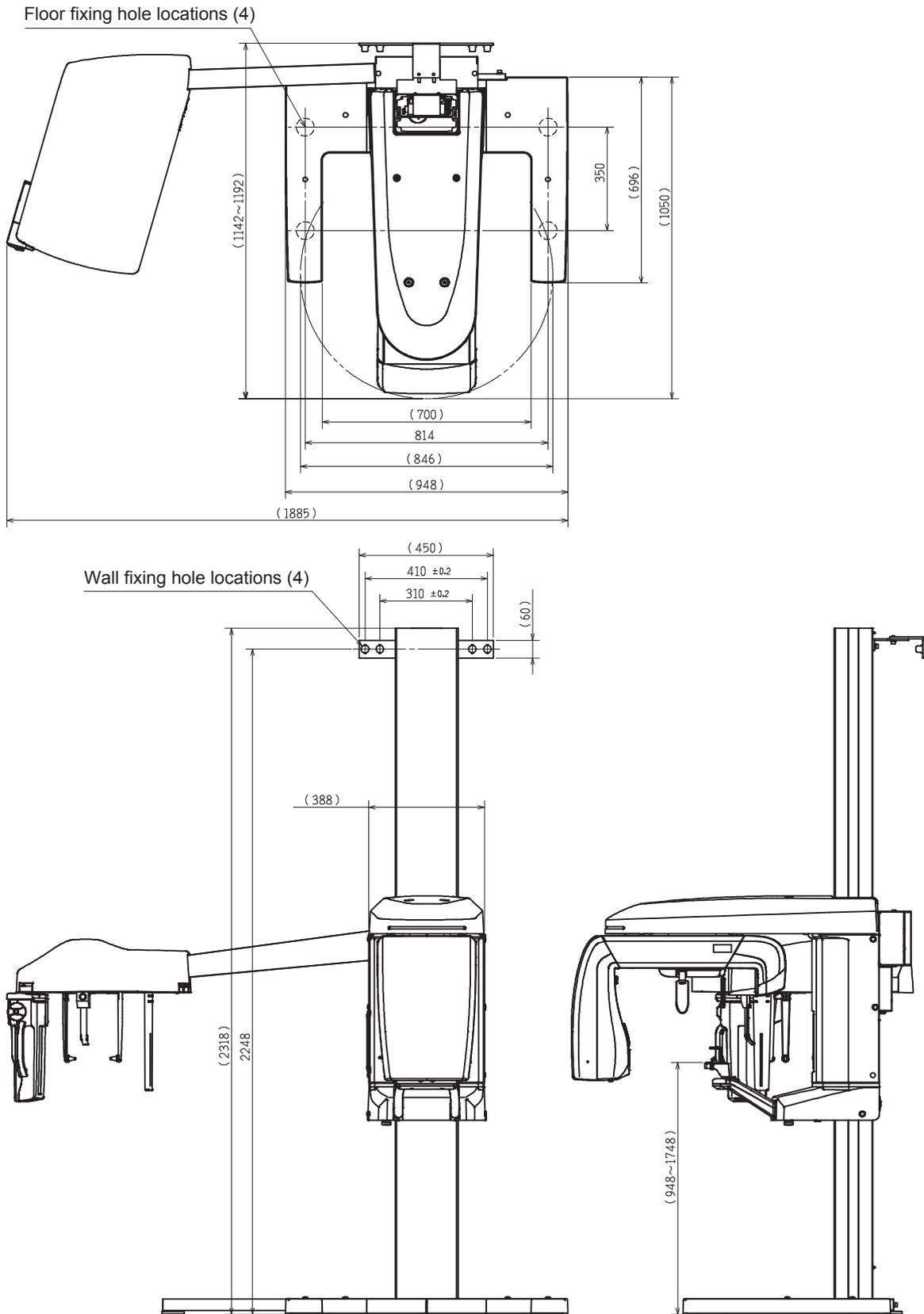


Fig. ③ -72: Fixing hole location measurements  
(Standing position base-mount long type (with an optional wide base): Cephalometric type)

d-10. Fixing hole location measurements (Standing position base-mount (with an optional wide base):  
3D Cephalometric type)

Unit: mm

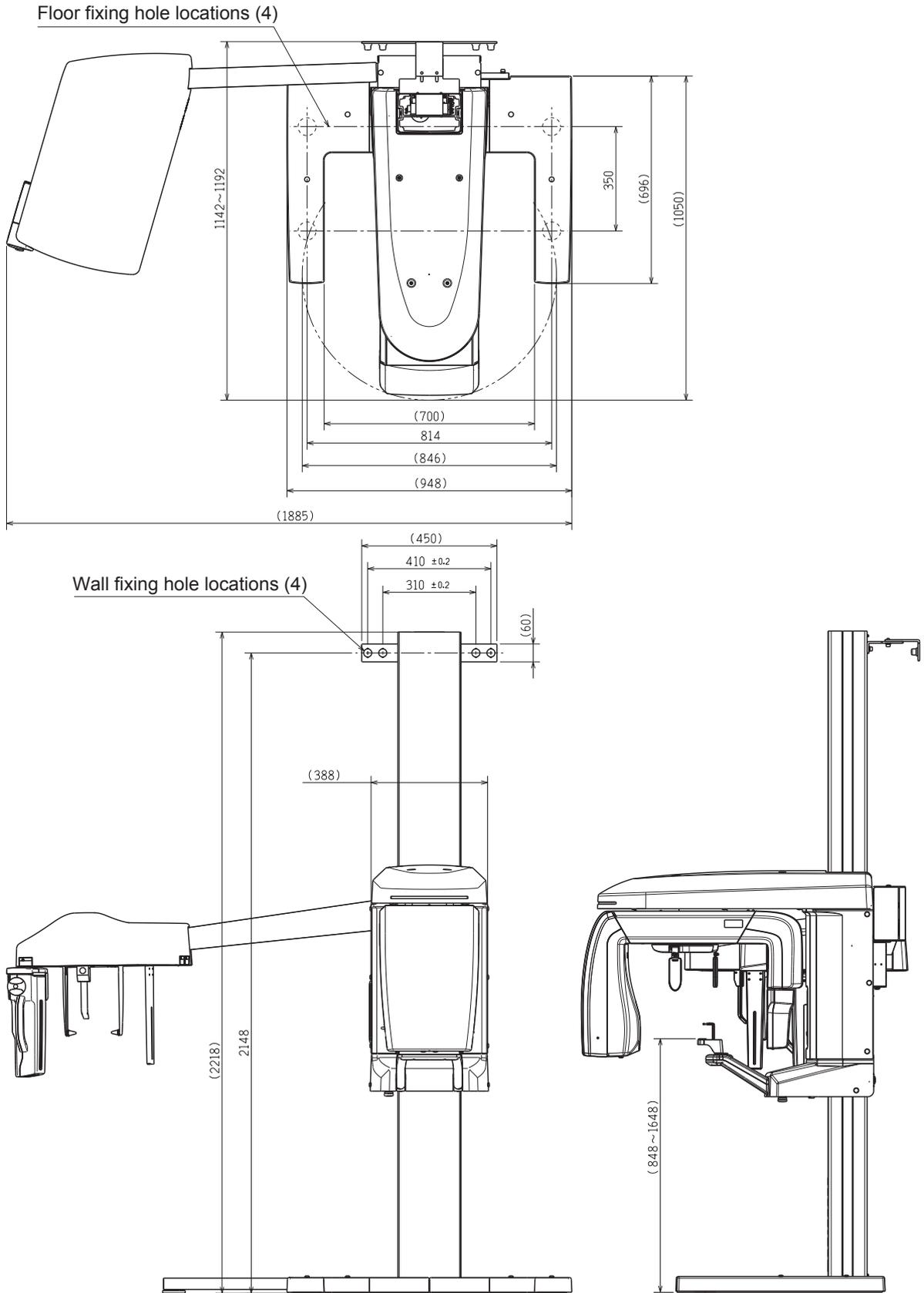


Fig. ③ -73: Fixing hole location measurements  
(Standing position base-mount (with an optional wide base): 3D Cephalometric type)

d-11. Fixing hole location measurements (Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)

Unit: mm

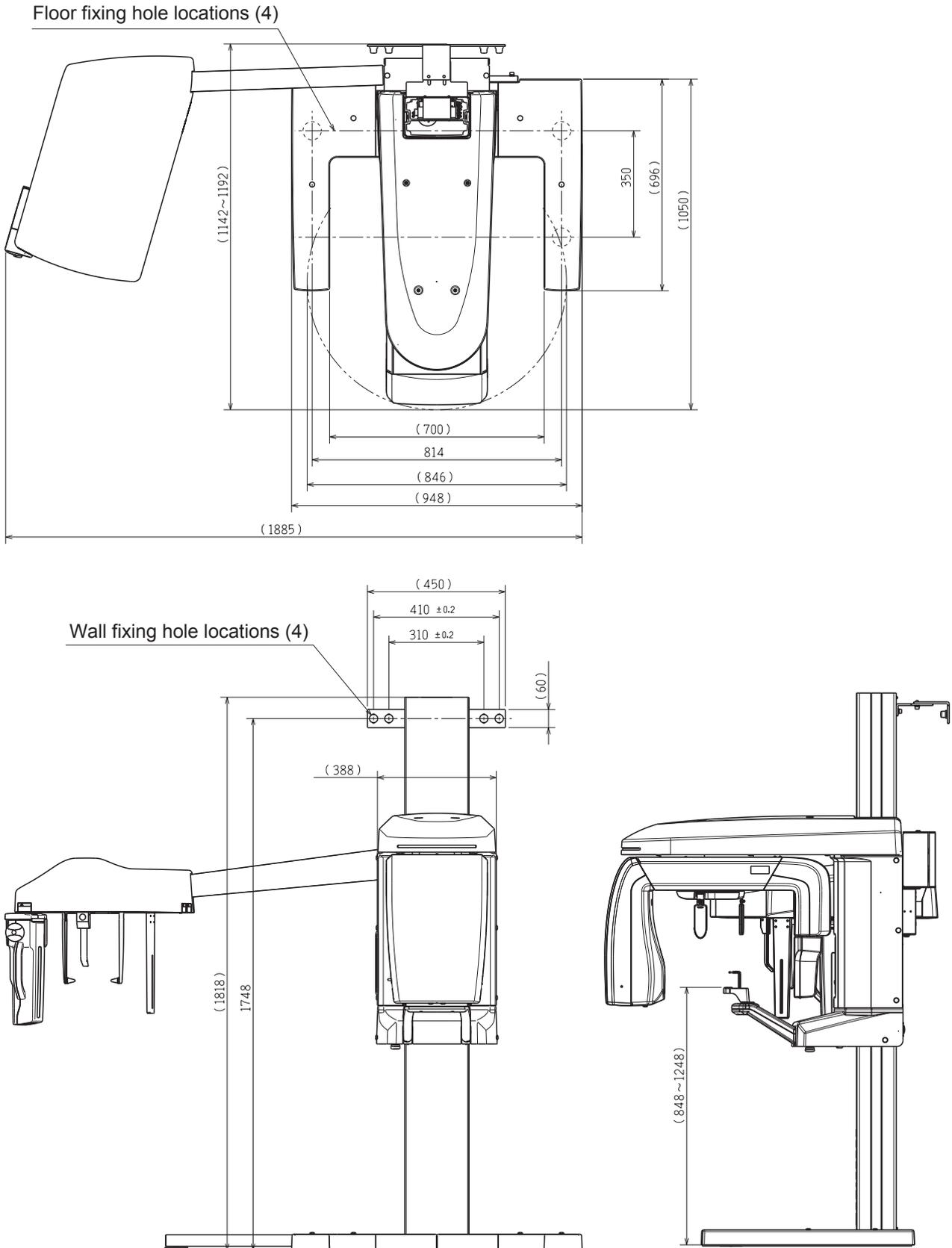


Fig. ③ -74: Fixing hole location measurements  
(Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)

d-12. Fixing hole location measurements (Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)

Unit: mm

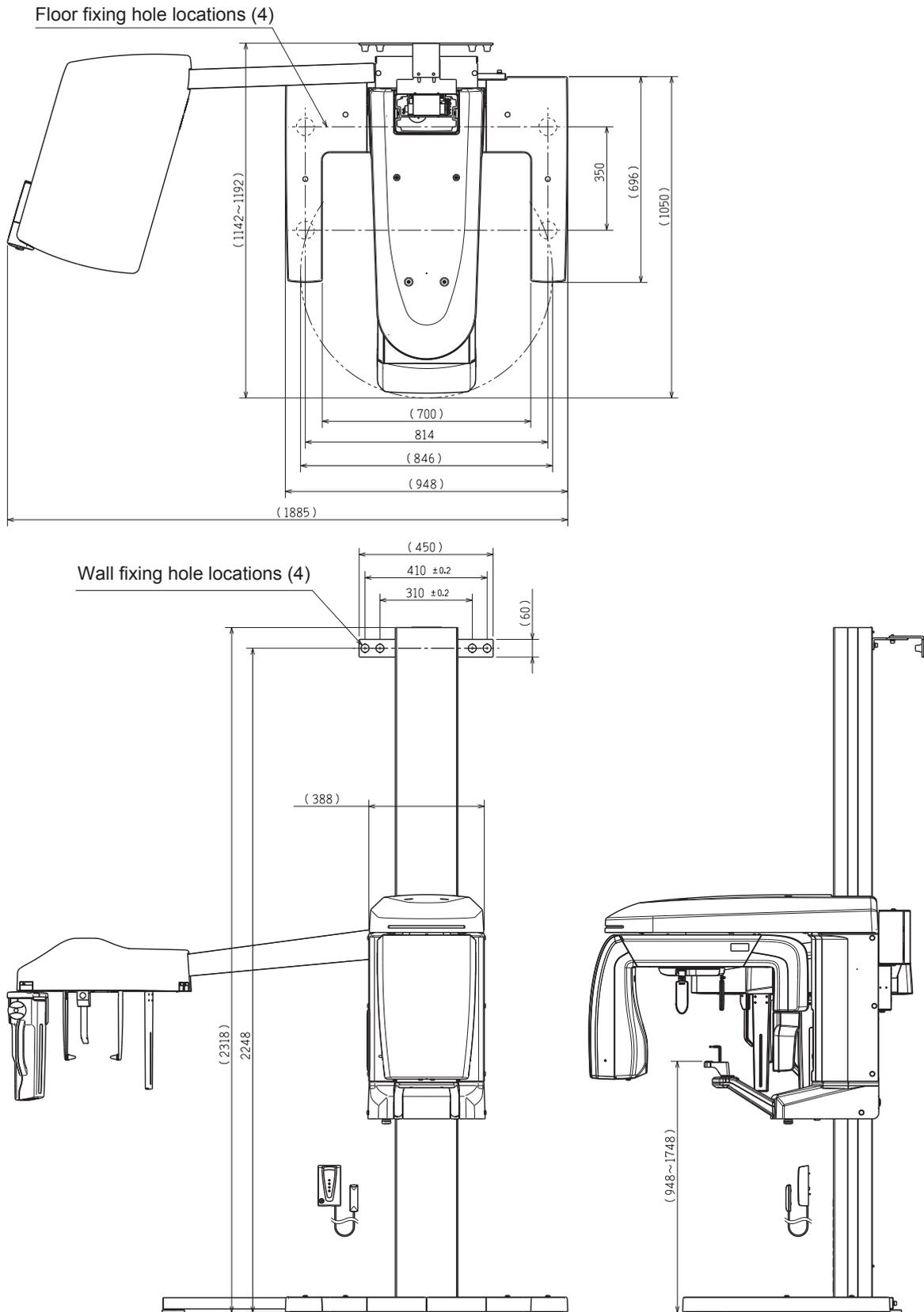


Fig. ③ -75: Fixing hole location measurements  
(Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)

e. Floor fixing hole locations (wall-mounted)

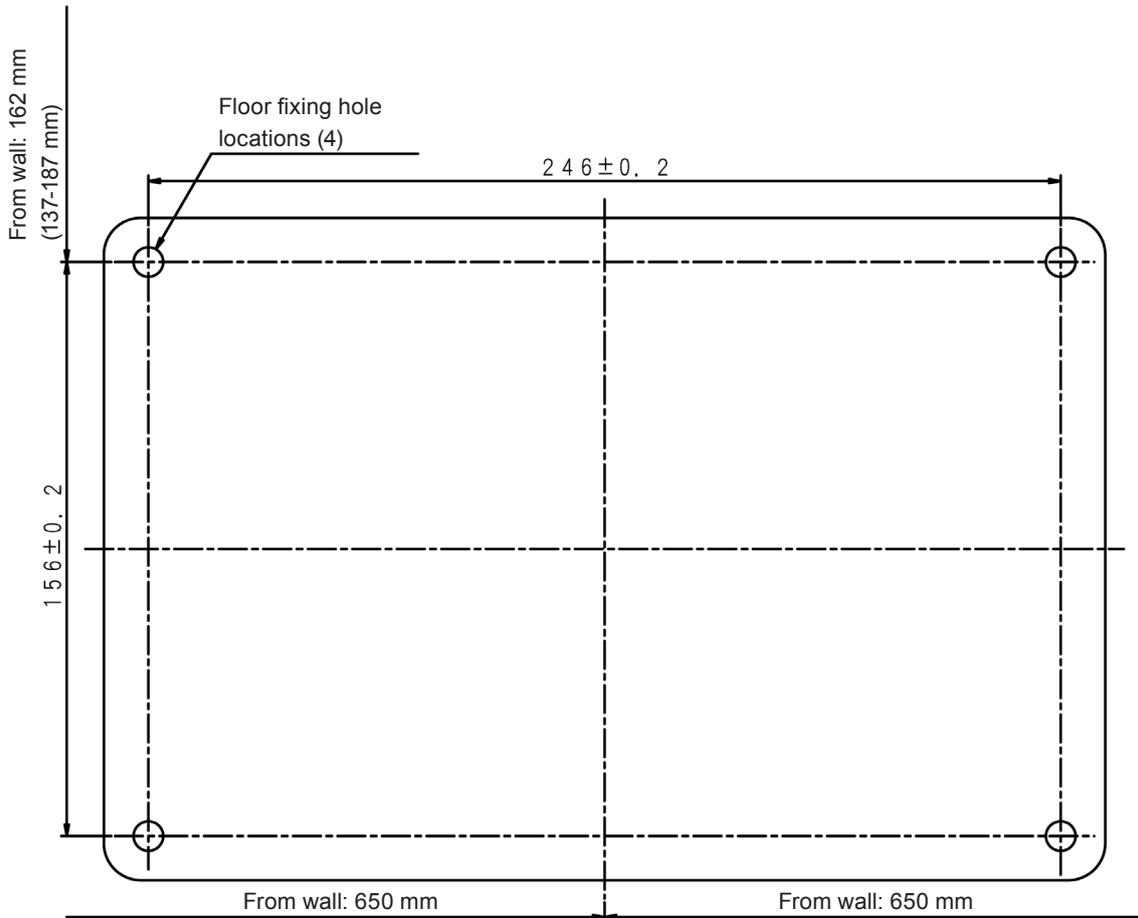


Fig. ③ -76: Floor fixing hole locations (wall-mounted)

f. Floor fixing hole locations (base-mounted)

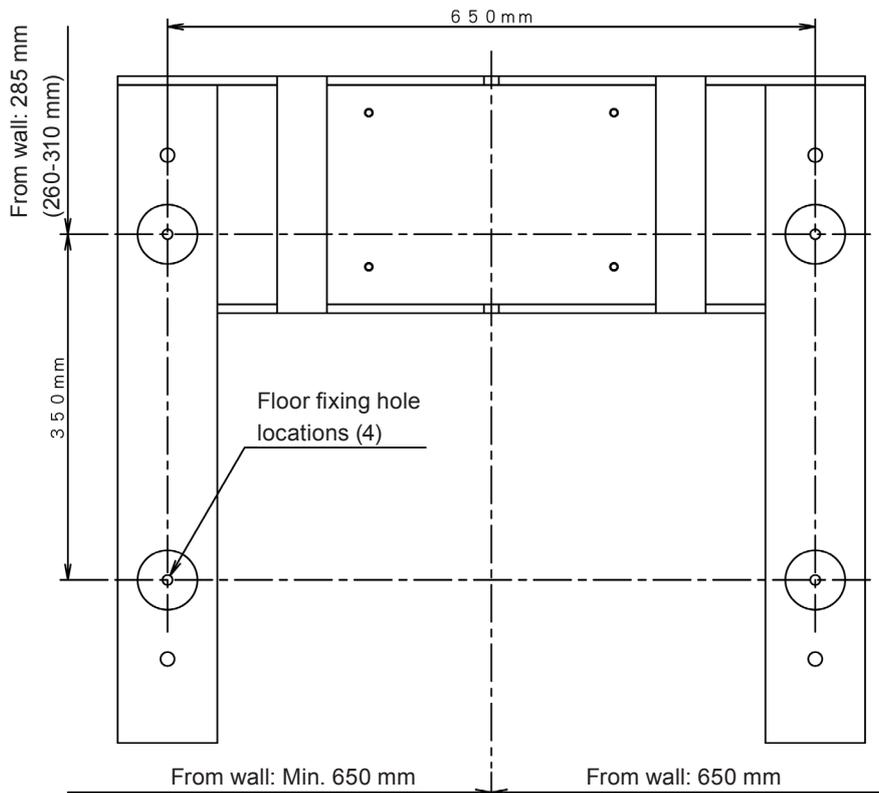


Fig. ③ -77: Floor fixing hole locations (base-mounted)

g. Floor fixing hole locations (wide base-mounted)

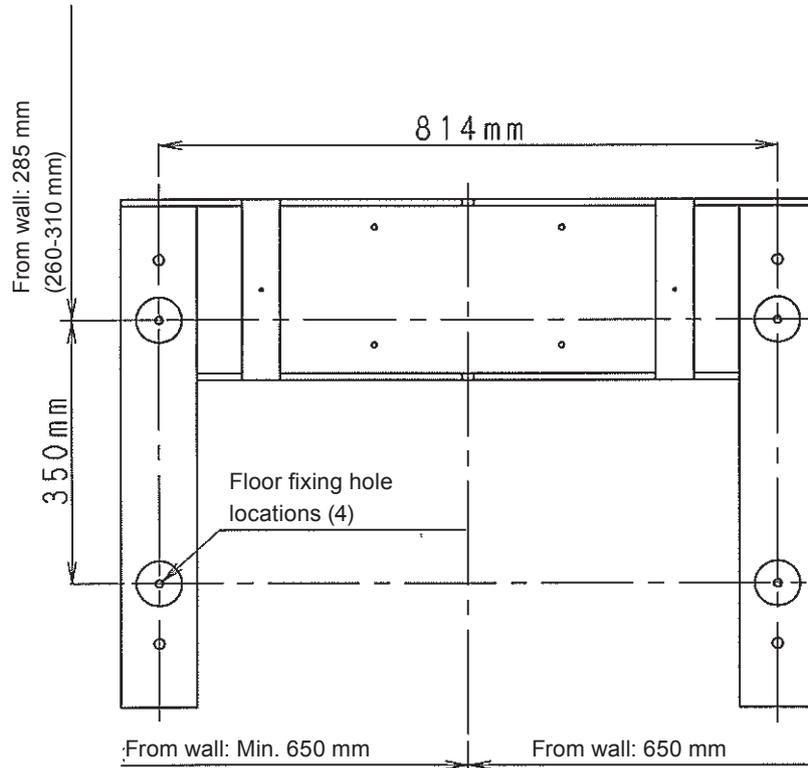


Fig. ③ -78: Floor fixing hole locations (wide base-mounted)

h. Floor fixing hole locations (cephalometric)

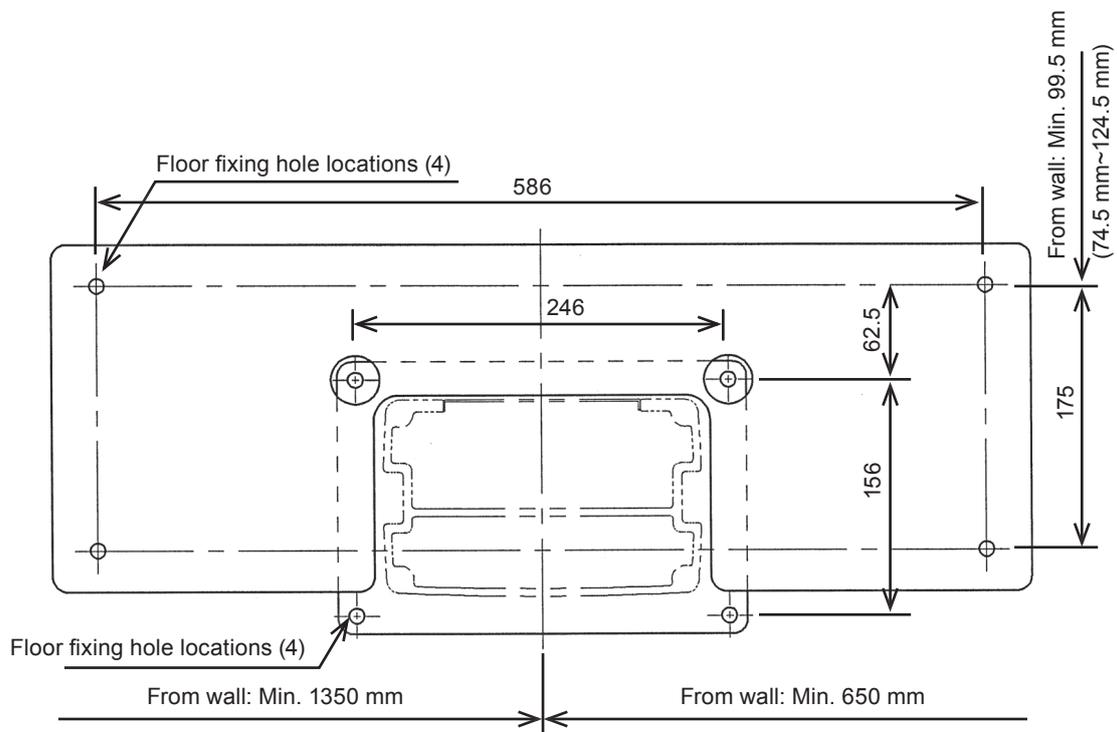


Fig. ③ -79: Floor fixing hole locations (cephalometric)

## 2-2-6. Fixing method for concrete floors

### **WARNING**

- For concrete floors, use anchors and Allen bolts with the tensile strength specified in “3. Installation Location Strength Requirements” in “① Requirements for Installation Location Facilities”. The use of weaker bolts could result in the equipment falling over.

### **CAUTION**

- Before installing the main body, thoroughly confirm that there is no ductwork or wiring at the positions of fixing holes on the floor before the work operation.
- The materials referred to in this section are purely examples for illustrative purposes. You should carefully read the instructions provided with your drill guide, dust pump and anchor holders when carrying out this work.

- 1) Using a drill guide, drill 4 vertical holes (12.5 mm dia., to a depth of 61 mm).  
(The figure shows the drill guide tip.)

Tools used: Power drill

Masonry drill bit (12.5 mm dia.)

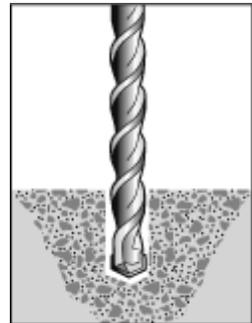


Fig. ③ -80: Drilling the hole

- 2) Use a dust pump or similar tool to remove the dust inside the 4 drilled holes.

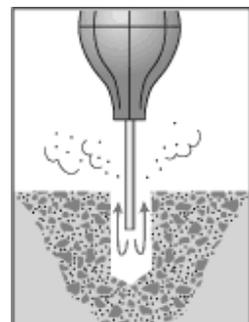


Fig. ③ -81: Blowing out the dust

- 3) Insert the adjustable anchors provided (AG-850 (Sanko Techno Co., Ltd)) into the holes and use special anchor holders (Sanko Techno Co., Ltd) to drive the anchor bolts into the holes until you feel them hit the bottom of the hole. Always screw the anchor holders onto the anchor bolts before driving the bolts into the holes. Be sure to drive the 4 anchor bolts in as far as the reference embedding line.

**NOTE** : The special anchor holders (Sanko Techno Co., Ltd) are not provided as accessories and should be purchased beforehand.

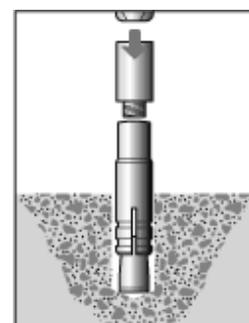


Fig. ③ -82: Fastening

- 4) Once you have finished embedding the 4 adjustable anchor bolts, align the fixing holes over the anchors and screw in the Allen bolts (M8 x 25) fitted with spring and flat washers (provided). Then tighten the 4 bolts using an Allen wrench.

Tool used: 6 mm Allen wrench

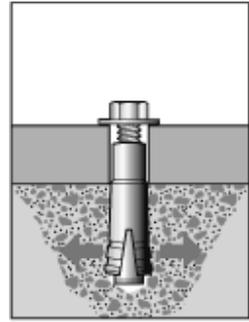


Fig. ③ -83: Embedding the anchor

## 2-2-7. Fixing method for non-concrete floors

### CAUTION

- Before starting the installation of the main body, confirm and doublecheck that there's no ductwork or wiring in the way where the fixing holes are to be drilled underneath the floor.
- The materials referred to in this section are purely examples for illustrative purposes. You should carefully read the instructions provided with your drill guide and dust pump when carrying out this work.

- 1) Using a drill guide , drill 4 vertical holes.  
(The figure shows the drill guide tip.)

Tools used: Power drill

Drill bit (4 mm dia.)

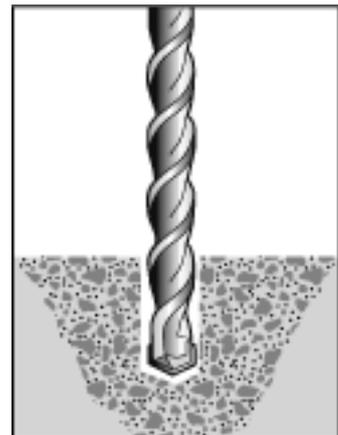


Fig. ③ -84: Drilling the hole

- 2) Use a dust pump or similar tool to remove the dust inside the 4 drilled holes.

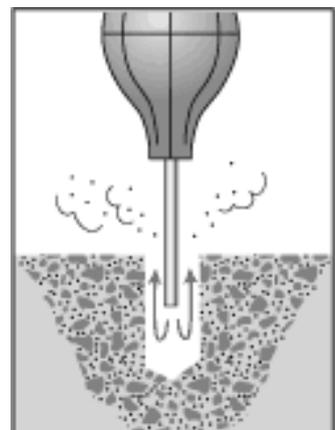


Fig. ③ -85: Blowing out the dust

3) Align the fixing holes over the drilled holes and screw in the coach screws (M8 x 38) and flat washers (provided). Then tighten the 4 screws with a spanner.

Tool used: 14 mm spanner

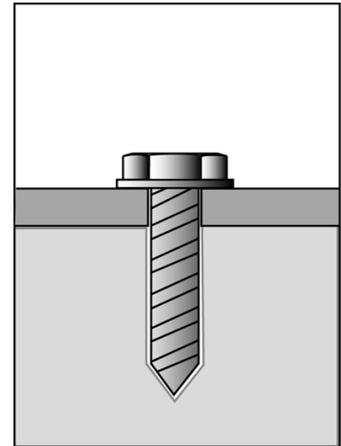


Fig. ③ -86: Fastening

### 3. Basic Installation Example

When fixing the X-era Smart to the floor, check the floor material and ensure that the work is carried out in accordance with the applicable requirements below.

#### A. When fixing on a concrete floor

In the fixing holes, use anchor bolts with the tensile strength specified in “3. Installation Location Strength Requirements” in “① Requirements for Installation Location Facilities” to secure the equipment firmly to a level floor.

#### B. When fixing on a non-concrete floor

In the fixing holes, use the anchor bolts (coach screws) provided to secure the equipment firmly to a level floor. For some floor constructions, the optional base should be used.

When fixing the X-era Smart to a wall, check the wall material and ensure that the work is carried out in accordance with the applicable requirements below.

#### A. When mounting on a concrete wall

In the fixing holes, use anchor bolts with the tensile strength specified in “3. Installation Location Strength Requirements” in “① Requirements for Installation Location Facilities” to secure the equipment firmly to a level floor.

#### B. When mounting on a non-concrete wall

In the fixing holes, use the anchor bolts (coach screws) provided to secure the equipment firmly to a level floor.

**NOTE** : When using anchor bolts for concrete, read the instructions provided with the anchor bolts.

**REF.** : Refer also to the installation examples on the following pages. Note that these examples are purely for illustrative purposes.

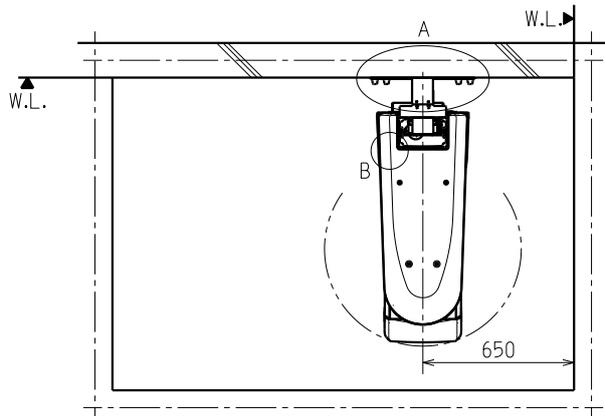
 **CAUTION**

- A place where the floor / wall shakes or creaks when a person walks or lean over is not appropriate condition for installing the equipment. Be sure to use the base of the unit (optional) and fix the equipment on to the wall.
- If the floor's strength is insufficient, the equipment might collapse.
- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

### 3-1. Example of fixings for installations on concrete walls or floors

#### a-1. Example of Standing position wall-mount: Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-99: Wall fixing detail drawing  
Fig.③-100: Floor fixing detail drawing

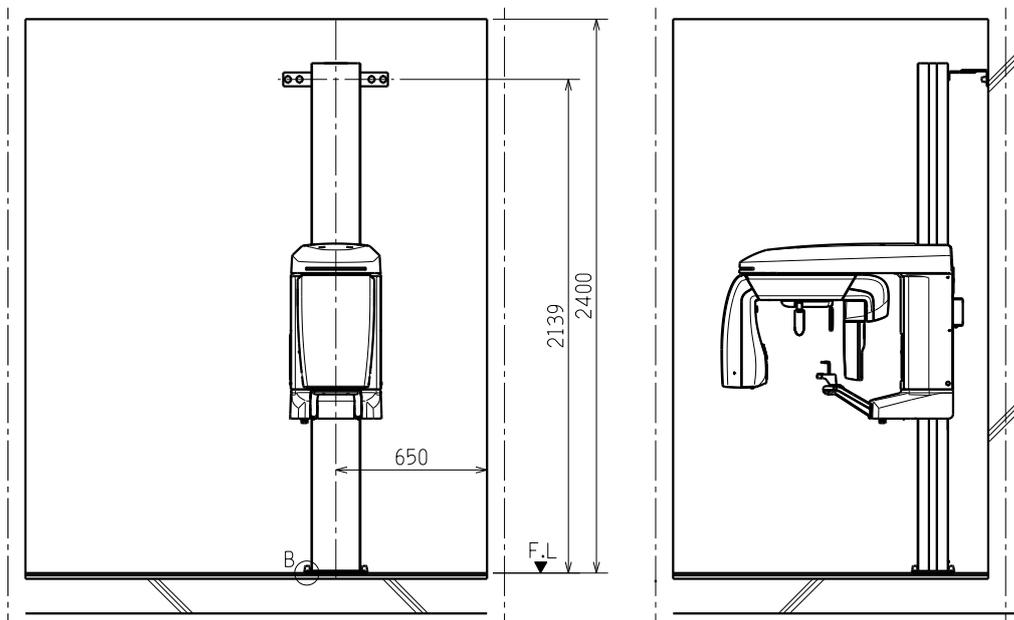


Fig. ③ -87: Example of fixings for installations on concrete walls or floors  
(Standing position wall-mount: Panoramic type)

#### **CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-2. Example of Standing position wall-mount short type: Panoramic type installation

Unit: mm

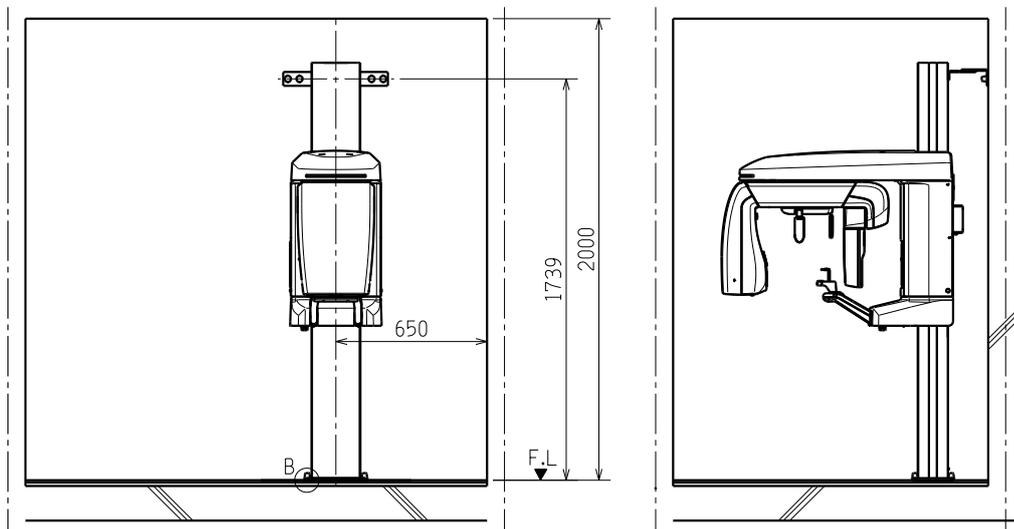
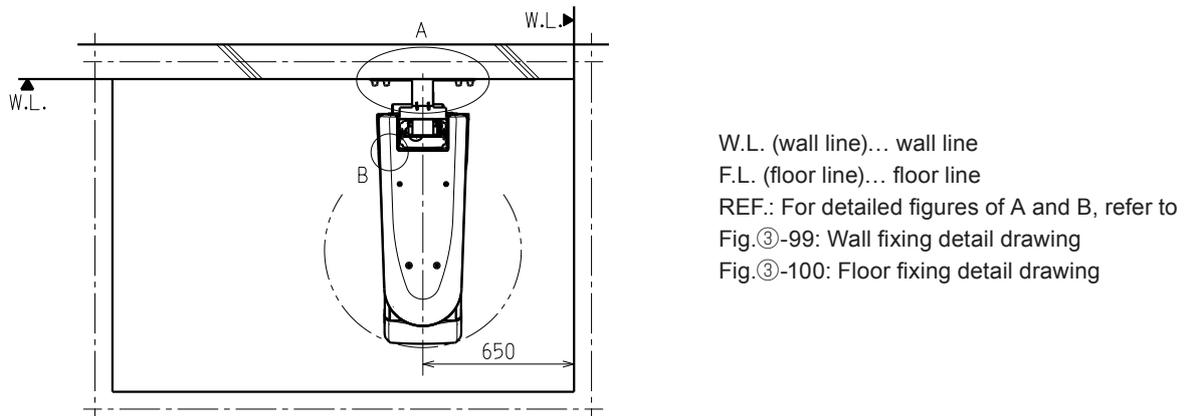


Fig. ③ -88: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount short type: Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-3. Example of Standing position wall-mount long type: Panoramic type installation

Unit: mm

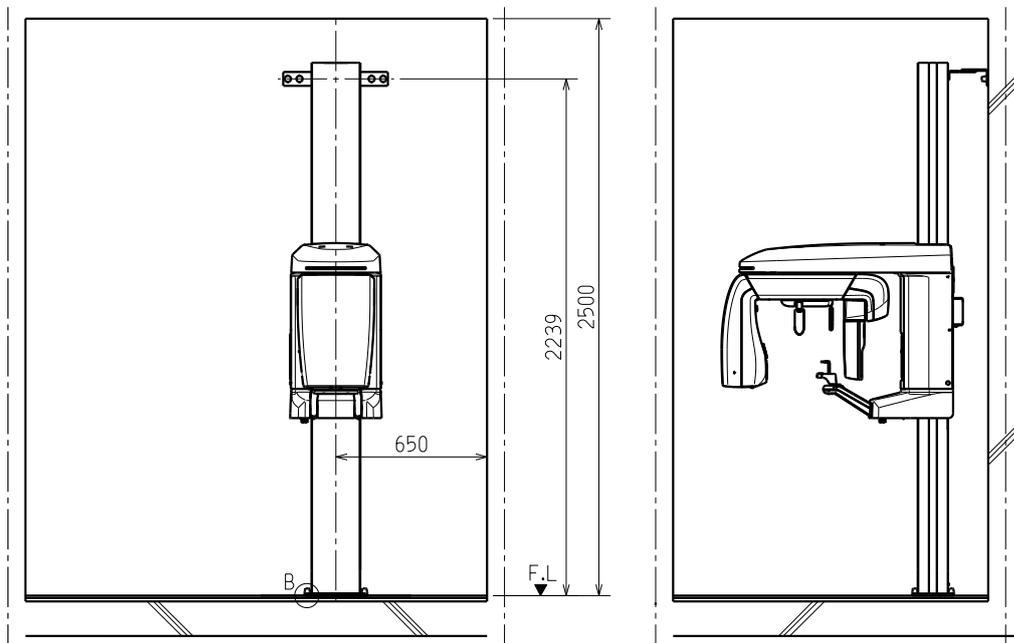
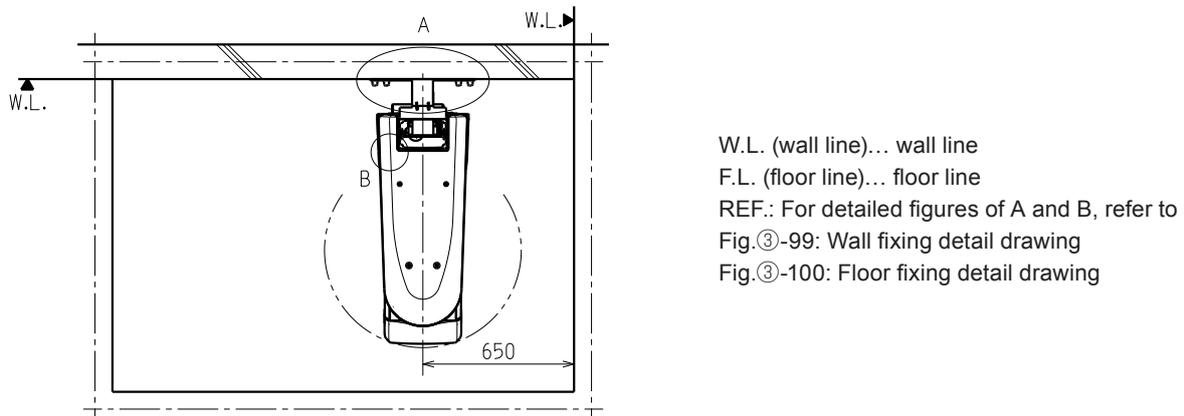
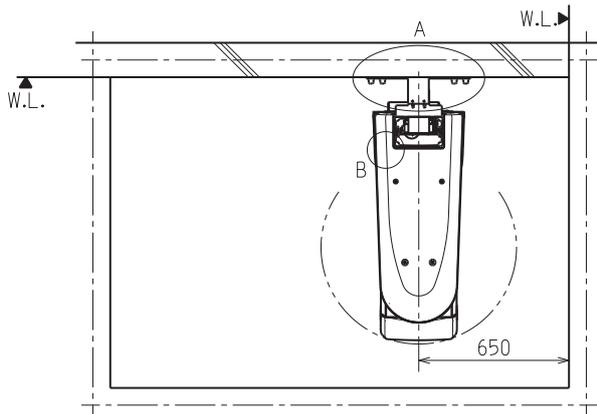


Fig. ③ -89: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount long type: Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing

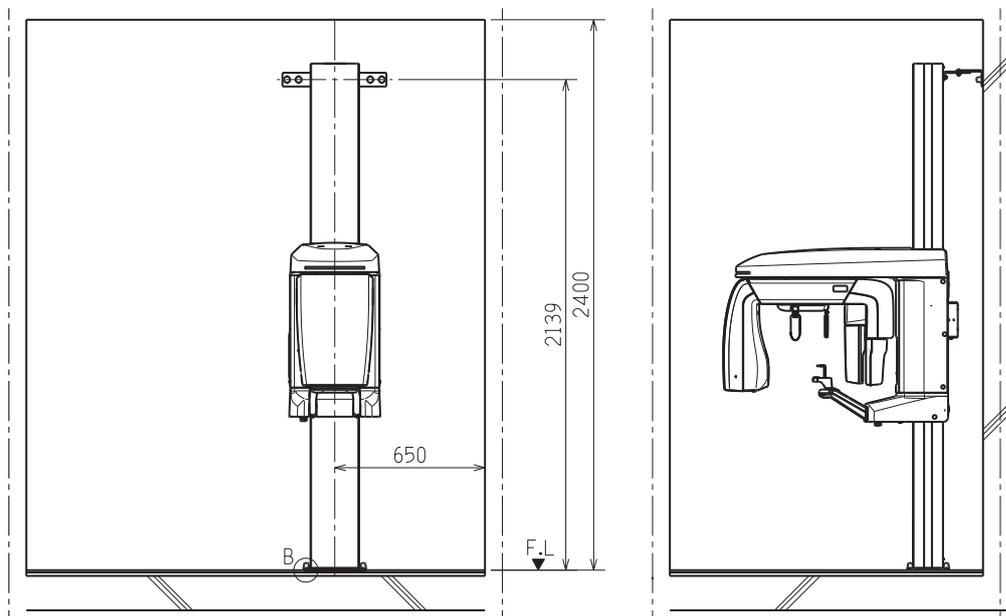


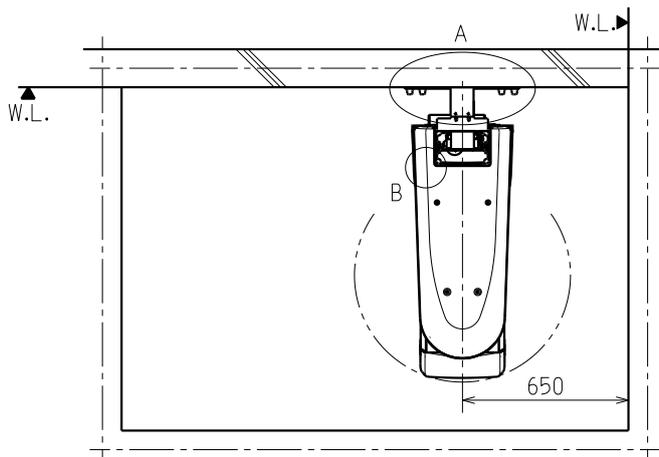
Fig. ③ -90: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount: 3D type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-5. Example of Standing position wall-mount short type: 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing

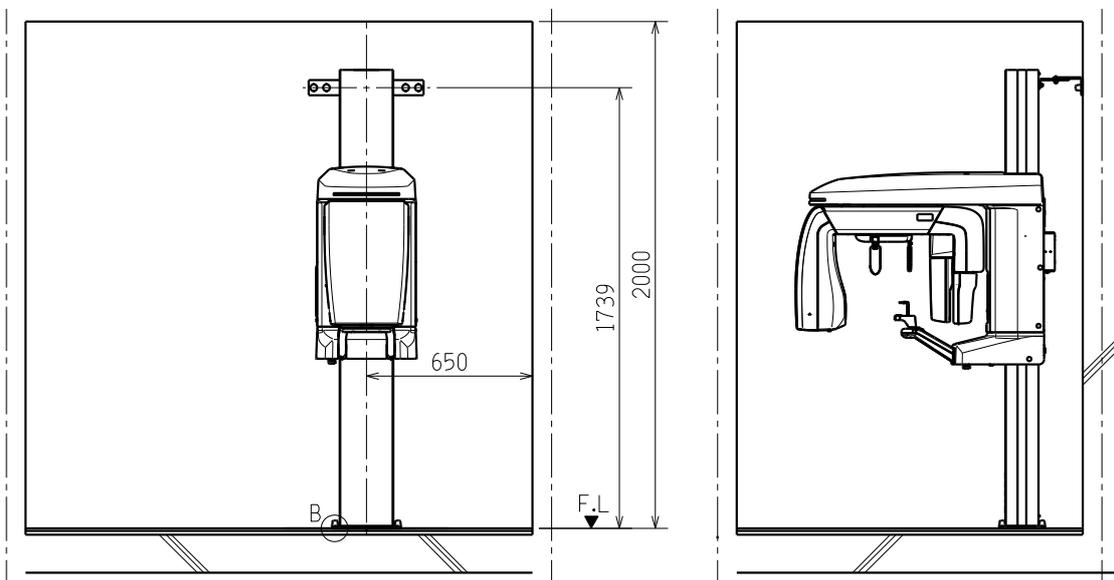


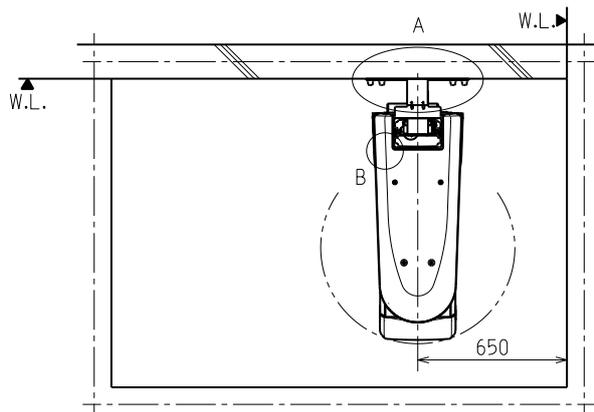
Fig. ③ -91: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount short type: 3D type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-6. Example of Standing position wall-mount long type: 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing

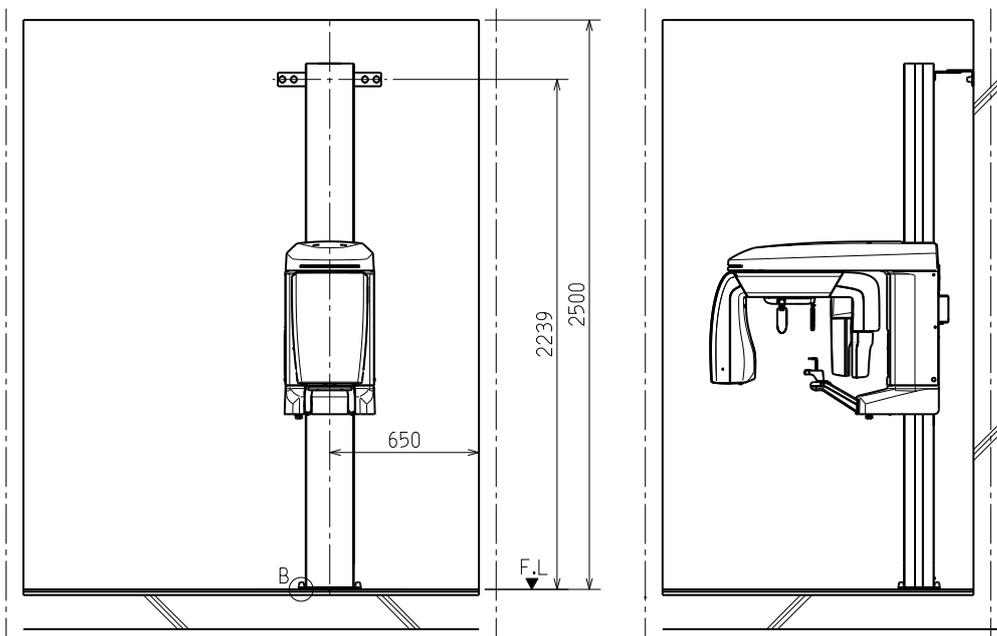


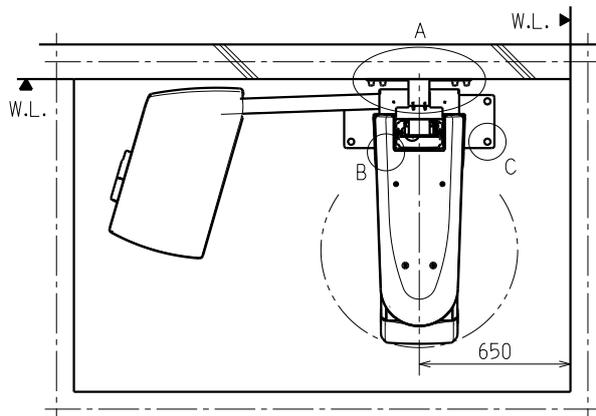
Fig. ③ -92: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount long type: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-1. Example of Standing position wall-mount : Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B and C, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing  
 Fig.③-101: Floor fixing detail drawing (Cephalometric type)

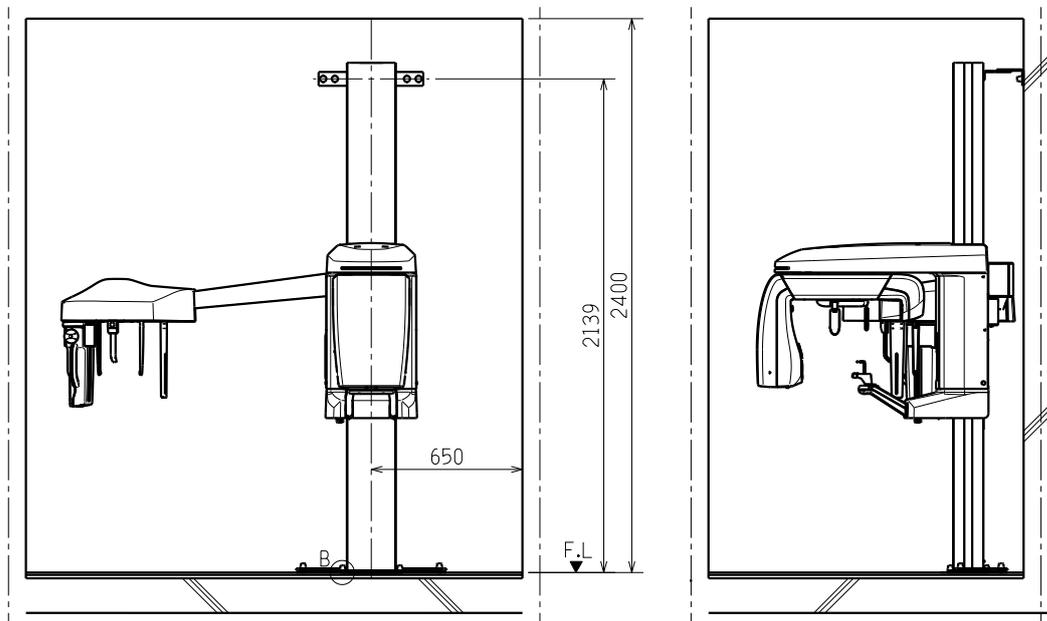


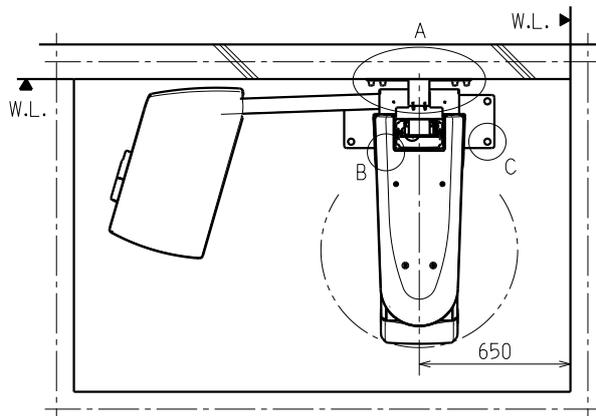
Fig. ③ -93: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount : Cephalometric type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-2. Example of Standing position wall-mount short type : Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B and C, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing  
 Fig.③-101: Floor fixing detail drawing (Cephalometric type)

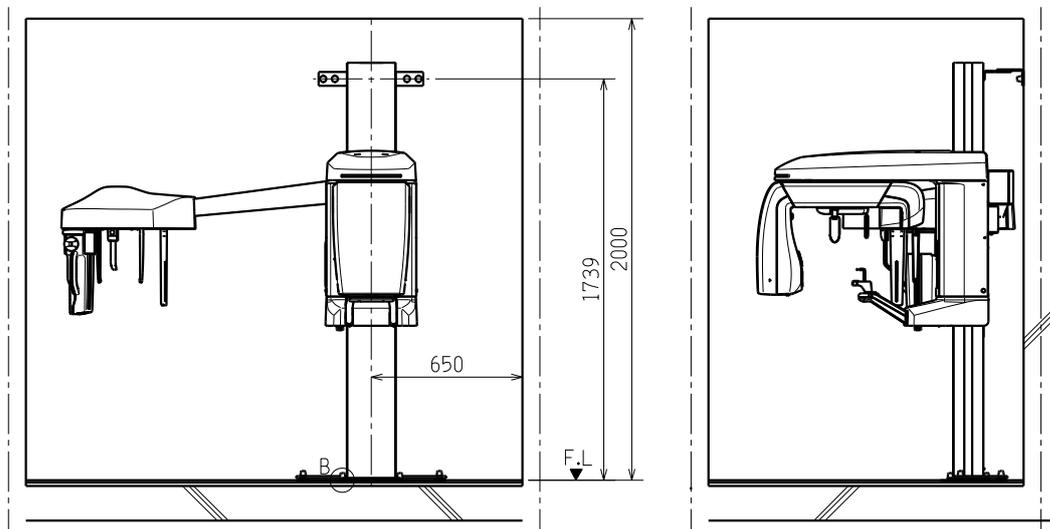


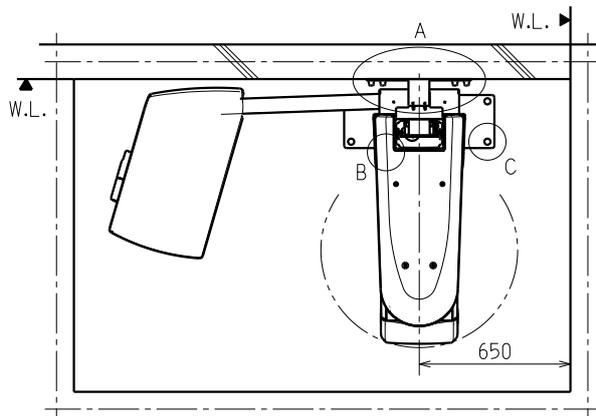
Fig. ③ -94: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount short type : Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-3. Example of Standing position wall-mount long type : Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B and C, refer to  
Fig.③-99: Wall fixing detail drawing  
Fig.③-100: Floor fixing detail drawing  
Fig.③-101: Floor fixing detail drawing (Cephalometric type)

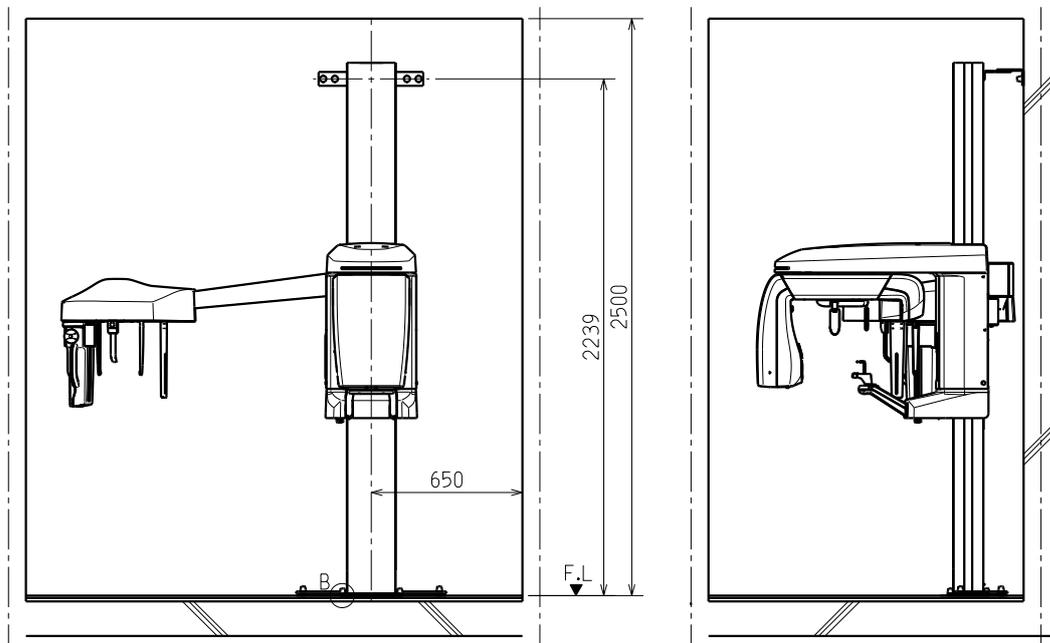


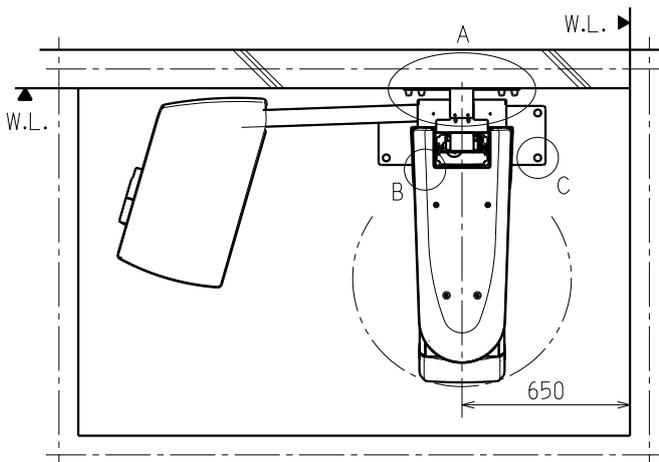
Fig. ③ -95: Example of fixings for installations on concrete walls or floors  
(Standing position wall-mount long type : Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-4. Example of Standing position wall-mount : 3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B and C, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing  
 Fig.③-101: Floor fixing detail drawing (Cephalometric type)

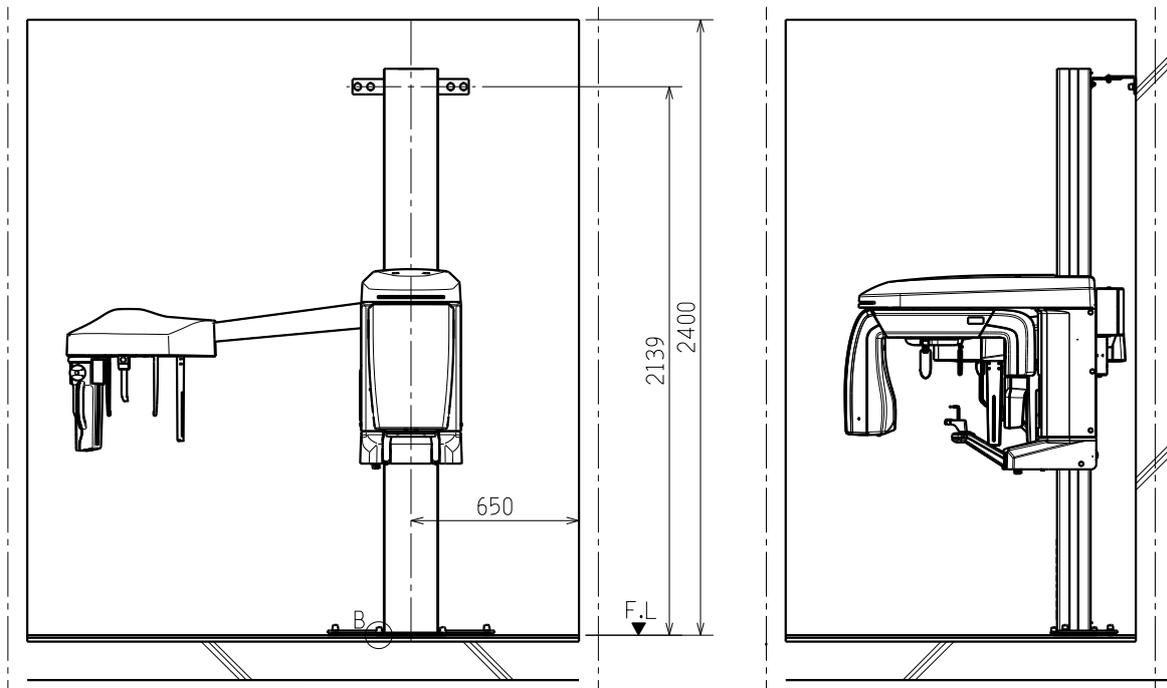


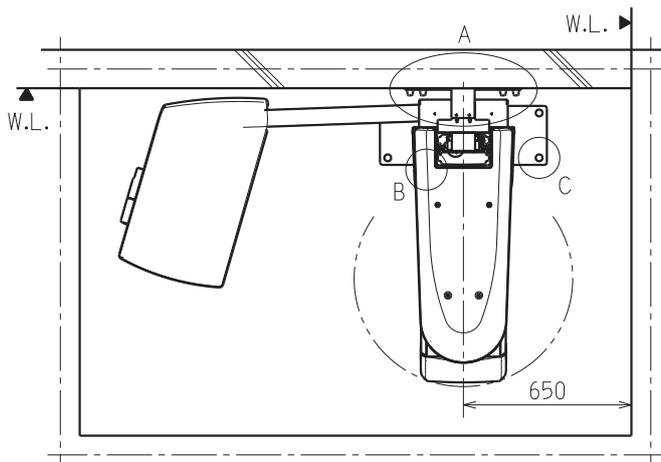
Fig. ③ -96: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount : 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-5. Example of Standing position wall-mount short type : 3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B and C, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing  
 Fig.③-101: Floor fixing detail drawing (Cephalometric type)

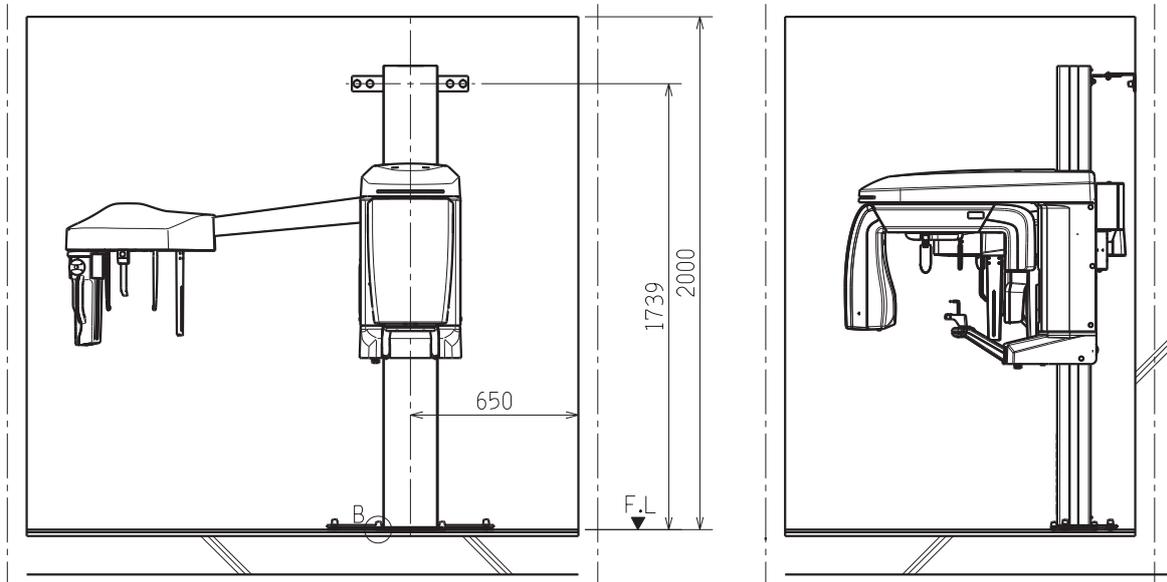


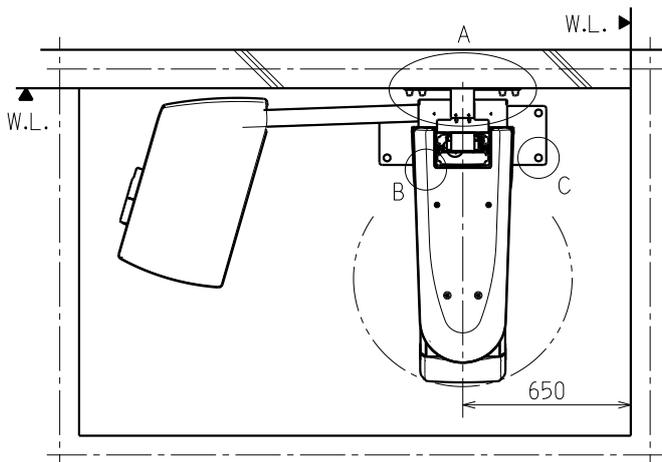
Fig. ③ -97: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount short type : 3D Cephalometric type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-6. Example of Standing position wall-mount long type : 3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B and C, refer to  
 Fig.③-99: Wall fixing detail drawing  
 Fig.③-100: Floor fixing detail drawing  
 Fig.③-101: Floor fixing detail drawing (Cephalometric type)

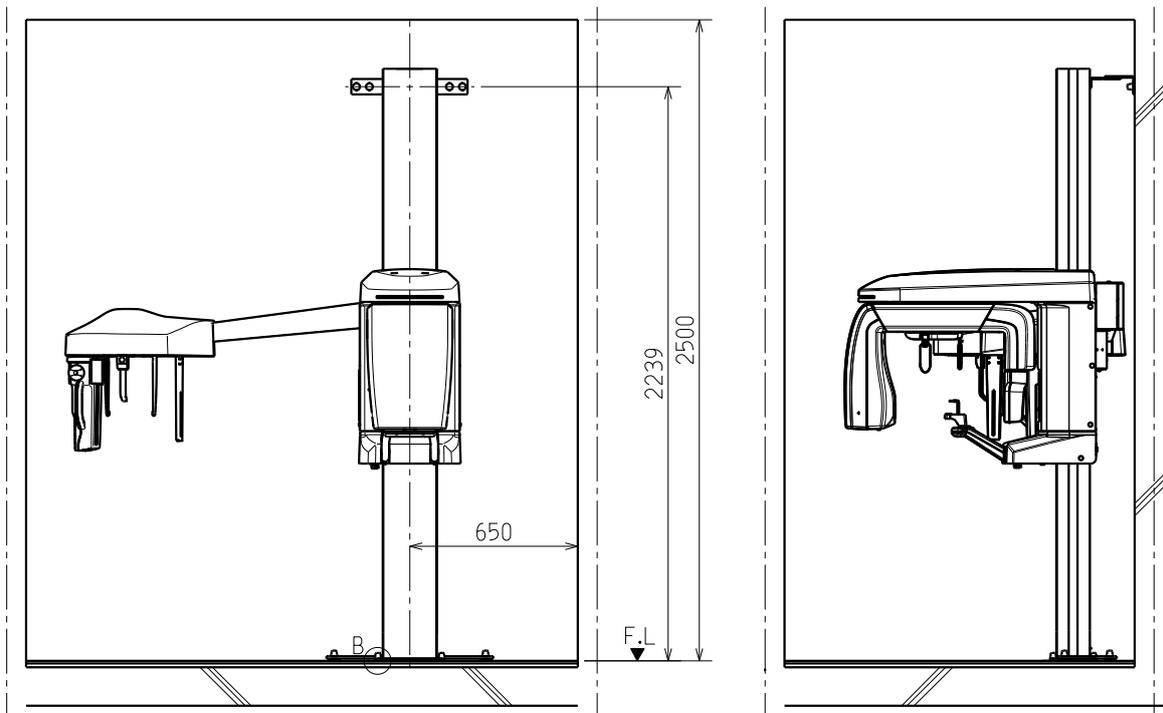


Fig. ③ -98: Example of fixings for installations on concrete walls or floors  
 (Standing position wall-mount long type : 3D Cephalometric type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

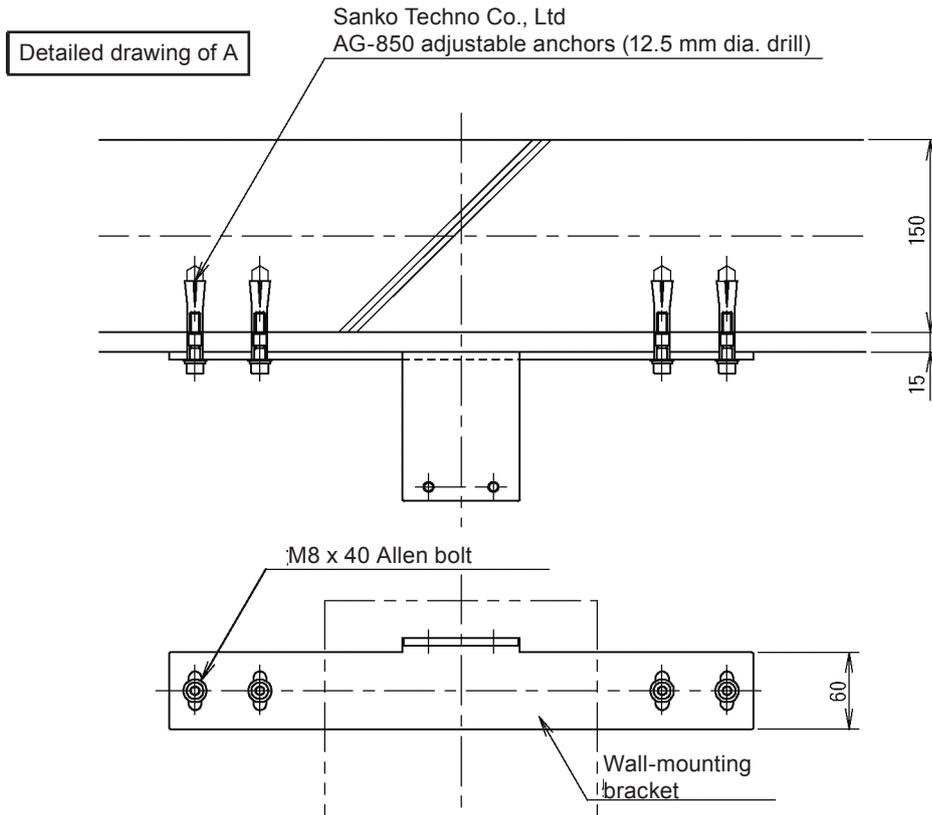


Fig. ③ -99: Wall fixing detail drawing

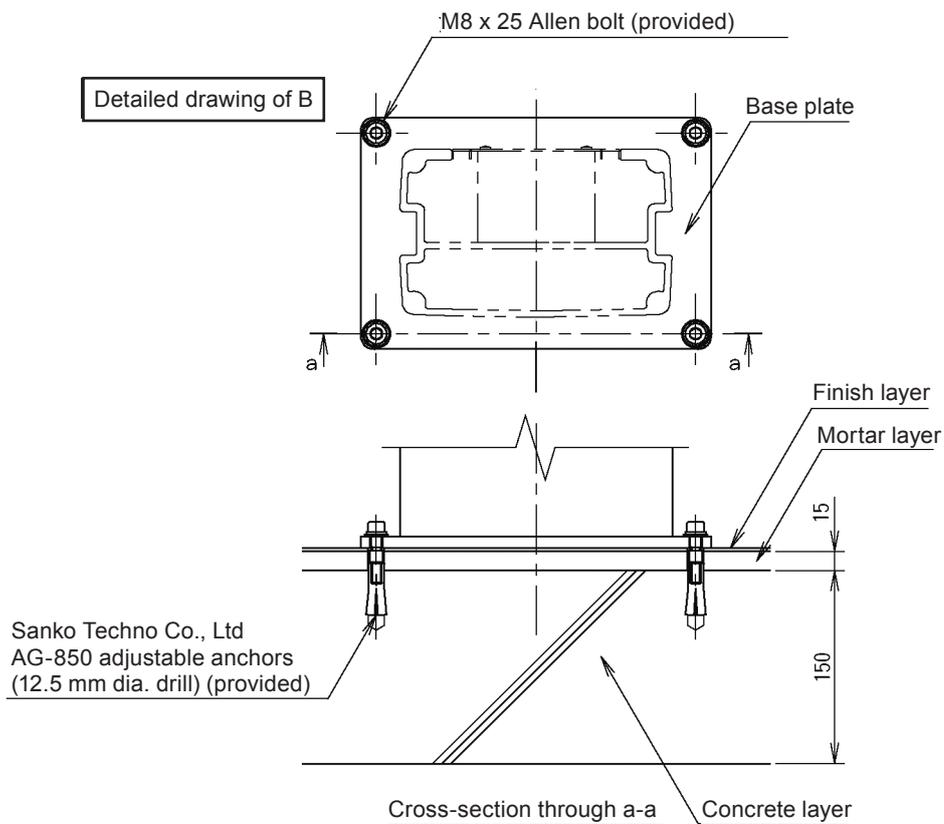


Fig. ③ -100: Floor fixing detail drawing

Detailed drawing of C

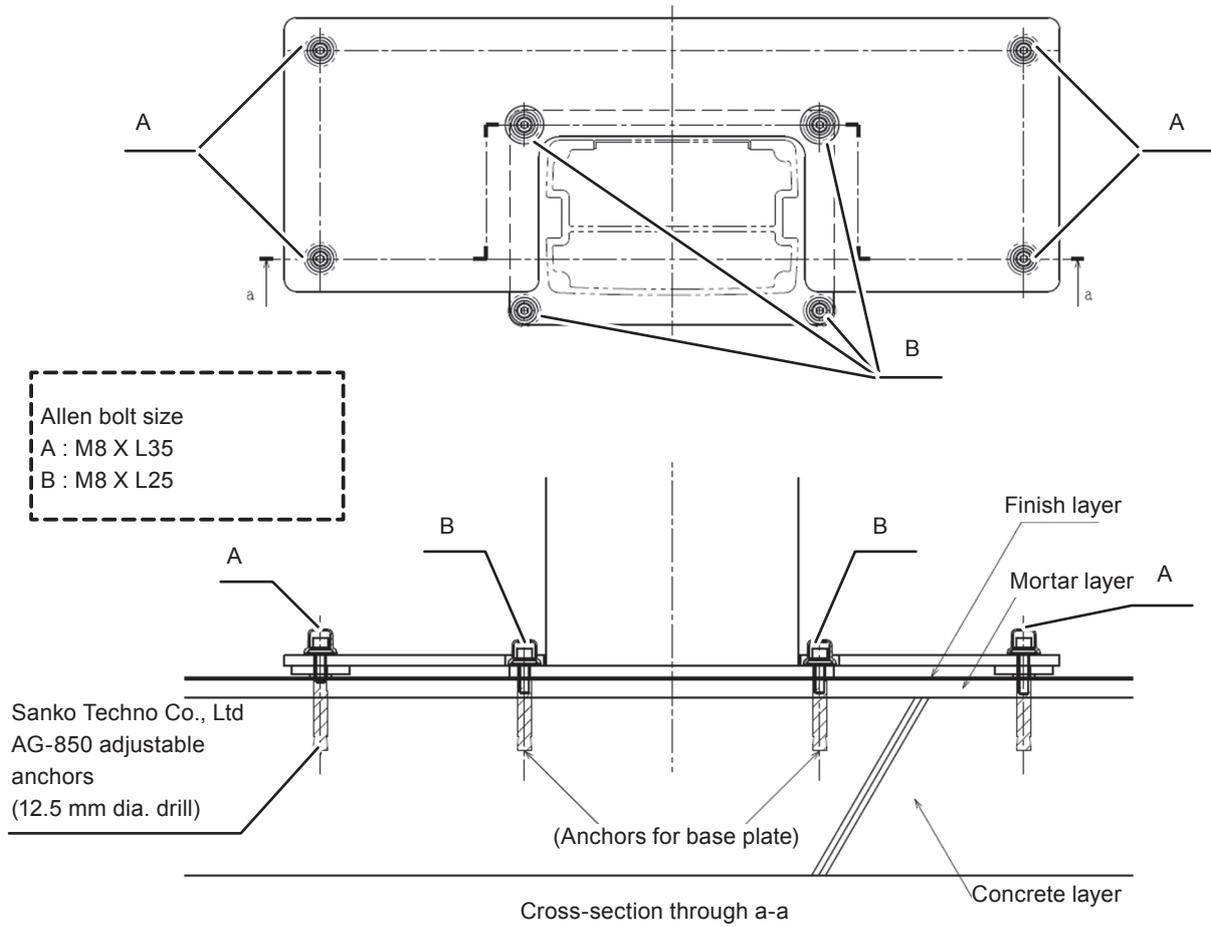


Fig. ③ -101: Floor fixing detail drawing (Cephalometric type)

### 3-2. Example of fixings for installations on non-concrete walls or floors

#### 3-2-1. Dry double floor and light-gauge steel frame partition wall

##### a-1. Example of Standing position wall-mount: Panoramic type installation

Unit: mm

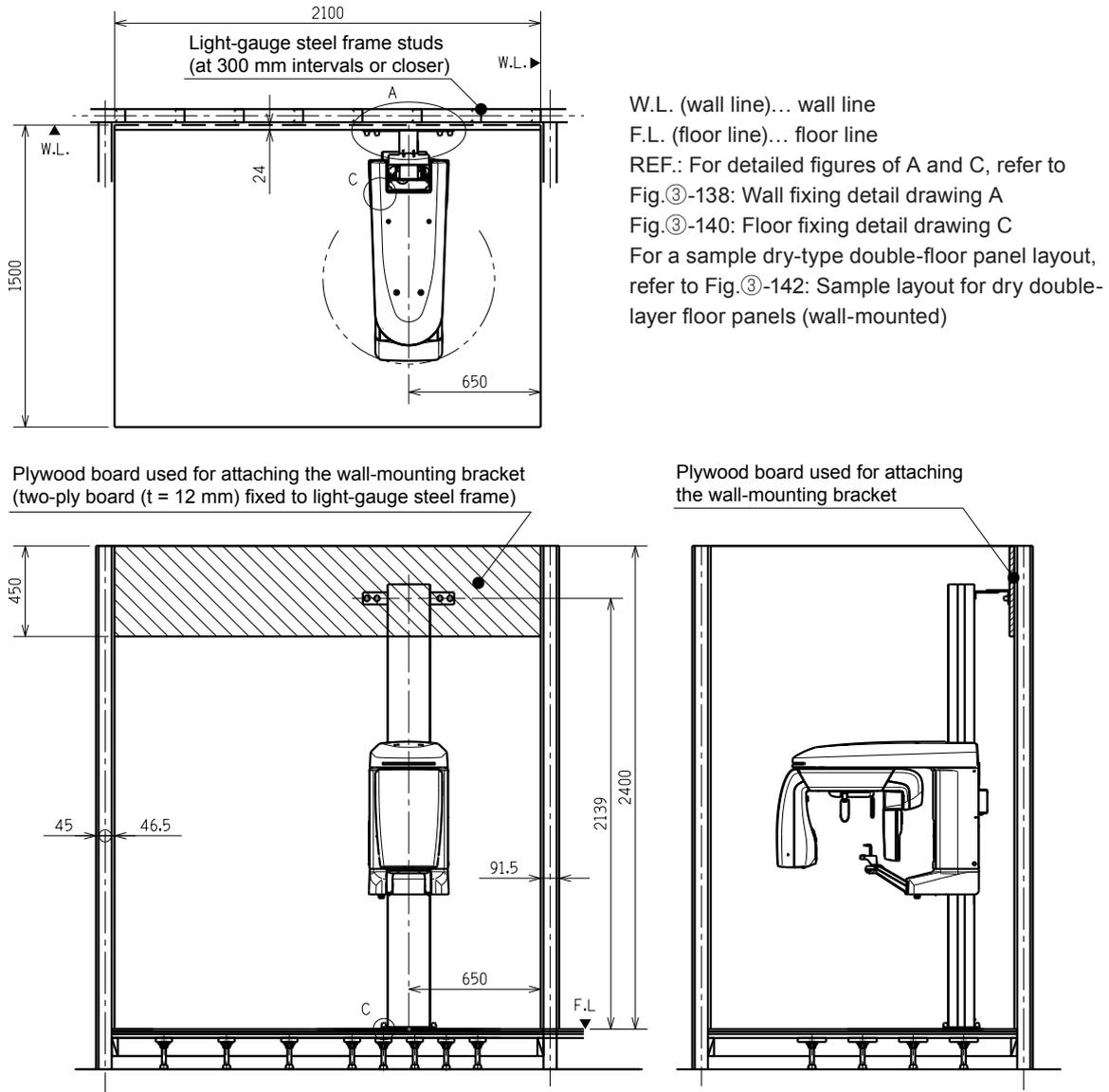


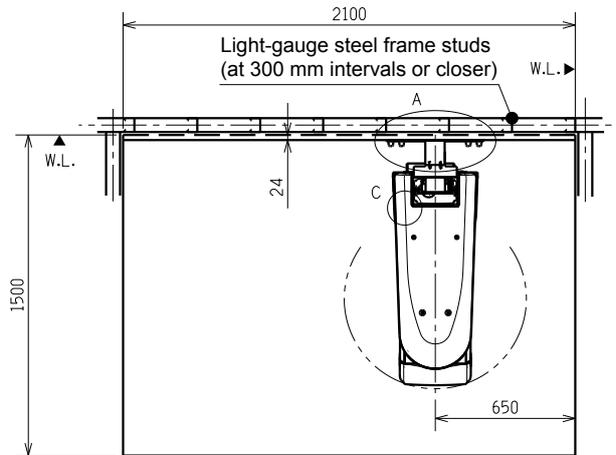
Fig. ③ -102: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position wall-mount: Panoramic type)

### ⚠ CAUTION

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

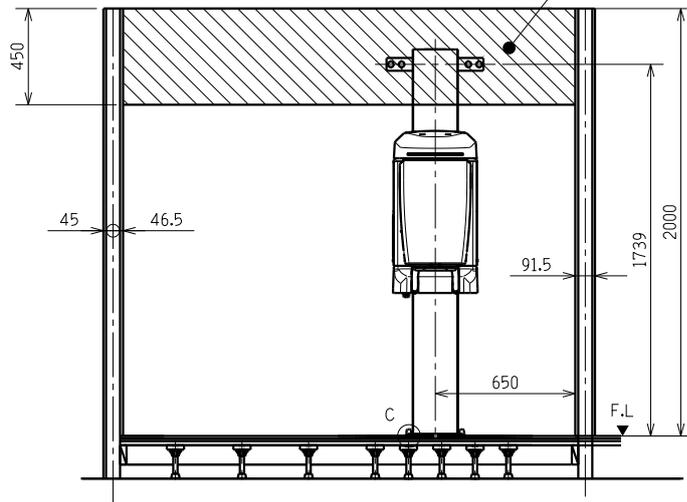
a-2. Example of Standing position wall-mount short type: Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

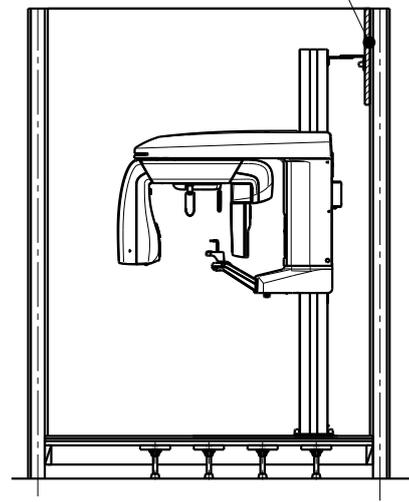


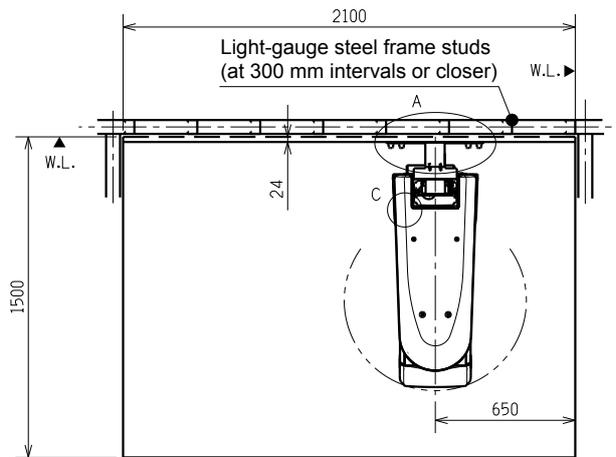
Fig. ③ -103: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount short type: Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

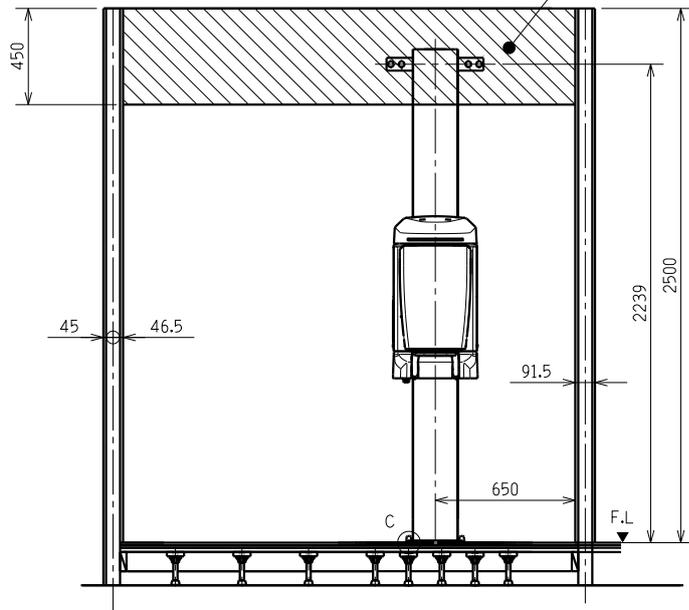
a-3. Example of Standing position wall-mount long type: Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

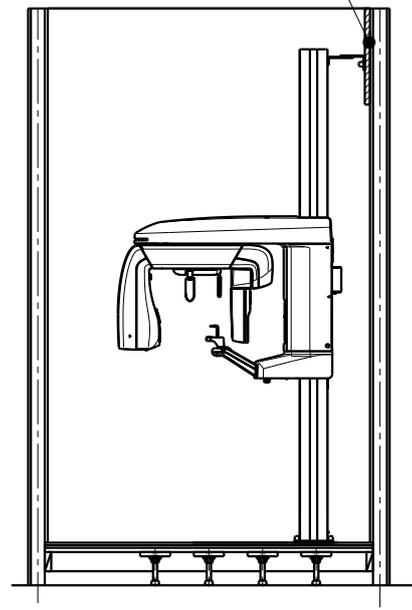


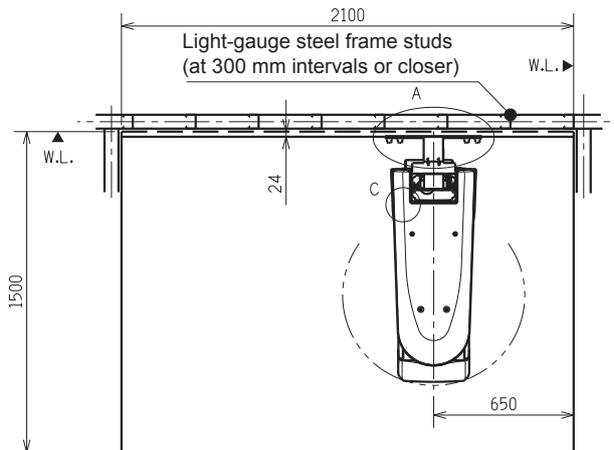
Fig. ③ -104: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount long type: Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-4. Example of Standing position wall-mount: 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)

Plywood board used for attaching  
 the wall-mounting bracket

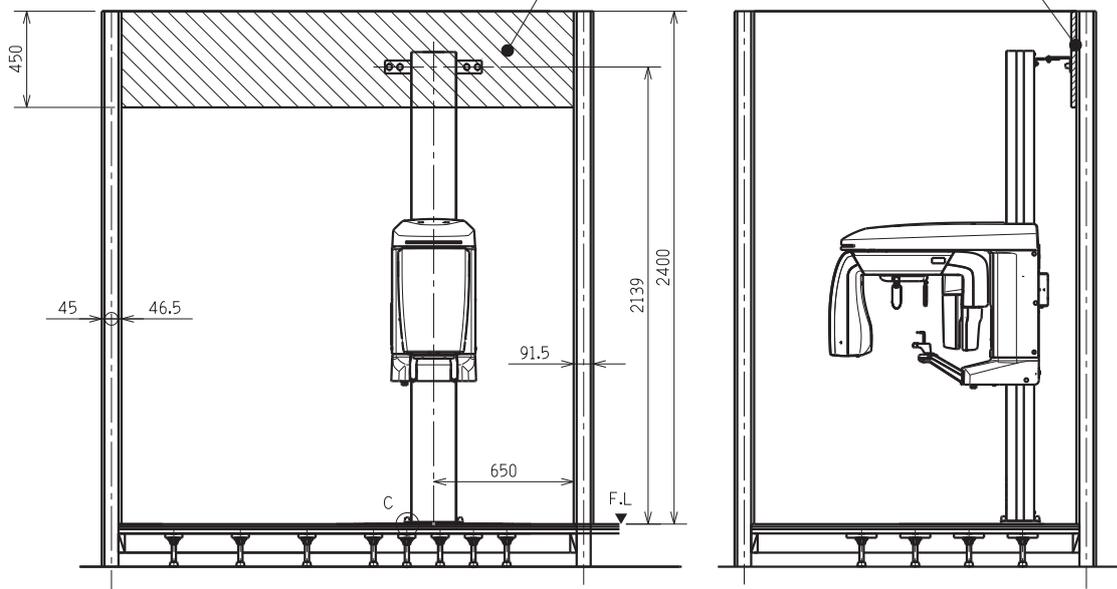


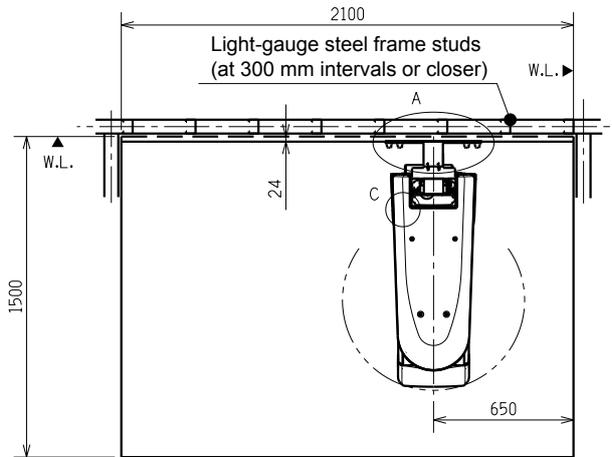
Fig. ③ -105: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

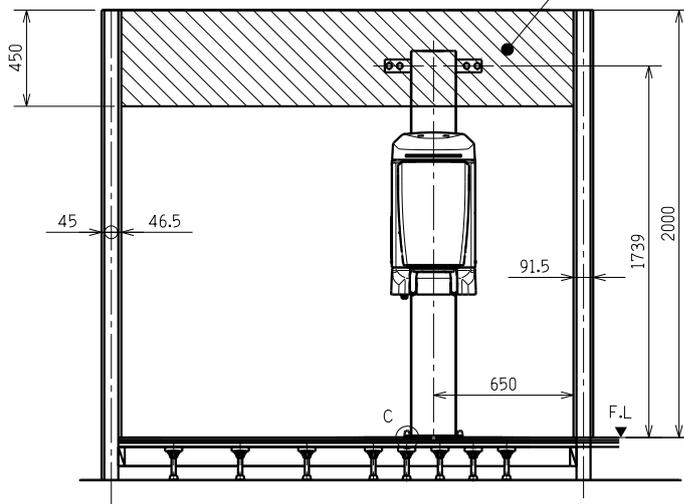
a-5. Example of Standing position wall-mount short type: 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

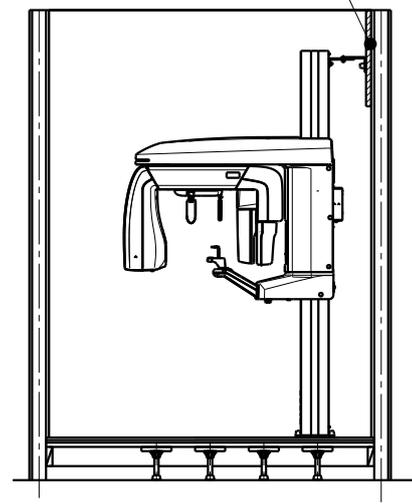


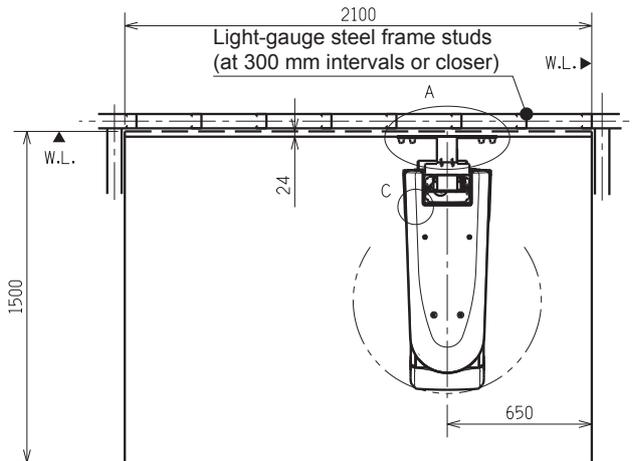
Fig. ③ -106: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount short type: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

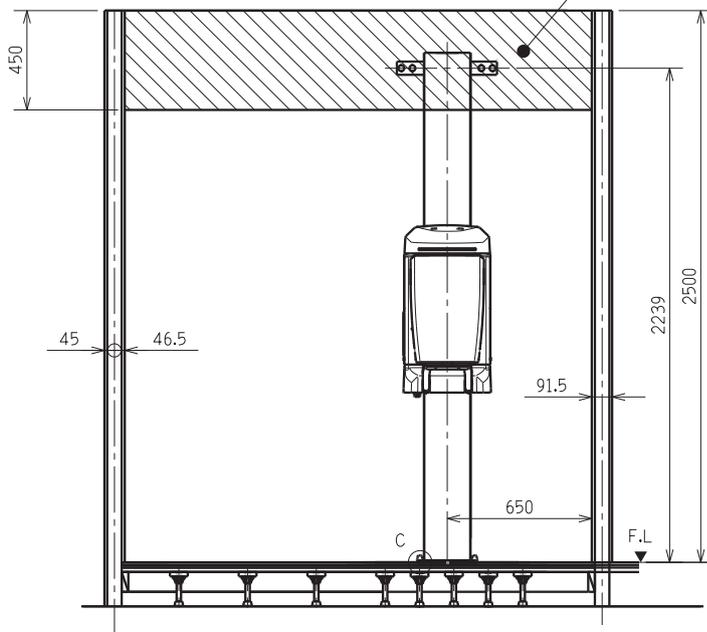
a-6. Example of Standing position wall-mount long type: 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching the wall-mounting bracket

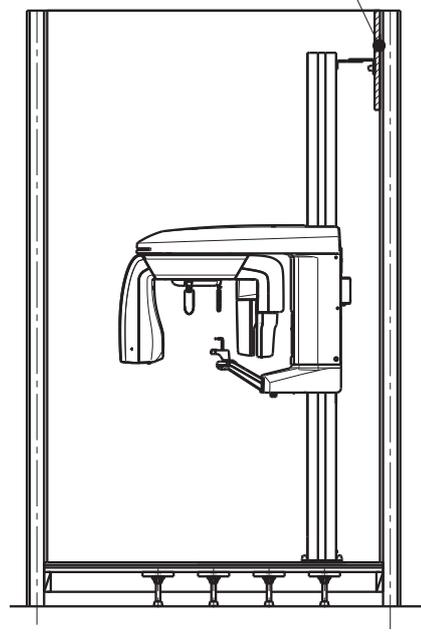


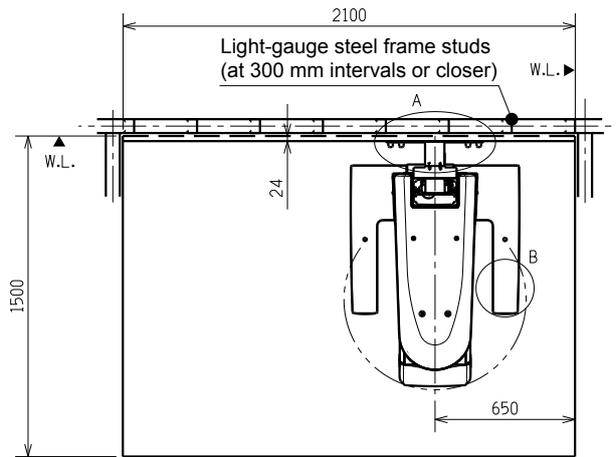
Fig. ③ -107: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount long type: 3D type)

**! CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

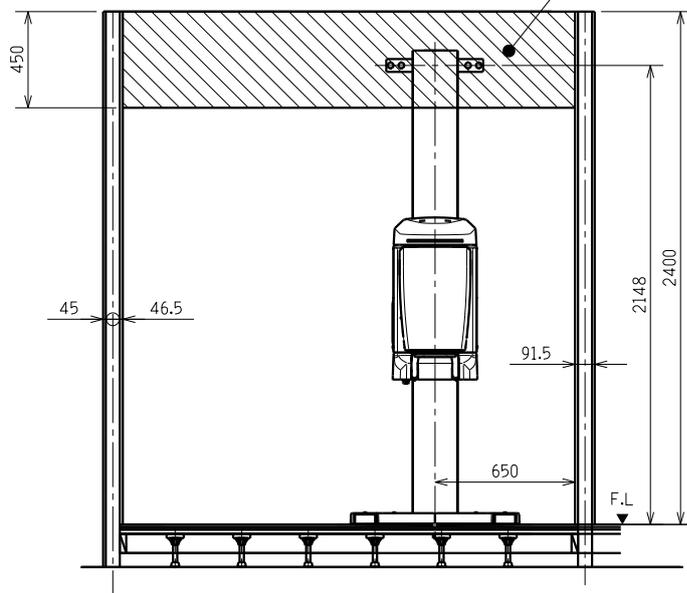
b-1. Example of Standing position base-mount (with an optional base): Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

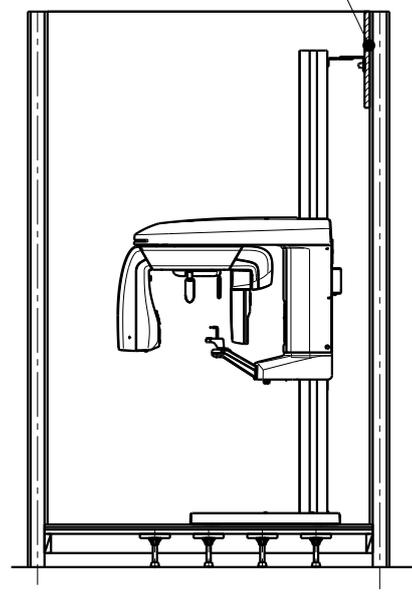


Fig. ③ -108: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount (with an optional base): Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-2. Example of Standing position base-mount short type (with an optional base) :  
Panoramic type installation

Unit: mm

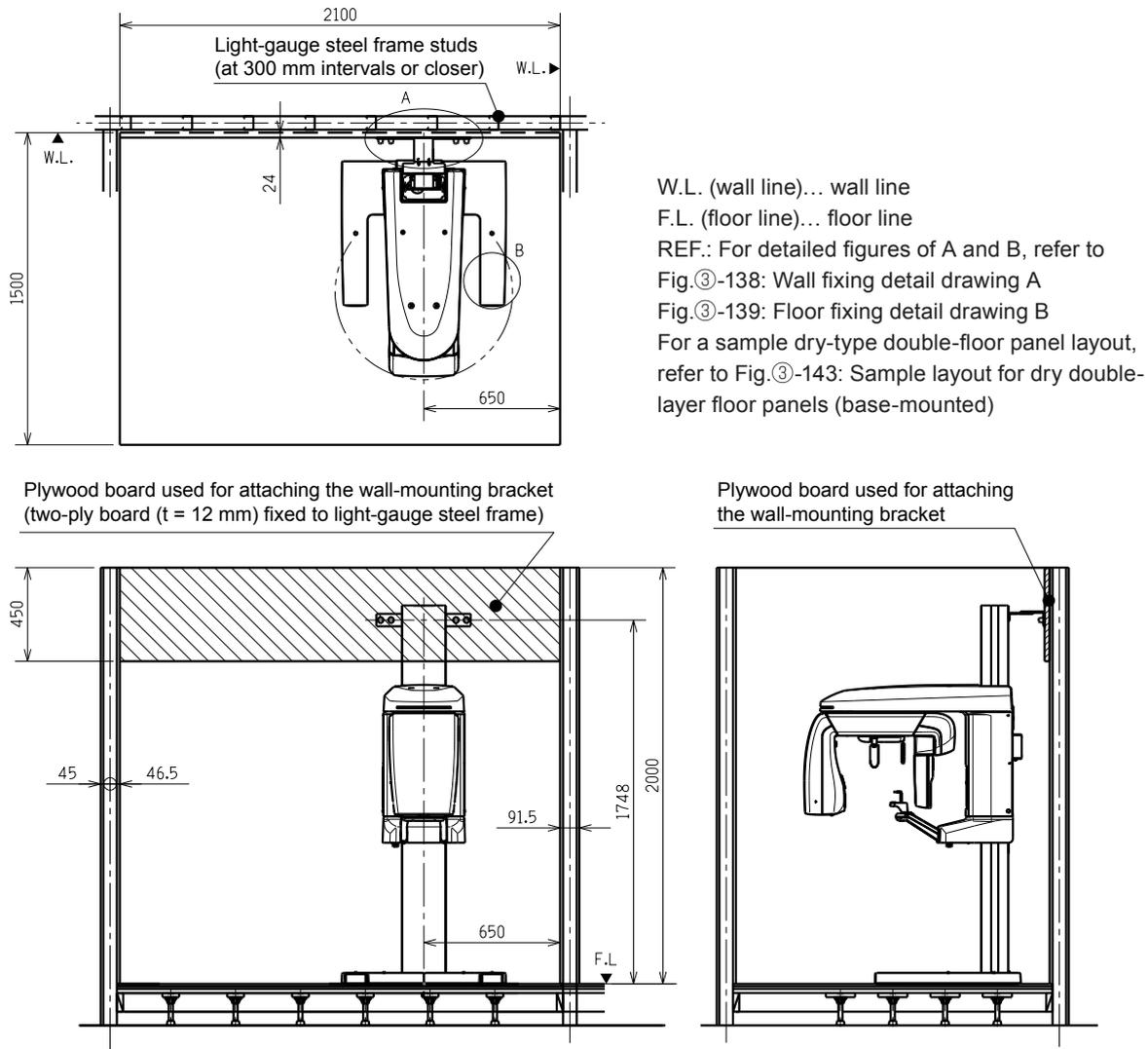


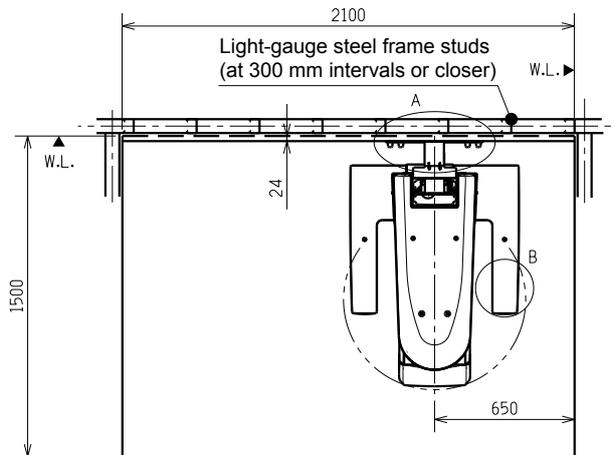
Fig. ③ -109: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount short type (with an optional base) : Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

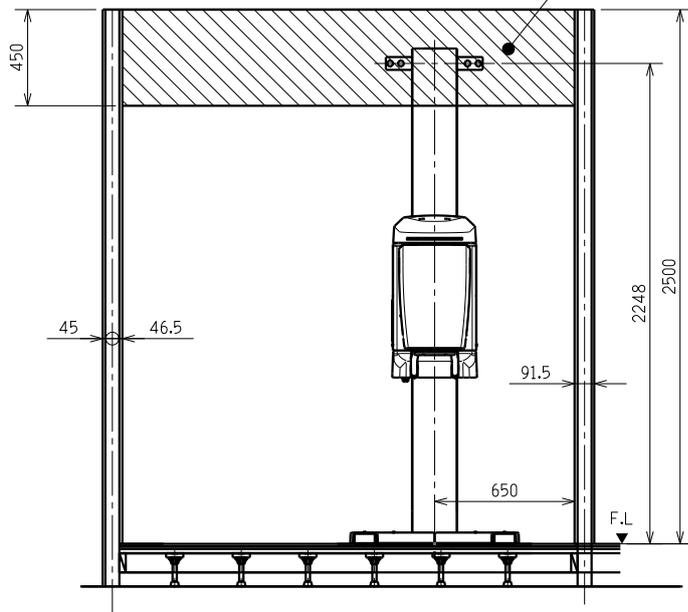
b-3. Example of Standing position base-mount long type (with an optional base) :  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-143: Sample layout for dry double-  
layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching the wall-mounting bracket

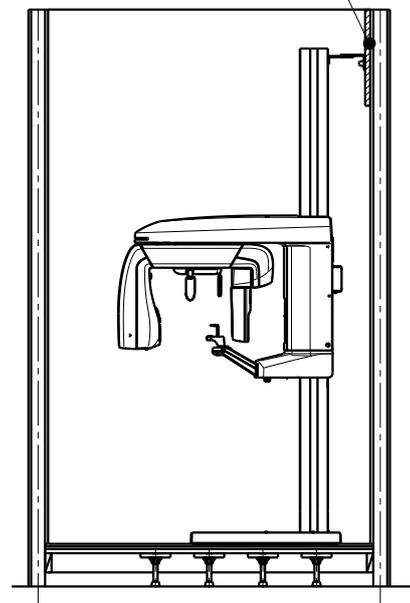


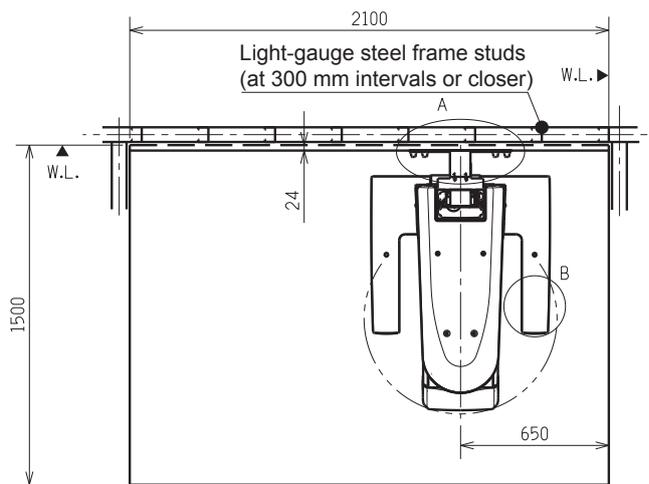
Fig. ③ -110: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount long type (with an optional base) : Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-4. Example of Standing position base-mount (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

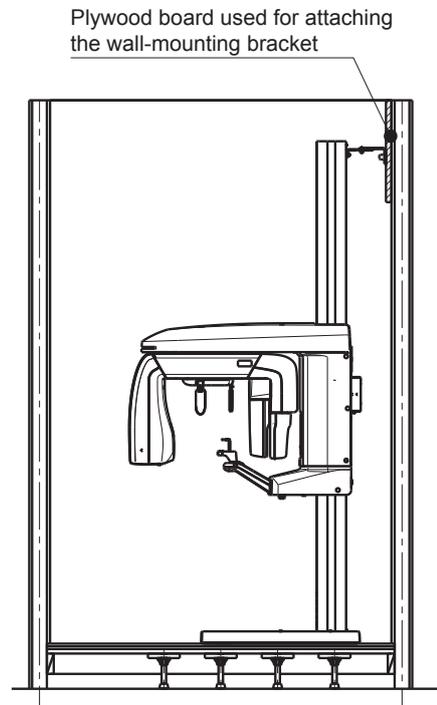
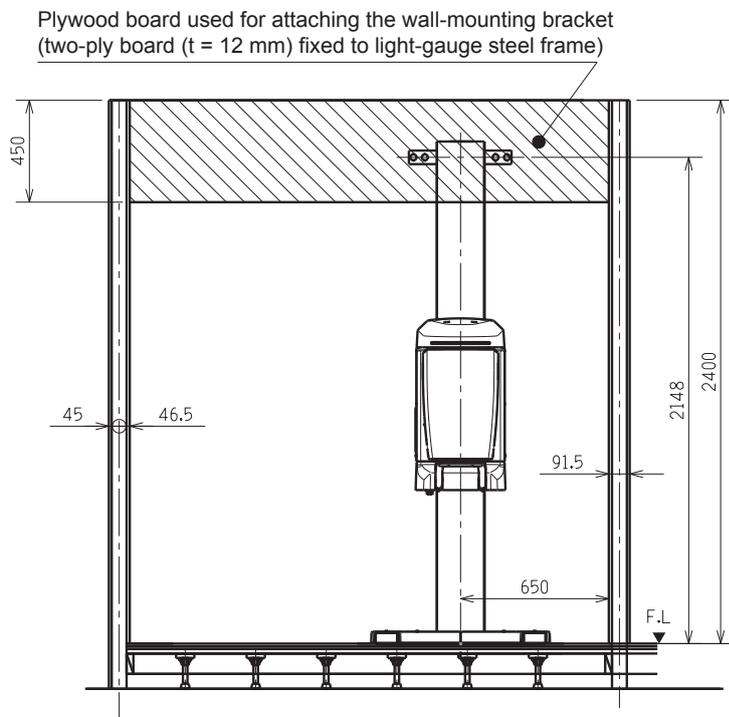


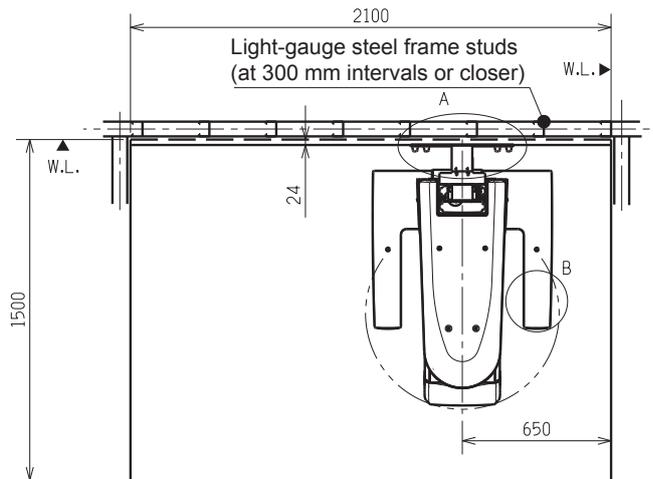
Fig. ③ -111: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount (with an optional base) : 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

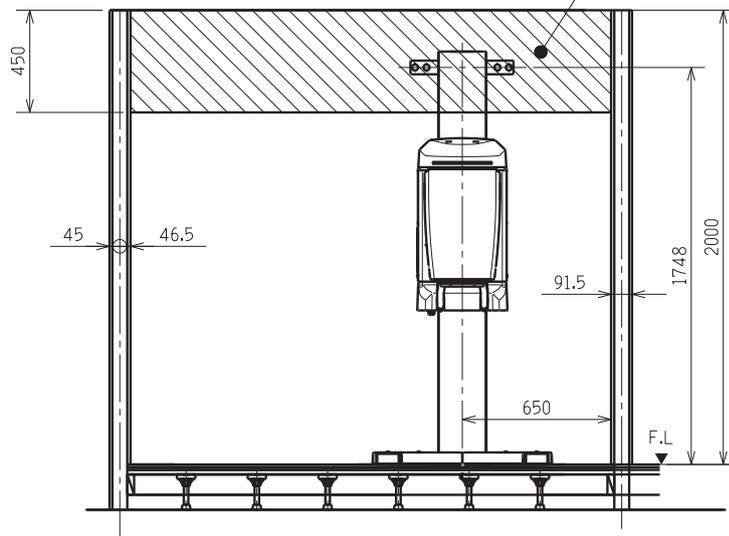
b-5. Example of Standing position base-mount short type (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

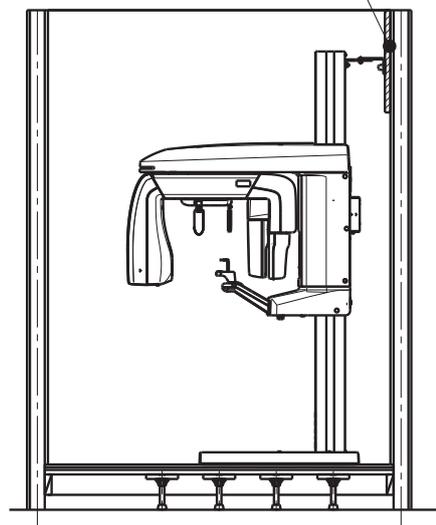


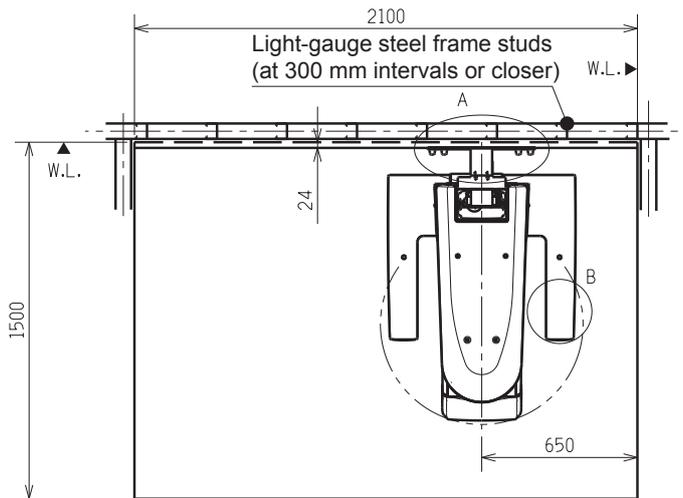
Fig. ③ -112: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount short type (with an optional base) : 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

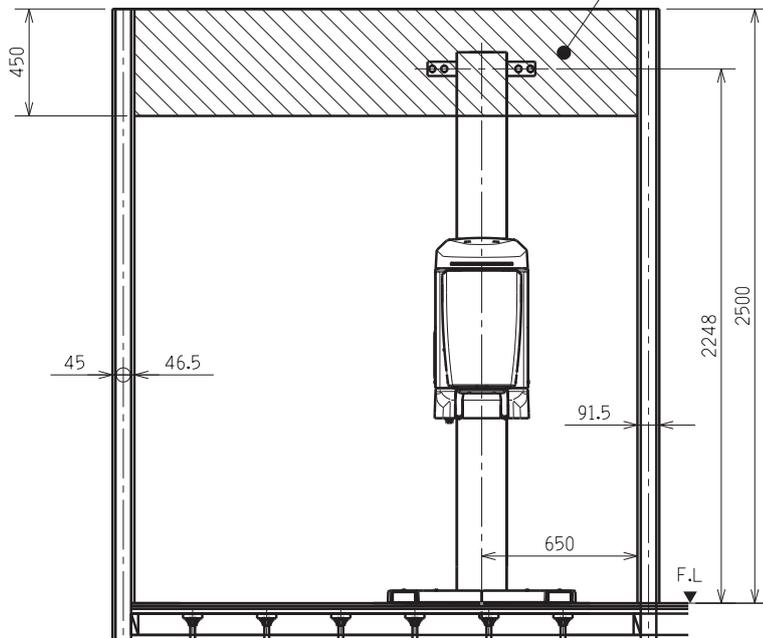
b-6. Example of Standing position base-mount long type (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig. ③-138: Wall fixing detail drawing A  
 Fig. ③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig. ③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
 the wall-mounting bracket

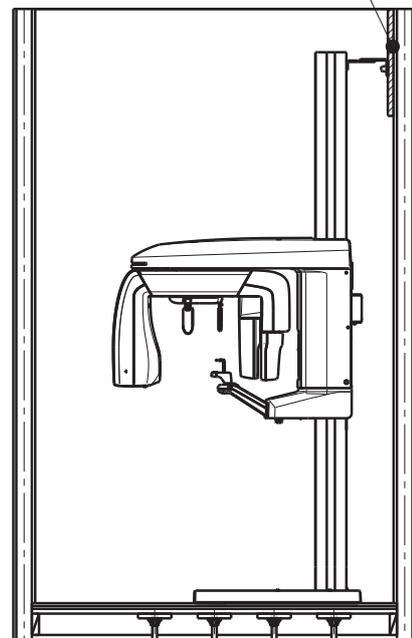


Fig. ③ -113: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount long type (with an optional base) : 3D type)

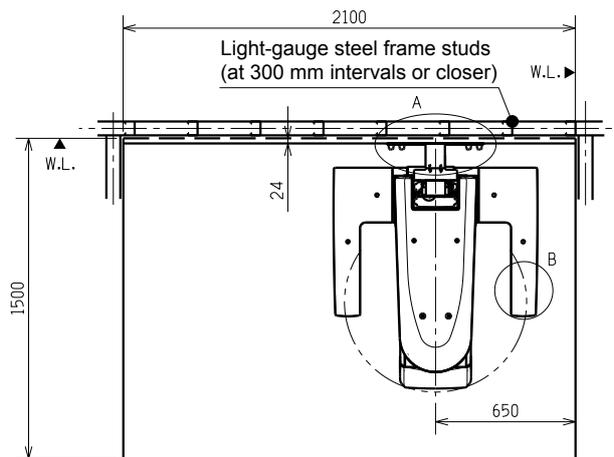
**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-7. Example of Standing position base-mount (with an optional wide base):

Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-144: Sample layout for dry double-  
 layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to light-gauge steel frame)

Plywood board used for attaching  
 the wall-mounting bracket

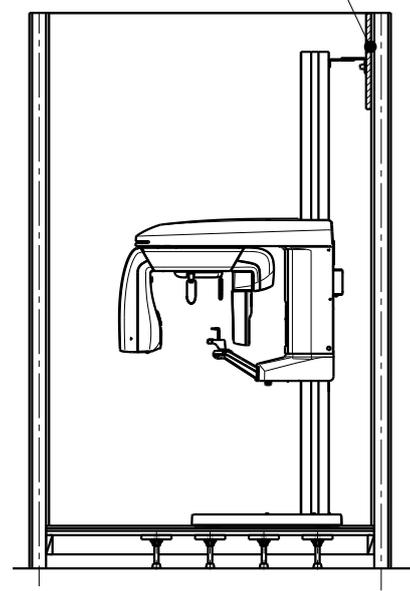
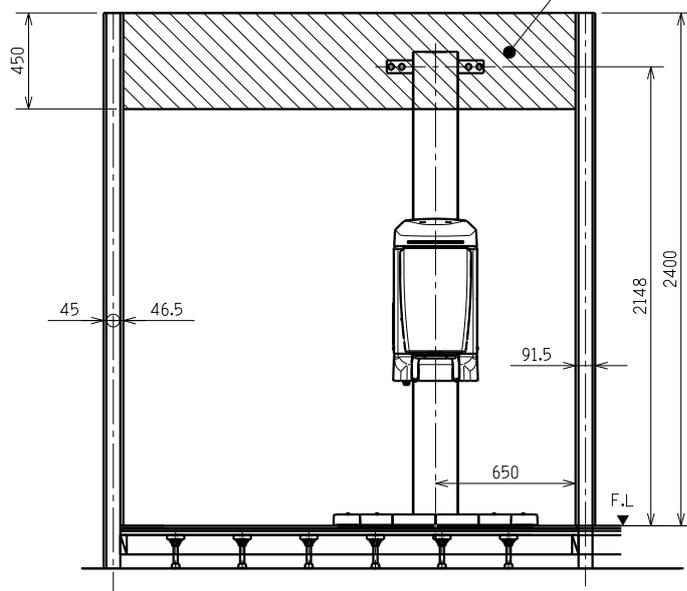


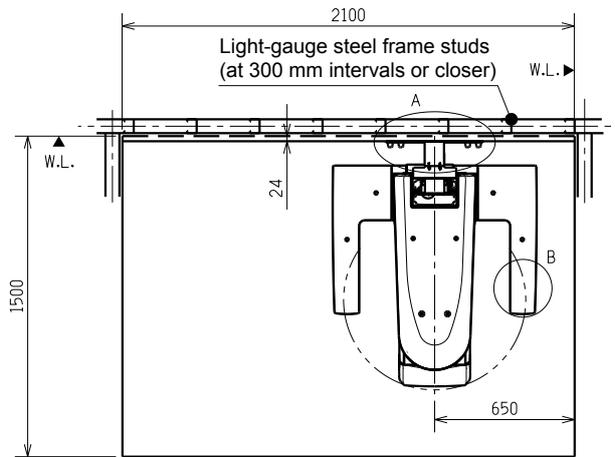
Fig. ③ -114: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount (with an optional wide base): Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

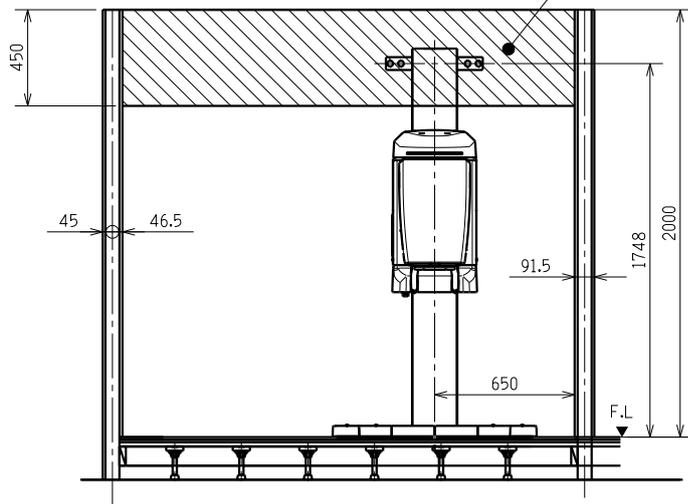
b-8. Example of Standing position base-mount short type (with an optional wide base):  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

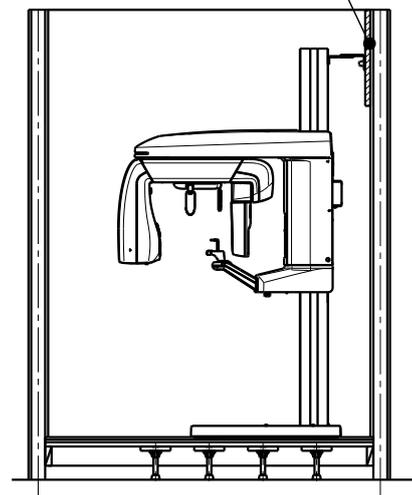


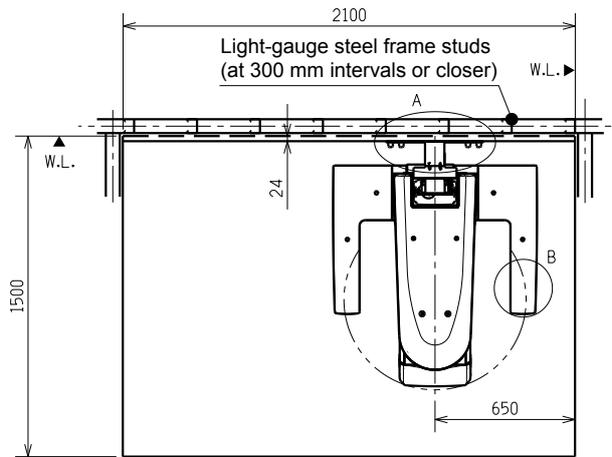
Fig. ③ -115: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount short type (with an optional wide base): Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-9. Example of Standing position base-mount long type (with an optional wide base):  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)

Plywood board used for attaching  
the wall-mounting bracket

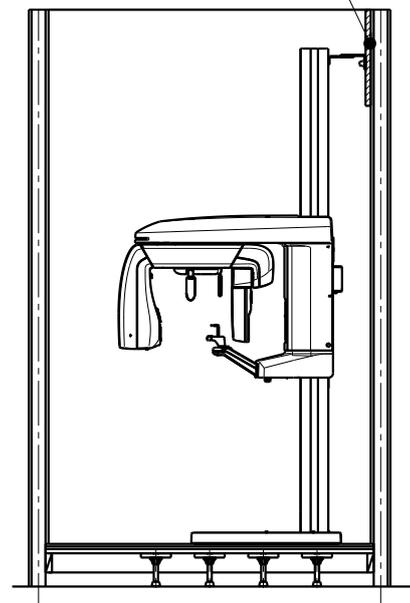
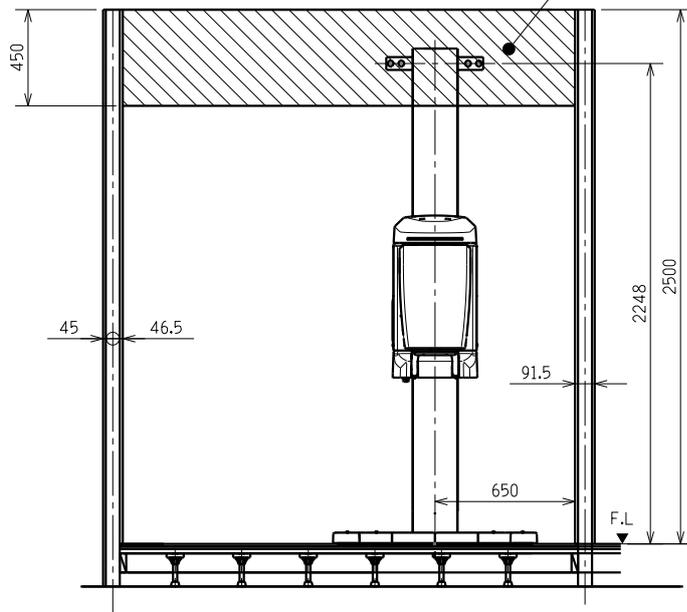


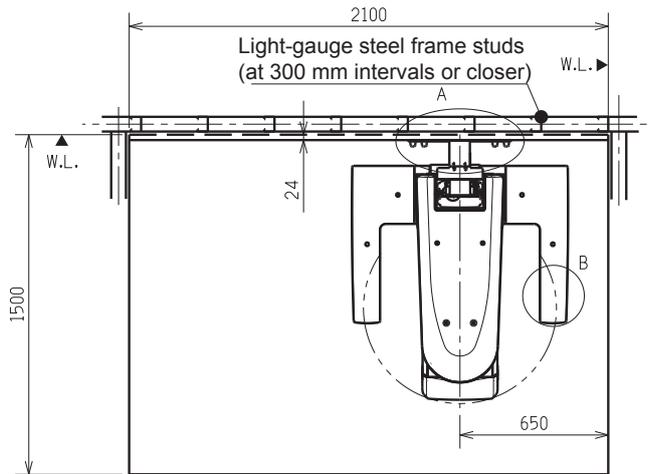
Fig. ③ -116: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount long type (with an optional wide base): Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

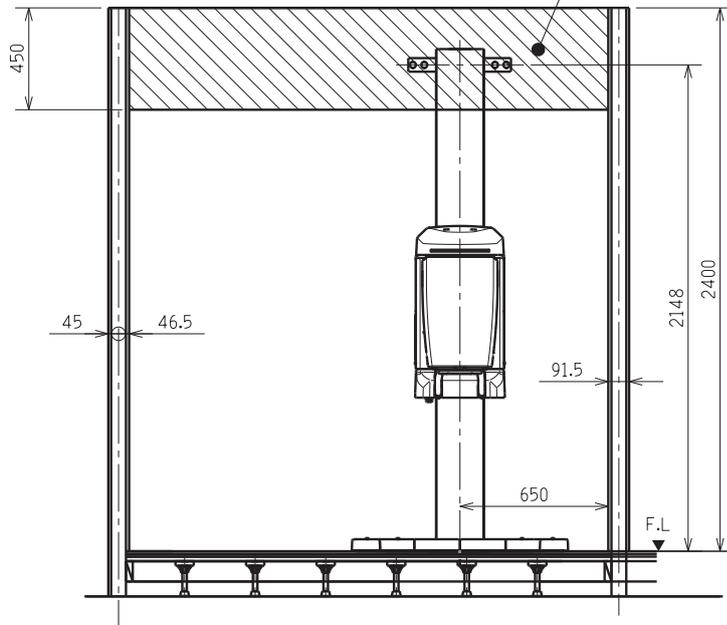
b-10. Example of Standing position base-mount (with an optional wide base):  
3D type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig. ③-138: Wall fixing detail drawing A  
Fig. ③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig. ③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

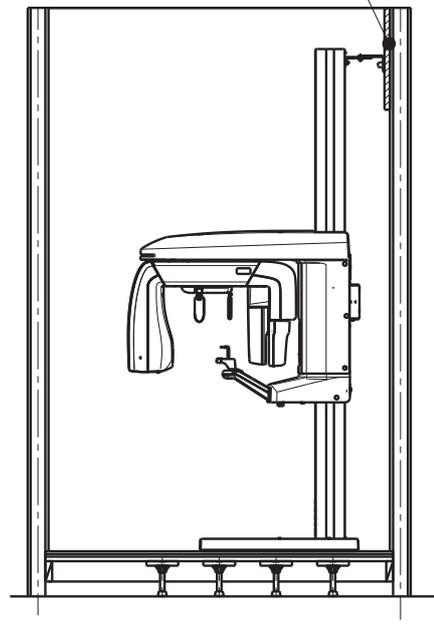


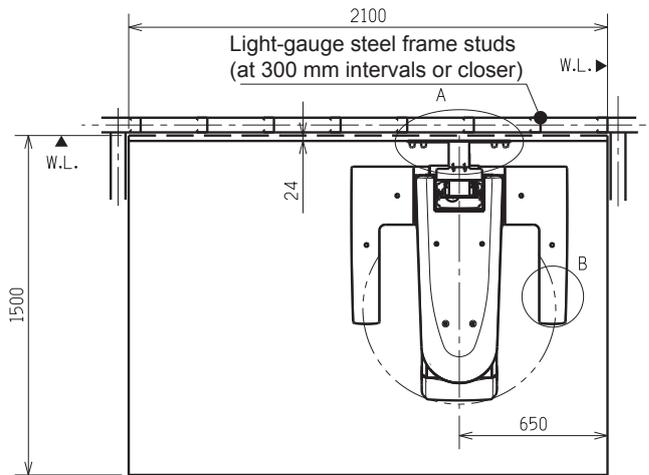
Fig. ③ -117: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

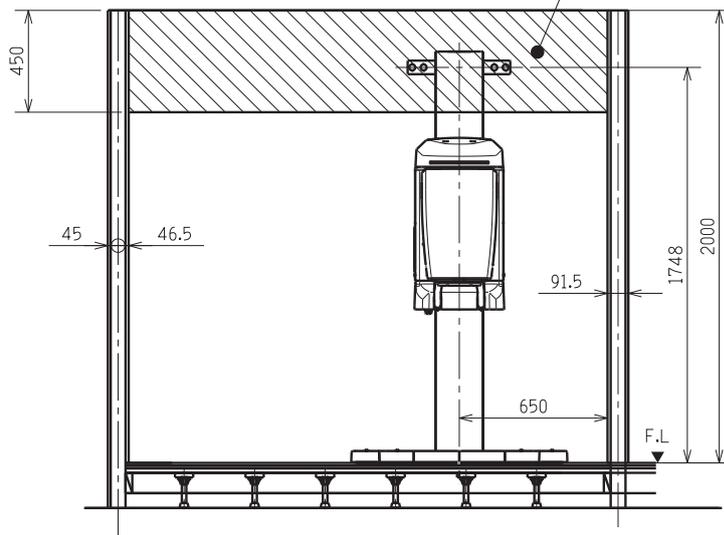
b-11. Example of Standing position base-mount short type (with an optional wide base):  
3D type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

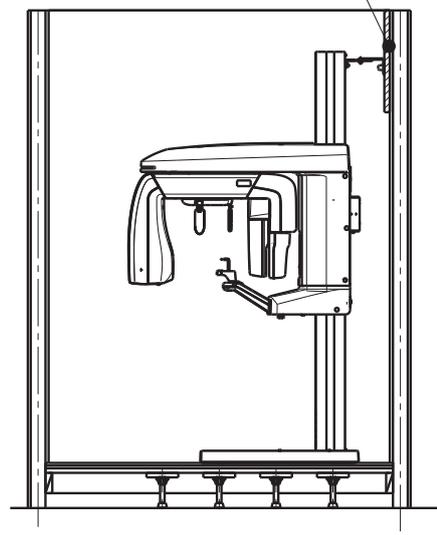


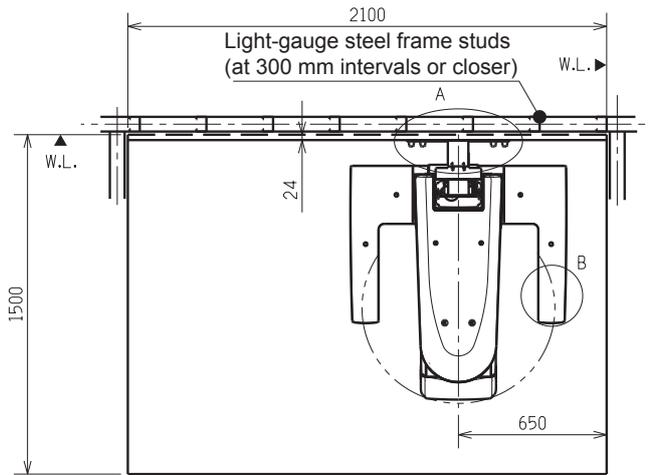
Fig. ③ -118: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount short type (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

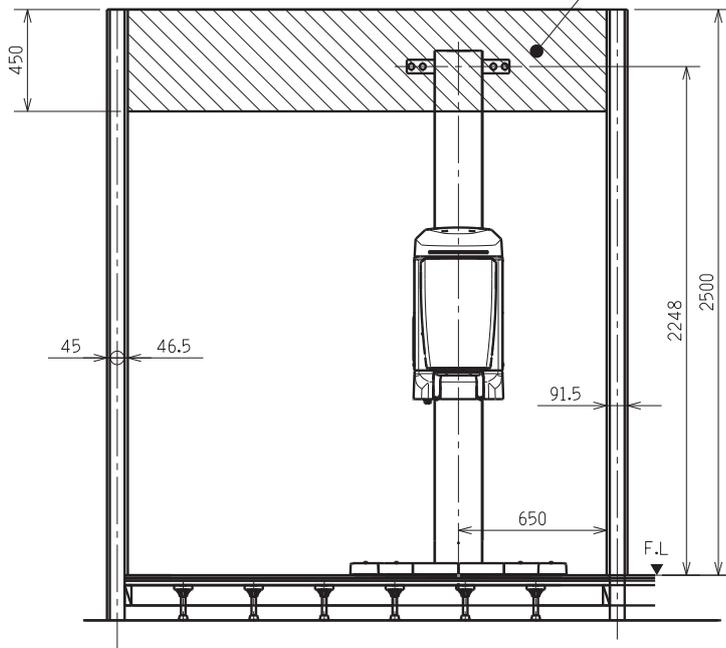
b-12. Example of Standing position base-mount long type (with an optional wide base):  
3D type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

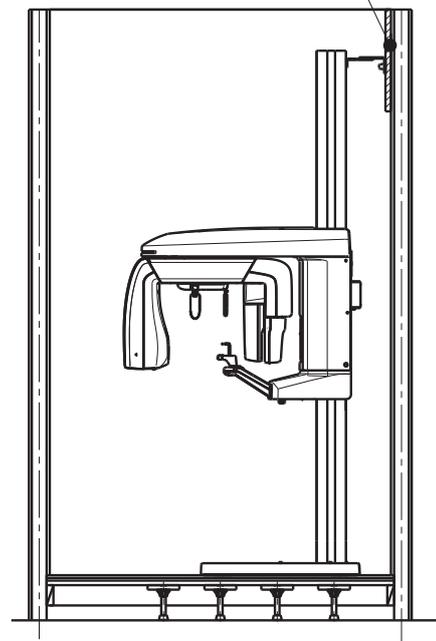


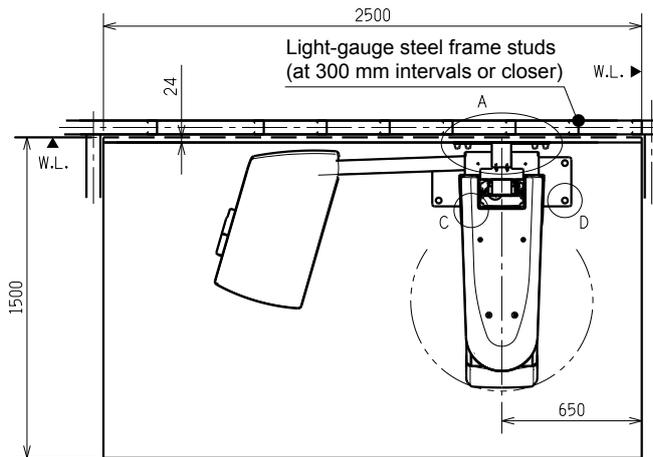
Fig. ③ -119: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount long type (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-1. Example of Standing position wall-mount: Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and C and D, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-140: Floor fixing detail drawing C  
 Fig.③-141: Floor fixing detail drawing D  
 (Cephalometric type)  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-142: Sample layout for dry double-  
 layer floor panels (wall-mounted)

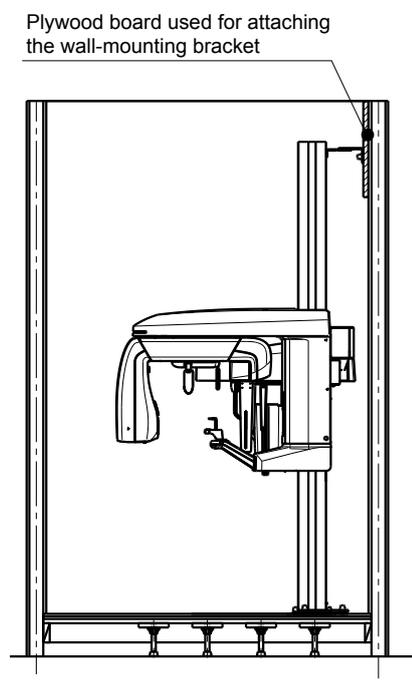
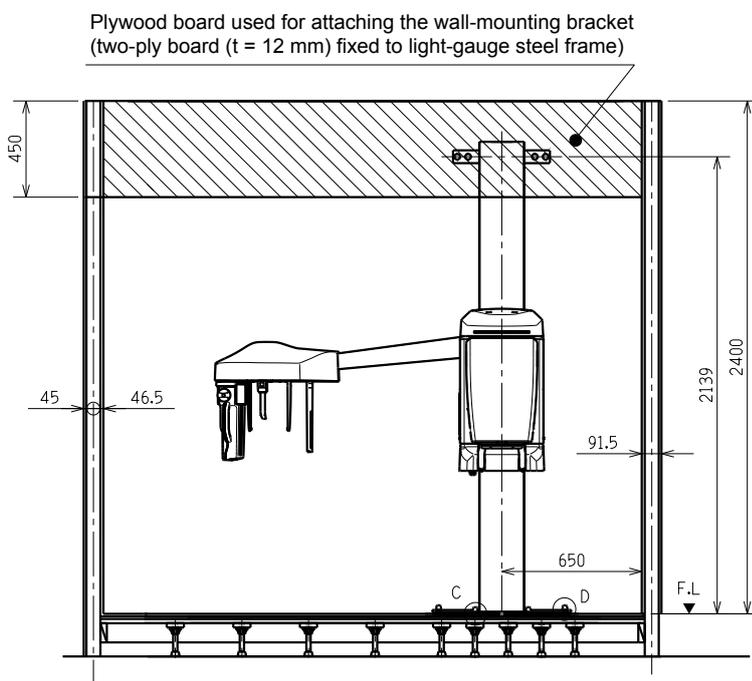


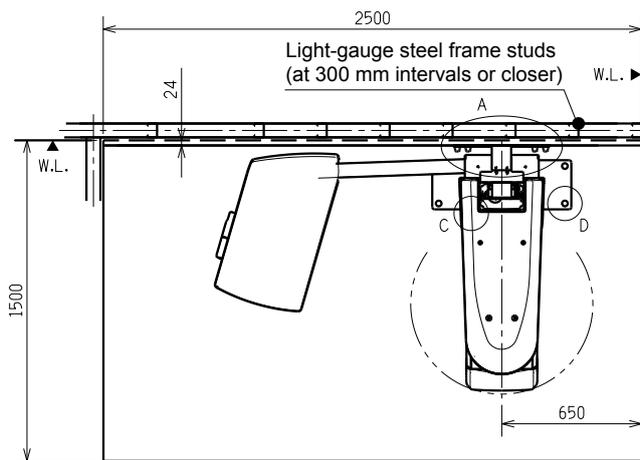
Fig. ③ -120: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position wall-mount: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-2. Example of Standing position wall-mount short type: Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and C and D, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-140: Floor fixing detail drawing C  
Fig.③-141: Floor fixing detail drawing D (Cephalometric type)  
For a sample dry-type double-floor panel layout, refer to Fig.③-142: Sample layout for dry double-layer floor panels (wall-mounted)

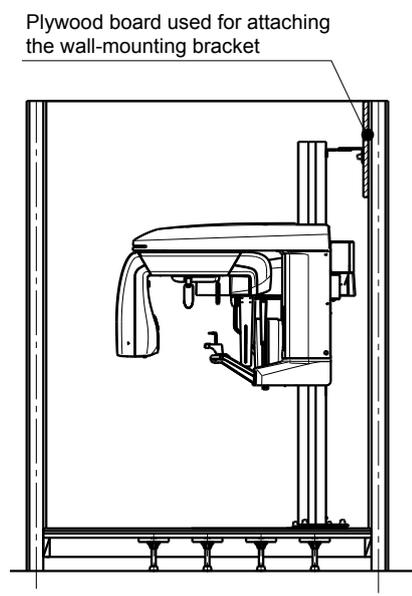
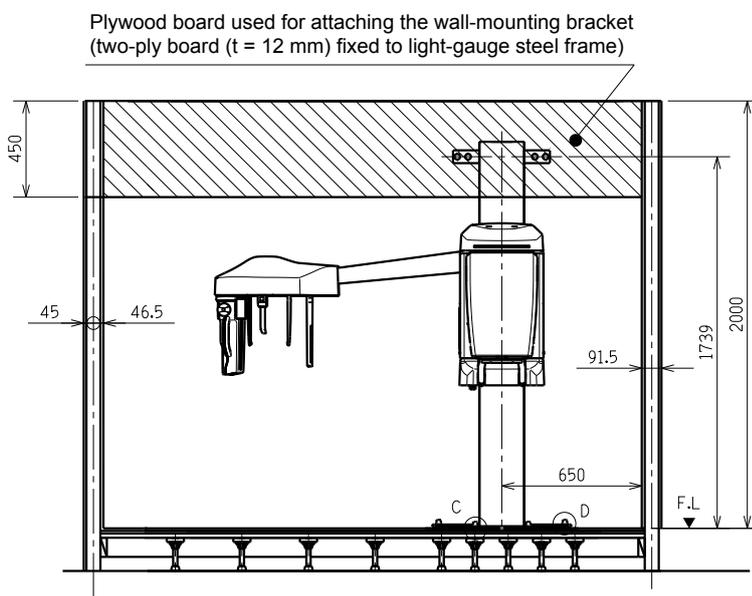


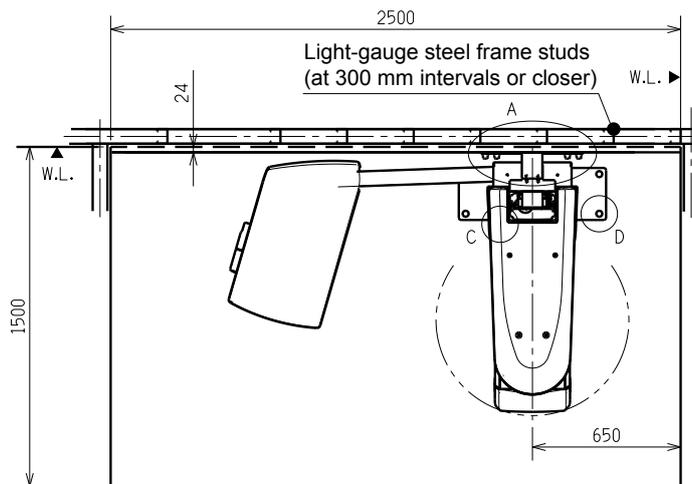
Fig. ③ -121: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position wall-mount short type: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

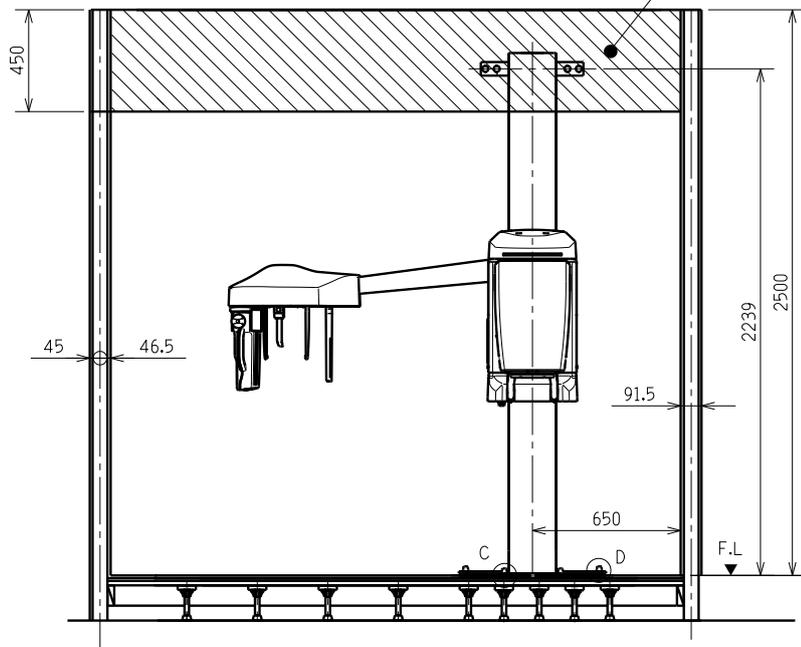
c-3. Example of Standing position wall-mount long type: Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and C and D, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-140: Floor fixing detail drawing C  
Fig.③-141: Floor fixing detail drawing D  
(Cephalometric type)  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-142: Sample layout for dry double-  
layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

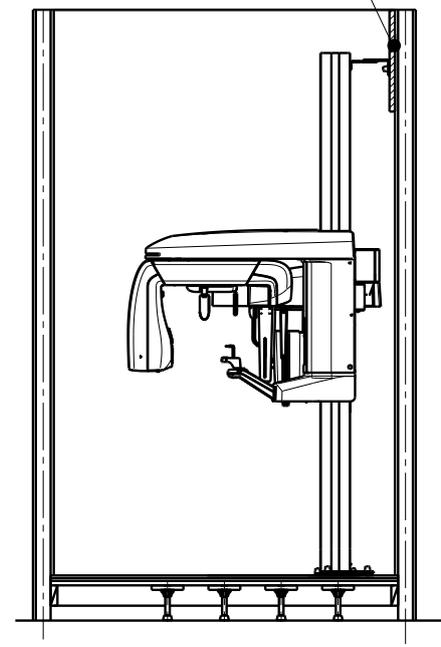


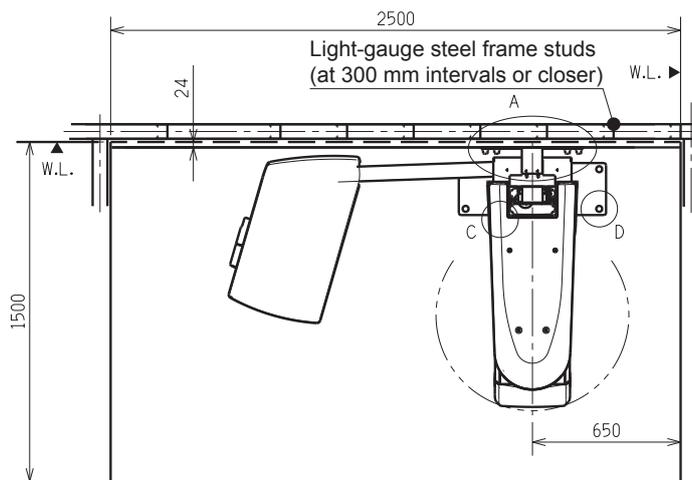
Fig. ③ -122: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position wall-mount long type: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-4. Example of Standing position wall-mount: 3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and C and D, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-140: Floor fixing detail drawing C  
Fig.③-141: Floor fixing detail drawing D (Cephalometric type)  
For a sample dry-type double-floor panel layout, refer to Fig.③-142: Sample layout for dry double-layer floor panels (wall-mounted)

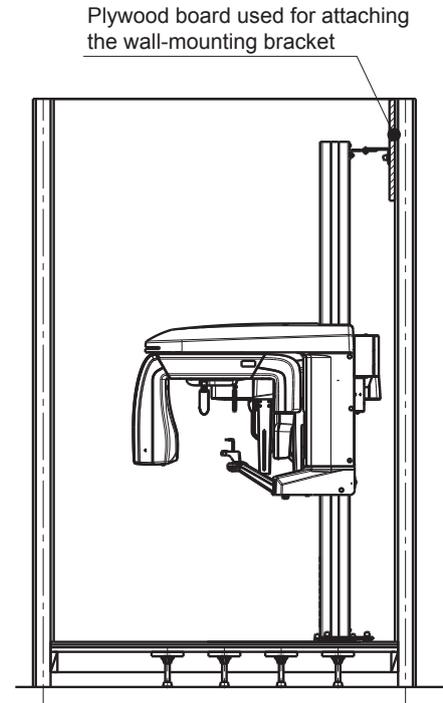
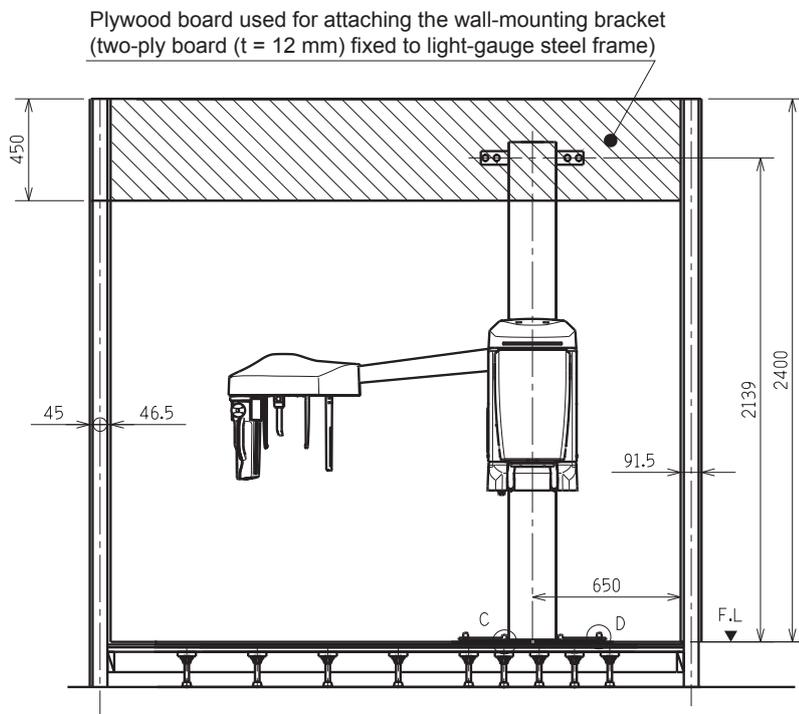
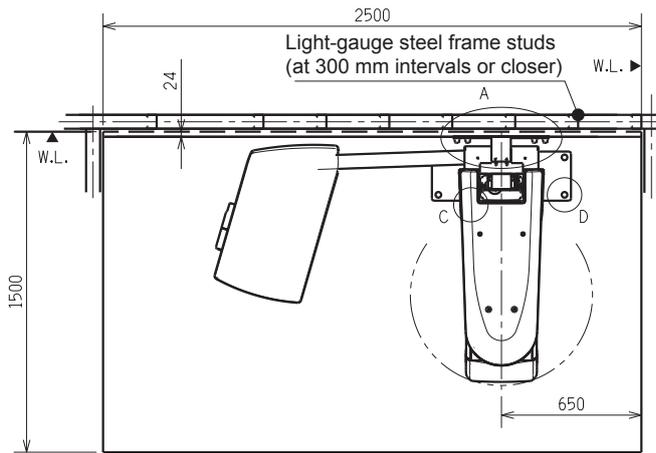


Fig. ③ -123: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position wall-mount: 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and C and D, refer to Fig.③-138: Wall fixing detail drawing A  
Fig.③-140: Floor fixing detail drawing C  
Fig.③-141: Floor fixing detail drawing D (Cephalometric type)  
For a sample dry-type double-floor panel layout, refer to Fig.③-142: Sample layout for dry double-layer floor panels (wall-mounted)

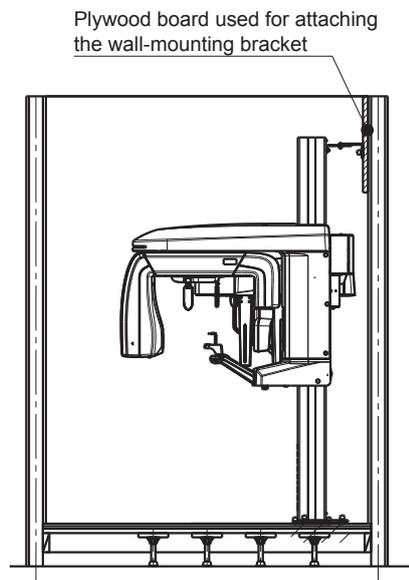
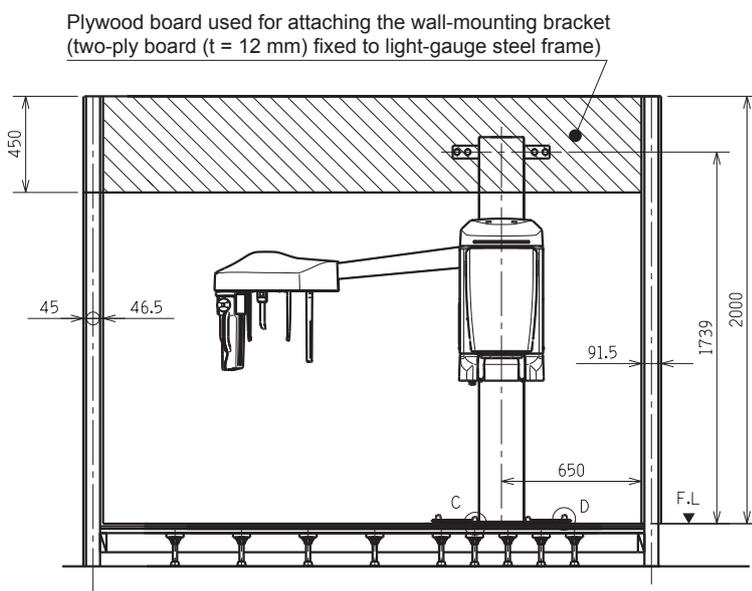
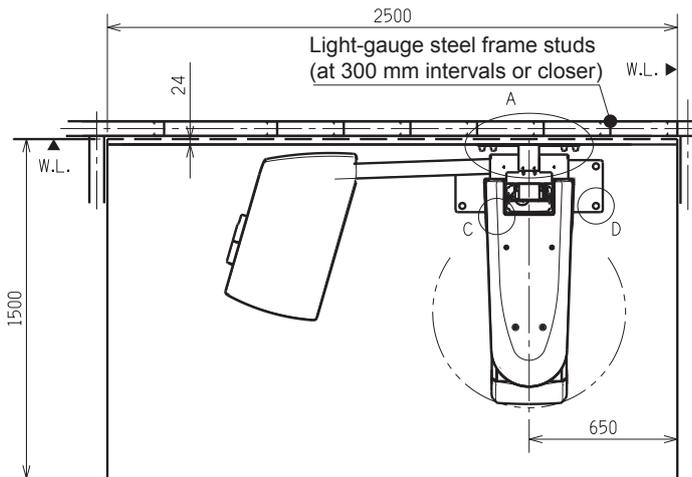


Fig. ③ -124: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position wall-mount short type: 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and C and D, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-140: Floor fixing detail drawing C  
Fig.③-141: Floor fixing detail drawing D  
(Cephalometric type)  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-142: Sample layout for dry double-  
layer floor panels (wall-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)

Plywood board used for attaching  
the wall-mounting bracket

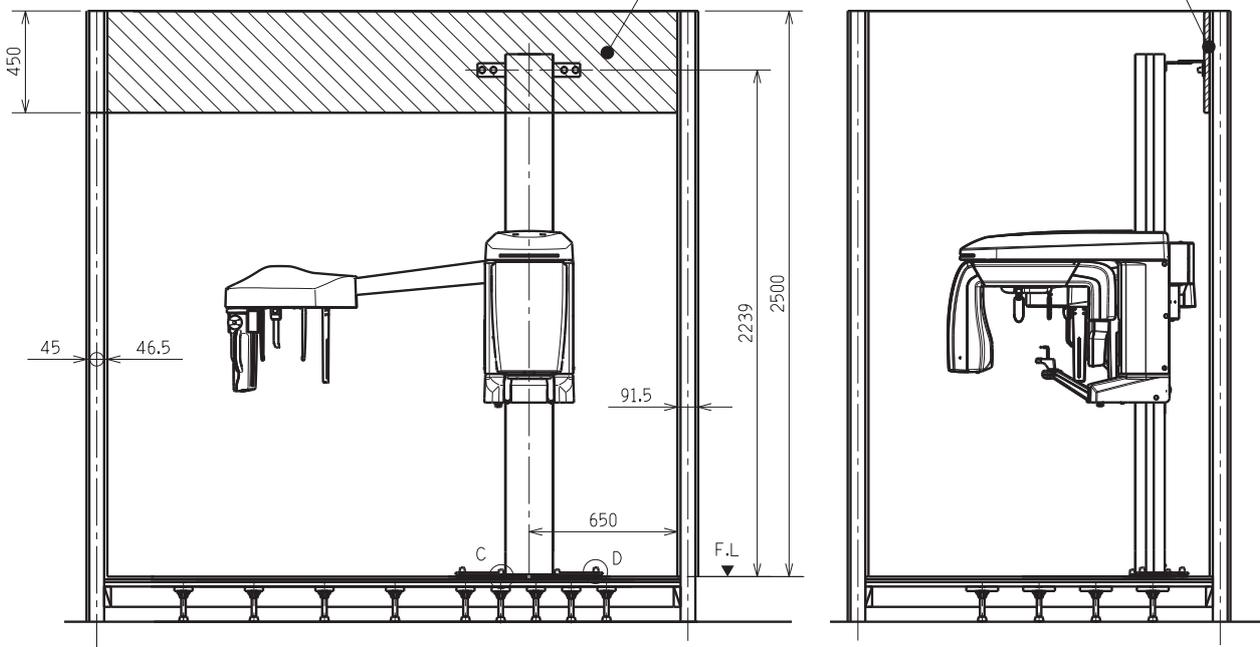


Fig. ③ -125: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position wall-mount long type: 3D Cephalometric type)

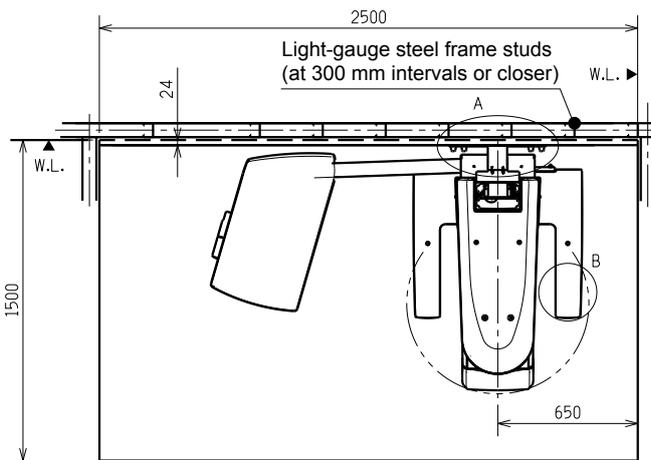
**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-1. Example of Standing position base-mount (with an optional base):

Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

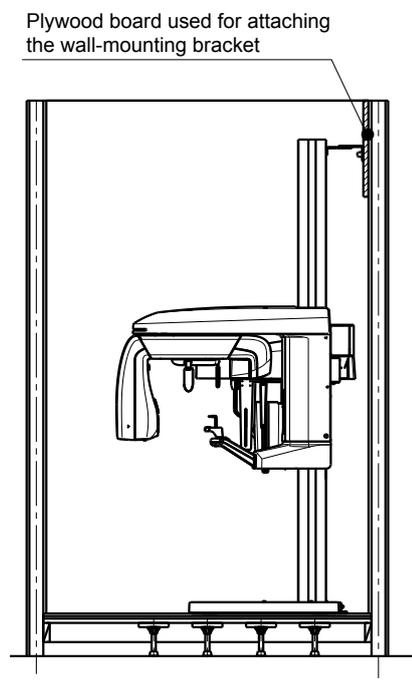
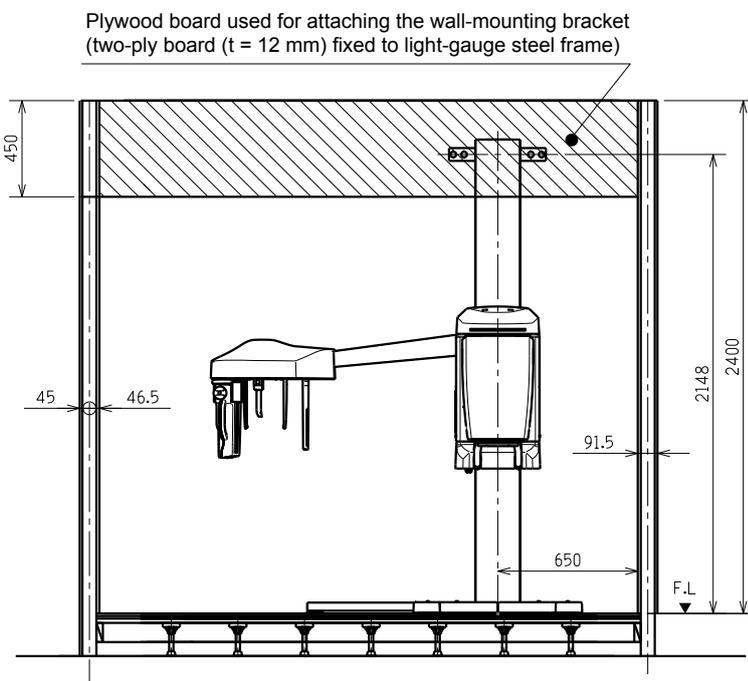


Fig. ③ -126: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount (with an optional base): Cephalometric type)

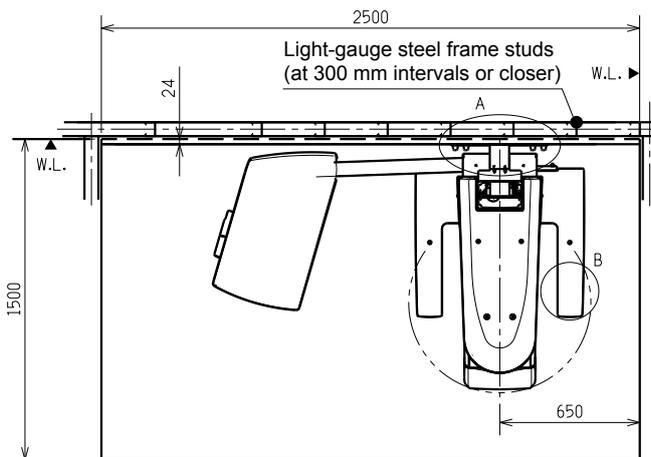
**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-2. Example of Standing position base-mount short type (with an optional base):

Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

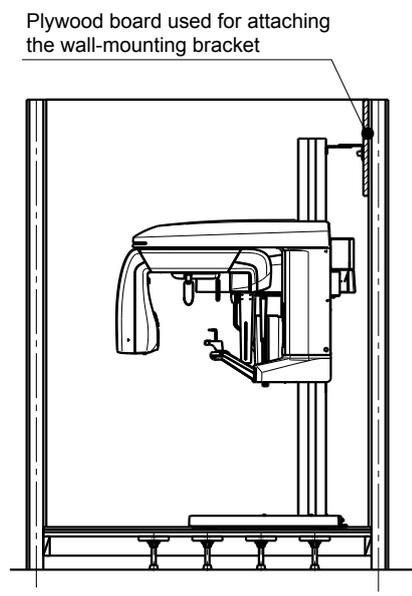
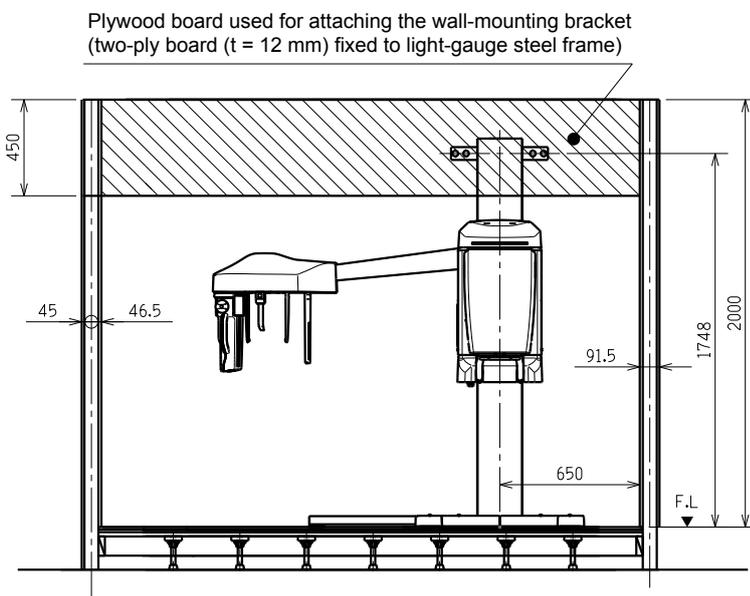


Fig. ③ -127: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount short type (with an optional base): Cephalometric type)

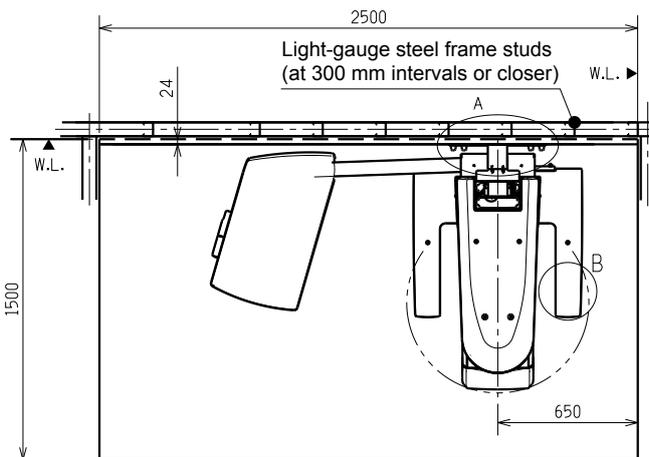
**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-3. Example of Standing position base-mount long type (with an optional base):

Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line

F.L. (floor line)... floor line

REF.: For detailed figures of A and B, refer to

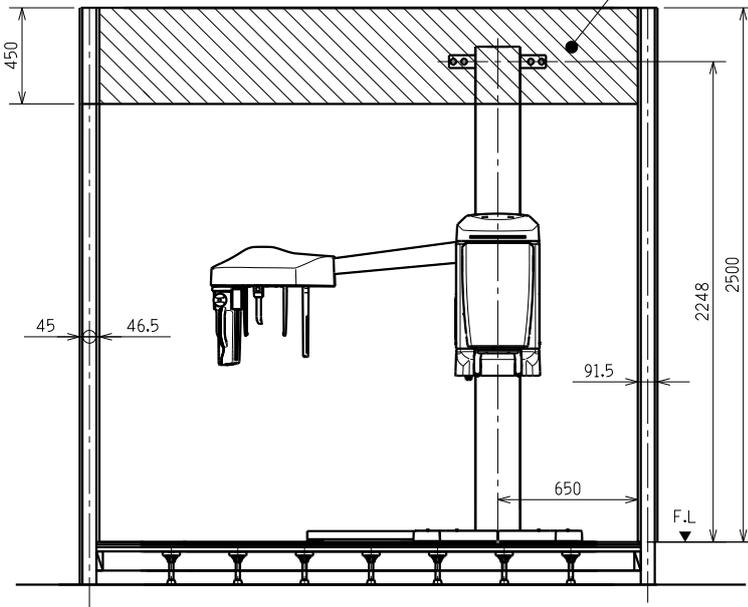
Fig.③-138: Wall fixing detail drawing A

Fig.③-139: Floor fixing detail drawing B

For a sample dry-type double-floor panel layout,

refer to Fig.③-143: Sample layout for dry double-layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching the wall-mounting bracket

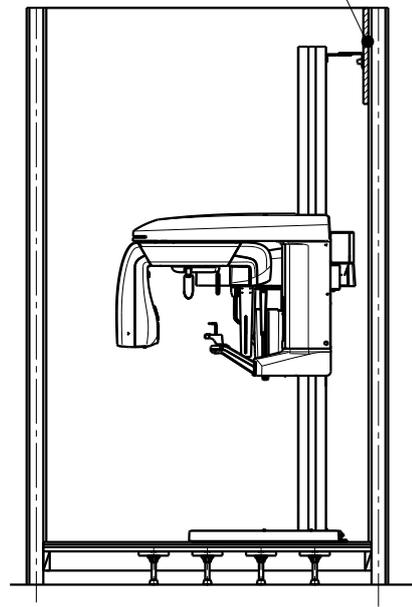


Fig. ③ -128: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position base-mount long type (with an optional base): Cephalometric type)

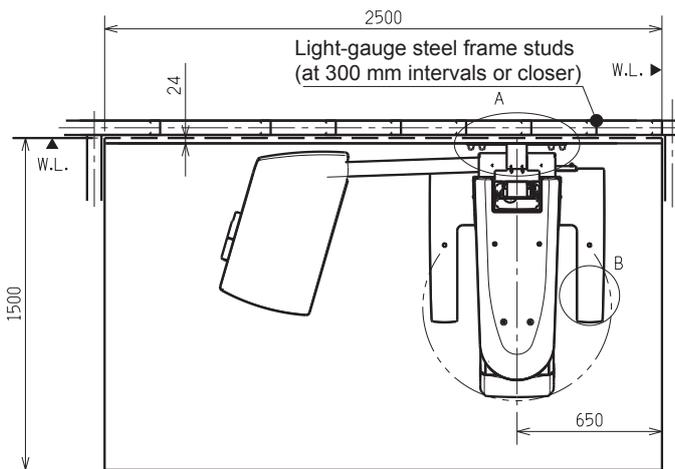
**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-4. Example of Standing position base-mount (with an optional base):

3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

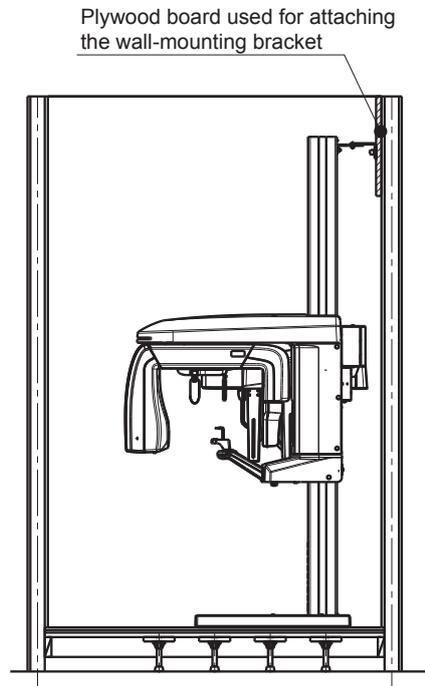
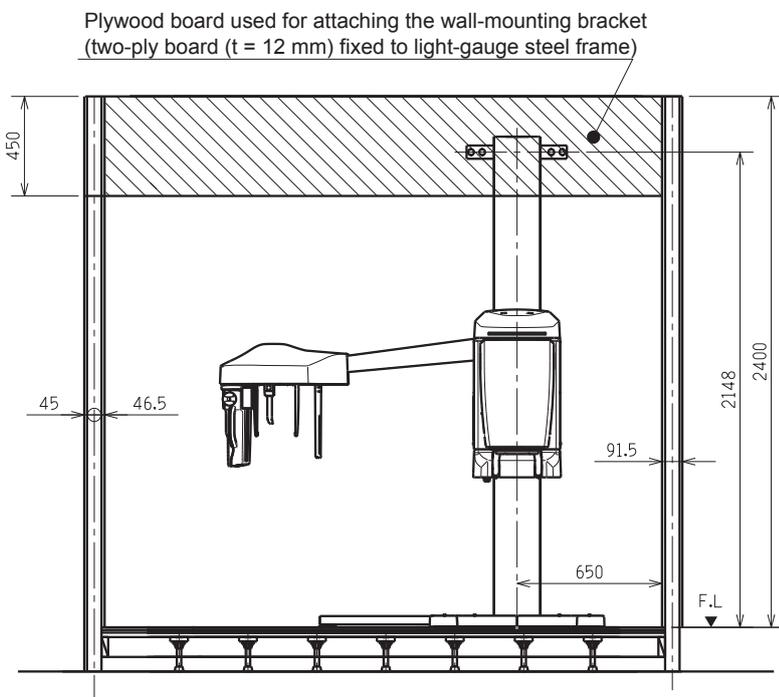


Fig. ③ -129: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount (with an optional base): 3D Cephalometric type)

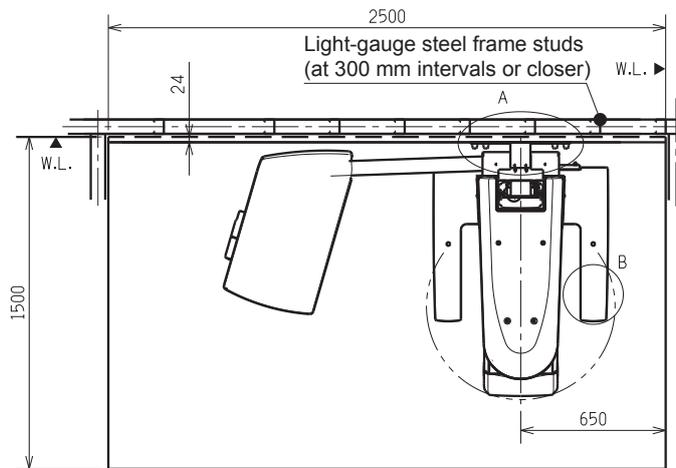
**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-5. Example of Standing position base-mount short type (with an optional base):

3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line

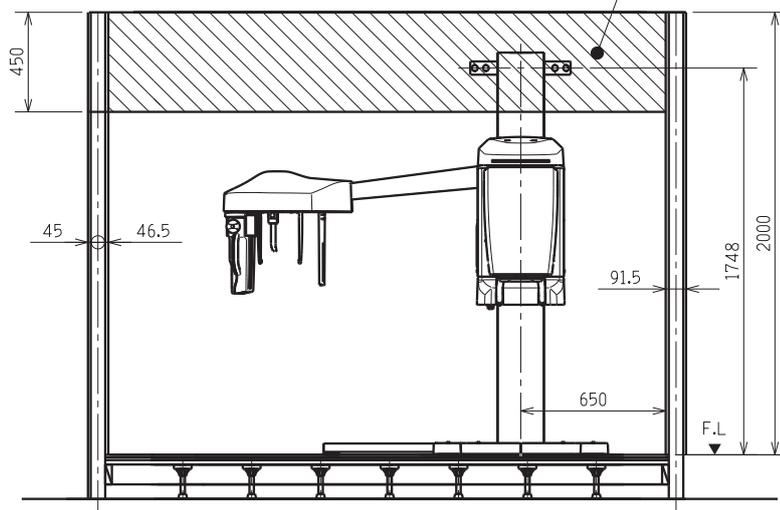
F.L. (floor line)... floor line

REF.: For detailed figures of A and B, refer to Fig.③-138: Wall fixing detail drawing A

Fig.③-139: Floor fixing detail drawing B

For a sample dry-type double-floor panel layout, refer to Fig.③-143: Sample layout for dry double-layer floor panels (base-mounted)

Plywood board used for attaching the wall-mounting bracket (two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching the wall-mounting bracket

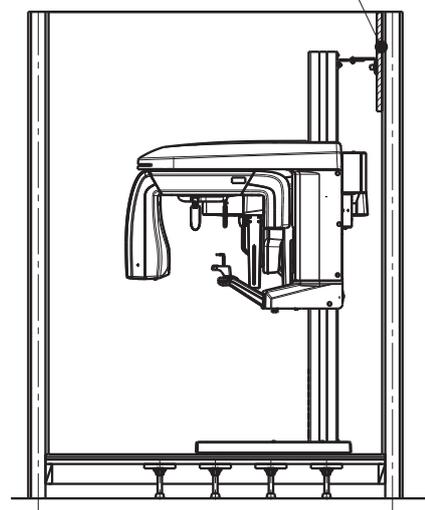


Fig. ③ -130: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position base-mount short type (with an optional base): 3D Cephalometric type)

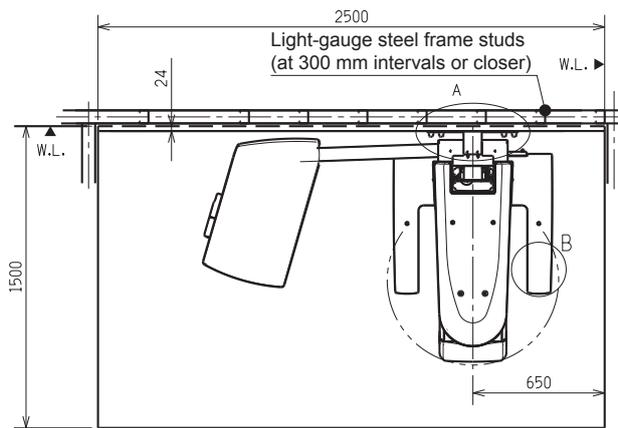
**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-6. Example of Standing position base-mount long type (with an optional base):

3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-138: Wall fixing detail drawing A  
 Fig.③-139: Floor fixing detail drawing B  
 For a sample dry-type double-floor panel layout,  
 refer to Fig.③-143: Sample layout for dry double-  
 layer floor panels (base-mounted)

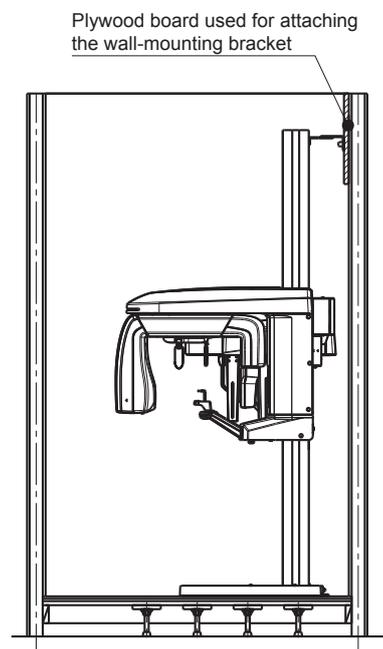
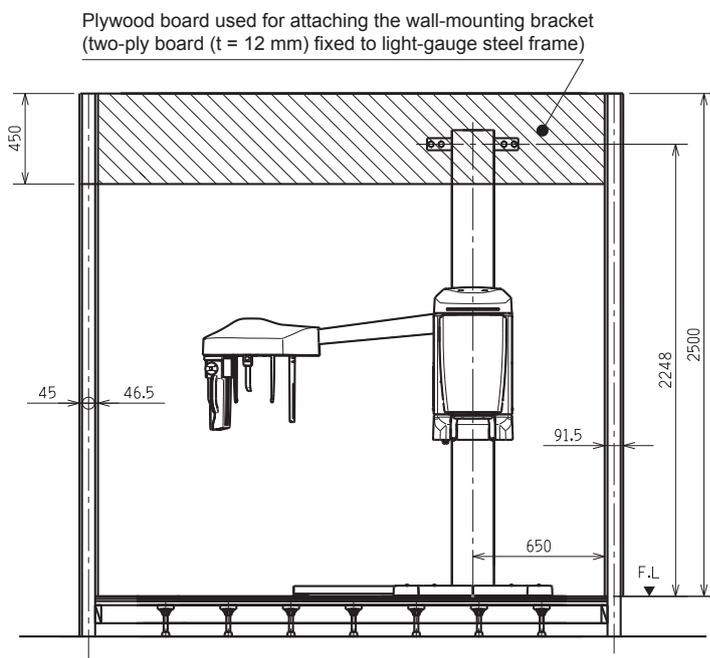


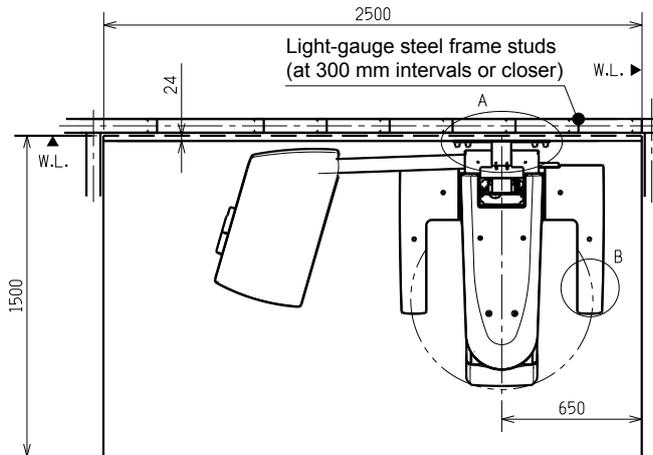
Fig. ③ -131: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
 (Standing position base-mount long type (with an optional base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-7. Example of Standing position base-mount (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

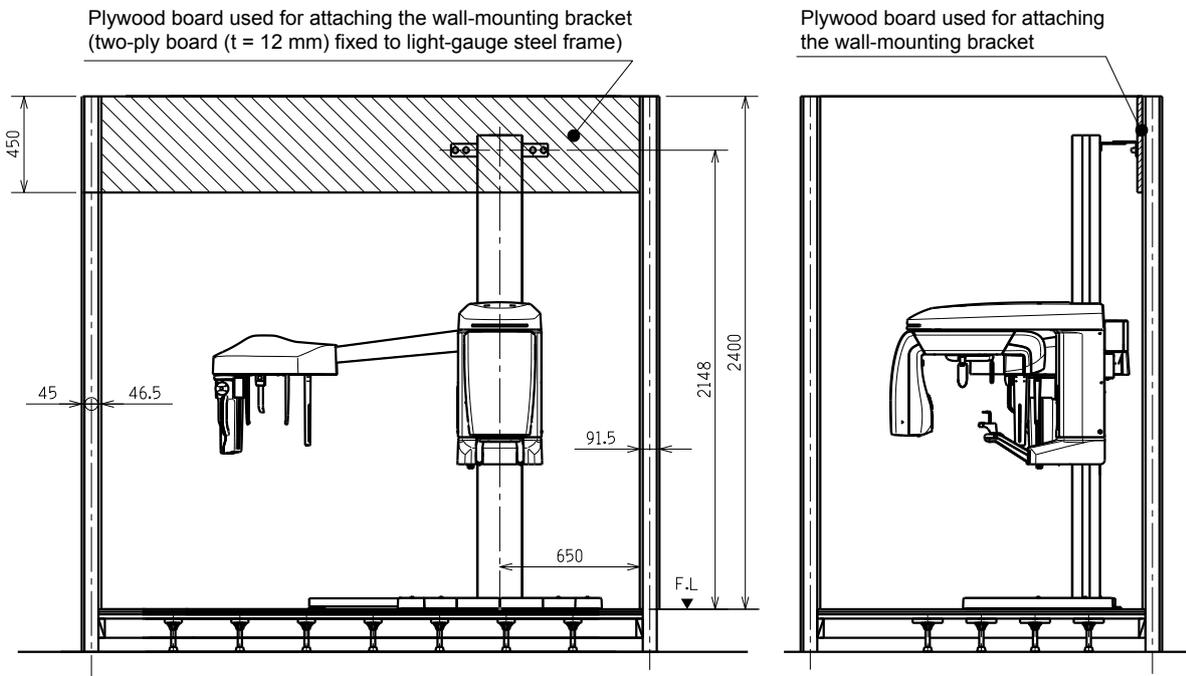


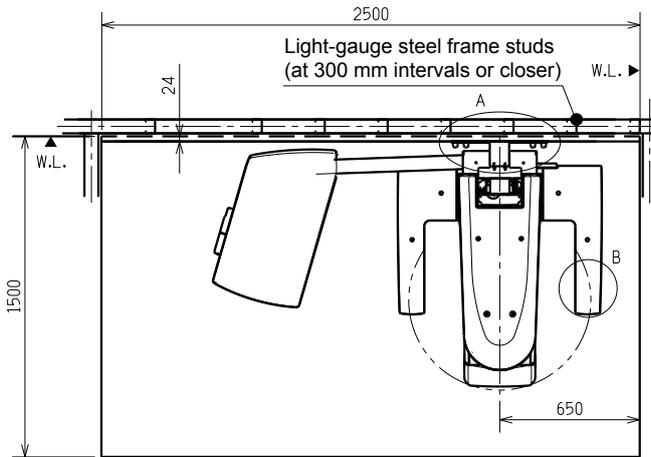
Fig. ③ -132: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount (with an optional wide base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
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- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-8. Example of Standing position base-mount short type (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig. ③-138: Wall fixing detail drawing A  
Fig. ③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig. ③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

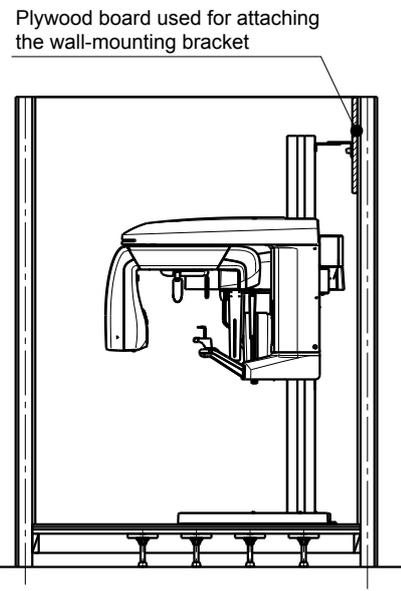
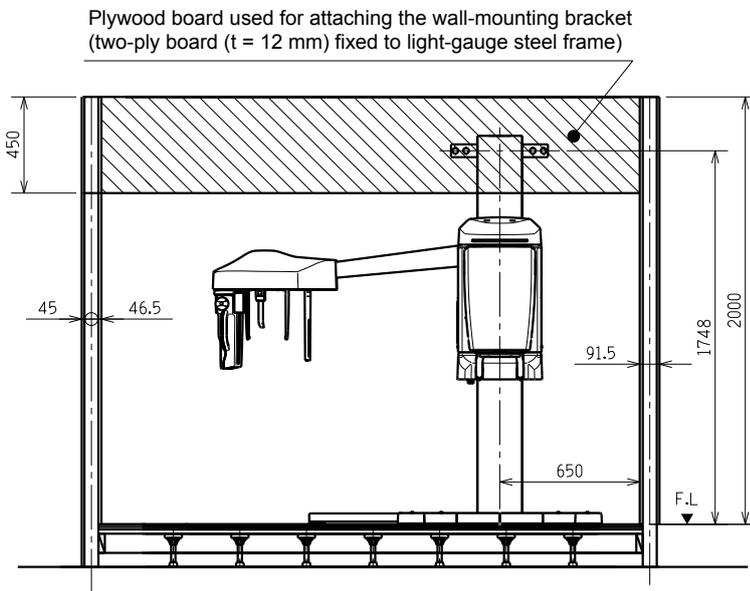


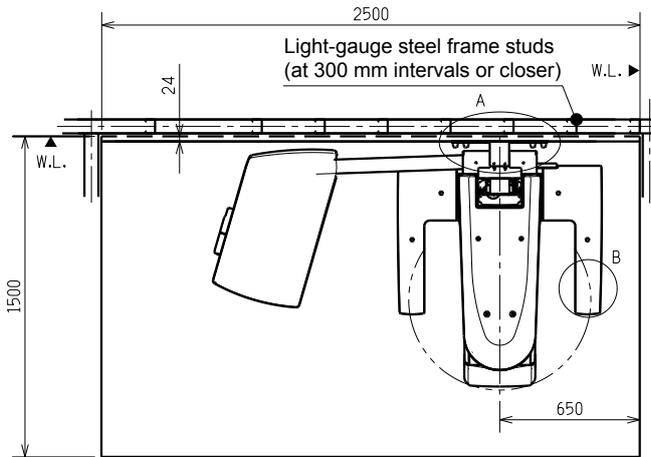
Fig. ③ -133: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount short type (with an optional wide base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-9. Example of Standing position base-mount long type (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

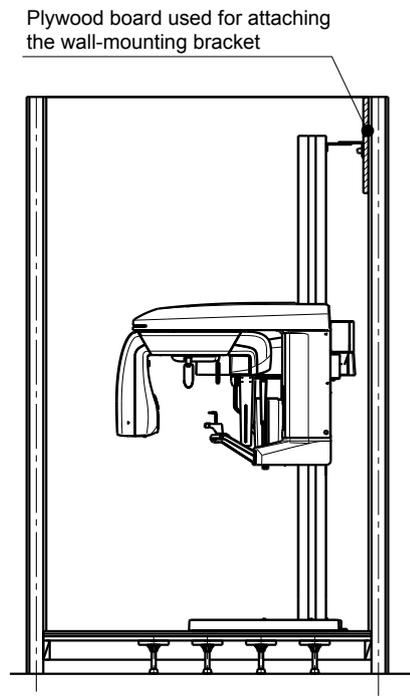
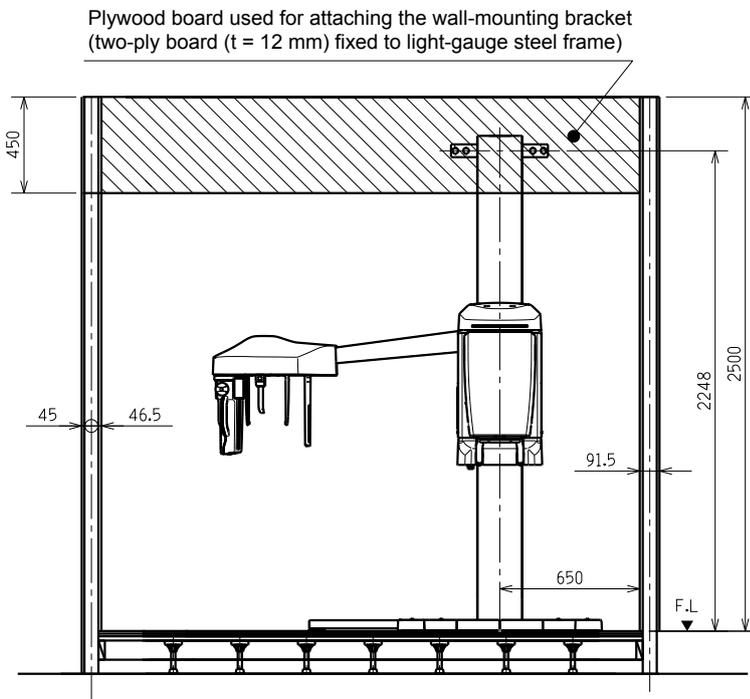


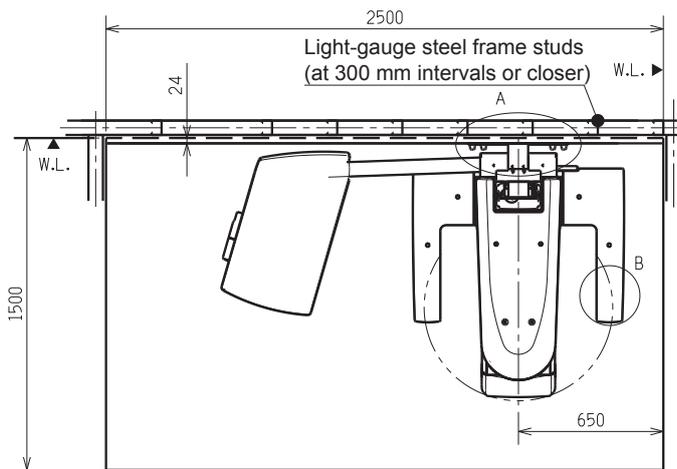
Fig. ③ -134: Example of fixings for a dry double floor and light-gauge steel frame partition wall (Standing position base-mount long type (with an optional wide base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
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- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

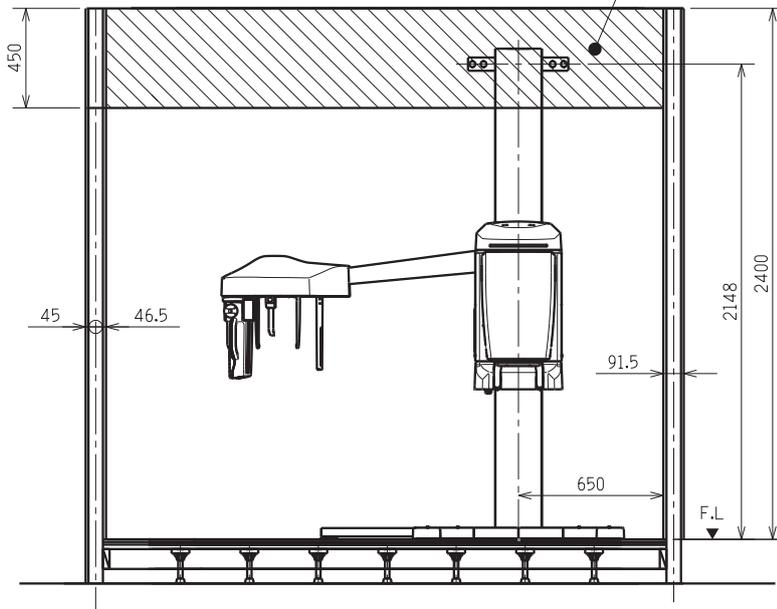
d-10. Example of Standing position base-mount (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

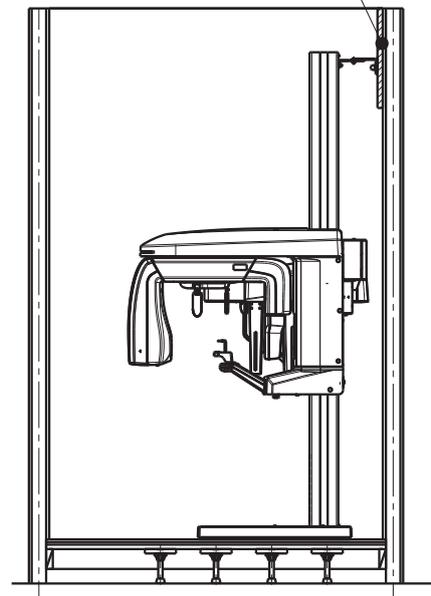


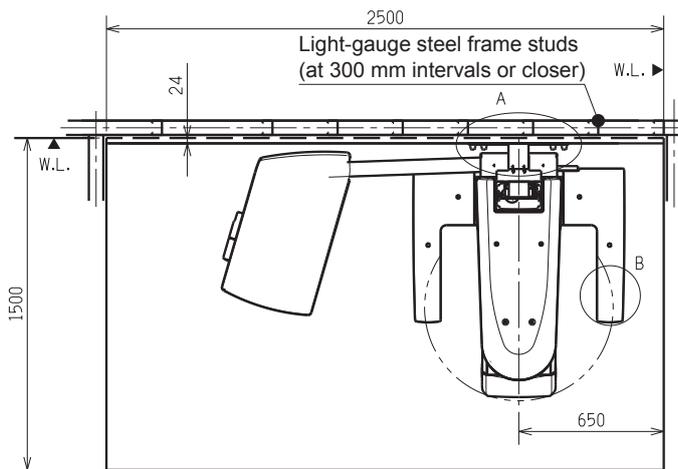
Fig. ③ -135: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount (with an optional wide base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

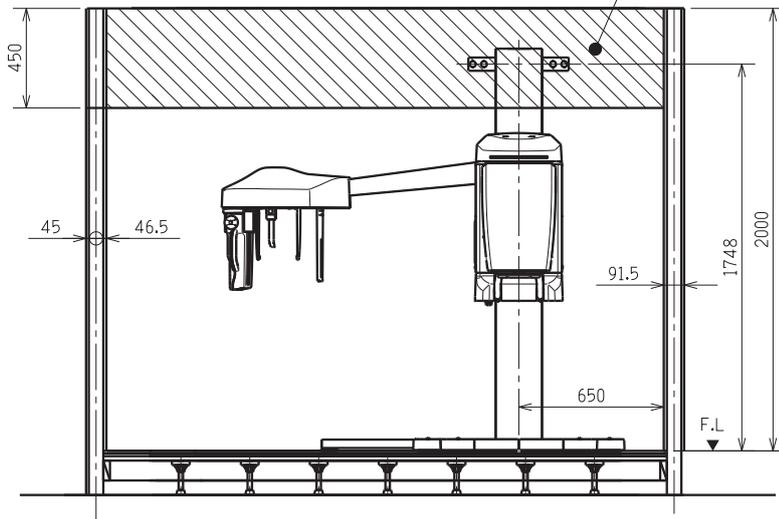
d-11. Example of Standing position base-mount short type (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

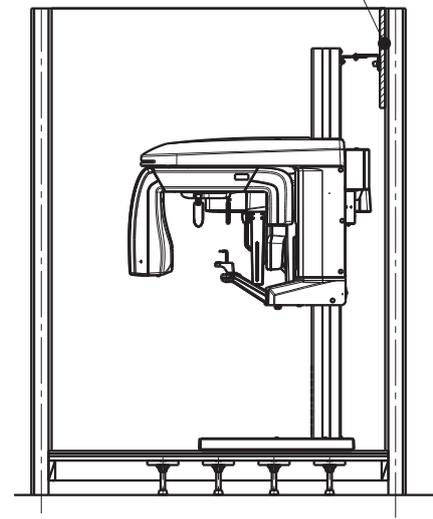


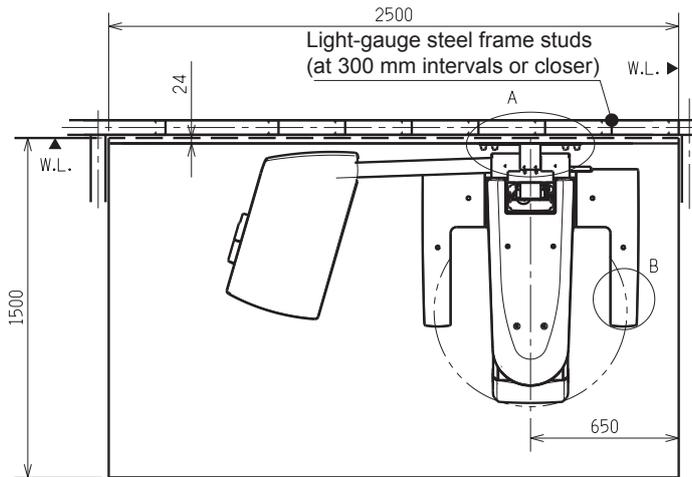
Fig. ③ -136: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

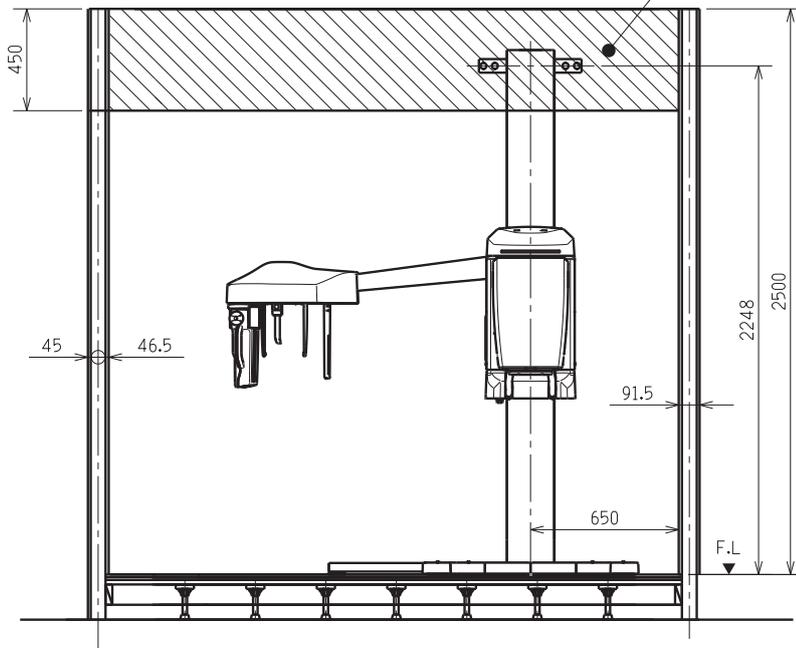
d-12. Example of Standing position base-mount long type (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-138: Wall fixing detail drawing A  
Fig.③-139: Floor fixing detail drawing B  
For a sample dry-type double-floor panel layout,  
refer to Fig.③-144: Sample layout for dry double-  
layer floor panels (wide base-mounted)

Plywood board used for attaching the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to light-gauge steel frame)



Plywood board used for attaching  
the wall-mounting bracket

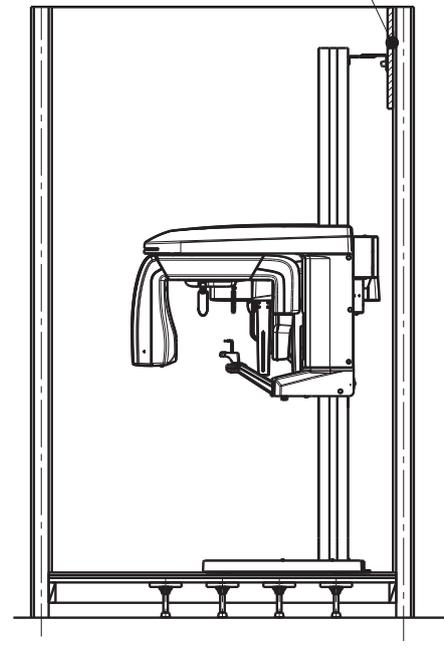


Fig. ③ -137: Example of fixings for a dry double floor and light-gauge steel frame partition wall  
(Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

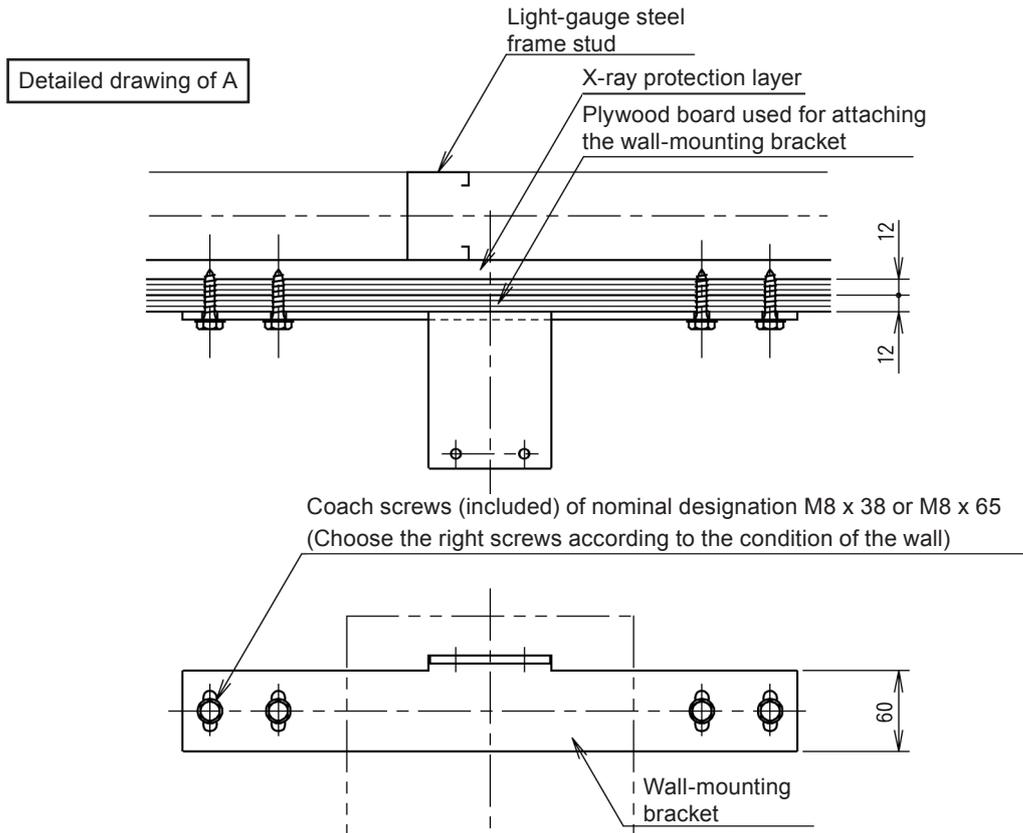


Fig. ③ -138: Wall fixing detail drawing A

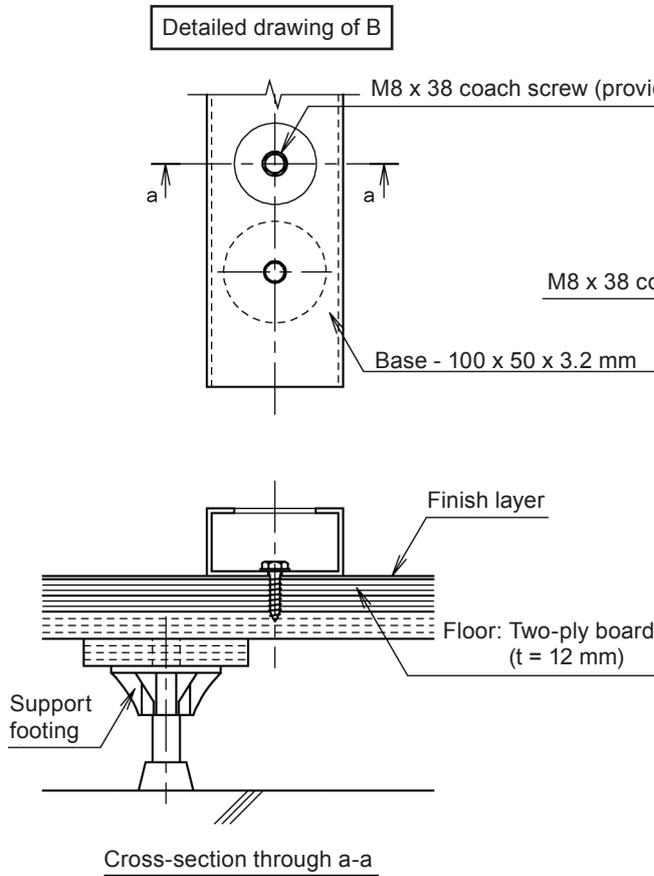


Fig. ③ -139: Floor fixing detail drawing B

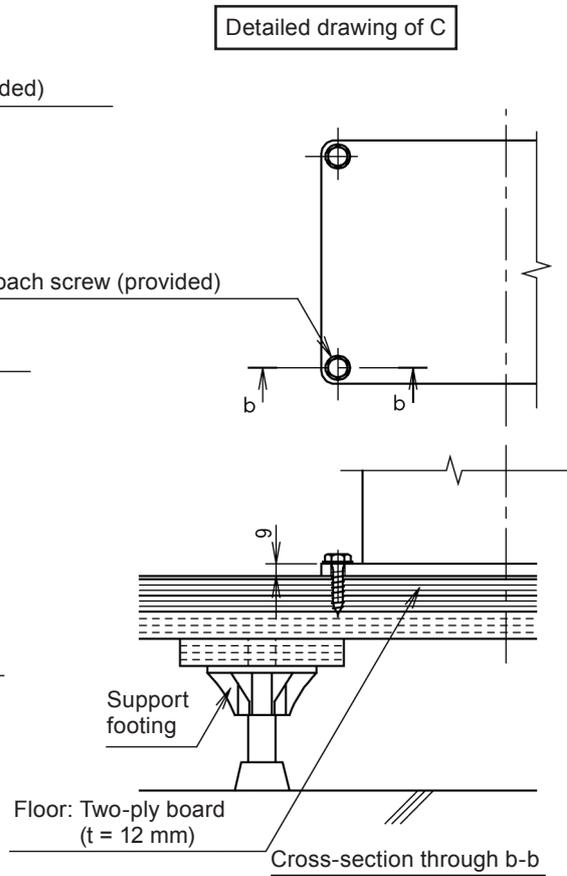
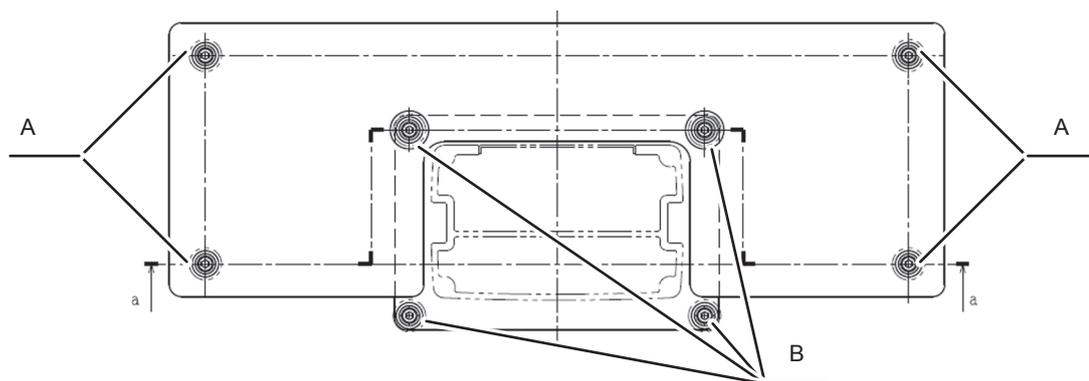


Fig. ③ -140: Floor fixing detail drawing C

Detailed drawing of D



Coach screw size  
A: M8 x L50  
B: M8 x L38

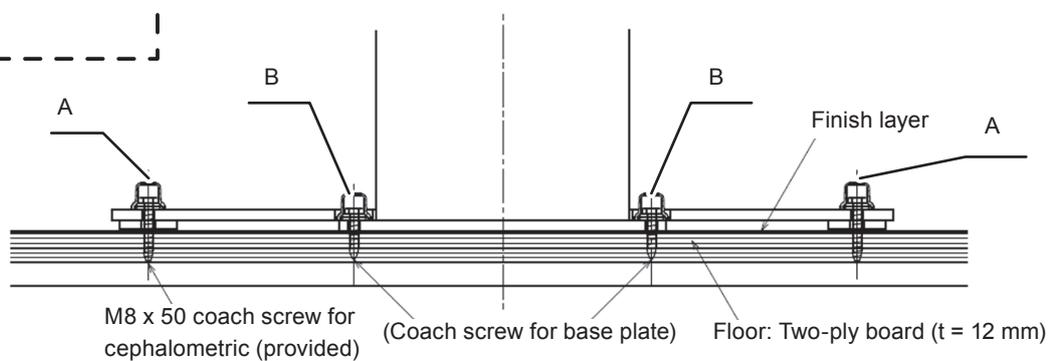


Fig. ③ -141: Floor fixing detail drawing D (Cephalometric type)

■X-ray unit weight

- Standing position wall-mount: Panoramic type : 130 kg
- Standing position wall-mount short type: Panoramic type : 125 kg
- Standing position wall-mount long type: Panoramic type : 135 kg
- Standing position wall-mount: Cephalometric type : 170 kg
- Standing position wall-mount short type: Cephalometric type : 165 kg
- Standing position wall-mount long type: Cephalometric type: 175 kg
- Standing position wall-mount: 3D type: 140 kg
- Standing position wall-mount short type: 3D type: 135 kg
- Standing position wall-mount long type:3D type: 145 kg
- Standing position wall-mount: 3D Cephalometric type: 180 kg
- Standing position wall-mount short type: 3D Cephalometric type: 175 kg
- Standing position wall-mount long type: 3D Cephalometric type: 185 kg

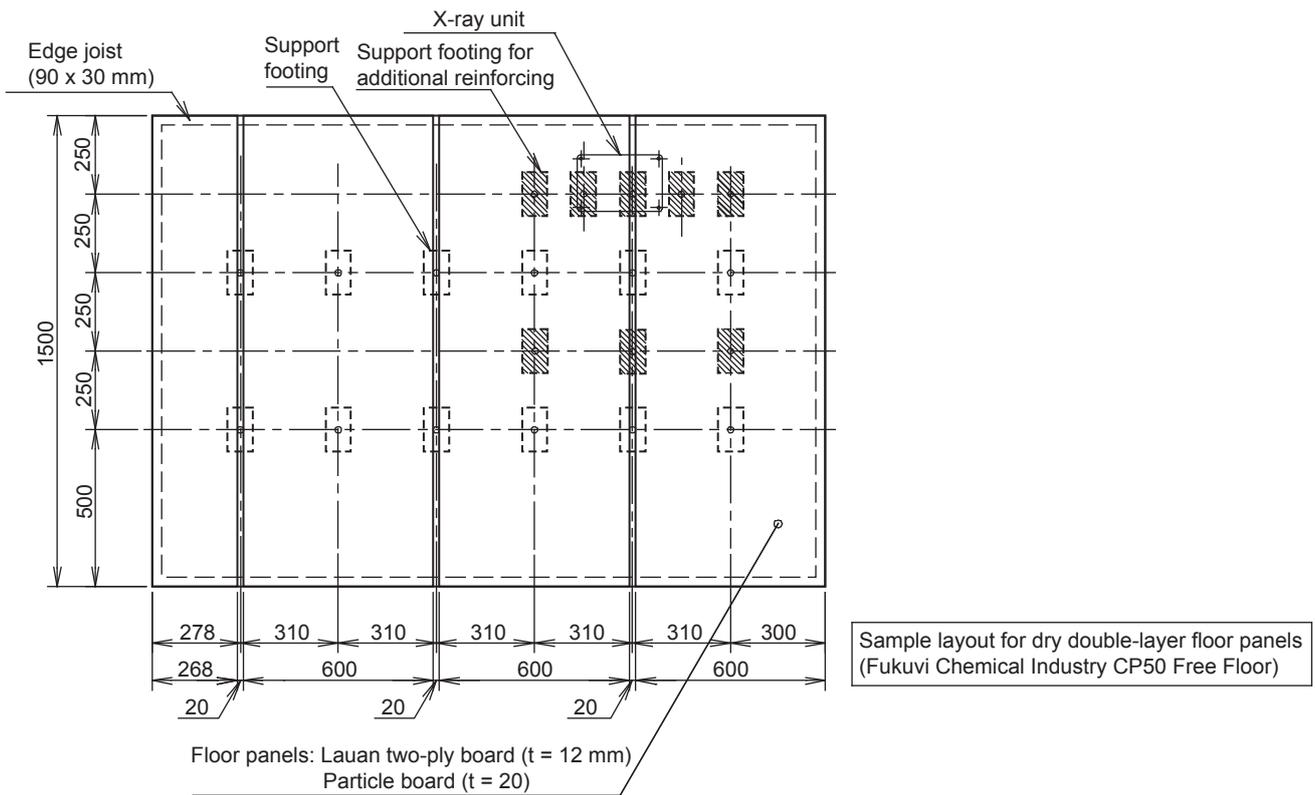


Fig. ③ -142: Sample layout for dry double-layer floor panels (wall-mounted)

■X-ray unit weight

- Standing position base-mount (with an optional base): Panoramic type : 155 kg
- Standing position base-mount short type (with an optional base): Panoramic type : 150 kg
- Standing position base-mount long type (with an optional base): Panoramic type : 160 kg
- Standing position base-mount (with an optional base): Cephalometric type : 195 kg
- Standing position base-mount short type (with an optional base): Cephalometric type : 190 kg
- Standing position base-mount long type (with an optional base): Cephalometric type : 200 kg
- Standing position base-mount (with an optional base): 3D type : 165 kg
- Standing position base-mount short type (with an optional base): 3D type : 160 kg
- Standing position base-mount long type (with an optional base): 3D type : 170 kg
- Standing position base-mount (with an optional base): 3D Cephalometric type : 205 kg
- Standing position base-mount short type (with an optional base): 3D Cephalometric type : 200 kg
- Standing position base-mount long type (with an optional base): 3D Cephalometric type : 210 kg

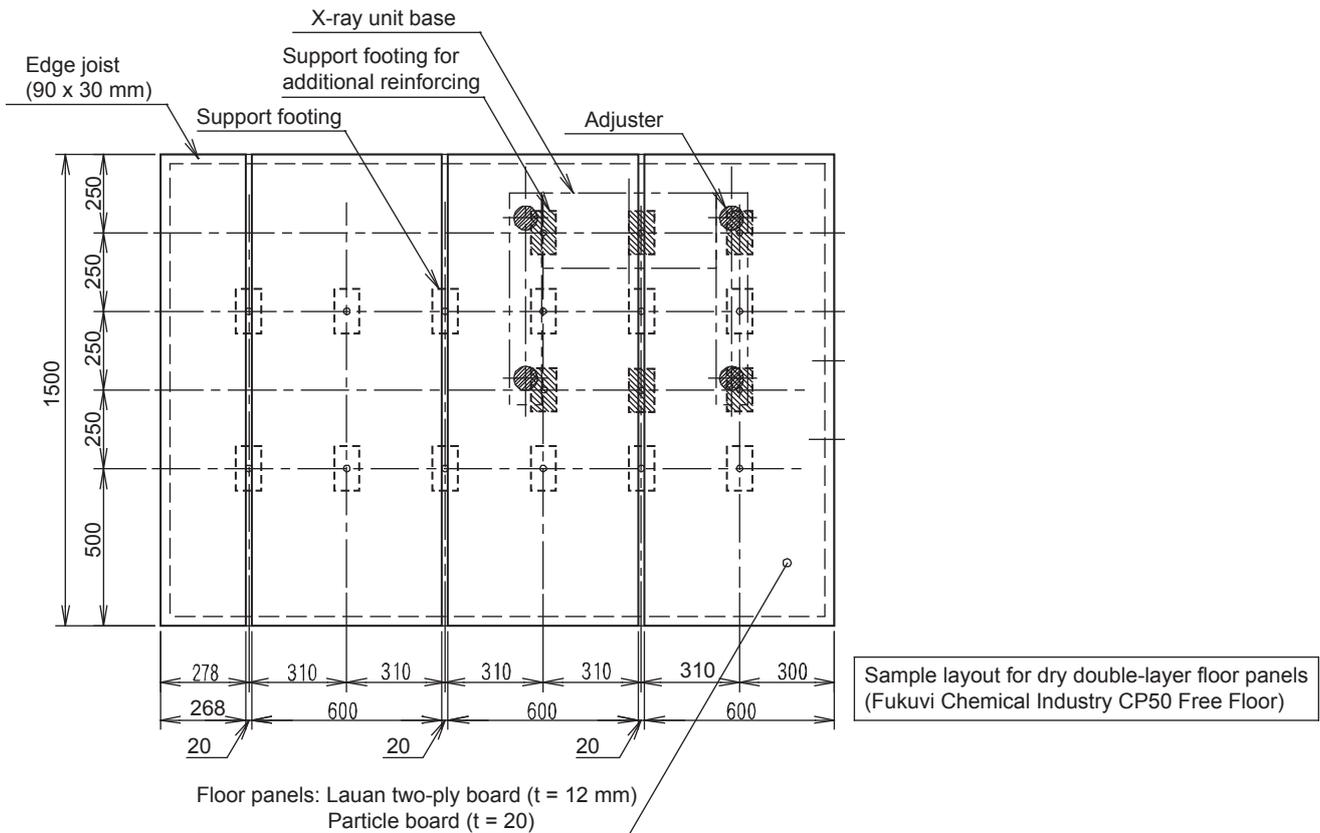


Fig. ③ -143: Sample layout for dry double-layer floor panels (base-mounted)

■X-ray unit weight

- Standing position base-mount (with an optional wide base): Panoramic type : 160 kg
- Standing position base-mount short type (with an optional wide base): Panoramic type : 155 kg
- Standing position base-mount long type (with an optional wide base): Panoramic type : 165 kg
- Standing position base-mount (with an optional wide base): Cephalometric type : 200 kg
- Standing position base-mount short type (with an optional wide base): Cephalometric type : 195 kg
- Standing position base-mount long type (with an optional wide base): Cephalometric type : 205 kg
- Standing position base-mount (with an optional wide base): 3D type 170 kg
- Standing position base-mount short type (with an optional wide base): 3D type 165 kg
- Standing position base-mount long type (with an optional wide base): 3D type 175 kg
- Standing position base-mount (with an optional wide base): 3D Cephalometric type 210 kg
- Standing position base-mount short type (with an optional wide base): 3D Cephalometric type 205 kg
- Standing position base-mount long type (with an optional wide base): 3D Cephalometric type 215 kg

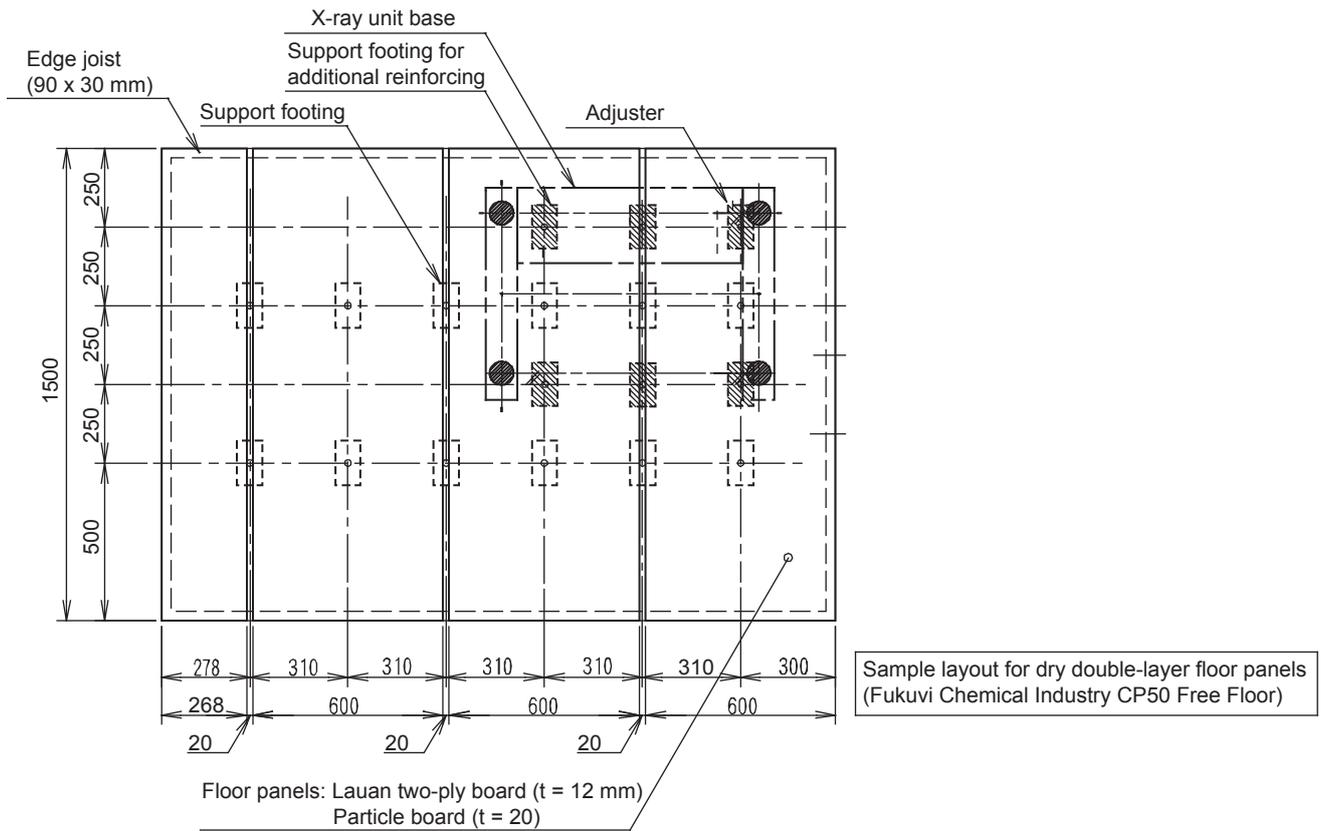


Fig. ③ -144: Sample layout for dry double-layer floor panels (wide base-mounted)

### 3-2-2. Conventional wooden construction and partition wall

#### a-1. Example of Standing position wall-mount: Panoramic type installation

Unit: mm

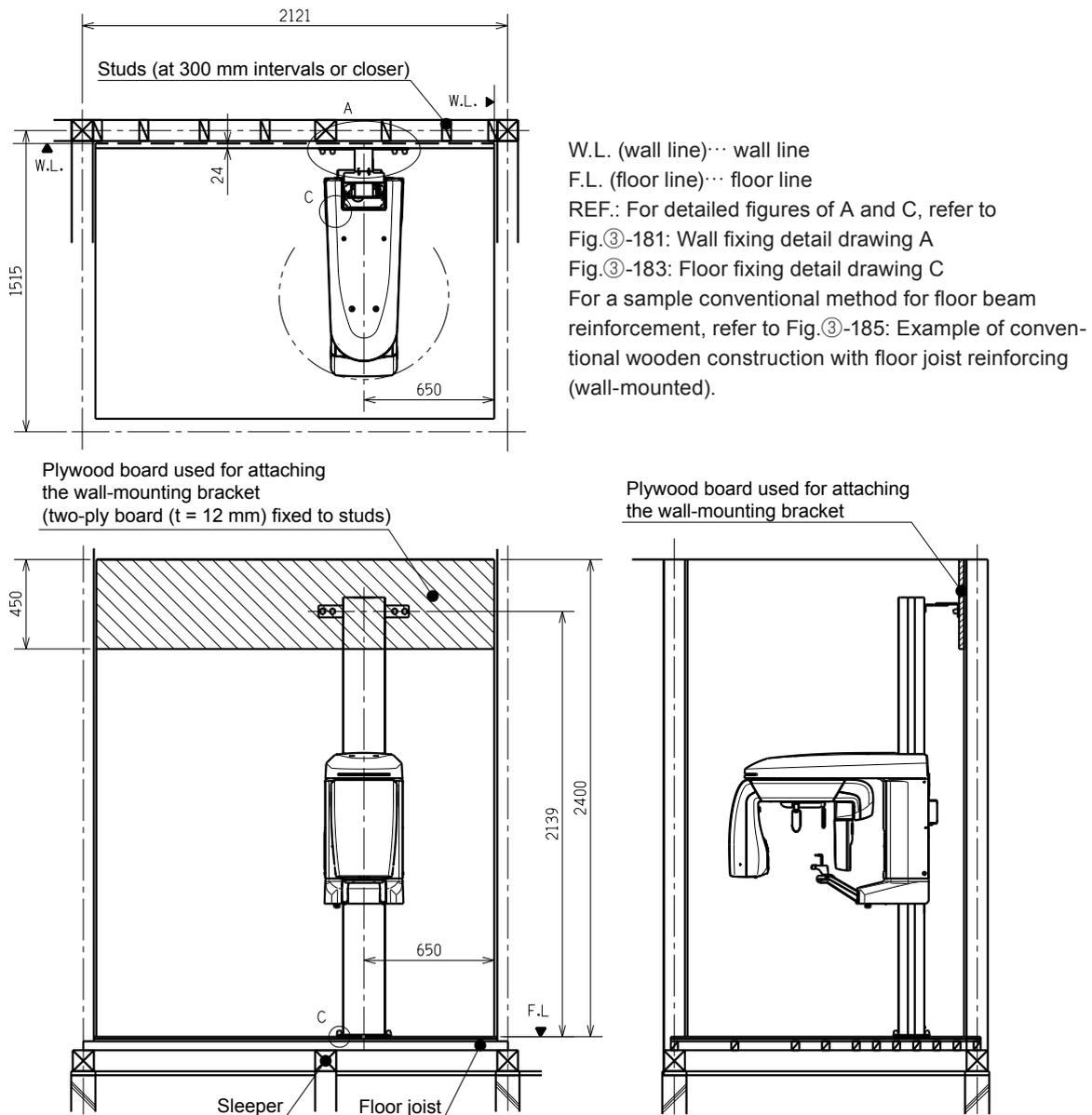


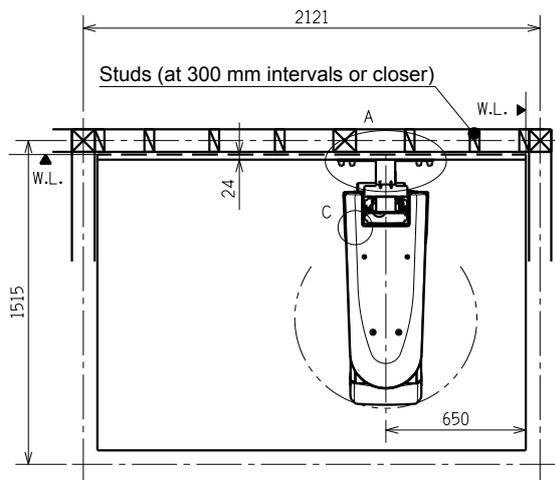
Fig. ③ -145: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount: Panoramic type)

#### ⚠ CAUTION

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-2. Example of Standing position wall-mount short type: Panoramic type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-185: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (wall-mounted).

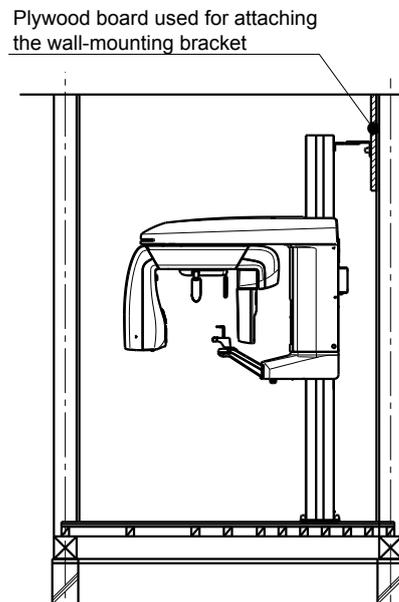
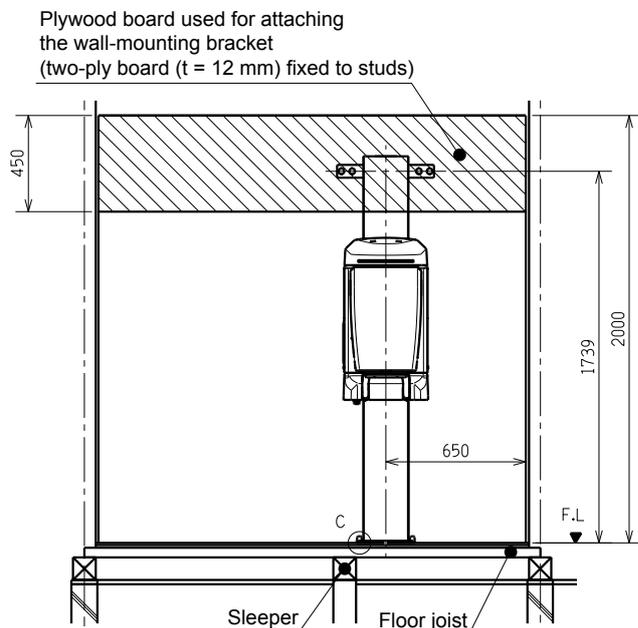


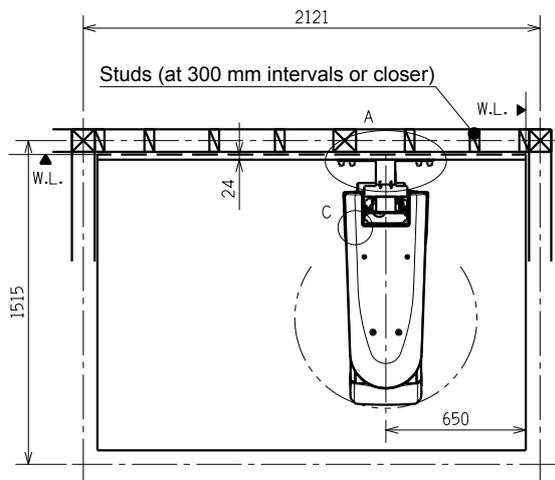
Fig. ③ -146: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount short type: Panoramic type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-3. Example of Standing position wall-mount long type: Panoramic type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-185: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (wall-mounted).

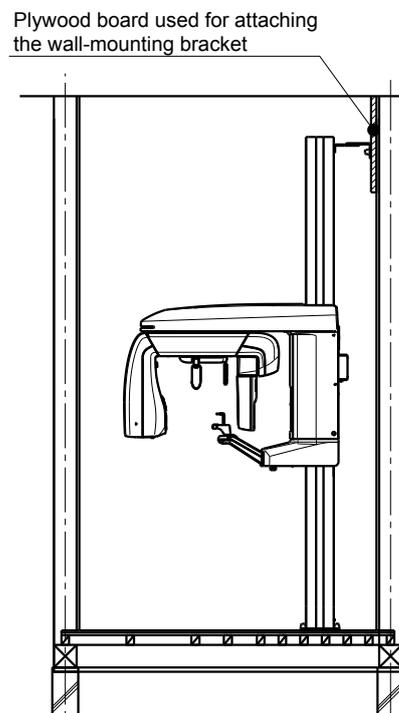
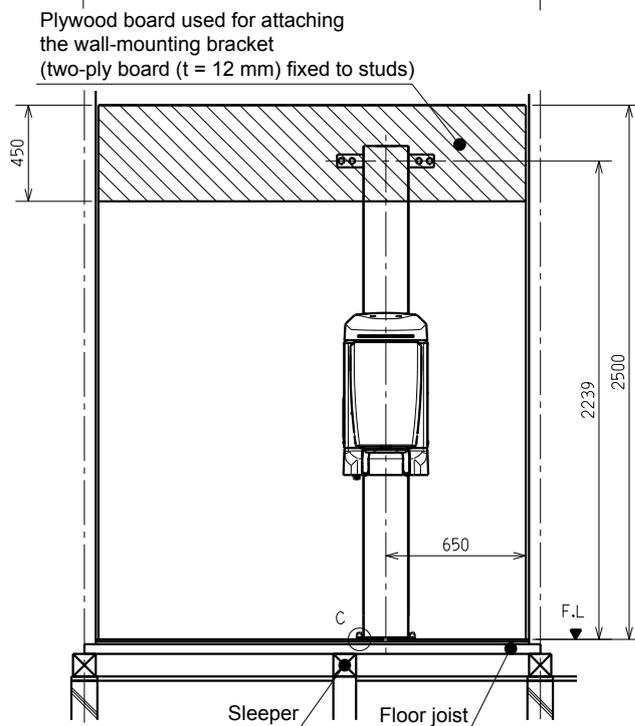


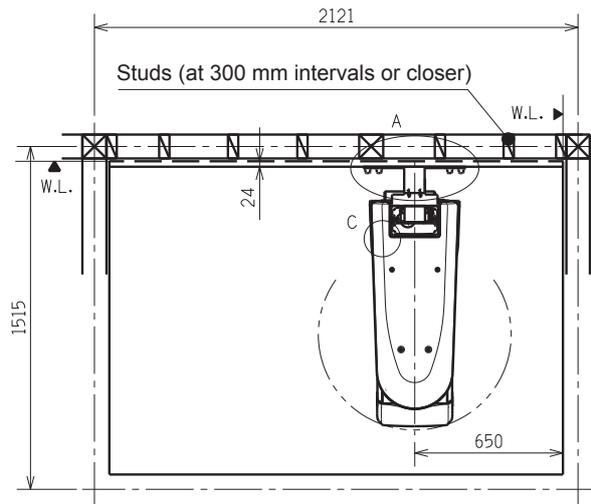
Fig. ③ -147: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount long type: Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-4. Example of Standing position wall-mount: 3D type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-185: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (wall-mounted).

Plywood board used for attaching  
 the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
 the wall-mounting bracket

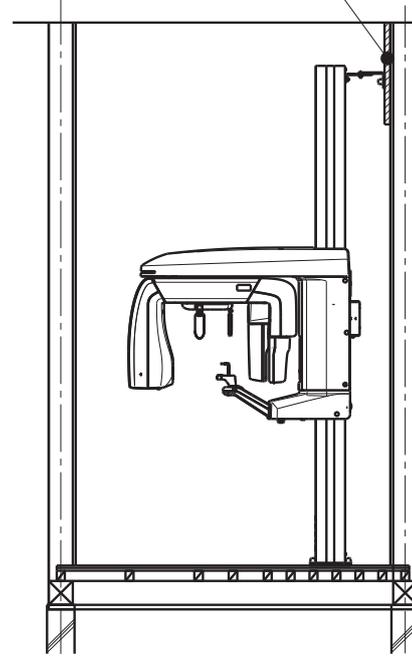
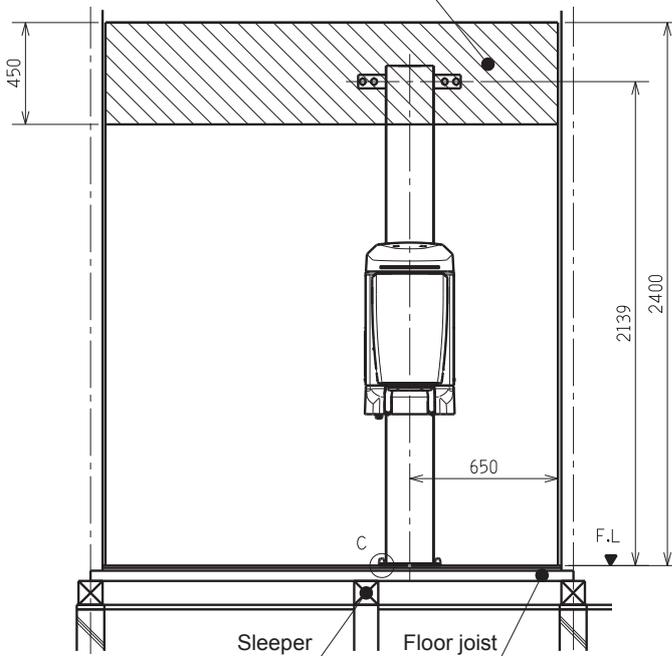


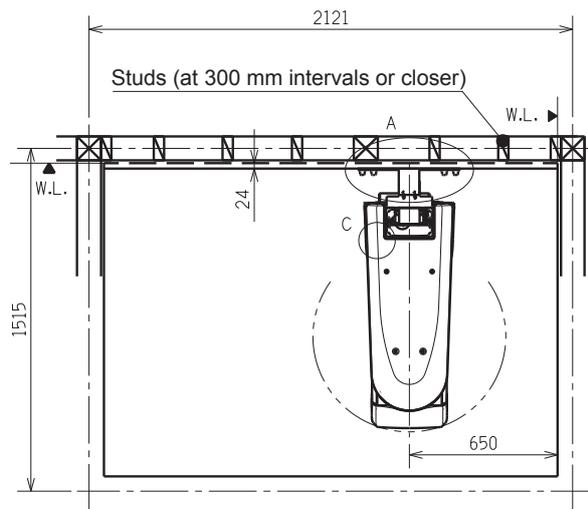
Fig. ③ -148: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

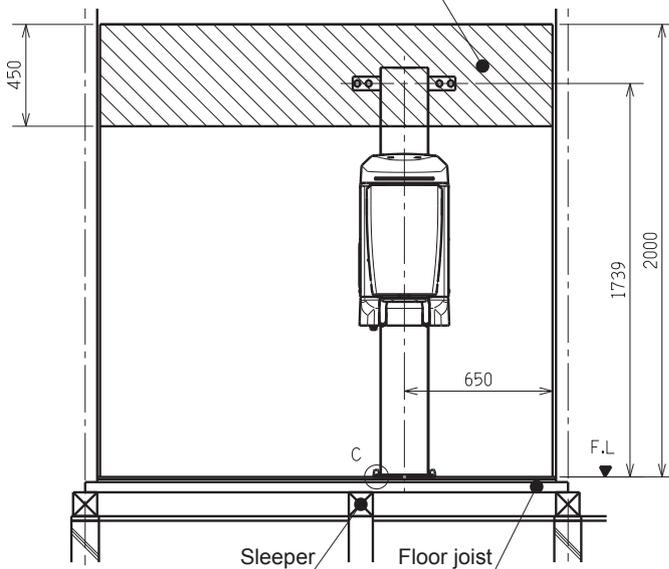
a-5. Example of Standing position wall-mount short type: 3D type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-185: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (wall-mounted).

Plywood board used for attaching  
 the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to studs)



Plywood board used for attaching  
 the wall-mounting bracket

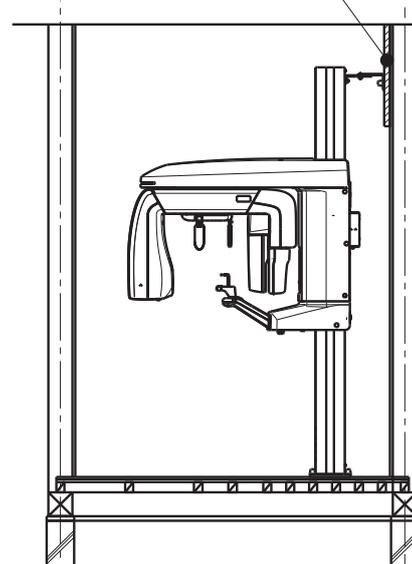


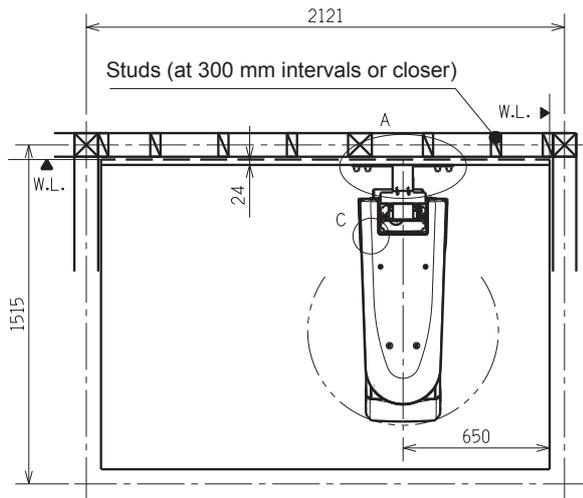
Fig. ③ -149: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount short type: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

a-6. Example of Standing position wall-mount long type: 3D type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-185: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (wall-mounted).

Plywood board used for attaching  
 the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
 the wall-mounting bracket

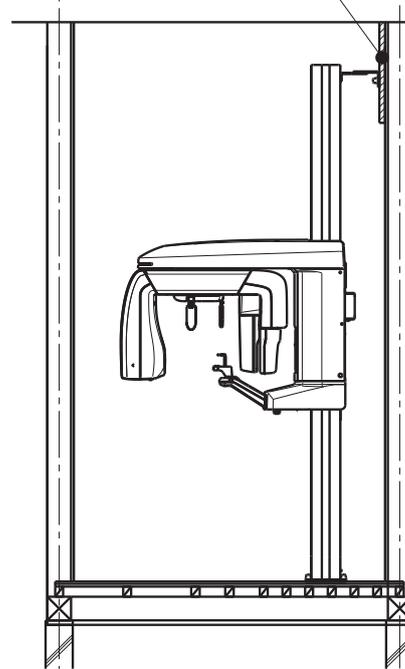
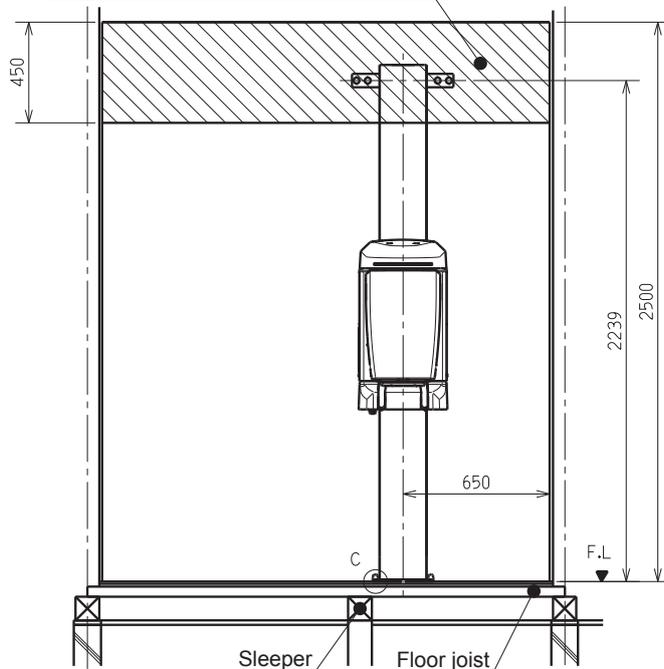


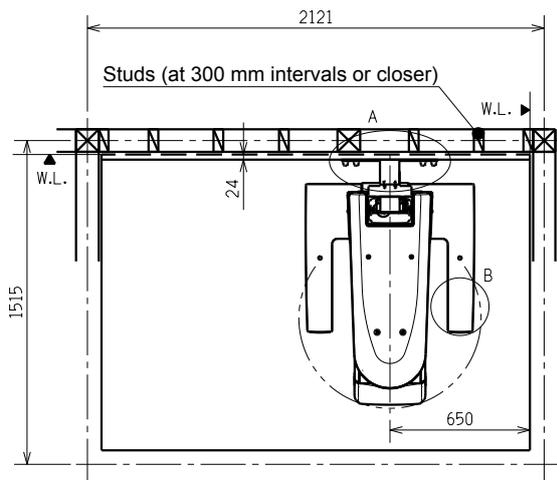
Fig. ③ -150: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount long type: 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-1. Example of Standing position base-mount (with an optional base) : Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
 F.L. (floor line)... floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-182: Floor fixing detail drawing B  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-186: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (base-mounted).

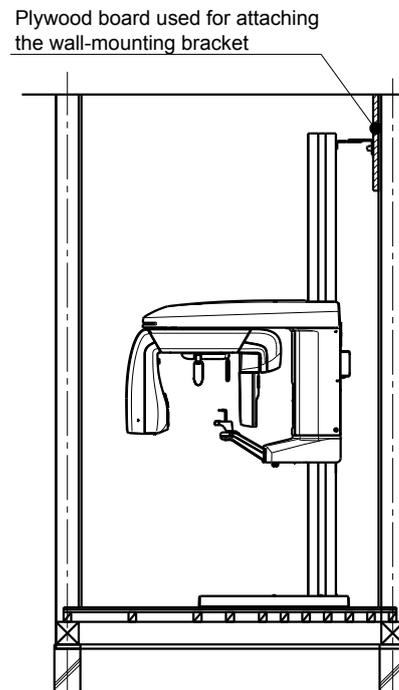
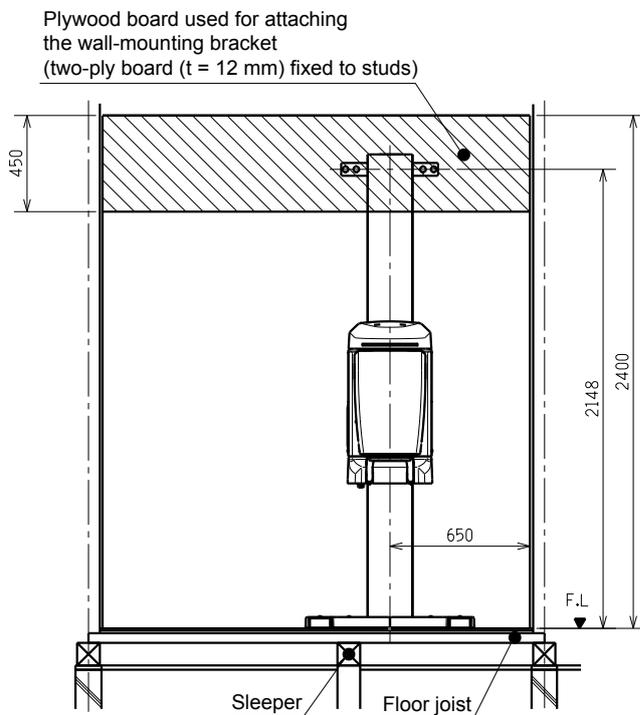


Fig. ③ -151: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position base-mount (with an optional base) : Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-2. Example of Standing position base-mount short type (with an optional base) :  
Panoramic type installation

Unit: mm

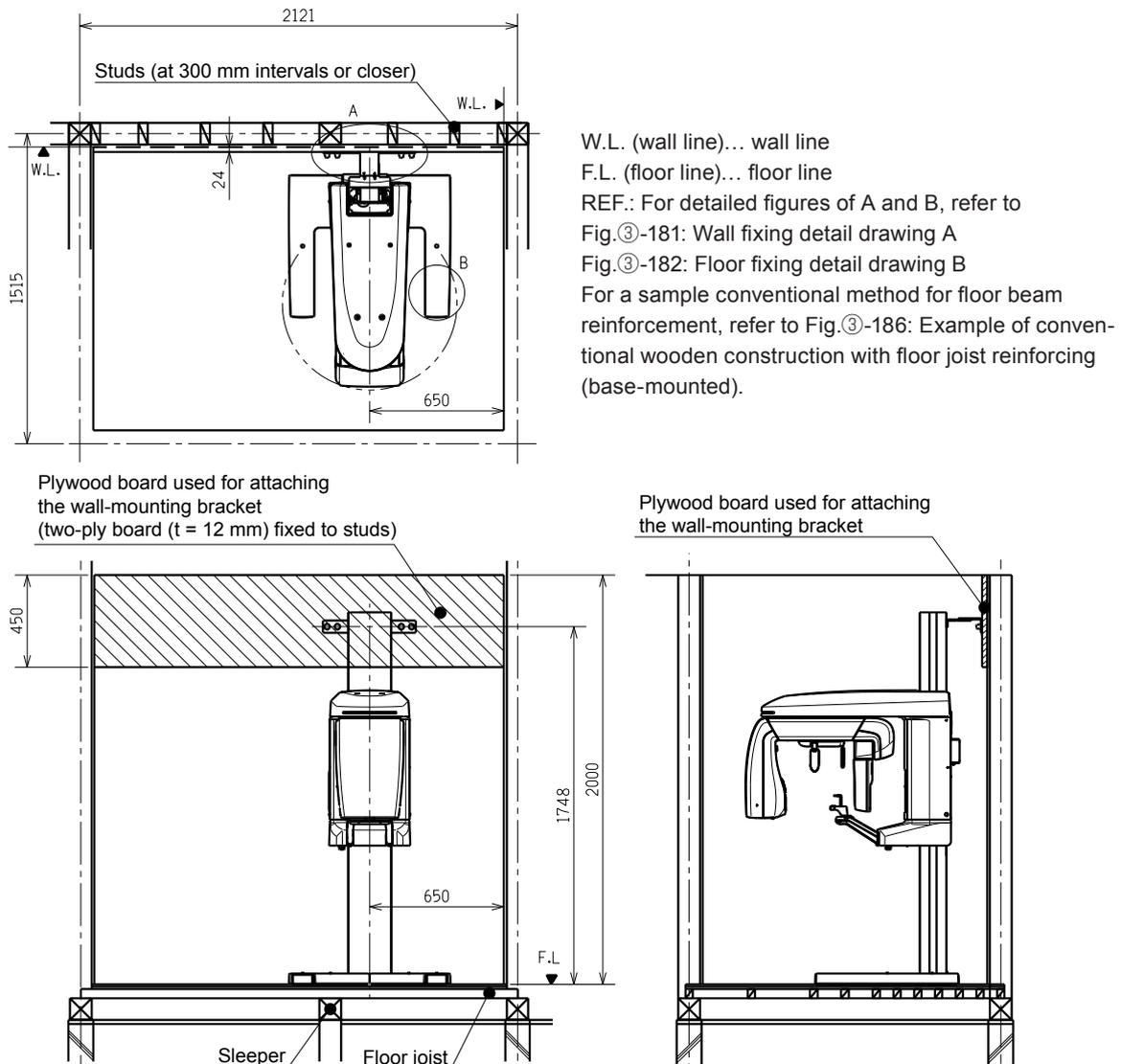


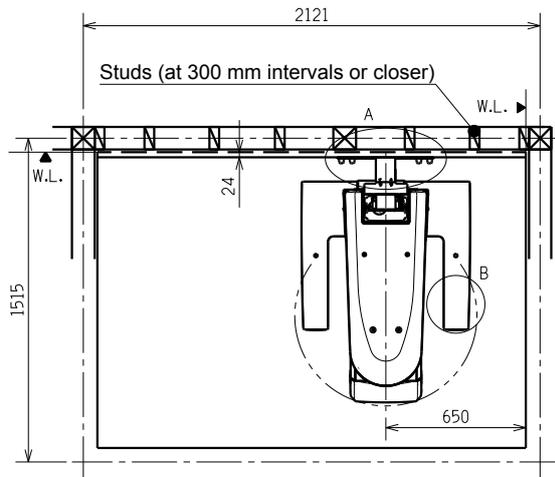
Fig. ③ -152: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional base) : Panoramic type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-3. Example of Standing position base-mount long type (with an optional base) :  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of conven-  
tional wooden construction with floor joist reinforcing  
(base-mounted).

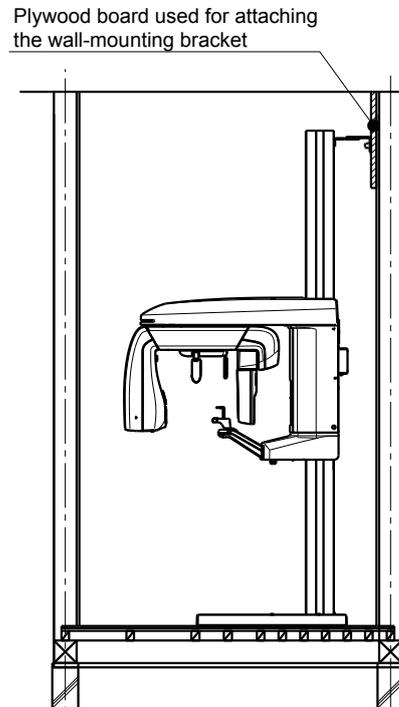
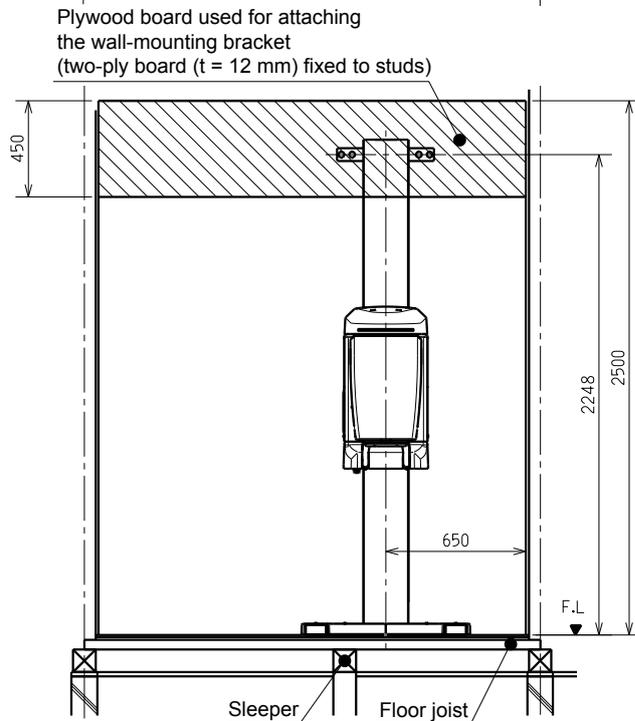


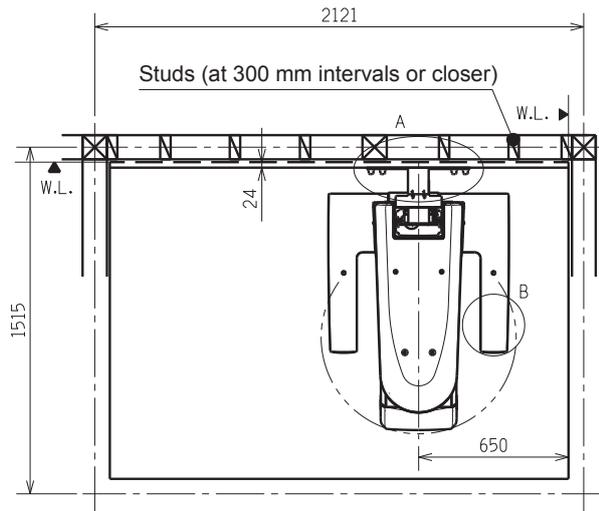
Fig. ③ -153: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional base) : Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-4. Example of Standing position base-mount (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-182: Floor fixing detail drawing B  
 For a sample conventional method for floor beam reinforcement  
 refer to Fig.③-186: Example of conventional wooden construction with floor joist reinforcing  
 (base-mounted).

Plywood board used for attaching  
 the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
 the wall-mounting bracket

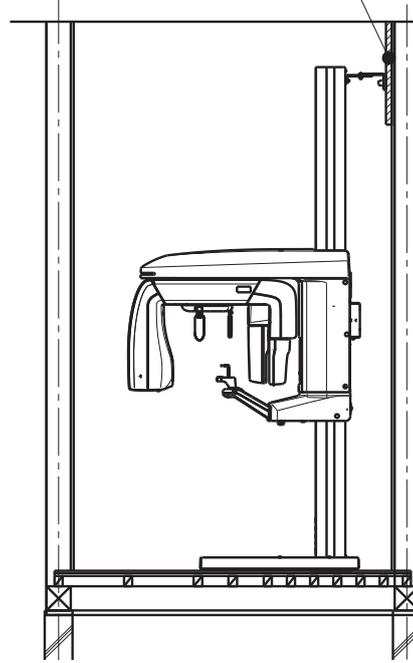
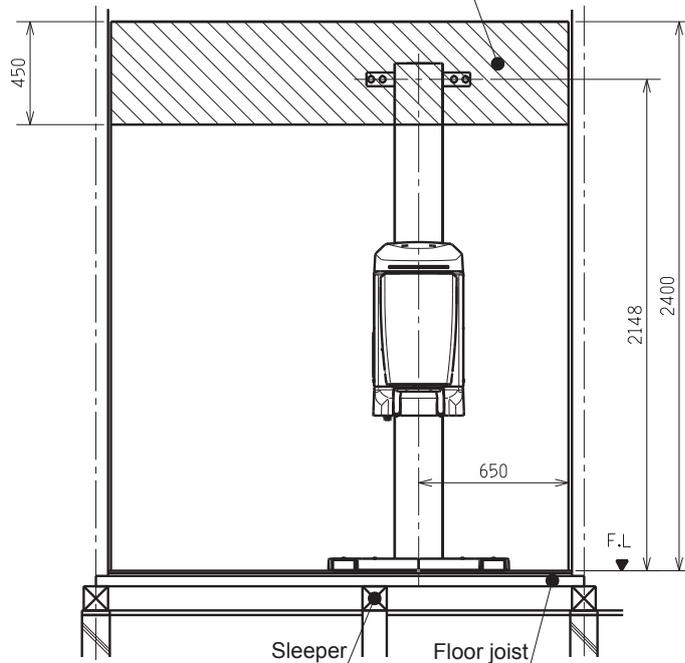


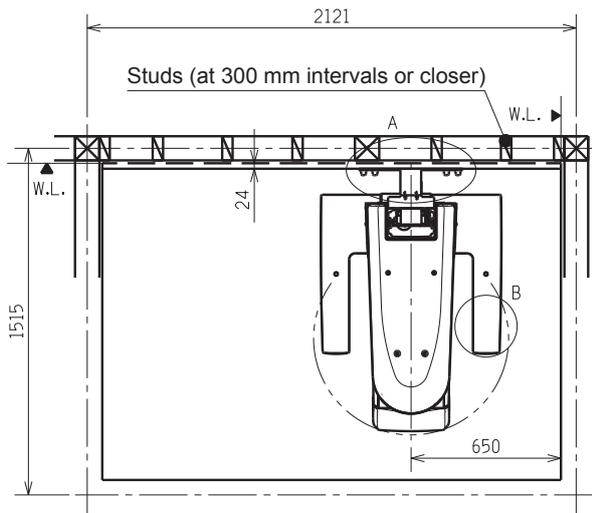
Fig. ③ -154: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position base-mount (with an optional base) : 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-5. Example of Standing position base-mount short type (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and B, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-182: Floor fixing detail drawing B  
 For a sample conventional method for floor beam  
 reinforcement, refer to Fig.③-186: Example of conven-  
 tional wooden construction with floor joist reinforcing  
 (base-mounted).

Plywood board used for attaching  
 the wall-mounting bracket  
 (two-ply board (t = 12 mm) fixed to studs)

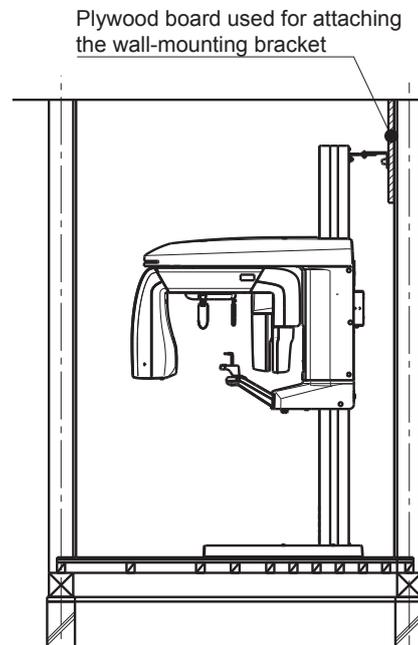
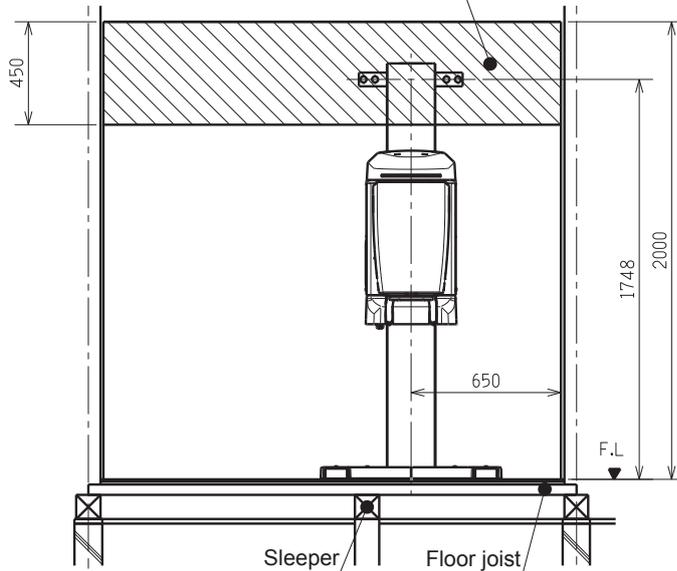


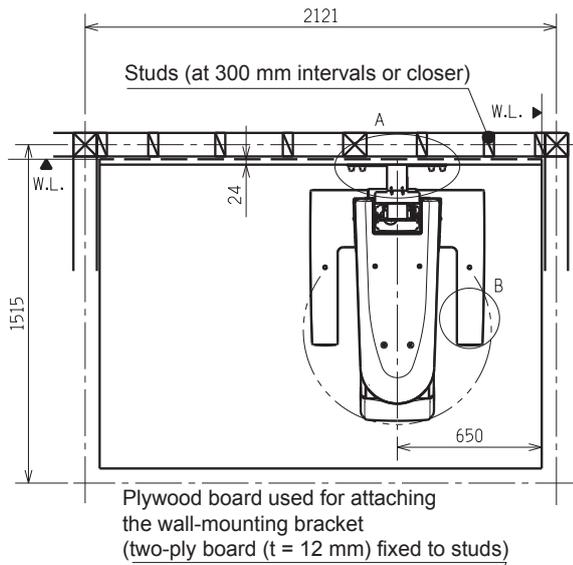
Fig. ③ -155: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position base-mount short type (with an optional base) : 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-6. Example of Standing position base-mount long type (with an optional base) : 3D type installation

Unit: mm



W.L. (wall line)··· wall line

F.L. (floor line)··· floor line

REF.: For detailed figures of A and B, refer to

Fig.③-181: Wall fixing detail drawing A

Fig.③-182: Floor fixing detail drawing B

For a sample conventional method for floor beam reinforcement, refer to Fig.③-186: Example of conventional wooden construction with floor joist reinforcing (base-mounted).

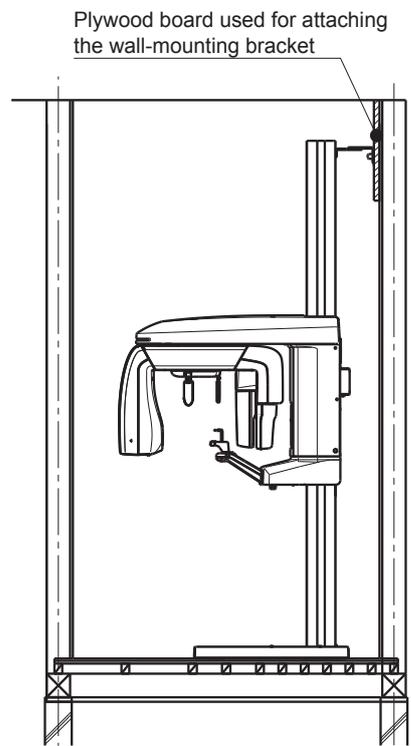
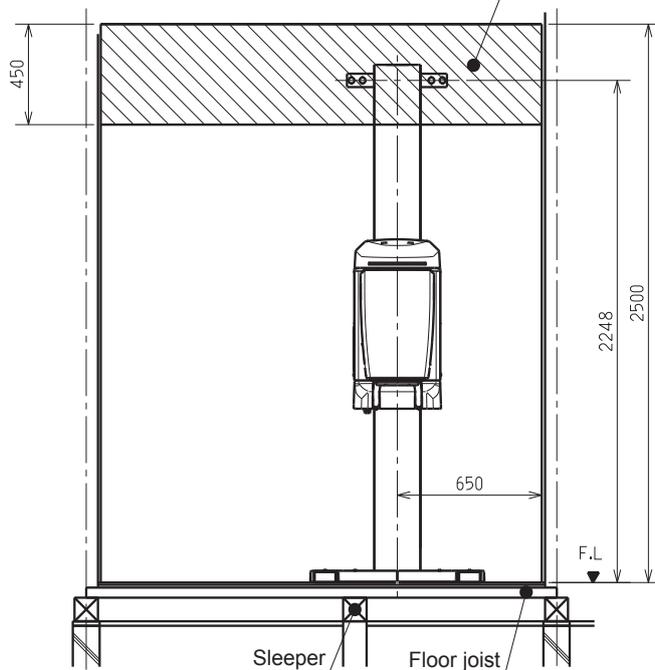


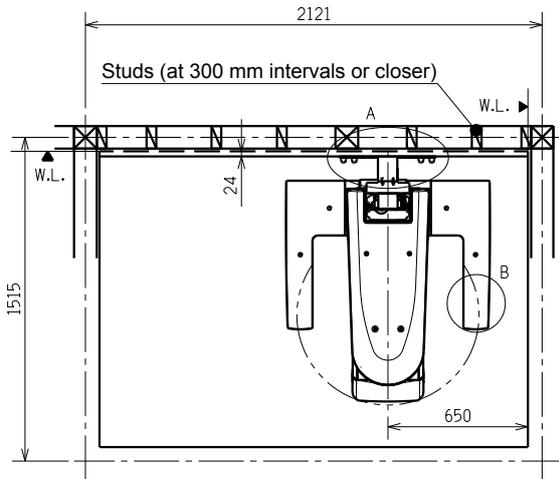
Fig. ③ -156: Example of fixings for a conventional wooden construction and partition wall (Standing position base-mount long type (with an optional base) : 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-7. Example of Standing position base-mount (with an optional wide base):  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

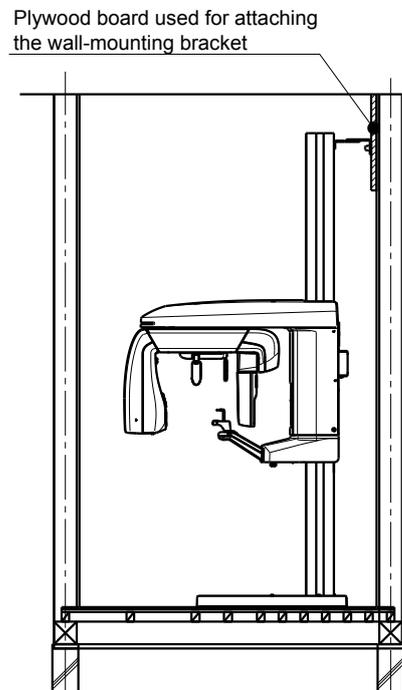
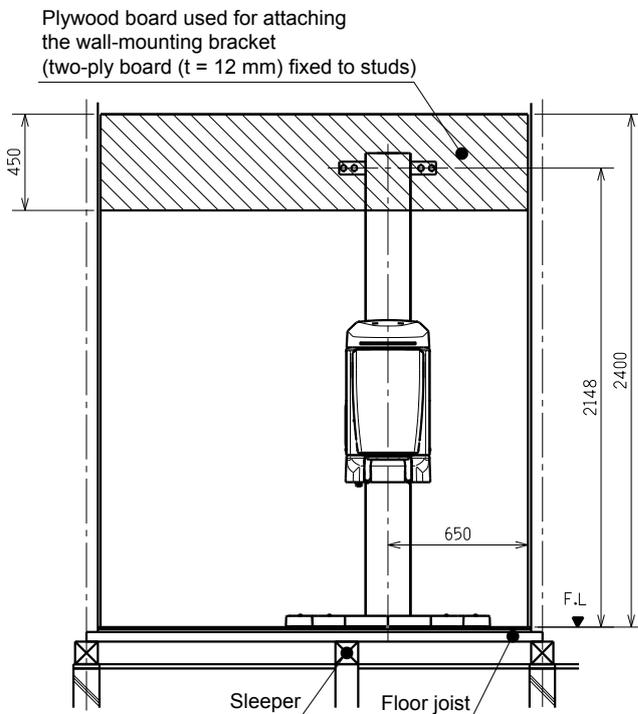


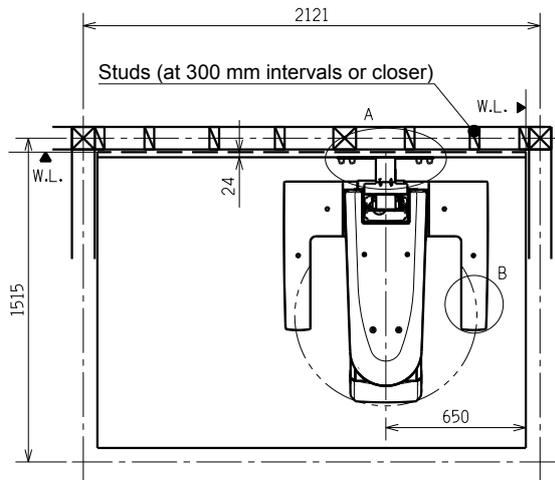
Fig. ③ -157: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional wide base): Panoramic type)

**! CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-8. Example of Standing position base-mount short type (with an optional wide base):  
Panoramic type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

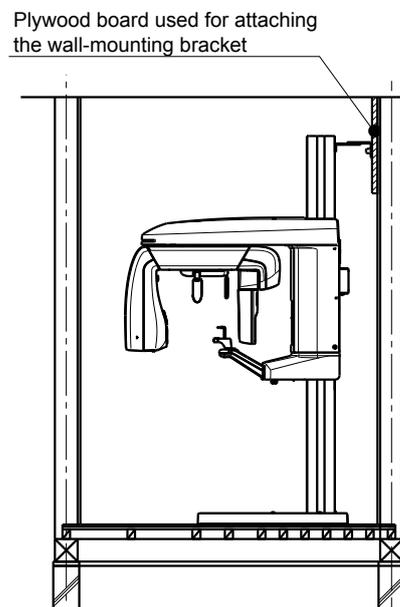
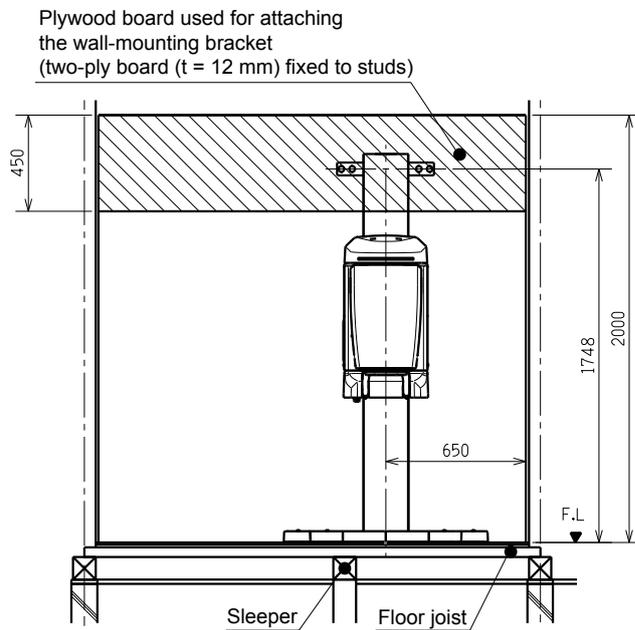


Fig. ③ -158: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional wide base): Panoramic type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-9. Example of Standing position base-mount long type (with an optional wide base):  
Panoramic type installation

Unit: mm

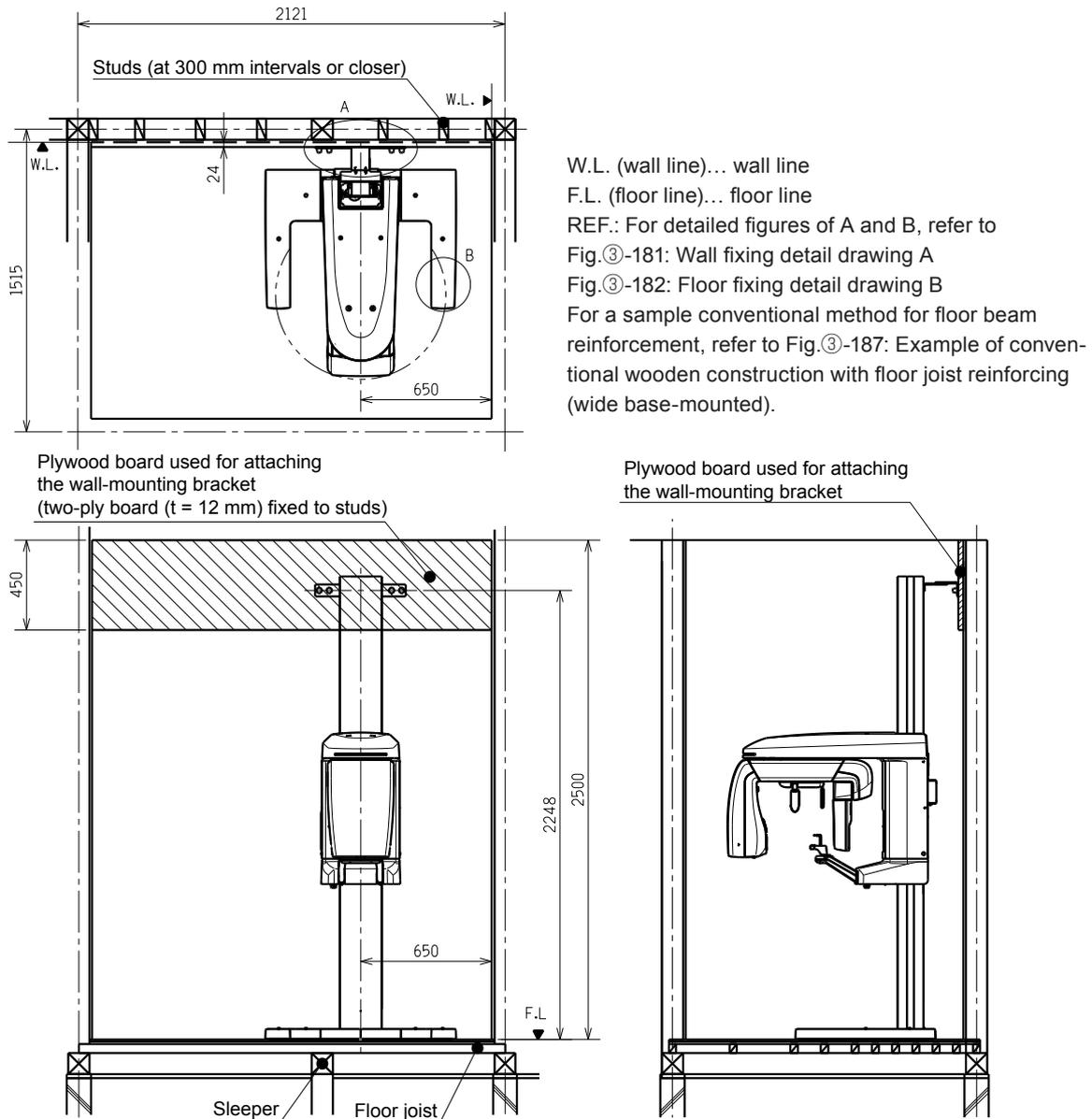


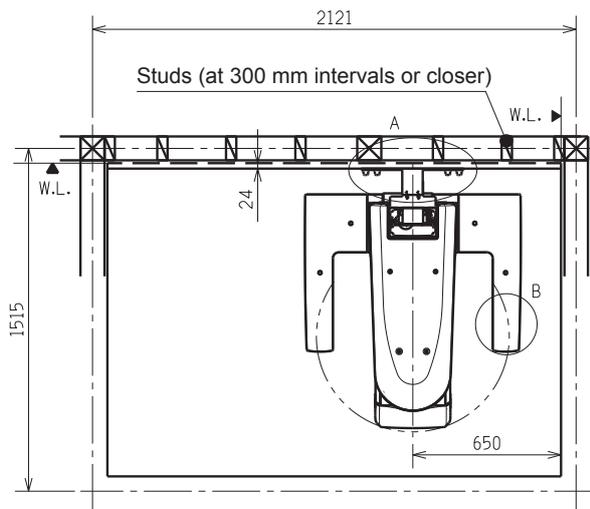
Fig. ③ -159: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional wide base): Panoramic type)

**! CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-10. Example of Standing position base-mount (with an optional wide base):  
3D type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

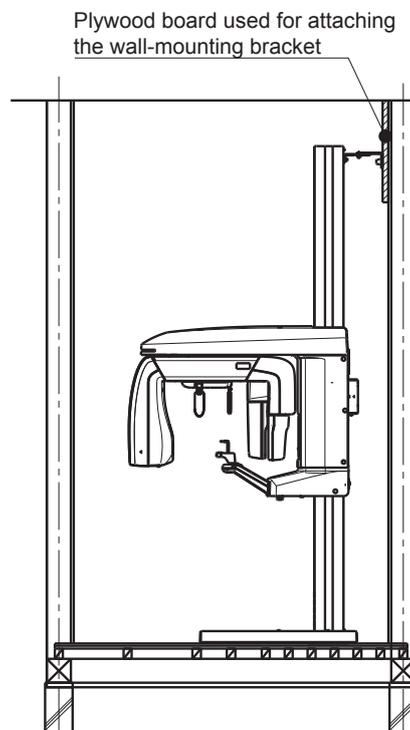
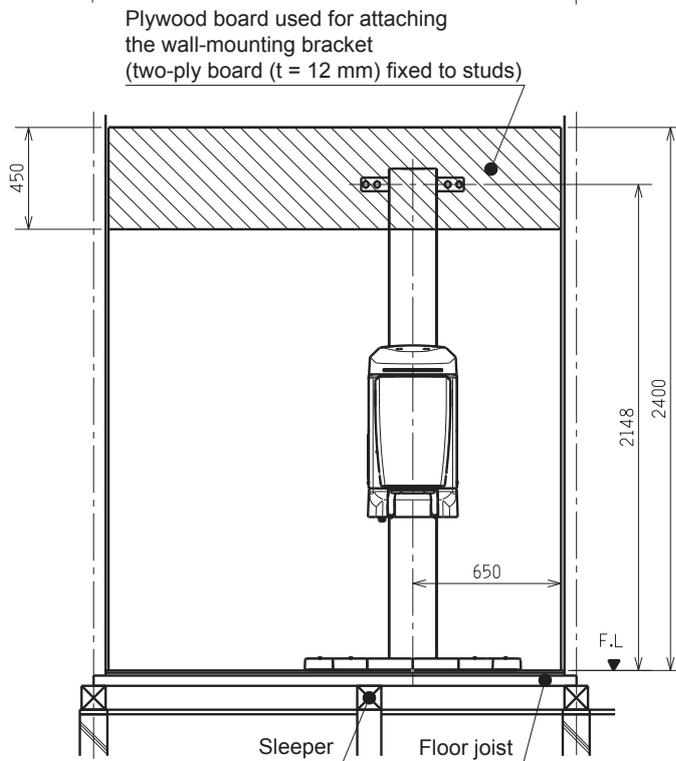


Fig. ③ -160: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-11. Example of Standing position base-mount short type (with an optional wide base):  
3D type installation

Unit: mm

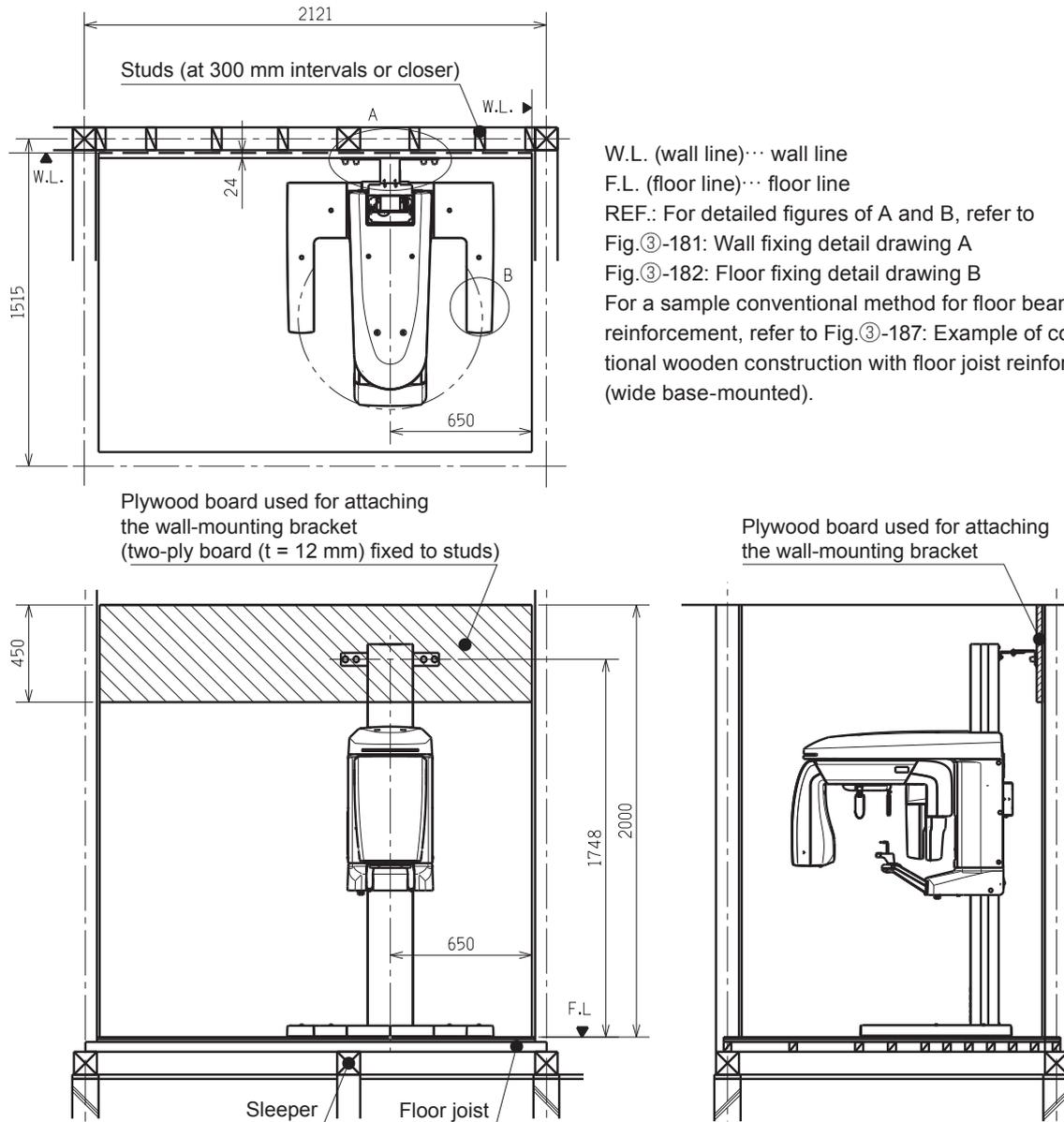


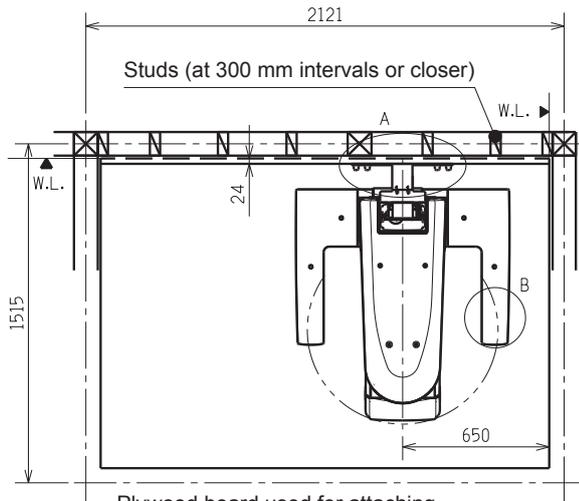
Fig. ③ -161: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

b-12. Example of Standing position base-mount long type (with an optional wide base):  
3D type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

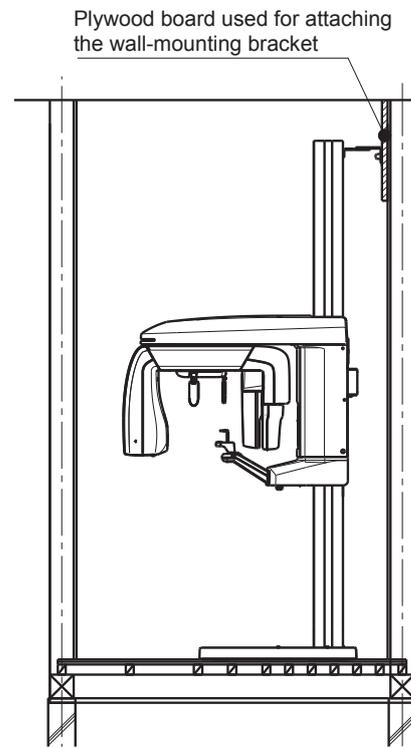
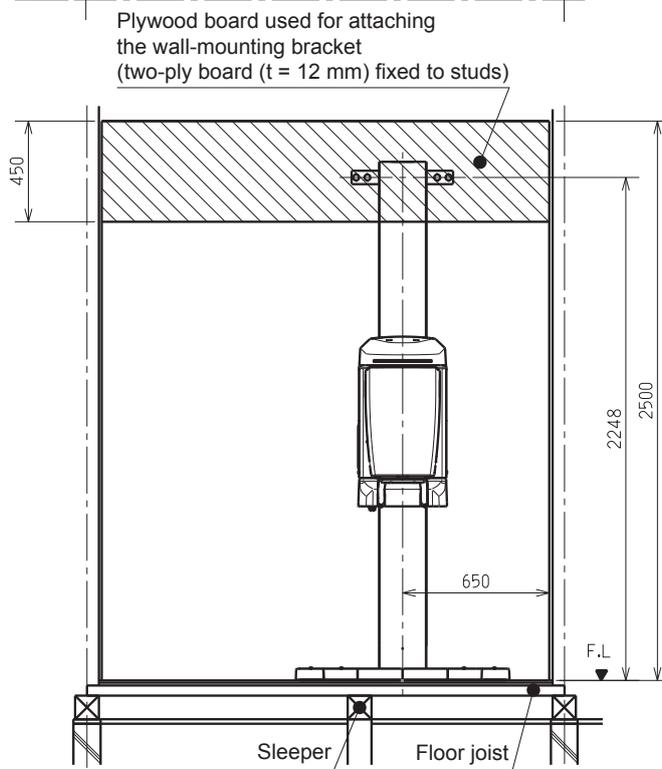


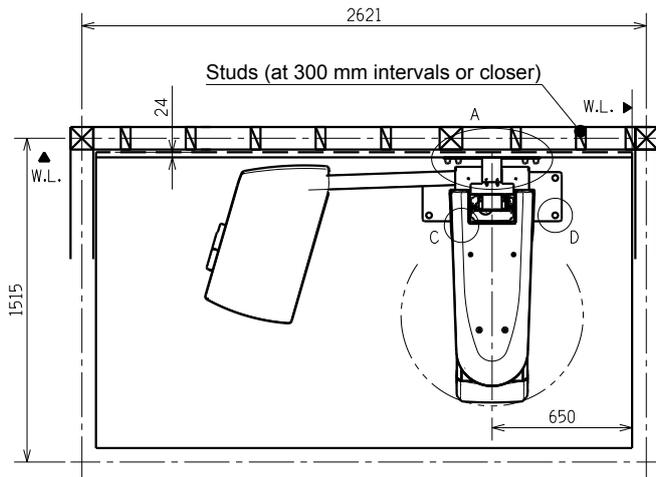
Fig. ③ -162: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional wide base): 3D type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- Allow a clear space of at least 800 mm between the left side of the machine and the nearest wall to ensure unimpeded access to the control panel.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-1. Example of Standing position wall-mount: Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C and D, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 Fig.③-184: Floor fixing detail drawing D (Cephalometric type)

For a sample conventional method for floor beam reinforcement, refer to Fig.③-185: Example of conventional wooden construction with floor joist reinforcing (wall-mounted).

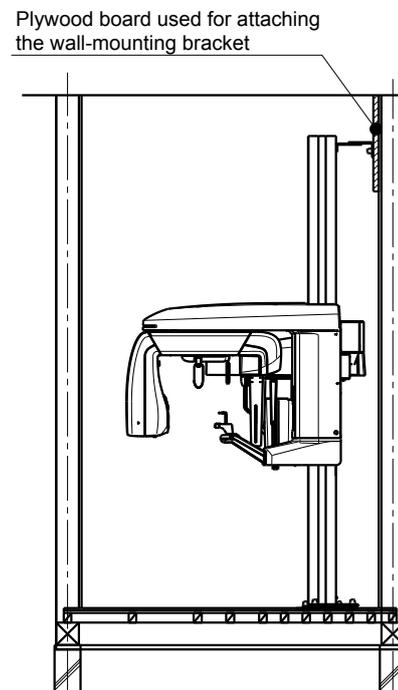
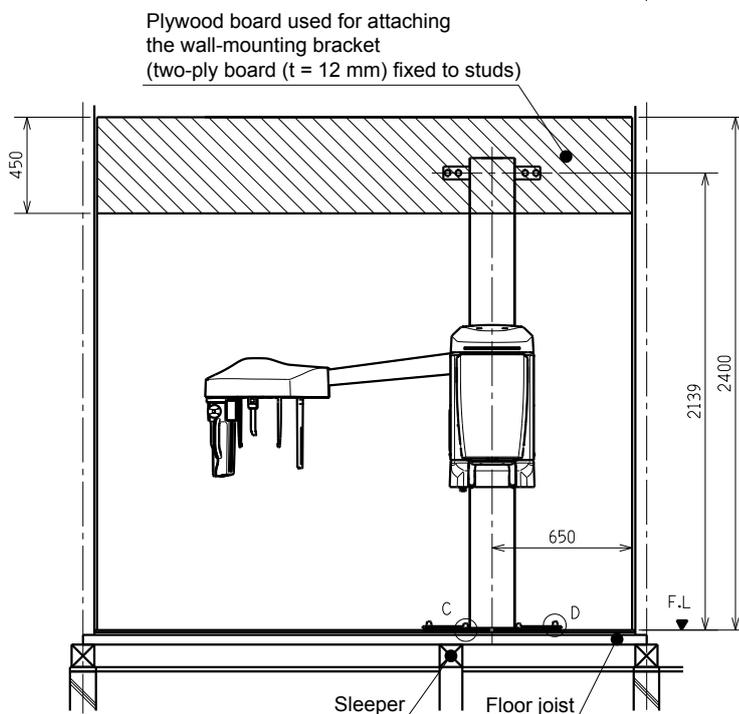


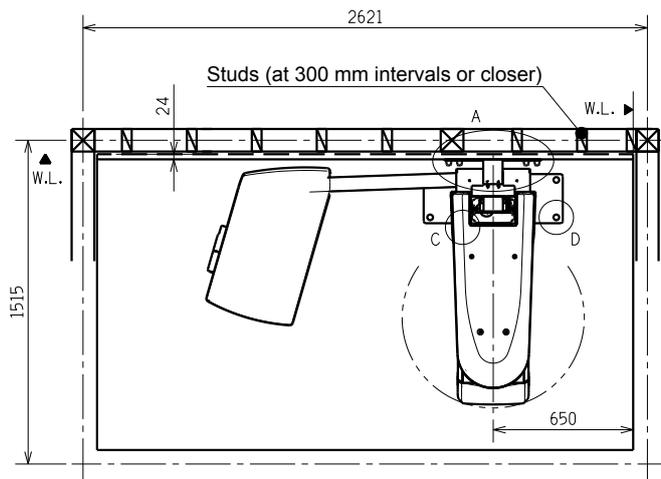
Fig. ③ -163: Example of fixings for a conventional wooden construction and partition wall (Standing position wall-mount: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

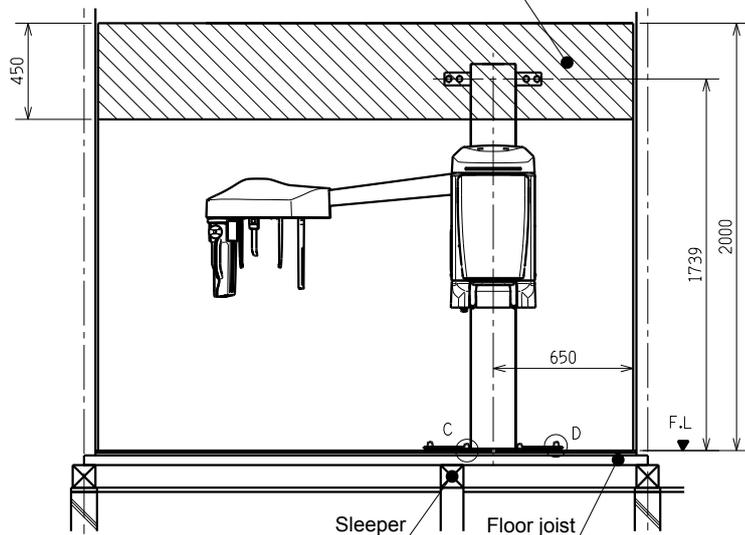
c-2. Example of Standing position wall-mount short type: Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C and D, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 Fig.③-184: Floor fixing detail drawing D (Cephalometric type)  
 For a sample conventional method for floor beam reinforcement, refer to Fig.③-185: Example of conventional wooden construction with floor joist reinforcing (wall-mounted).

Plywood board used for attaching the wall-mounting bracket (two-ply board (t = 12 mm) fixed to studs)



Plywood board used for attaching the wall-mounting bracket

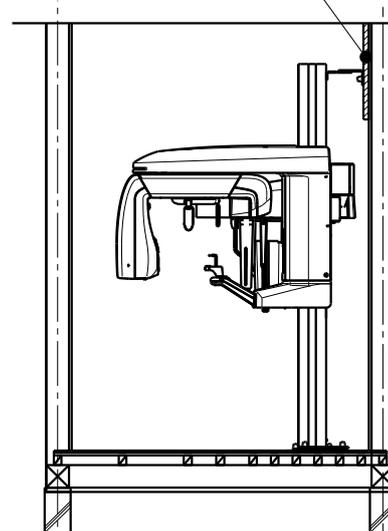


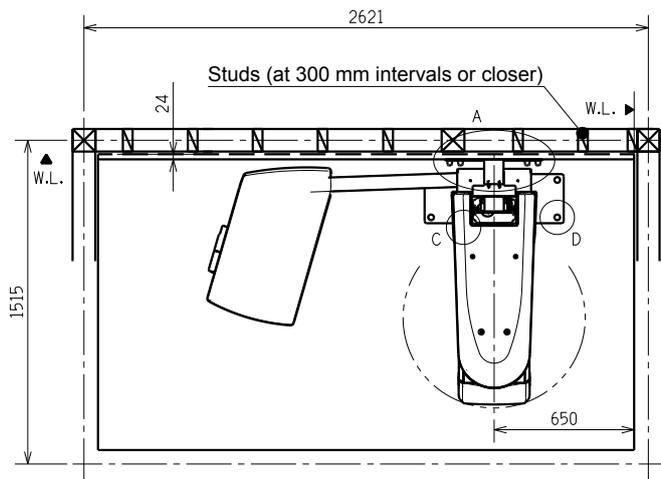
Fig. ③ -164: Example of fixings for a conventional wooden construction and partition wall (Standing position wall-mount short type: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-3. Example of Standing position wall-mount long type: Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
 F.L. (floor line)··· floor line  
 REF.: For detailed figures of A and C and D, refer to  
 Fig.③-181: Wall fixing detail drawing A  
 Fig.③-183: Floor fixing detail drawing C  
 Fig.③-184: Floor fixing detail drawing D (Cephalometric type)  
 For a sample conventional method for floor beam reinforcement, refer to Fig.③-185: Example of conventional wooden construction with floor joist reinforcing (wall-mounted).

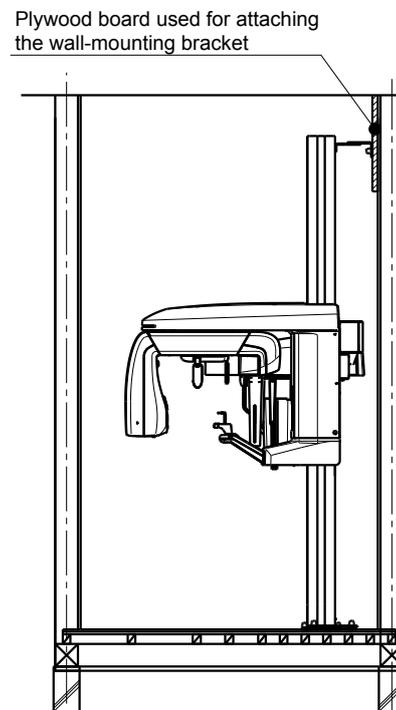
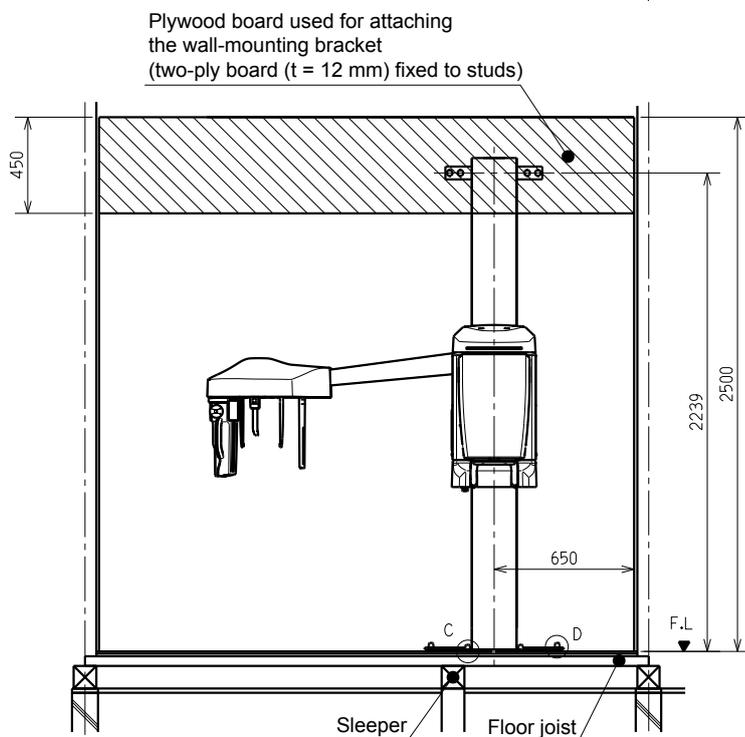


Fig. ③ -165: Example of fixings for a conventional wooden construction and partition wall  
 (Standing position wall-mount long type: Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-4. Example of Standing position wall-mount: 3D Cephalometric type installation

Unit: mm

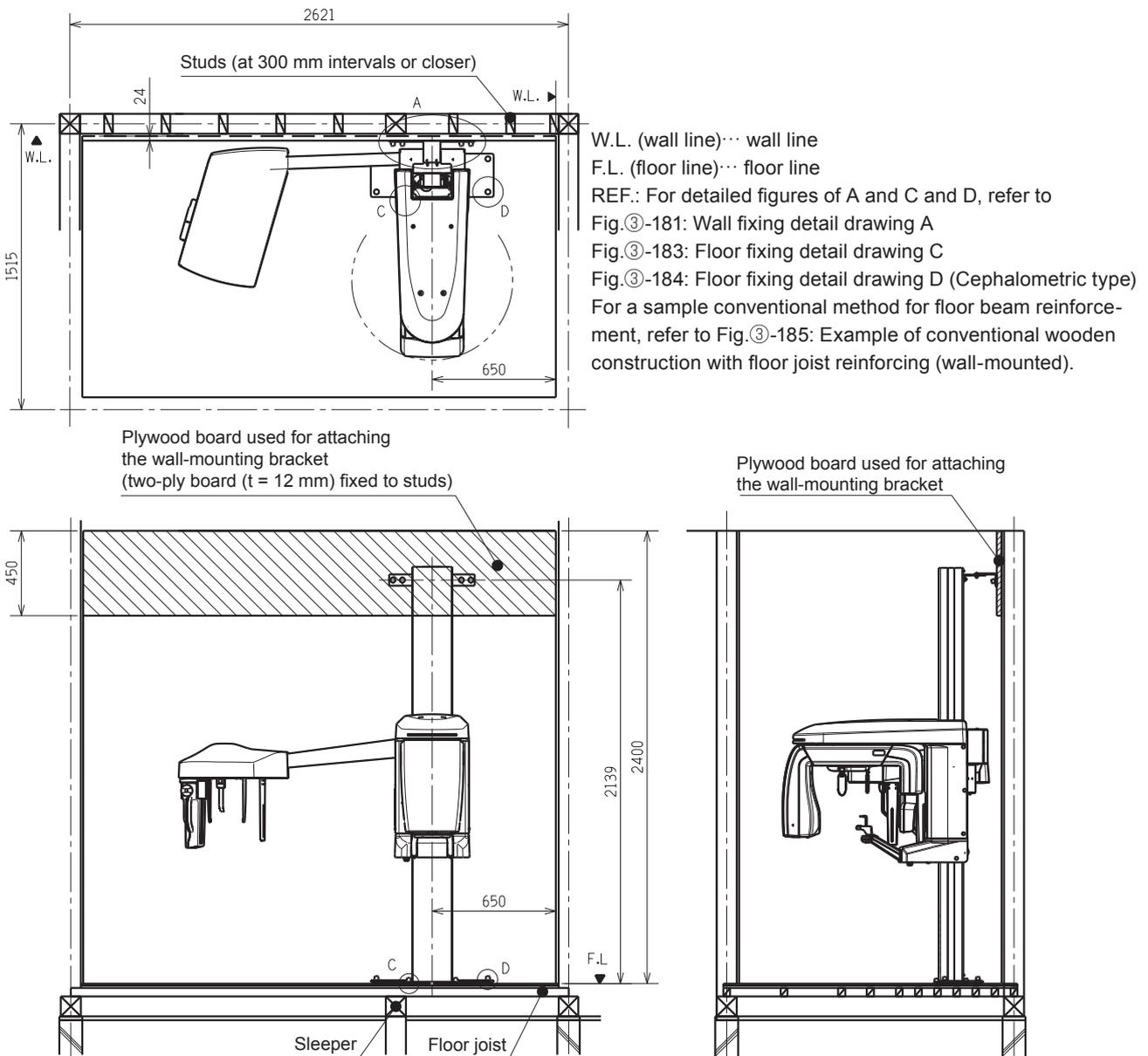


Fig. ③ -166: Example of fixings for a conventional wooden construction and partition wall (Standing position wall-mount: 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-5. Example of Standing position wall-mount short type: 3D Cephalometric type installation

Unit: mm

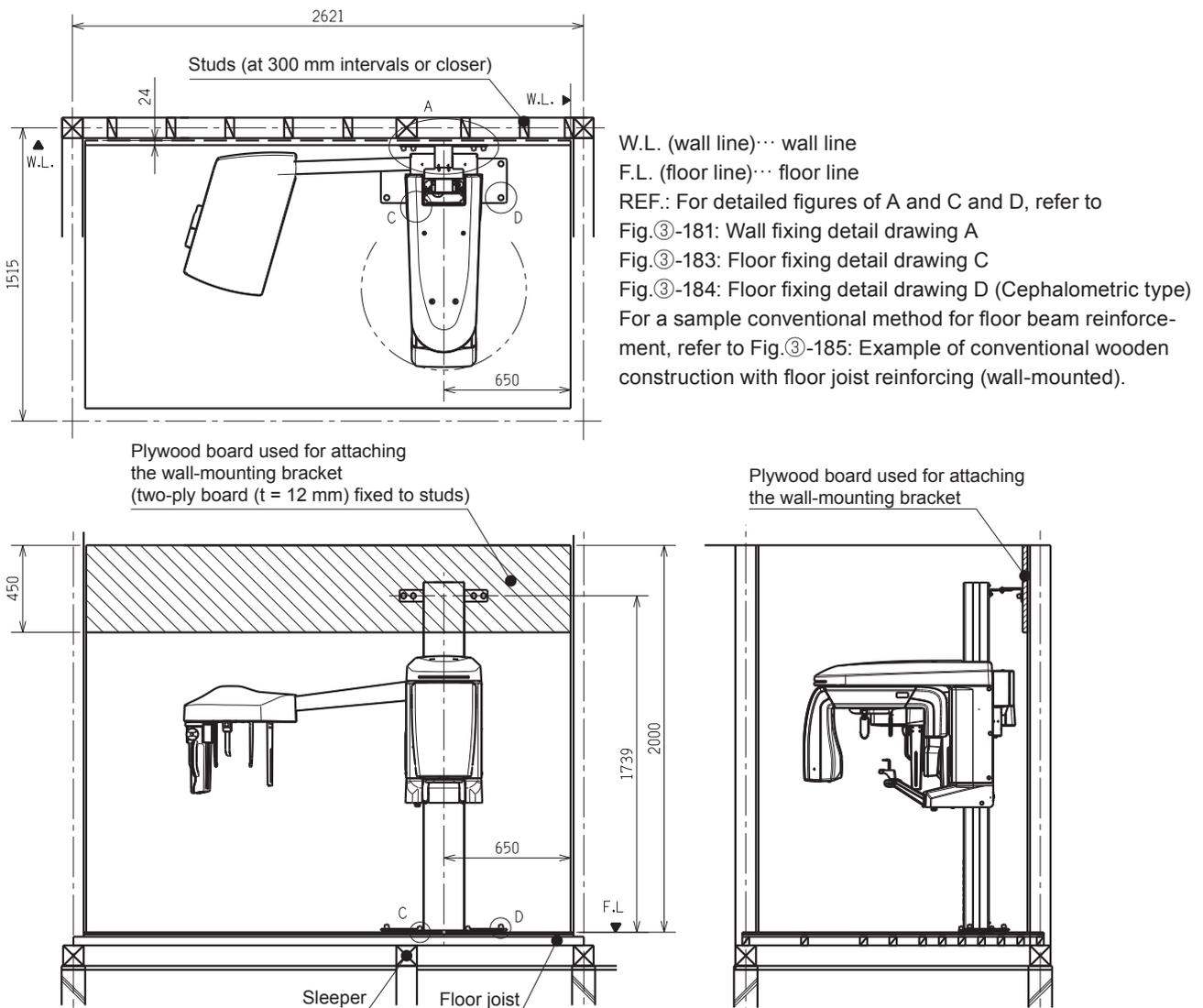


Fig. ③ -167: Example of fixings for a conventional wooden construction and partition wall (Standing position wall-mount short type: 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

c-6. Example of Standing position wall-mount long type: 3D Cephalometric type installation

Unit: mm

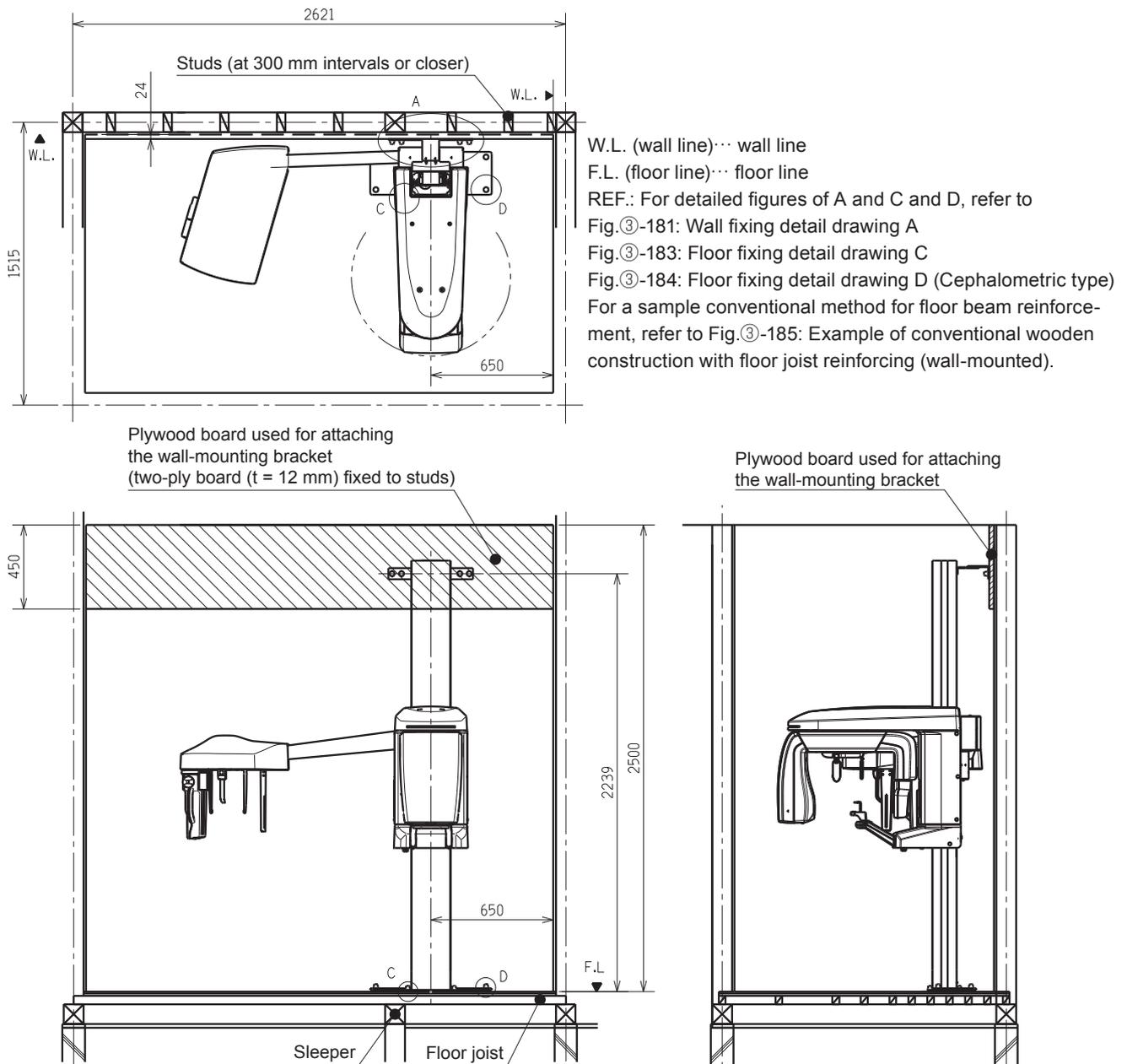


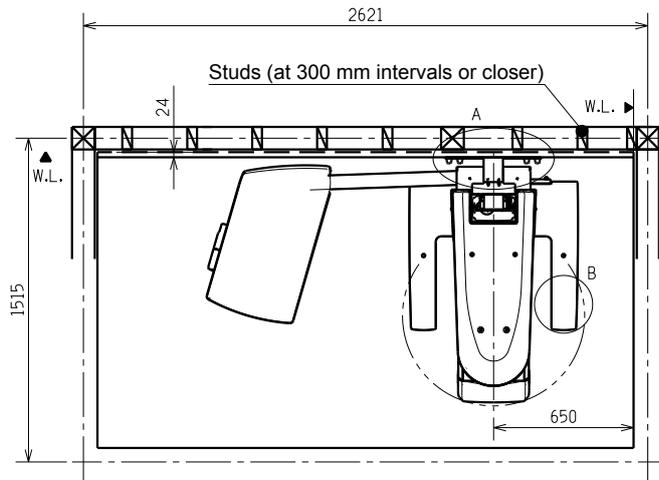
Fig. ③ -168: Example of fixings for a conventional wooden construction and partition wall (Standing position wall-mount long type: 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-1. Example of Standing position base-mount (with an optional base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig. ③-181: Wall fixing detail drawing A  
Fig. ③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig. ③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

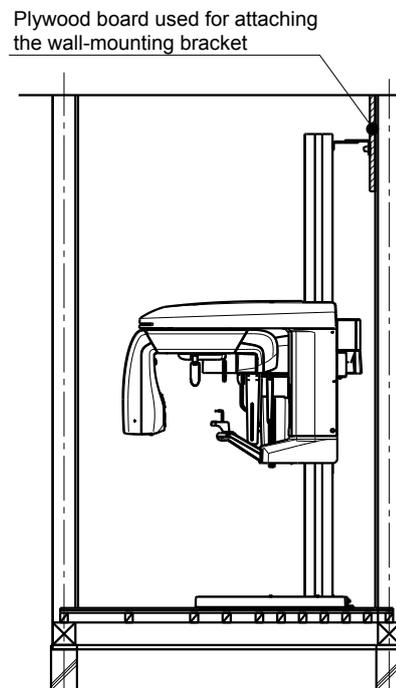
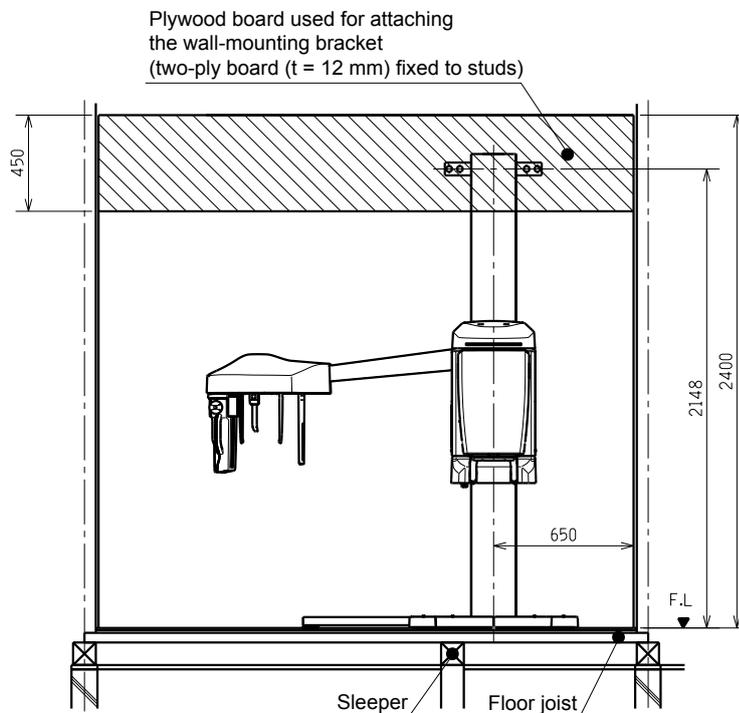


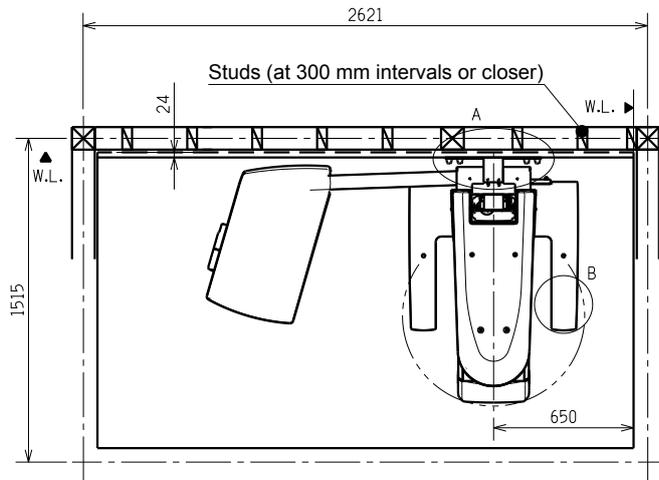
Fig. ③ -169: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-2. Example of Standing position base-mount short type (with an optional base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

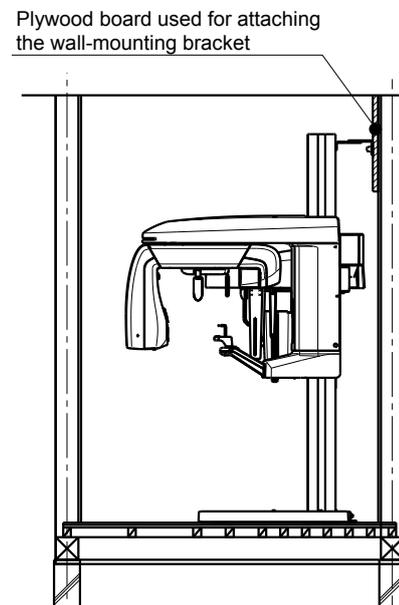
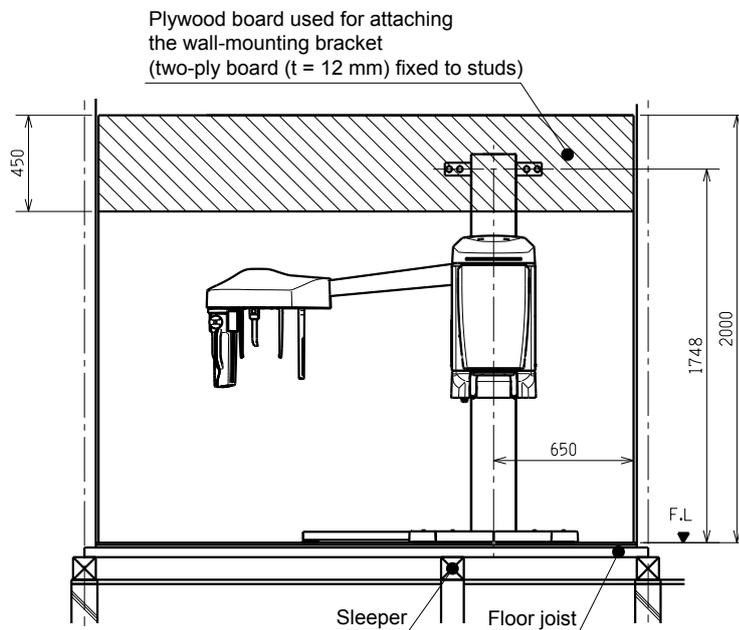


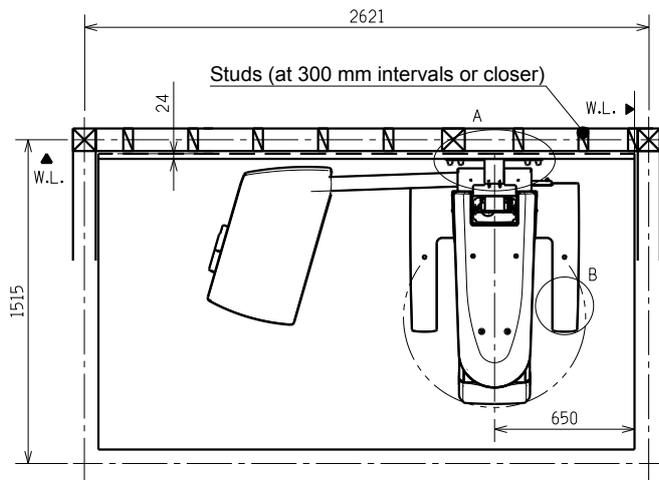
Fig. ③ -170: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-3. Example of Standing position base-mount long type (with an optional base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

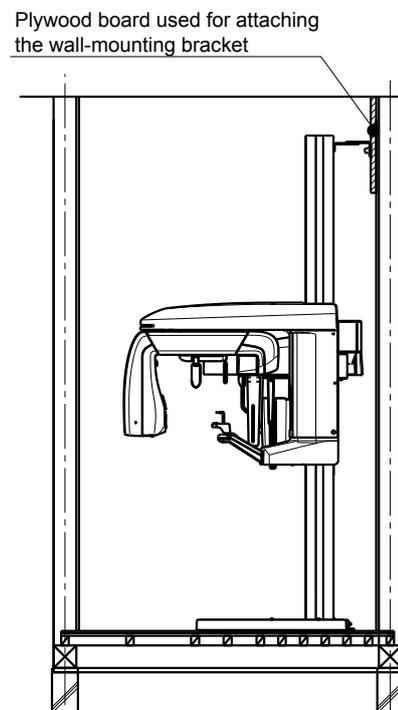
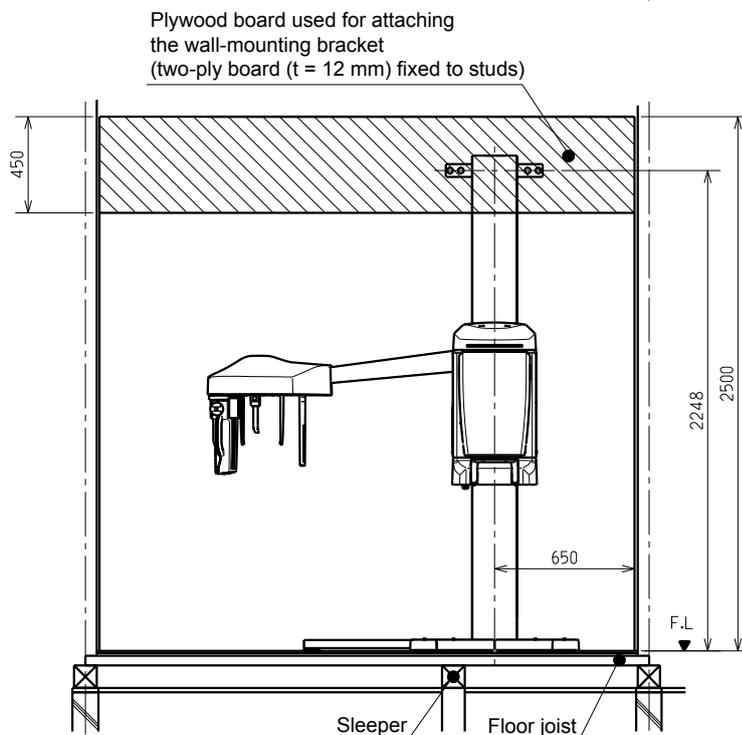


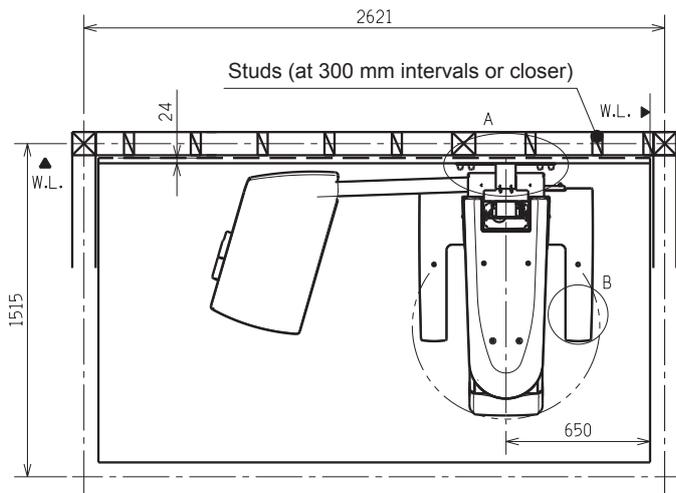
Fig. ③ -171: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-4. Example of Standing position base-mount (with an optional base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

Plywood board used for attaching  
the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
the wall-mounting bracket

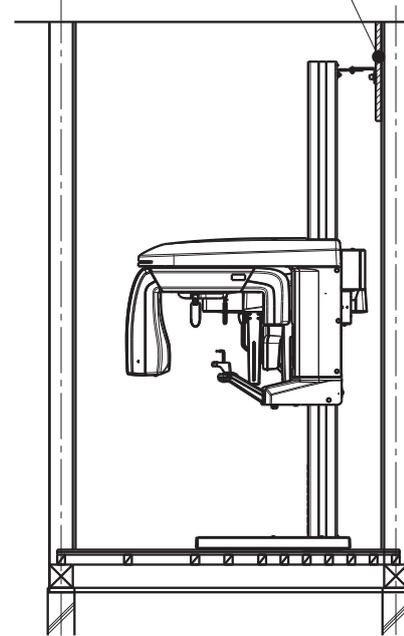
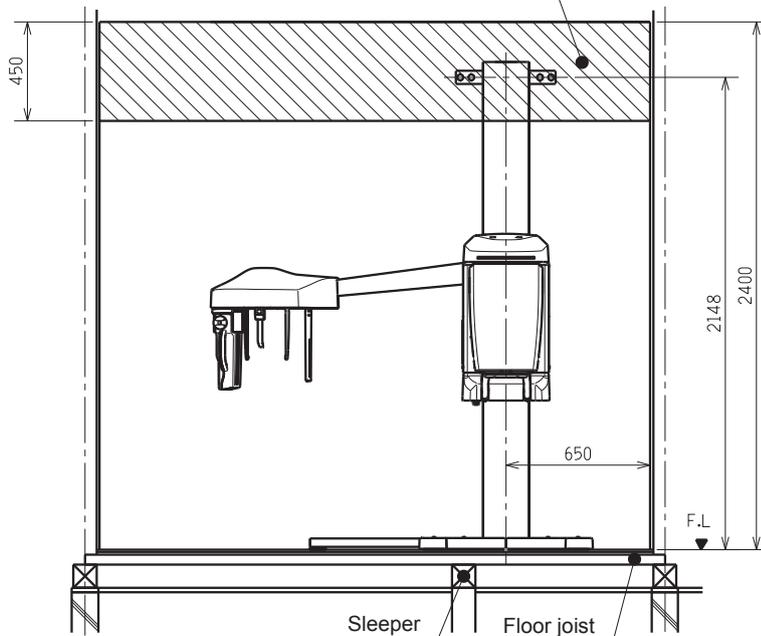


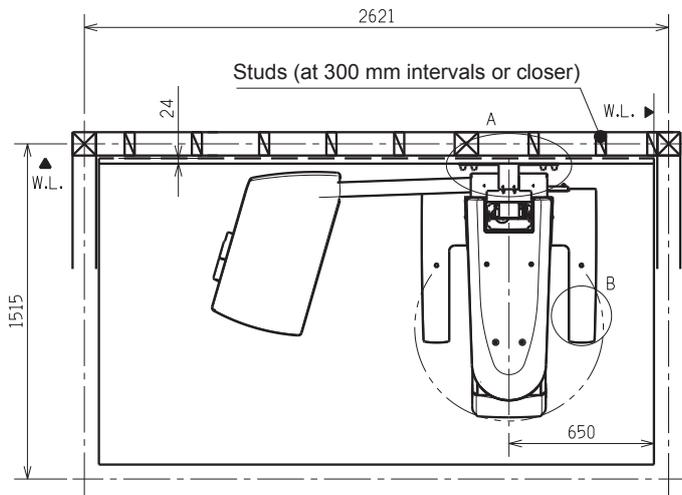
Fig. ③ -172: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-5. Example of Standing position base-mount short type (with an optional base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

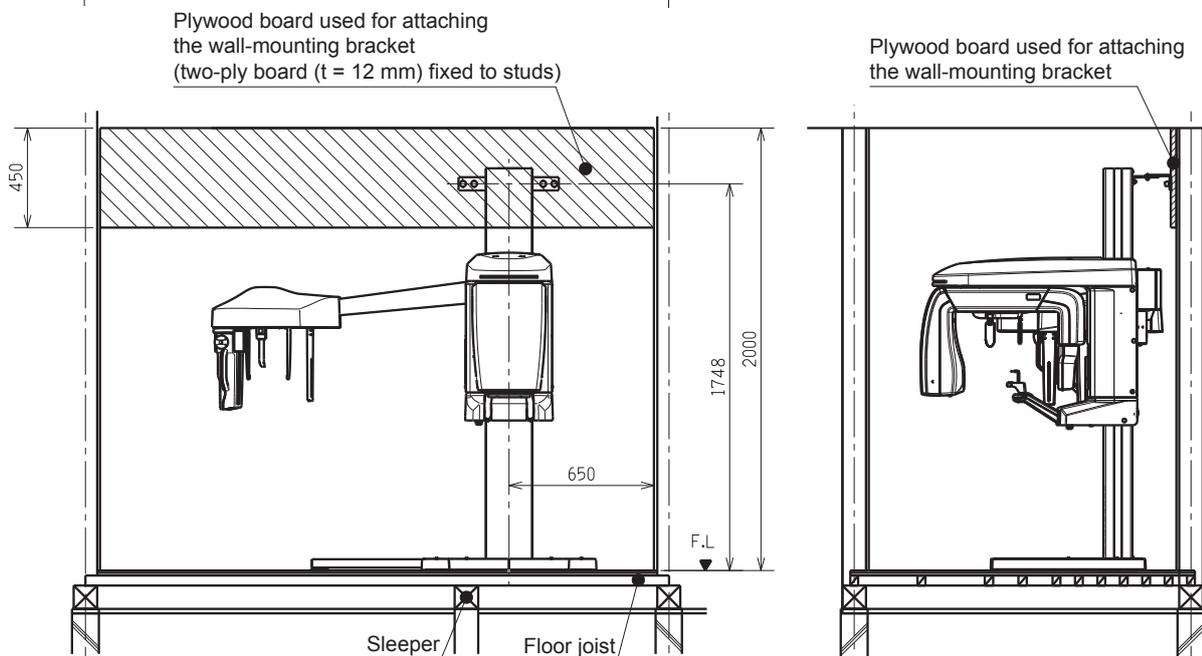


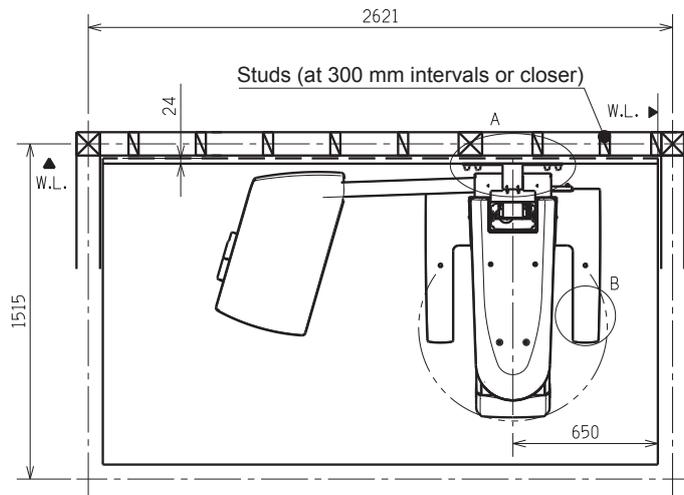
Fig. ③ -173: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

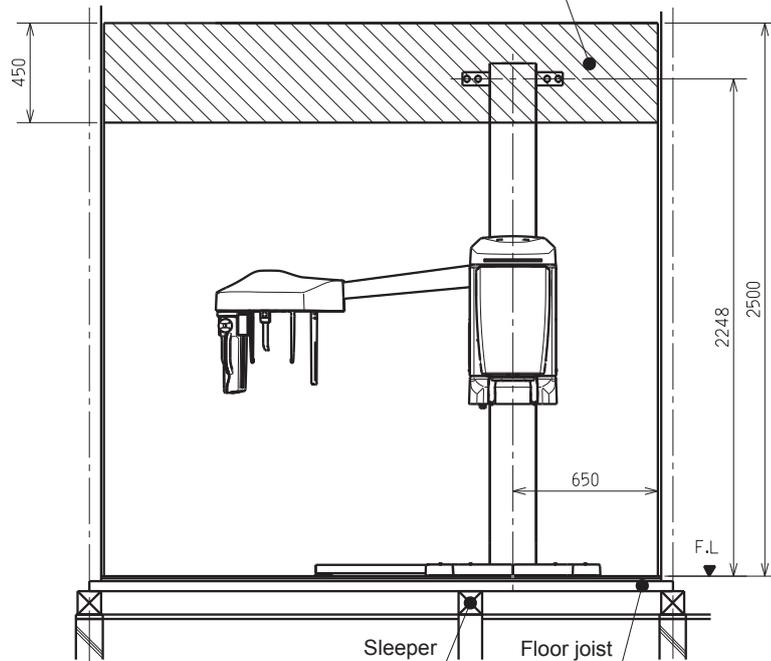
d-6. Example of Standing position base-mount long type (with an optional base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-186: Example of  
conventional wooden construction with floor joist  
reinforcing (base-mounted).

Plywood board used for attaching  
the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to studs)



Plywood board used for attaching  
the wall-mounting bracket

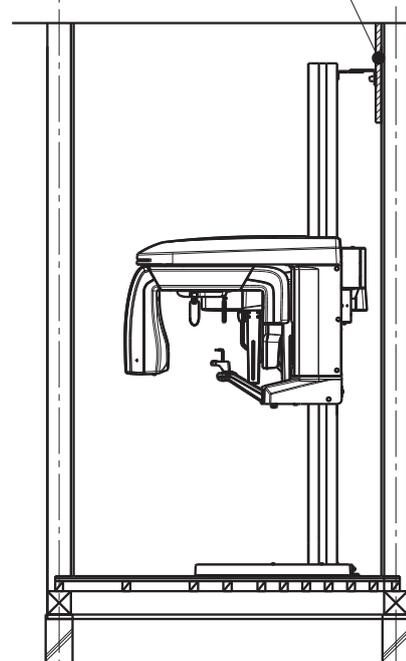


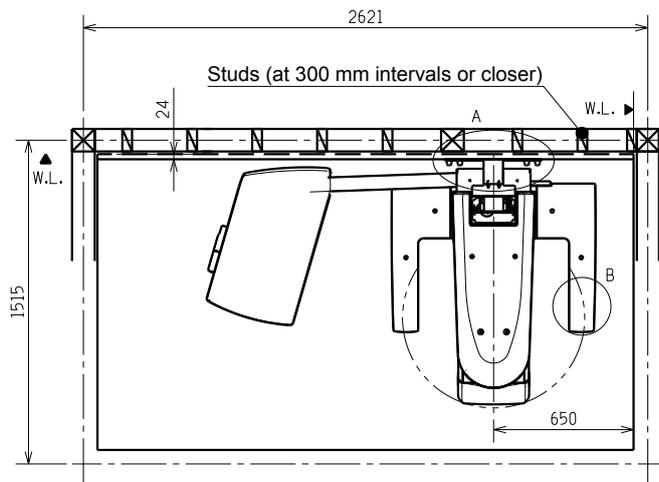
Fig. ③ -174: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional base): 3D Cephalometric type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-7. Example of Standing position base-mount (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of  
conventional wooden construction with floor joist  
reinforcing (wide base-mounted).

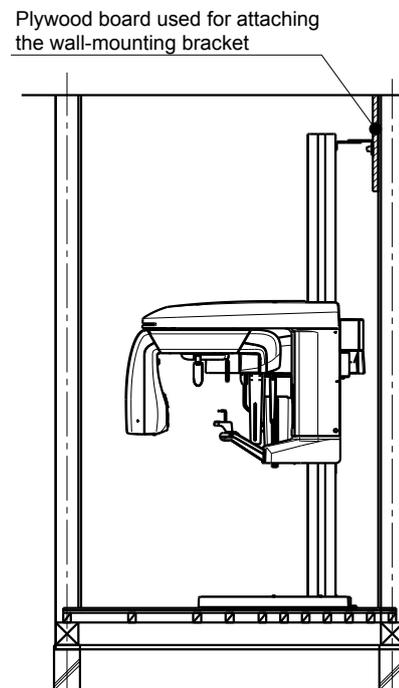
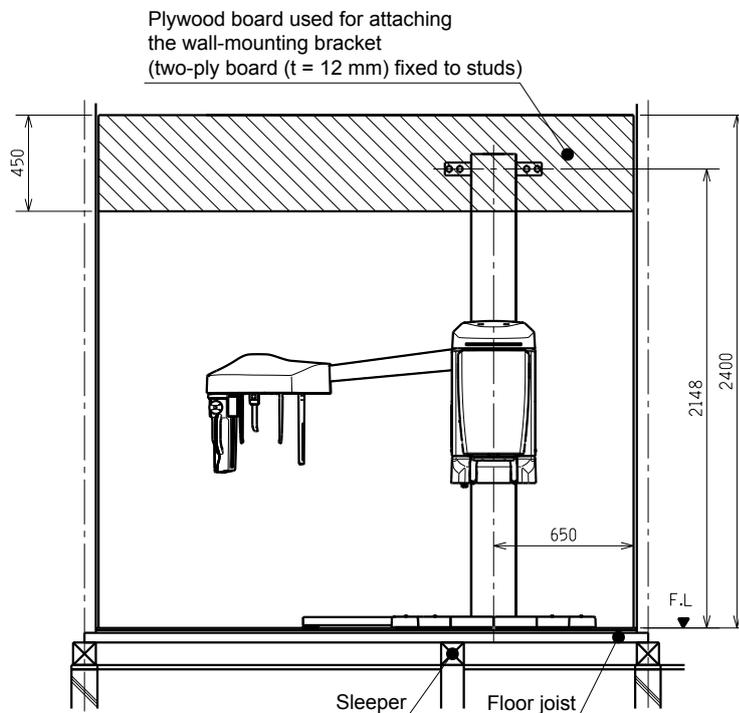


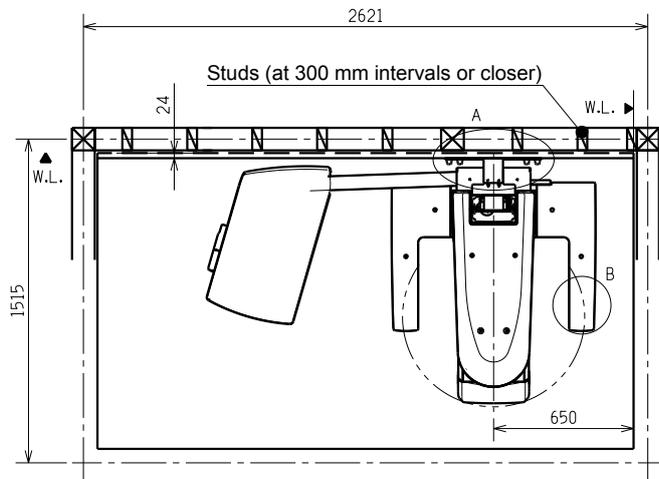
Fig. ③ -175: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional wide base): Cephalometric type)

**! CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-8. Example of Standing position base-mount short type (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of  
conventional wooden construction with floor joist  
reinforcing (wide base-mounted).

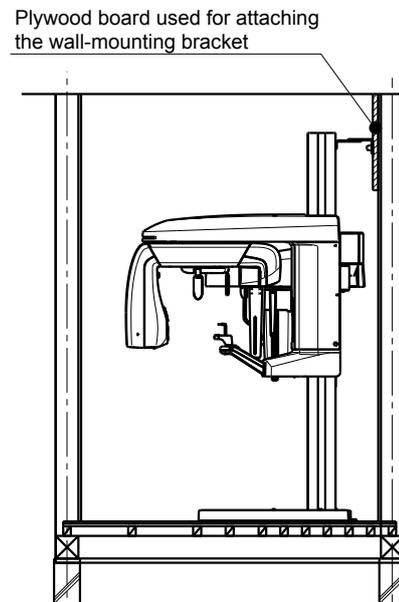
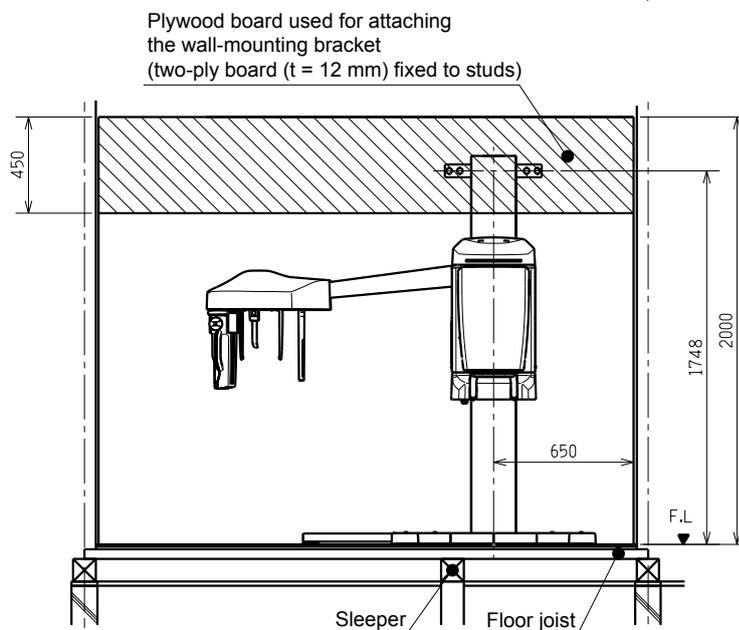


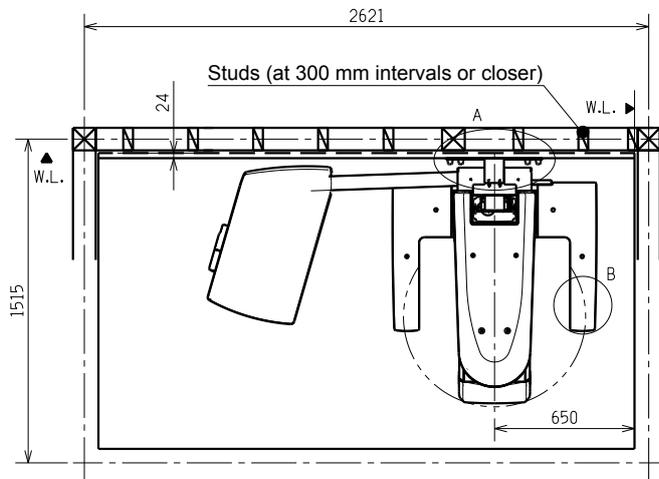
Fig. ③ -176: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional wide base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-9. Example of Standing position base-mount long type (with an optional wide base):  
Cephalometric type installation

Unit: mm



W.L. (wall line)... wall line  
F.L. (floor line)... floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of  
conventional wooden construction with floor joist  
reinforcing (wide base-mounted).

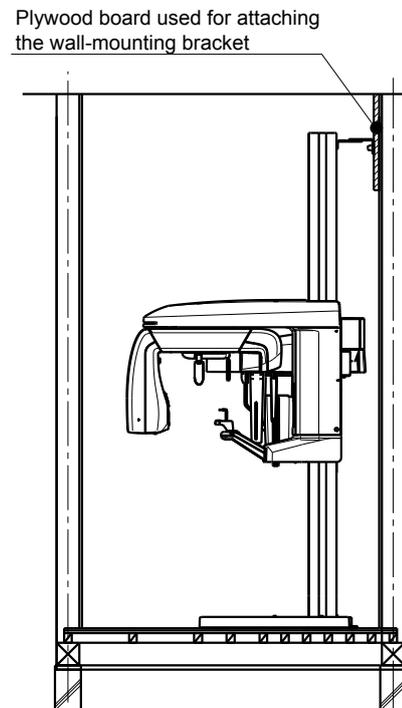
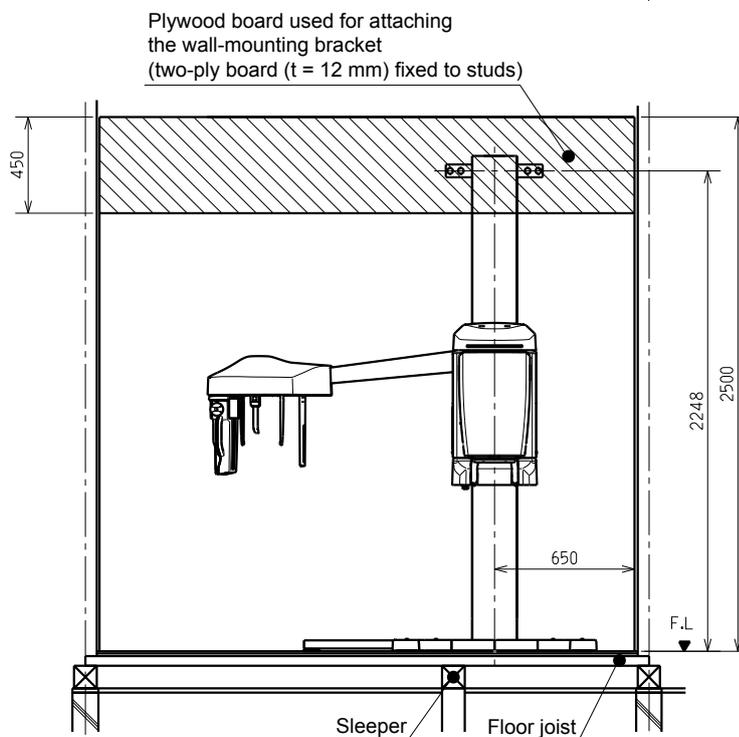


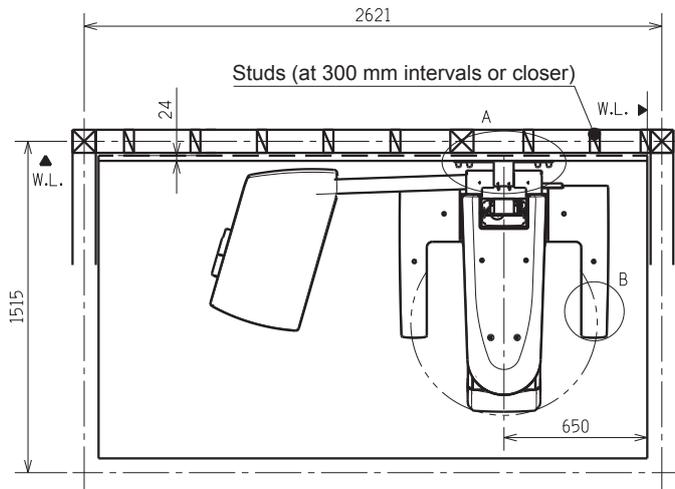
Fig. ③ -177: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional wide base): Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-10. Example of Standing position base-mount (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

Plywood board used for attaching  
the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
the wall-mounting bracket

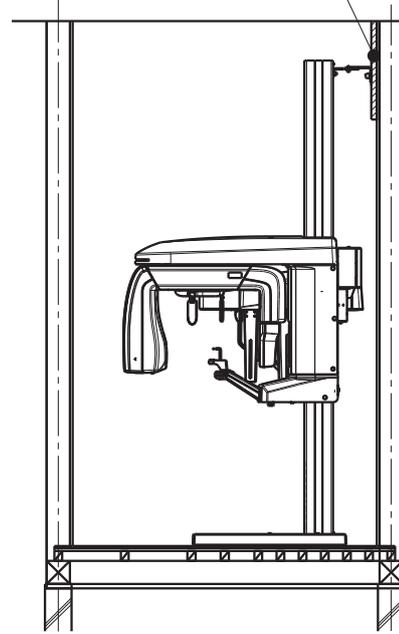
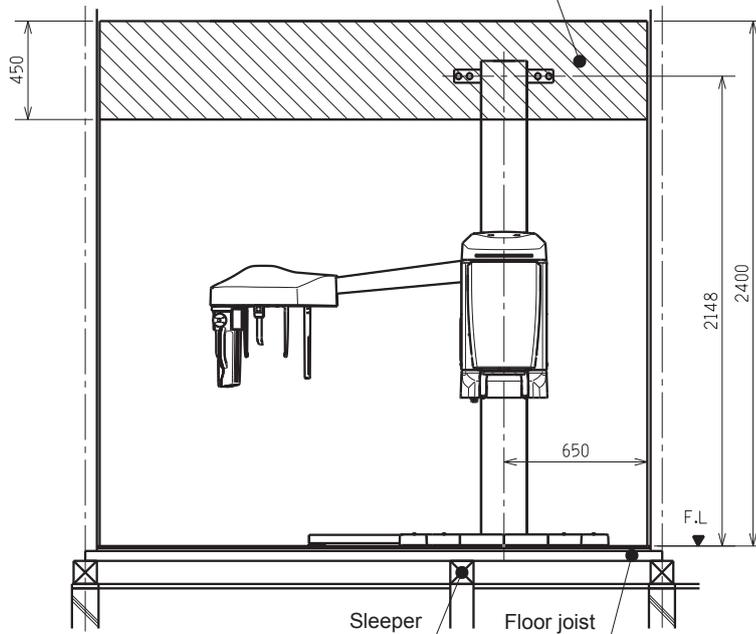


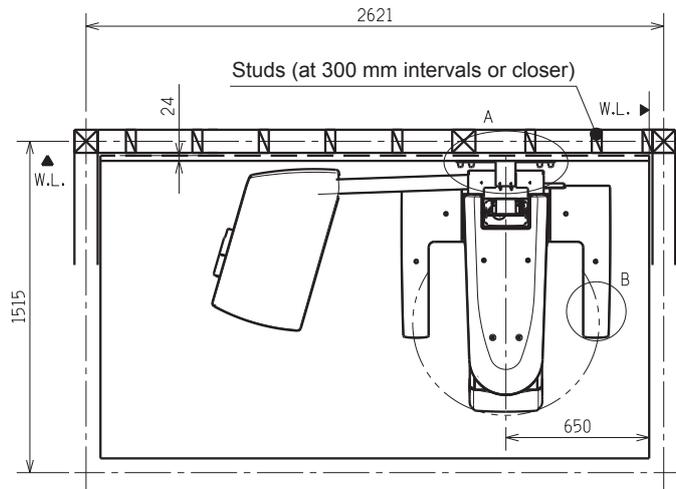
Fig. ③ -178: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount (with an optional wide base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-11. Example of Standing position base-mount short type (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conven-  
tional wooden construction with floor joist reinforcing  
(wide base-mounted).

Plywood board used for attaching  
the wall-mounting bracket  
(two-ply board (t = 12 mm) fixed to studs)

Plywood board used for attaching  
the wall-mounting bracket

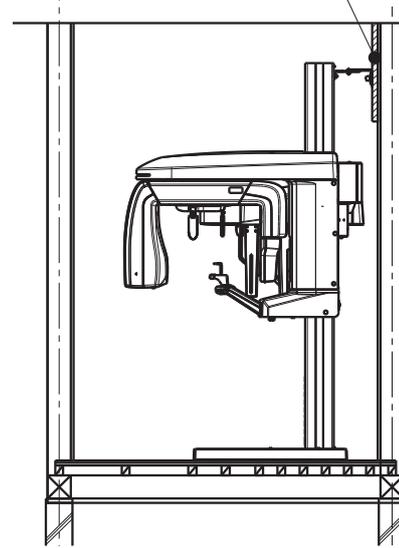
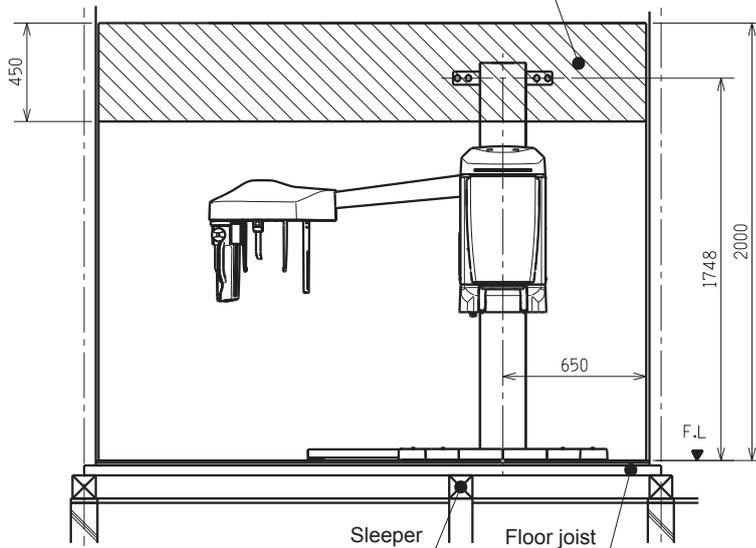


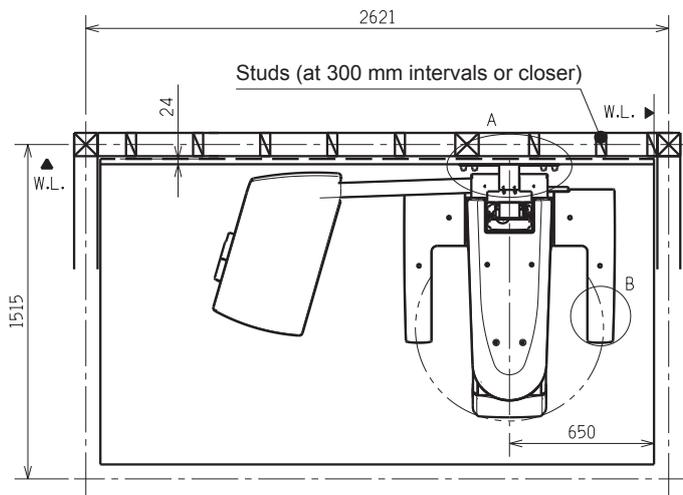
Fig. ③ -179: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount short type (with an optional wide base): 3D Cephalometric type)

**CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

d-12. Example of Standing position base-mount long type (with an optional wide base):  
3D Cephalometric type installation

Unit: mm



W.L. (wall line)··· wall line  
F.L. (floor line)··· floor line  
REF.: For detailed figures of A and B, refer to  
Fig.③-181: Wall fixing detail drawing A  
Fig.③-182: Floor fixing detail drawing B  
For a sample conventional method for floor beam  
reinforcement, refer to Fig.③-187: Example of conventional  
wooden construction with floor joist reinforcing  
(wide base-mounted).

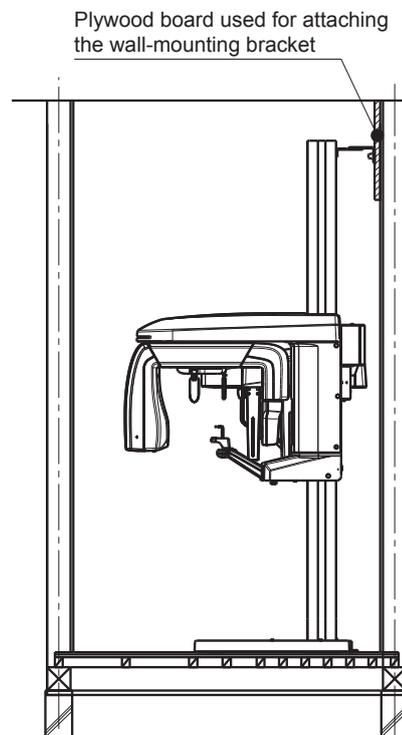
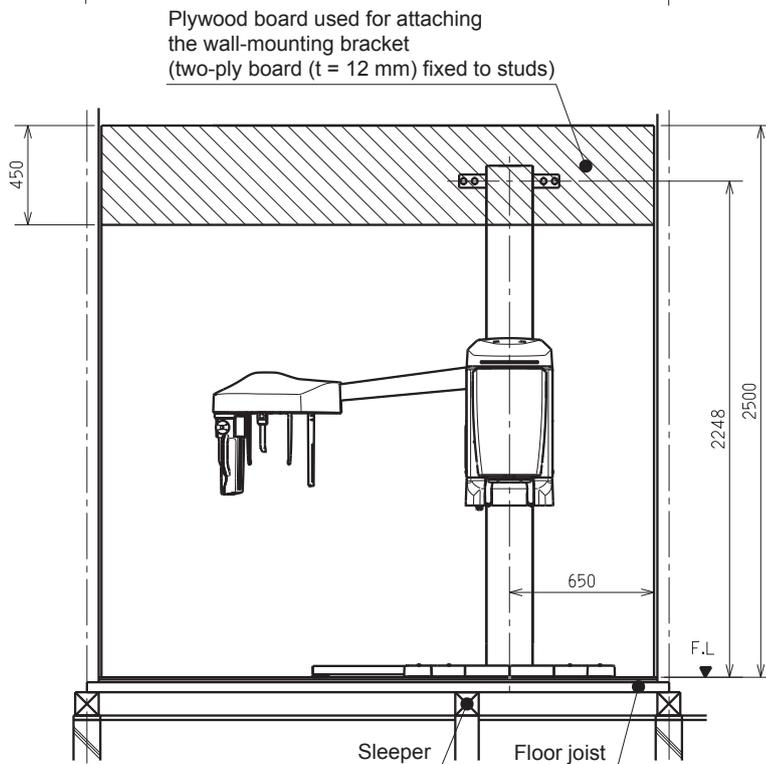


Fig. ③ -180: Example of fixings for a conventional wooden construction and partition wall  
(Standing position base-mount long type (with an optional wide base): 3D Cephalometric type)

**⚠ CAUTION**

- The examples given here are purely for illustrative purposes. Select the type of installation best suited to the requirements of your installation location.
- The distance of 650 mm from the wall is to ensure that the X-era Smart does not make contact with the wall.
- When determining the installation location, take into account the size and shape of the room concerned and ensure that the operator has unimpeded access to the control panel on the left side of the X-era Smart.

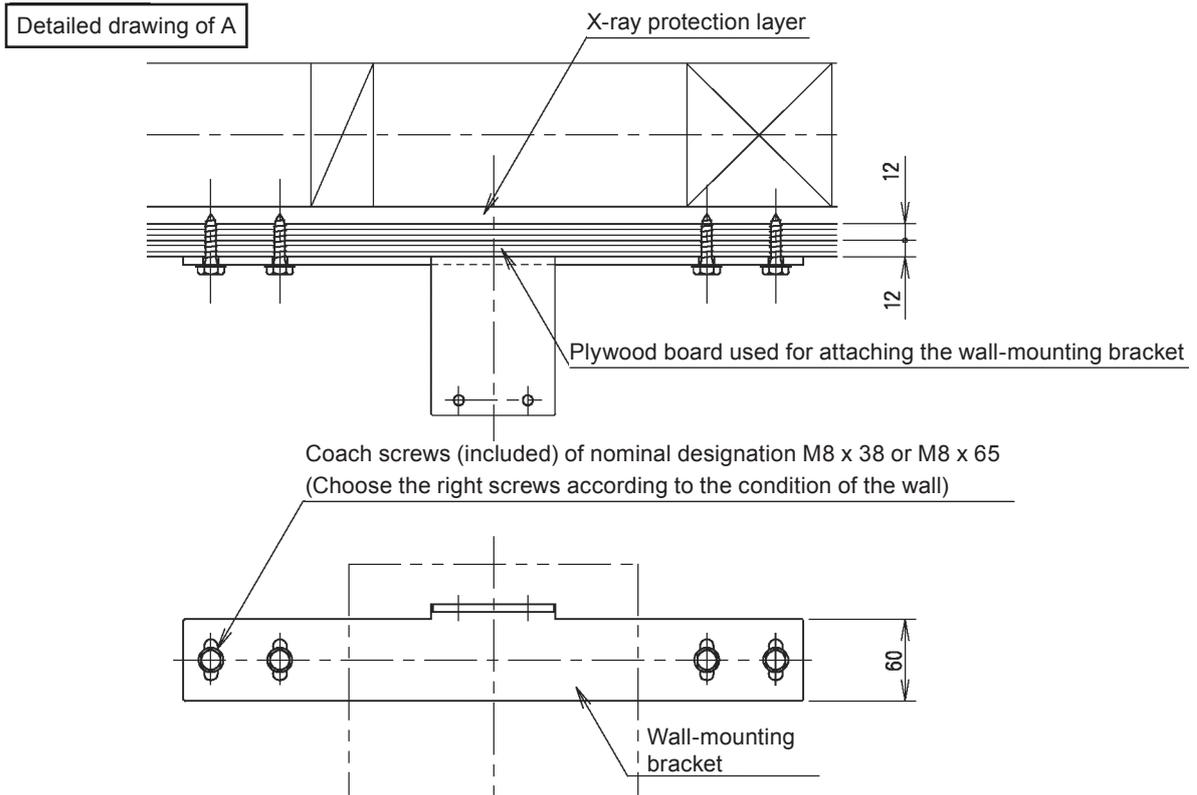
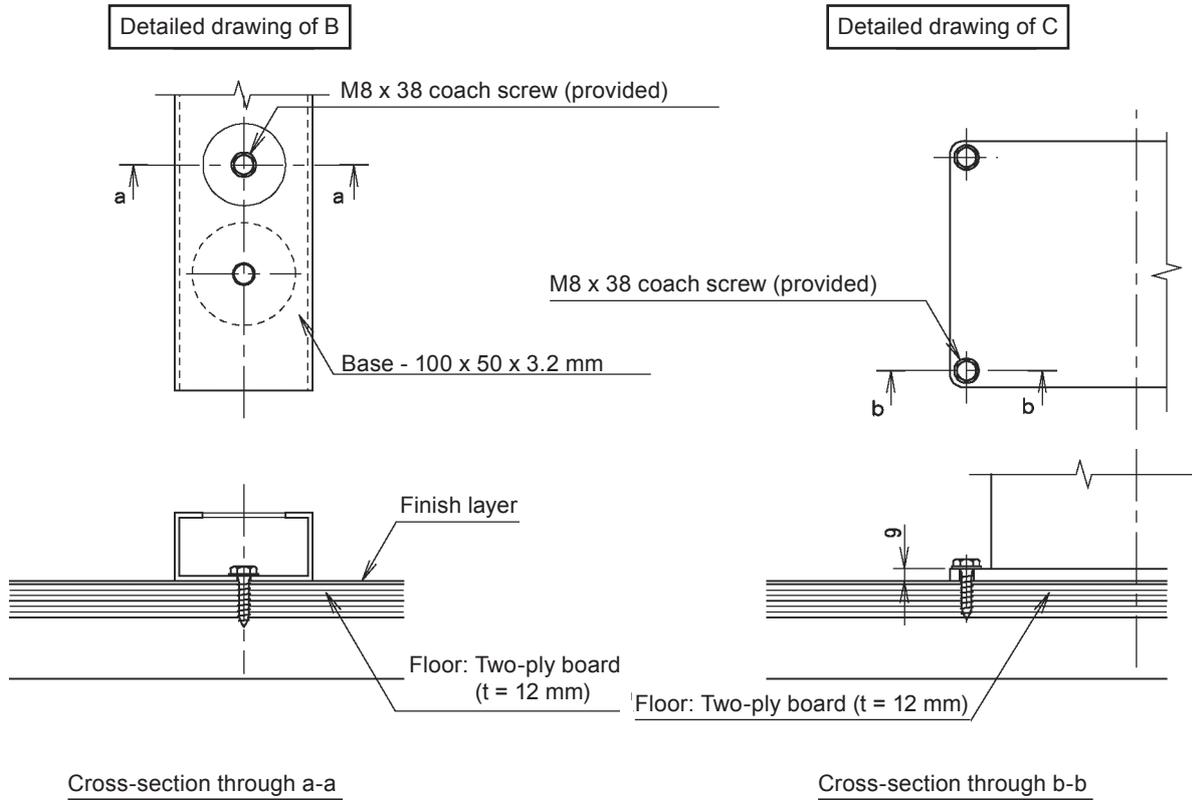


Fig. ③ -181: Wall fixing detail drawing A



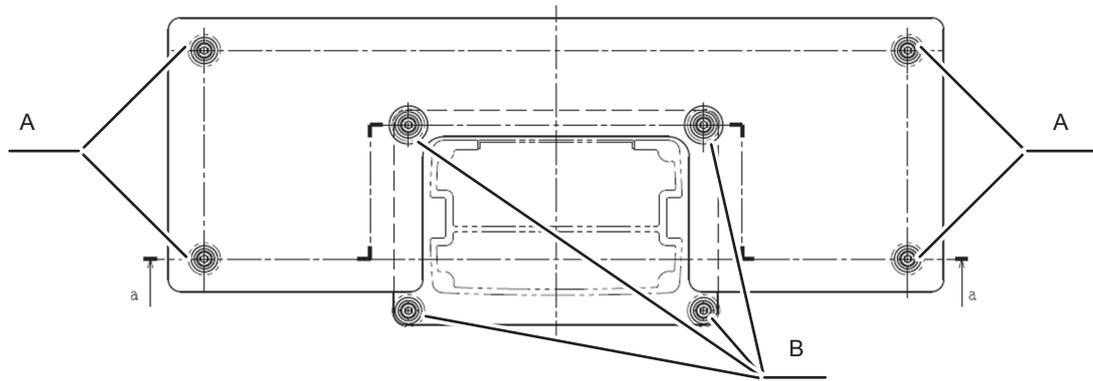
Cross-section through a-a

Fig. ③ -182: Floor fixing detail drawing B

Cross-section through b-b

Fig. ③ -183: Floor fixing detail drawing C

Detailed drawing of D



Coach screw size  
A: M8 x L50  
B: M8 x L38

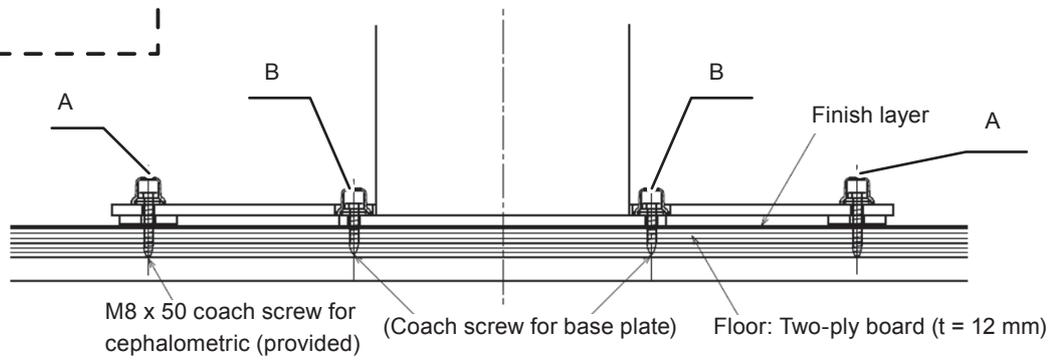


Fig. ③ -184: Floor fixing detail drawing D (Cephalometric type)

■X-ray unit weight

- Standing position wall-mount: Panoramic type : 130 kg
- Standing position wall-mount short type: Panoramic type : 125 kg
- Standing position wall-mount long type: Panoramic type : 135 kg
- Standing position wall-mount: Cephalometric type : 170 kg
- Standing position wall-mount short type: Cephalometric type : 165 kg
- Standing position wall-mount long type: Cephalometric type : 175 kg
- Standing position wall-mount: 3D type 140 kg
- Standing position wall-mount short type: 3D type 135 kg
- Standing position wall-mount long type: 3D type 145 kg
- Standing position wall-mount: 3D Cephalometric type 180kg
- Standing position wall-mount short type: 3D Cephalometric type 175 kg
- Standing position wall-mount long type: 3D Cephalometric type 185 kg

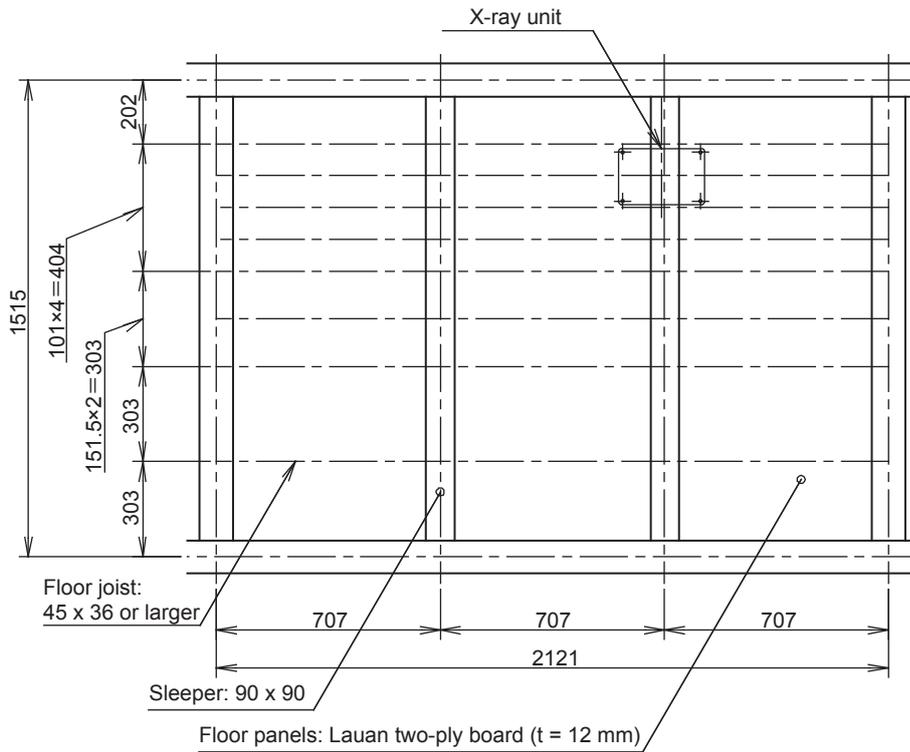


Fig. ③ -185: Example of conventional wooden construction with floor joist reinforcing (wall-mounted)

■X-ray unit weight

- Standing position base-mount (with an optional base): Panoramic type : 155 kg
- Standing position base-mount short type (with an optional base): Panoramic type : 150 kg
- Standing position base-mount long type (with an optional base): Panoramic type : 160 kg
- Standing position base-mount (with an optional base): Cephalometric type : 195 kg
- Standing position base-mount short type (with an optional base): Cephalometric type : 190 kg
- Standing position base-mount long type (with an optional base): Cephalometric type : 200 kg
- Standing position base-mount (with an optional base): 3D type 165 kg
- Standing position base-mount short type (with an optional base): 3D type 160 kg
- Standing position base-mount long type (with an optional base): 3D type 170 kg
- Standing position base-mount (with an optional base): 3D Cephalometric type 205 kg
- Standing position base-mount short type (with an optional base): 3D Cephalometric type 200 kg
- Standing position base-mount long type (with an optional base): 3D Cephalometric type 210 kg

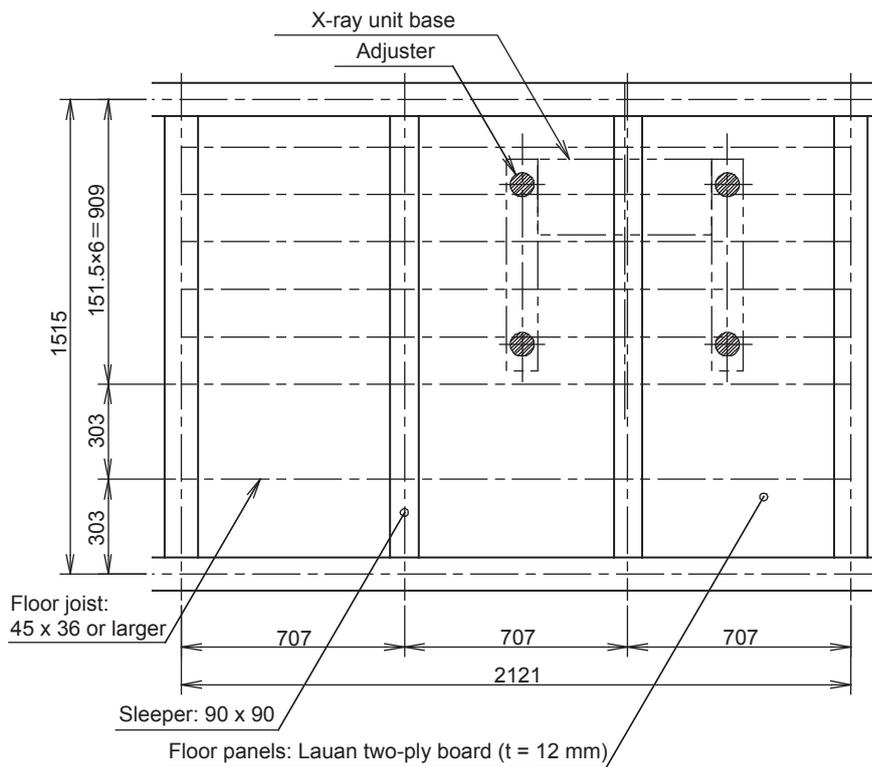


Fig. ③ -186: Example of conventional wooden construction with floor joist reinforcing (base-mounted)

■X-ray unit weight

- Standing position base-mount (with an optional wide base): Panoramic type : 160 kg
- Standing position base-mount short type (with an optional wide base): Panoramic type : 155 kg
- Standing position base-mount long type (with an optional wide base): Panoramic type : 165 kg
- Standing position base-mount (with an optional wide base): Cephalometric type : 200 kg
- Standing position base-mount short type (with an optional wide base): Cephalometric type : 195 kg
- Standing position base-mount long type (with an optional wide base): Cephalometric type : 205 kg
- Standing position base-mount (with an optional wide base): 3D type 170 kg
- Standing position base-mount short type (with an optional wide base): 3D type 165 kg
- Standing position base-mount long type (with an optional wide base): 3D type 175 kg
- Standing position base-mount (with an optional wide base): 3D Cephalometric type 210 kg
- Standing position base-mount short type (with an optional wide base): 3D Cephalometric type 205 kg
- Standing position base-mount short type (with an optional wide base): 3D Cephalometric type 215 kg

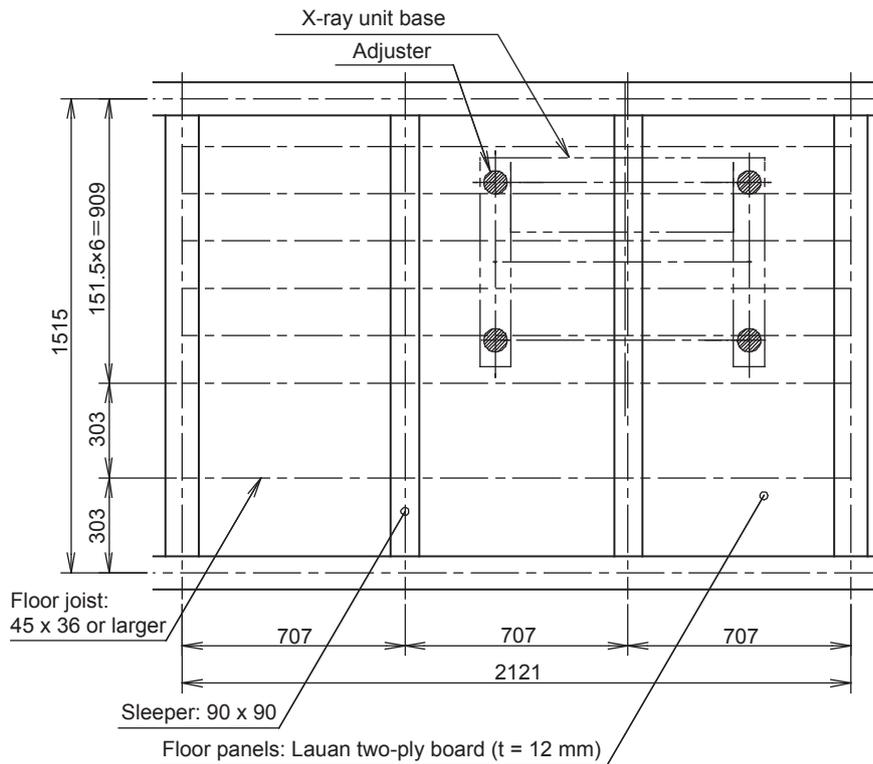


Fig. ③ -187: Example of conventional wooden construction with floor joist reinforcing (wide base-mounted)

#### 4. Example of Wall Mounting

a. Mounting without exposing the reinforcing board: When a plasterboard is directly underneath the wallpaper (or finishing material).

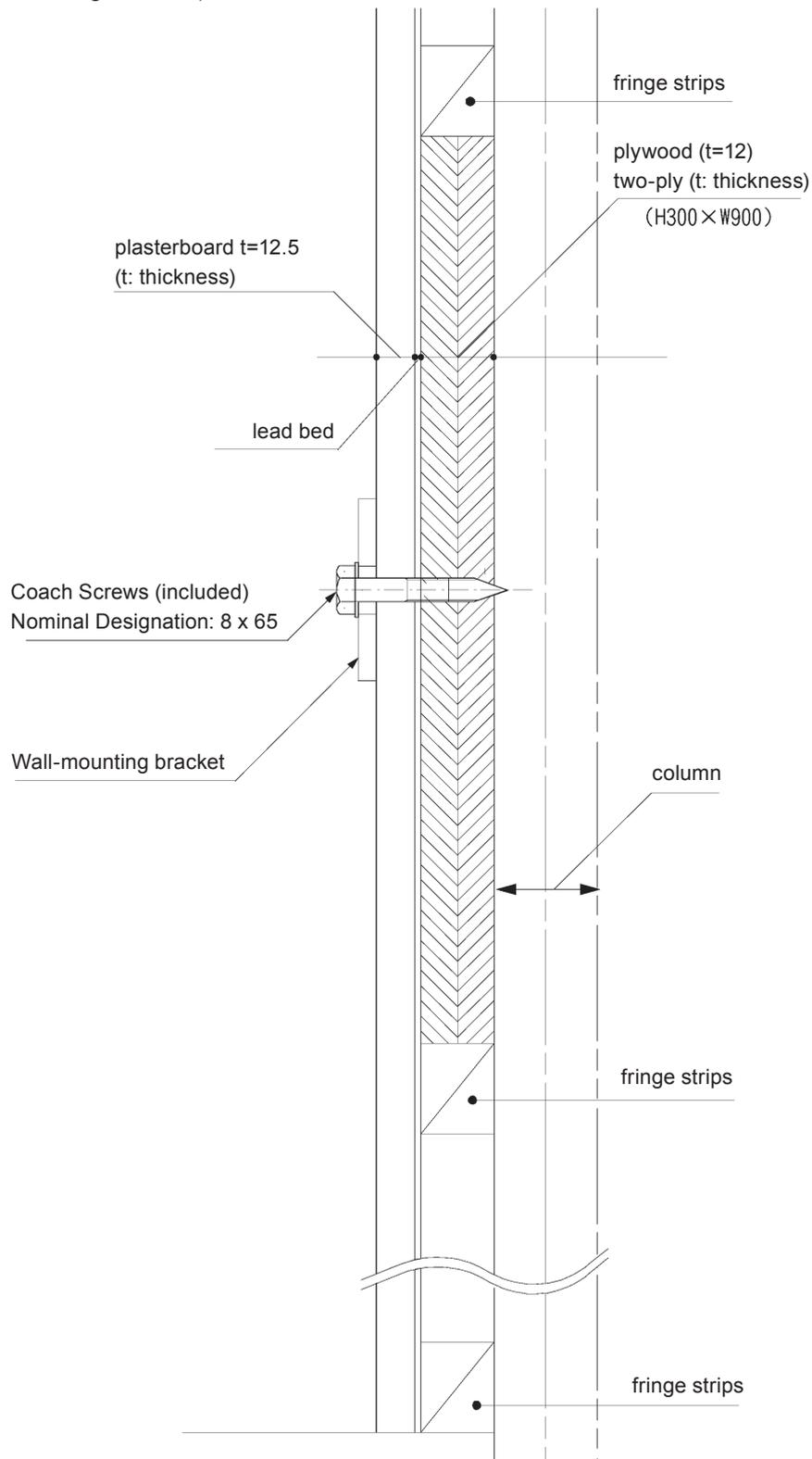


Fig. ③ -188: Mounting without exposing the reinforcing board – 1

#### CAUTION

- What is described here is simply an example. Install the unit in the way best suited to the conditions of the place of installation.

- b. Mounting without exposing the reinforcing board: When a plywood board is directly underneath the wallpaper (or finishing material).

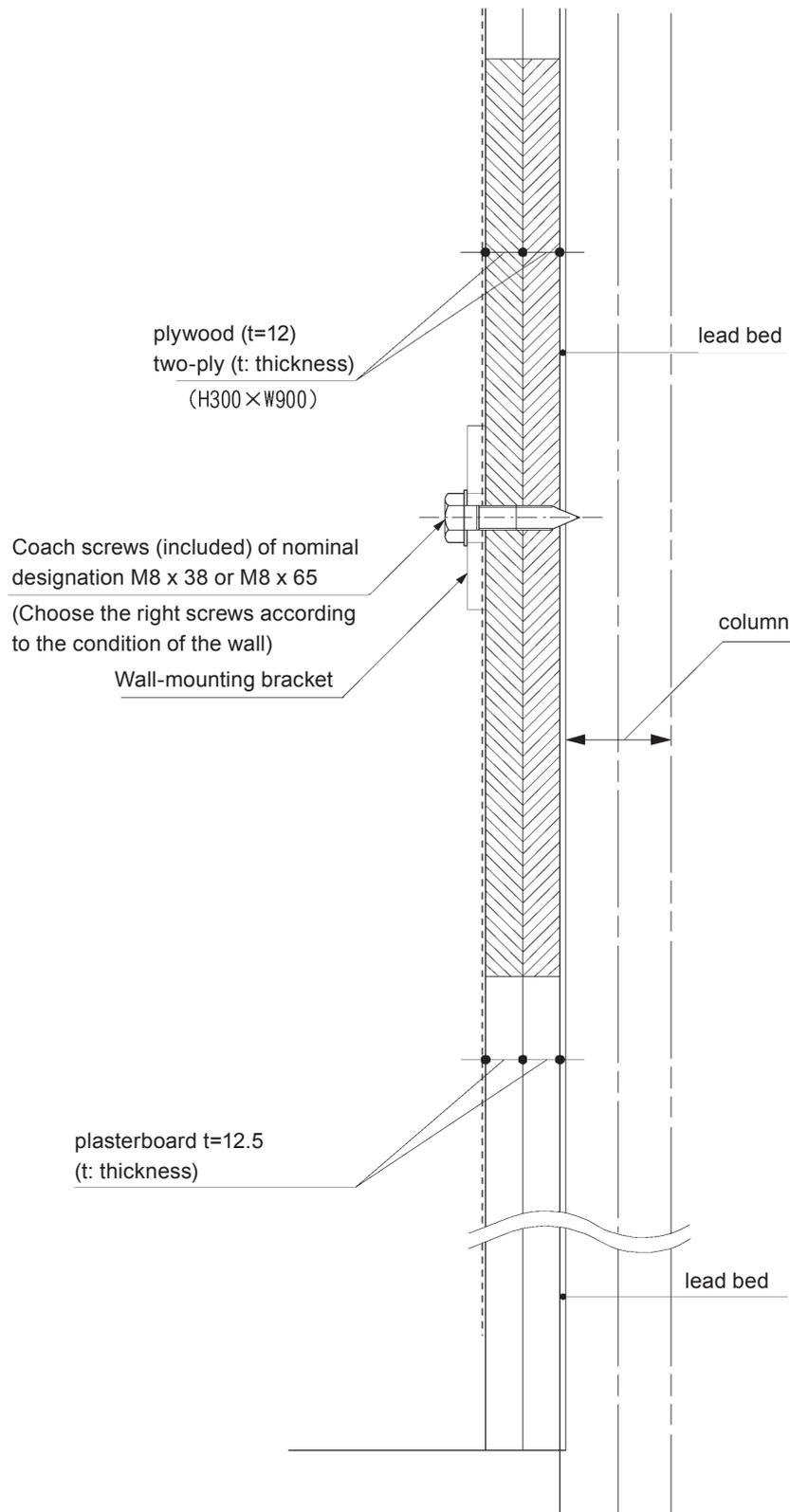


Fig. ③ -189: Mounting without exposing the reinforcing board – 2

**⚠ CAUTION**

- What is described here is simply an example. Install the unit in the way best suited to the conditions of the place of installation.

## 5. Radiography wiring: Detailed Example of Mounting

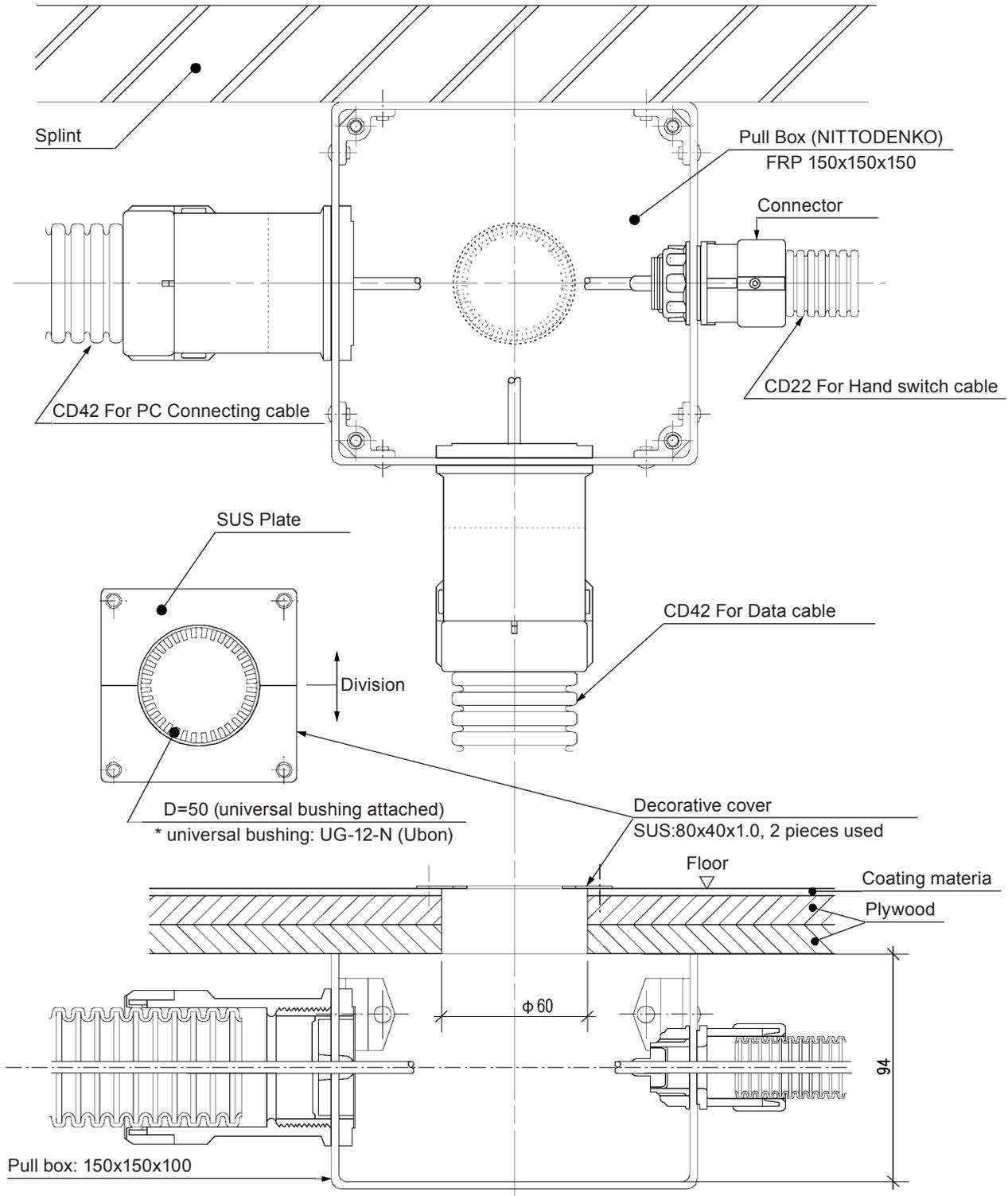


Fig. ③ -190: Detailed Example of Wiring in the X-ray room

\* Pull box and decorative cover do not come together as accessories. Please purchase them separately.

### **CAUTION**

- What is described here is simply an example. Install the unit in the way best suited to the conditions of the place of installation.

## 6. X-ray Room: Window Layout Example

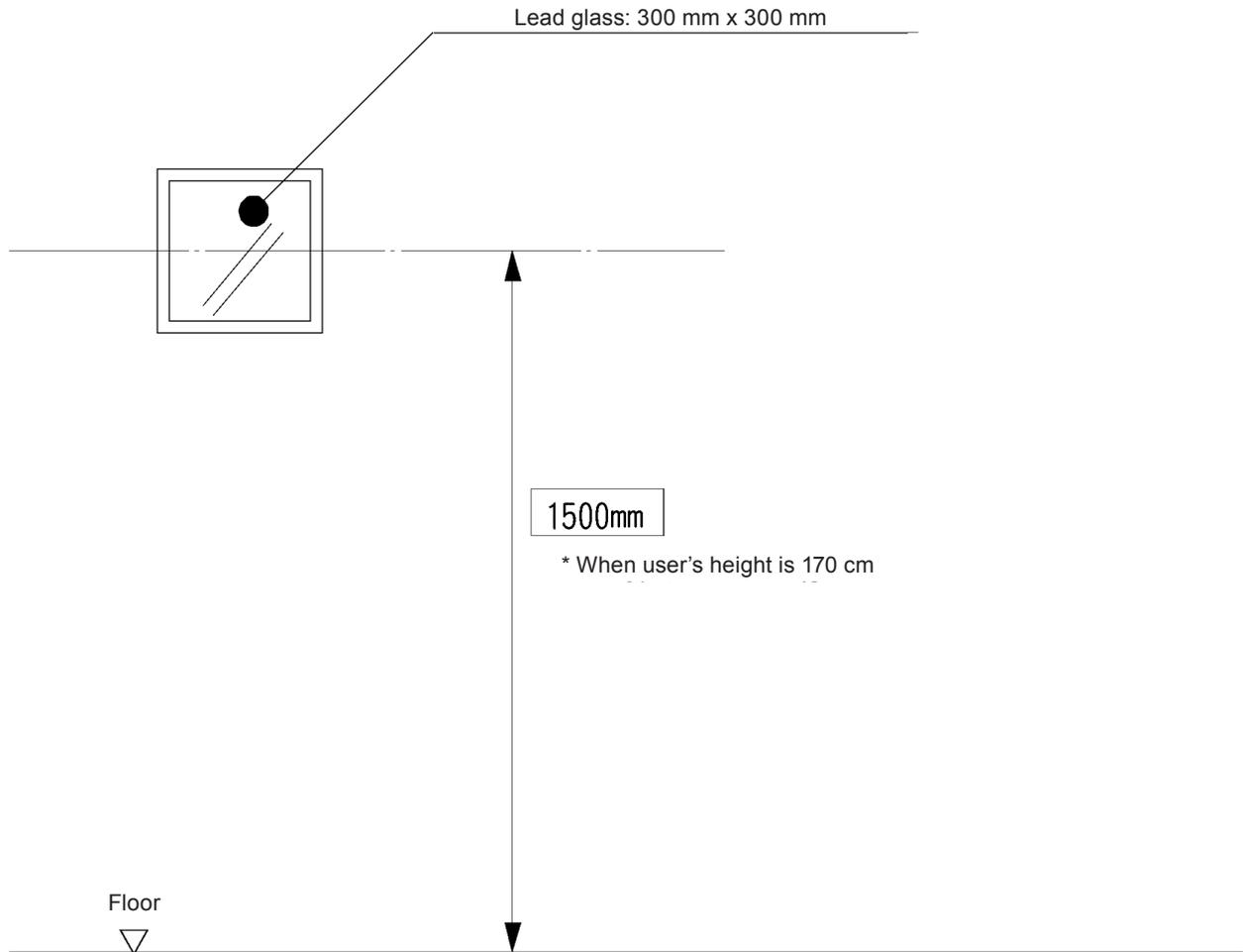


Fig. ③ -191: X-ray Room Window Layout Example

### CAUTION

- What is described here is simply an example. Depending on the size of the X-ray room, layout of the equipment, height of the user, surrounding environment, etc., size of the window, location and lead equivalence of lead glass may vary. Install the unit in the way best suited to the conditions of the place of installation.

## ④ Equipment Assembly Procedure and Precautions

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### 1. Safety Precautions

To ensure that accidents, equipment damage and other unforeseen situations do not arise during assembly, observe the precautions below when assembling the equipment.

\* Any queries regarding ambiguities in these precautions should be addressed to Yoshida Dental Mfg. Co., Ltd.

#### **WARNING**

- As this product is heavy equipment, all necessary precautions should be taken to avoid accidents during transportation and installation.
- Installation work should be carried out by at least 2 persons.
- When moving or operating this equipment during installation, care should be taken to ensure that it does not tip over. Check also that there are no obstacles around the equipment.
- When erecting the main body, make sure that there is no obstruction within the range of movement of this equipment for hoisting and arm rotations.
- During installation, always ensure that the power cord is unplugged from the power outlet when no power supply is required, and take great care to avoid electric shocks or similar accidents.
- Take particular care to avoid personal injury when attaching the equipment components.
- To avoid electric shocks, burns and other accidents when connecting or disconnecting power plugs or electrical connectors inside the equipment, always ensure that the power switch and the circuit breakers in the room are set to OFF.
- When approaching moving parts (elevation unit, rotating arm, etc.), provide supports for the moving parts where necessary to prevent accidents.
- Put in place measures to prohibit persons not involved in the installation work from entering the site.
- Take particular care when the installation work requires a hand, foot or other body part to be placed underneath a heavy object.
- Do not place the film processor in the X-ray room. Film processors emit gas which might erode the X-ray equipment and cause critical harm.
- Do not touch high-voltage parts such as the switching power source, X-ray control circuit board, and X-ray head when turning the power on as it might cause electrification.

#### **CAUTION**

- Install in a location free of moisture.
- Install in a location where there is no risk of adverse effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
- Beware of impacts when transporting the unit.
- Install the unit in a place with no tilts, vibrations or impacts.
- Do not install in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
- Means must be provided that allow the operator and patient to communicate both visually and aurally.
- Ensure that the equipment is correctly grounded.  
Apply the grounding work equivalent to requirements of metal wires with ground resistance of 100  $\Omega$  or more and pulling strength 0.39 kN or more, or soft copper wires with 1.6 mm diameter or more.

## CAUTION

- Always turn off the power to the X-era Smart and the computer when connecting to the computer.
- The computer should be set up outside the X-ray room.
- Ensure that the computer is also correctly grounded.
- Use a common grounding point for both the X-era Smart and the computer (shared protective grounding).
- Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.
- Drilling holes in the floor or wall to fix the X-era Smart in place will generate noise and vibration. Where necessary, use ear protectors or install noise barriers or similar measures to counter the effects of the noise and vibration on the surrounding area and the workers themselves.
- To minimize the level of harm should an injury occur, do not carry out installation work alone.
- Pay attention to your surroundings and give appropriate signals before commencing work.
- When placing heavy objects in a temporary location, take care to ensure that they are stable.
- To avoid injury to workers, do not concurrently carry out work above another worker.
- Do not insert your finger into drilled holes.
- When using power switches, always give appropriate signals to the other workers.
- Do not install this equipment in a place where it is exposed to ambient noise.
- Install this equipment in a place fully fitted with lighting equipments. Install the monitor in a place where it does not get internal or external lights or reflections from them.
- When the equipment is not fixed to the floor or wall, or when the floor or wall does not have sufficient strength, vibrations during image acquisition might adversely influence the quality of the image. Properly fix the equipment to the floor and wall and reinforce them as necessary.

## 2. Assembly Procedures

Follow the procedures below for assembly operations.

### 2-1. X-Axis Motor Mounting

- (1) Unscrew 4 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) that fasten the arm mounting unit top cover. Remove the arm mounting unit top cover.

Tool used: No. 2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

Arm mounting unit top cover

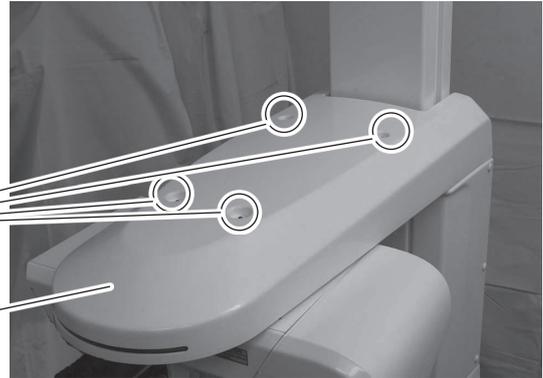


Fig. ④ -1

- (2) Remove 2 x Phillips pan-head screws (M5 x L12 with spring washer and flat washer) fixing the drive section main unit.

Tool used: Phillips screwdriver No. 2

Phillips pan-head screws  
(M5 x L12 with spring washer and flat washer)

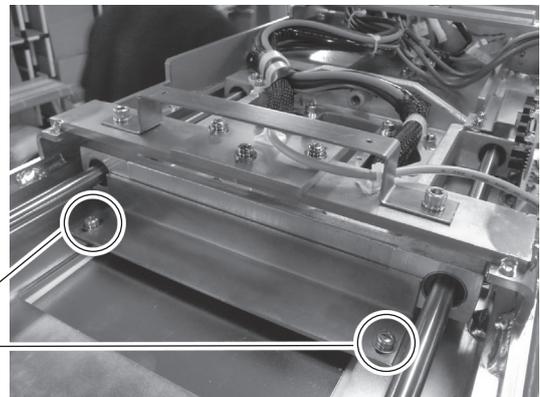


Fig. ④ -2

- (3) Place the X-axis motor unit on top of the arm mounting unit.
- (4) Rotate the coupling by hand while the feed screw on the X-axis motor unit is fitted with the plastic nut of the arm mounting unit. Make the feed screw on the X-axis motor unit interlock with the plastic nut.

Plastic Nut

Feed Screw

Coupling

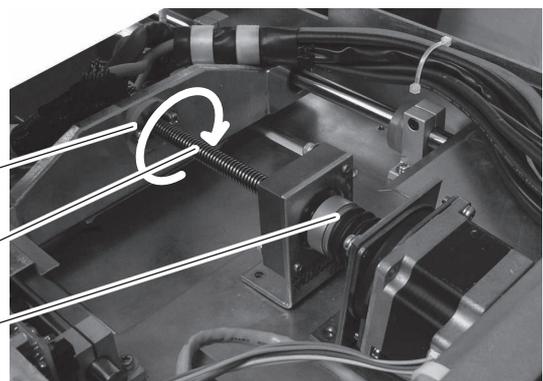


Fig. ④ -3

- (5) Loosen 2 x Allen bolts (M4 x L20 with spring washer) on the bearing holder.

Tools used: 3 mm Allen wrench

Allen bolt (M4 x L20 with spring washer)

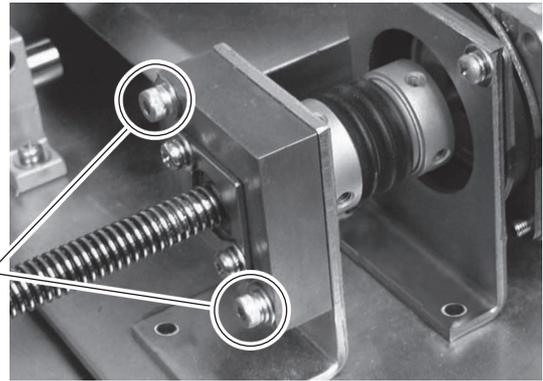


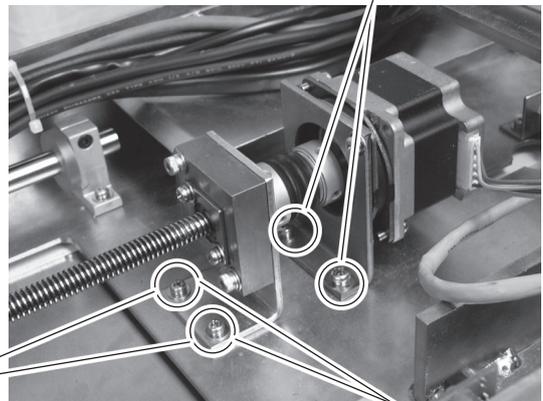
Fig. ④ -4

- (6) Fasten the bracket of X-axis motor unit using 2 x Phillips pan-head machine screws (M5 x L8 with spring and flat washers), and temporarily tighten the bracket of bearing holder using 2 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers).

Tool used: No. 2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

Phillips pan-head machine screw  
(M5 x L8 with spring and flat washers)

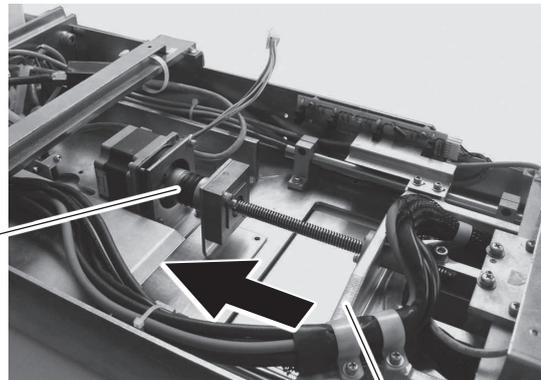


Temporary Tightening

Fig. ④ -5

- (7) Rotate the coupling and move the arm mounting unit until it hits the X-axis motor.

Coupling



Arm mounting unit

Fig. ④ -6

- (8) Fasten the bracket of the bearing holder using 2 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers). After that, tighten the 2 x Allen bolts (M4 x L20 with spring and flat washers) on the bearing holder.

Tool used:

- No .2 Phillips screwdriver
- 3 mm Allen wrench

- Allen bolt (M4 x L20 with spring washer)
- Phillips pan-head machine screw (M4 x L8 with spring and flat washers)

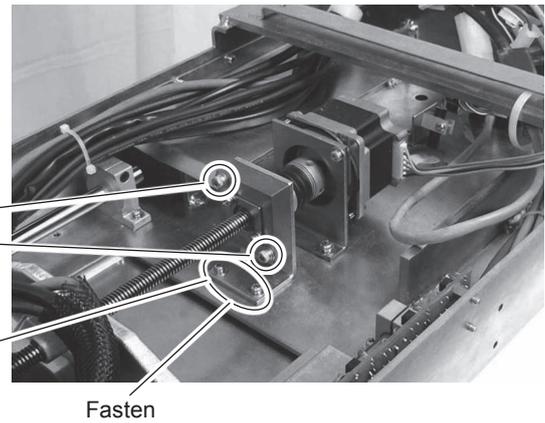


Fig. ④ -7

**NOTE :** Rotate the coupling after tightening the Allen bolts (M4 x L20 with spring and flat washers) and make sure that the arm mounting unit moves smoothly.

- (9) Connect the 8-pin connector on the X-axis motor to the connector on the slide body.

**REF. :** See “⑮ Wiring Diagram”

## 2-2. X-ray Head Mounting

- (1) Take the X-ray head out of the carton box.

Additional Information: X-ray head weight: 20 kg

**NOTE :** Place your hands at the spots indicated in the picture when taking the X-ray head out of the box.



Fig. ④ -8

- (2) Refer to the figure and place the holes on the edge part of the X-ray head at the pins on the arm unit. Fasten the unit using 4 x Allen bolts (M6 x L16 with spring washer).

Tools used: 5 mm Allen wrench

**NOTE :** Do not remove your hands until the mounting procedure is complete so as to avoid falling of the X-ray head.

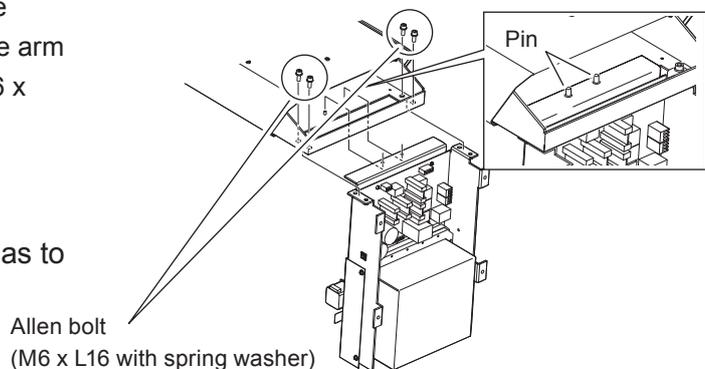


Fig. ④ -9

(3) Connect the Connector 1 (XP63W30000006\*) and Connector 2 (XP63W20000001\* or XP73W20000002\*) to the X-ray head circuit board (XE20-01\* )

- Connector 1 (XP63W30000006\*) : X-ray head circuit board (XE20-01\* ) X1
- Connector 2 (XP63W20000001\* or XP73W20000002\*) : X-ray head circuit board (XE20-01\* ) X2

**REF. :** See “⑮ Wiring Diagram”

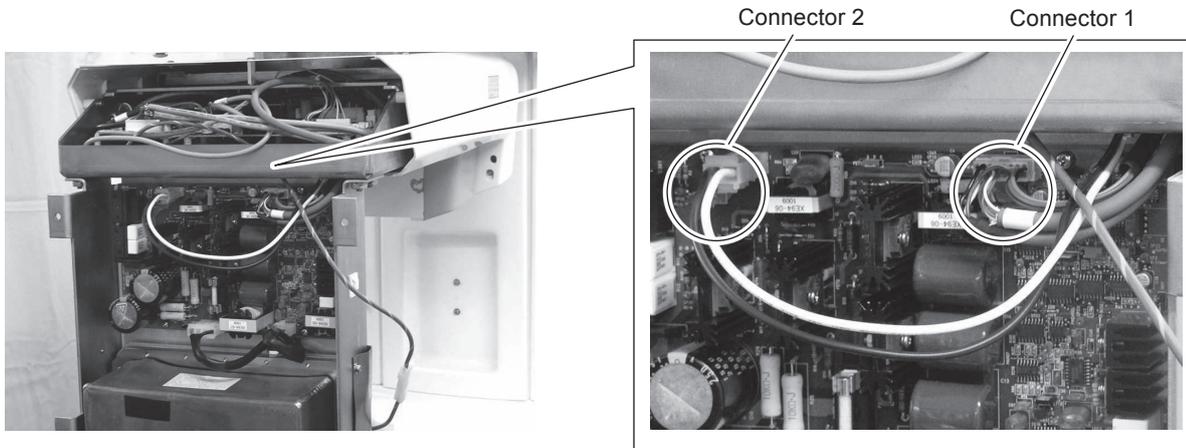


Fig. ④ -10

(4) Connect the grounding connector. Tie up the wires connected using a binding band.

**REF. :** See “⑮ Wiring Diagram”

**Additional Information:**

In case of an equipment attached with a cephalometric unit, do not tie up the wires with a binding band and proceed to the next step.

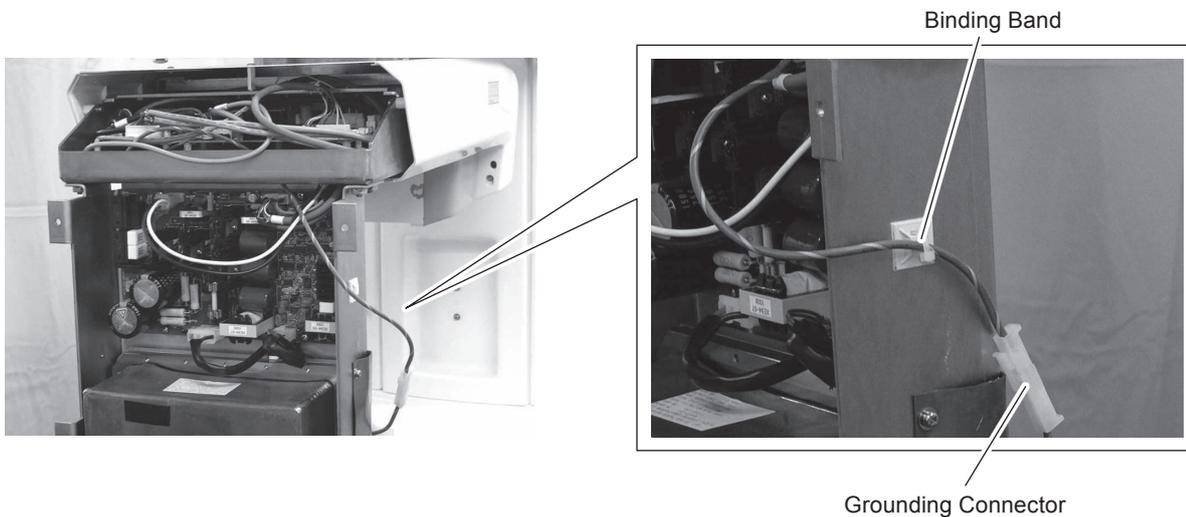


Fig. ④ -11

- (5) Depending upon the power voltage of the place where this equipment is used, connect the double-voltage switching wiring harness (XP63W40000001\*) to the X-ray head circuit board (XE20-01\* ).
- If the power voltage of the place where the equipment is used is 200 V, the double-voltage switching wiring harness is not required.
  - If the power voltage of the place where the equipment is used is 100 V, the double-voltage switching wire harness is required.

**REF. :** See “⑬ Wiring Diagram”

**⚠ CAUTION**

- Erroneously connecting the double-voltage switching wiring harness may cause damage to the X-ray head circuit board (XE20-01\* ).

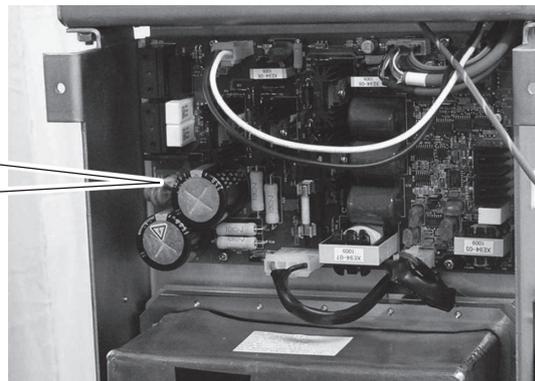
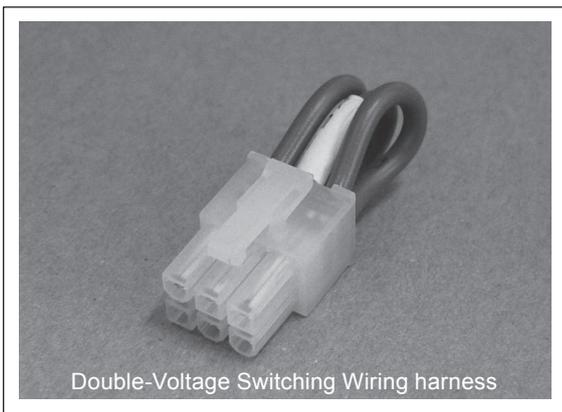


Fig. ④ -12

Follow the procedures below only when attaching a cephalometric unit.

- (6) Connect the connector on the harness for motor drive circuit board (XP64W30000008\*) to the driving motor of the electric collimator.
- Connector 3 : Electric Collimator Driving Motor (XP64W42000002\*)

**REF. :** See “⑬ Wiring Diagram”

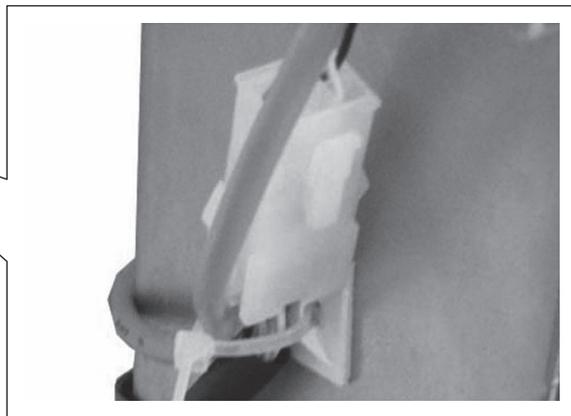
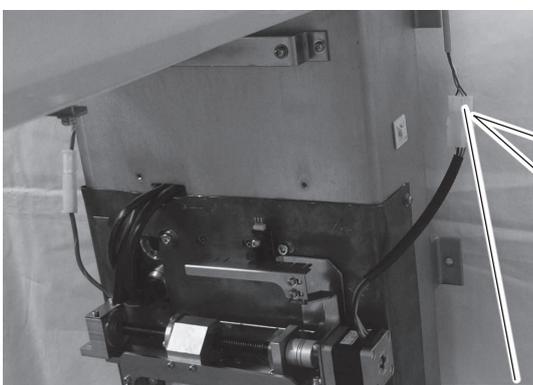


Fig. ④ -13

(7) Connect the connector located at the opposite side of the harness for the CPU circuit board (XP64W3000006) to the sensor on the collimator.

- Harness 3 (XP64W3000006) Long Harness : Connector 4

**REF. :** See “<sup>⑮</sup> Wiring Diagram”

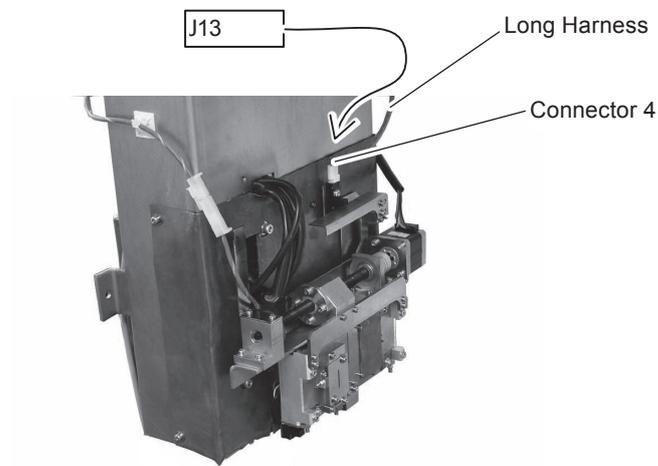


Fig. ④ -14

(8) Refer to the figure. Put together and tie up the harnesses using a binding band.

Additional Information: After tying the harnesses using a binding band, cut the band at an appropriate length.

**NOTE :** Make sure that any of the harnesses tied up by the binding band does not interfere with movable parts.

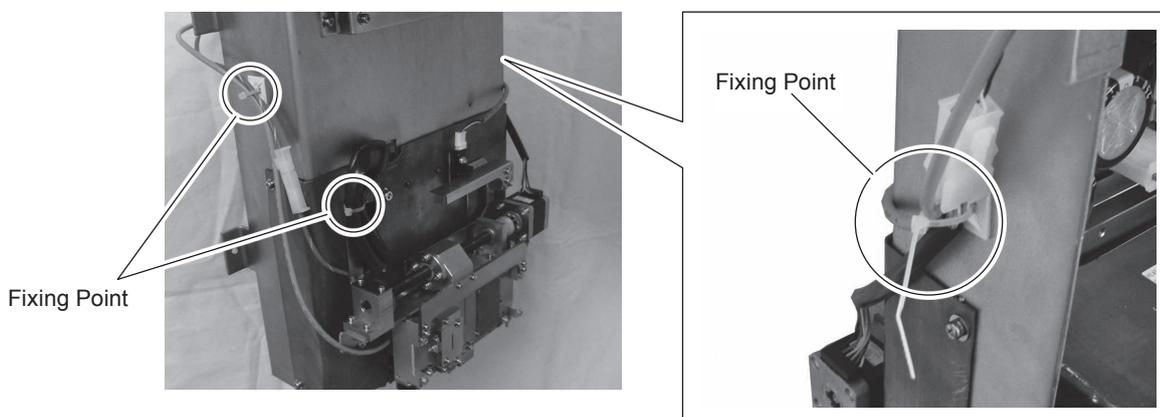


Fig. ④ -15

## 2-3. Checking Horizontal Level

### REF. :

For Cephalo-attached system, conduct the above procedure after completing processes in “2-9. Cephalometric Unit Mounting”. For 3D-attached type, conduct the above procedure after completing processes in “2-10. 3D Sensor Unit Mounting”.

(1) Place a level on top of the driving part and make sure that it is horizontal. If it is on a tilt, follow “2-2-4. Leveling” in “③ Equipment Installation Procedure and Precautions” and adjust the leveling of the unit.

**NOTE :** When checking the horizontal level, place the level on the cutting surface of the arm mounting unit.

**NOTE :** For equipment with 3D function, check the level with a digital level gauge.

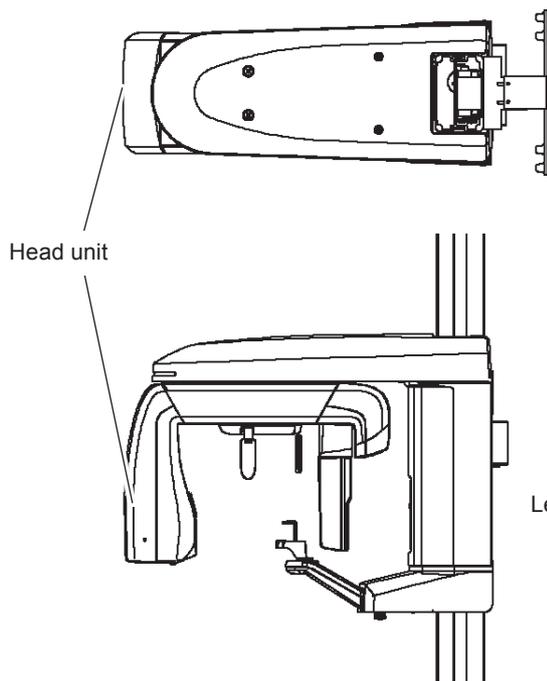


Fig. ④ -16 : Head unit position when checking the level

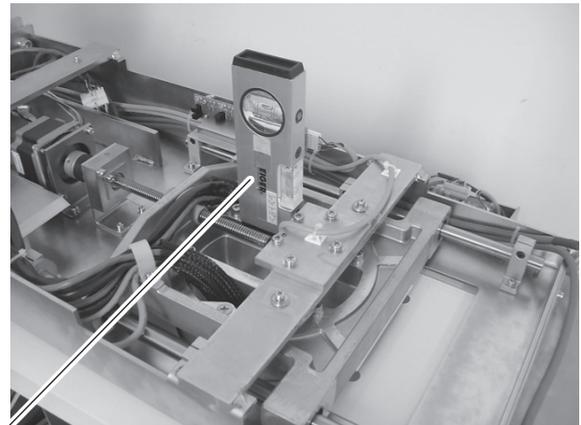


Fig. ④ -17 : Checking the level (front-back)



Fig. ④ -18 : Checking the level (left-right)

## 2-4. Head Support Unit Mounting

- (1) Remove the 4 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers) on the head support fastening part.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

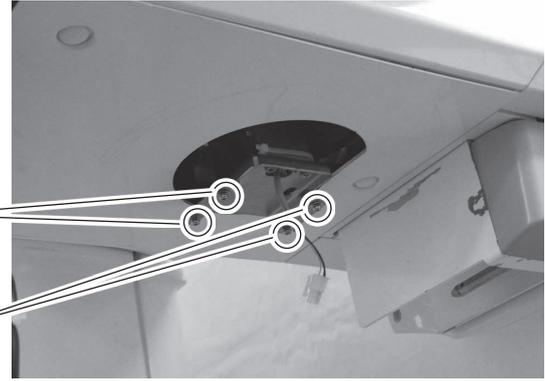


Fig. ④ -19

- (2) Connect the connector on the head support unit to the connector on the driving part.

REF. : See “⑮ Wiring Diagram”

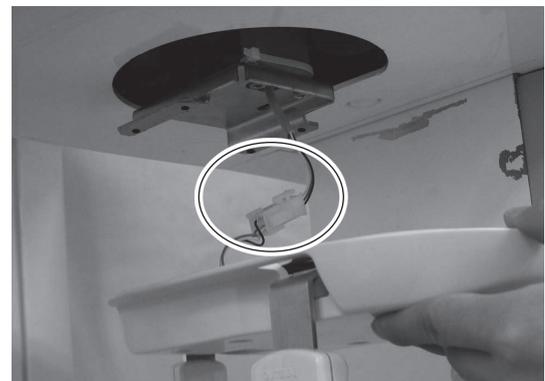
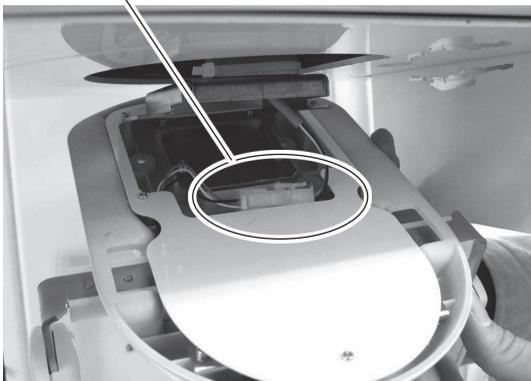


Fig. ④ -20

- (3) Refer to the figure. Put the connector in the connector holder on the head support disc and fasten the head support unit using 4 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers).

Connector Holder



Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

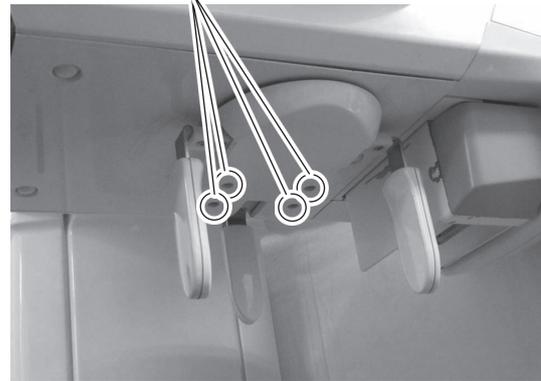


Fig. ④ -21

**NOTE :** When mounting the head support unit, make sure that the connector is placed in the connector holder on the head support disc. Beware so that the harness is not caught in between when screws are fastened.

## 2-5. Mounting of Other Components and Covers

(1) Mount the eye-ear beam lever.

**NOTE :** When mounting the eye-ear beam lever, insert it until the cutout of the plate is hidden as in the figure below.

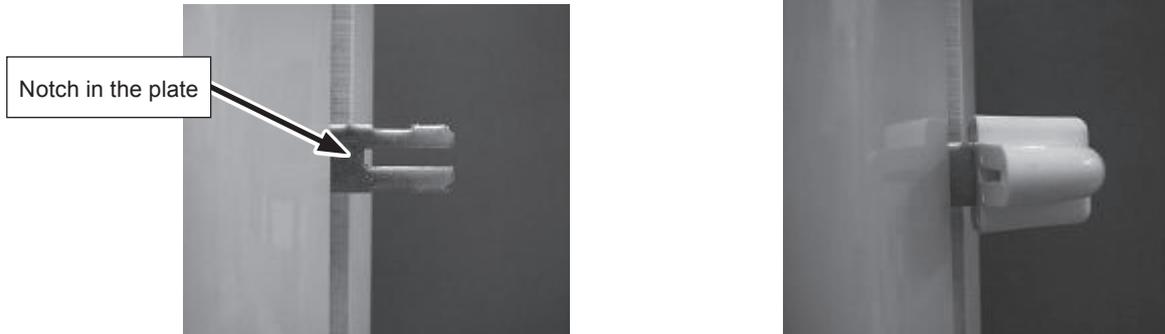


Fig. ④ -22

(2) Loosen the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) on the frontal cover on the slide body. Slide and fix the positioning mirror fastening bracket.  
Tool used: No .2 Phillips screwdriver

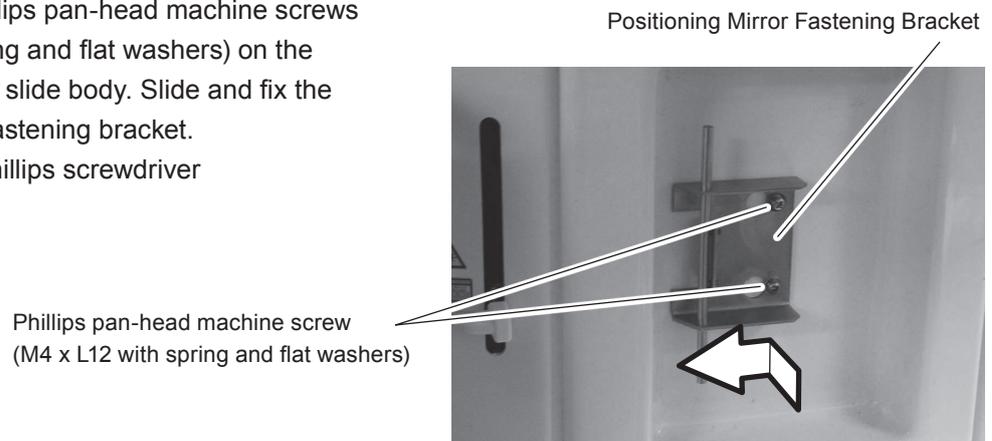


Fig. ④ -23

(3) Mount the positioning mirror after the positioning mirror fastening bracket is fixed using 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers).

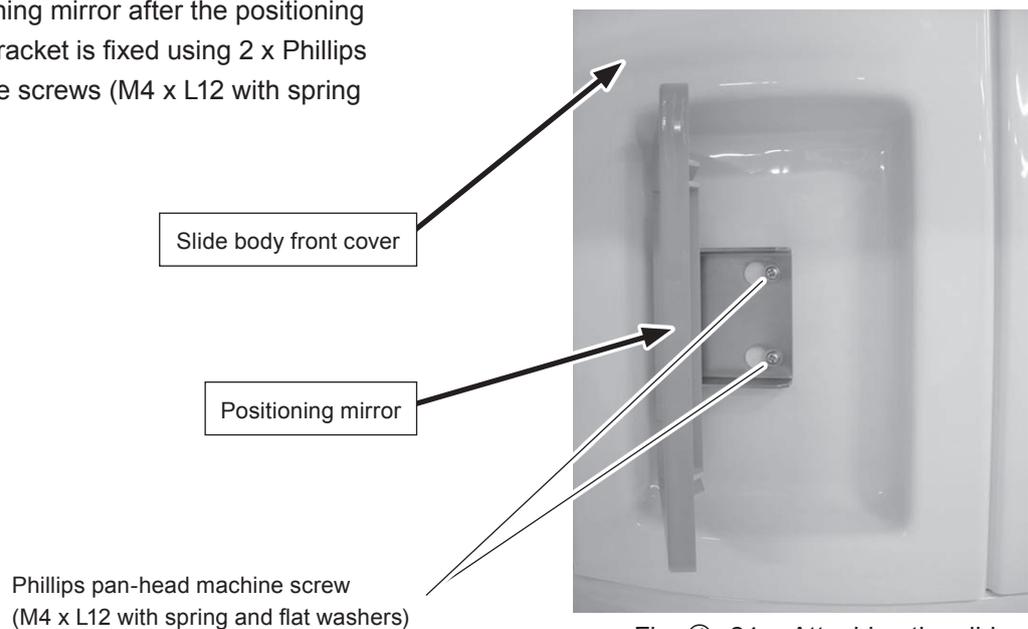


Fig. ④ -24: Attaching the slide body front cover

- (4) Put the arm mounting unit top cover on and fix it using 4 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers).  
Tools used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

Arm mounting unit top cover

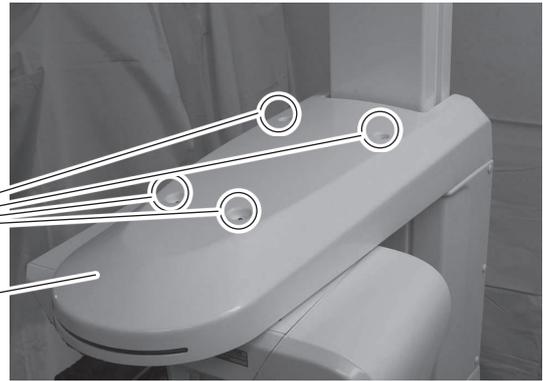


Fig. ④ -25

- (5) Refer to the figure. Put on the sensor's upper-back cover on the arm unit and fix it using 1 x Phillips pan-head machine screw (M4 x L6 with spring and flat washers).  
Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L6 with spring and flat washers)

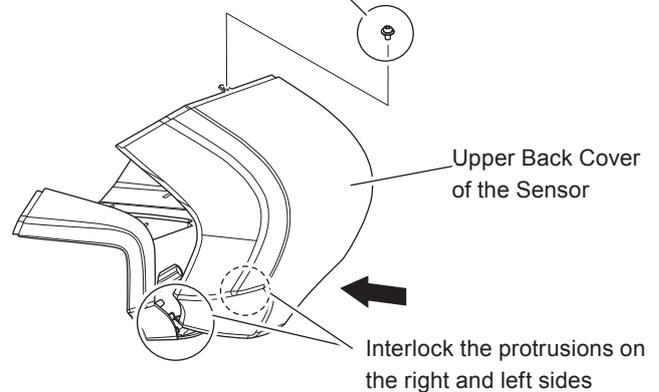


Fig. ④ -26

- (6) Fix the arm's upper covers A and B using 5 x binding screws (M4 x L6).  
Tools used: No .2 Phillips screwdriver

Arm's Upper Cover B

binding screw  
(M4 x L6)

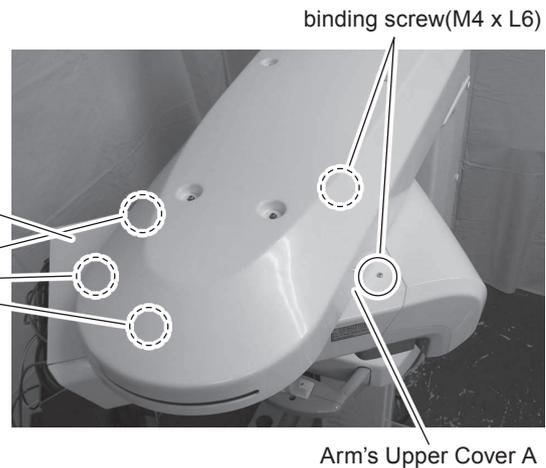


Fig. ④ -27

- (7) Refer to the figure. Put on the back cover on the X-ray head and fix it using 4 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers).  
Tool used: No .2 Phillips screwdriver

(8) Refer to the figure. Put on the frontal cover on the X-ray head and fix it using 2 x Phillips countersunk machine screws (M4 x L8 with built-in setup washer) and 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers). Put the cap on.  
Tool used: No .2 Phillips screwdriver

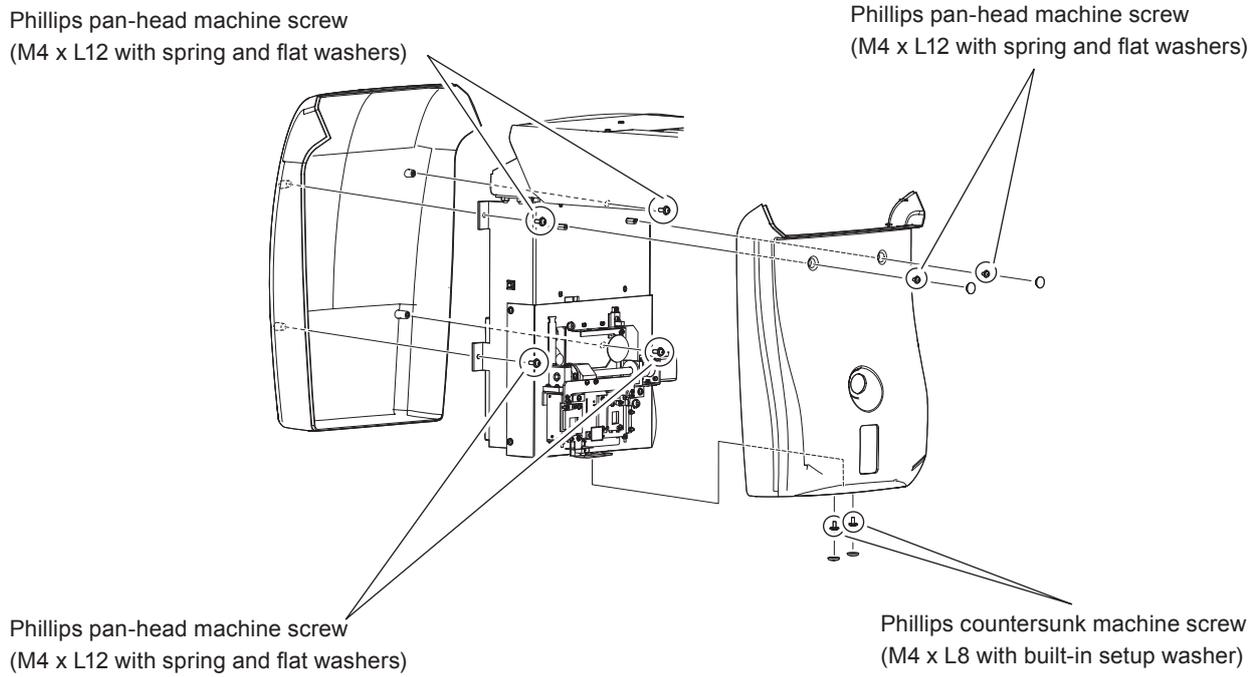


Fig. ④ -28

## 2-6. Connecting Power Plug

This product does not include the power plug connected at the tip of the power cord.

When installing this product, get appropriate power plugs for power voltages used in different countries or regions and connect them according to the connection method instructed by the manufacturer.

Following are the power plugs recommended for each type.

### NOTE :

- If you use a power plug other than that of the following types, please contact the distributor.
- A power plug is only fitted with U.S.A.-destined product.

### 2-6-1. Power plug

<B-3 type>

Recommended product: 513-N (250 V 15 A) / Izutsu Seisakusho LTD. (Japan)

Required specification: Conforming to BS546 standard

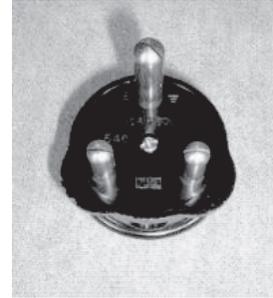


Fig. ④ -29

<BF type>

Recommended product: 515-NSL (250 V 13 A) / Izutsu Seisakusho LTD. (Japan)

Required specification: Conforming to BS1363 standard

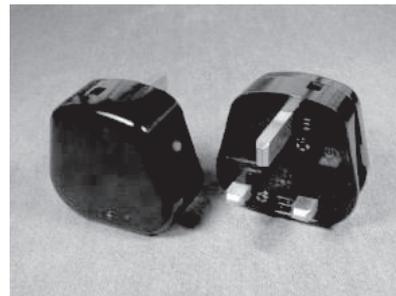


Fig. ④ -30

<SE type>

Recommended product: 616 (250 V 10 A) / KAISER (Germany)

Required specification: Conforming to IEC60884:2005 standard

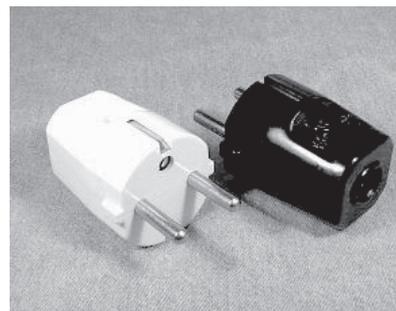


Fig. ④ -31

<C type (Italy-specific plug)>

Recommended product: 296N (250 V 10 A) / SCAME  
(Italy)  
Required specification: Conforming to CEI23-50  
standard

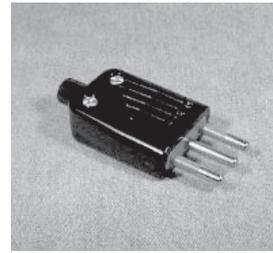


Fig. ④ -32

<C type (Switzerland-specific plug)>

Recommended product: 521 (250 V 10 A) / KAISER  
(Germany)  
Required specification: Conforming to SEV1011  
standard

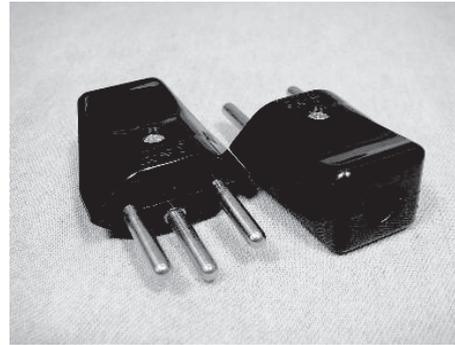


Fig. ④ -33

## 2-6-2. Connecting Protective ground wire

Connect the grounding terminal on the additional protective earth conductor to the grounding wire on the building.

## 2-7. Connecting to the computer

### CAUTION

- Always turn off the power to the X-era Smart and the computer when connecting to the computer.
- The computer should be set up outside the X-ray room.
- Ensure that the computer is correctly grounded.
- Use a common grounding point for both the X-era Smart and the computer (shared protective grounding).
- Always unplug the computer from the power outlet before connecting or disconnecting the protective grounding wire.
- Ensure that the data and PC connection cables are correctly connected to the X-era Smart and the computer. Faulty or erroneous connections could result in faults in the X-era Smart or computer.
- Take care to ensure that the connecting cables will not interfere with the elevation movement of the X-era Smart.

- (1) Replace the Additional Protective Grounding Slot Cover with the unused slot cover of the computer.
- (2) Mount PCI bus LAN board to the PCI-Express (or PCI) slot of the computer.

**NOTE :** Mount Gigabit compliant Ethernet board (either Intel, 3COM or Marvel) for the additional PCI bus LAN board.

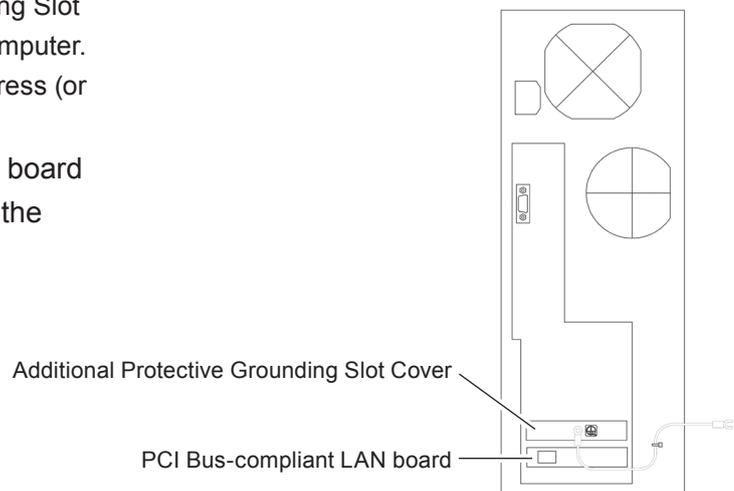


Fig. ④ -34

- (1) Run the data and PC connection cables from inside the X-ray room out into the room housing the computer.
- (2) Plug the data and PC connection cables into their respective connectors on the back of the X-era Smart.

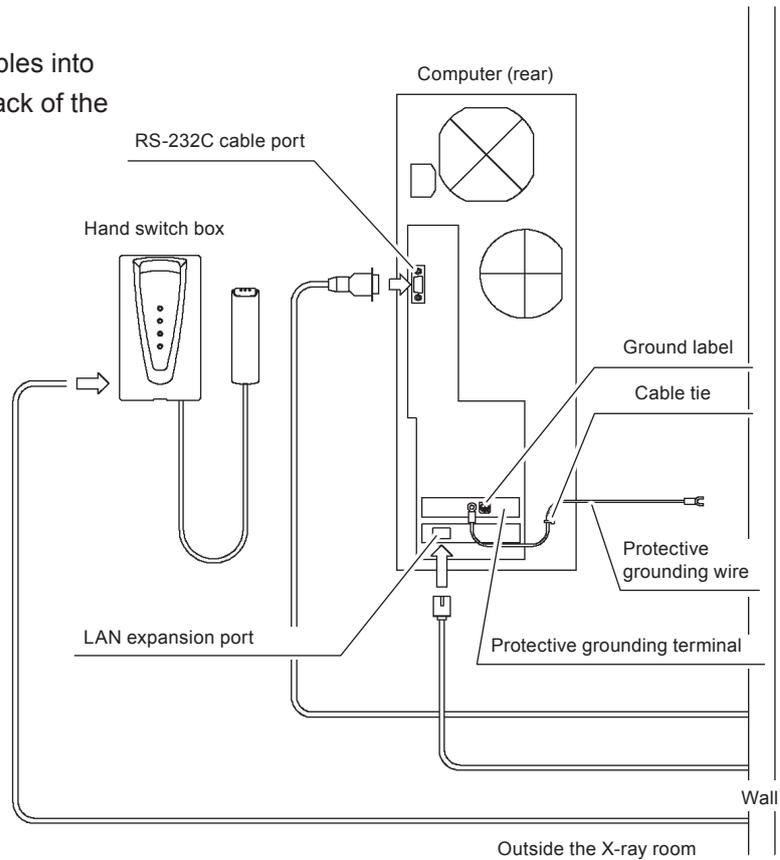


Fig. ④ -35: Cable connections

- (3) Connect the data cable to the computer's LAN expansion board and the PC connection cable to the computer's RS-232C communications port.

**Additional Information :**

For settings of PCI bus LAN board, refer to “2-13. Setting PCI LAN board”.

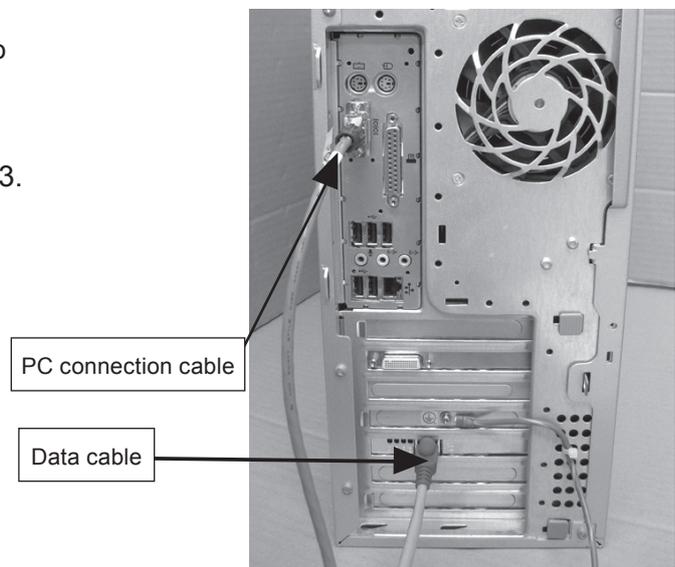


Fig. ④ -36: Computer connections

- (4) Secure the protective grounding wire terminal (round) to the protective grounding slot cover using a SEMS screw (M3 x 6), as shown in the figure on the right.

**NOTE :** Fix the terminal of the grounding wire at a position where the grounding mark remains visible.

- (5) Secure the protective grounding wire with a cable tie to ensure that no load is placed on the protective grounding wire terminal (round).
- (6) Connect the other protective grounding wire terminal (open-ended) to a ground (D-type).

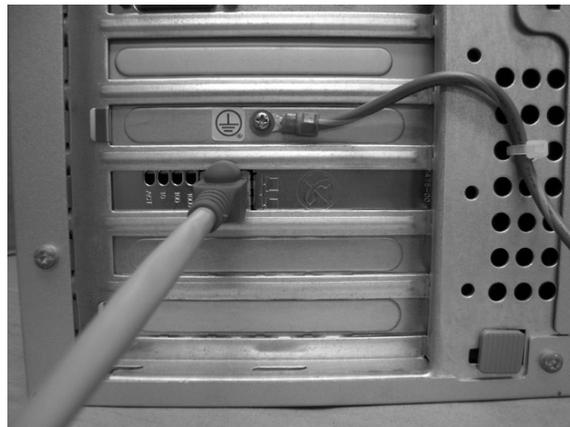


Fig. ④ -37 : Protective grounding wire connection

**Additional Information :**

Attach the protective grounding slot cover supplied with the LAN expansion board and fasten the protective grounding slot wire terminal (round) to the protective grounding slot cover with a SEMS screw (M3 x 6).

**NOTE :** We recommend that the computer be installed in a location that allows the operator to press the X-ray exposure switch (hand switch) while viewing the computer screen, as this will be all the operator to check data such as scanned images.

- (7) When using an existing computer, i.e. adding a PCI bus LAN board on site, attach the PCI bus LAN board to the computer.

Mount the PCI bus LAN board to the PCI-Express (or PCI) slot of the computer.

**NOTE :** Mount Gigabit compliant Ethernet board (either Intel, 3COM or Marvel) for the additional PCI bus LAN board.

**Additional Information :**

For settings of PCI bus LAN board, refer to “2-13. Setting PCI LAN board”.

## 2-7-1. Organizing the cables

- (1) Bundle the power, data, PC connection and hand switch box cables together with a provided cable tie as shown in the figure and secure it with the clamp 1.

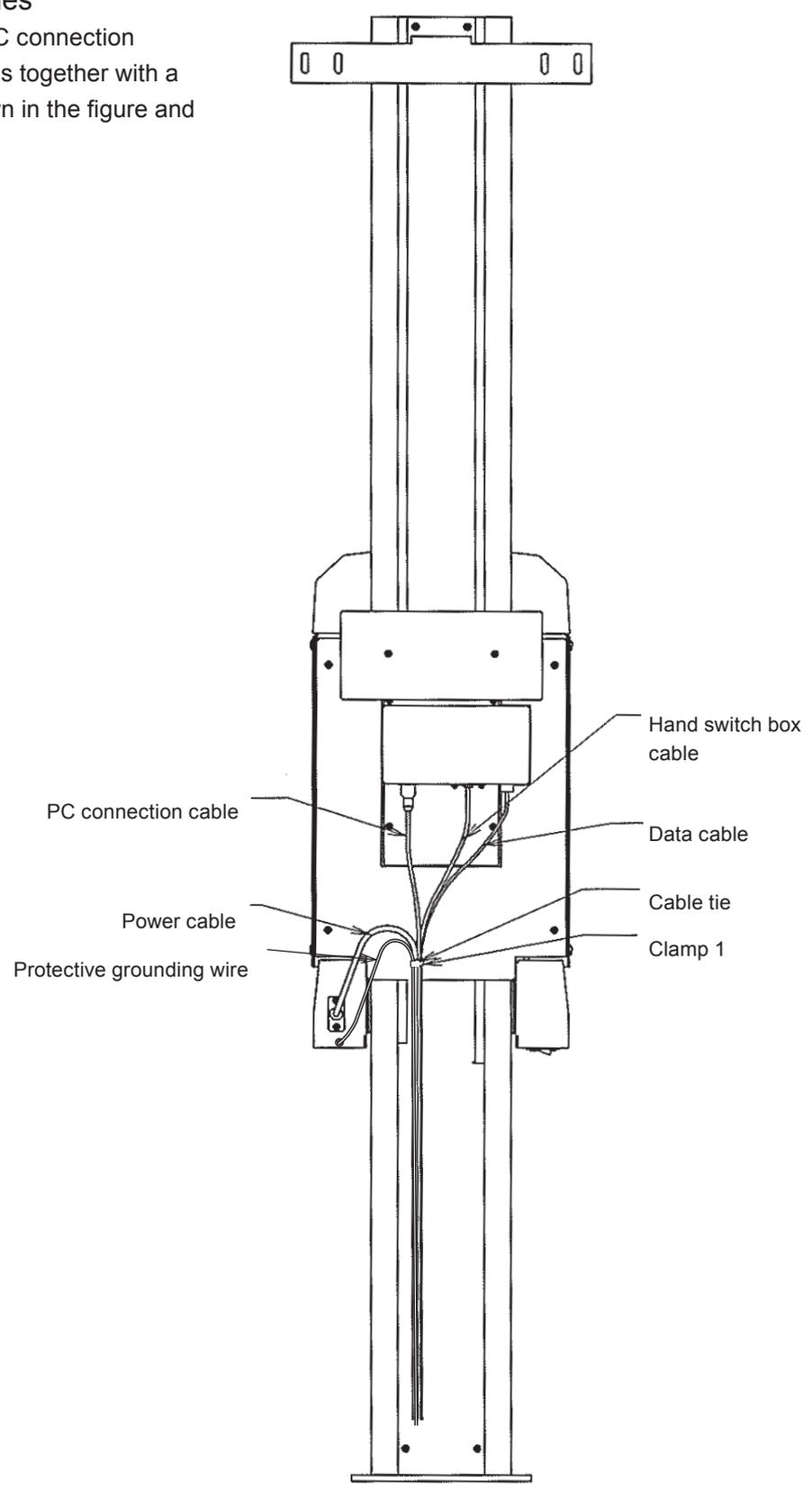


Fig. ④ -38 : Organizing the cables - 1

- (2) Below the clamp 1, bundle the cables inside the provided spiral tube.

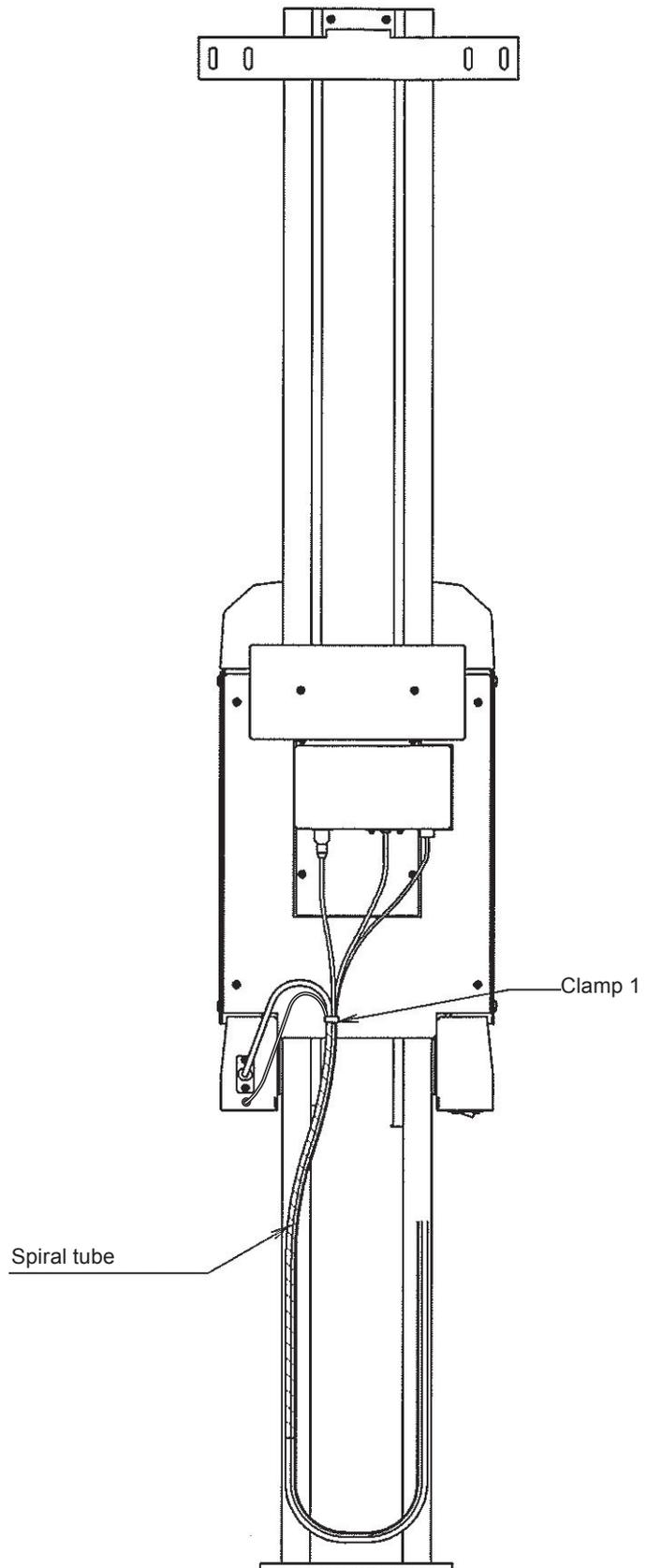


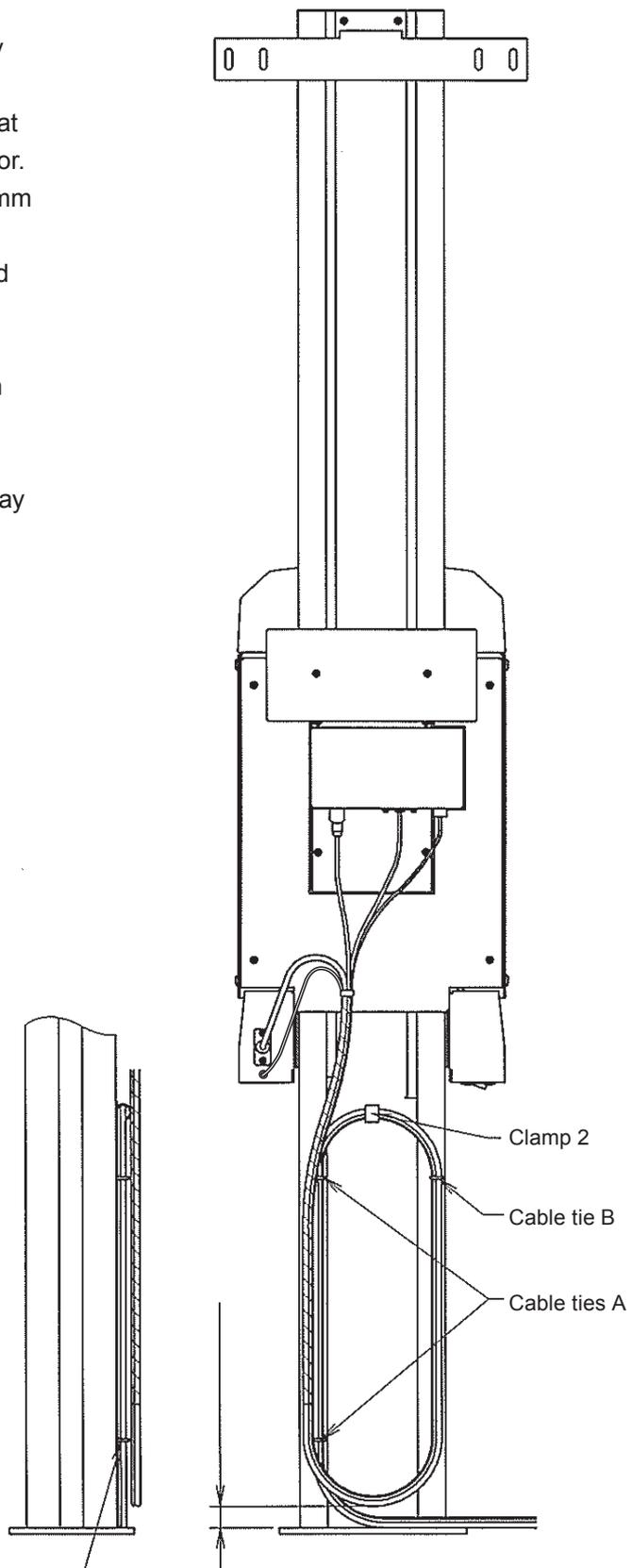
Fig. ④ -39 : Organizing the cables - 2



**CAUTION**

- Avoid twisting the cables when bundling them together.

- (3) Lower the slide body to its lowest position.
- (4) Gather together the cables below where they are bundled into the spiral tube and secure them with a clamp 2. Clamp the cables so that they are between 30 and 50 mm from the floor. For long-type, make a clearance of 130-150mm between the wire and the floor.
- (5) Pull the cables below where they are secured by clamp 2 around so that they are between the spiral tube and the column.
- (6) Bundle the cables together with a cable tie in the location shown in the figure. Attach the cable ties so that A faces towards the column and B faces towards the wall (away from the column). This is to ensure that the 2 sets of bundled cables do not catch on each other.



Cable tie A:  
Bundled so that it faces towards the column  
Cable tie B:  
Bundled so that it faces towards the wall

Fig. ④ -40: Organizing the cables - 3



## CAUTION

- Avoid twisting the cables when bundling them together.

- (7) Raise the slide body from its lowest position to its highest position and check that the cables are not pulled tight and do not catch or become entangled.

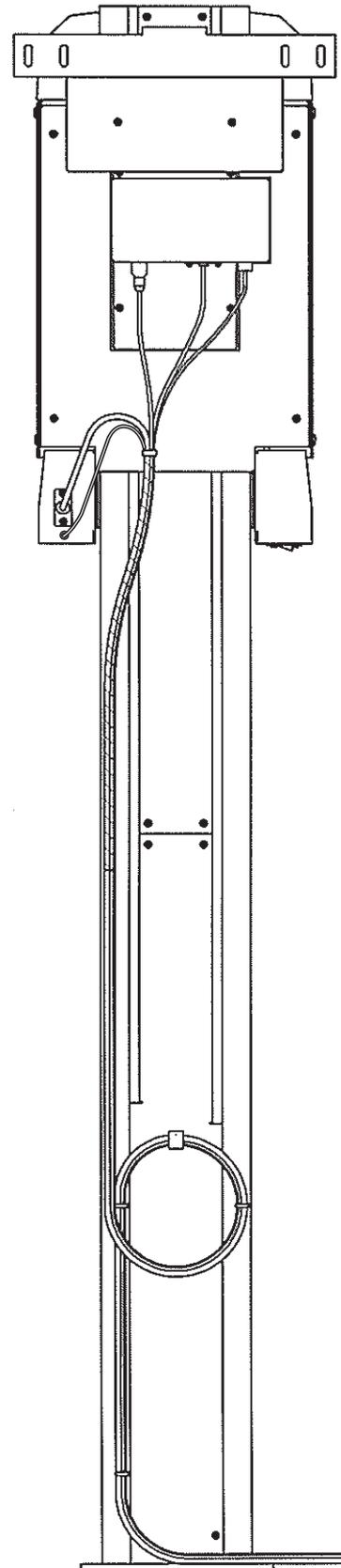


Fig. ④ -41: Organizing the cables - 4

## 2-8. Handling the Sensor

- (1) When attaching the sensor unit to the main unit, insert the sensor unit into the Docking Station Unit, turn the knob clockwise, and lock it there.

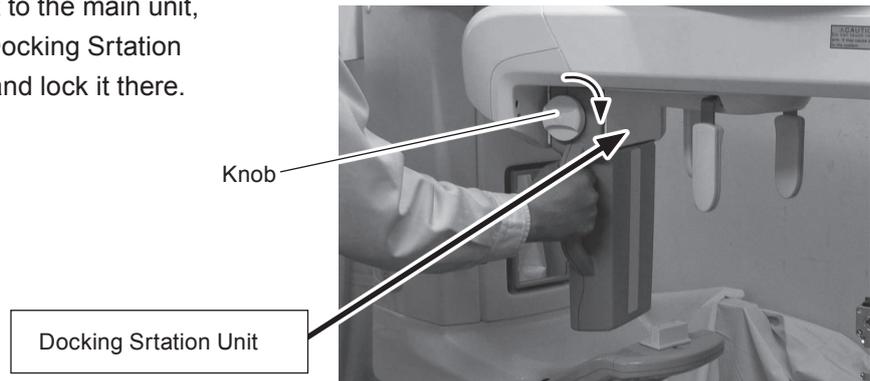


Fig. ④ -42

- (2) When detaching the sensor, turn the knob to the left to unlock it and pull the sensor.

### NOTE :

When handling the sensor, exercise caution in the following matters:

- The sensor unit is equipped with a shock sensor. The shock sensor records any excessive impact incurred, such as when the equipment falls down, and the equipment will not qualify as being warrantable. Exercise caution in handling the equipment.
- Hold the grip when attaching or detaching the sensor.
- When the sensor is set to the main unit, lock it properly.
- Do not touch the terminals of the sensor.

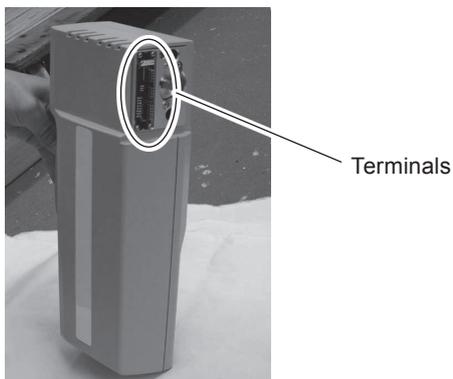


Fig. ④ -43

- Do not block the air intake orifice or exhaust vent of the sensor.

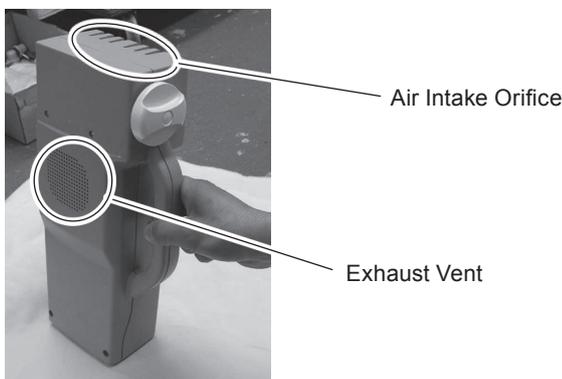


Fig. ④ -44

In case of Cephalometric type and 3D Cephalometric type, follow the procedures of "2-9. Cephalometric Unit Mounting".  
In case of 3D type, follow the procedures of "2-10. 3D Sensor Unit Mounting".  
In case of Panoramic type, follow the procedures of "2-11. Software Installation" onward.

## 2-9. Cephalometric Unit Mounting

### A. Floor Stationary Position

When an optional base is not used, place a floor positioning accessory plate.

(1) Make sure that the main body is properly fixed to the floor and the wall, and that it is on the level.

**REF. :** Refer to “2-3. Checking Horizontal Level” in [④ Equipment Assembly Procedure and Precautions] for checking the level of the main body.

(2) Use anchor bolts or coach screws to fix the floor positioning accessory plate.

**NOTE :** Note the size of the bolts of this particular usage is different from those used in other parts.

Refer to “3. Basic Installation Example” in [③ Equipment Installation Procedure and Precautions].



Fig. ④ -45

When an optional base is in use, attach the cephalo unit stabilizer.

(1) Fix the cephalo unit stabilizer on the back of the optional base using 4 x Allen bolts (M8 x L35 with spring washer).

Tools used: 6 mm Allen wrench

(2) Rotate the adjusting bolt at the tip of cephalo unit stabilizer with Allen wrench. Make sure that the main body is positioned right horizontally.

Tools used: 6 mm Allen wrench

**REF. :** Refer to “2-3. Checking Horizontal Level” in [④ Equipment Assembly Procedure and Precautions] for checking the level of the main body.

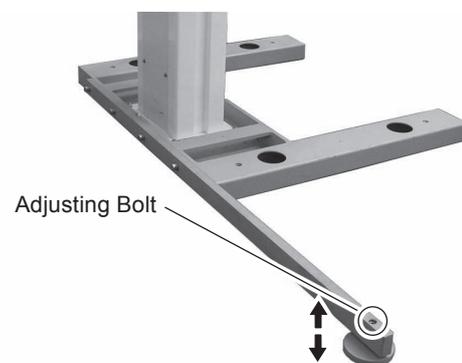


Fig. ④ -46

## B. Cephalometric Main Unit

- (1) Attach the Cephalo-base plate using 4 x Allen bolts (M8 x L30 with spring washer) to the backside of the Slide Main Unit.

Tools used: Allen wrench (nominal designation: 6)

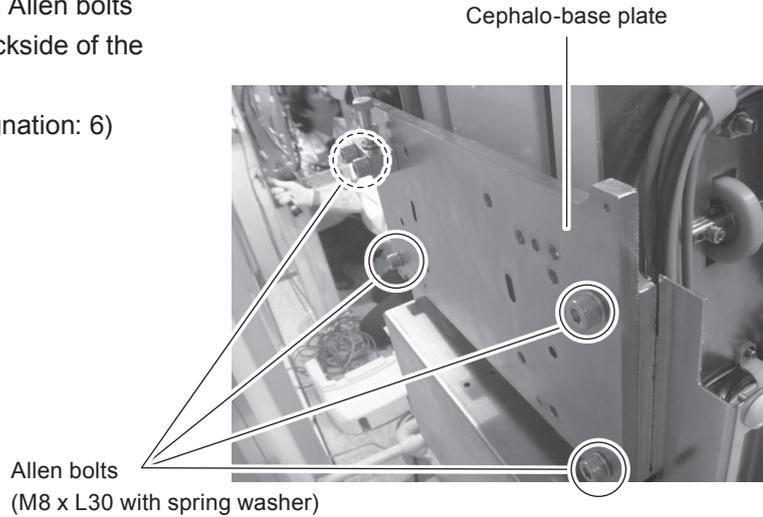


Fig. ④ -47

- (2) Put the holes of the Cephalo-base plate over the pins of Cephalo-Arm S. Fasten Cephalo-Arm S on the Cephalo-base plate using 4 x Allen bolts (M8 x L35 with spring washer and plain washer).

Tools used: Allen wrench (nominal designation: 6)

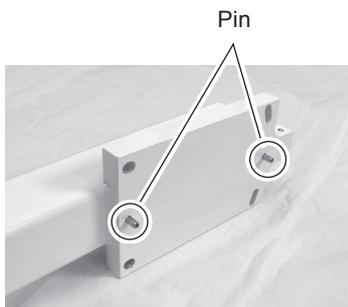


Fig. ④ -48

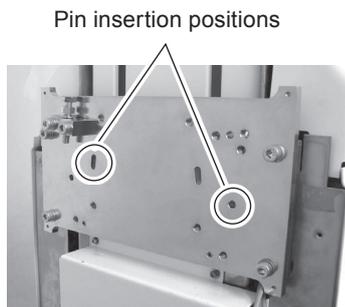


Fig. ④ -49

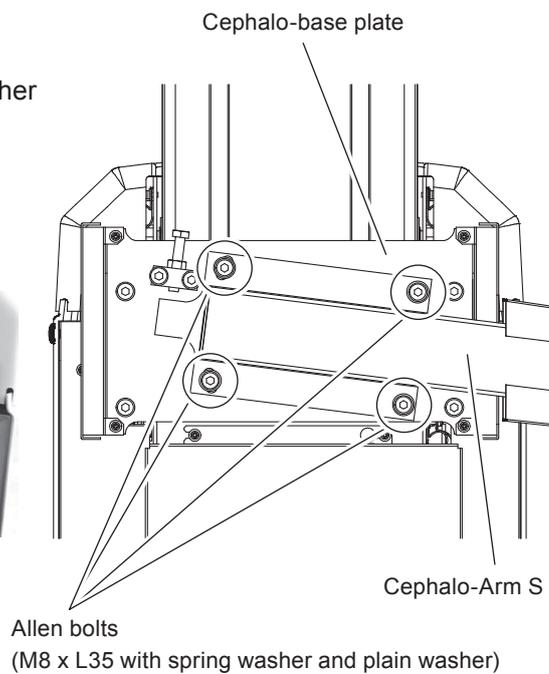


Fig. ④ -50

- (3) Put the hole of the Cephalometric Main Unit over the pin on the end of the Cephalometric Arm Unit. Fasten it on the Cephalometric Arm Unit using 4 x Allen bolts (M5 x L25 with spring washer and plain washer).

Tool used: Allen wrench (nominal designation: 4)

**NOTE :** Be sure to connect each cables to the corresponding location.

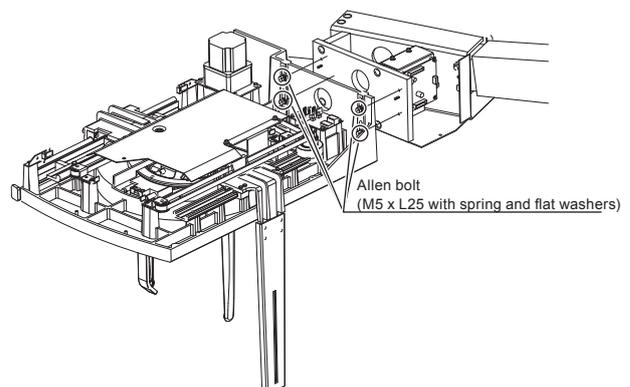


Fig. ④ -51

- (4) Remove the Frankfurt horizontal beam lever.  
 Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) on the frontal cover of the slide main unit. Remove the frontal cover from the slide main unit.  
 Tool used: No .2 Phillips screwdriver

Frontal Cover on the Slide Main Unit.



Fig. ④ -52

- (5) Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and the 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer) on the left cover of the slide main unit. Remove the left cover from the slide main unit.  
 Tool used: No .2 Phillips screwdriver

Phillips pan-head screws  
 (M4 x L12 with built-in setup washer)

Phillips pan-head machine screw  
 (M4 x L12 with spring and flat washers)



Fig. ④ -53

- (6) Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and the 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer) on the right cover of the slide main unit. Remove the right cover from the slide main unit.  
 Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
 (M4 x L12 with spring and flat washers)

Phillips pan-head screws  
 (M4 x L12 with built-in setup washer)

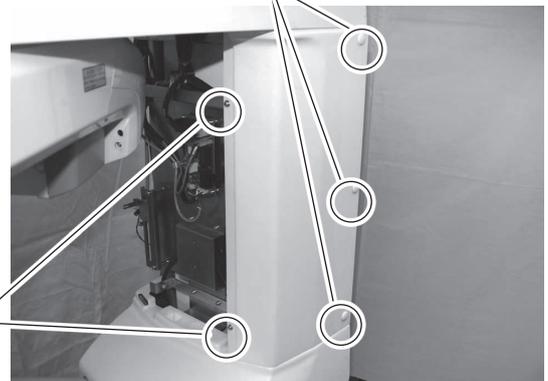


Fig. ④ -54

- (7) Route the connectors in the figure below (connector No. (24) ~No. (26)) through the cut-out on the slide main unit. Bundle them with the connector (connector No. (23)) and route them together to the upper side of the connector box.

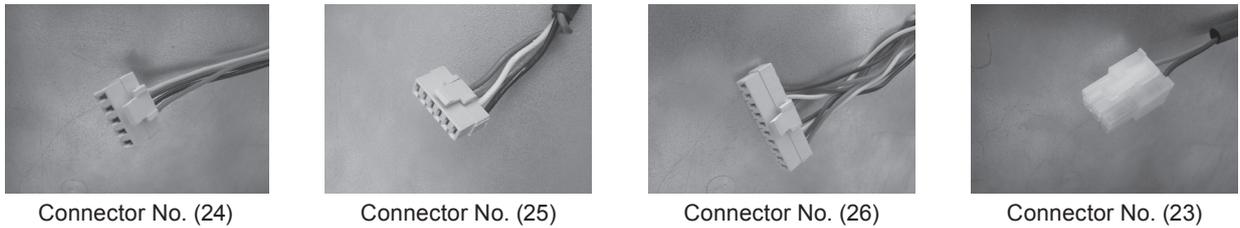


Fig. ④ -55

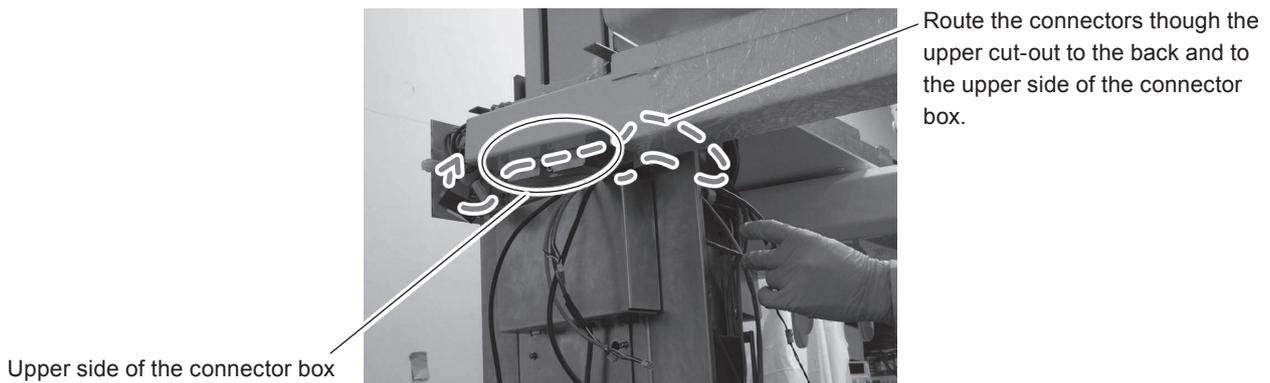


Fig. ④ -56

- (8) Route the grounding wire of the harness and LAN cable stored in the cephalo arm through the cut-out on the slide main unit to the frontal side. Connect other harnesses to the connectors (connectors No. (23) ~ No. (26)) in Step (7).

**REF. :** See “⑤ Wiring Diagram”

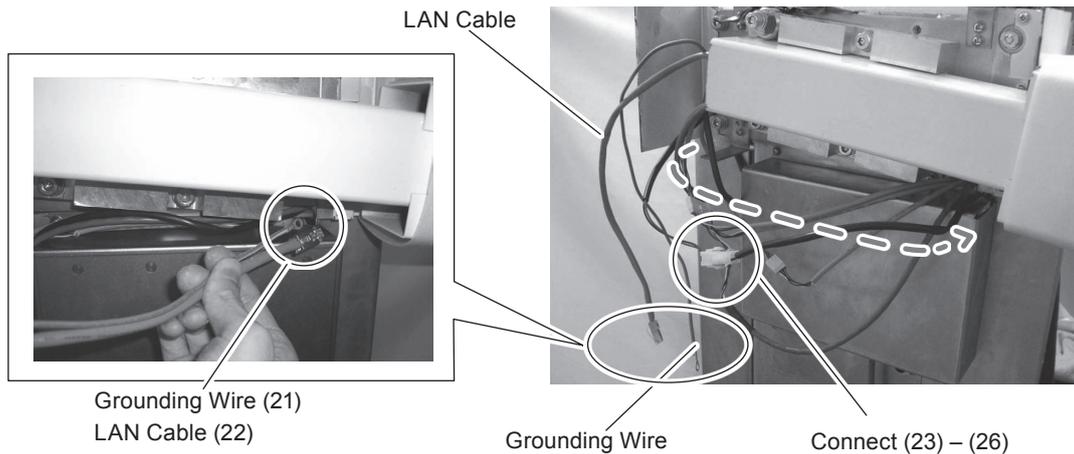


Fig. ④ -57

- (9) Place the harness of the connector connected at Step (8) in the cephalo arm.

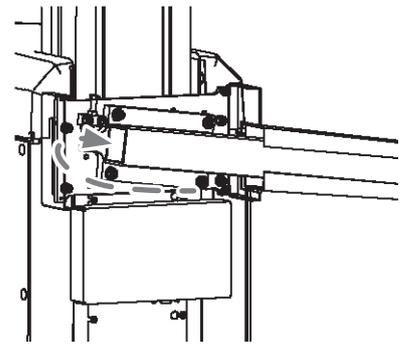


Fig. ④ -58

- (10) Attach the Cephalo Outer-Bottom Cover using 2 x Phillips pan-head screws (M4 x L8 with spring washer and plain washer), and the cephalo left-bottom auxiliary cover using 2 x Phillips pan-head screws (M4 x L8 with spring washer and plain washer).  
Tool used: No .2 Phillips screwdriver

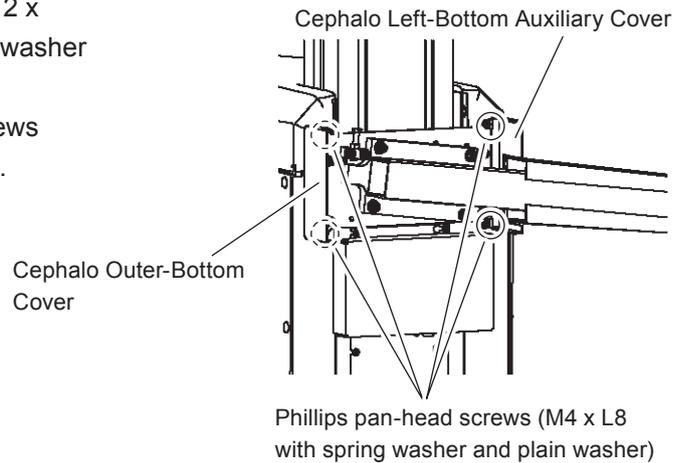
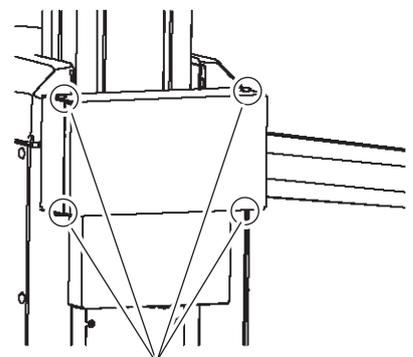


Fig. ④ -59

- (11) Attach the cephalo bottom main cover using 4 x Phillips countersunk machine screws (M4 x L12 with built-in setup washer).  
Tool used: No .2 Phillips screwdriver



Phillips countersunk machine screws (M4 x L12 with built-in setup washer).

Fig. ④ -60

- (12) Connect the cable routed to the slide main unit to the switching hub.  
**REF. :** See “⑮ Wiring Diagram”

**⚠ CAUTION**

- Properly fasten the LAN cable so that any slack of the cable is not caught in the moveable parts.

Power Harness

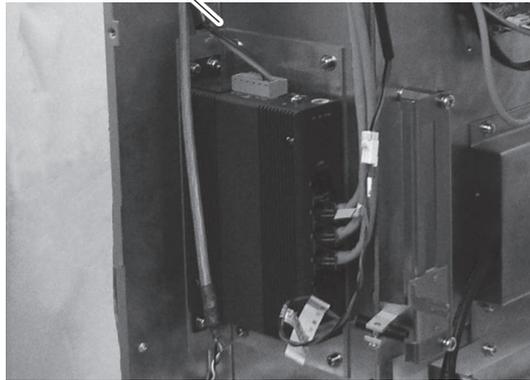


Fig. ④ -61

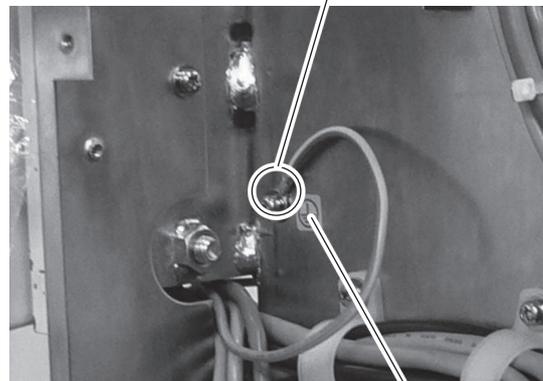
- (13) Fix the grounding wire of the cephalometric main unit on the slide main unit using 1 x Phillips pan-head machine screw (M4 x L8 with spring and flat washers).

Tool used: No .2 Phillips screwdriver

**REF. :** See “⑮ Wiring Diagram”

**NOTE :** Fix the terminal of the grounding wire at a position where the grounding mark remains visible.

Grounding Terminal



Grounding Mark

Fig. ④ -62

- (14) Fasten the harnesses and LAN cables using nylon clips and a binding band.

**⚠ CAUTION**

- Make sure that the harnesses and LAN cables fastened do not interfere with moving parts.

Nylon Clips

Binding Band

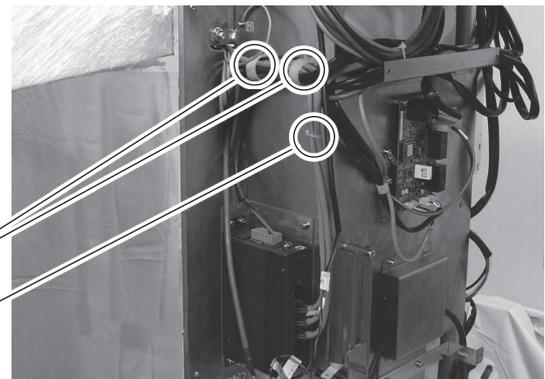


Fig. ④ -63

(15) Connect the connectors (K1 – K7, K9) on the Control Panel.

Fasten the Control Panel harnesses to the reinforcement plate using binding bands.

**REF. :** See “ Wiring Diagram”

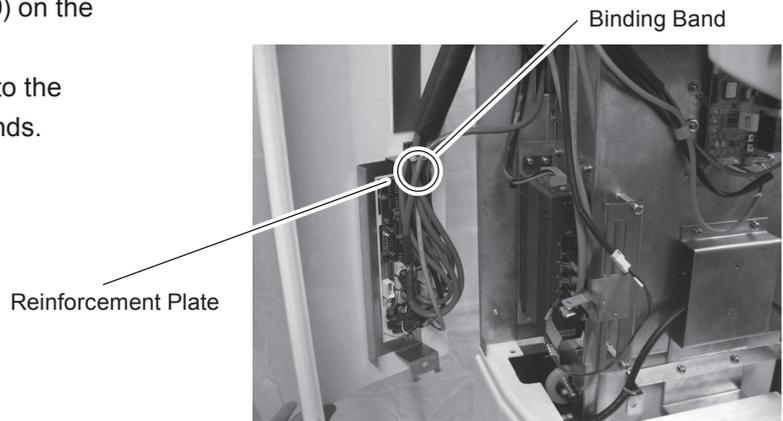


Fig. ④ -64

(16) Fix the left cover on the slide main unit using 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer). Put the cap on.

Tool used: No .2 Phillips screwdriver

Phillips pan-head screws  
(M4 x L12 with built-in setup washer)

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

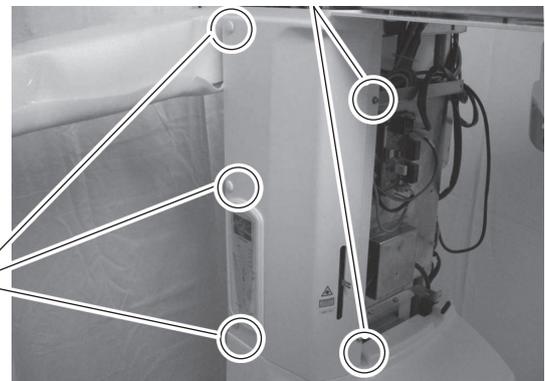


Fig. ④ -65

(17) Likewise, fix the right cover on the slide main unit using 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer). Put the cap on.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

Phillips pan-head screws  
(M4 x L12 with built-in setup washer)

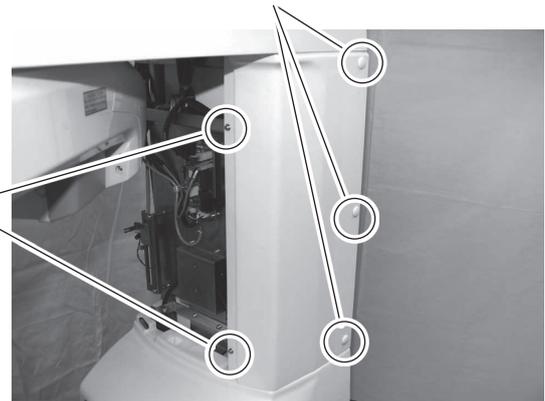


Fig. ④ -66

(18) Use 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) to fix the frontal cover on the slide main unit.

Tool used: No .2 Phillips screwdriver

**Additional Information :**

Temporarily fasten the screws so that the positioning mirror fastening bracket can be mounted.

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

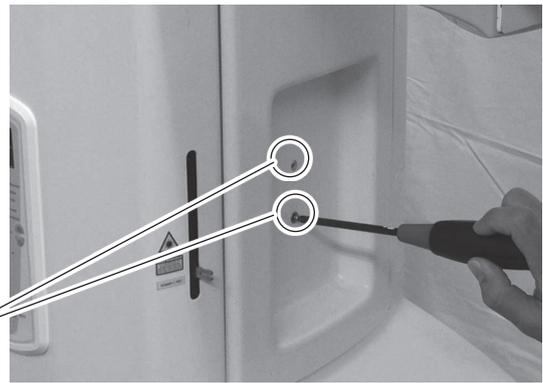


Fig. ④ -67

(19) Refer to “2-5. Mounting of Other Components and Covers” and mount the eye-ear beam lever and the positioning mirror.

Tool used: No .2 Phillips screwdriver

(20) After “2-11. Software Installation” is complete, activate CS mode from X-era Smart Control Manager, select [CS100] and set “Exist” for [Sensor Save Mechanism].

(21) In the following items (22) – (27), attachments of the secondary slits, ear rods and nose support need to be done after completing “2-11. Adjusting the position of X-ray beam (Cephalometric)” in [® Implementation Procedure for Performance and Safety Checking and Performance Benchmarks].

(22) Mount the secondary slits on the cephalo main unit. Fix them using 4 x Hexagonal nuts (M3 x L6).

Tools used: 5.5 mm Box wrench

Hexagonal nuts (M3 x L6)

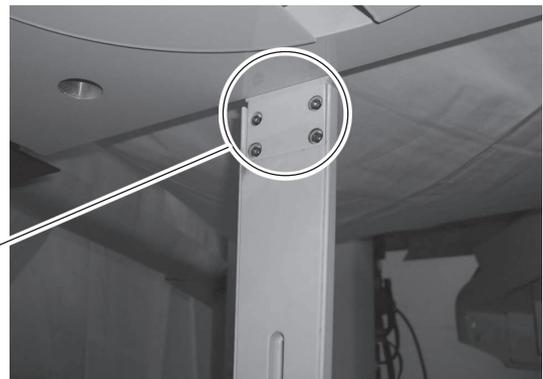


Fig. ④ -68

(23) Mount the ear rods on the cephalo main unit using 3 x Allen bolts (M4 x L25 with flat washers).

Tools used: 3 mm Allen wrench

(24) Insert the nose support into the nose support mounting part.

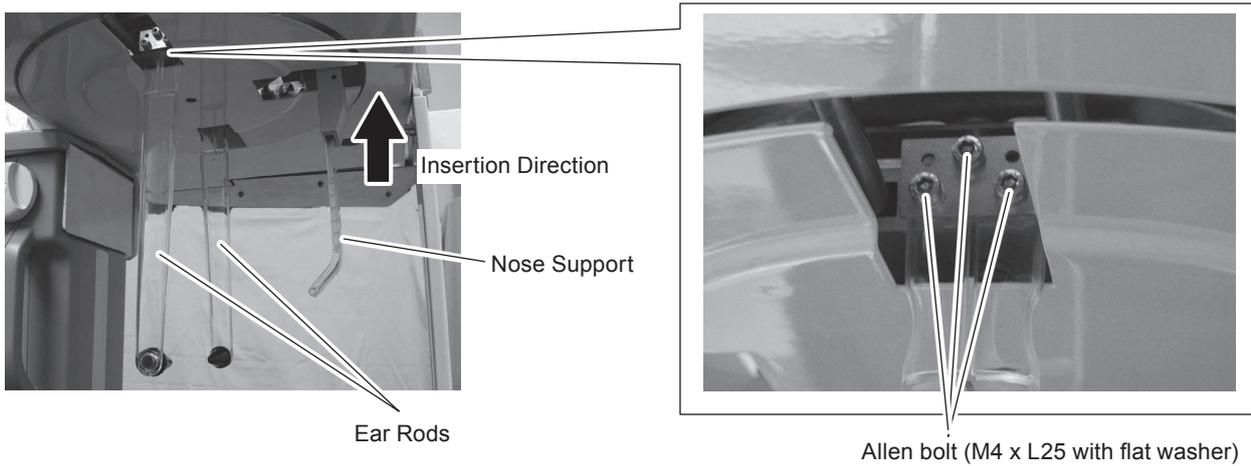


Fig. ④ -69

(25) Fix the blinding cover on cephalo top cover using 2 x binding screws (M3 x L5).

Tool used: No .2 Phillips screwdriver

**Additional Information :**

Mount one blinding cover of the two.



Fig. ④ -70

(26) Mount the cephalo top cover on the cephalometric main unit. Fix the other blinding cover using 2 x binding screws (M3 x L5).

Tool used: No .2 Phillips screwdriver

(27) Fix the cephalo top cover using 2 x Allen bolts (M4 x L10 with spring washer) and 2 x Phillips pan-head machine screw (M4 x L8 with spring washer).

Tool used: No .2 Phillips screwdriver 3 mm Allen wrench

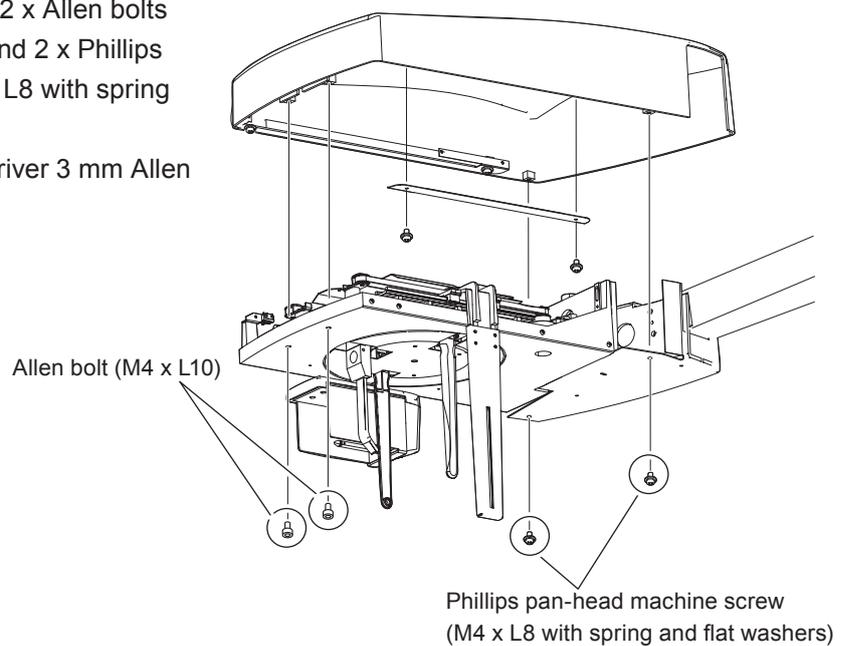


Fig. ④ -71

## 2-10. 3D Sensor Unit Mounting

### 2-10-1. Removing covers

- Remove the covers shown below.

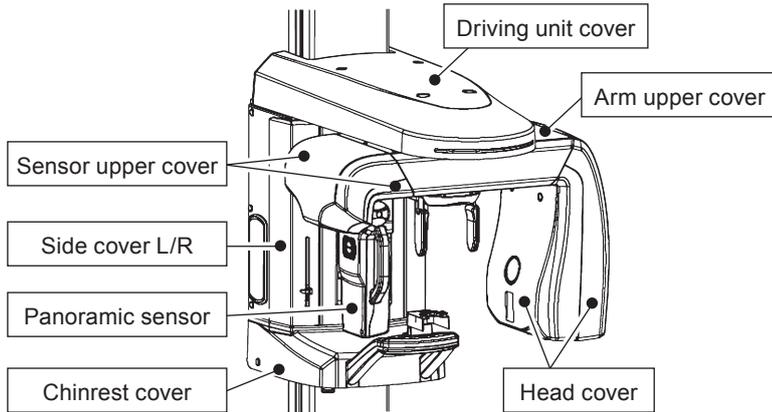


Fig. ④ -72

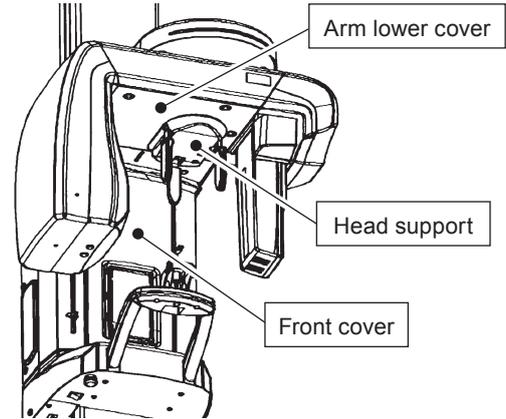


Fig. ④ -73

### 2-10-2. Installing 3D sensor ASSY

#### CAUTION

- This procedure requires two people in order to avoid the equipment from falling.

(1) Hold the part shown in the photo. Do not apply force on to the sliding part.

Also, FPD is very sensitive to shocks. Do not apply any shocks on to the ASSY.

At this stage, do not remove the protector covering FPD image reception area.

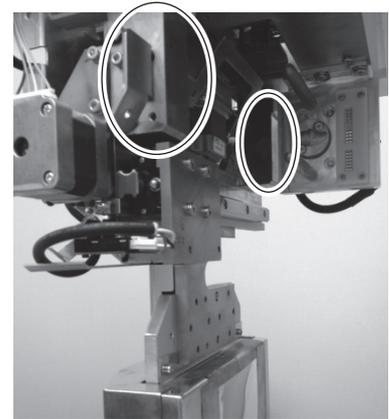


Fig. ④ -74

(2) Match the pins of 3D sensor ASSY to the holes of arm component, and place the included screws to screw holes in the photo.

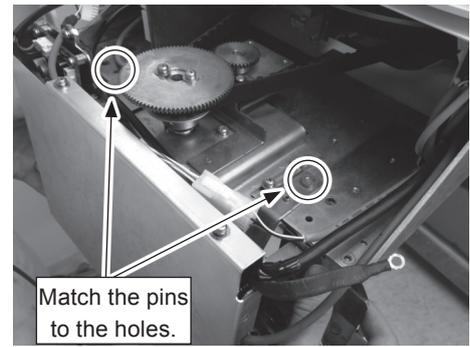


Fig. ④ -75

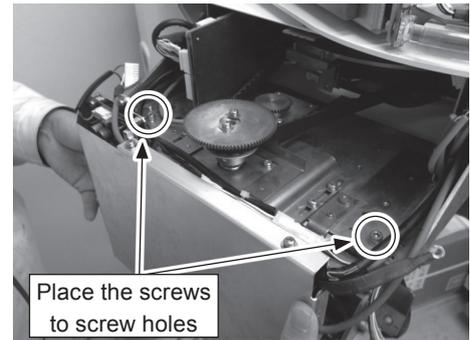


Fig. ④ -76

(3) Tighten the both Left/Right screws evenly.

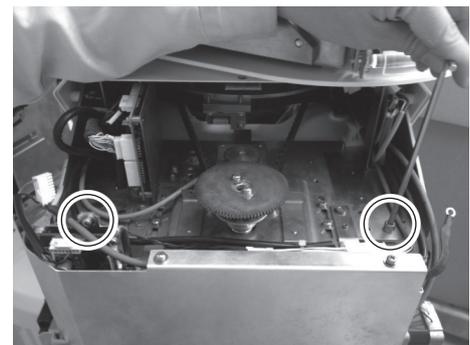


Fig. ④ -77

(4) Confirm that there is no space between attaching surface of 3D sensor ASSY and arm part.

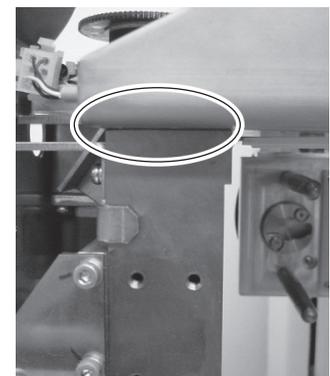


Fig. ④ -78

(5) Later, tighten the bolts in the photo and fix them all firmly.

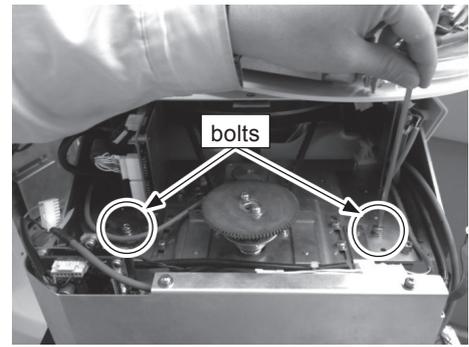


Fig. ④ -79

### 2-10-3. Installing the Motor drive circuit board

(1) Attach included motor drive circuit board in the position shown in the photo.

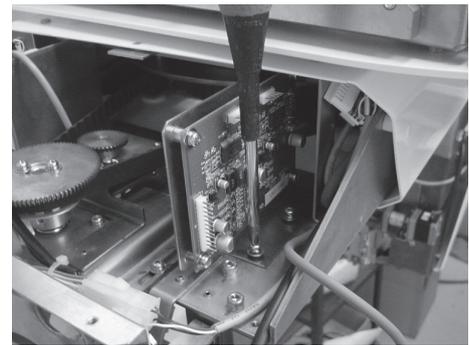


Fig. ④ -80

(2) Remove this cover.

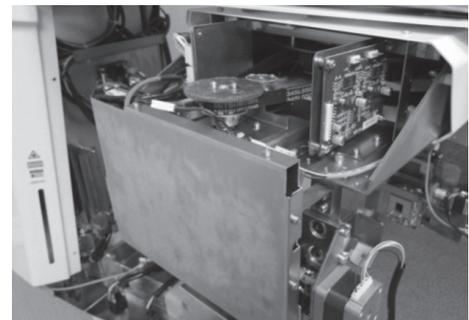


Fig. ④ -81

(3) Connect each harness that is coming out from 3D sensor ASSY.

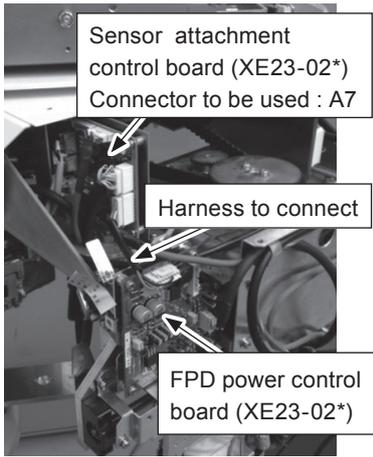


Fig. ④ -82

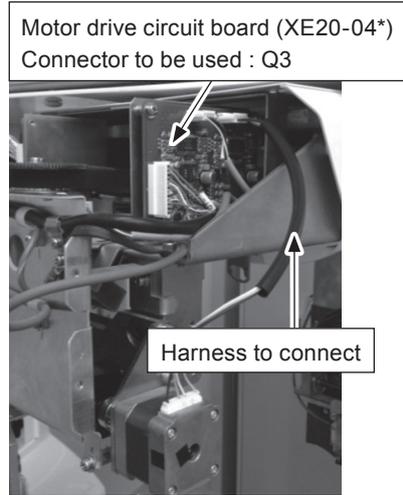


Fig. ④ -83

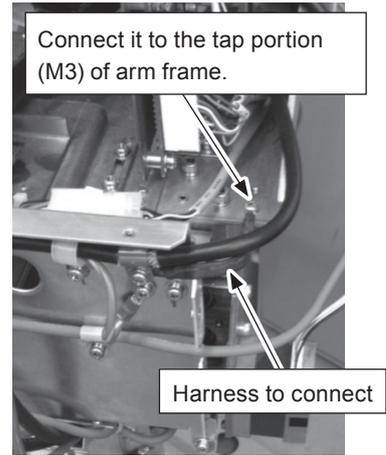


Fig. ④ -84

(4) Connect Gray Cable as indicated at Fig.④-84-2, -3 and -4.

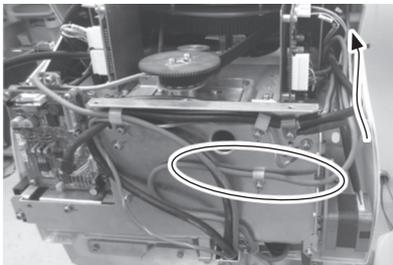


Fig.④-84-2

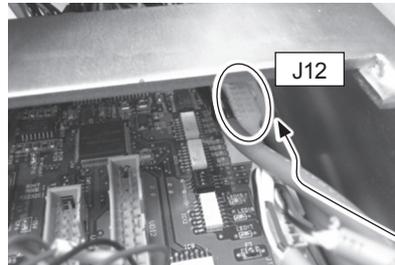


Fig.④-84-3: CPU Board

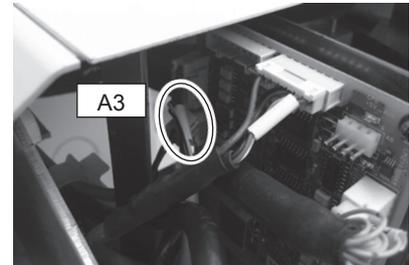


Fig.④-84-4:  
Sensor Attachment Control Board

## 2-10-4. Confirming FPD input voltage

### CAUTION

- Turn off the main switch of power before carrying out this procedure.

(1) Remove the connector indicated in red circle (above photo).

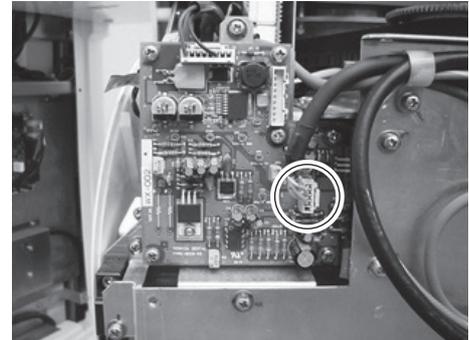


Fig. ④ -85

(2) Turn on the power of the equipment.

(3) Check and adjust the voltage in the following procedure.

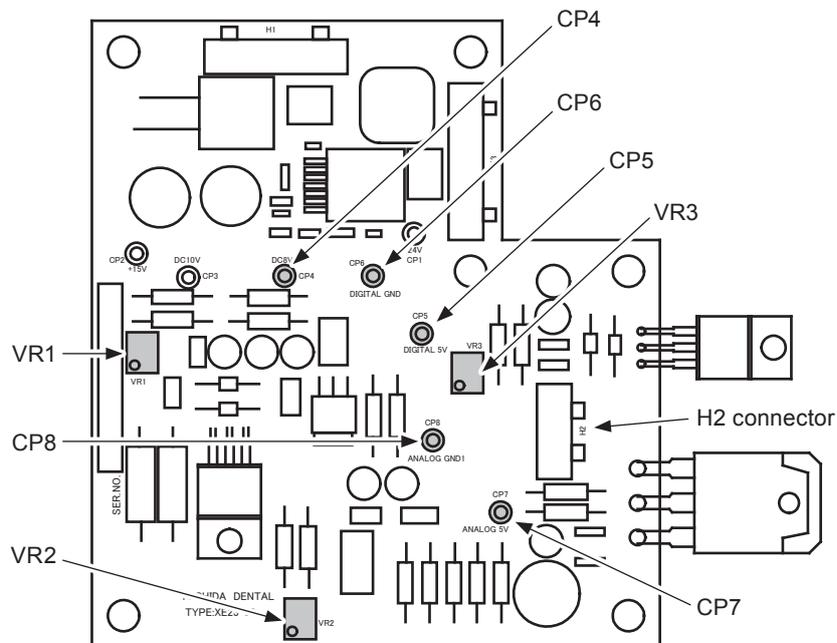


Fig. ④ -86

#### ① Checking the Analog 5V

Connect a tester between check pins CP4(DC8V) and CP8(ANALOG GND), and check to see if the output voltage is 8V.

If it is not 8V, adjust it to 8V by turning VR1.



Connect a tester between check pins CP7(ANALOG 5V) and CP8(ANALOG GND), and check to see if the output voltage is 5V.

If it is not 5V, adjust it to 5V ( $\pm 0.1$ ) by turning VR2.

#### ② Checking the Digital 5V

Connect a tester between check pins CP5(DIGITAL 5V) and CP6(DIGITAL GND), and check to see if the output voltage is 5V.

If it is not, adjust it to 5V ( $\pm 0.1$ ) by turning VR3.

(4) Turn off the power of the equipment.

(5) Connect the connector.

### 2-10-5. Adding the communication cable for 3D

Add the communication cable for 3D

(1) Remove the existing cable clamp

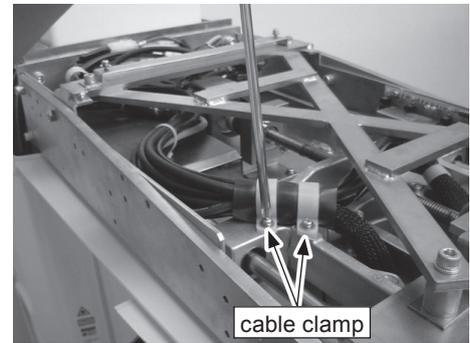


Fig. ④ -87

(2) Pass the end without ferrite core through driving unit.

Reshape the mesh tube as shown in the photo and pass the provided communication cable through from the bottom.

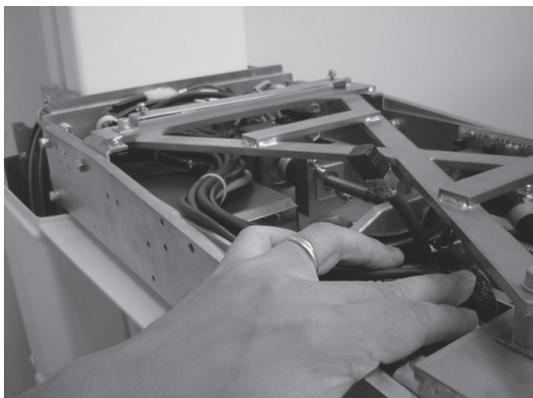
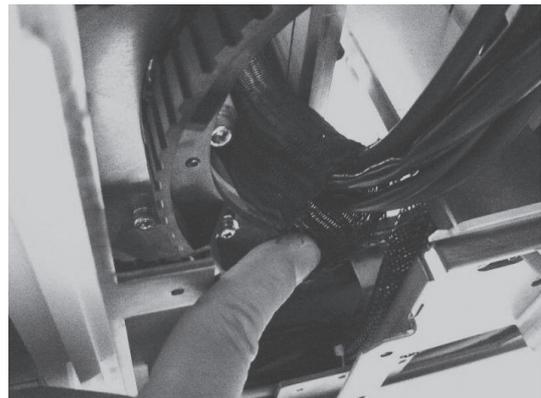
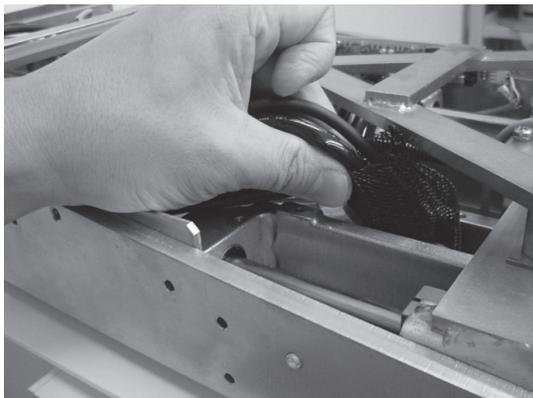


Fig. ④ -88

(3) Place along the existing wiring.

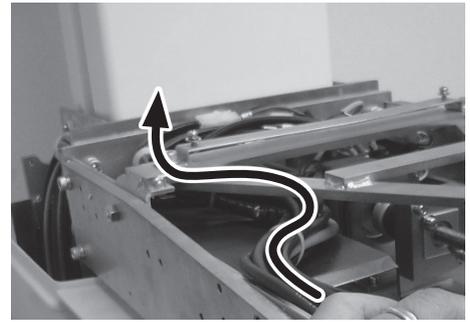


Fig. ④ -89

(4) Replace nylon clip in the photo with the newly-provided ones. Fix it at the position where 800mm above nylon clip.

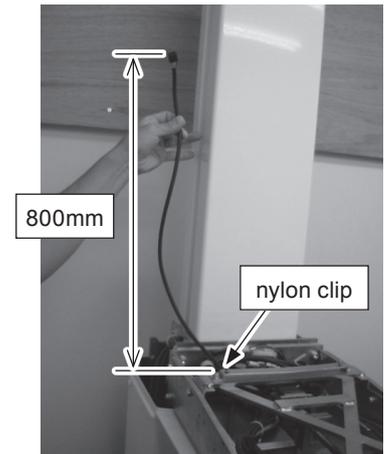


Fig. ④ -90

(5) As shown in the photos, fix it with existing wiring using a fixing band (cable tie).

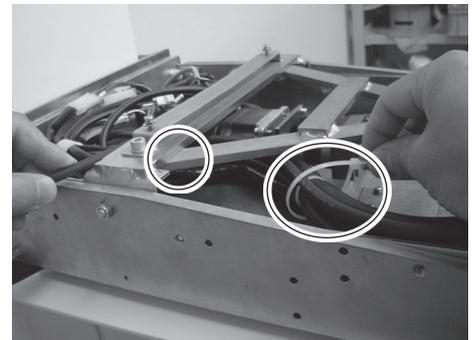


Fig. ④ -91

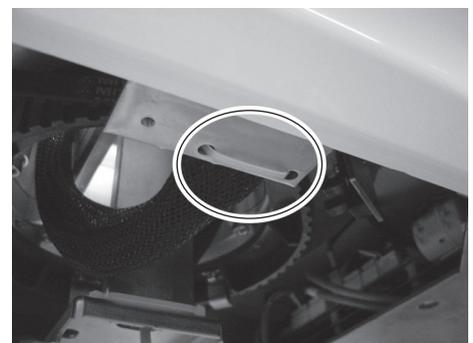


Fig. ④ -92

(6) Connect to HUB.

## 2-10-6. Adjustment of laser beams

- (1) Turn on the main power supply.
- (2) Select Panoramic mode on the control panel and click RESET.
- (3) Click beam button and emit each laser.
- (4) When laser beam shuts down, press the side beam button and emit.
- (5) Check the mid-sagittal beam.  
Check that the beam is on the center of the patient head fixator.

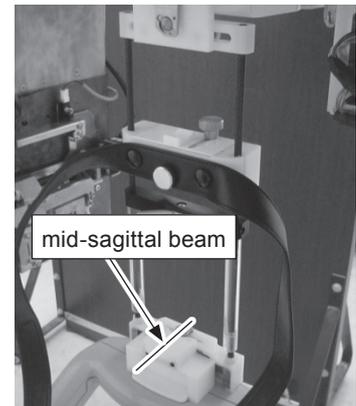


Fig. ④ -93

- (6) Adjustment of Frankfurt beam  
Align the beam so that it will be on FOV mark of patient head fixator, and adjust Frankfurt beam.

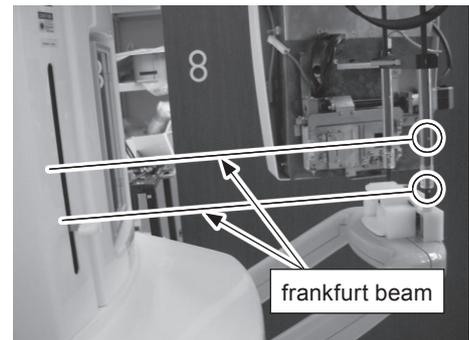


Fig. ④ -94

- (7) Check the positioning beam.  
Attach the testing phantom and adjust the positioning beam along with groove.

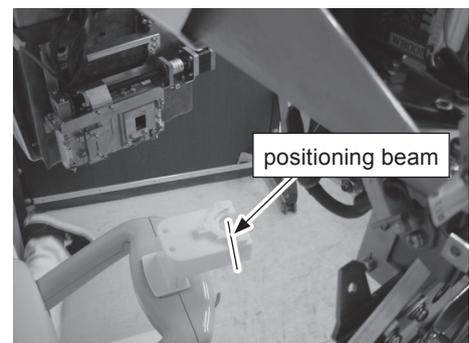


Fig. ④ -95

## 2-10-7. Installing 3D head support

Fix 3D head support by matching with patient head fixator.

- (1) Temporarily connect and fix the connector inside the head support. (Do this procedure without forehead support and head support)

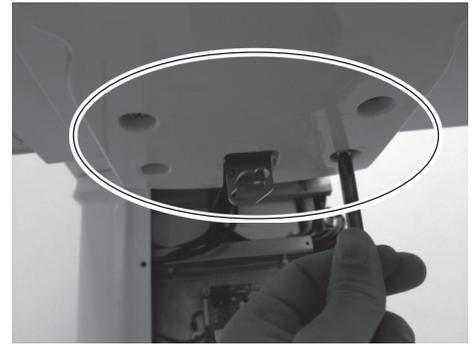


Fig. ④ -96



Fig. ④ -97

- (2) Install the patient fixator. Position both top and bottom one to the center.

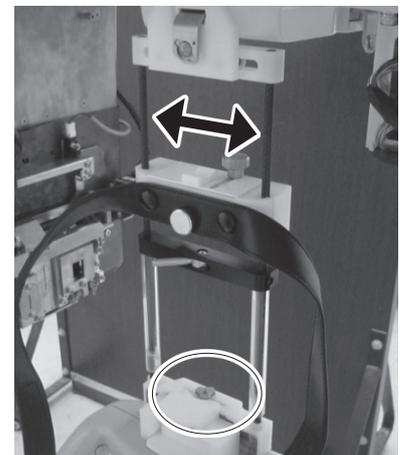


Fig. ④ -98

(3) Fix the head support main part at the position where matches with forehead support attachment holes.

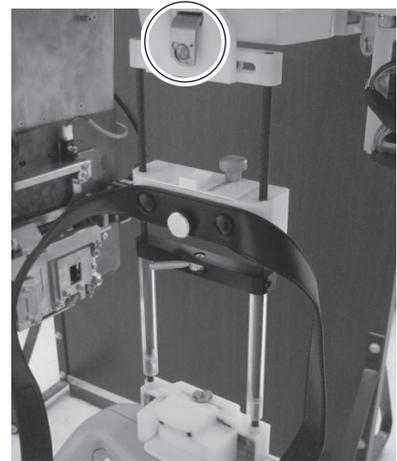


Fig. ④ -99

#### 2-10-8. Leveling the main unit

**REF.** :Refer to “2-2-4. Leveling” “B. For equipment with 3D function” in “③ Equipment Installation Procedure and Precautions”.

#### 2-10-9. Attaching covers

**NOTE** :This procedure needs to be carried out after each adjustment is completed.

## 2-11. Software Installation

Follow the instructions below (① to ④) to install various pieces of software.

- ① Installing X-era Smart Control Manager
- ② Installing Dental Imaging Software
- ③ Installing Image Creator
- ④ Installing the Viewer

### CAUTION

- The contents of this software product are subject to change for improvement at any time in the future and without notice.
- Use of this software product is solely licensed to the user of our corresponding product.
- Do not install any software products on the computer outside the specifications.
- Do not connect the computer to the Internet.
- Responsibly manage the computer so that it does not get infected with viruses. In case of viral infection, there are possibilities of serious failures including radiation exposure due to malfunctions during image acquisitions. Anti-virus software or virus detecting software cannot be installed on the computer.
- The performance of the Image Creator software can be lowered when it is run concurrently with other pieces of software on the computer.

### ① Installing X-era Smart Control Manager

(1) Insert the “X-era Smart Software” installation disk into the CD / DVD drive of the PC.

(2) Click “Start” and select “Run...” or press “Windows key + R”.

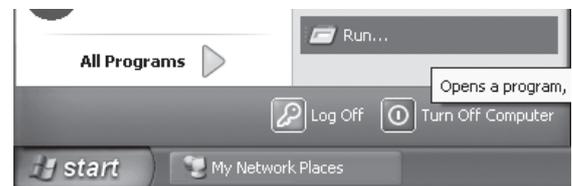


Fig. ④ -100

(3) The “Run” dialog box is displayed. Click “Browse...”.

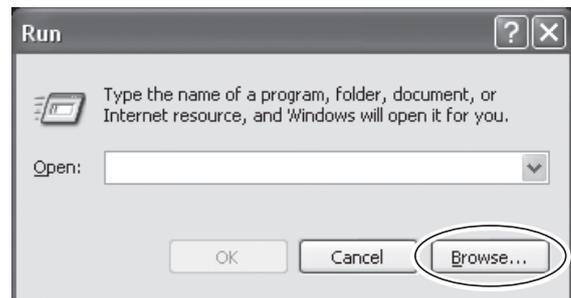


Fig. ④ -101

(4) The “Browse” dialog box is displayed. From “Look in”, select the CD / DVD drive.

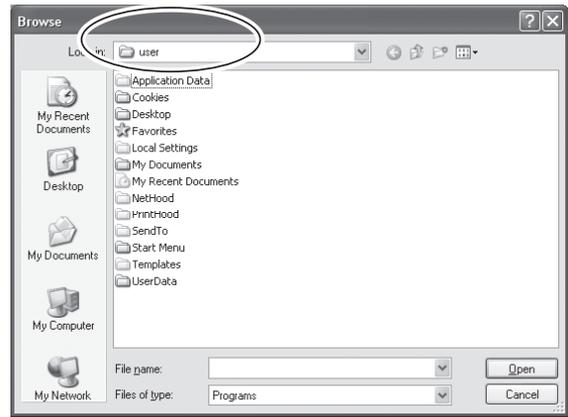


Fig. ④ -102

(5) Contents of the CD / DVD drive will be displayed. Double-click and open the “Control Manager” folder. Select “Control Manager”.

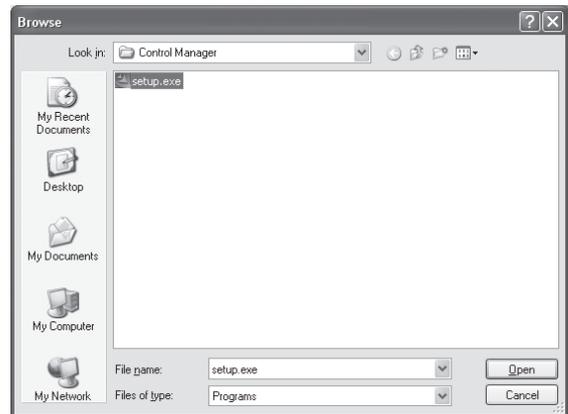


Fig. ④ -103

(6) Click “Open”.

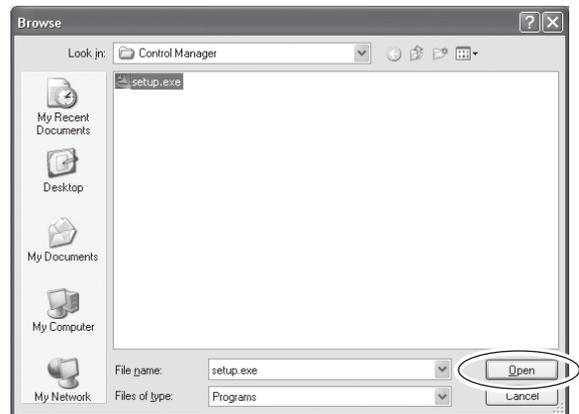


Fig. ④ -104

(7) Return to the “Run” dialog box. Click “OK”. The installer begins its operation.

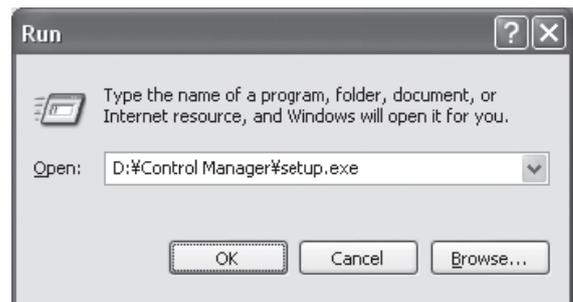


Fig. ④ -105

## Installation

(1) A dialog box as in the figure on the right is displayed.

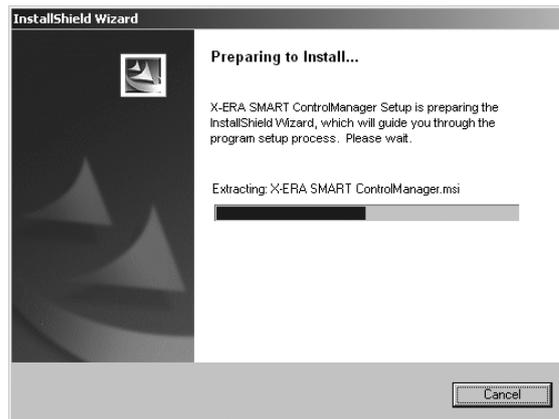


Fig. ④ -106

(2) Then a dialog box as in the figure of the right is displayed.

Click "Next >".



Fig. ④ -107

(3) The "License Agreement" is displayed in the dialog box. Read the description of the software license agreement and if you agree with it, check in the "I accept....." box and click "Next >".

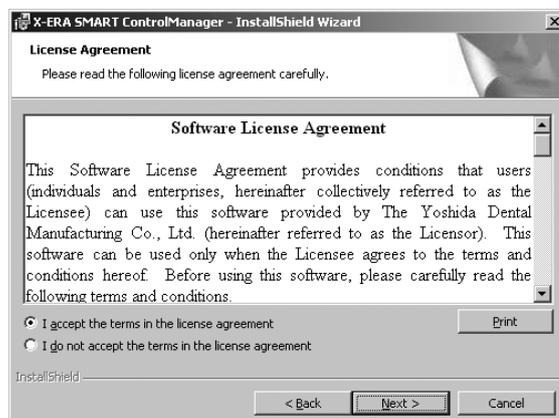


Fig. ④ -108

(4) A dialog box appears prompting for installation destination. Check the installation destination and click “Next >”.



Fig. ④ -109

(5) A dialog box as in the figure on the right is displayed. Click “Install”.

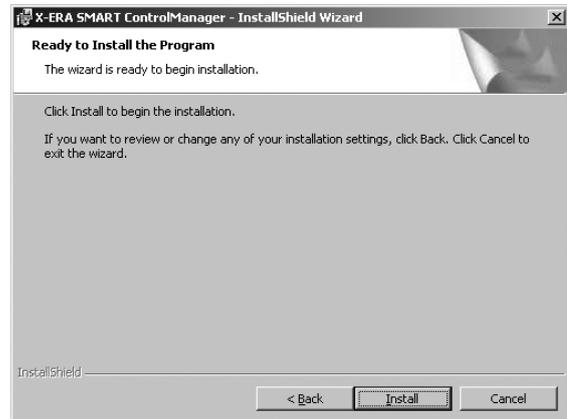


Fig. ④ -110

(6) A dialog box as in the figure on the right is displayed while the installation is in progress.



Fig. ④ -111

(7) When the installation is completed, a dialog box as in the figure on the right is displayed.

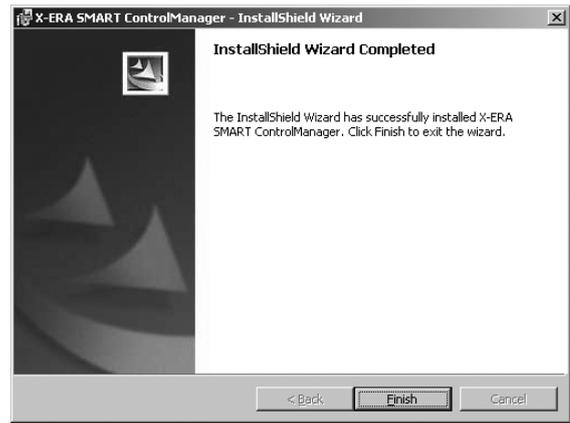


Fig. ④ -112

(8) Restart the computer.

(9) The dialog box as in the figure on the right appears after the computer restarts. Press [OK].



Fig. ④ -113

(10) The port setting window is displayed.



Fig. ④ -114

(11) Select the port to be used from the pull-down menu and press [OK].



Fig. ④ -115

**REF.** :Reference: For port settings, refer to “X-era Smart Operation Manual”.

② Installing Dental Imaging Software

(1) Insert the “X-era Smart Software” installation disk into the CD / DVD drive of the PC.

(2) Click “Start” and select “Run...” or press “Windows key + R”.

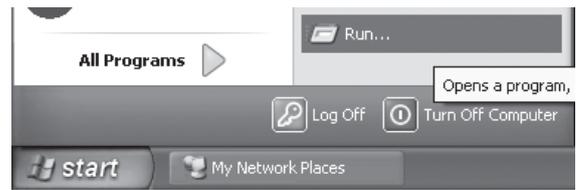


Fig. ④ -116

(3) The “Run” dialog box is displayed. Click “Browse...”.

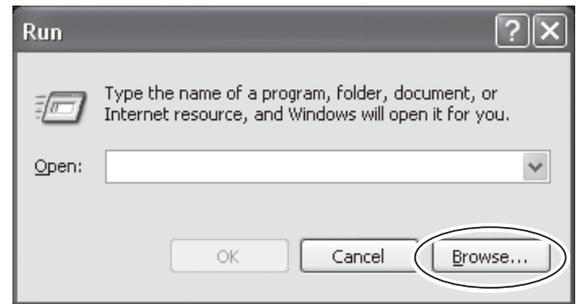


Fig. ④ -117

(4) The “Browse” dialog box is displayed. From “Look in”, select the CD / DVD drive.

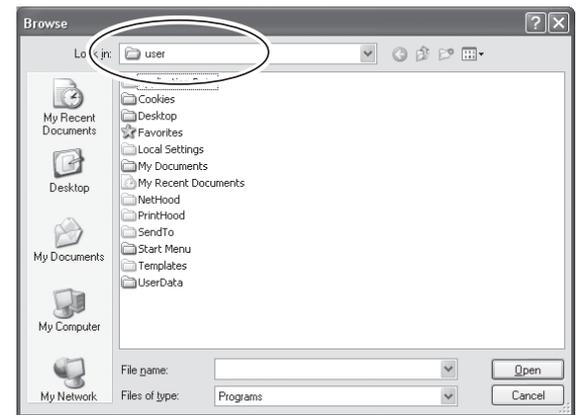


Fig. ④ -118

(5) Contents of the CD / DVD drive will be displayed. Double-click and open the “Image Creator” folder. Select “AJAT\_DENTAL\_IMAGING\_[version number].exe” \*1.

\*1 e.g.: AJAT\_DENTAL\_IMAGING\_6.12.19.2316.exe

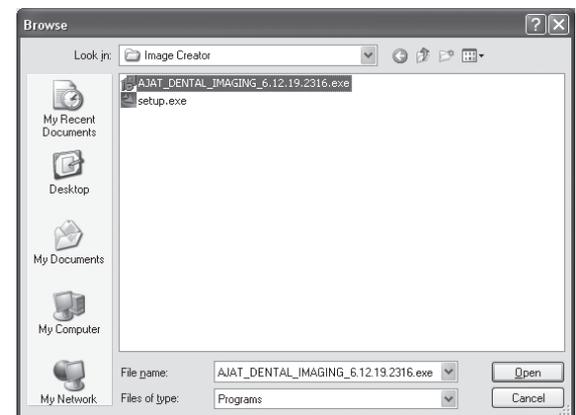


Fig. ④ -119

(6) Click “Open”.

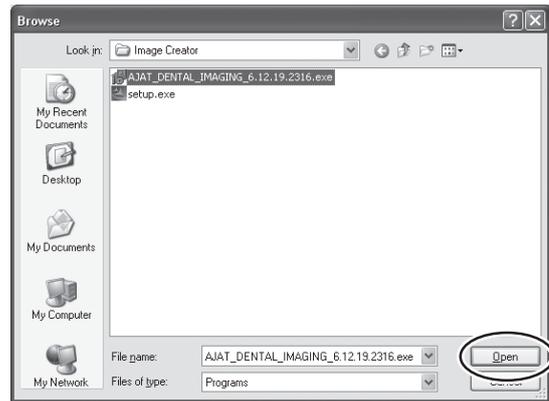


Fig. ④ -120

(7) Return to the “Run” dialog box. Click “OK”. The installer begins its operation.

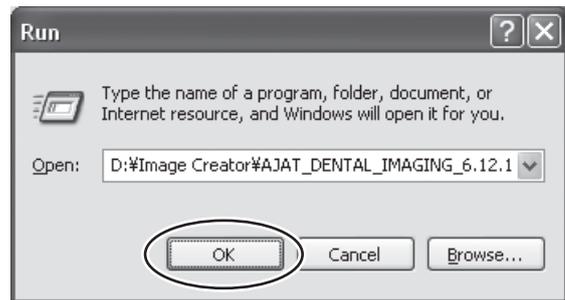


Fig. ④ -121

#### Installation

(1) A dialog box as in the figure on the right is displayed. Click “Next >”.



Fig. ④ -122

(2) A dialog box appears prompting for installation destination. Check the installation destination and click “Next >”.

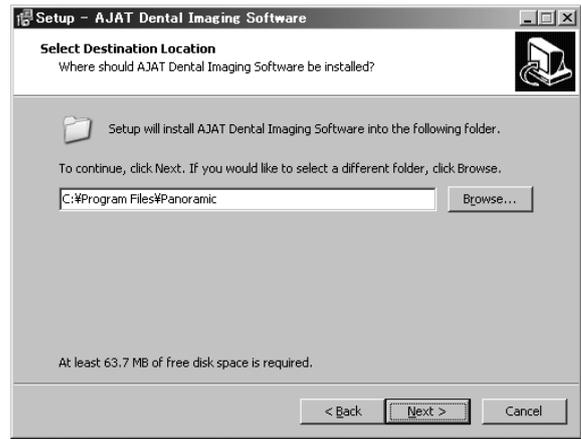


Fig. ④ -123

(3) A dialog box as in the figure on the right is displayed. Select “Full installation with hardware support” and click “Next >”.

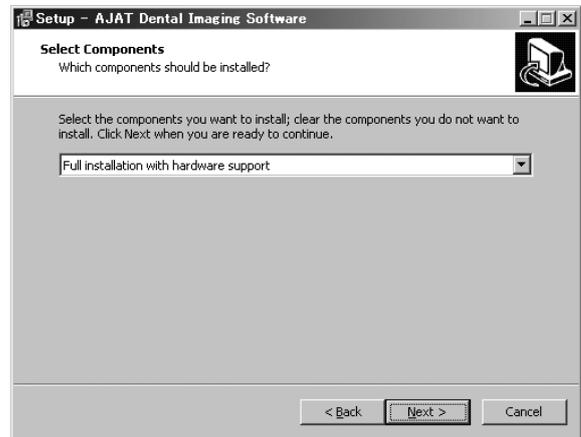


Fig. ④ -124

(4) A dialog box as in the figure on the right is displayed. Click “Next >”.

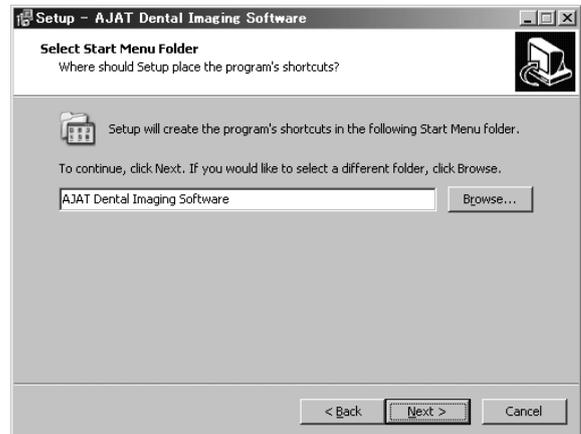


Fig. ④ -125

(5) A dialog box as in the figure on the right is displayed. Click “Next >”.

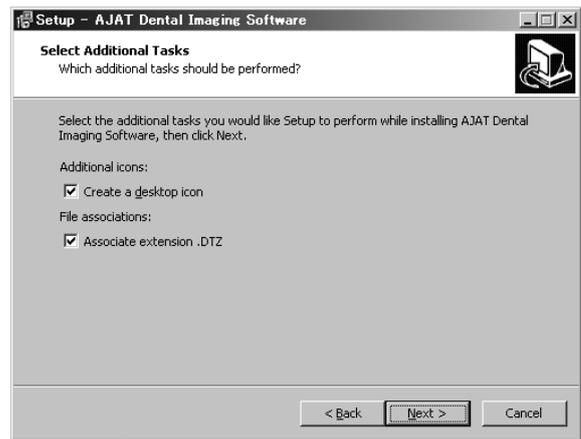


Fig. ④ -126

(6) A dialog box as in the figure on the right is displayed. Click “Install”.

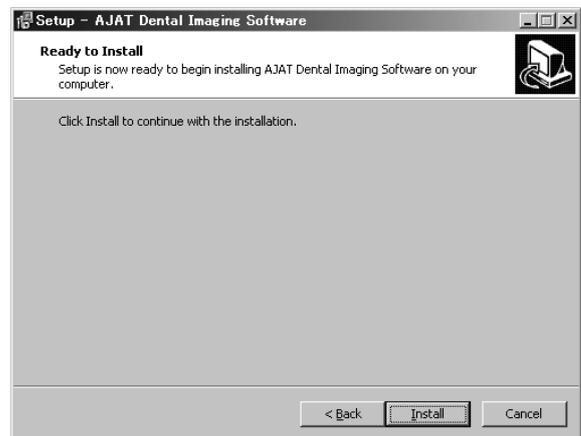


Fig. ④ -127

(7) A dialog box as in the figure on the right is displayed while the installation is in progress.



Fig. ④ -128

- (8) When the installation is completed, a dialog box as in the figure on the right is displayed. Click “Finish” and restart the computer. After the computer is restarted, the Windows service of Dental Imaging Software is automatically activated and takes up about 1 GB of internal memory.

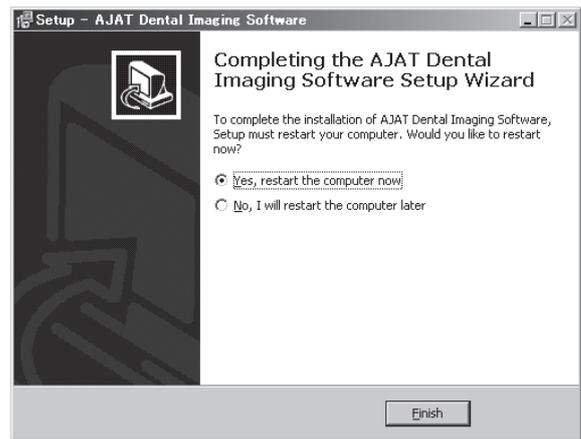


Fig. ④ -129

### ③ Installing Image Creator

- (1) Insert the “X-era Smart Software” installation disk into the CD / DVD drive of the PC.

- (2) Click “Start” and select “Run...” or press “Windows key + R”.

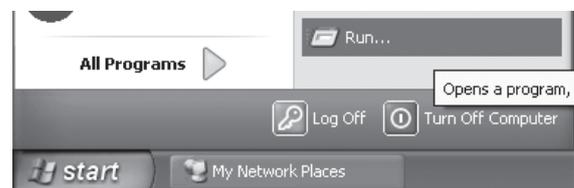


Fig. ④ -130

- (3) The “Run” dialog box is displayed. Click “Browse...”.

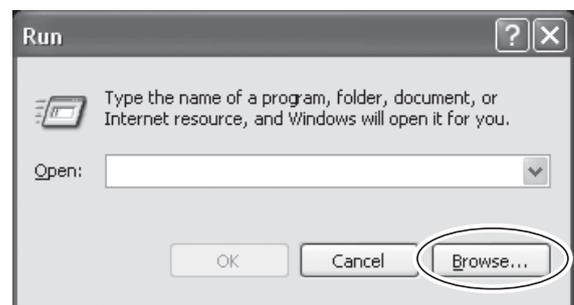


Fig. ④ -131

- (4) The “Browse” dialog box is displayed. From “Look in”, select the CD / DVD drive.

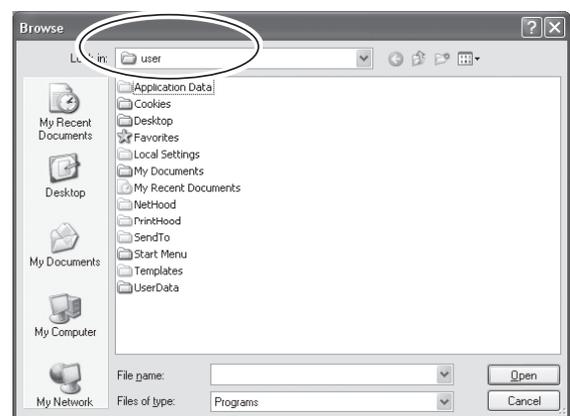


Fig. ④ -132

- (5) Contents of the CD / DVD drive will be displayed.  
Double-click and open the “Image Creator” folder.  
Select “setup.exe”.

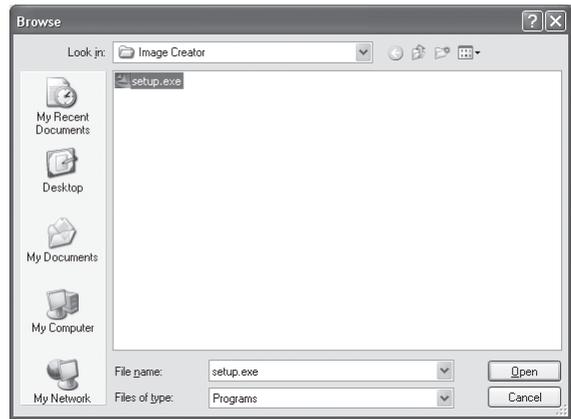


Fig. ④ -133

- (6) Click “Open”.

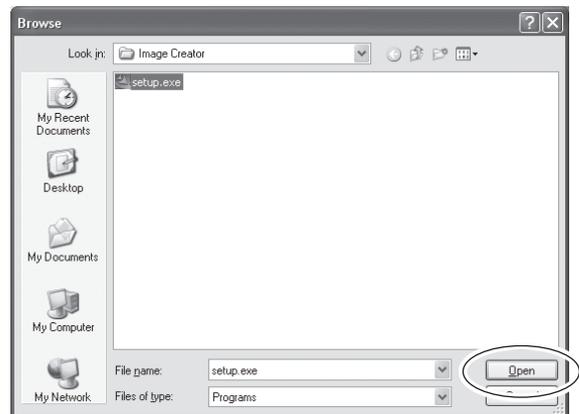


Fig. ④ -134

- (7) Return to the “Run” dialog box. Click “OK”. The installer begins its operation.

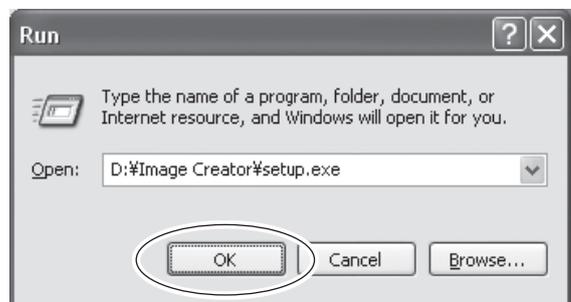


Fig. ④ -135

## Installation

- (1) A dialog box as in the figure on the right is displayed.

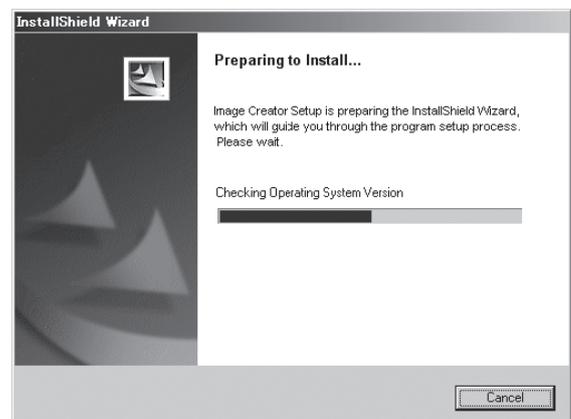


Fig. ④ -136

- (2) A dialog box as in the figure on the right is displayed.  
Click “Next >”.



Fig. ④ -137

- (3) The “License Agreement” is displayed in the dialog box. Read the description of the software license agreement and if you agree with it, check in the “I accept.....” box and click “Next >”.

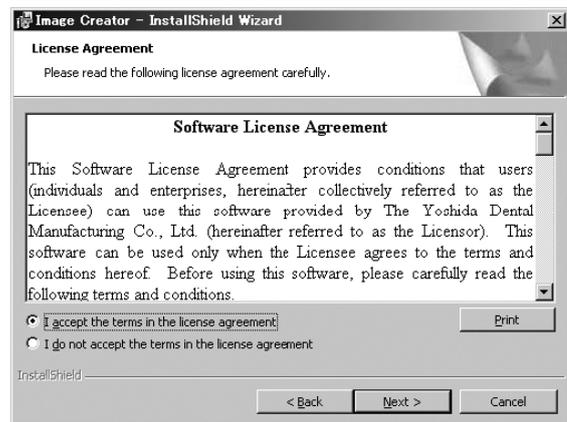


Fig. ④ -138

- (4) A dialog box appears prompting for installation destination. Check the installation destination and click “Next >”.

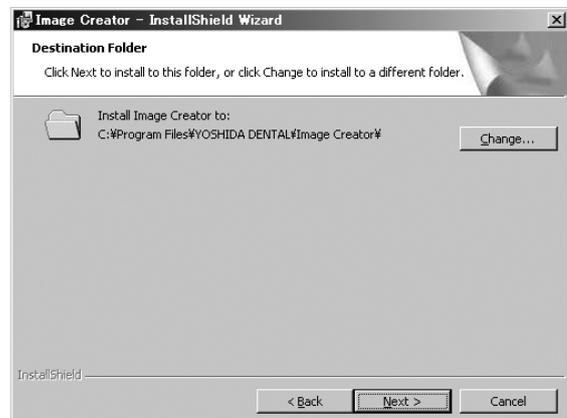


Fig. ④ -139

- (5) The dialog box as in the figure on the right is displayed. When the unit in question has 3D function, select "3D Type" whereas when unit does not have 3D function, select "2D Type".

When "3D Type" is selected, set whether "Receipt Computing Link" needs to be established. When "2D Type" is selected, set whether "Launcher Button" needs to be installed.

Press [Next >] button.

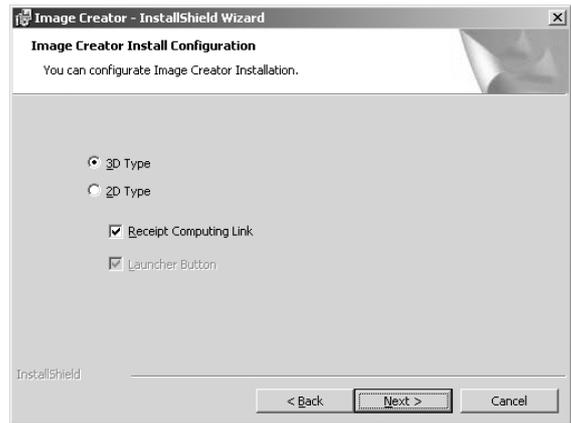


Fig. ④ -140

- (6) A dialog box as in the figure on the right is displayed. Click "Install".

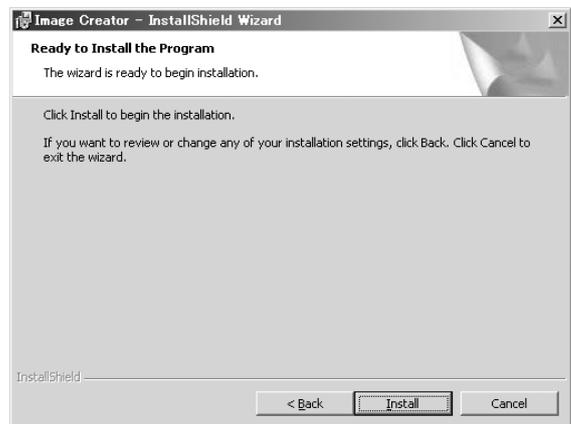


Fig. ④ -141

- (7) A dialog box as in the figure on the right is displayed while the installation is in progress.



Fig. ④ -142

- (8) When the installation is completed, a dialog box as in the figure on the right is displayed.

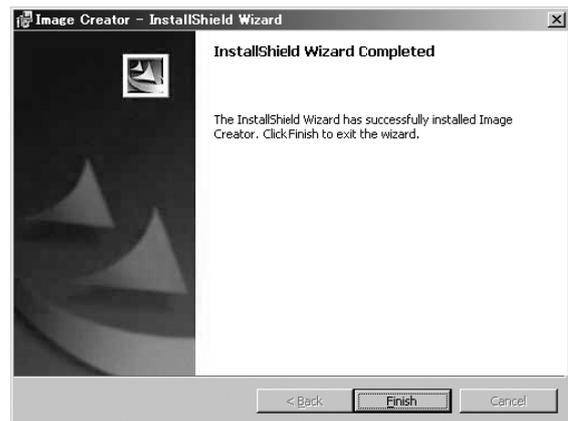


Fig. ④ -143

- (9) Restart the computer.

Settings after Installation (for 3D Type only)

**NOTE** : This setting is applied for 3D type only. It is unnecessary for 2D type.

- (1) Open the property window of the drive from Computer (or My Computer) window.  
Confirm the disk drive configuration on the computer and check the disk drive that the free space is bigger (or the biggest) on the computer.
- (2) Open the initial configuration files of Image Creator as follows by using notepad etc.
  - xs\_starter.ini (In [X-era Smart Software Installation Folder(\*1)]\XS-Starter folder)
  - VolumeCreator.ini (In [X-era Smart Software Installation Folder(\*1)]\VolumeCreator folder)(\*1) e.g.: "C:\Program Files\YOSHIDA DENTAL\X-ERA SMART Software"
- (3) Confirm the setting values of the following setting items in each file.

Change to the disk drive mark confirmed at step (1).

<xs\_starter.ini>

```
[appinfo]
DataDir=C:\YCINC\P18S\Data\{0}
DataDir3D=C:\YCINC\P18S\Data\{0}\3D
DataDir2D=C:\YCINC\P18S\Data\{0}\2D
PatientDataDir=C:\YCINC\P18S\Data
HandoverDir=C:\YCINC\P18S\VC
[backup]
PatientDataDir=C:\YCINC\P18S\Data\_backup
```

<VolumeCreator.ini>

```
[appinfo]
HandoverDir=C:\YCINC\P18S\VC
ParamDir=C:\YCINC\P18S\VC
RawSaveDir=C:\YCINC\P18S\Data\raw3d
```

e.g.: When C and D exist on the computer and the free space of D is bigger than that of C, rewrite "C:" to "D:".

- (4) Overwrite these configuration files.

#### ④ Installing the Viewer

Refer to the instruction manual attached to the Viewer.

## 2-12. Software Installation (for 3D Type only)

Follow the procedures below when installing various software products.

- 2-12-1. Installation of CUDA
- 2-12-2. Installation of Graphics Driver
- 2-12-3. Installation of GEVPlayer
- 2-12-4. Installation of DCAM-API
- 2-12-5. Installation of OnDemand3D (for Server)
- 2-12-6. Installation of OnDemand3D (for Client)

### CAUTION

- Contents of software may be changed for improvement without notice.
- The software products are intended for use only by users of our products.
- Do not install unspecified software products on the computer.
- Do not connect the computer to the Internet.
- Manage the computer responsibly so as to avoid virus infection. Virus infection of computer may result in serious failures including radiation-exposures due to malfunction during image acquisition. In addition, anti-virus software or virus detector can not be installed on the computer.

## 2-12-1. Installation of CUDA

### ① Installation of CUDA Toolkit

(1) Activate the installer by double-clicking the execution file of CUDA Toolkit software.

- for 32-bit OS:  
  `cuda toolkit_<*.**( *1)>_win_32.msi`
  - for 64-bit OS:  
  `cuda toolkit_<*.**( *1)>_win_64.msi`
- \*1: \* indicates the version number of software.  
e.g.: `cuda toolkit_3.2.16_win_32.msi`

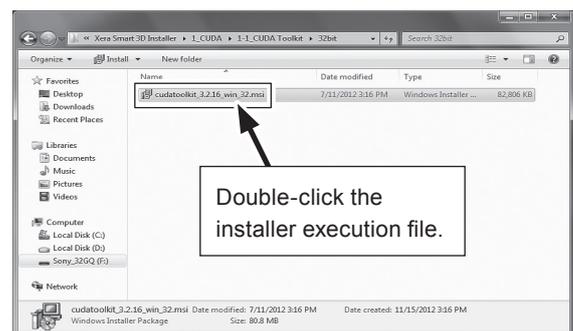


Fig. ④ -144

(2) When a security warning on file(s) opened appears, press [Run] button and start installation procedures.

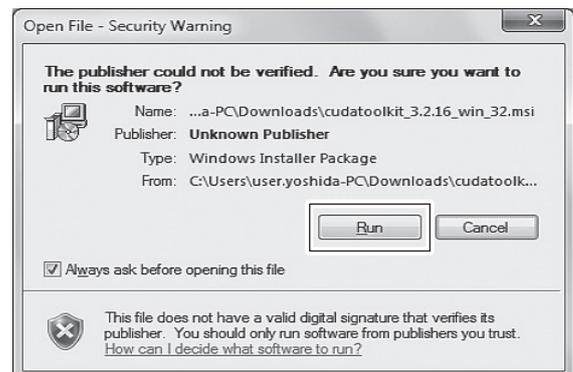


Fig. ④ -145

- (3) CUDA Toolkit Installer window appears.  
Press [Next] button.

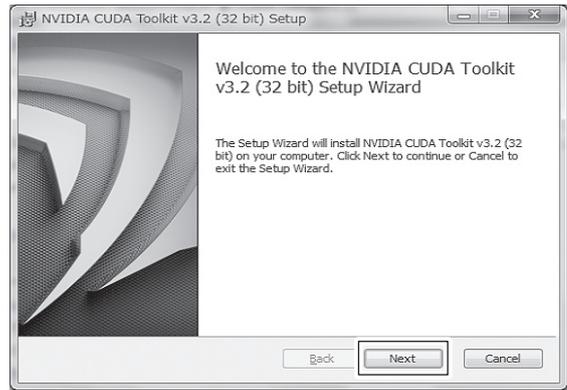


Fig. ④ -146

- (4) License Agreement window appears.  
Select “I accept the terms in the License Agreement”, and press [Next] button.

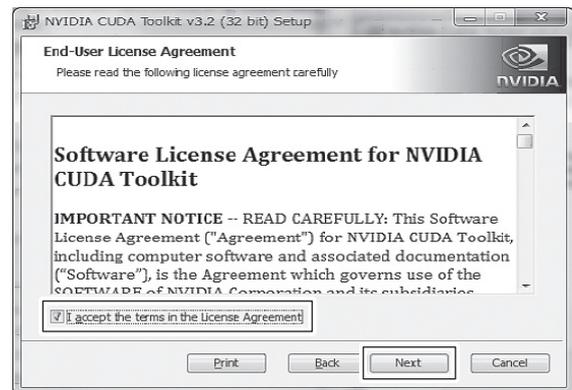


Fig. ④ -147

- (5) Company Information input window appears.  
In this instance, input “YOSHIDA” in [Full Name] and [Organization] fields. Select “No, thanks! I would not like to subscribe.” and press [Register] button.

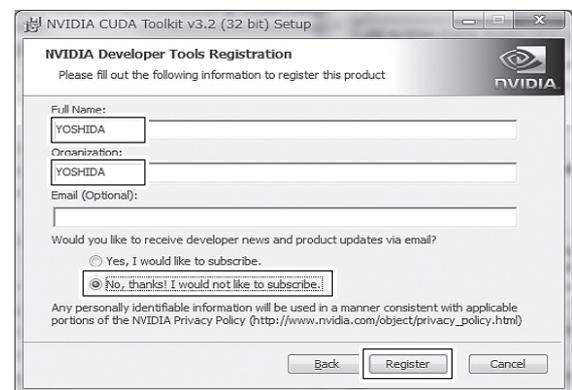


Fig. ④ -148

- (6) Press [Next] button.

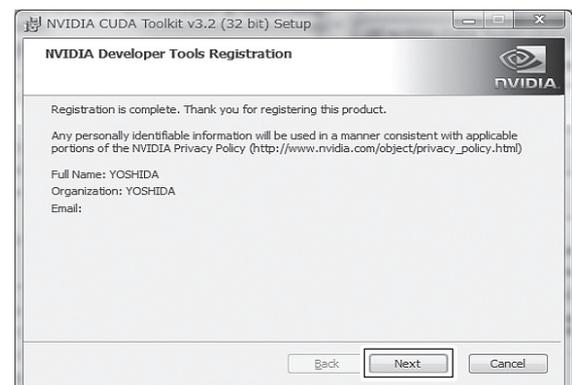


Fig. ④ -149

- (7) Installation package selection window appears.  
Press [Complete] button.

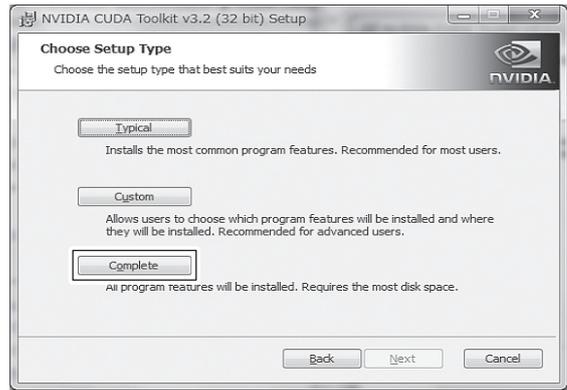


Fig. ④ -150

- (8) Ready to Install window appears.  
Press [Install] button.

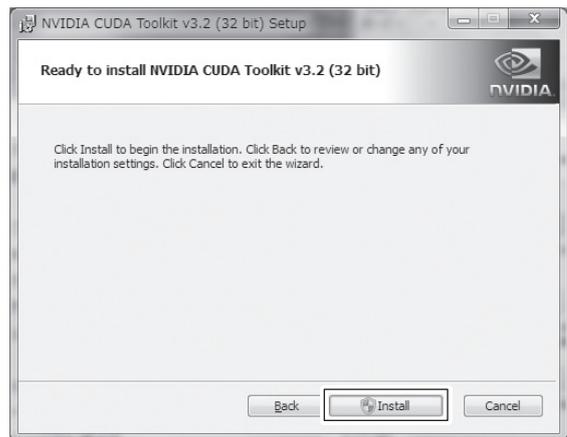


Fig. ④ -151

- (9) Installation in Progress window appears.  
Wait until installation is complete.

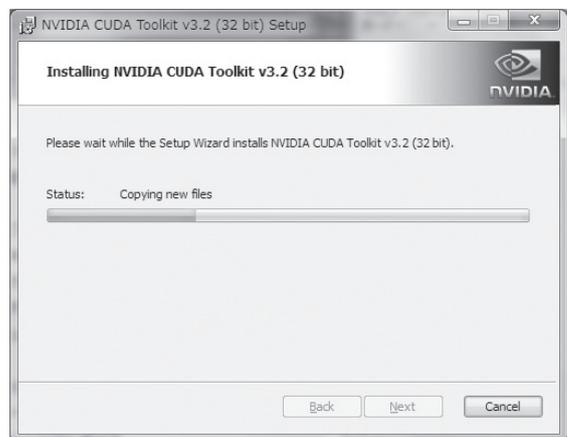


Fig. ④ -152

(10) Installation Complete window appears.

Press [Finish] button.

\* Restart the computer after installation is complete.

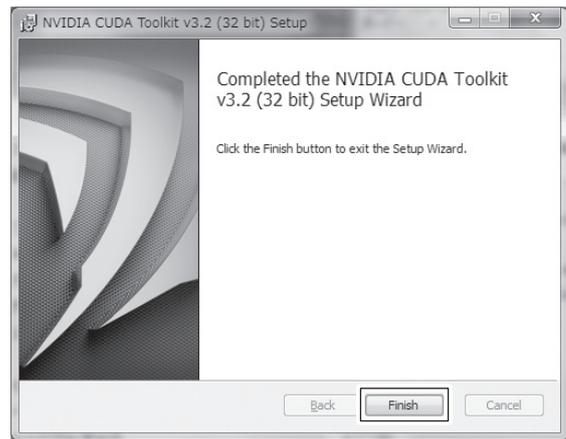


Fig. ④ -153

## ② Installation of CUDA SDK

(1) Activate the installer by double-clicking the execution file of CUDA SDK software.

- for 32-bit OS:  
gpucomputingsdk\_< \*.\*>(\*2)>\_win32.exe
  - for 64-bit OS:  
gpucomputingsdk\_< \*.\*>(\*2)>\_win64.exe
- \*2: \* indicates the version number of software.  
e.g.: gpucomputingsdk\_3.2.16\_win\_32.exe

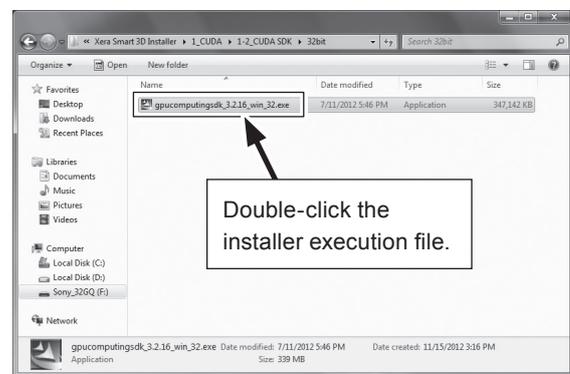


Fig. ④ -154

(2) When a security warning on file(s) opened appears, press [Run] button and start installation procedures.

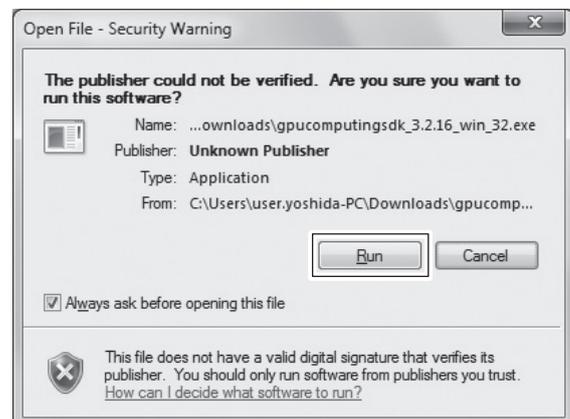


Fig. ④ -155

- (3) CUDA Toolkit Installer window appears.  
Press [Next >] button.

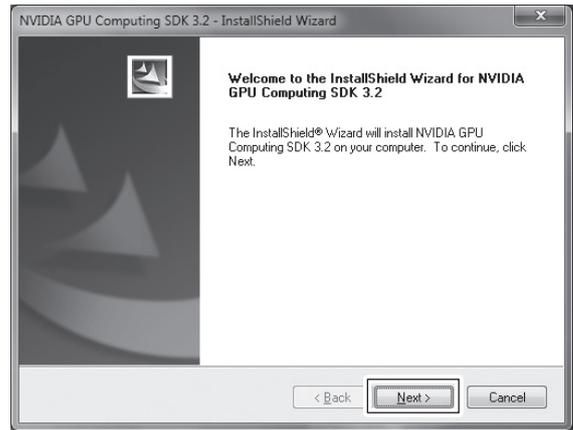


Fig. ④ -156

- (4) License Agreement window appears.  
Select “I accept the terms of the license agreement”, and press [Next >] button.

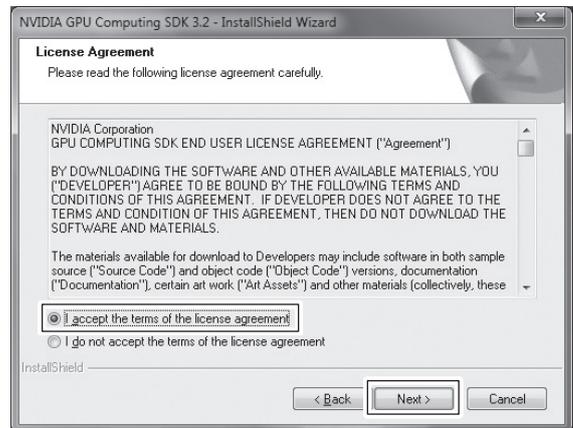


Fig. ④ -157

- (5) Company Information input window appears.  
In this instance, input “YOSHIDA” in [Name] and [Organization] fields. Select “No, thanks!” and press [Next >] button.

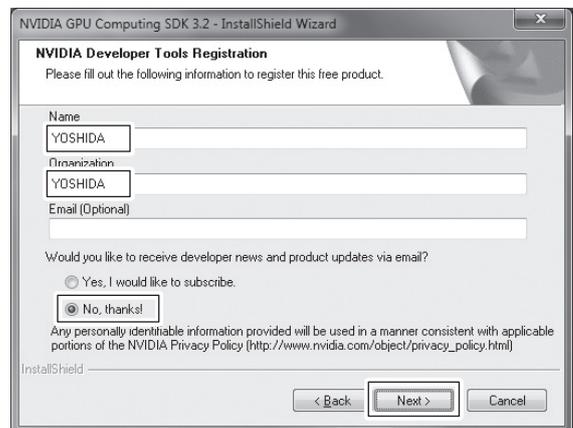


Fig. ④ -158

(6) Select [All Users] and press [Next >] button.

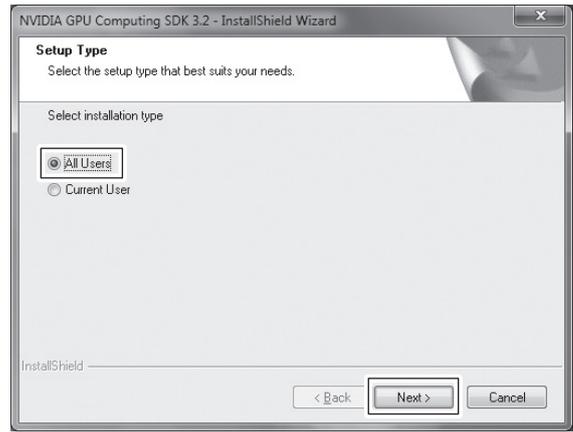


Fig. ④ -159

(7) Installation Target Selection window appears.  
Press [Next >] button.

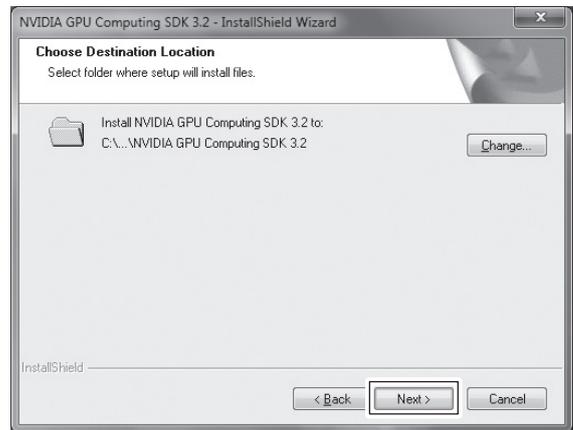


Fig. ④ -160

(8) Ready to Install window appears.  
Press [Install] button.

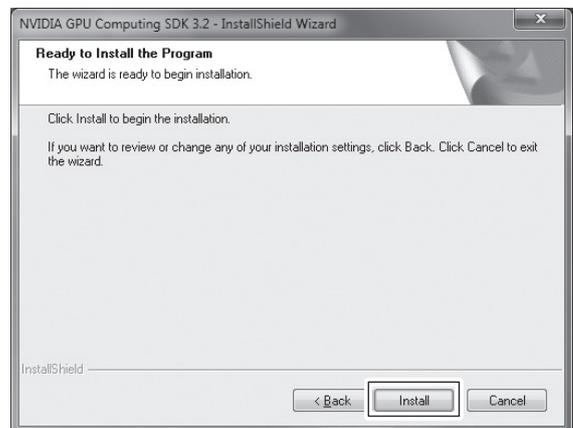


Fig. ④ -161

- (9) Installation in Progress window appears.  
Wait until installation is complete.

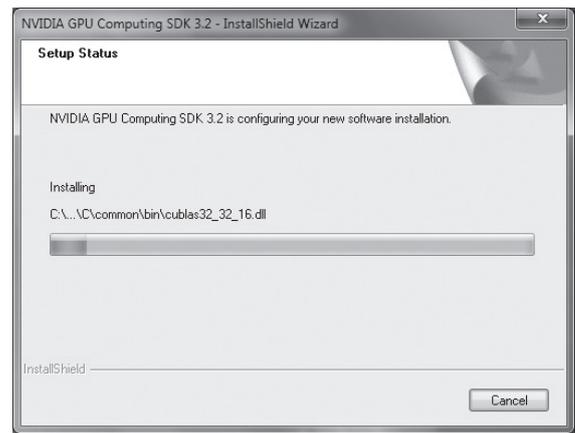


Fig. ④ -162

- (10) Wait for a while as setting window for Microsoft Visual C++ Redistributable appears.

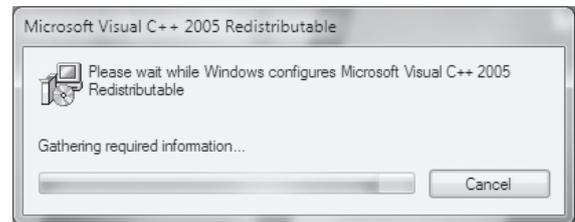


Fig. ④ -163

- (11) A message appears asking if a shortcut needs to be create on Desktop.  
Press [No].

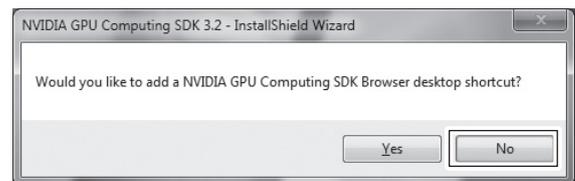


Fig. ④ -164

- (12) Installation Complete window appears.  
Uncheck check boxes of [Browse NVIDIA GPU Computing SDK 3.2<sup>\*1</sup> files] and [Read Release Notes] and press [Finish] button.

<sup>\*1</sup> In case the version of CUDASDK is 3.2.

\* Restart the computer after installation is complete.

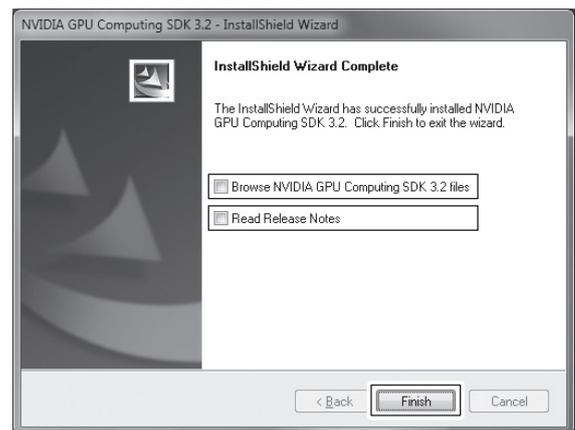


Fig. ④ -165

## 2-12-2. Installation of Graphics Driver

### ① Uninstallation

- (1) Select “Programs and Features” from Control Panel, and select NVIDIA Graphics Driver and press [Uninstall / Change].

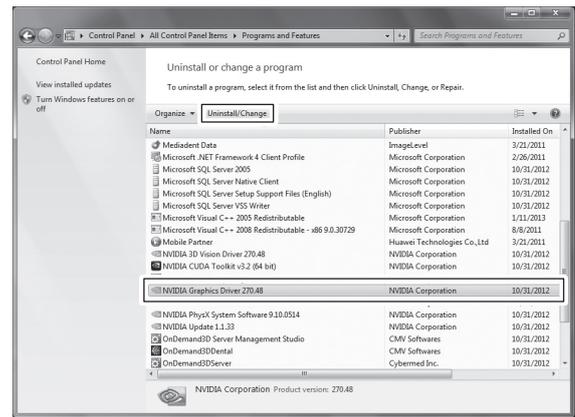


Fig. ④ -166

- (2) A message appears on window asking whether to delete Graphics Driver or not. Press [UNINSTALL] and continue.



Fig. ④ -167

- (3) Uninstallation procedures start.

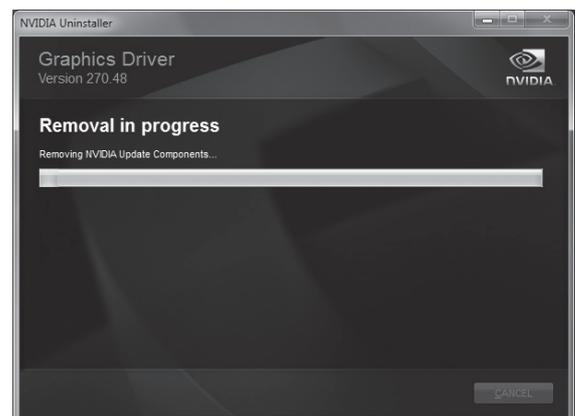


Fig. ④ -168

- (4) After uninstallation completes, press [RESTART NOW] button. The computer restarts.



Fig. ④ -169

## ② Installation

- (1) Prepare and run nVidia Graphics Driver.

Choose the driver to run according to the version of Windows 7 whether it is 32 bit or 64 bit version.

32 bit version: `devdriver_<*. *(<sup>1</sup>>_<Windows OS>_32_<***. **(<sup>2</sup>>)_general.exe`

64 bit version: `devdriver_<*. *(<sup>1</sup>>_<Windows OS>_64_<***. **(<sup>2</sup>>)_general.exe`

\*1 .\* indicates the version of CUDA (Toolkit , SDK).

\*2 .\* indicates the version of graphics driver software.

e.g. : `devdriver_3.2_winvista-win7_32_263.06_general.exe`

- (2) When a security warning on file(s) opened appears, press [Run] button and start installation procedures.

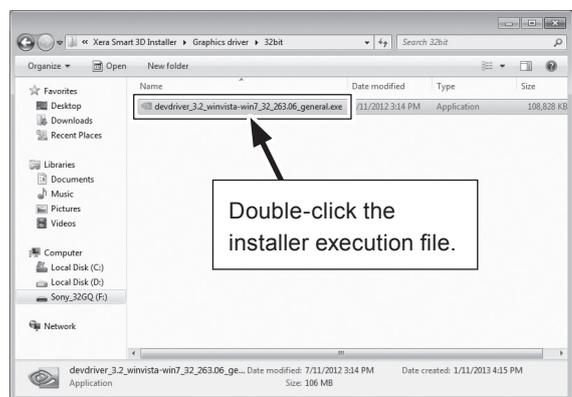


Fig. ④ -170

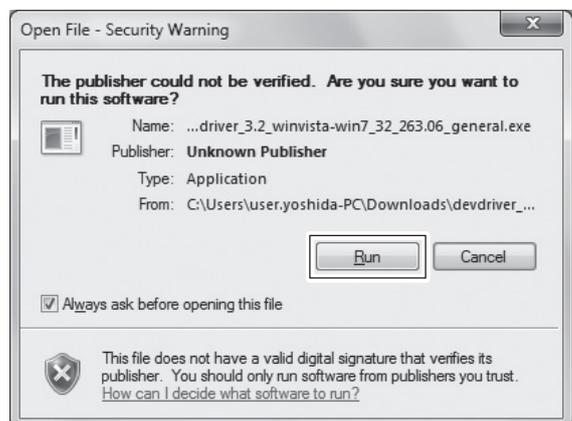


Fig. ④ -171

- (3) A message to confirm the path to which files are to be expanded appears. Press [OK] without changing the settings.

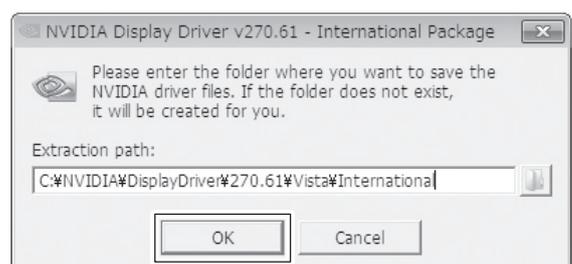


Fig. ④ -172

(4) Files to be installed start expanding.

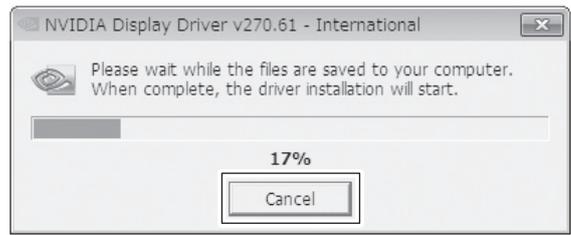


Fig. ④ -173

(5) Driver installer gets activated.  
Press [AGREE AND CONTINUE] button.



Fig. ④ -174

(6) Select [Custom] from Installation Option and press [NEXT] button.



Fig. ④ -175

(7) Check the check box of “Perform clean install” and press [NEXT].



Fig. ④ -176



- (2) eBus SDK Installer window appears.  
Press [Next >] button.

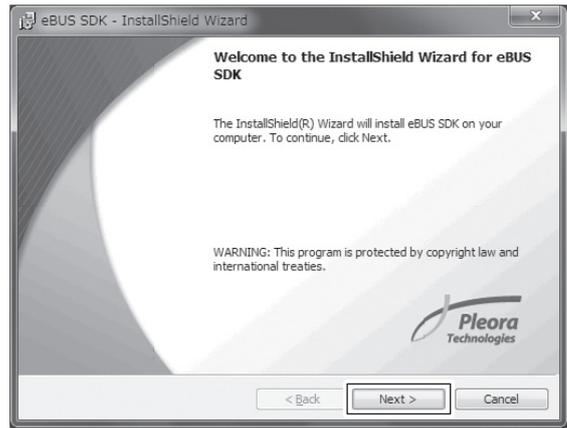


Fig. ④ -180

- (3) License Agreement window appears.  
Select "I accept the terms in the license agreement", and press [Next >] button.

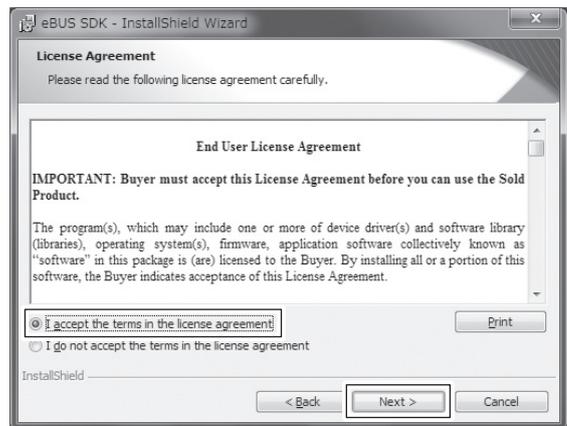


Fig. ④ -181

- (4) A window to select installation target folder appears.  
Press [Next >] button.

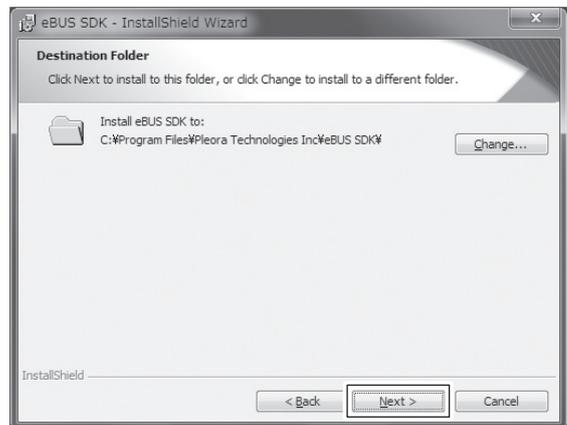


Fig. ④ -182

- (5) Installation Ready window appears.  
Press [Install] button.

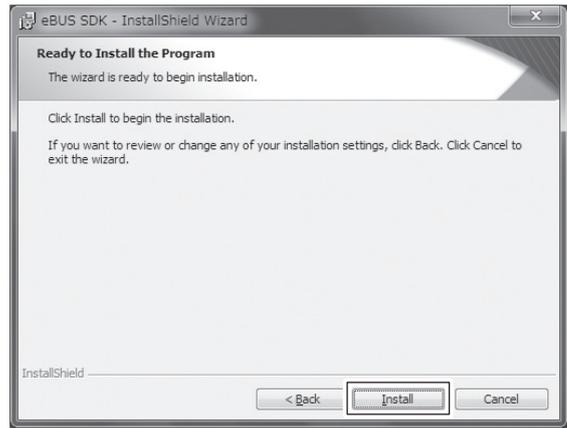


Fig. ④ -183

- (6) Installation in Progress window appears.  
Wait until installation is complete.

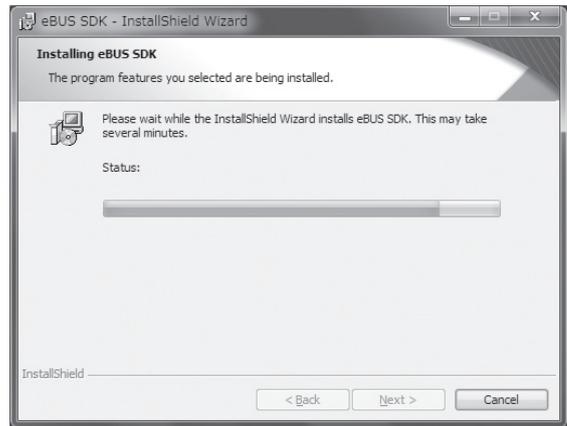


Fig. ④ -184

- (7) Installation Complete window appears.  
Press [Finish] button.

\* Restart the computer after installation is complete.

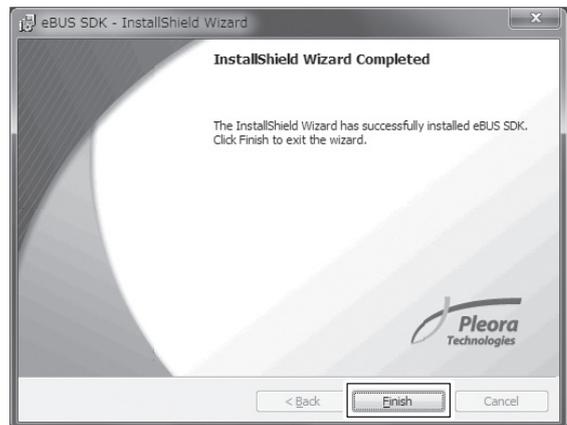


Fig. ④ -185

## 2-12-4. Installation of DCAM-API

### (1) Activate DCAM-API Installer.

For 32-bit OS:

DCAM\_<\*\*\*\*\_\*\*(1)>\_GigE\_x86.msi

For 64-bit OS:

DCAM\_<\*\*\*\*\_\*\*(1)>\_GigE\_x64.msi

\*1: \* indicates the version number of software.

e.g.: DCAM\_2012-08\_GigE\_x86.msi

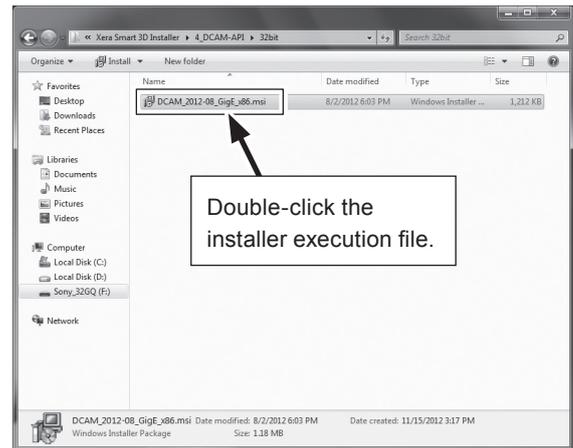


Fig. ④ -186

### (2) DCAM-API Installer window appears.

Select "I accept the terms in the License Agreement", and press [Install] button.

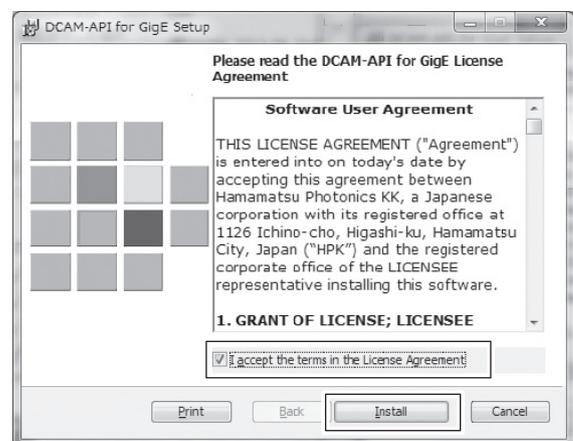


Fig. ④ -187

### (3) Installation in Progress window appears, and Installation begins.

\* When operating system used is Windows 7 or later and User Account Control setting is active, User Account Control window appears in the process. Press [Yes] in order to proceed with installation.

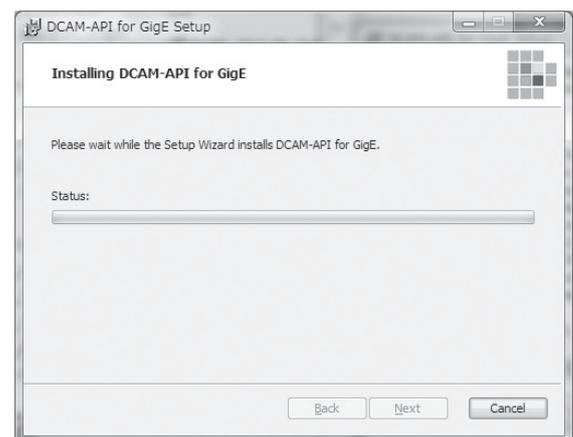


Fig. ④ -188

(4) Installation in Progress window closes, and Installation Complete window appears. Press [Finish] button.

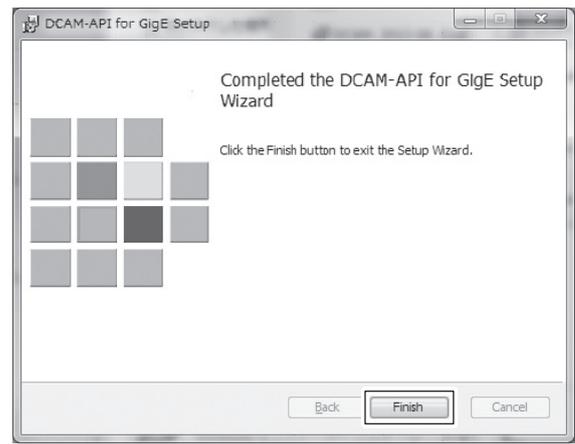


Fig. ④ -189

\* It is not necessary to restart the computer after installation.

## 2-12-5. Installation of OnDemand3D (for Server)

### Procedures

- ① Installation of OnDemand3D Dental
- ② Installation of LeafImplant
- ③ Installation of Microsoft SQL Server 2005
- ④ Installation of OnDemand3D Server
- ⑤ Installation of OnDemand3D Server Management Studio
- ⑥ Automatic Backup Settings on OnDemand3D Server Management Studio

### ① Installation of OnDemand3D Dental

- (1) Open the installer folder of OnDemand3D Dental.

Activate the installer by double-clicking the execution file of OnDemand3D Dental software, "setup.exe".

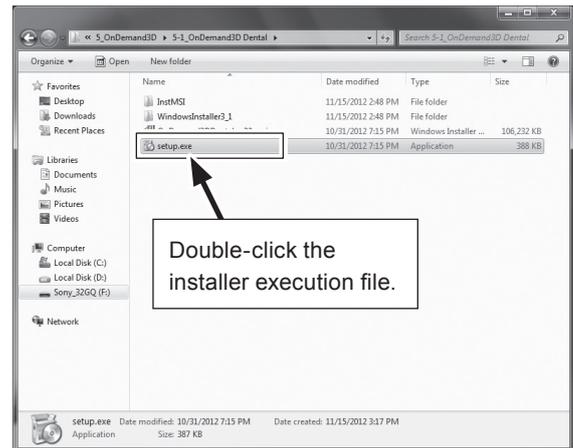


Fig. ④ -190

- (2) OnDemand3D Installer window appears.

Press [Next >] button.

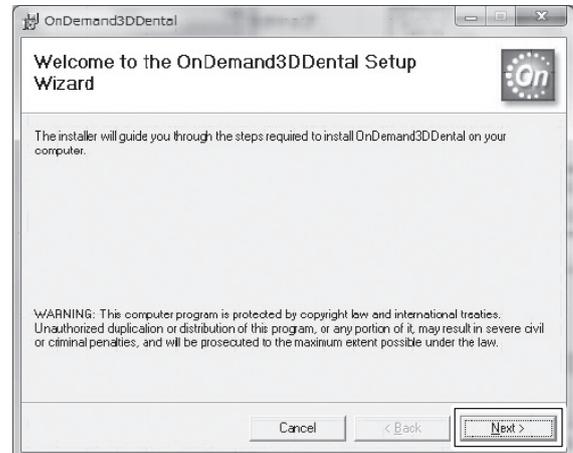


Fig. ④ -191

- (3) License Agreement window appears.  
Select [I Agree] and press [Next >] button.



Fig. ④ -192

- (4) Installation Selection window appears.  
Install "OnDemand3D Dental" to the computer used as a server (base unit). Check the check boxes of "OnDemand3D Dental" and "Show Language Selection Dialog". Press [Next >] after confirming the check boxes.

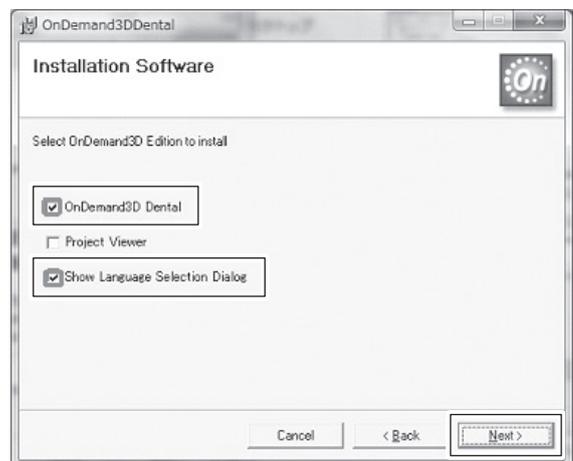


Fig. ④ -193

- (5) A window to select installation target folder appears.  
Press [Next >] button.

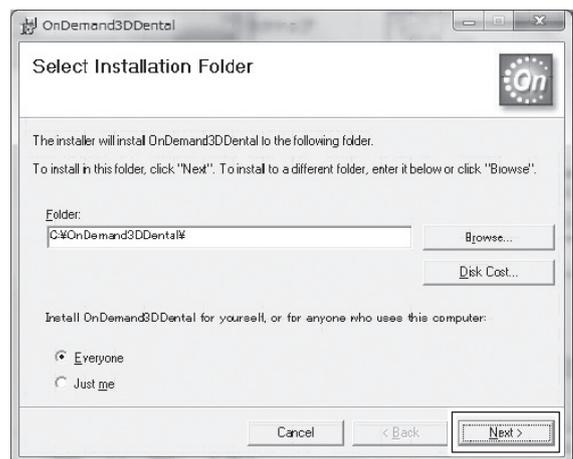


Fig. ④ -194

- (6) Installation Ready window appears.  
Press [Next >] button.

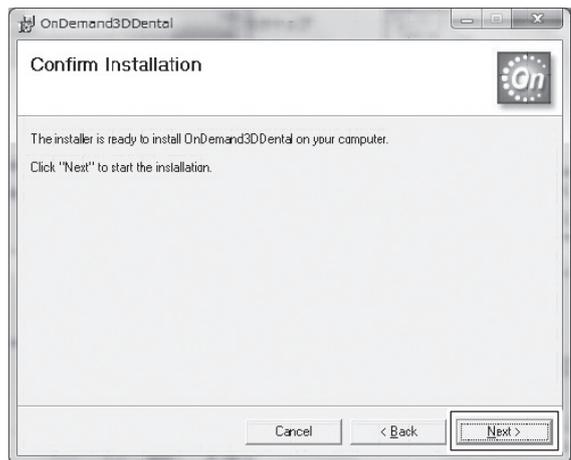


Fig. ④ -195

- (7) Language Selection window of OnDemand3D appears. Press the pop-up button, select a language, and press [OK].

**NOTE :** Language can not be changed after installation is complete. If language change becomes necessary after installation, uninstall “OnDemand3D Dental” first, and then re-install it.

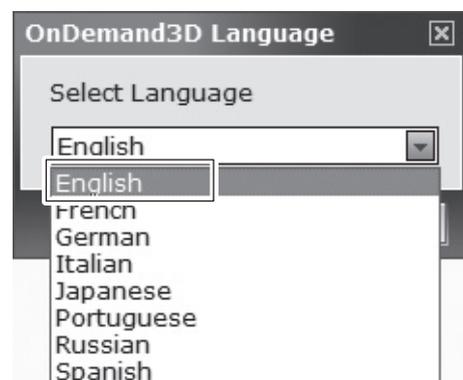


Fig. ④ -196

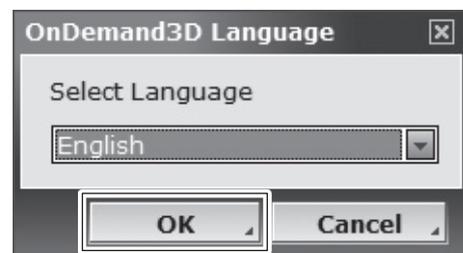


Fig. ④ -197

- (8) Installation Complete window appears.  
Press “Close” Button.

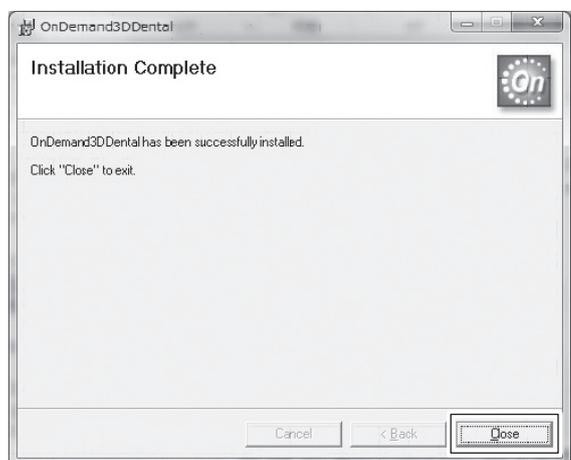


Fig. ④ -198

## ② Installation of LeafImplant

- (1) Open the installer folder of LeafImplant. Activate the installer by double-clicking the execution file of LeafImplant software, "setup.exe" in the folder.

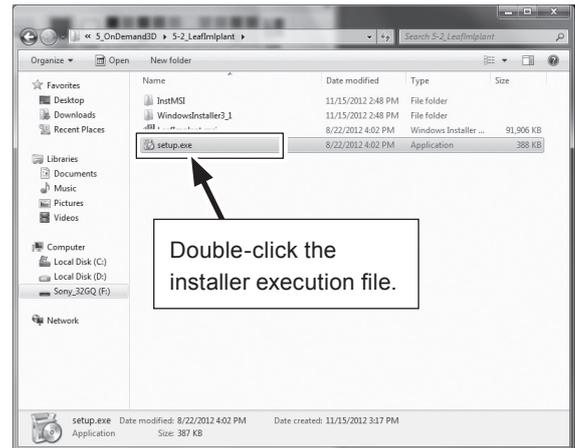


Fig. ④ -199

- (2) LeafImplant Installer window appears. Press [Next >] button.



Fig. ④ -200

- (3) License Agreement window appears. Select [I Agree] and press [Next >] button.

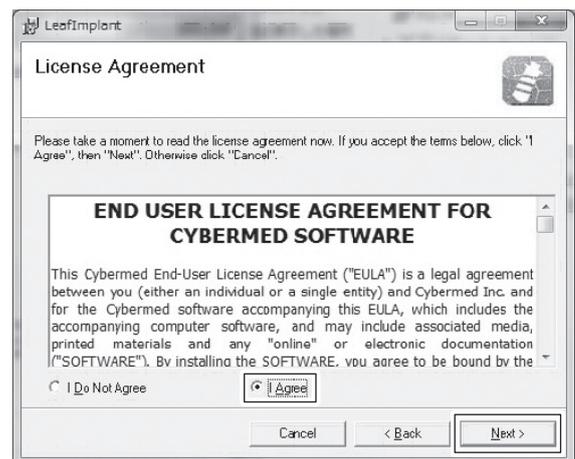


Fig. ④ -201

- (4) A window to select installation target folder appears.  
Press [Next >] button.

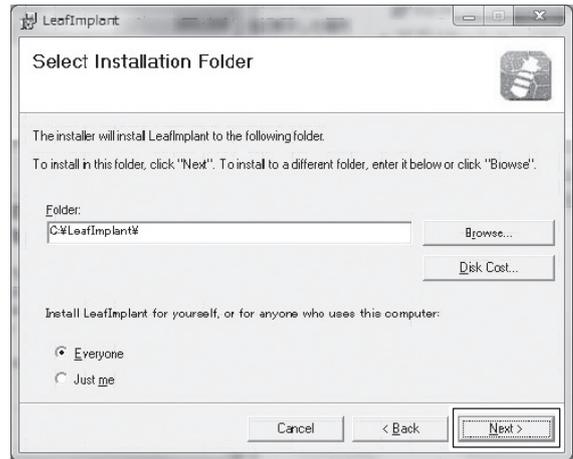


Fig. ④ -202

- (5) Installation Ready window appears.  
Press [Next >] button.

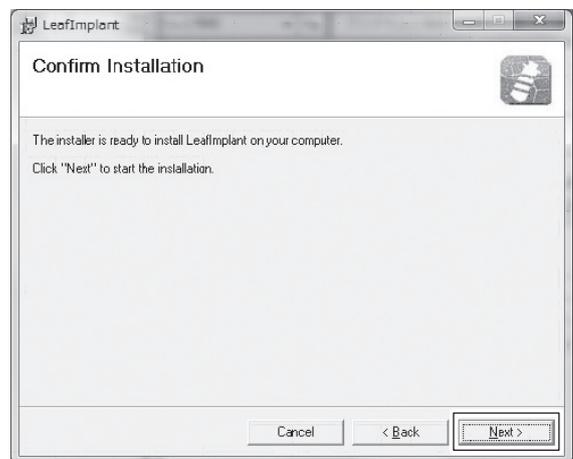


Fig. ④ -203

- (6) Installation in Progress window appears, and after that, Installation Complete window appears.  
Press "Close" Button.

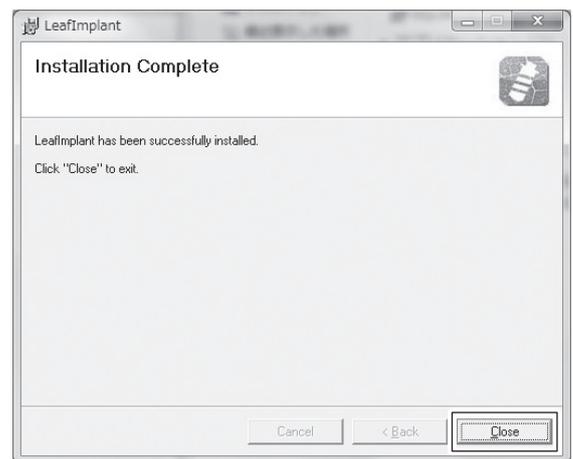


Fig. ④ -204

### ③ Installation of Microsoft SQL Server 2005

(1) Activate the installer of Microsoft SQL Server 2005.

For 32-bit OS: SQLEXP32.EXE  
For 64-bit OS: SQLEXP32.EXE

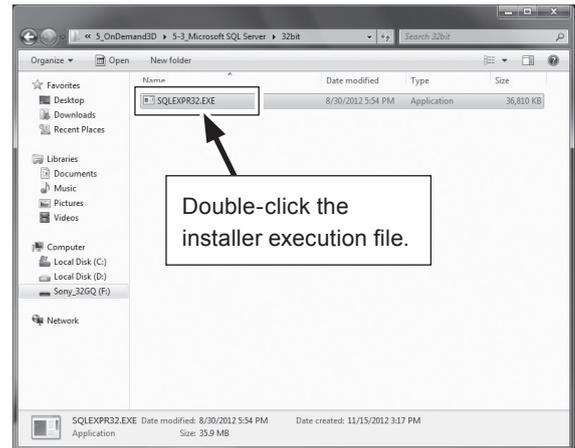


Fig. ④ -205

(2) License Agreement window appears.  
Check the check box of “I accept the licensing items and conditions”, and press [Next >] button.

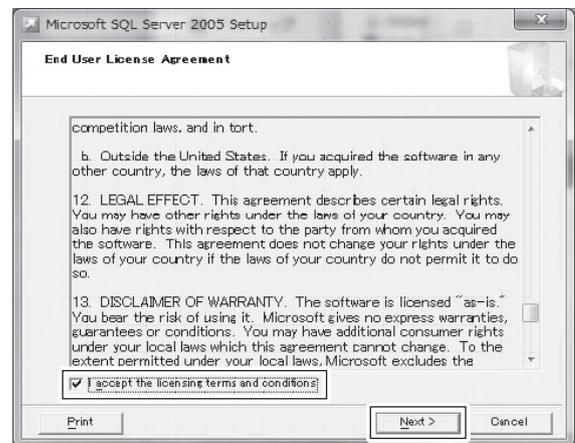


Fig. ④ -206

(3) Press [Install] button.

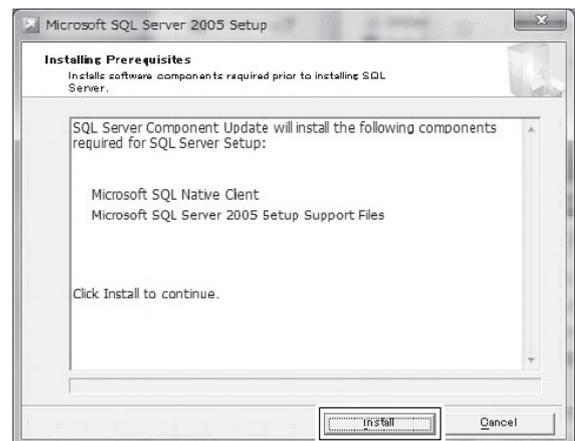


Fig. ④ -207

(4) Press [Next >] button when installation is complete.

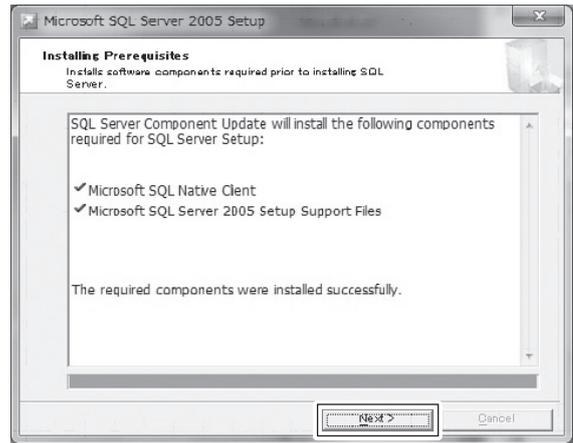


Fig. ④ -208

(5) Wait for a while as “System Configuration Check” window appears.

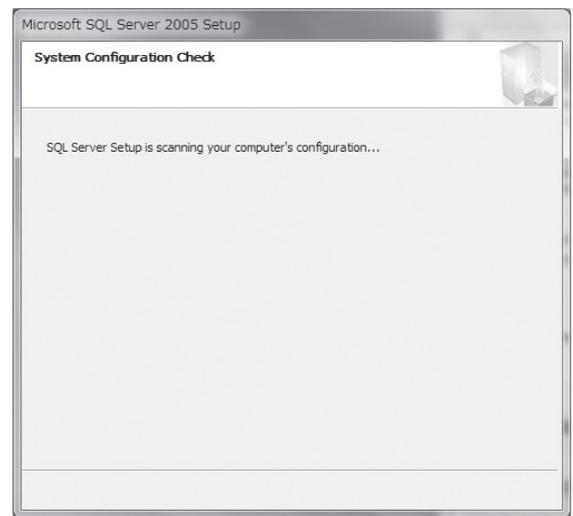


Fig. ④ -209

(6) The window on the right appears after the window described in (5).  
Microsoft SQL Server installation window appears.  
Press [Next >] button.

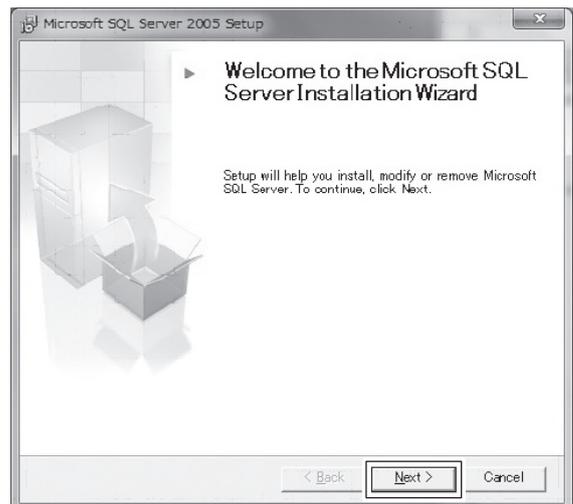


Fig. ④ -210

(7) Press [Next >] button.

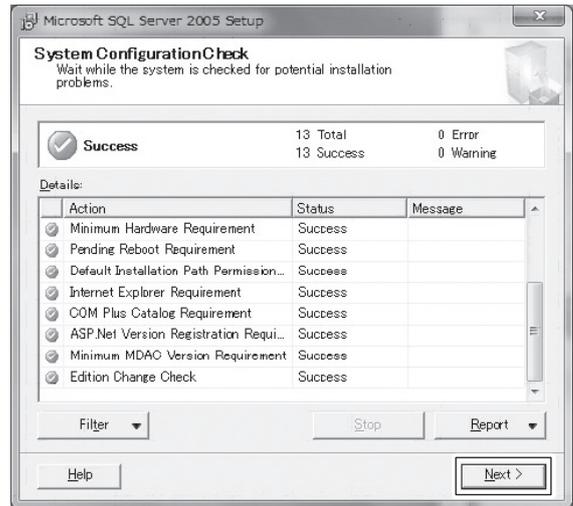


Fig. ④ -211

(8) Wait for a while as Installation in Progress window appears.

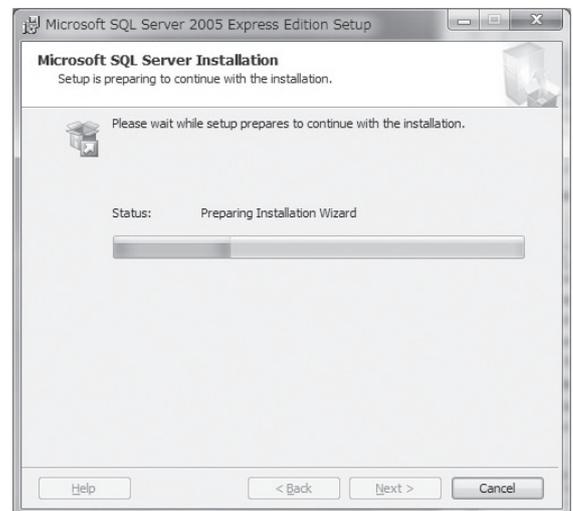


Fig. ④ -212

(9) In "Registration Information" window, input "YOSHIDA" in the "Name" and "Company" fields. Check the check box of "Hide advanced configuration options" and press [Next >] button.

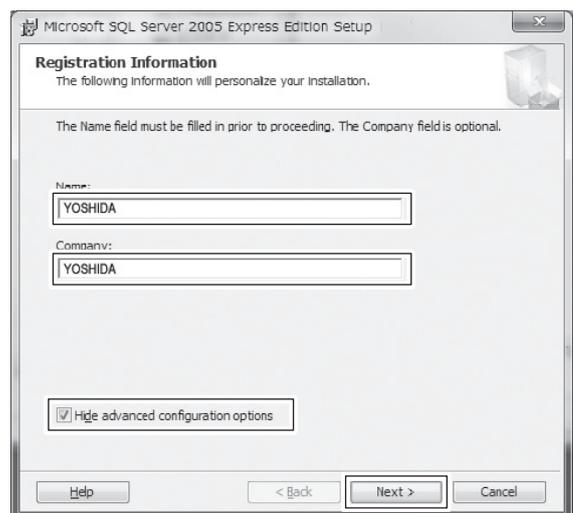


Fig. ④ -213

(10) Press [Next >] button at “Future Selection” window.

**NOTE :** Do not install other software pieces than “Database Services”.

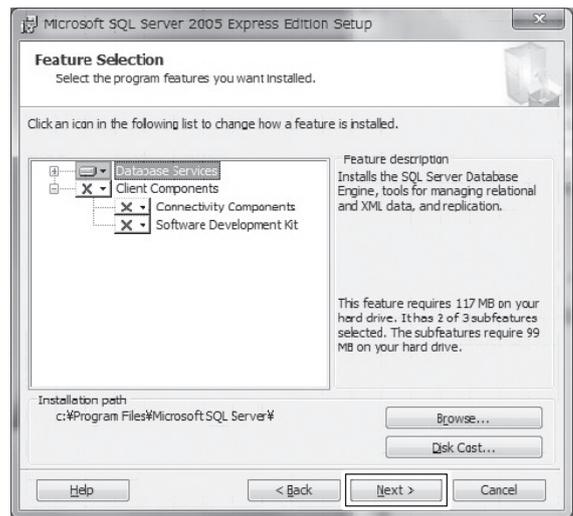


Fig. ④ -214

(11) In “Authentication Mode” window, check the check box of “Windows Authentication Mode” and press [Next >] button.



Fig. ④ -215

(12) In “Configuration Options” window, check the check box of “Enable User Instances” and press [Next >] button.

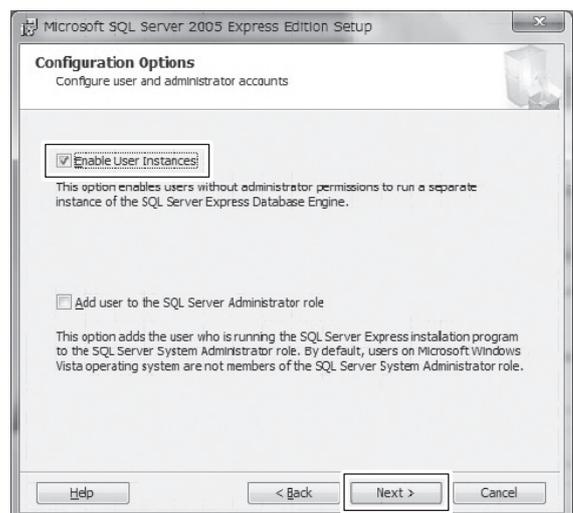


Fig. ④ -216

- (13) In “Error and Usage Report Setting” window, do not check any of the check boxes and press [Next >] button.

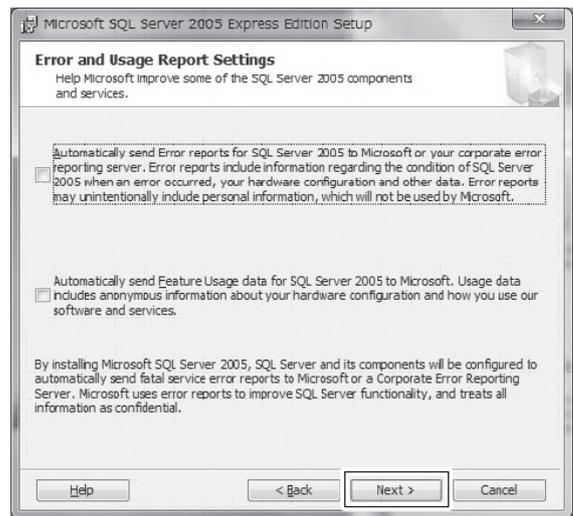


Fig. ④ -217

- (14) Installation Ready window appears. Press [Install] button.

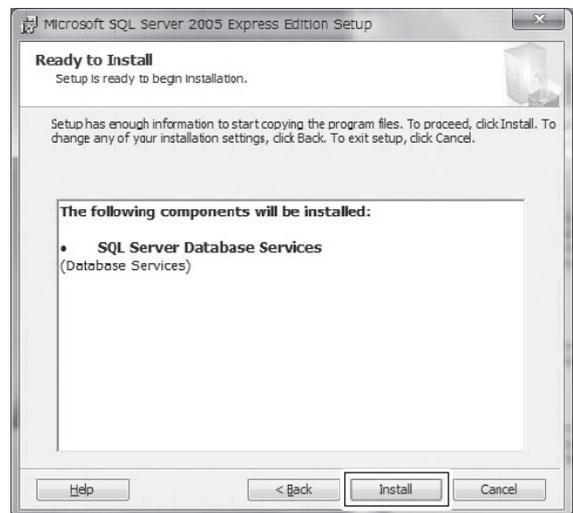


Fig. ④ -218

- (15) Wait till the end as Installation in Progress window appears.

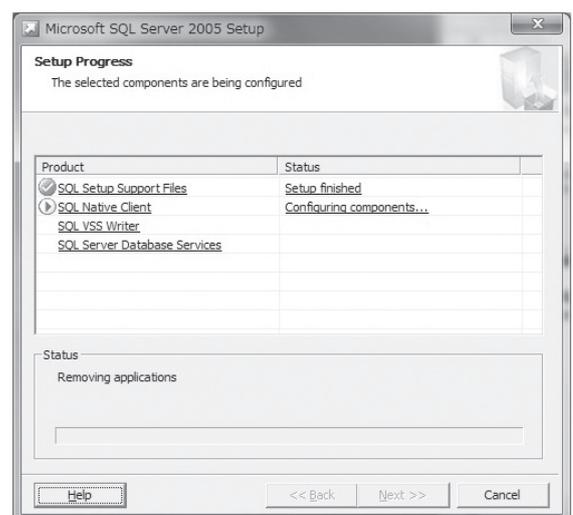


Fig. ④ -219

(16) Installation Complete window appears.  
Press [Next >] button.

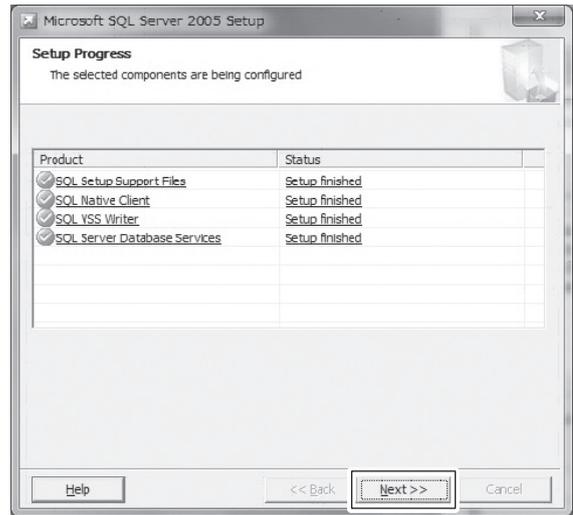


Fig. ④ -220

(17) Installation Complete window appears.  
Press [Finish] button.

\*Restart the computer after installation is complete.

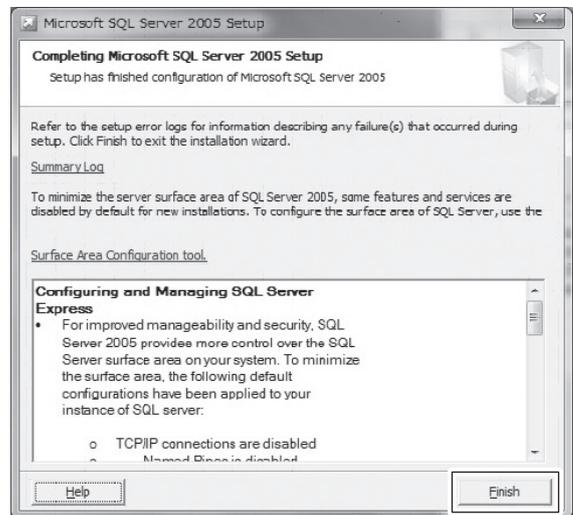


Fig. ④ -221

#### ④ Installation of OnDemand3D Server

**NOTE :** Do not insert USB key.

- (1) Open the installer folder of OnDemand3D Server.  
Double-click the execution file of OnDemand3D Server software, "setup.exe" in the folder.

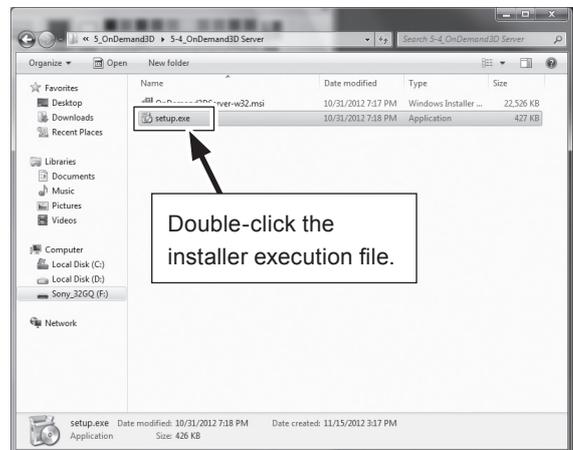
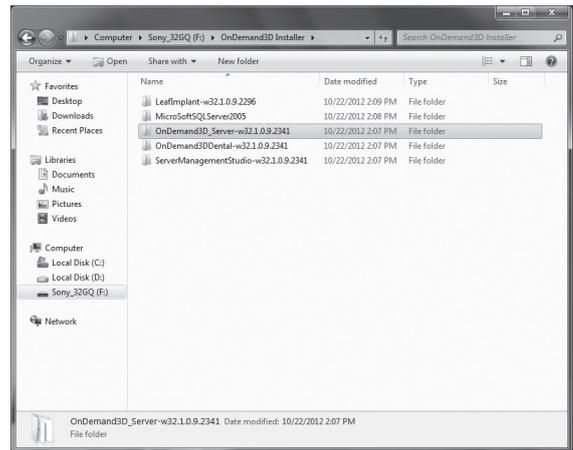


Fig. ④ -222

- (2) OnDemand3D Server Installer window appears.  
Press [Next >] button.



Fig. ④ -223

- (3) License Agreement window appears.  
Select [I Agree] and press [Next >] button.



Fig. ④ -224

- (4) Installation Target Selection window appears.  
Press [Next >] button.

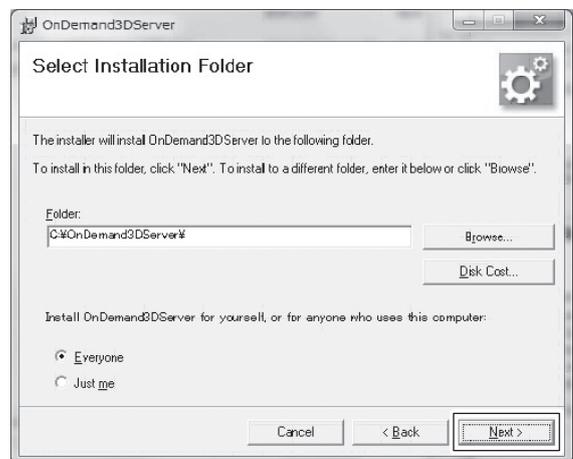


Fig. ④ -225

- (5) Installation Ready window appears.  
Press [Next >] button.

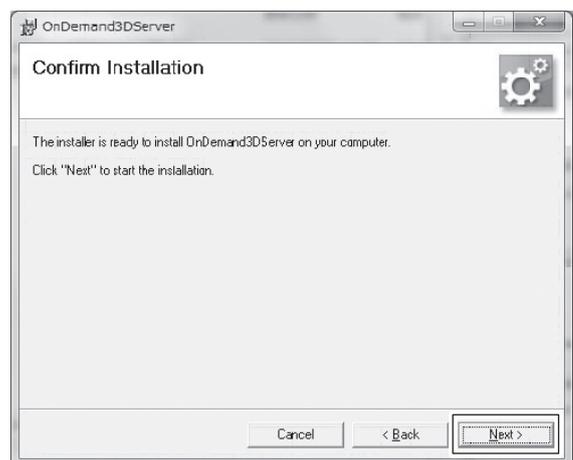


Fig. ④ -226

(6) Installation in Progress window appears.

Wait for a while.

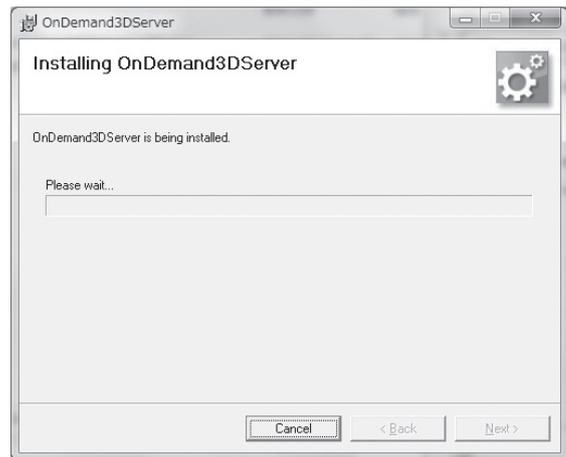


Fig. ④ -227

(7) Server's Initial Setting window appears after the window indicated in (6).

Select "Data Storage" Tab and enter the following items.

**Note:**

Confirm the disk drive configuration on the computer before carrying out this setting.(Open the property window of the drive from Computer (or My Computer) window.) After confirming it, appoint the disk drive that the free space is bigger (or the biggest) on the computer.

- Storage Path : [disk drive] OD3DDATA<sup>(\*)</sup>
- Network User Name : admin
- Network password : admin
- Backup Path : [disk drive] OD3DBackup<sup>(\*)</sup>
- Network User Name : admin
- Network password : admin
- Default Database(MS-SQL 2005 or 2008 Express)  
: Check
- Compression Constraint : Uncheck

<sup>(\*)</sup> e.g. : 1) When C and D exist on the computer and the free space of D is bigger than that of C, appoint as follows.

Storage Path : D:\OD3DDATA  
Backup Path : D:\OD3DBackup

2) When C,D and E exist on the computer and the free space of D and E are much bigger than that of C, appoint as follows.

Storage Path : D:\OD3DDATA  
Backup Path : E:\OD3DBackup

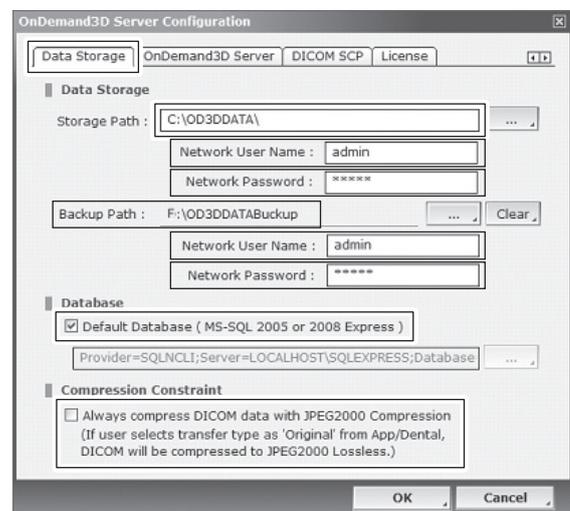


Fig. ④ -228

(8) Select “OnDemand3D Server” Tab and enter/ configure the following items.

- Listening Port : 3970
- Time Out (mins) : 30
- Description : OnDemand3D Server 2008
- Allow Proxy User : Check
- Deny Progressive Transfer to localhost :  
Check
- Use Separate Authentication Server :  
Uncheck

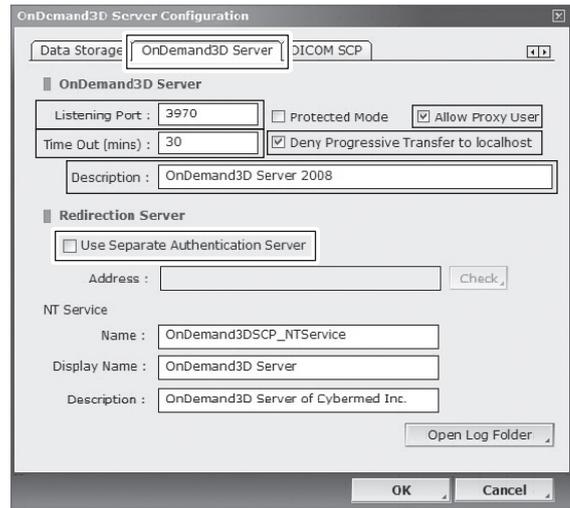


Fig. ④ -229

(9) Select “DICOM SCP” Tab and enter/configure the following items and press [OK] button.

- AE-Title : OnDemand3DSCP
- Listening Port : 104
- DICOM Command : Check all five check boxes

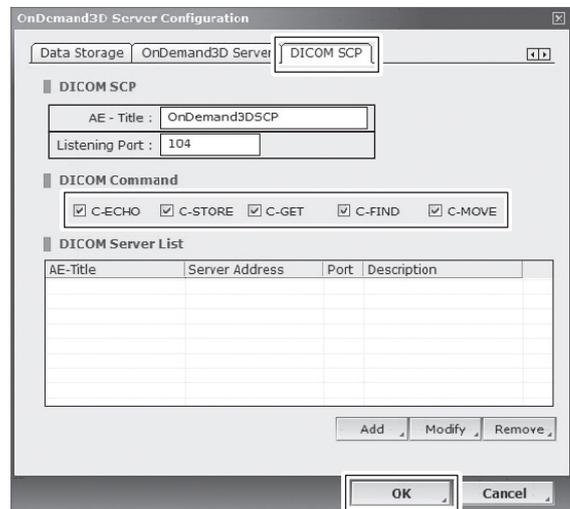


Fig. ④ -230

(10) A confirmation window appears asking whether or not to save Server Settings. Press [OK] with checking the check box of “Restart OnDemand3D Server”.

**Additional Information:**

Settings for OnDemand3D Server done in procedures (7) to (9) can also be done after installation. When settings are done after installation, a window as in (10) also appears. Press [OK] with checking the check box of "Restart OnDemand3D Server".

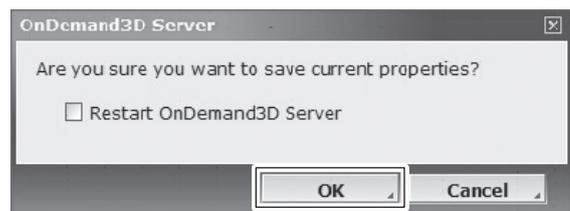


Fig. ④ -231

- (11) A message appears that installation of OnDemand3D Server is complete. Press [OK] button.

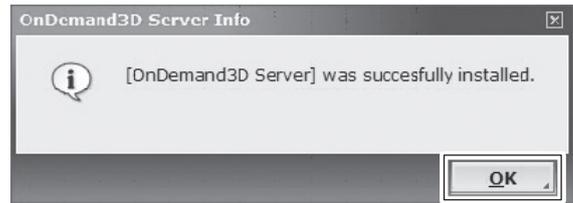


Fig. ④ -232

- (12) Installation Complete window appears. Press [Close] button and close the window.

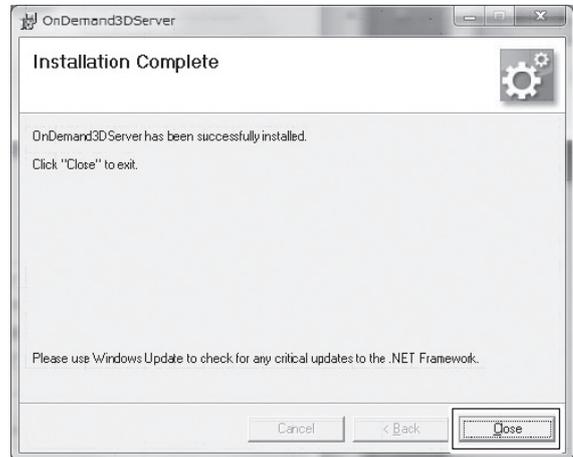


Fig. ④ -233

**NOTE :** The following procedures need to be followed after USB key is inserted.

- (13) Press Start Button and select "All Programs". Then select "OnDemand3D Server" and finally "Configure OnDemand3D Server".

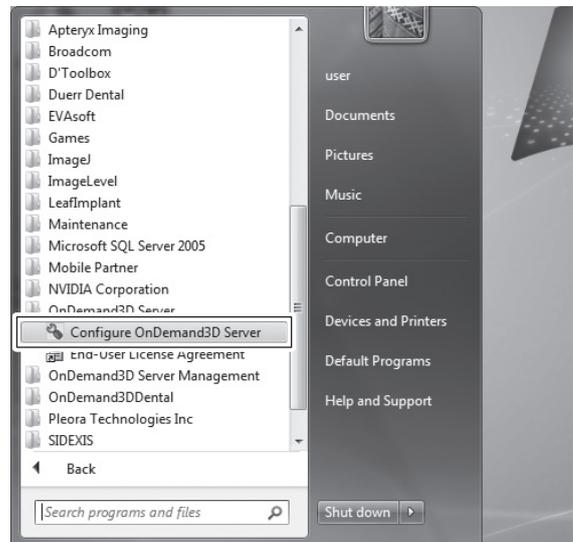


Fig. ④ -234

(14) Click [License] Tab and check [Status] in [License Information]. Check to see that [[Network] IP: USB] is displayed and press [OK] button.

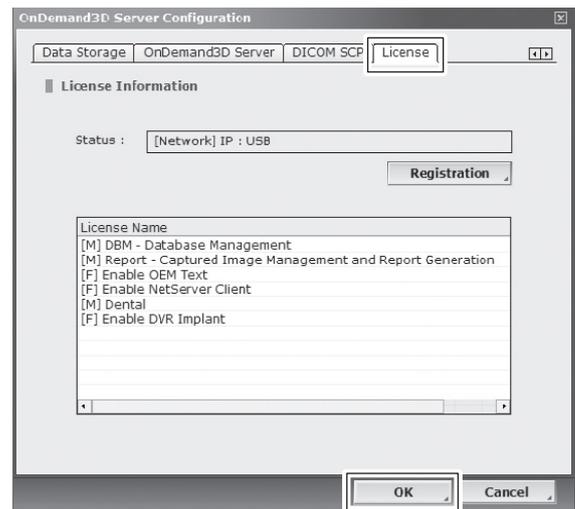


Fig. ④ -235

⑤ Installation of OnDemand3D Server Management Studio

- (1) Open the installer folder of OnDemand3D Server Management Studio. Double-Click “setup.exe” in the folder.

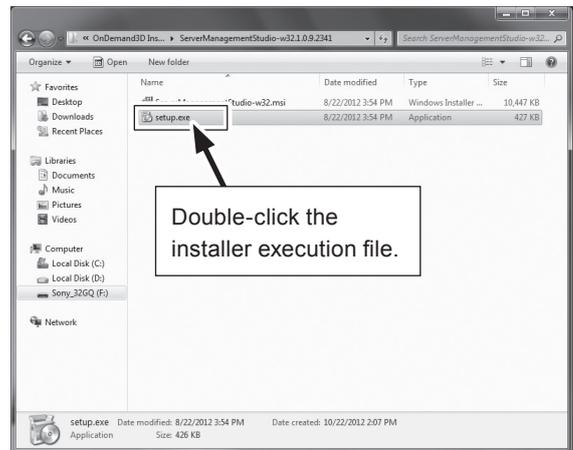
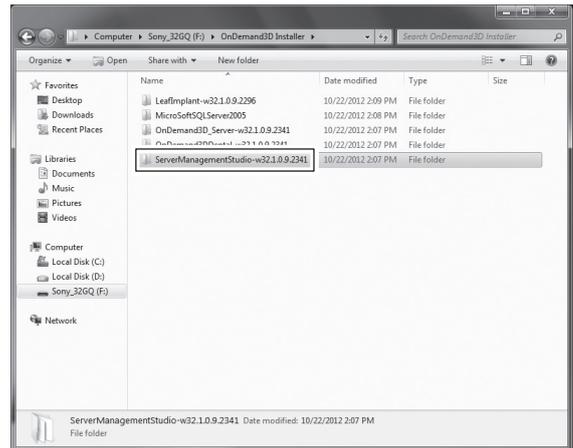


Fig. ④ -236

- (2) OnDemand3D Server Management Studio Installer window appears. Press [Next >] button.

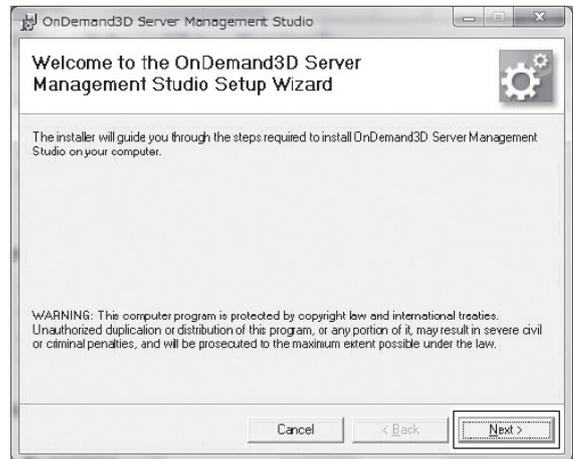


Fig. ④ -237

- (3) License Agreement window appears.  
Select [I Agree] and press [Next >] button.

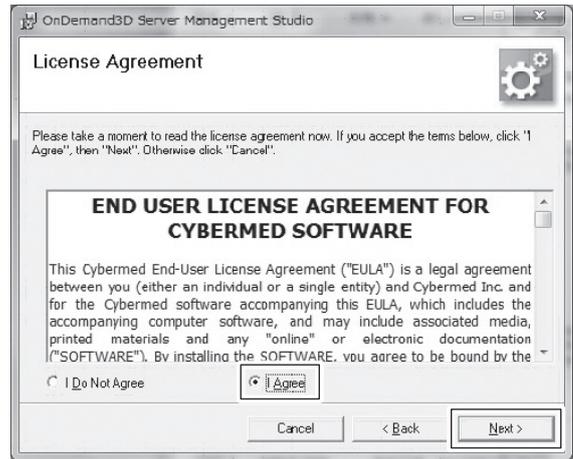


Fig. ④ -238

- (4) Installation Target Selection window appears.  
Press [Next >] button.

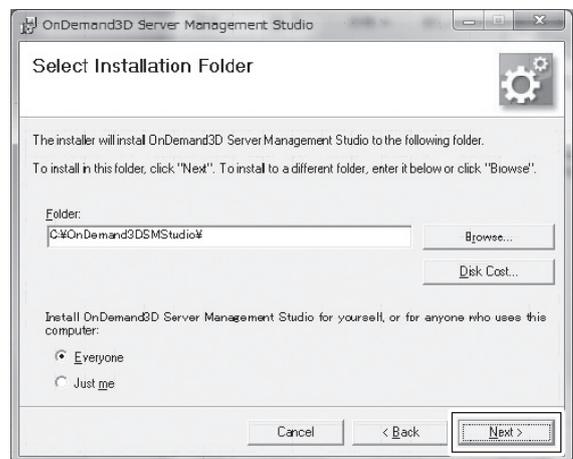


Fig. ④ -239

- (5) Installation Ready window appears.  
Press [Next >] button.

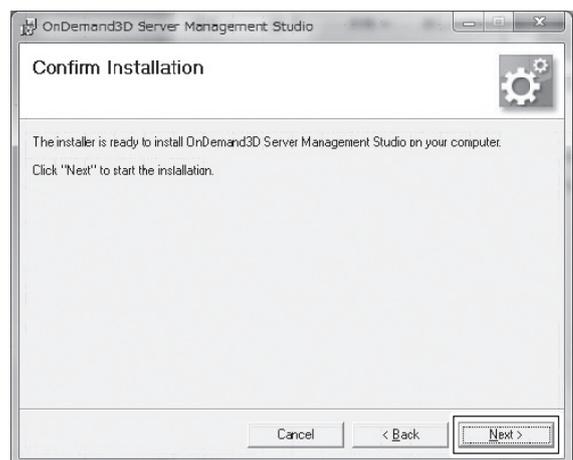


Fig. ④ -240

- (6) Installation in Progress window appears.  
Wait for a while.

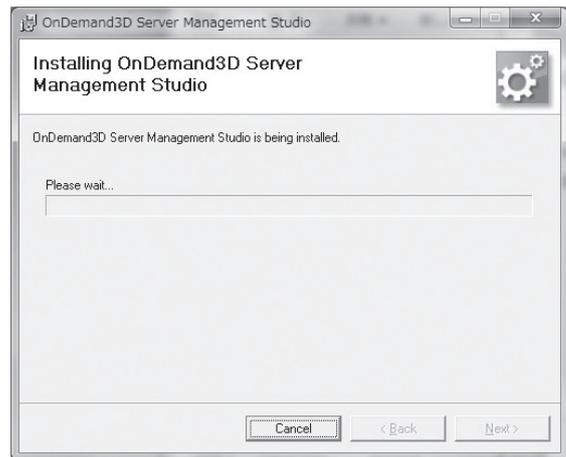


Fig. ④ -241

- (7) Installation Complete window appears.  
Press "Close" Button.

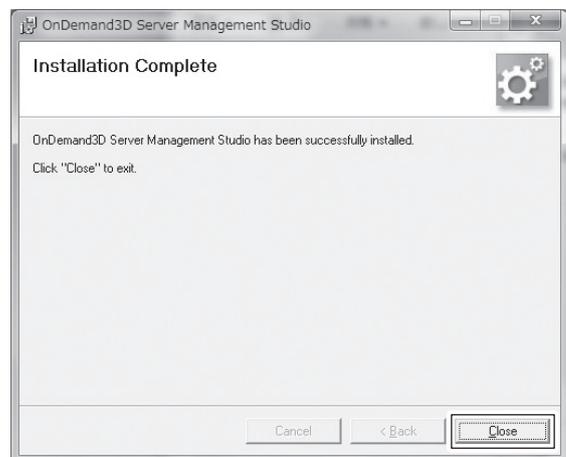


Fig. ④ -242

## ⑥ Automatic Backup Settings on OnDemand3D Server Management Studio

(1) Activate “OnDemand3D Server Management Studio” by double-clicking the shortcut icon on Desktop.



Fig. ④ -243

(2) Main Screen is displayed. Click on the icon at upper left.



Fig. ④ -244

(3) OnDemand3D Server Login window appears. Enter Network User Name, Network Password and the server's address entered at item (7) of OnDemand3D Server installation procedures. Press [Connect] button. Login information can be stored if the check box of “Remember User Information” is checked.

- User ID: admin
- Password : admin
- Server Address: localhost



Fig. ④ -245

(4) A screen as in the figure on the right appears when login is successful. Make sure that “Activated” is displayed in “Activation” item in “Server Status” column.

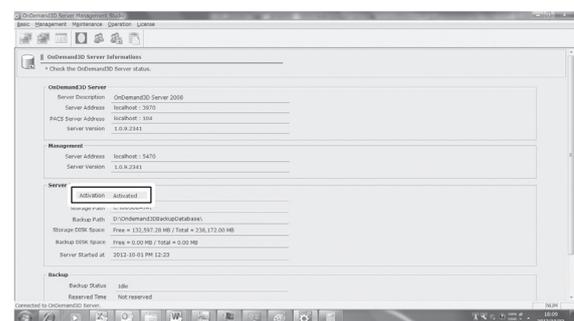


Fig. ④ -246

(5) OnDemand3D Server has the function to automatically backup the data. In initial settings, automatic backup feature is turned off. Automatic backup settings are done here. After logging into OnDemand3D Server, click on “Maintenance” tab and select “Backup”.



Fig. ④ -247

(6) Backup Management screen opens and Backup Information is displayed.

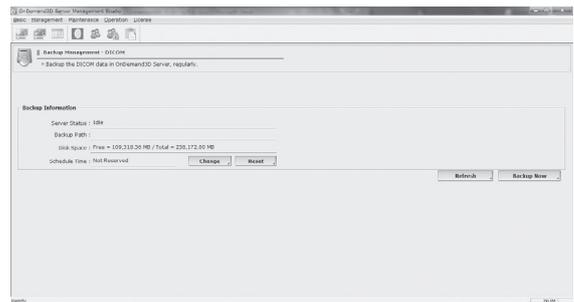


Fig. ④ -248

(7) When “Not Reserved” is displayed at “Schedule Time”, automatic backup will not be executed. Press “Change” button and configure “Schedule Time”.

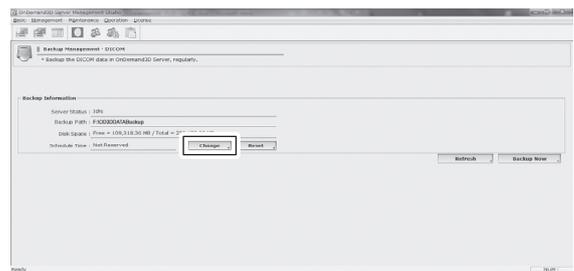


Fig. ④ -249

(8) Set the time for making backup. Set “Time” as 14: 00: 00, and press [OK] button.

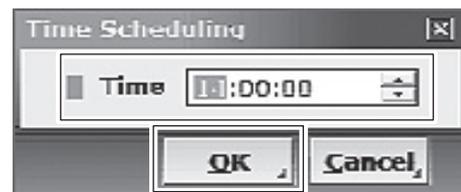


Fig. ④ -250

(9) Make sure PM 02:00 is displayed at “Schedule Time”.

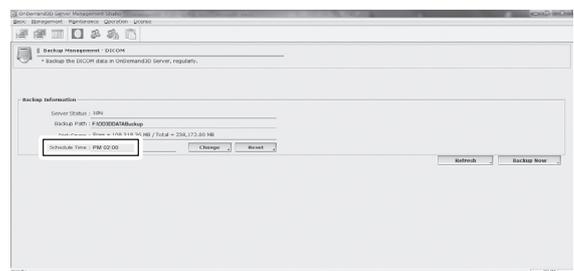


Fig. ④ -251

## 2-12-6. Installation of OnDemand3D (for Client)

### Procedures

- ① Installation of Project Viewer
- ② Installation of LeafImplant
- ③ Connection confirmation of Project Viewer

#### ① Installation of Project Viewer

- (1) Open the installer folder of OnDemand3D Dental.

Activate the installer by double-clicking the execution file of OnDemand3D Dental software, "setup.exe" in the folder.

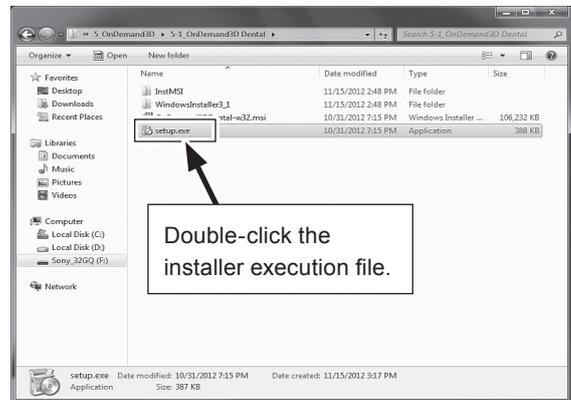


Fig. ④ -252

- (2) OnDemand3D Dental Installer window appears.

Press [Next >] button.

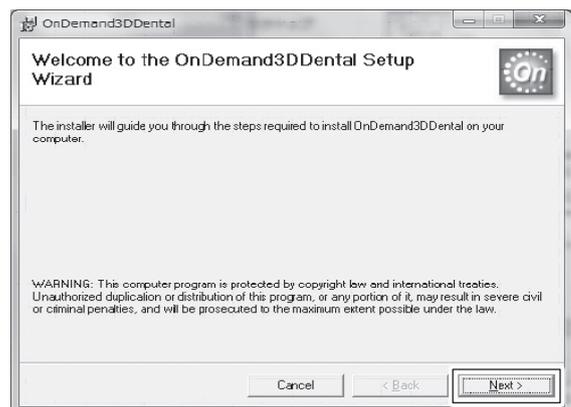


Fig. ④ -253

- (3) License Agreement window appears.

Select [I Agree] and press [Next >] button.

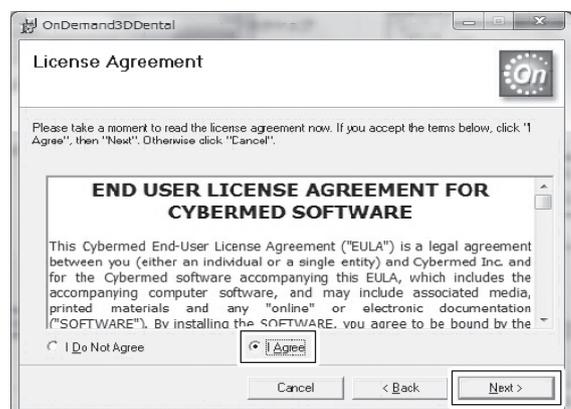


Fig. ④ -254

- (4) Installation Selection window appears.  
Install “Project Viewer” to the computer used as a client (sub unit). Check the check boxes of “Project Viewer” and “Show Language Selection Dialog”, and press [Next >] button.

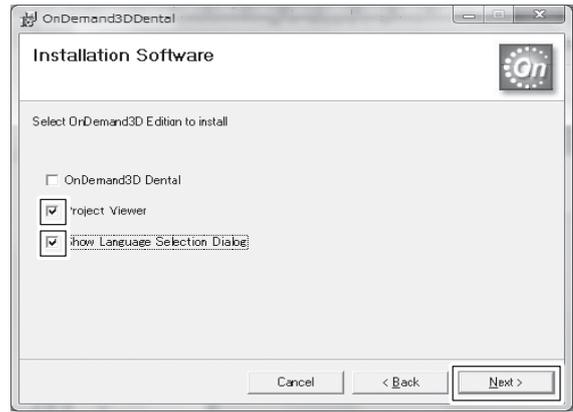


Fig. ④ -255

- (5) A window to select installation target folder appears.  
Press [Next >] button.

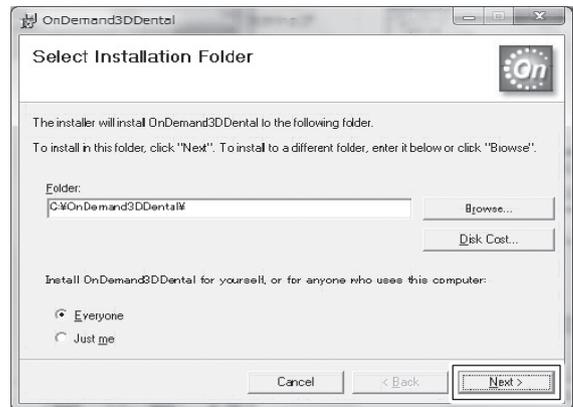


Fig. ④ -256

- (6) Installation Ready window appears.  
Press [Next >] button.

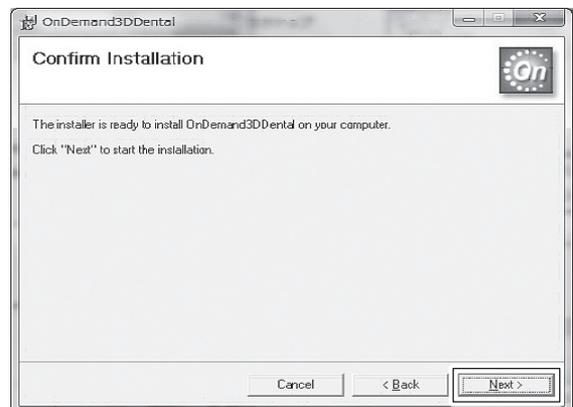


Fig. ④ -257

(7) Language Selection window of OnDemand3D appears. Press the pop-up button, select a language, and press [OK].

**NOTE :** Language can not be changed after installation is complete. If language change becomes necessary after installation, uninstall “Project Viewer” first, and then re-install it.

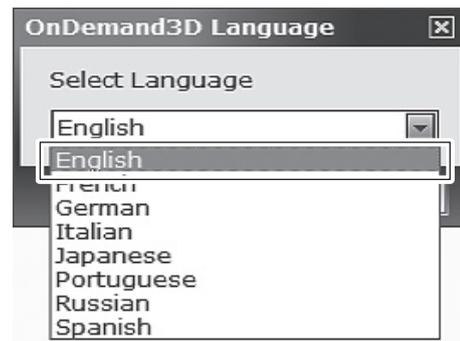


Fig. ④ -258



Fig. ④ -259

(8) Installation Complete window appears. Press “Close” Button.

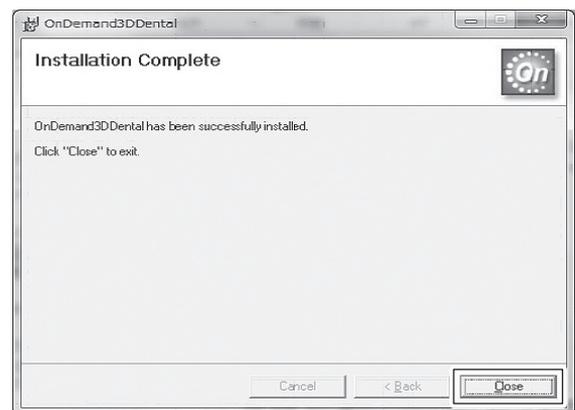


Fig. ④ -260

## ② Installation of LeafImplant

(1) Open the installer folder of LeafImplant. Activate the installer by double-clicking the execution file of LeafImplant software, “setup.exe” in the folder.

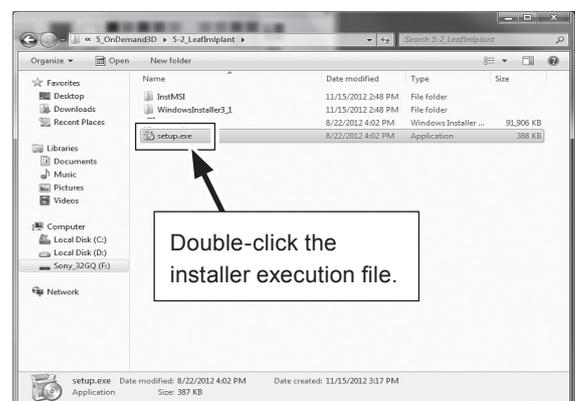


Fig. ④ -261

- (2) LeafImplant Installer window appears.  
Press [Next] button.



Fig. ④ -262

- (3) License Agreement window appears.  
Select [I Agree] and press [Next >] button.

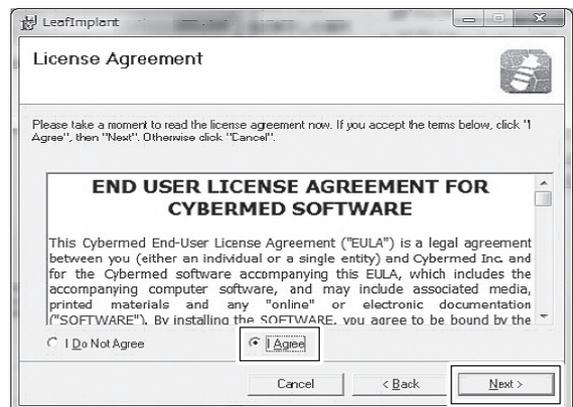


Fig. ④ -263

- (4) A window to select installation target folder appears.  
Press [Next >] button.

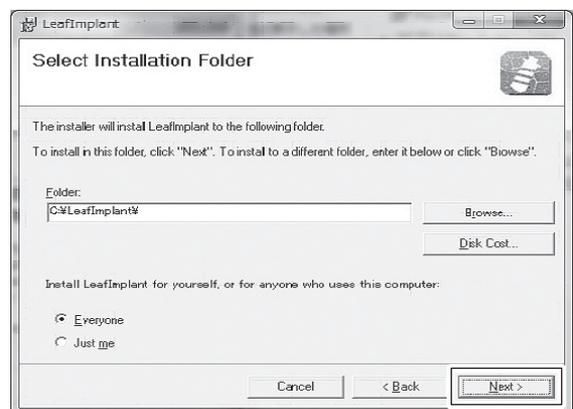


Fig. ④ -264

- (5) Installation Ready window appears.  
Press [Next >] button.

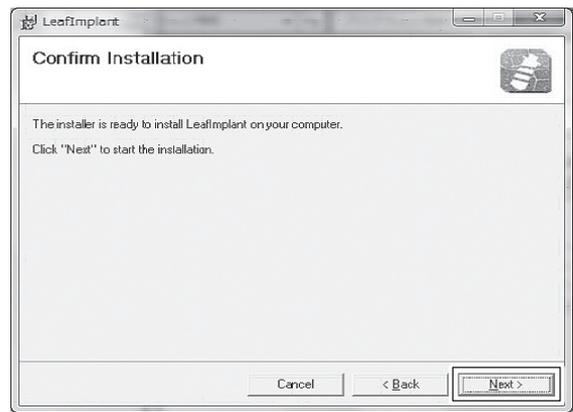


Fig. ④ -265

- (6) Installation in Progress window appears, and after that, Installation Complete window appears.  
Press "Close" Button.

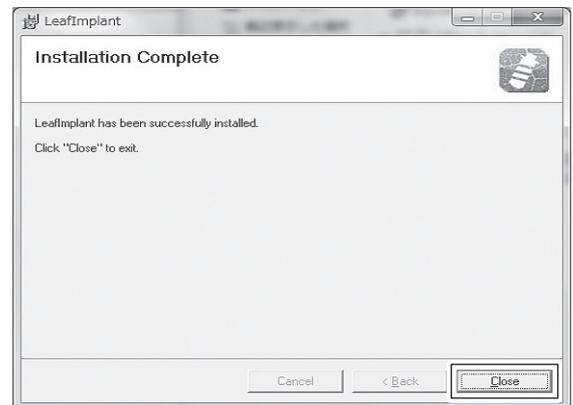


Fig. ④ -266

③ Connection confirmation of Project Viewer

- (1) Activate "Project Viewer" by double-clicking the shortcut icon on Desktop.



Fig. ④ -267

- (2) Main Screen appears and a window appears asking login information.

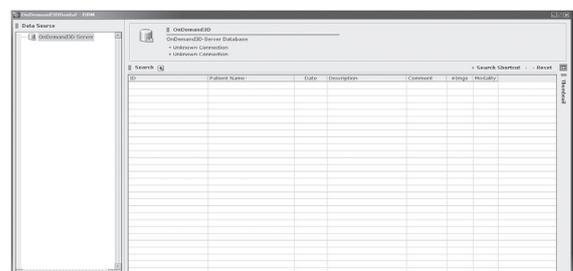


Fig. ④ -268

(3) A window appears asking login information.  
 Enter Network User Name, Network Password and the server's address entered at item (7) of OnDemand3D Server installation procedures.  
 Press [Connect] button.

User ID: admin  
 Password: admin  
 Server Address: Server computer IP address

\* A screen as in the figure on the right appears when login fails. In such a case, check the following items. If login fails even after checking the following items, restart the computer.

- The server computer and client computer are connected with each other using a LAN cable.
- "admin" is entered as Password.
- IP address of the server computer is entered at Server Address.
- Network adapter is not deactivated.

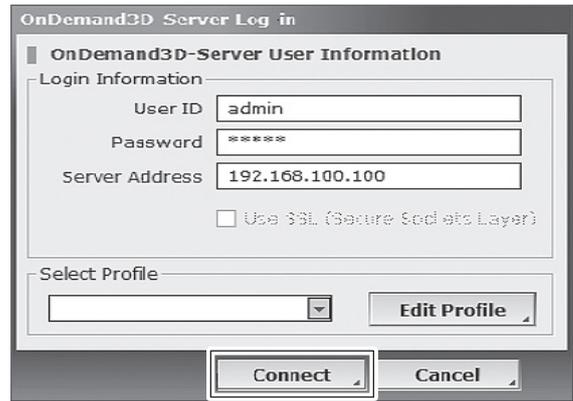


Fig. ④ -269

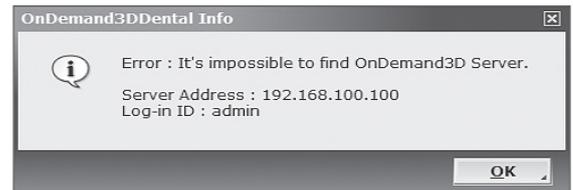


Fig. ④ -270

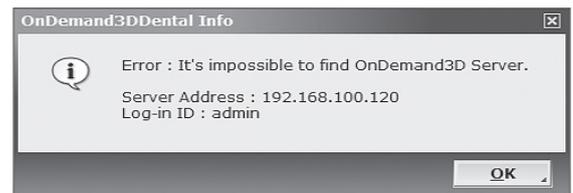


Fig. ④ -271

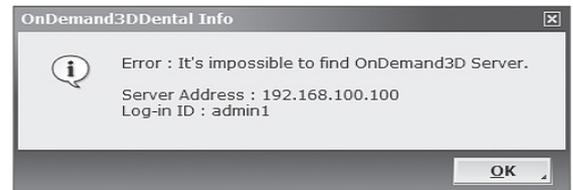


Fig. ④ - 272

(4) If login is successful, the indication on top of the main window changes from Unknown to what is displayed in the figure on the right (lower).

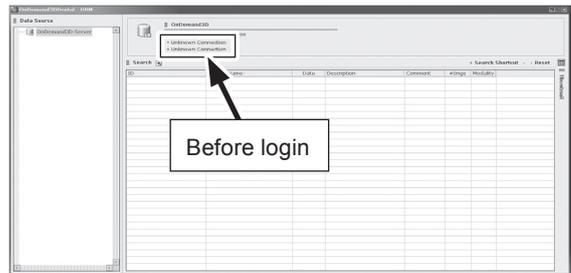


Fig. ④ -273

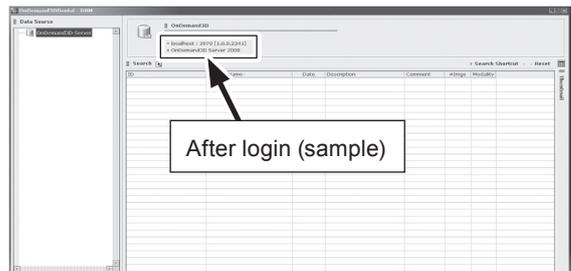


Fig. ④ -274

## 2-13. Setting PCI LAN board

Follow the instructions below for mounting and setting PCI LAN board.

### (1) Preparation

- PC (PCI-Express or PCI expansion slot mounted)
- 1 x Gigabit Ethernet board (either Intel, 3COM or Marvel)
- Ethernet board compliant driver (\* prepare as necessary)

### (2) Follow the instructions below.

- ① Turn the computer off and unplug the power plug from the power outlet.
- ② Mount PCI LAN board to PCI-Express (or PCI) slot of the PC.
- ③ Driver installation of PCI LAN board

Turn on the computer. If the “New hardware detection wizard” screen is displayed, install the driver which complies to the mounted Ethernet board.

### ④ Configure network connection

- (1) Open network connection screen.

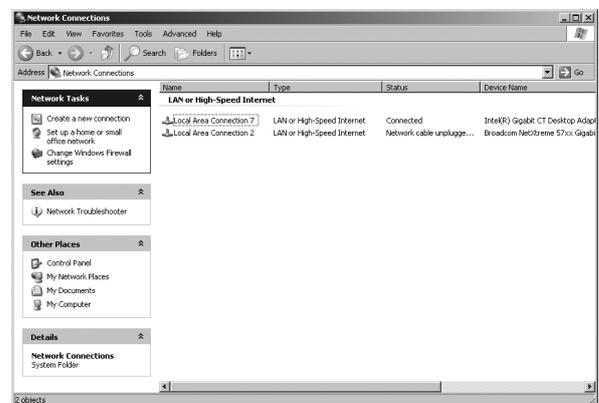


Fig. ④ -275

- (2) Open the Properties screen of the mounted Ethernet connection.

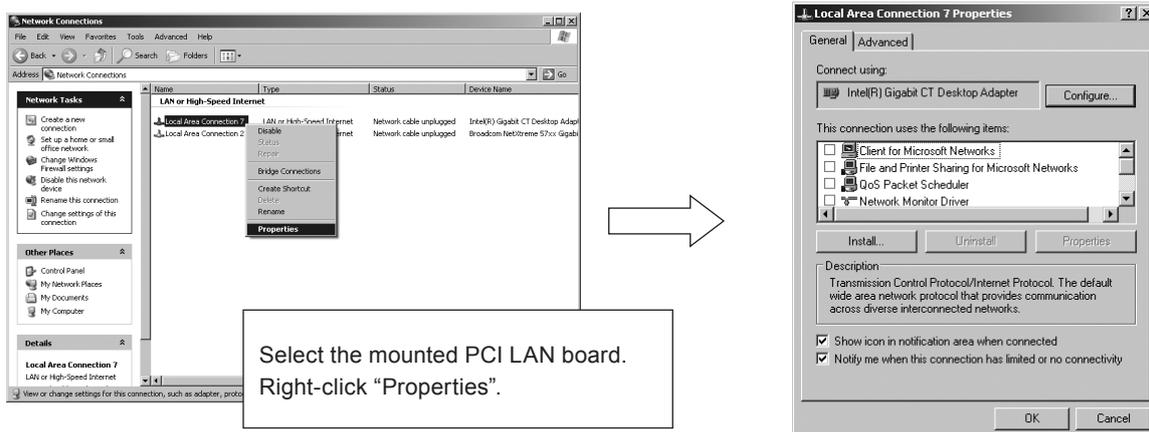


Fig. ④ -276

(3) Clear all the check marks in the check boxes at the bottom of the Properties screen. Click "OK".

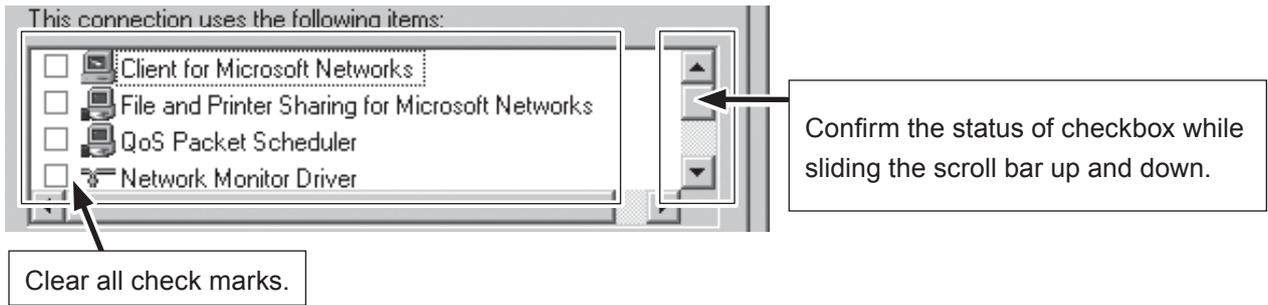


Fig. ④ -277

⑤ Configure Jumbo Packet.

(1) Open Device Manager screen.

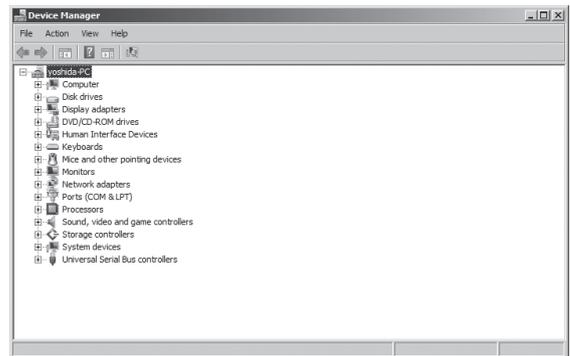


Fig. ④ -278

(2) Expand "Network Adapter". Open Properties screen of the mounted Ethernet board.

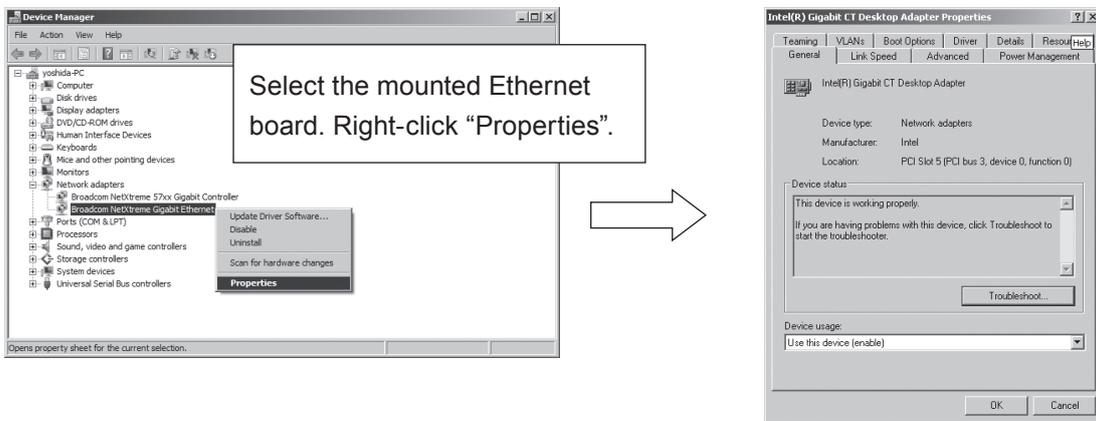


Fig. ④ -279

(3) Open “Advanced Settings” tab. Select “9014 Bytes” (or above) under “Jumbo Packet”. Click “OK”.

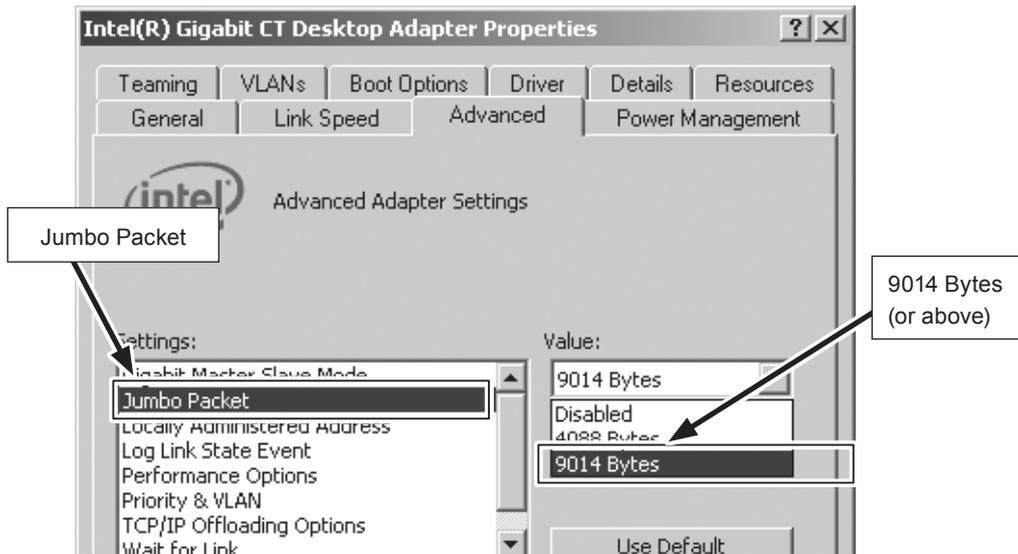


Fig. ④ -280

\* If Jumbo Packet is not listed in the Advanced Settings, or “9014 Bytes” and above cannot be selected in the setting, it cannot be properly connected to the sensor. If this is the case, replace to the Ethernet board which is compliant to this setting and repeat the configuration.

⑥ Confirmation of User Account Control Settings (OS: Windows 7 only)

\* If the OS is Windows XP, proceed to “⑦ Check Firewall Settings”.

(1) Open “Change User Account Control Settings” screen.

Click “Start”. Type “UAC” in the program and file search box. “Change User Account Control Settings” will be listed.

Click “Change User Account Control Settings”.

Or select “Change User Account Control Settings” from Control Panel > User Accounts.



Fig. ④ -281

(2) User Account Control Settings screen is displayed. Check if the notification setting is set at the lowest (Never notify).

If it is not set at the lowest, change the position.

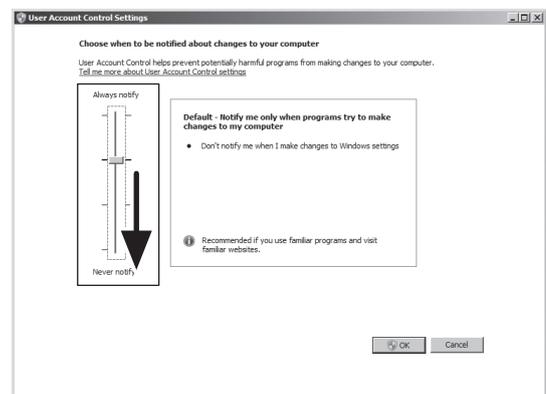


Fig. ④ -282

(3) Set at the lowest and click “OK”.

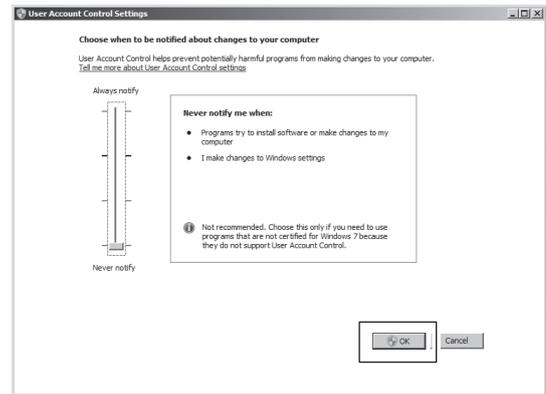


Fig. ④ -283

(4) User Account Control Change Approval dialog box is displayed. Click “Yes”.

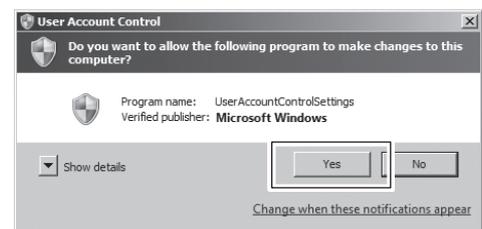


Fig. ④ -284

(5) After the setting, task bar displays a message which prompts you to restart the computer. Restart the computer.

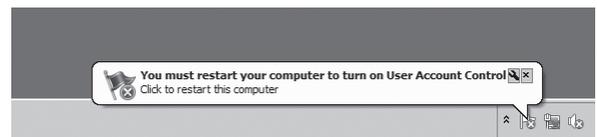


Fig. ④ -285

(6) Click the message. Action Center screen is displayed. Click “Restart Now”.

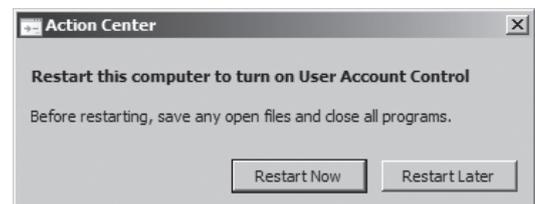


Fig. ④ -286

### ⑦ Check Firewall Settings

<OS: in case of Windows XP>

(1) Click Start, and select “Run...” or press “Windows key + R”.

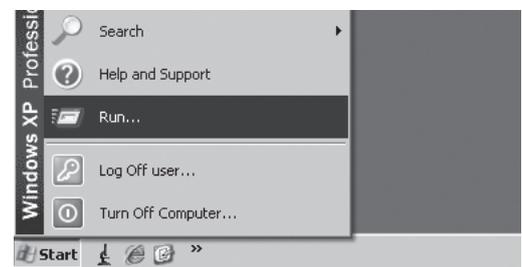


Fig. ④ -287

(2) Type “firewall.cpl” into the Run text box and click “OK”.

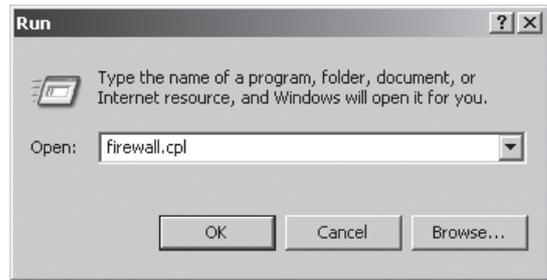


Fig. ④ -288

(3) On the General tab of the Windows Firewall screen, make sure if “On (recommended)” is selected and “Don't allow exceptions” check box is cleared.

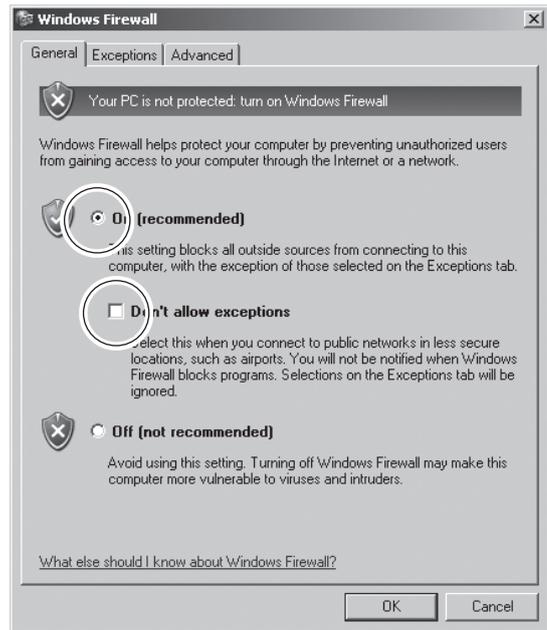


Fig. ④ -289

(4) Select [Advanced] tab. In the “Network Connection Settings”, clear the check box of PCI LAN card connection.

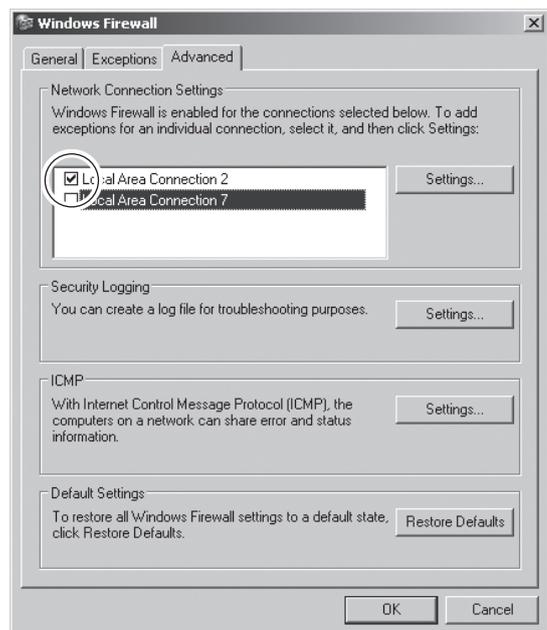


Fig. ④ -290

(5) Click “OK” and close Windows Firewall screen.

<OS: in case of Windows 7>

(1) Click the “Start” button. Type “firewall” into the Search box.

“Check firewall status” is displayed.

Click “Check firewall status”.

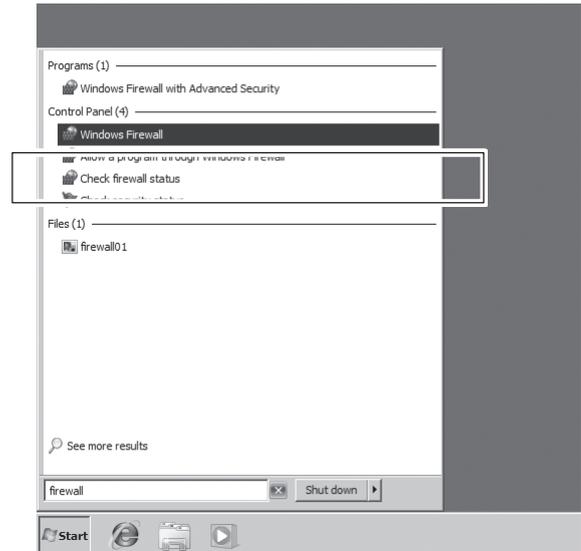


Fig. ④ -291

(2) Windows Firewall screen is displayed. Click “Advanced settings”.

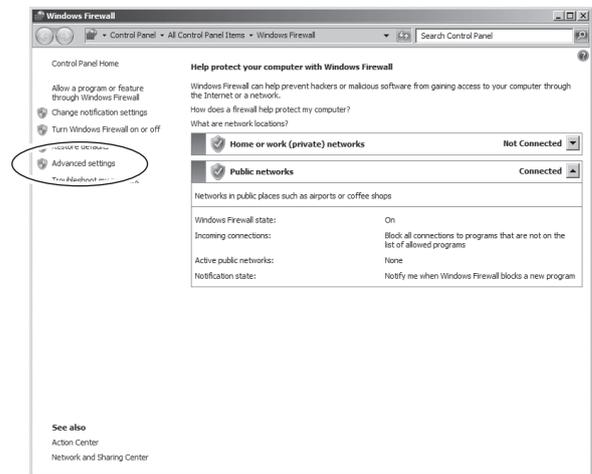


Fig. ④ -292

(3) “Windows Firewall with Advanced Security” screen is displayed.  
Click “Windows Firewall Properties” in Overview.

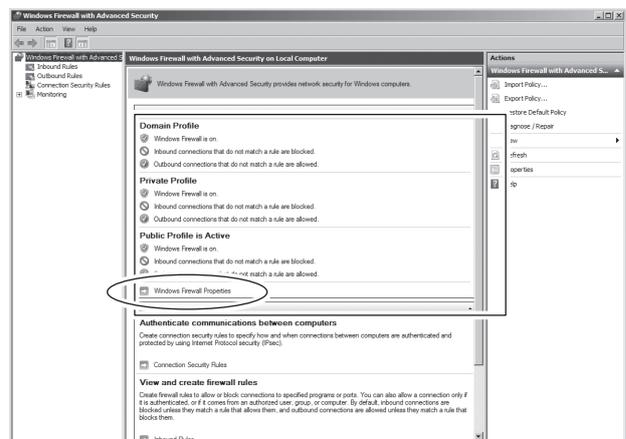


Fig. ④ -293

(4) “Windows Firewall Properties” screen is displayed.

Click “Customize” in Status.

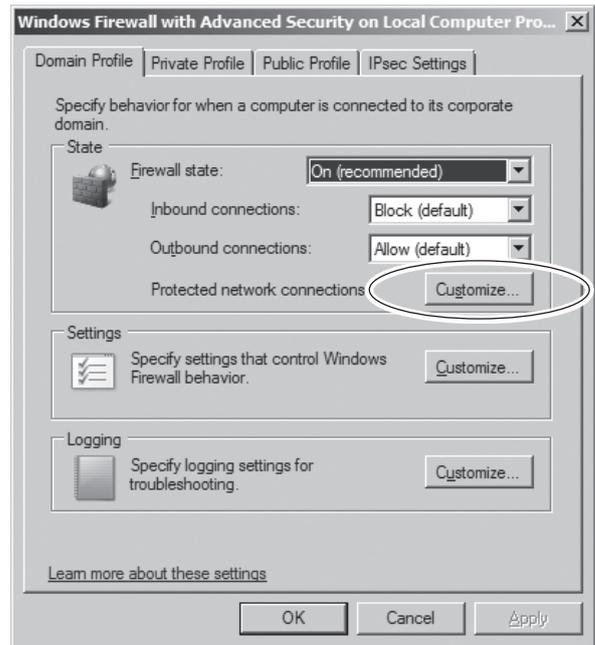


Fig. ④ -294

(5) Properties screen of the Network connection is displayed. Clear the check box of PCI LAN card connection in the “Network Connection”. Click “OK”.

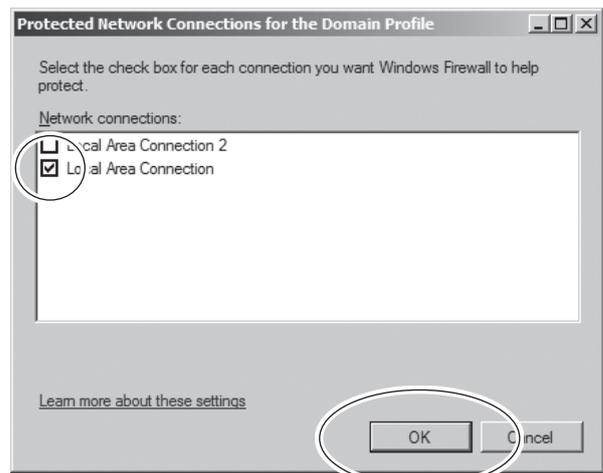


Fig. ④ -295

(6) Select [Private Profile] tab and follow the procedures (4) to (5).

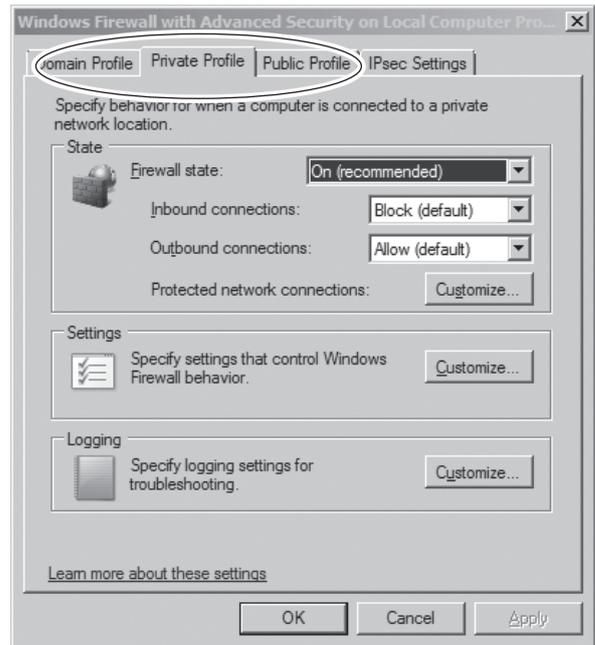


Fig. ④ -296

(7) Select [Public Profile] tab and follow the procedures (4) to (5).

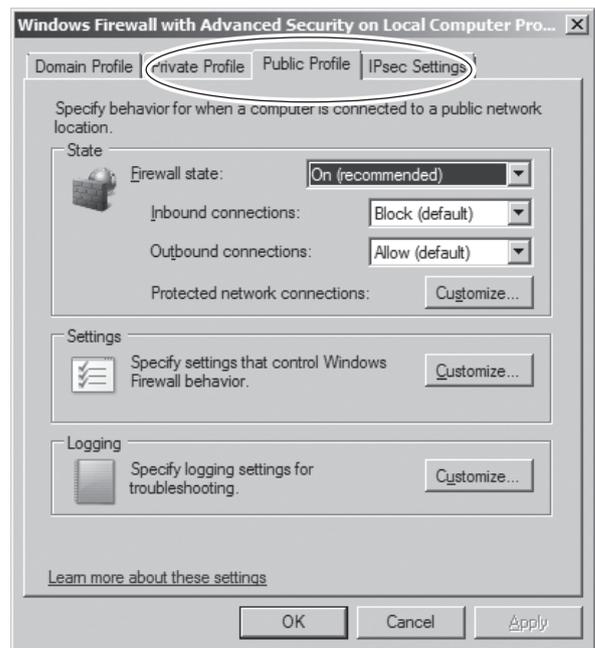


Fig. ④ -297

(8) Click “OK” and close Windows Firewall Properties screen.

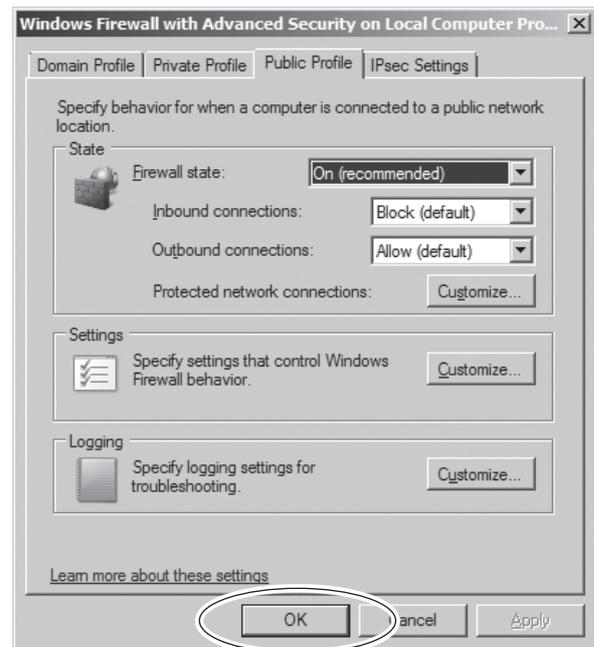


Fig. ④ -298

(9) Close “Windows Firewall with Advanced Security” screen.

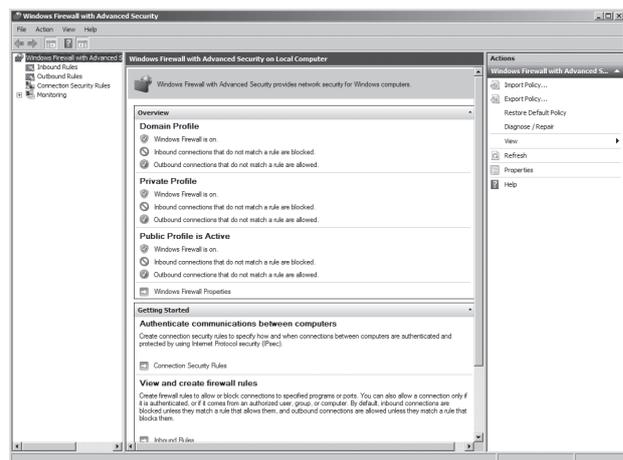


Fig. ④ -299

(10) Close Windows Firewall screen.

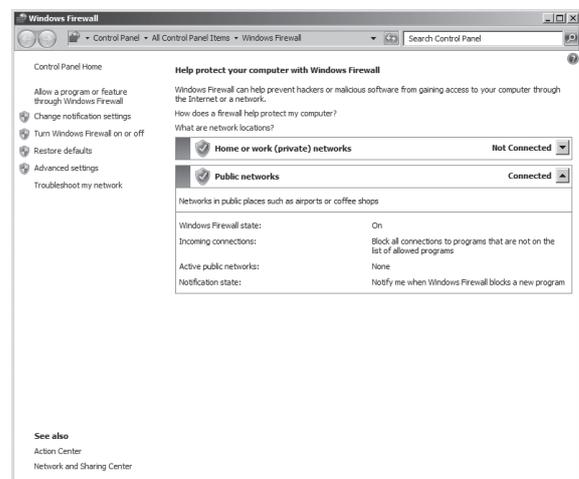


Fig. ④ -300

⑧ Check the connection with the sensor.

(1) Connect the Ethernet cable to the equipment and the computer and turn on the main unit.

(2) Check if “Dental Imaging Software” is installed to the computer.

**REF.** : If not installed, refer to “2-11. Software Installation”.

\* To confirm network connection, “Dental Imaging Software” must be installed. Through the Dental Imaging Software installation, “CCS Service”, the necessary service software for connection, is also installed. For service confirmation method, refer to the following.

• Service confirmation method

Check if “CCS Service” is in the start status from the Service screen (“Start” button > “Control Panel” > “Administrative Tools” > “Services”).

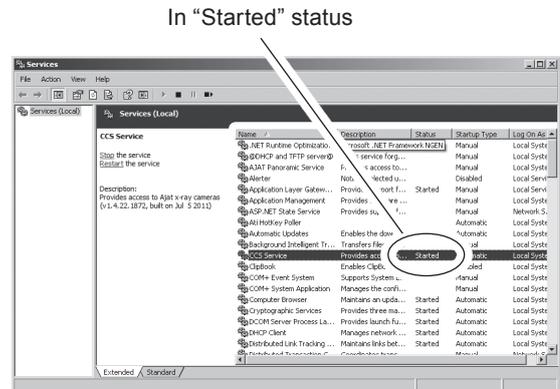


Fig. ④ -301

\* If it is in the Stop status, click “CCS Service” and click “Start the service”.

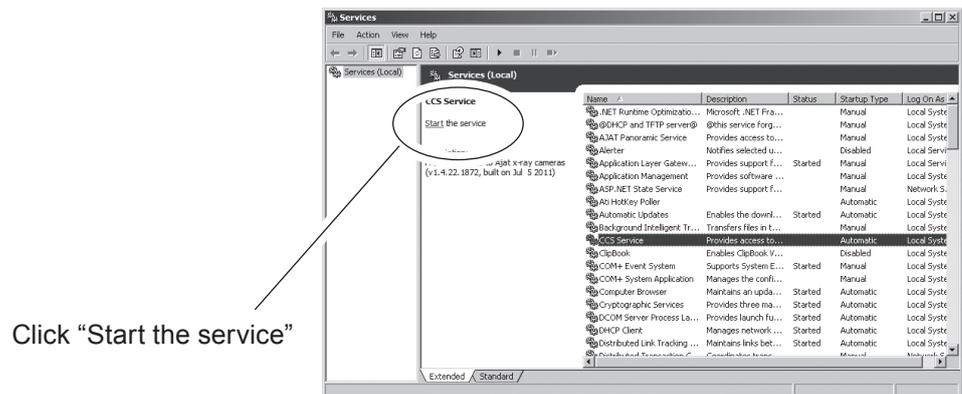


Fig. ④ -302

(3) Open Network Connection screen. Open the Status screen of the mounted Ethernet connection.

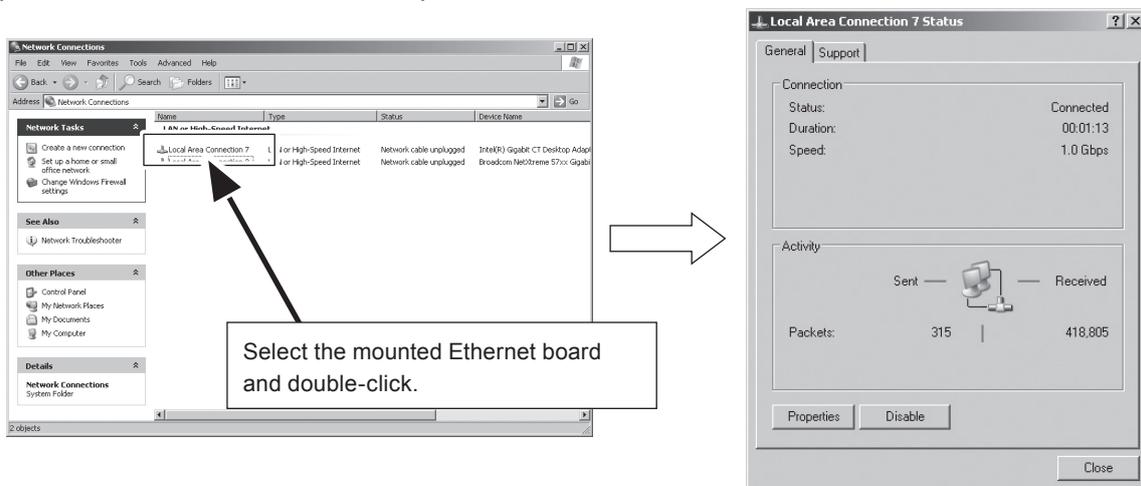


Fig. ④ -303

(4) Check the icon screen color and packet count.

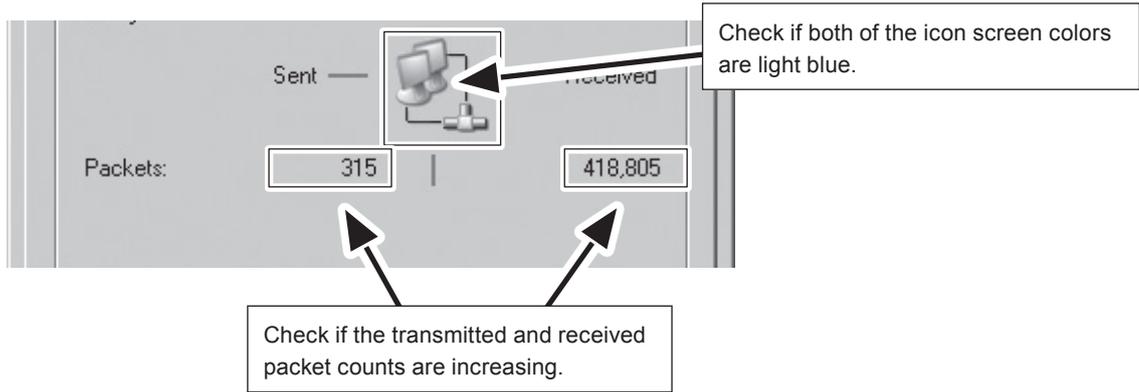


Fig. ④ -304

\* If there is no change in the transmitted and received packet counts and the icon screen is in gray, computer and sensor may not be properly connected. Check the Ethernet board settings and Ethernet cable connection.

(5) Activate the Dental Imaging Software. Check if the LED on the upper-left of the screen is green or red and the sensor status is “Not Calibrated”.

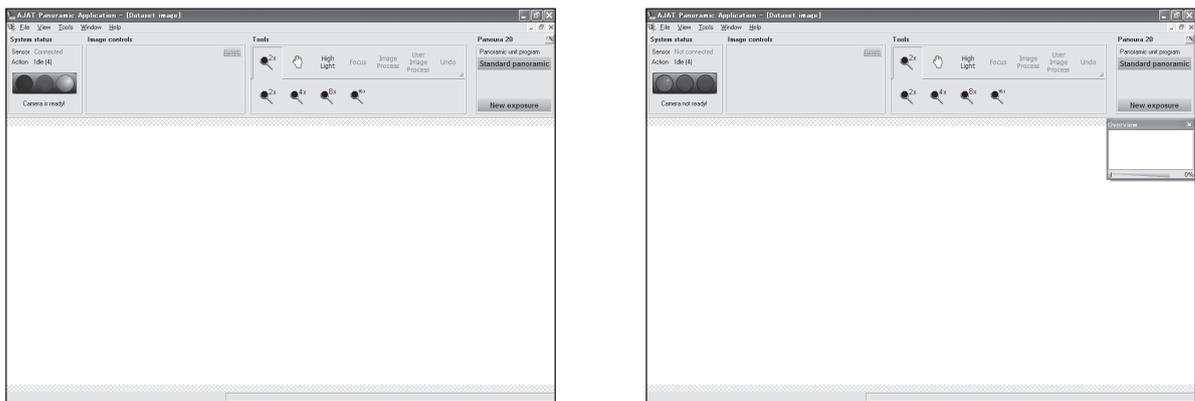


Fig. ④ -305

(6) Proceed with mechanical alignment and calibration of the sensor.

**REF. :** Refer to [③ Implementation Procedure for Performance and Safety Checking and Performance Benchmarks]“2-9. Selection of the Equipment”for mechanical alignment and calibration of the sensor.

⑨ Confirmation of Settings on the Computer (Panoramic Radiation Rotation, Cephalo On/Off)

(1) Activate X-era Smart Control Manager on the computer connected.

**Additional Information** : Refer to “① CS Mode” on how to activate CS Mode.

(2) Select [CS100] from the pull-down menu on the selection screen of CS Mode.

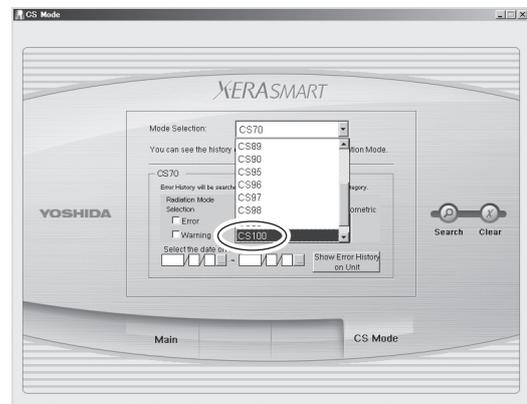


Fig. ④ -306

(3) In the settings window of CS100, select [Pano Radiation Rotation] and [Sensor Save Mechanism].

**Additional Information:**

[Pano Radiation Rotation]

[CW] : clockwise

[CCW] : counterclockwise

[Sensor Save Mechanism]

[Exist] :With 3D function or Cephalometric

[Not Exist] : Without 3D function, without Cephalometric

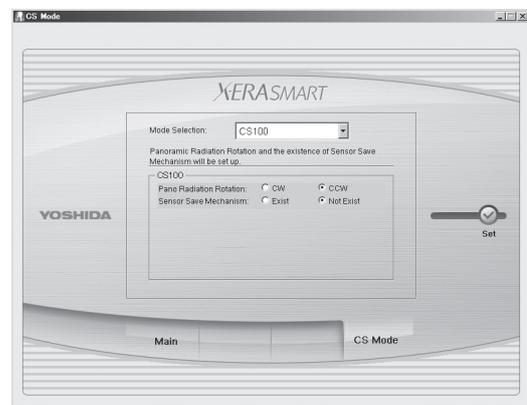


Fig. ④ -307

(4) Press [Set].

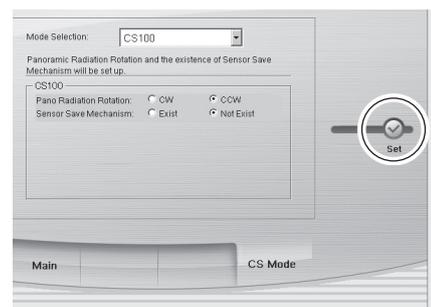


Fig. ④ -308

(5) Press [OK] when the setting adjustment complete screen is displayed.

## 2-14. Installation and Settings of Trophy Windows (for Cephalometric Type only)

When handling cephalometric image from X-ERA SMART, follow the steps below in order to install and configure settings.

**NOTE :** Settings can be made only at new installation. If the computer already has Trophy Windows on it, do not install a new piece over the existing software. Uninstall the old one first, and reinstall the software.

### 2-14-1. For Trophy Windows Version 6.12.12.0-A or earlier

(1) Activate Trophy Windows Installer. Follow the instructions on the screen until the installation settings screen appears.

(2) Installation Settings window appears. In the item in which the message “No Video grabber Installation” is displayed, select “Third Party Video grabber Card”.

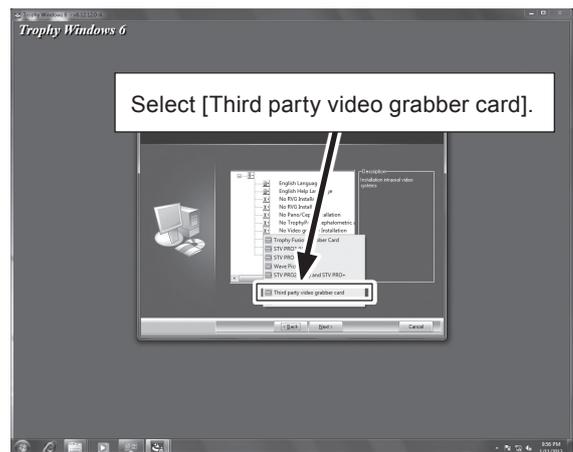


Fig. ④ -309

(3) Press [Next >] button, and continue with installation.



Fig. ④ -310

- (4) When installation is complete, a window as in the figure on the right appears.  
Press [Finish] button and the computer restarts.

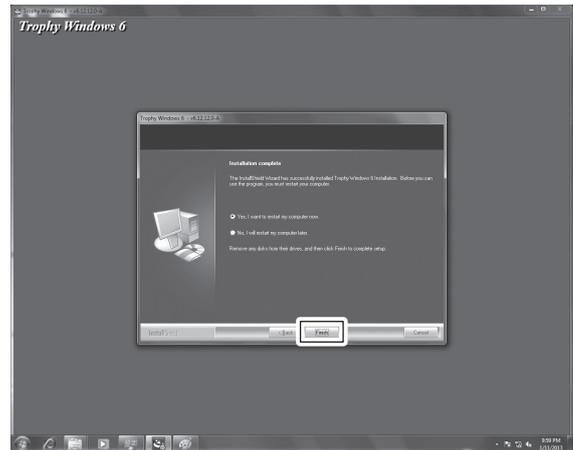


Fig. ④ -311

## 2-14-2. For Trophy Windows Version 6.12.24.0-B or later

- (1) Activate Trophy Windows Installer. Follow the instructions on the screen until the installation settings screen appears.
- (2) In the item in which the message “No Video grabber Installation” is displayed, select “Intraoral Camera Installation”.

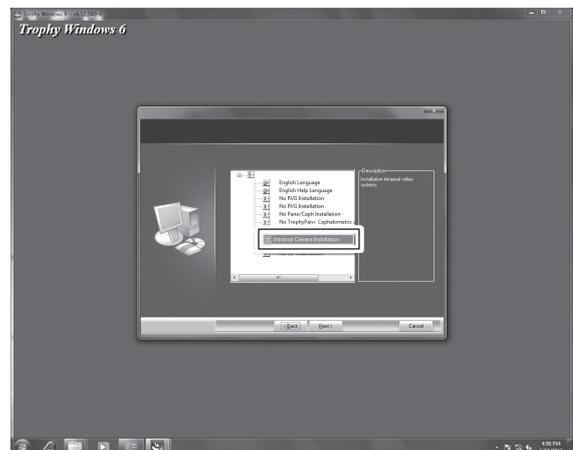


Fig. ④ -312

- (3) Press [Next >] button.

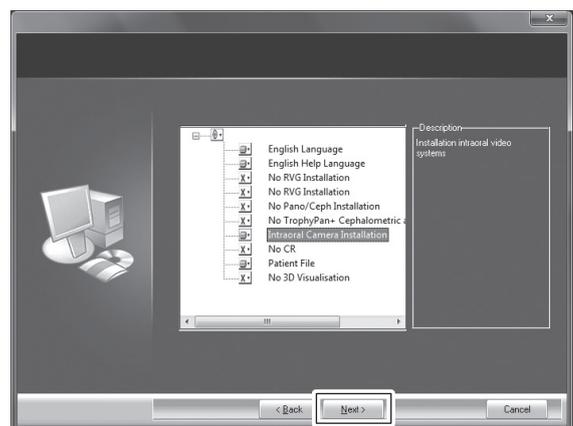


Fig. ④ -313

- (4) Camera selection window appears. Check on “Third party video grabber card” and on one or more check boxes of WAVE PICT-related items.

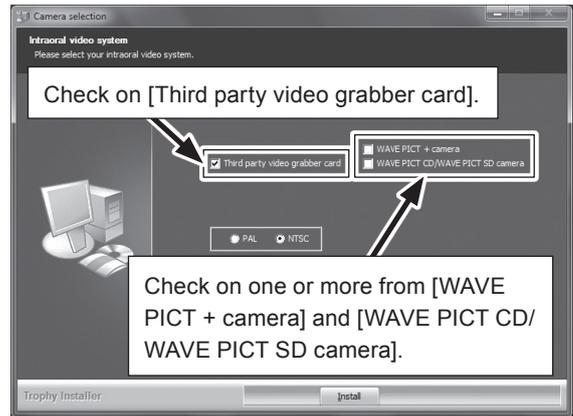


Fig. ④ -314

- (5) Press [Install] button, and continue with installation.

**Additional Information:**

It is not necessary to restart the computer after installation.

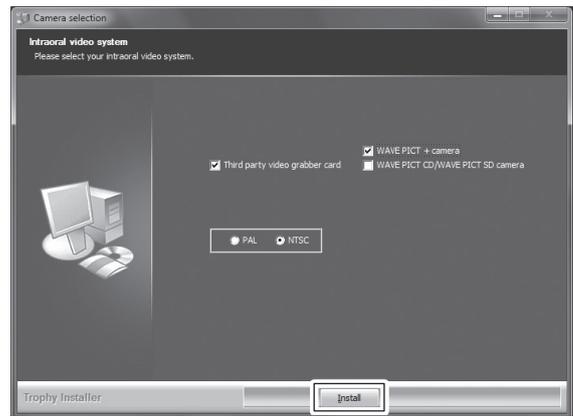


Fig. ④ -315

2-15. Settings on GEVPlayer (1) (for 3D Type only)

2-15-1. Network Connection Settings

- (1) Right-click [Network] icon on Desktop, and choose [Properties].



Fig. ④ -316

- (2) Network and Sharing Center window appears.  
Click on [Change adapter settings].

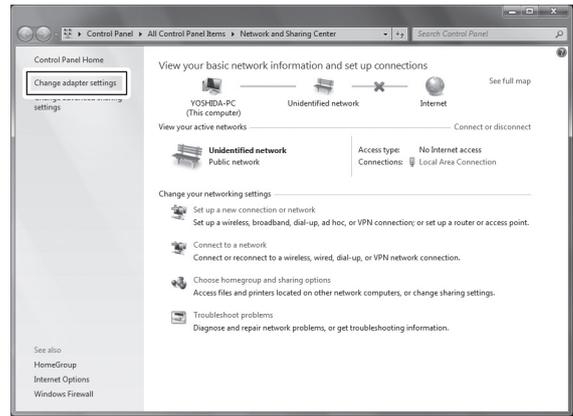


Fig. ④ -317

- (3) Network Connection settings window appears.  
Select and right-click the connection icon of Target LAN Board (\*), and choose [Properties].

(\* ) LAN Board used for image data transfer and import from the main unit.

e.g.: Intel<sup>(R)</sup> Gigabit CT Desktop Adapter

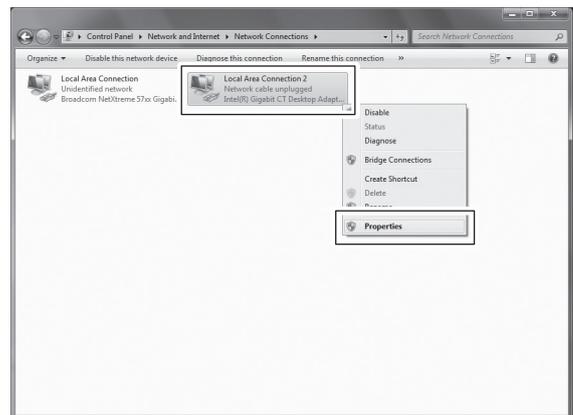


Fig. ④ -318

- (4) Connection Property window of the Target LAN Board (\*) appears. Make sure that [Internet Protocol Version 4 (TCP/IPv4)] is selected and its check box checked. If the box is unchecked, check it and press [Properties] button.

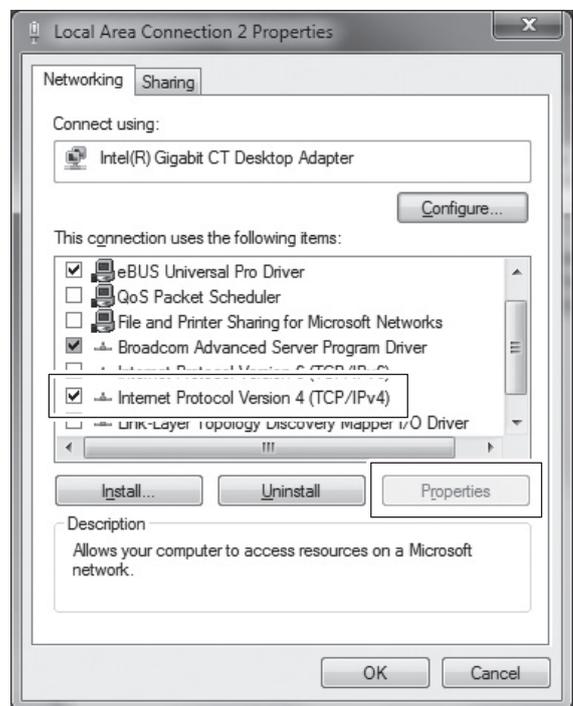


Fig. ④ -319

(5) Property window of “Internet Protocol Version 4 (TCP/IPv4)” appears. Select [Use the following IP Address], and input the IP Address and Subnet Mask as in the figure on the right. After inputting the values, press [OK] button.

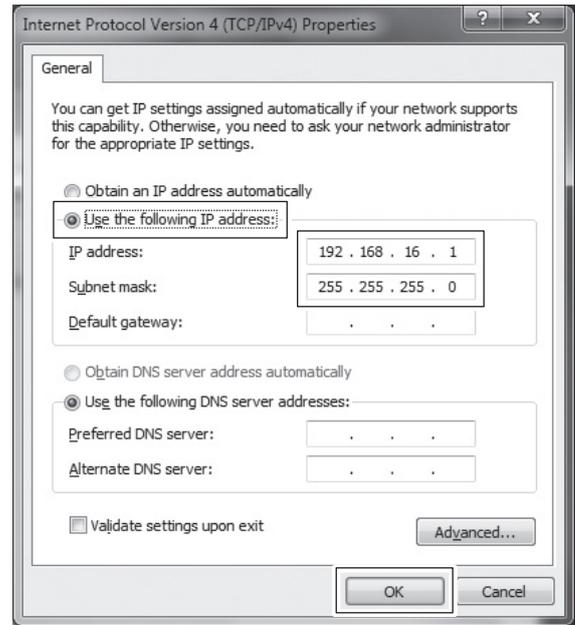


Fig. ④ -320

(6) Press [OK] button on Connection Property window of the Target LAN Board (\*).

(7) Close Network Connection settings window.

## 2-15-2. Jumbo Packet Settings

(1) Right-click [Computer] icon on Desktop, and choose [Properties].

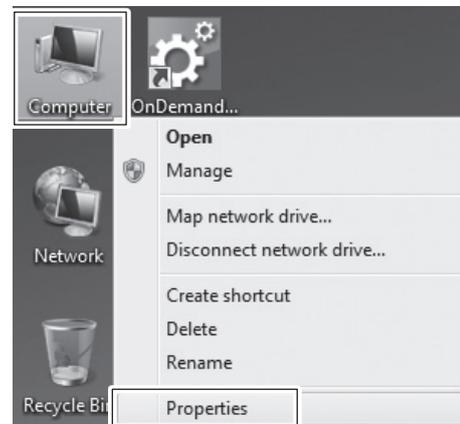


Fig. ④ -321

(2) System Information window appears. Click on [Device Manager].

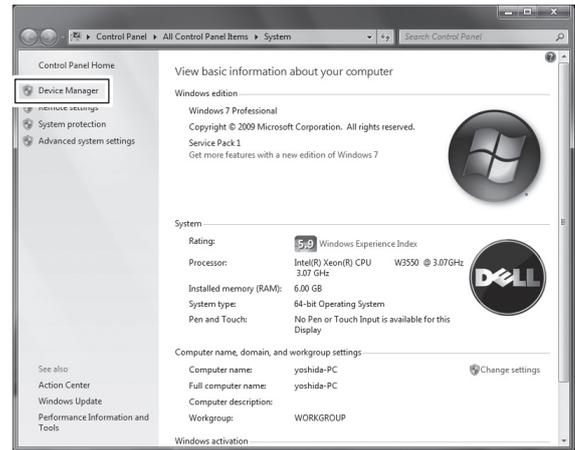


Fig. ④ -322

(3) Open the Property window of the Target LAN Board (\*) from Device Manager window.

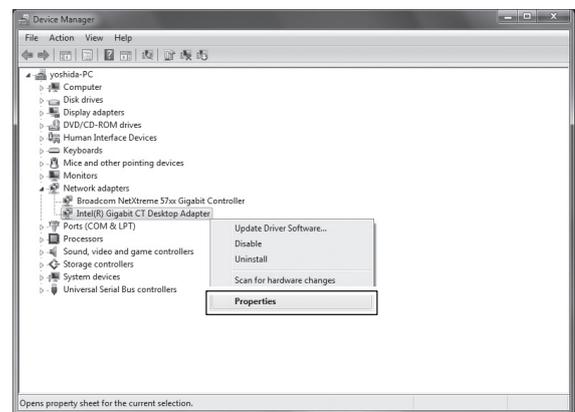


Fig. ④ -323

(4) Device Property window of the LAN Board appears. Click on [Advanced] Tab. Enter [9014 Bytes] or above in [Jumbo Packet] setting, and press [OK] to confirm the setting.

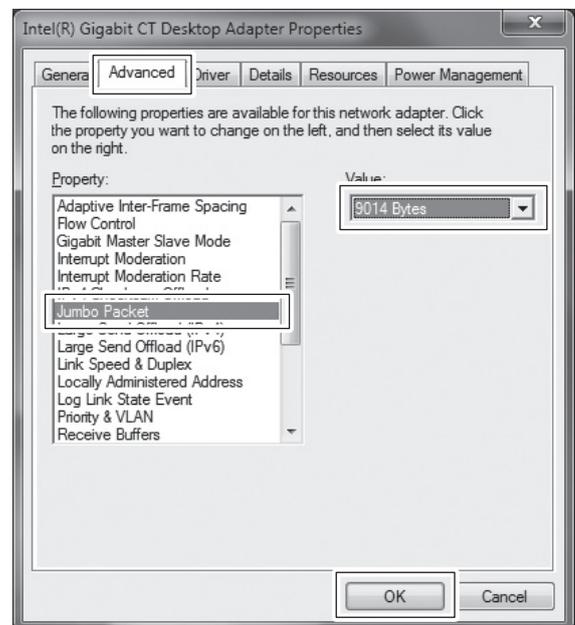


Fig. ④ -324

### 2-15-3. Driver Settings

(1) Choose [Pleora Technologies Inc] → [eBUS SDK] → [Tools] → [Driver Installation Tool] from Start Menu.

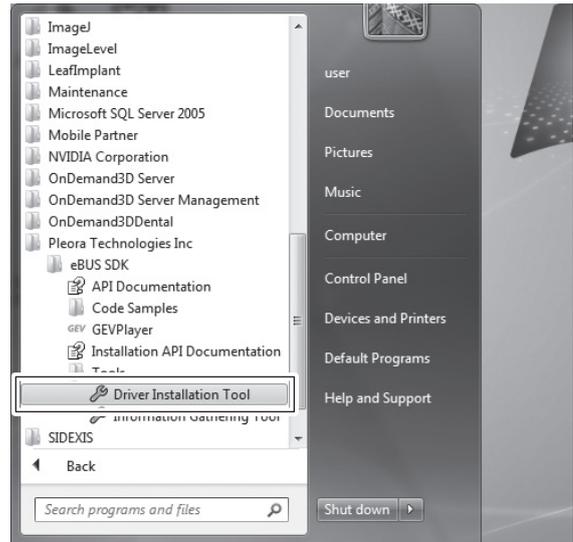


Fig. ④ -325

(2) Press the pop-up button in [Action] item of the Target LAN Board (\*).

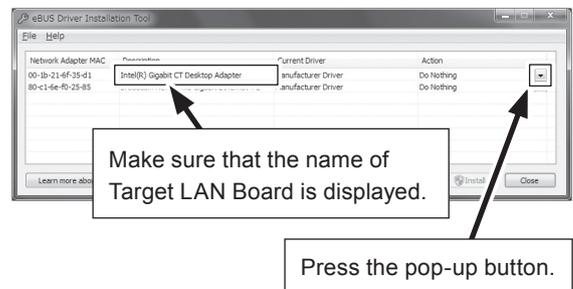


Fig. ④ -326

(3) Choose [Install eBUS Universal Pro Driver] from the pop-up menu.

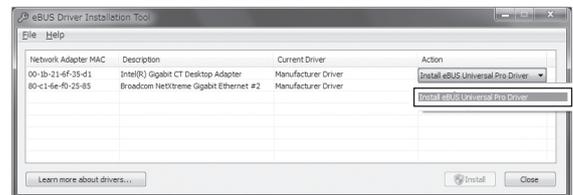


Fig. ④ -327

(4) Make sure that [Install eBUS Universal Pro Driver] is displayed in [Action] item, and press [Install] button.

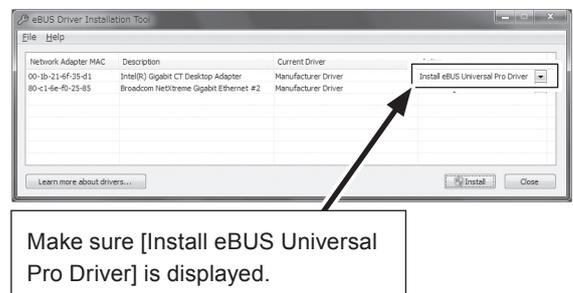


Fig. ④ -328

(5) Installation of driver starts, and progress window as in the figure on the right appears. Wait until installation is complete.

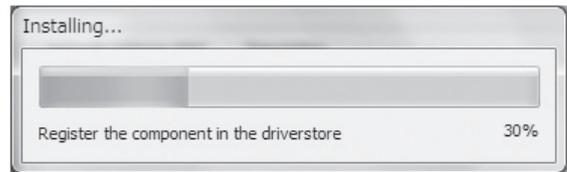


Fig. ④ -329

In addition, Installation Confirmation window as in the figure on the right may appear during the installation. In such a case, press [Install] button, and continue with the process.

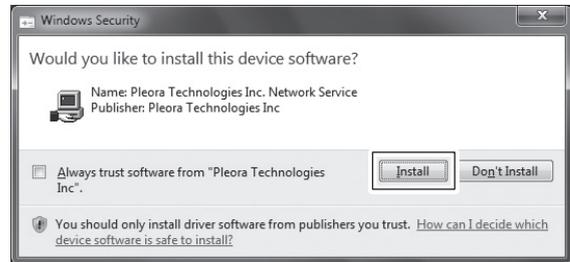


Fig. ④ -330

(6) After driver installation, make sure that [eBUS Universal Pro Driver] is displayed in the [Current Driver] item in the window as in the figure on the right. Press [Close] and exit the settings after confirmation.

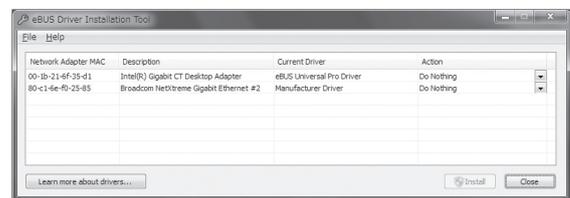


Fig. ④ -331

## 2-16. Settings on GEVPlayer (2) (for 3D Type only)

**NOTE :** Before making configuration to following settings, make sure that 3D Sensor of Main Unit is connected with computer. When the equipment is turned off or LAN cable is not connected with it, settings can not be made since Sensor can not be recognized.

### Setting Items

- ① Sensor IP Setting
- ② Sensor IP Memory Setting

### ① Sensor IP Setting

(1) Click on [GEVPlayer] from Start Menu.

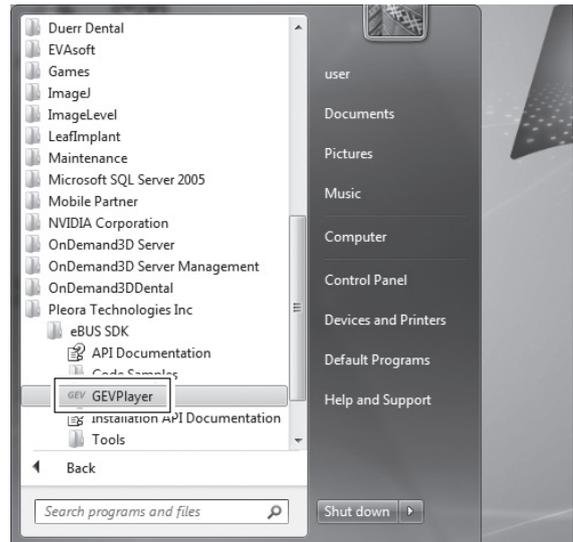


Fig. ④ -332

(2) GEVPlayer screen appears.

Press [Select/Connect] button.

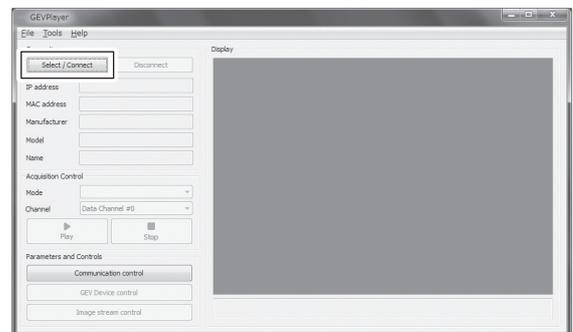


Fig. ④ -333

(3) GigE Vision Device Selection window appears.

Check the check box of [Show unreachable GigE Vision Devices].

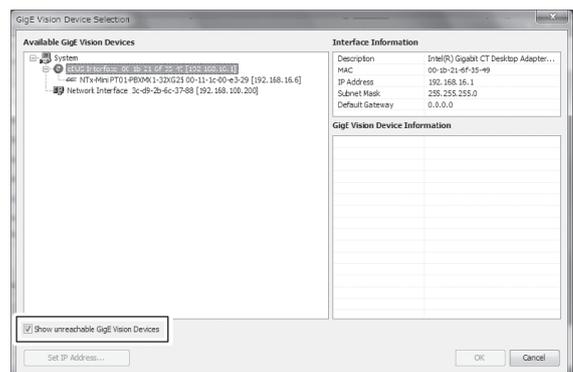


Fig. ④ -334

(4) Click on [NTx-Mini PT01-PBXMX 1-32XG25] on the tree list (boxed in the figure on the right).

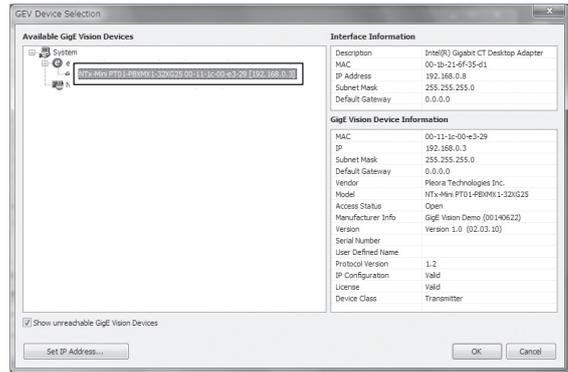


Fig. ④ -335

(5) Press [Set IP Address...] button.

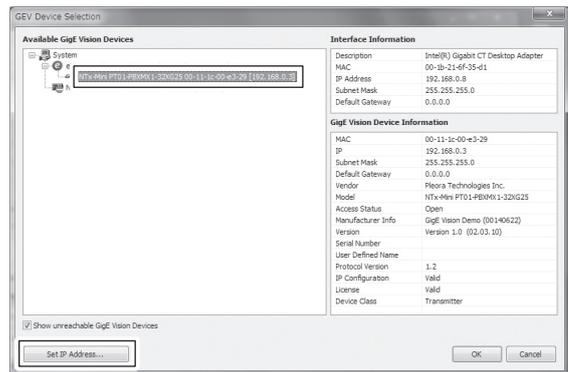


Fig. ④ -336

(6) Enter values in blank columns for IP Address. After inputting the values, press [OK] button. Enter 5 in the blank so that IP Address is set as [192.168.16.5]. After inputting the values, press [OK] button.

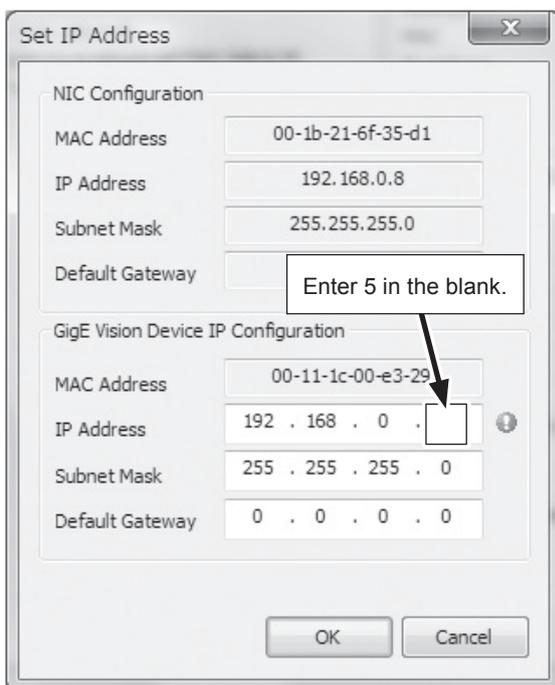


Fig. ④ -337

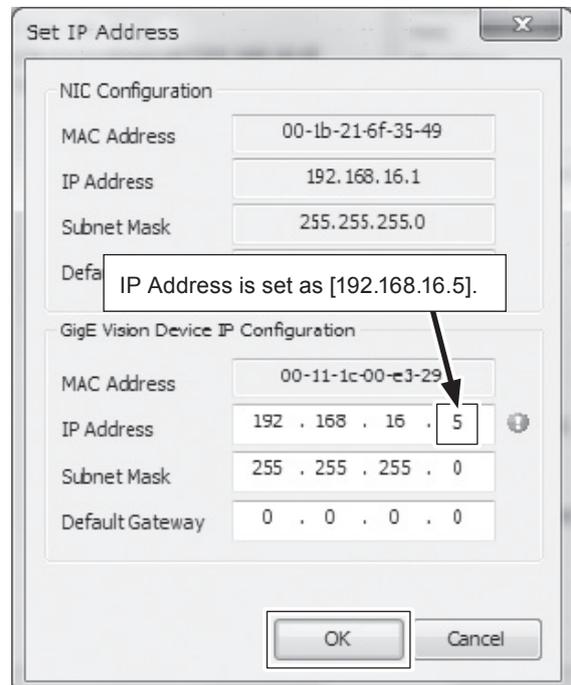


Fig. ④ -338

(7) Press [OK] button at GigE Vision Device Selection window.

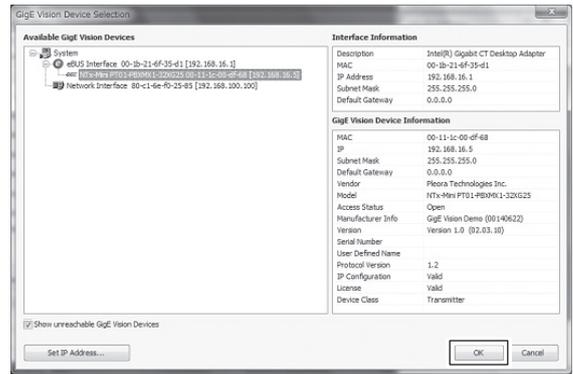


Fig. ④ -339

## ② Sensor IP Memory Setting

(1) Press [Device control] in GEVPlayer window.

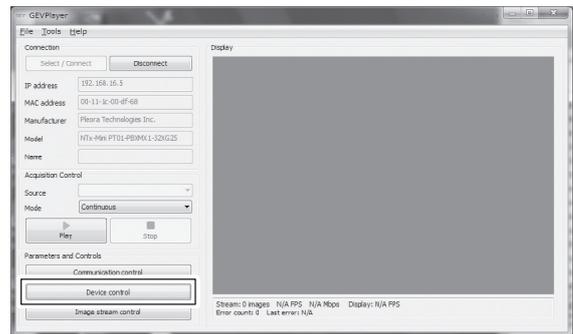


Fig. ④ -340

(2) GEV Device Control screen appears. Select [Beginner] in the Visibility item. Enter the following settings in the items boxed in the figure below. After inputting the values, press [X] button on the upper-right corner.

Item	Value
①	GevCurrentIPConfigurationLLA → True
②	GevCurrentIPConfigurationDHCP → False
③	GevCurrentIPConfigurationPersistentIP → True
④	GevPersistentIPAddress → same value as in GevCurrentIPAddress
⑤	GevPersistentSubnetMask → same value as in GevCurrentSubnetMask
⑥	GevPersistentDefaultGateway → same value as in GevCurrentDefaultGateway

Fig. ④ -341

**NOTE :** GEV Device Control window closes and returns to GEVPlayer window. However, do not close GEVPlayer or press [Disconnect] button since Buffer Options setting follows next.

### ③ Buffer Option Settings

(1) Press [Buffer Options] in [Tools] menu in GEVPlayer window.

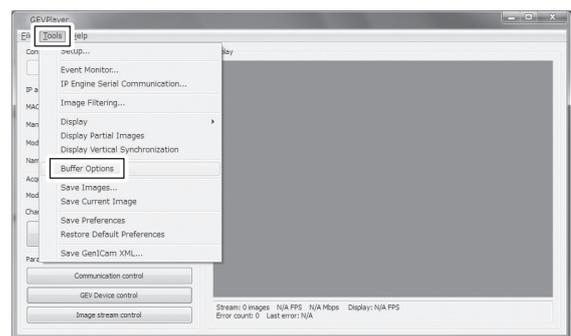


Fig. ④ -342

- (2) Buffer Options window appears.  
Select [128 buffers] and press [OK] button.

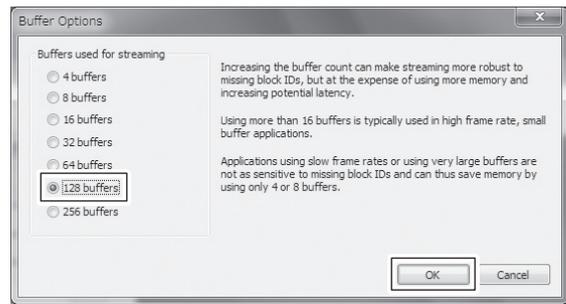


Fig. ④ -343

- (3) Close GEVPlayer window.

\* When activating GEVPlayer, make sure [128 buffers] is selected for Buffer Options.

## 2-17. Installation of Channel Correction Table (for 3D Type only)

Channel Correction Table has been made at inspection, and comes enclosed with the equipment on CD. Overwrite files to a specified folder.

**NOTE :** Before following these steps, make sure that installation of Image Creator has been completed.

### 2-17-1. Installation Procedures

- (1) Insert Channel Correction Table CD in the computer, and check the contents in Explorer.

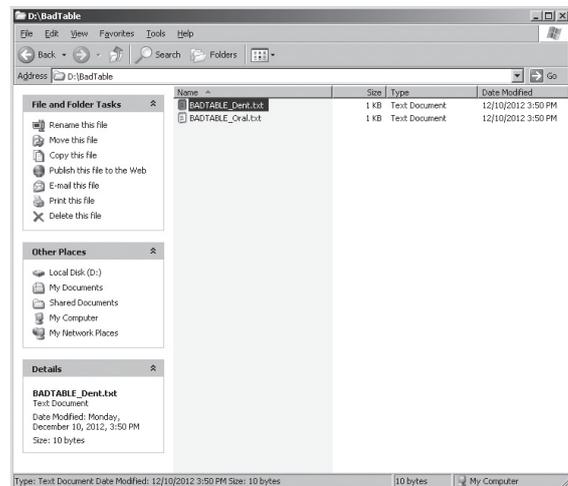


Fig. ④ -344

(2) Right-click [Image Creator] icon on Desktop, and choose [Properties].

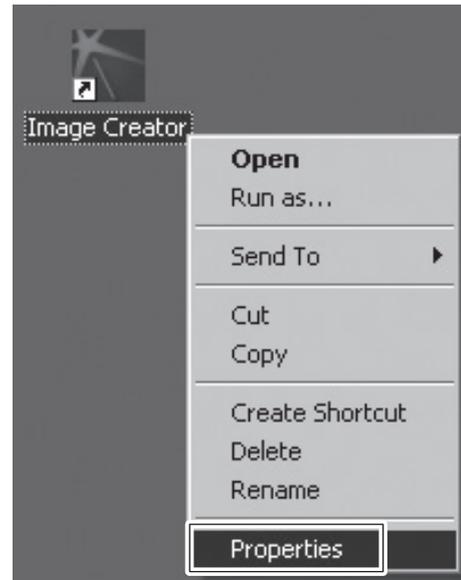


Fig. ④ -345

(3) Property window of Image Creator appears. Click on [Find Target...] or [Open File Location ].

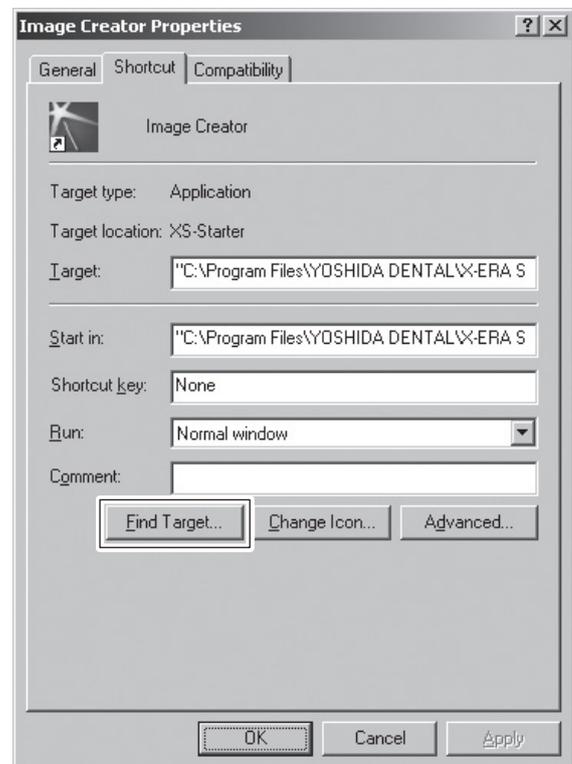


Fig. ④ -346

- (4) Explorer window appears.  
Click on “Above” icon.

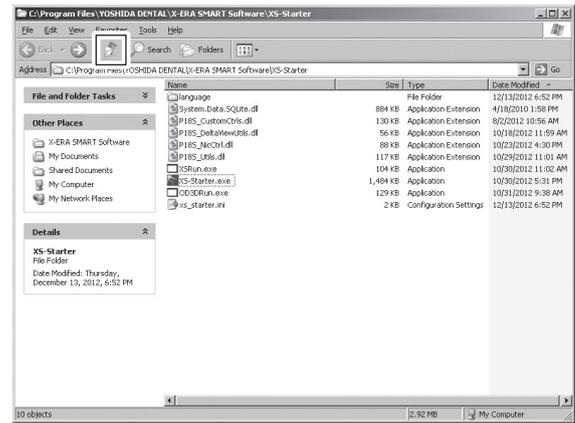


Fig. ④ -347

- (5) Open [VolumeCreator] → [filter] from the window as in the figure on the right.

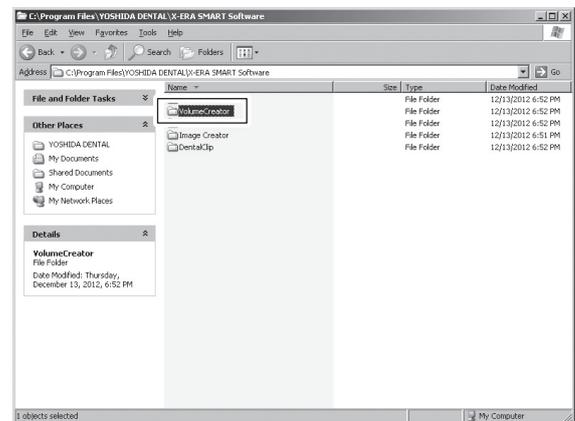


Fig. ④ -348

- (6) Contents of [filter] folder are displayed. Overwrite the Channel Table Data displayed in Step (1) to the window described at the right.
- 3D Oral: [BADTABLE\_Oral.txt]
  - 3D Dental: [BADTABLE\_Dent.txt]

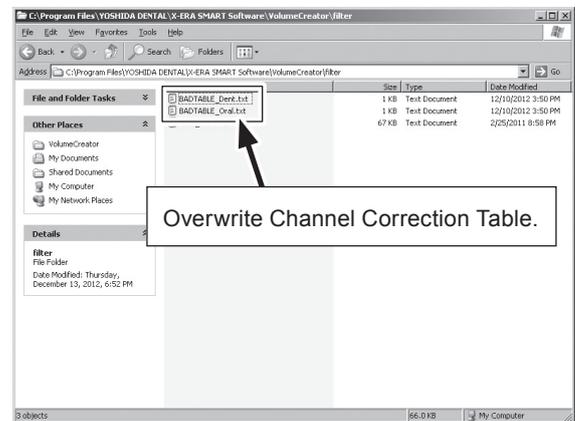


Fig. ④ -349

## 2-18. Switching the Left / Right Orientation of the Control Panel

In order to change the orientation of the equipment to left-rotating specifications depending on the installation environment, follow the procedures below in order to mount the Control Panel on the right cover of the slide main unit.

### **WARNING**

- There is a possible electrification hazard. Properly turn off the main switch and pull the power plug off from the wall power outlet before starting the work operation.

### A. Detaching and Attaching the Control Panel

- (1) Remove the Frankfurt horizontal beam lever and the positioning mirror.

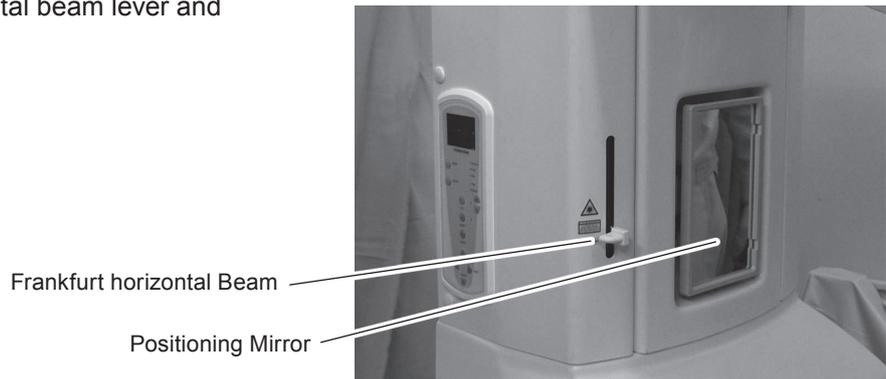


Fig. ④ -350

- (2) Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) on the frontal cover of the slide main unit. Remove the positioning mirror fastening bracket and frontal cover from the slide main unit.

Tool used: No .2 Phillips screwdriver

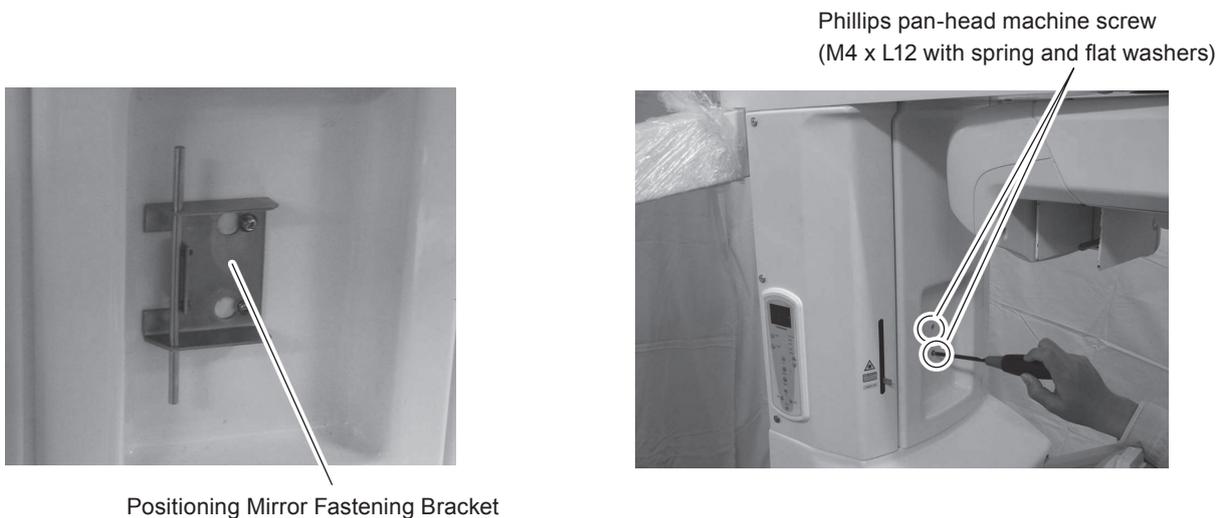


Fig. ④ -351

- (3) Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer) on the left cover of the slide main unit. Remove the left cover from the slide main unit.

Tool used: No .2 Phillips screwdriver

Phillips pan-head screws  
(M4 x L12 with built-in setup washer)

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)



Fig. ④ -352

- (4) Remove the 2 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) and the 3 x Phillips pan-head screws (M4 x L12 with built-in setup washer) on the right cover of the slide main unit. Remove the right cover from the slide main unit.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

Phillips pan-head screws  
(M4 x L12 with built-in setup washer)

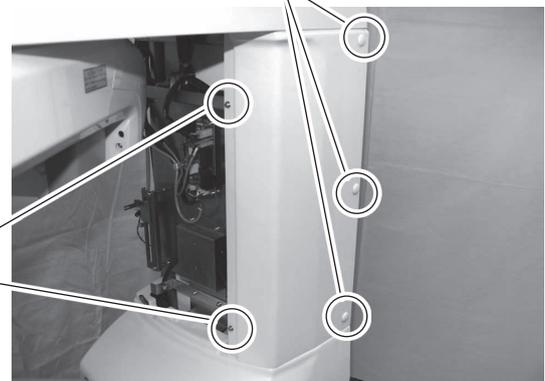


Fig. ④ -353

- (5) Remove the connectors connected to the Control Panel (connectors K1 – K7, and K9).

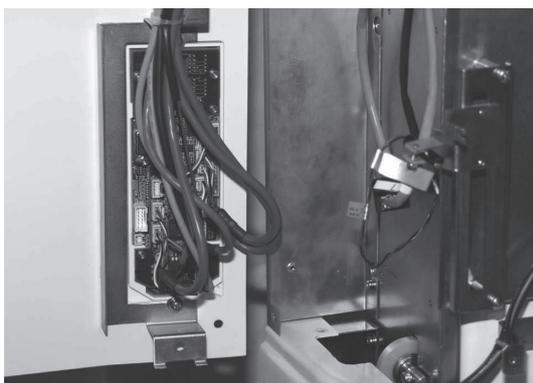


Fig. ④ -354

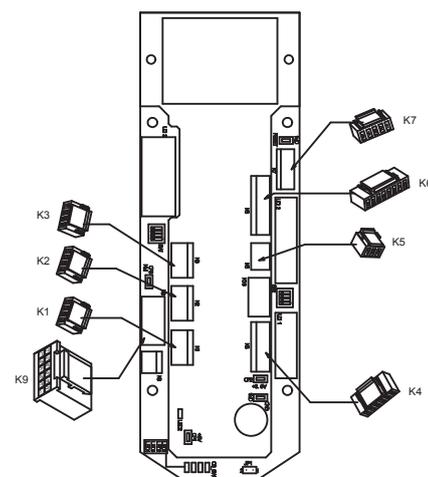


Fig. ④ -355

- (6) Remove the 4 x Phillips pan-head machine screws (M4 x L12 with spring and flat washers) on the arm mounting unit top cover. Remove the arm mounting unit top cover.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)



Fig. ④ -356

- (7) Remove the 2 x Phillips pan-head screws (M4 x L12 with built-in setup washer) on the chin rest main unit cover. Remove the chin rest main unit cover.

Tool used: No .2 Phillips screwdriver

Phillips pan-head screws  
(M4 x L12 with built-in setup washer)

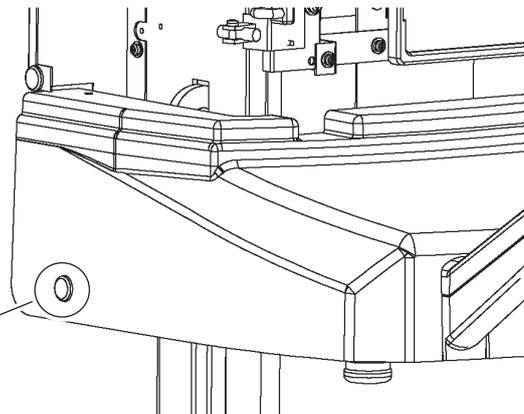
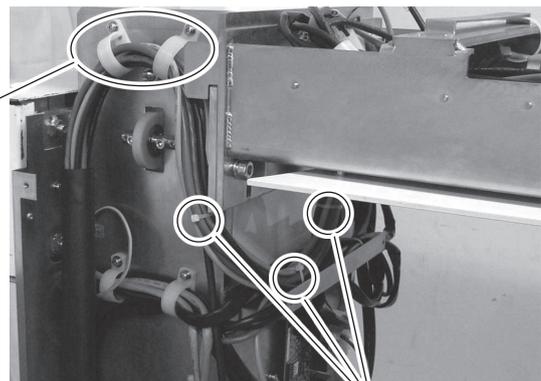


Fig. ④ -357

- (8) Remove the nylon clips and binding bands fixing the harnesses of the Control Panel.

Tool used: No .2 Phillips screwdriver

Nylon Clips

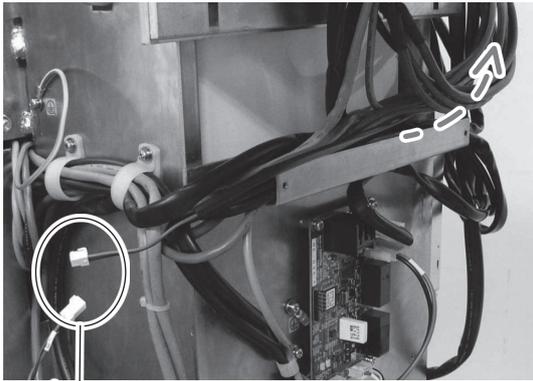


Binding Bands

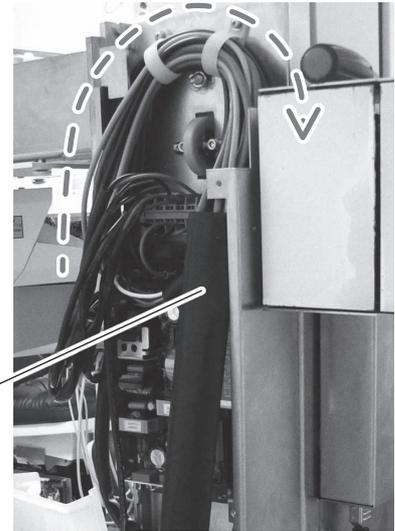
Fig. ④ -358

- (9) Remove the connector on the eye-ear beam

(10) Route the harness of the Control Panel and the harness of the Frankfurt horizontal beam to the side of the right cover of the slide main unit.



Frankfurt horizontal Beam Connector



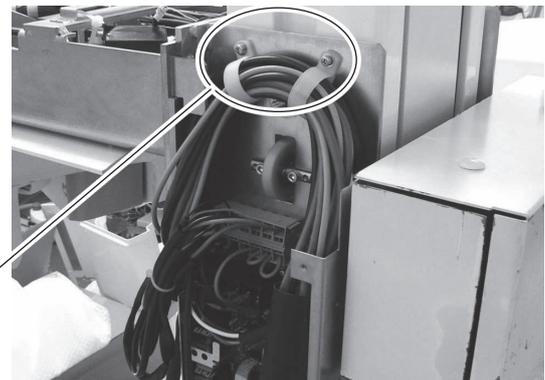
Control Panel Harness

Fig. ④ -359

(11) Fasten the harness of the Control Panel routed to the side of the right cover of the slide main unit and harness of the eye-ear beam using nylon clips and binding bands.

Tool used: No .2 Phillips screwdriver

**NOTE** :Make sure that the harness tied up by the binding band does not interfere with movable parts.



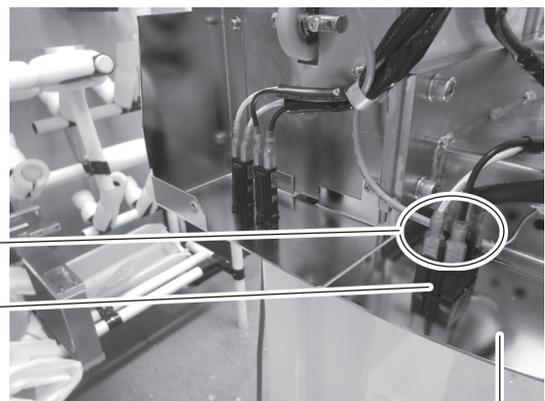
Nylon Clips

Fig. ④ -360

(12) After detaching the faston terminal connected to the main switch, detach the main switch from the chin-rest back panel.

Faston terminal

Main switch



Chin-rest back panel

Fig. ④ -361

- (13) First remove the connecting terminal of the emergency stop switch, and then remove the emergency stop switch.

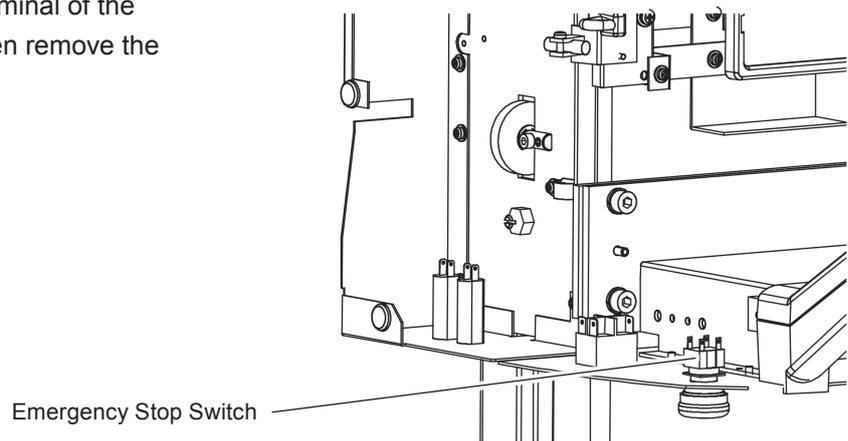


Fig. ④ -362

- (14) Remove the 4 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers) on the chin rest back panel. Remove the chin rest back panel.

Tool used: No .2 Phillips screwdriver

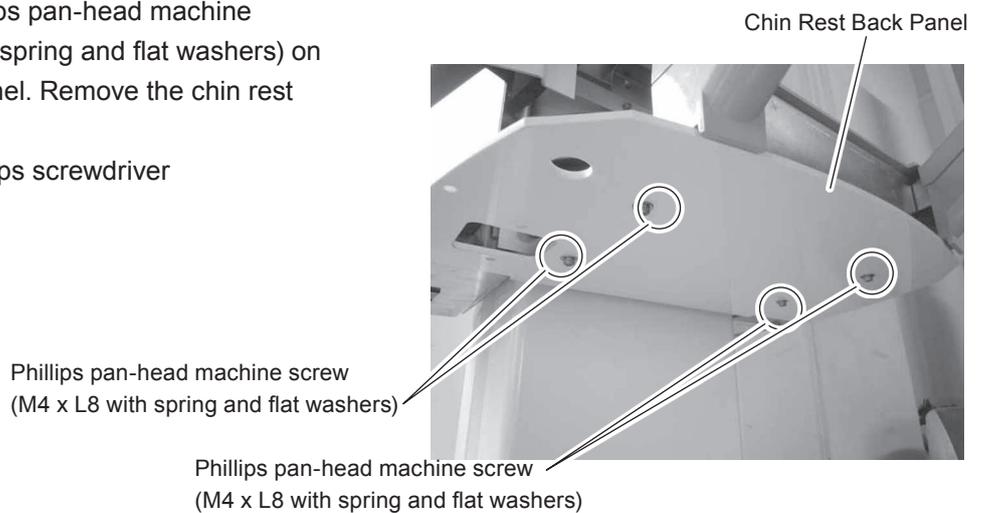


Fig. ④ -363

- (15) Paste the new emergency stop label to suit the position of the emergency stop switch.

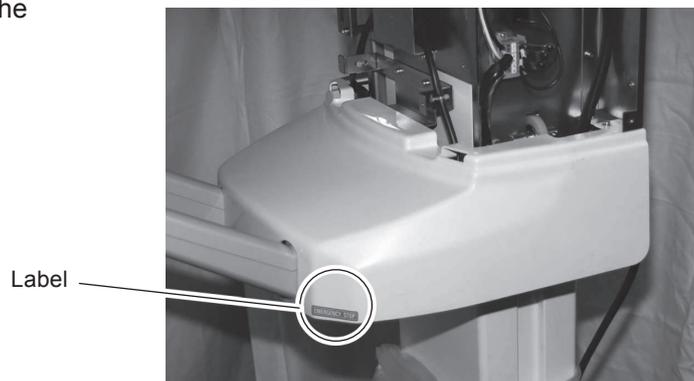


Fig. ④ -364

- (16) Turn the chin rest back panel over and fix it on the chin rest frame using 4 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers).

Tool used: No .2 Phillips screwdriver



Fig. ④ -365

(17) Mount the emergency stop switch, main switch and faston terminal on the chin-rest back panel. Fasten the harnesses using binding bands.

**NOTE :**

- When mounting the main switch, mount it so that the ○ marking faces outward of the main unit.
- Make sure that the harness of the main switch and harness of the emergency stop switch do not overlap each other.
- When mounting the faston terminal of the main switch, please be cautious with the connection.

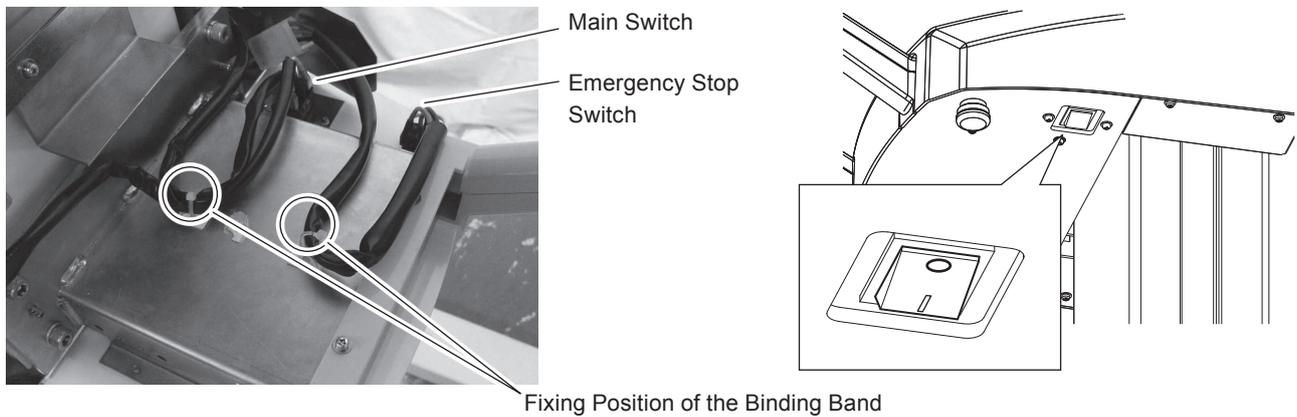


Fig. ④ -366

(18) Mount the emergency stop switch, main switch and faston terminal on the chin-rest back panel. Fasten the harnesses using binding bands.  
Tool used: Phillips screwdriver No. 2

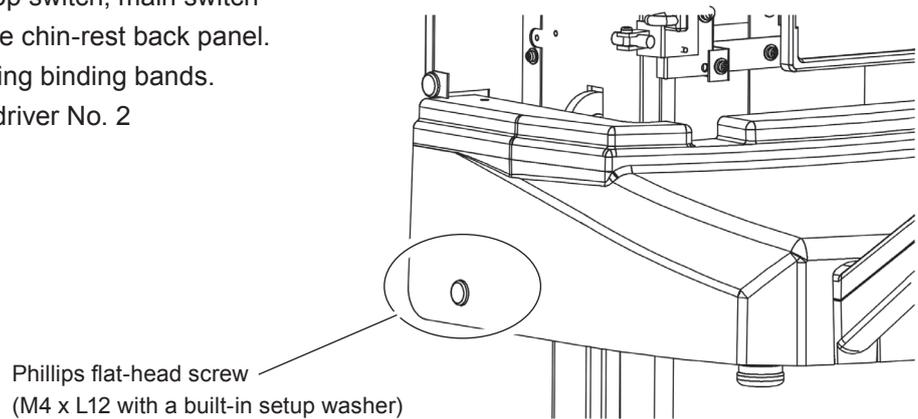


Fig. ④ -367

(19) Remove the 2 x Phillips pan-head machine screws (M5 x L8 with spring and flat washers) on the eye-ear beam slide plate. Remove the Frankfurt horizontal assembly.  
Tool used: No .2 Phillips screwdriver

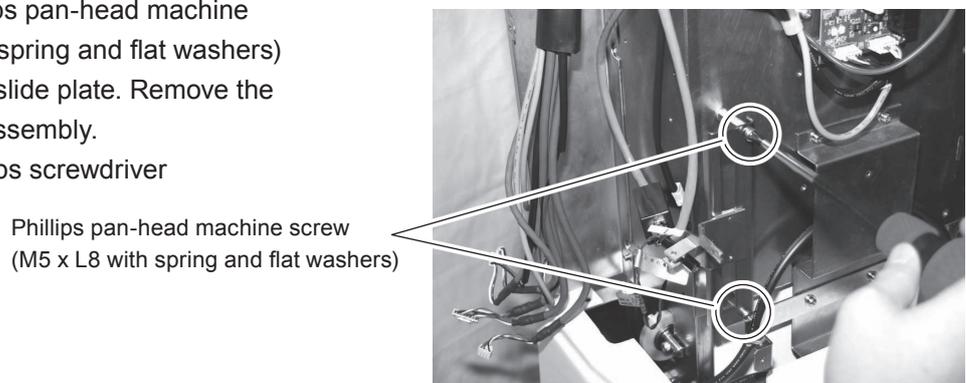


Fig. ④ -368

- (20) Remove the 2 x spacers (B8) and the 2 x spring washers (M5) from the Frankfurt horizontal beam slide panel. Fix them on the side of right cover on the slide main unit.  
Tools used: 8 mm Box wrench

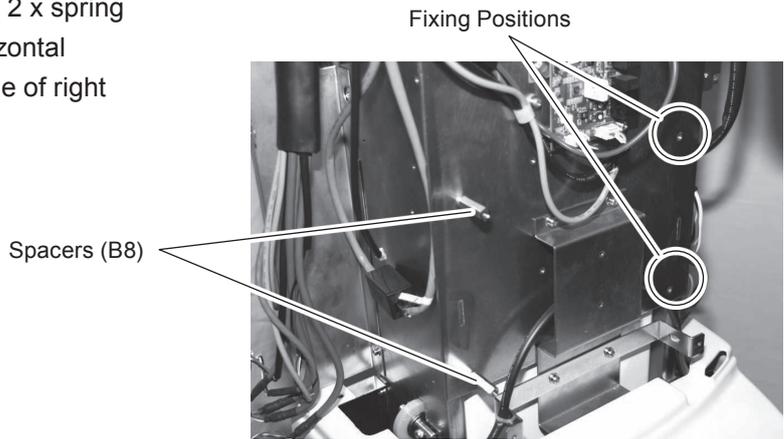


Fig. ④ -369

- (21) Remove the 2 x Phillips pan-head machine screws (M3 x L8 with spring and flat washers) and 1 x Allen bolt (M4 x L8 with flat washer) on the Frankfurt horizontal beam assembly. Dismantle the Frankfurt horizontal beam assembly.

Tool used:

- No .2 Phillips screwdriver
- 3 mm Allen wrench
- Phillips pan-head machine screw (M3 x L8 with spring and flat washers)

Allen bolt (M4 x L8 with flat washer)

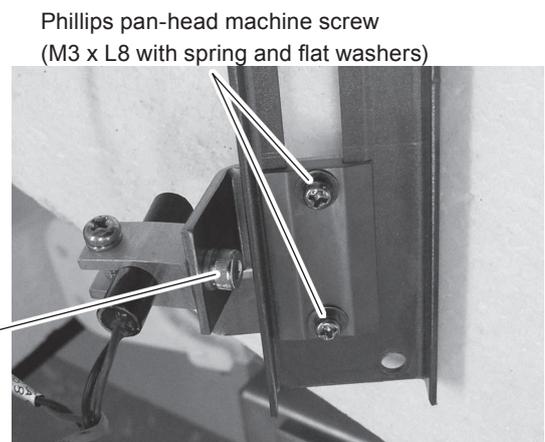


Fig. ④ -370

- (22) Replace the Frankfurt horizontal beam fixing board with the left-oriented one. Fix the Frankfurt horizontal laser marker with 1 x Allen bolt (M4 x L8 with spring washer).  
Tools used: 3 mm Allen wrench

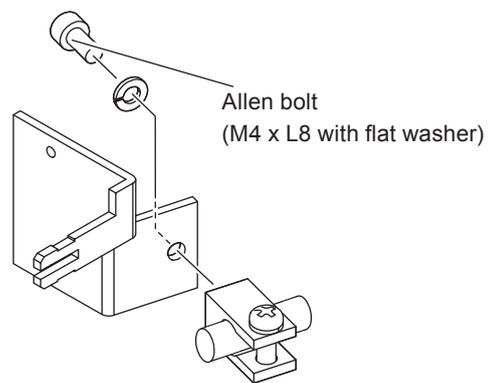


Fig. ④ -371

(23) As shown in the figure below, turn the Frankfurt horizontal beam slide plate 180 degrees and assemble the Frankfurt horizontal beam assembly. Fasten it using 2 x Phillips pan-head machine screws (M3 x L8 with spring and flat washers).

Tool used: No .2 Phillips screwdriver

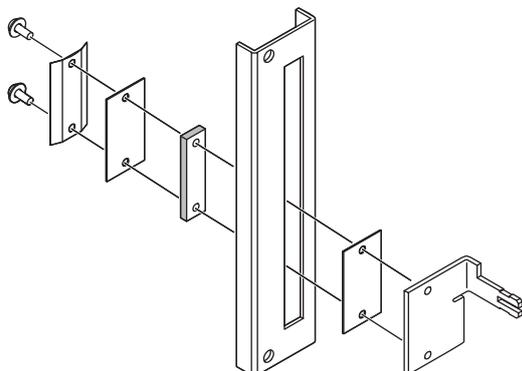


Fig. ④ -372

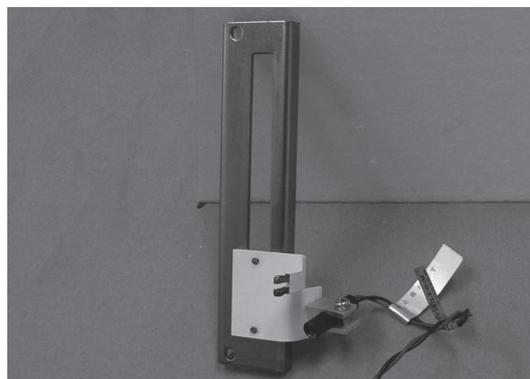


Fig. ④ -373

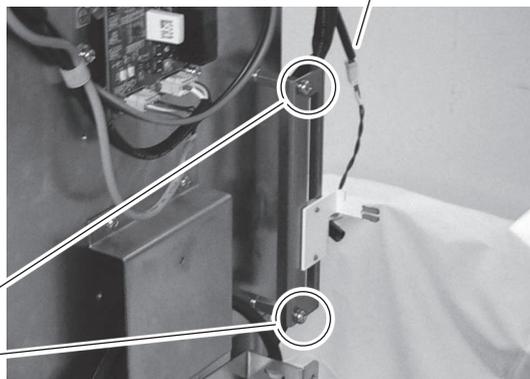
(24) Mount the Frankfurt horizontal beam assembly to the slide main unit using 2 x Phillips pan-head machine screws (M5 x L8 with spring and flat washers) and connect the connector.

Tool used: No .2 Phillips screwdriver

**REF. :** See “⑮ Wiring Diagram”

**NOTE :** Check the irradiation position of the positioning beam, and adjust it as necessary.

Frankfurt horizontal Beam Connector



Phillips pan-head machine screw  
(M5 x L8 with spring and flat washers)

Fig. ④ -374

(25) Remove the 1 x binding screw (M4 x L6) as show in the figure, and remove the upper back cover of the sensor on the arm unit.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L6 with spring and flat washers)

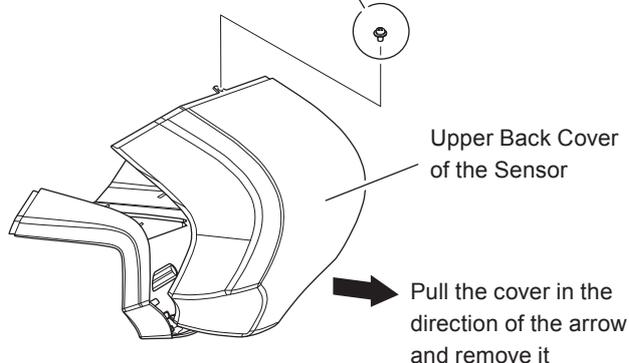


Fig. ④ -375

- (26) Remove the 2 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers) on the positioning beam bracket C. Remove the positioning beam assembly.

Tool used: No .2 Phillips screwdriver

Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

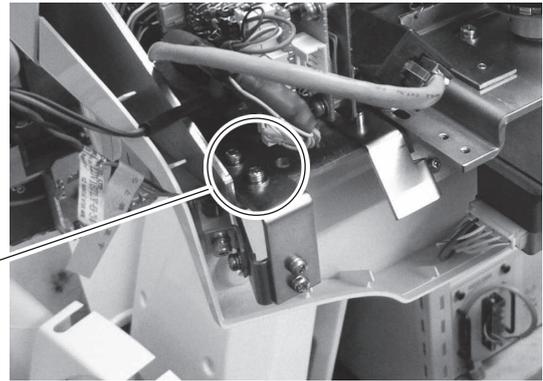
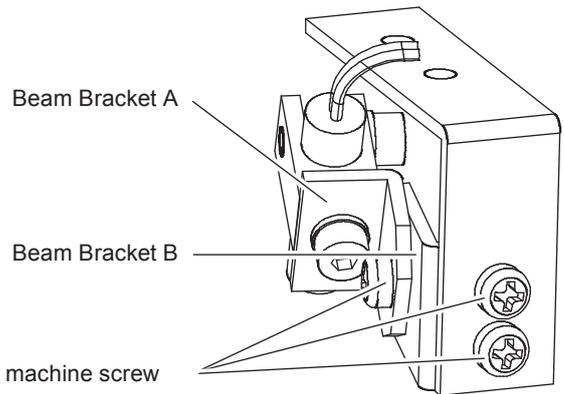


Fig. ④ -376

- (27) Remove the 3 x Phillips pan-head machine screws (M4 x L8 with spring washer) on the positioning beam assembly. Remove the positioning beam brackets A and B, and positioning beam laser marker.

Tool used: No .2 Phillips screwdriver



Phillips pan-head machine screw  
(M4 x L8 with spring and flat washers)

Fig. ④ -377

- (28) Loosen the 2 x Allen bolts (M4 x L8, L12 with spring washer) and remove the laser marker.

Tool used: Allen wrench (nominal designation: 6)

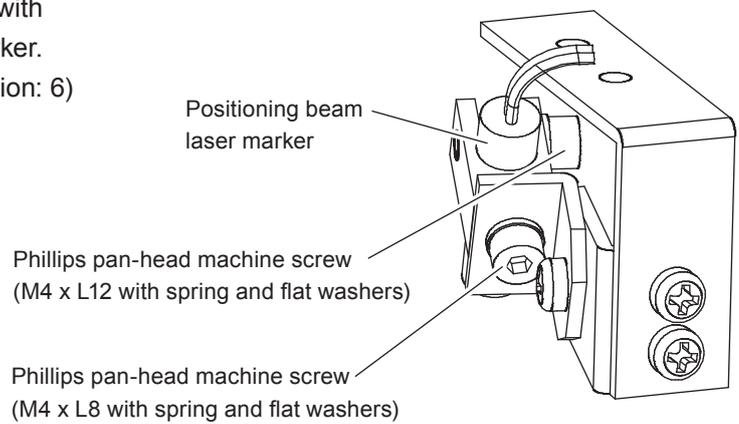


Fig. ④ -378

- (29) Rotate the positioning beam block and positioning beam bracket A and B as in the figure. Fasten 2 x Allen bolts (M4 x L8, L12 with spring washer) and attach the laser marker.  
 Tool used: Allen wrench (nominal designation: 3)

**Additional Information :**

For attachment of the laser marker, refer to the figure below.

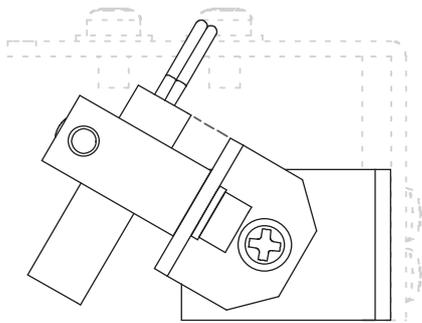


Fig. ④ -379

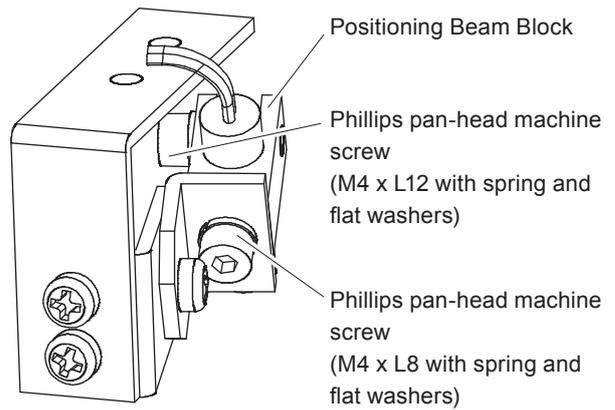


Fig. ④ -380

- (30) Attach the positioning beam bracket A and B by fastening the 3 x Phillips pan-head screws (M4 x L8 with spring washer) on the positioning beam assembly.  
 Tool used: No .2 Phillips screwdriver

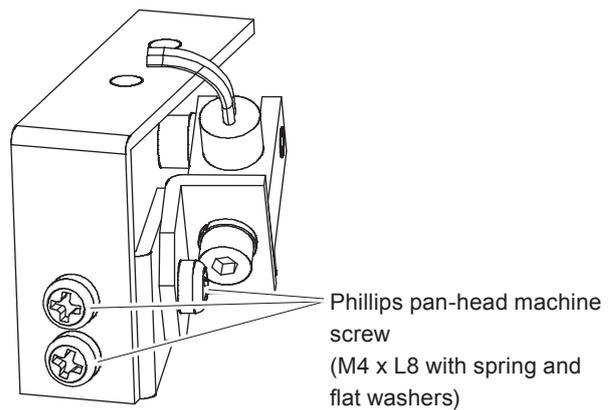


Fig. ④ -381

- (31) Fix the positioning beam assembly on the arm unit using 2 x Phillips pan-head machine screws (M4 x L8 with spring washer) and connect the connector.  
 Tool used: No .2 Phillips screwdriver

**NOTE :** Check the irradiation position of the positioning beam, and adjust it as necessary.

Phillips pan-head machine screw (M4 x L8 with spring and flat washers)

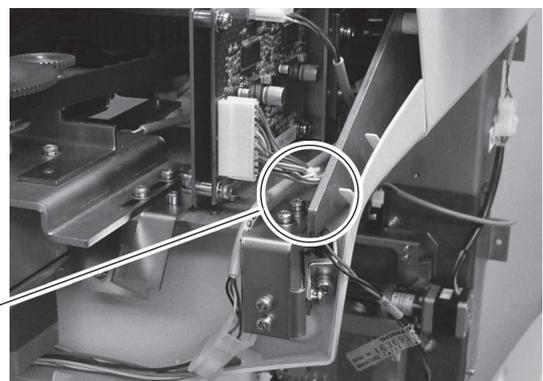


Fig. ④ -382

- (32) Fasten the harnesses of the positioning beam laser marker using a binding band.

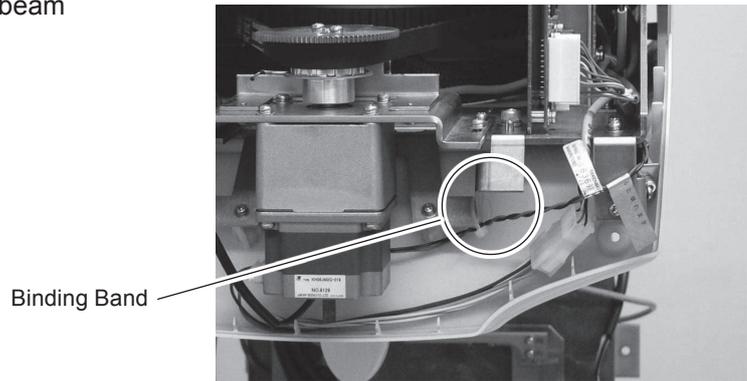


Fig. ④ -383

- (33) Remove the 2 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers) and 2 x washers (Φ 5) from the left cover on the slide main unit. Remove the Control Panel and the Control Panel reinforcement plate.  
Tool used: No .2 Phillips screwdriver

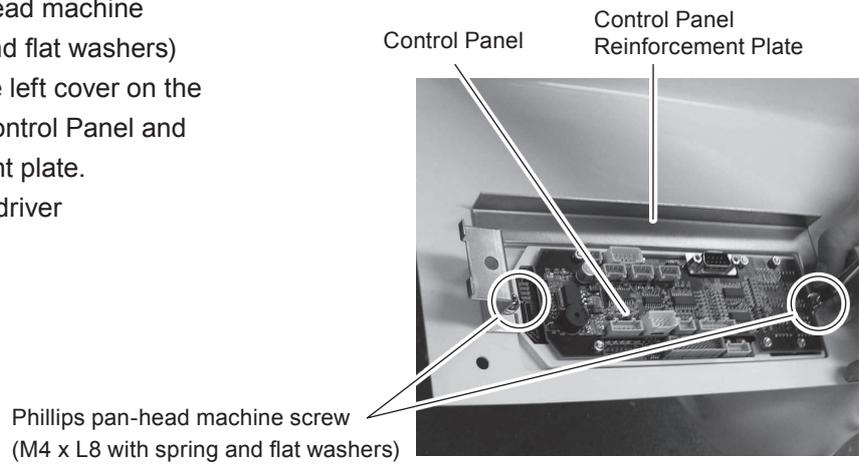


Fig. ④ -384

- (34) Turn the Control Panel reinforcement plate 180 degrees and mount it into the right cover on the slide main unit of the left-rotating specifications. Relocate the harness holder to the upper side of the Control Panel fixing bracket.

- (35) Fix the Control Panel using the 2 x Phillips pan-head machine screws (M4 x L8 with spring and flat washers) and 2 x washers (Φ 5).  
Tool used: No .2 Phillips screwdriver

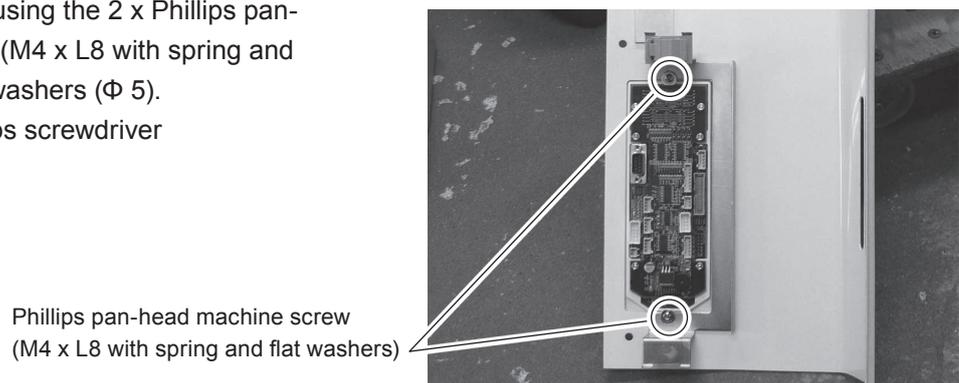


Fig. ④ -385

(36) Connect the connectors (connectors K1 - K7, and K9) of the Control Panel.

REF. : See “⑬ Wiring Diagram”

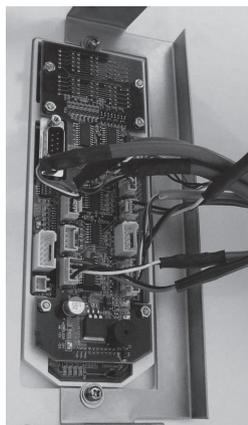


Fig. ④ -386

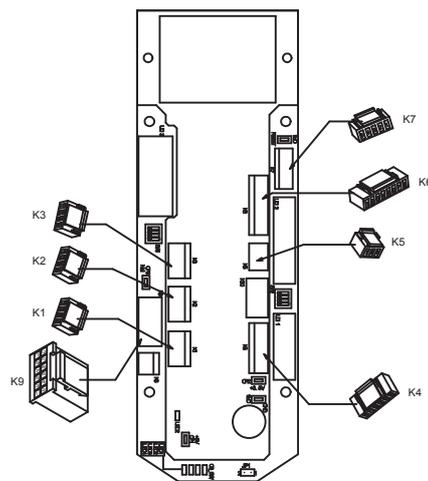


Fig. ④ -387



Control Panel

Fig. ④ -388

(37) Following the reverse steps of dismantling, mount the slide main unit cover, upper back cover of the sensor on the arm unit, arm mounting unit top cover, and Frankfurt horizontal beam lever.

Tool used: No .2 Phillips screwdriver

(38) Refer to the figure, mount the positioning mirror fixing bracket and the positioning mirror on the frontal cover of the slide main unit.

Tool used: No .2 Phillips screwdriver

Positioning Mirror

Phillips pan-head machine screw  
(M4 x L12 with spring and flat washers)

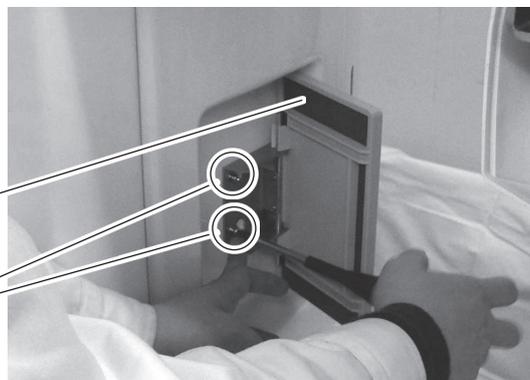


Fig. ④ -389

When this equipment has been modified to the left-rotating specifications, follow the steps below to change the settings on the computer.

## B. Changes in Computer Settings

(1) Activate X-era Smart Control Manager on the computer connected.

**Additional Information :** Refer to “① CS Mode” on how to activate CS Mode.

(2) Select [CS100] from the pull-down menu on the selection screen of CS Mode.

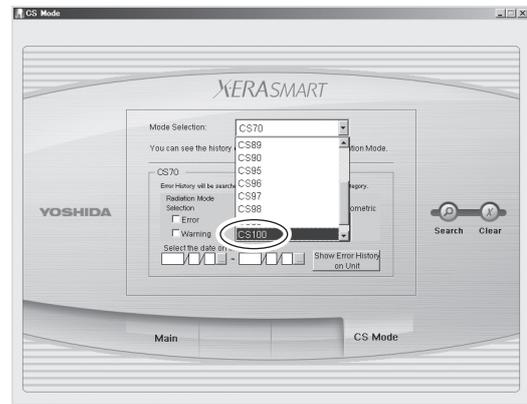


Fig. ④ -390

(3) From the settings screen of CS100, choose [CCW] for [Pano Radiation Rotation].

**NOTE :** For [Sensor Save Mechanism], choose [Exist] with 3D function or Cephalometric. [Not Exist] without 3D function, without Cephalometric.

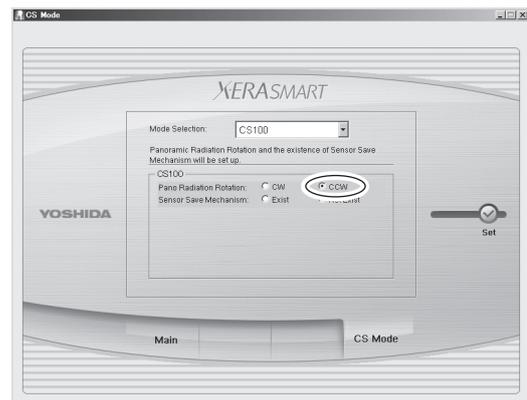


Fig. ④ -391

(4) Press [Set].

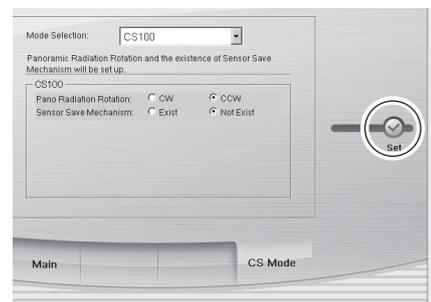


Fig. ④ -392

(5) Press [OK] when the settings adjustment complete screen is displayed.

(6) Choose the [Main] tab in order to display the main screen.

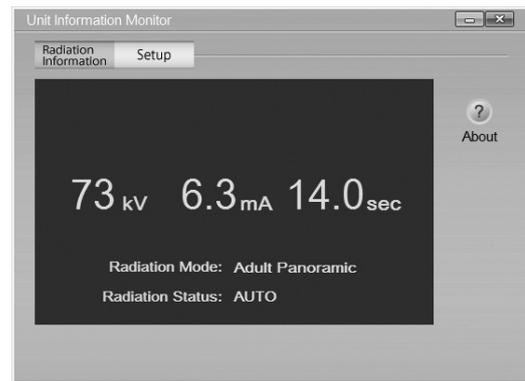


Fig. ④ -393

(7) Choose [CS90] from the pull-down menu on the top screen of CS Mode, and check the operation.

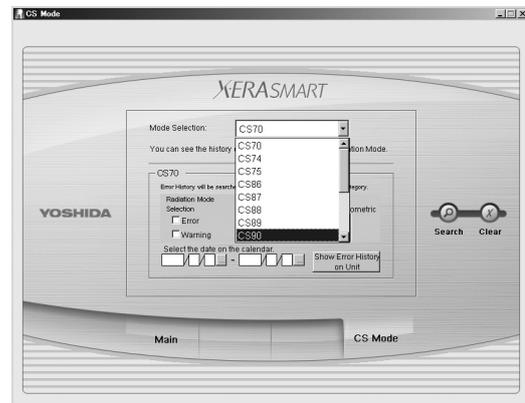


Fig. ④ -394

(8) After checking that the operation is normal, run a test image acquisition placing the installation phantom.

- Irradiance Conditions
- Tube Voltage: 58 kV
- Tube Current: 2.0 mA

## ⑤ Equipment and Power Source Connection Procedure and Precautions

---

### 1. Safety Precautions

To ensure that accidents, equipment damage and other unforeseen situations do not arise during installation, observe the precautions below when connecting the equipment to a power source.

\* Any queries regarding ambiguities in these precautions should be addressed to Yoshida Dental Mfg. Co., Ltd.

#### **WARNING**

- Always set the power switch to OFF when no power supply is required, and take great care to avoid electric shocks or similar accidents.
- Take particular care to avoid personal injury when attaching the equipment components.
- To avoid electric shocks, burns and other accidents when connecting or disconnecting power plugs or electrical connectors inside the equipment, always ensure that the power switch and the circuit breakers in the room are set to OFF.

#### **CAUTION**

- Install in a location free of moisture.
- Install in a location where there is no risk of adverse effects due to air pressure, temperature, humidity, ventilation, sunlight, dust, salt or air containing chemicals such as sulfur.
- Beware of impacts when transporting the unit.
- Install the unit in a place with no tilts, vibrations or impacts.
- Do not install in a location where chemicals or pharmaceuticals are stored or where there is exposure to gas.
- Ensure that the equipment is correctly grounded.  
(Apply the grounding work equivalent to requirements of metal wires with ground resistance of 100  $\Omega$  or more and pulling strength 0.39 kN or more, or soft copper wires with 1.6 mm diameter or more.)
- Always turn off the power to the X-era Smart and the computer when connecting to the computer.
- The computer should be set up outside the X-ray room.
- Ensure that the computer is also correctly grounded.
- Use a common grounding point for both the X-era Smart and the computer (shared protective grounding).
- Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.
- Do not install this equipment in a place where it is exposed to ambient noise.
- Install this equipment in a place fully fitted with lighting equipments. Install the monitor in a place where it does not get internal or external lights or reflections from them.
- When using power switches, always give appropriate signals to the other workers.

## 2. Power outlet connection procedure

Plug the power plug into a power outlet.

### **WARNING**

- Take great care to avoid electric shocks when connecting the equipment to a power outlet.
- Ensure that the power plug is correctly inserted into the power outlet and that no conversion plug is used.

## ⑥ Checking Procedure and Precautions Prior to Initial Operation

---

### 1. Safety precautions

To ensure that accidents, equipment damage and other unforeseen situations do not arise during installation, observe the precautions below when checking the equipment prior to initial operation.

\* Any queries regarding ambiguities in these precautions should be addressed to Yoshida Dental Mfg. Co., Ltd.

#### **DANGER**

- It is extremely dangerous to conduct checking prior to trial operation without first securing the equipment to the floor and wall. Always ensure that the equipment is securely fixed to the floor and wall beforehand.

#### **WARNING**

- When moving this equipment, care should be taken to ensure that there are no obstacles around the equipment.
- When attaching the arm and after the arm is attached, check that there are no obstacles within the equipment's range of movement.
- Always set the power switch to OFF when no power supply is required, and take great care to avoid electric shocks or similar accidents.
- To avoid electric shocks, burns and other accidents when connecting or disconnecting power plugs or electrical connectors inside the equipment, always ensure that the power switch and the circuit breakers in the room are set to OFF.
- When approaching moving parts (elevation unit, rotating arm, etc.), provide supports for the moving parts where necessary to prevent accidents.
- Before carrying out trial operation, always check that the equipment is level.
- When using power switches, always give appropriate signals to the other workers.
- Ensure that the power plug is correctly inserted into the power outlet and that no conversion plug is used.
- Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.

## 2. Checklist and Procedure Prior to Initial Operation

### 2-1. Rechecking the connections

Recheck the following connections:

Power plug

Checking method: Check that the power plug is correctly inserted into the power outlet and that no conversion plug is used.

### 2-2. Checking for play in the column

Checking method: Rock the column slightly to confirm that there is no looseness in the equipment fixings.

### 2-3. Checking the level

Checking method: Place a level on the column and arm mounting unit to confirm that the equipment is level as stipulated in all directions. For equipment with 3D function, check the level with a digital level gauge.

**NOTE** : If the equipment is not level as stipulated, adjust the level as described in “2-2-4. Leveling” in “③ Equipment Installation Procedure and Precautions”.

**REF.** : “4. Installation Location (Floor) Levelness Requirements” in “① Requirements for Installation Location Facilities”.

### 2-4. Other checks

Check the following items, with reference to “2. Performance and Safety Checking Items and Performance Benchmarks” in “② Implementation Procedure for Performance and Safety Checking and Performance Benchmarks”:

- Grounding connections
- Column fixings
- Power cable connections
- Arm mounting unit installation
- Chinrest fixings
- Confirmation of cephalometric unit attachment.

## ⑦ Initial Operation Implementation Procedure and Precautions

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Refer to “⑥ Implementation Procedure for Performance and Safety Checking and Performance Benchmarks” and carry out the final checking work.

## ⑧ Implementation Procedure for Performance and Safety Checking and Performance Benchmarks

---

### 1. Safety precautions

To ensure that accidents, equipment damage and other unforeseen situations do not arise during installation, observe the precautions below when checking the equipment performance and safety.

\* Any queries regarding ambiguities in these precautions should be addressed to Yoshida Dental Mfg. Co., Ltd.

#### **WARNING**

- When moving the rotating arm, check that there are no obstacles within the arm's range of movement.
- Always set the power switch to OFF when no power supply is required, and take great care to avoid electric shocks or similar accidents.
- Take particular care to avoid personal injury during checking.
- To avoid electric shocks, burns and other accidents when connecting or disconnecting power plugs or electrical connectors inside the equipment, always ensure that the power switch and the circuit breakers in the room are set to OFF.
- Take particular care to avoid accidents when approaching moving parts (elevation unit, rotating arm, etc.).

#### **CAUTION**

- Ensure that the equipment is correctly grounded.  
(Apply the grounding work equivalent to requirements of metal wires with ground resistance of 100Ω or more and pulling strength 0.39kN or more, or soft copper wires with 1.6mm diameter or more.)

## 2. Performance and Safety Checking Items and Performance Benchmarks

Check the items shown below and fill in the required information in “3. IEC61223-3-4:2000 X-ray Equipment Image Performance Acceptance Testing Report”.

Make a copy of “3. IEC61223-3-4:2000 X-ray Equipment Image Performance Acceptance Testing Report” and then use the copy.

After completing the report, ensure that it is placed in safe storage by the equipment installer.

### 2-1. Checking the accessories

Check that you have all the items listed in “2. Other Components” in “② Lists of Equipment Components, Consumables, Tools, Measuring Instruments and Jigs”.

### 2-2. Checking the test report

Check that all the information in the test report supplied with the X-era Smart meets the approval benchmarks.

### 2-3. Checking the labeling and display

Check that the name plates are correctly affixed and that the information provided (equipment name, model and serial number) is entirely clear and legible.

Check also that there are no parts of the control panel display that are obscured or unclear.

**REF.** : Refer to the “X-era Smart Operation Manual” for details.

### 2-4. Checklist and performance benchmarks

Carry out the performance and safety checks while referring to “Table 8-1: Checklist and performance benchmarks”.



#### **CAUTION**

- Make sure that between the electrical switchboard and the wall power outlet is single-wired. Confirm with the power distribution specialist or power company that appropriate power distribution equipment is used for the load capacity (2000 VA / 100-120 V, 220-240 V). Confirm that the power voltage of the wall power outlet to which this equipment is to be connected is within the range of  $\pm 10\%$ .
- If the power supply is not within the designated range, consult an electrical equipment specialist or your power company.

Table ⑧-1: Checklist and performance benchmarks

■ Power Source

Item	Task details	Approval/Performance benchmark
Power supply (input) voltage checking (under load*)	<p>Set the measuring range of tester to AC Voltage, and connect the power plug of Main Unit into power strip. Connect tester between L Terminal and N Terminal on the power strip. Measure loaded voltage* when power consumption is set at maximum (82kV, 10mA).</p> <p><b>REF.</b> : Before measuring, make sure the specifications described in [① Requirements for Installation Location Facilities] “2. Equipment Requirements for Power, etc.”.</p> 	±10% of the power voltage (VAC)
Grounding connection checking	<p>Set the tester measurement range to AC voltage and then use the tester to measure the voltage between the power outlet ground terminal and terminal L and between the power outlet ground terminal and terminal N.</p> <p><b>REF.</b> : Before measuring, make sure the specifications described in [① Requirements for Installation Location Facilities] “2. Equipment Requirements for Power, etc.”.</p>	<p>Between the earth and L terminals: ±10% of the power voltage (VAC)</p> <p>Between the earth and N terminals: 2 (VAC) or less</p>
Whether the power cable is correctly connected	Check that the power plug is correctly plugged into the power outlet (no conversion plug used).	Power plug correctly plugged into power outlet with no conversion plug used.
Confirmation of additional protective earth conductor.	Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.	Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.

\* “Under load” refers to a state where the elevation motor or rotating arm motor are running and X-ray irradiation is in progress (including states involving concurrent operation).

■ Main Unit

Item	Task details	Approval/Performance benchmark
Column fixings checking	Check the fixing locations.	No looseness or play.
Arm mounting unit installation checking	Check the fixing locations.	No looseness or play.
Chinrest fixings checking	Check the fixing locations.	No looseness or play.
Confirmation of cephalometric unit attachment.	Check the fixing locations.	No looseness or play.
Level checking	Measure whether the arm mounting unit is level.	<p>[Non-3D Type] Levelness: ±0.5 (°) or less</p> <p>[3D Type] Levelness: ±0.1 (°) or less</p>
Damage or soiling	Visually check the exterior of the equipment.	No damage or soiling.

Confirmation of the equipment's option settings.	Check the equipment's settings by CS100 of the CS mode.	The equipment's specifications and settings need to match each other.
--	---	---

■ Component Operating Status

Item	Task details	Approval/Performance benchmark
Slide body vertical movement checking	Press the Up switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The slide body rises when the Up switch is pressed and stops at the highest point stated in the dimensional drawing.
	Press the Down switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The slide body descends when the Down switch is pressed and stops at the lowest point stated in the dimensional drawing.
Calibrations of collimator drive and sensor drive (with 3D <sup>(*)</sup> and Cephalometric <sup>(*)</sup> only)	Calibrate the collimator drive and sensor drive using CS102 of CS mode.	The Operating Status: "Calibration has completed" is displayed.
Rotating arm front-back movement checking	Press the Beam switch on the control panel, switch to positioning mode and press the Forward switch <b>REF.</b> : X-era Smart Operation Manual	The rotating arm moves towards the column when the Forward switch is pressed.
	Press the Beam switch on the control panel, switch to positioning mode and press the Back switch <b>REF.</b> : X-era Smart Operation Manual	The rotating arm moves away from the column when the Back switch is pressed.
Confirmation of resetting operations (panoramic, 3D <sup>(*)</sup> , cephalometric <sup>(*)</sup> )	Press the RESET switch on the Control Panel after switching to each of 3D <sup>(*)</sup> , panoramic and cephalometric <sup>(*)</sup> modes. <b>REF.</b> : X-era Smart Operation Manual	By pressing the RESET switch, the rotating arm unit, collimator unit, and sensor unit move to and stop at the image acquisition starting position.
Positioning beam operation checking	Press the Beam switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The laser beam, midline beam and anterior teeth fault area laser beams light and correctly illuminate the designated location.
Confirmation of opening and closing of the head support.	Hold the bottoms of the temporal support and forehead support and slide them.	They should move smoothly.
Confirmation of opening and closing of the ear rods and nose support <sup>(*)</sup>	When opening the ear rods, slide them by holding the depressed parts. When opening the nose support, slide it by holding the bottom part.	They should move smoothly.
Confirmation of cephalo rotating unit operations <sup>(*)</sup>	Hold the bottom of ear rod and rotate it to the PA or LA position. <b>REF.</b> : X-era Smart Operation Manual	They should move smoothly.
Exposure operation checking	Select Test mode and then press the X-ray exposure switch (hand switch).	Dashes (--) appear on the control panel kV and mA display. Only while the X-ray exposure switch (hand switch) is pressed, the rotating arm moves and the hand switch box "X-ray" LED and arm mounting unit indicators both light.
Aging process	Carry out aging using CS95 CS mode.	The aging completed display appears.
Adjusting the position of X-ray beam (Panoramic)	Adjust the position of X-ray beam. <b>REF.</b> : ⑧ 2-10. A. Mechanical Alignment: Panoramic <b>REF.</b> : ⑧ 2-10. B. Sensor Calibration: Panoramic	Irradiation position of X-ray beam is set correctly and calibration is successful.

Item	Task details	Approval/Performance benchmark
Adjusting the position of X-ray beam (Cephalometric) <sup>(*)</sup>	Adjust the position of X-ray beam. <b>REF.</b> : ⑧ 2-11. A. Mechanical Alignment: Cephalometric <b>REF.</b> : ⑧ 2-11. B. Sensor Calibration: Cephalometric <b>REF.</b> : ⑧ 2-11. C. Mechanical Alignment: Secondary Slit	Irradiation position of X-ray beam is set correctly and calibration is successful.
Panoramic fault area checking	Carry out exposure with the Installation phantom installed on the chinrest base.	The desired image is displayed correctly on the computer monitor.
Ear rings center position confirmation <sup>(*)</sup>	Adjust the center position of the ear rings. <b>REF.</b> : ⑧ 2-13. Center Alignment of Ear Rings	Center positions of the ear rings are aligned.
Confirmation of QA image (Panoramic)	Acquire panoramic image using QA phantom. <b>REF.</b> : ⑧ 2-14. QA Procedure (Panoramic)	Line Pairs : Slit part needs to be visible. Low Contrast : Holes need to be visible.
Confirmation of QA Image (Cephalometric) <sup>(*)</sup>	Acquire cephalometric image using QA phantom. <b>REF.</b> : ⑧ 2-15. QA Procedure (Cephalometric)	Line Pairs : Slit part needs to be visible. Low Contrast : Holes need to be visible.
Pin adjustment <sup>(**)</sup>	Adjust the pins using CS103 of CS mode and 3D Maintenance Tool. <b>REF.</b> : ⑧ 2-16-3. Pin Adjustment	Make sure that the tip of the spear overlaps with the stainless-steel needle for images from both ways.
Checking the 3D irradiation field <sup>(**)</sup>	Adjust the 3D irradiation field using CS10I of CS mode and 3D Maintenance Tool. <b>REF.</b> : ⑧ 2-16-1. Checking the 3D Irradiation Field	Make sure that there is no deficiency in X-ray irradiation field of resulting image.
Digital calibration <sup>(**)</sup>	Calibrate the center channel using 3D Maintenance Tool. <b>REF.</b> : ⑧ 2-16-4. Digital Calibration	Check the “Upper-end Steel Sphere”, “Lower-end Steel Sphere”, “Mid-height Steel Sphere”, and make sure that the distances between them are as follows. • “Upper-end Steel Sphere” - “Lower-end Steel Sphere”: 39.6 [mm] - 40.4 [mm] • “Upper-end Steel Sphere” - “Mid-height Steel Sphere”: 37.3 [mm] - 38.1 [mm] • “Lower-end Steel Sphere” - “Mid-height Steel Sphere”: 37.3 [mm] - 38.1 [mm]
Confirmation of QA image(3D) <sup>(**)</sup>	Conduct the 3D (Oral / Dental) procedure using the QA phantom for 3D image acquisition. <b>REF.</b> : ⑧ 2-18. QA Procedure (3D)	The following requirements have to be met from in the image acquired. 1. Distance between two steel spheres 29.6 [mm] - 30.4 [mm] 2. Tickness of aluminum disc 0.7 [mm] or less 3. Diameter of teflon pin’s minor axis 4.6 [mm] - 5.3 [mm] 4. Standard deviation of pixel values at acrylic part For Image Creator Version 2.52 or earlier: 10 or less For Image Creator Version 2.53 or later: 120 or less

■ Explanations

Item	Task details	Approval/Performance benchmark
Were the equipment handling and maintenance procedures and requirements explained as stated in the manuals?	Explain the requirements as stated in the X-era Smart Operation Manual	---

\* Items with (\*) only apply to a Cephalometric equipment.

\*\* The items marked with (\*\*) need to be conducted only with 3D type.

## 2-5. Calibrations of Collimator Drive and Sensor Drive (For equipment with 3D function and Cephalometric)

Select CS 102 at X-ERA SMART Control Manager on the computer connected.

### A. Calibration of Electric Collimator

- (1) Select “Collimator” as pictured on the right, and press “Set” button on the right of the image.
- (2) Press the “FIX” switch on the control panel on the main unit, and the calibration of electric collimator starts.
- (3) During the calibration process, the status is displayed as in the picture below.
- (4) When “Calibration has completed.” is displayed as the operation status, the calibration for the electric collimator is completed.

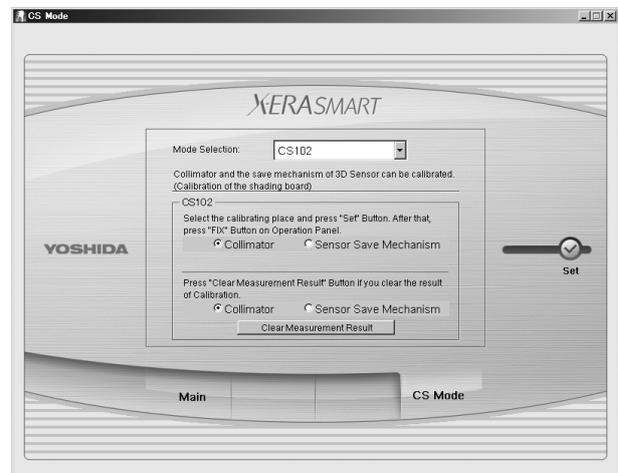


Fig. ⑧ -1: CS102

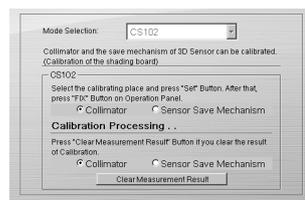


Fig. ⑧ -1-2: CS102

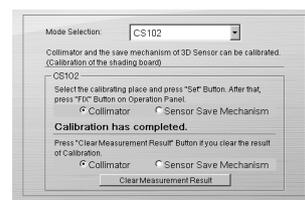


Fig. ⑧ -1-3: CS102

### B. Calibration of Sensor Drive

**NOTE** :Conduct the procedure only with 3D Type.

- (1) Select “Sensor Save Mechanism” as pictured on the right, and press “Set” button on the right of the image.
- (2) Press the “FIX” switch on the control panel on the main unit, and the calibration of sensor drive starts.
- (3) During the calibration process, the status is displayed as in the case of electric collimator.
- (4) When "Calibration has completed." is displayed as the operation status, the calibration for the sensor drive is completed.

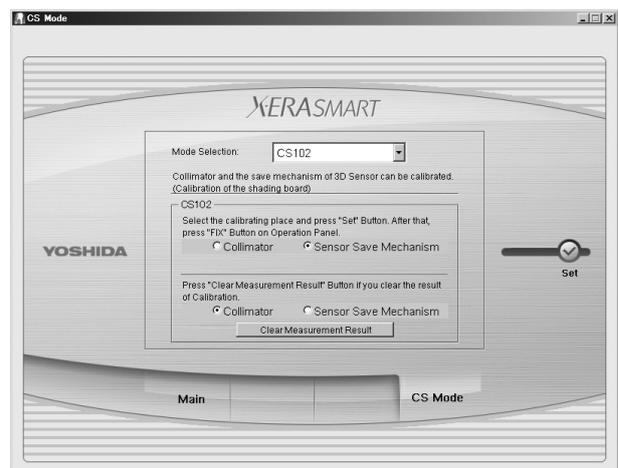


Fig. ⑧ -2: CS102

### ⚠ CAUTION

- Do not press “Clear Measurement Result” button, as it will clear the measurement.

### C. Calibration of the angle detection sensor on the rotating arm

Select CS97 at X-ERA SMART Control Manager on the computer connected.

Follow the instruction on the screen.

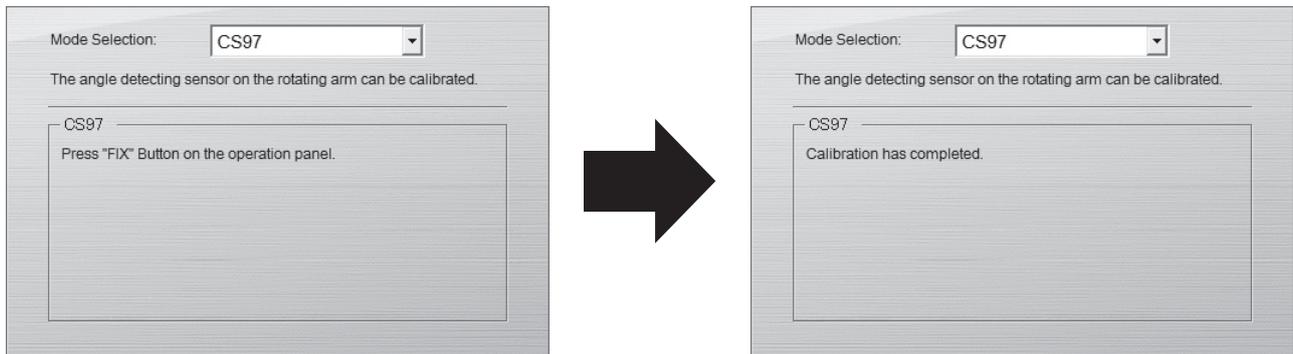


Fig. ⑧ -3: CS97

### D. Calibration of the head support thickness detection sensor

Select CS98 at X-ERA SMART Control Manager on the computer connected.

Follow the instruction on the screen.

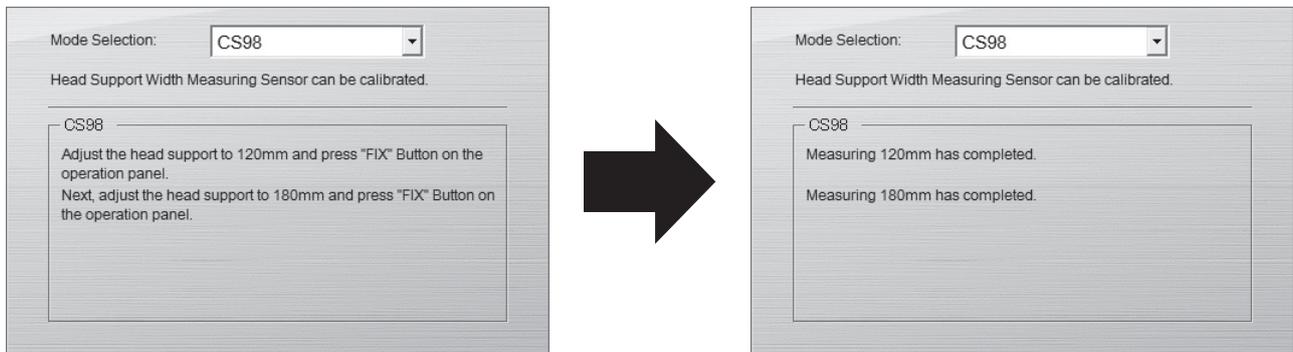


Fig. ⑧ -4: CS98

## 2-6. Positioning beam operation checking method

- (1) Mount the Installation phantom on the chinrest block base.
- (2) Press the Beam switch on the control panel to fire the positioning beam.
- (3) Check that the beam illuminates the locations described below.

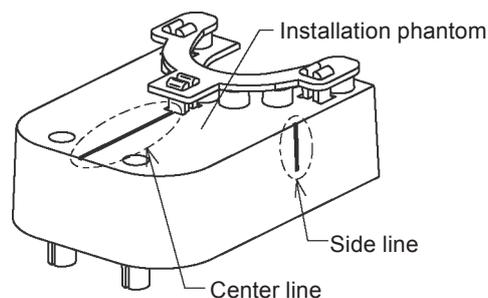


Fig. ⑧ -5: Fixed phantom

Midline beam: Illuminates the center line on the fixed phantom.

Laser beam: The emitted beam is level.

Anterior teeth fault area beam: The beam is aligned with the side line on the fixed phantom.

## 2-7. Exposure operation checking method

- (1) Set the X-era Smart to test mode.  
(Hold down the SELECT and FIX switches on the control panel at the same time for at least 3 seconds. Dashes (--) appear on the kV and mA displays.)

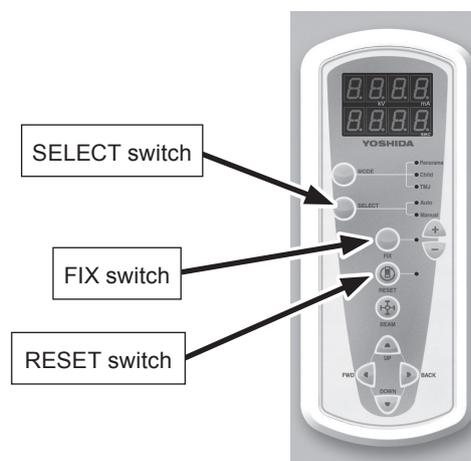


Fig. ⑧ -6: Control panel

- (2) Press the RESET switch.  
If the rotating arm is not in the exposure start position, the rotating arm rotates to the exposure start position and then stops.
- (3) Check that the rotating arm has stopped in the exposure start position.
- (4) Press the X-ray exposure switch (hand switch).
- (5) Only while the X-ray exposure switch (hand switch) is pressed, check the following:
  - That the rotating arm moves.
  - That the hand switch box X-ray lamp (orange) lights.
  - That the buzzer sounds continuously.
  - That the arm mounting unit indicator changes from blue to orange.

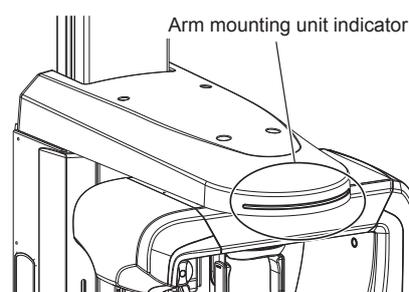


Fig. ⑧ -7: Arm mounting unit indicator

**REF.** : Refer to the “X-era Smart Operation Manual” for details.

## 2-8. Aging process

### **WARNING**

- There is a risk of unintended irradiation in CS mode. Ensure that you fully understand the details.

### **CAUTION**

- The aging process includes X-ray irradiation. Take all necessary precautions when carrying out this task and handling the equipment.
- If you are using the X-era Smart for the first time, if you have just replaced the X-ray tube head or if the X-era Smart has not been used for 1 month or more, you should carry out aging before using the equipment.
- The aging process includes X-ray irradiation and should always be carried out in an irradiation controlled area.
- Do not use the X-era Smart in any other ways during the aging process.

<Carry out aging using CS95 CS mode>

- (1) Select the CS95 CS mode in the X-era Smart Control Manager on the connected computer.

**REF. :** See “① CS Mode” for information on how to select CS mode.

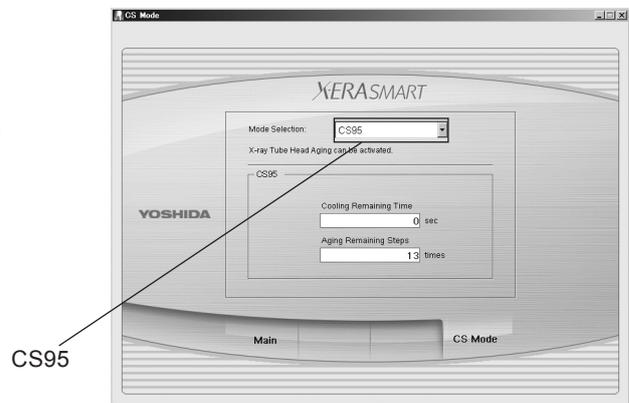


Fig. ⑧ -8: CS mode

- (2) The control panel display changes as shown below.

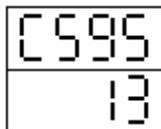


Fig. ⑧ -9: CS95 control panel display

- (3) When you press the X-ray exposure switch (hand switch), X-rays are emitted for 4 seconds. When irradiation ends, the display changes as shown below.

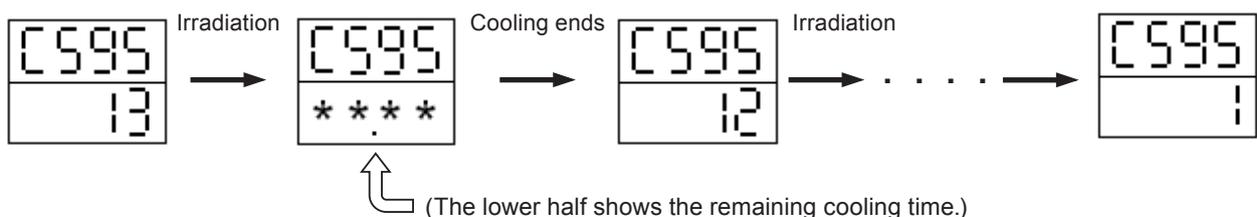


Fig. ⑧ -10: Display during aging

**NOTE :** There is an 80 second cooling period after irradiation. If you press the X-ray exposure switch during cooling, the FL03 warning is displayed and irradiation is not possible.

(4) The 13th irradiation ends and the display shown below appears to indicate that aging is completed.

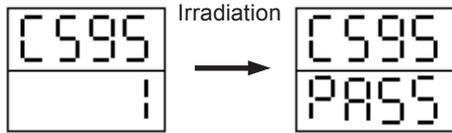


Fig. ⑧ -11: Display when aging ends

**Additional Information :** The display of remaining aging steps in the X-era Smart Control Manager shows “0” briefly and then reverts to “13”.

(5) Click the “Main” tab to exit CS mode.



Fig. ⑧ -12: Exiting CS mode

## 2-9. Selection of the Equipment

Before proceeding with mechanical alignment and calibration, adjust the settings of the equipment.

(1) Activate Dental Imaging Software.

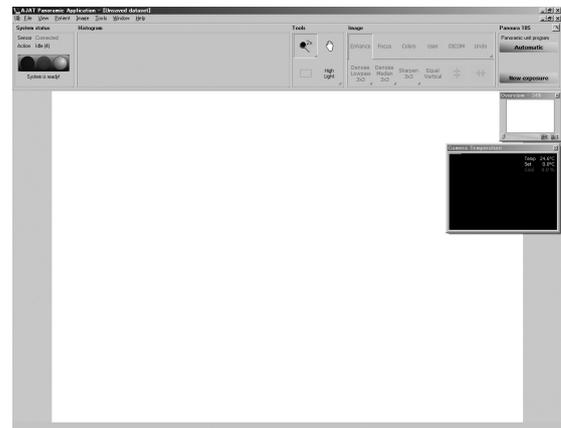


Fig. ⑧ -13

(2) Choose [Tools] – [Settings] from the top screen.

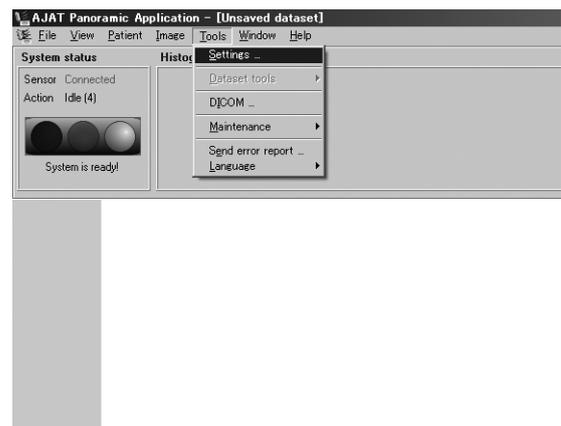


Fig. ⑧ -14

(3) Choose [Yoshida:Panoura 18S] from the “Panoramic unit” tab on the Settings screen.

(4) Set up the image-acquiring orientation of the equipment.

When the panoramic image acquisition is done  
 in right rotation: Left to right (Clockwise)  
 in left rotation: Right to Left (Counter clockwise)  
 is to be selected.

(5) Press [OK] to finalize the settings.

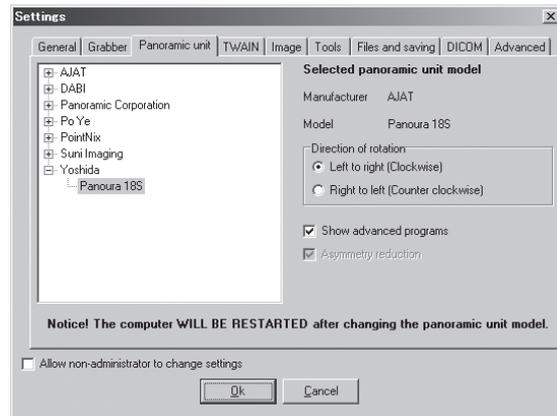


Fig. ⑧ -15

## 2-10. Adjusting the position of X-ray beam (Panoramic)

Check and adjust X-ray's irradiation position.

### A. Mechanical Alignment: Panoramic

(1) Install the Sensor to the Panoramic Unit

**REF.** : For details on how to install the sensor unit, refer to [④ Equipment Assembly Procedure and Precautions] “2-8. Handling the Sensor”.

(2) Use the fluorescent screen to see to confirm that X-ray is irradiated on the image reception area on the sensor.

(3) Activate Dental Imaging Software.

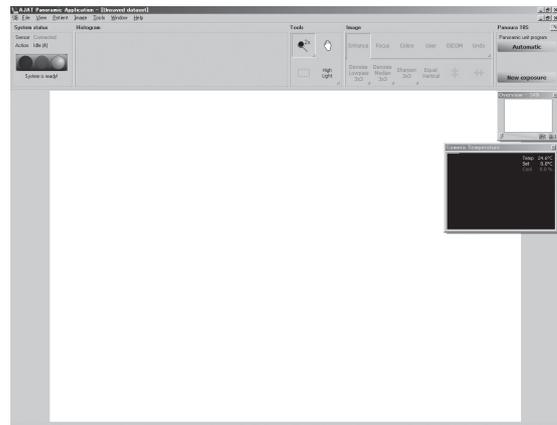


Fig. ⑧ -16

(4) Select [Tools] – [Maintenance] – [Mechanical Alignment] from the top screen.

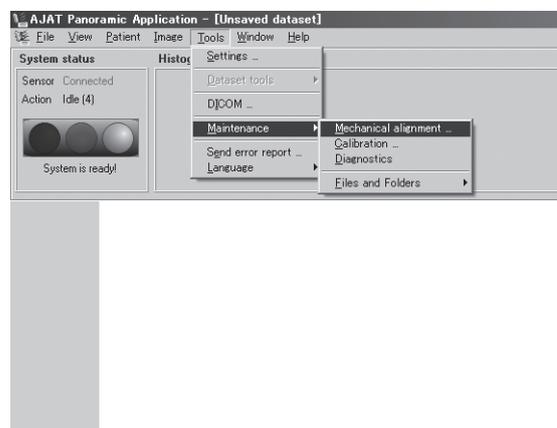


Fig. ⑧ -17

(5) The mechanical alignment tools screen is displayed.

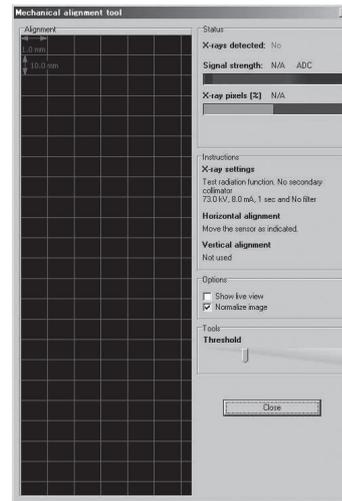


Fig. ⑧ -18

(6) Irradiate X-ray and check the irradiation position status in the mechanical alignment tools screen.

- Irradiance Conditions
- Tube Voltage: 73 kV
- Tube Current: 6.3 mA
- With a 20 mm aluminum block attached (see Fig. ⑧ -32 for reference)
- Vertical Adjustment: upper part within 130±3
- Horizontal Adjustment: within ±0.2 mm

within the specified range: numbers in green  
without the specified range: numbers in red

**NOTE** : In case of horizontal adjustment, irradiation image can be checked in details by pressing [Save] button.

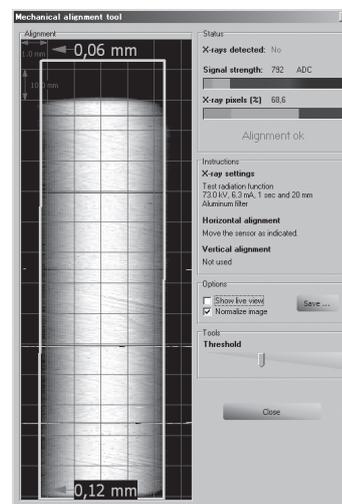


Fig. ⑧ -19

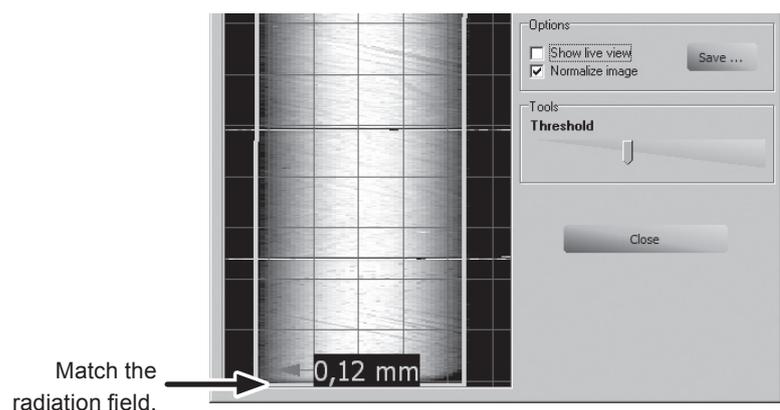


Fig. ⑧ -20

(7) If the irradiation result is out of the specified parameters and the message [Invalid Alignment] is displayed, adjust the position of the collimator.

(a. In case of fixed collimator)  
<Adjusting Vertical Position>

Loosen the 2 x Phillips pan-head screws fixing the slit stay, and adjust the vertical position of the slit stay.

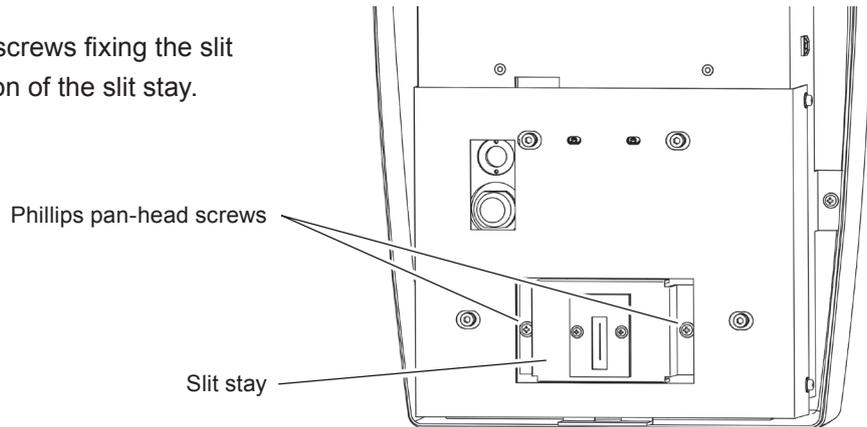


Fig. ⑧ -21

<Adjusting Horizontal Position>

Loosen the 2 x Phillips pan-head screws fixing the slit, and adjust the vertical position of the slit.

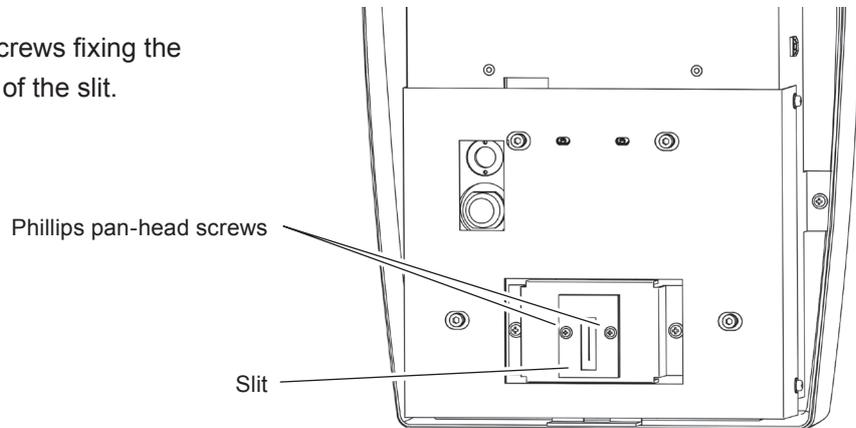


Fig. ⑧ -22

<Adjusting Rotating Direction>

Loosen the 2 x Phillips pan-head screws fixing the slit stay and the 2 x Phillips pan-head screws fixing the slit. Rotate the slit to and adjust.

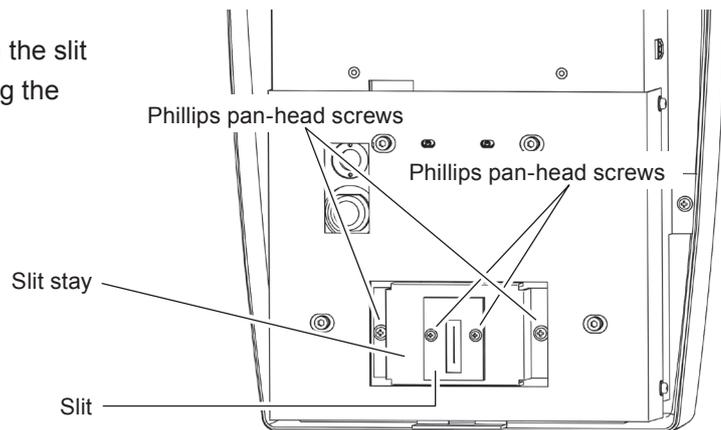


Fig. ⑧ -23

In case of fixed collimator, proceed with (10) below after adjusting the position of the collimator.

(b. In case of electric collimator)

<Adjusting Vertical Position>

Loosen the 4 x slits fixing screws, and adjust the vertical position using the slits height adjusting screw.

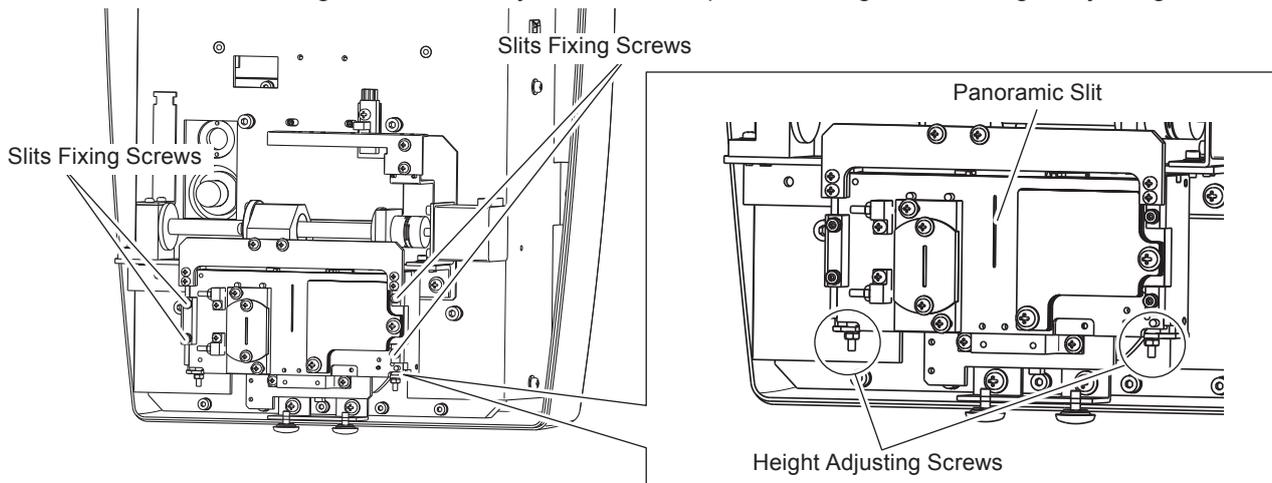


Fig. ⑧ -24

<Adjusting Horizontal Position>

Loosen the 2 x douser adjusting screws and adjust the horizontal position of the douser.

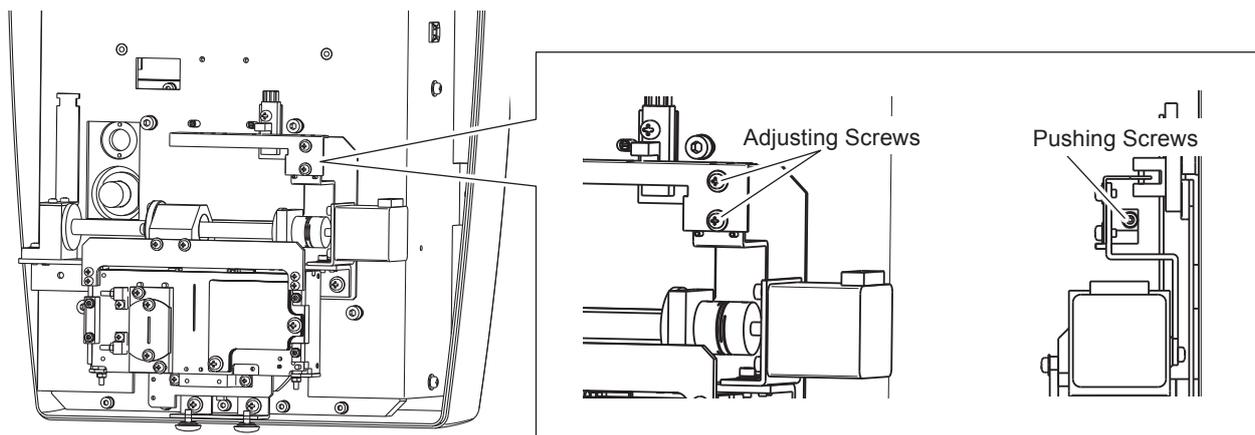


Fig. ⑧ -25

<Adjusting Rotating Direction>

Loosen the three screws on the flange part that fasten the collimator and adjust the rotating position.

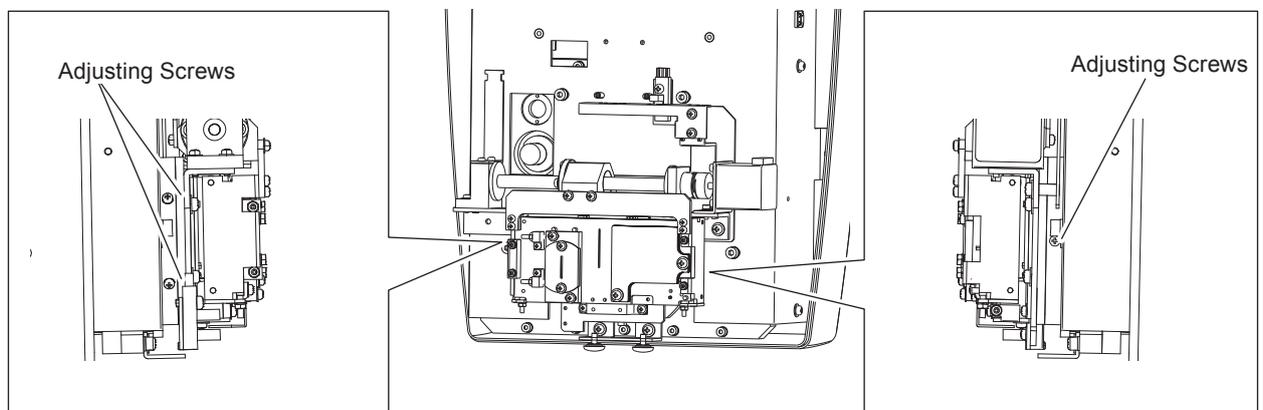


Fig. ⑧ -26

In case of electric collimator, proceed with (8) - (10) below after adjusting the position of the collimator.





(9) Press [OK] when the “Done” dialog box is displayed.



Fig. ⑧ -33

## 2-11. Adjusting the position of X-ray beam (Cephalometric)

### A. Mechanical Alignment: Cephalometric

- (1) Check that the secondary slits have been removed.
- (2) Attach the sensor on the cephalometric side.

**REF.** : Refer to “④ Equipment Assembly Procedure and Precautions” “2-8. Handling the Sensor” on how to attach the sensor.

- (3) Proceed with image acquisition. Use the fluorescent screen to confirm that X-ray is irradiated on the image reception area on the sensor.
- (4) Press the MODE switch on the Control Panel and switch the display to [CEPH] and [LA]. Press the RESET switch. Then press the BEAM switch.

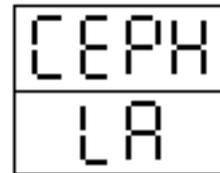


Fig. ⑧ -34

- (5) Activate X-era Smart Control Manager on the computer connected.
- (6) Choose [CS75] from the pull-down menu on the top menu of CS Mode.

**REF.** : Refer to “① CS Mode” on how to activate CS Mode.

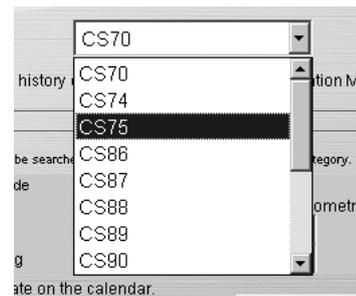


Fig. ⑧ -35

- (7) Input the irradiance conditions at CS75 screen.

- Irradiance Conditions
- Tube Voltage: 73 kV
- Tube Current: 8 mA
- Exposure Time: 1 sec.



Fig. ⑧ -36

(8) Activate Dental Imaging Software.

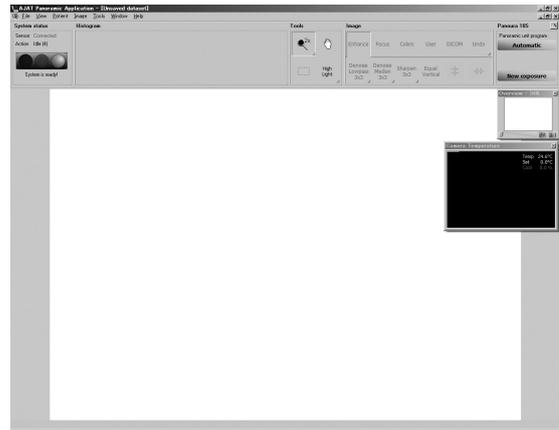


Fig. ⑧ -37

(9) Select [Tools – [Maintenance] – [Mechanical Alignment] from the top screen.

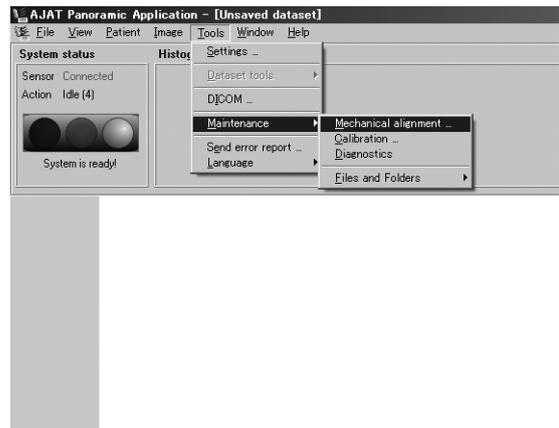


Fig. ⑧ -38

(10) The mechanical alignment tools screen is displayed.

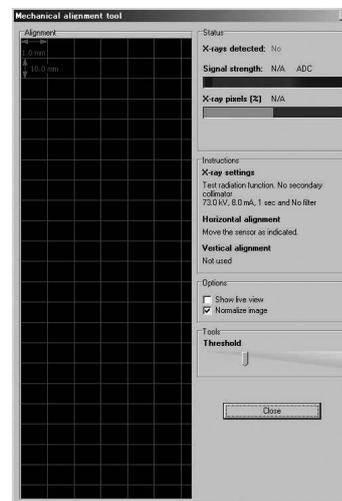


Fig. ⑧ -39

- (11) Irradiate X-ray and check the irradiation position status in the mechanical alignment tools screen.
- Vertical Adjustment: approximately the same width of upper and lower margin
  - Horizontal Adjustment: within  $\pm 0.2$  mm  
 within the specified range: numbers in green  
 without the specified range: numbers in red

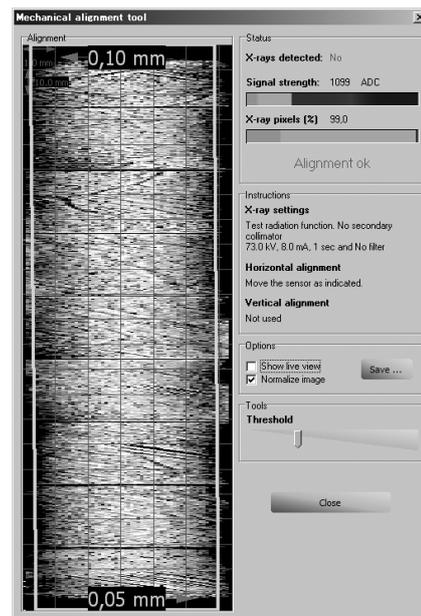


Fig. ⑧ -40

- (12) If the irradiation result is out of the specified parameters and the message [Invalid Alignment] is displayed, adjust the positions of the cephalometric slit.

**NOTE** : Adjust the rotating direction first.

<Adjusting Rotating Position>

Loosen the rotating direction adjusting screws shown in the figure. Then, loosen the nut on the push screw. Rotate the push screw and adjust the rotating position by the thrust-out length of the screw.

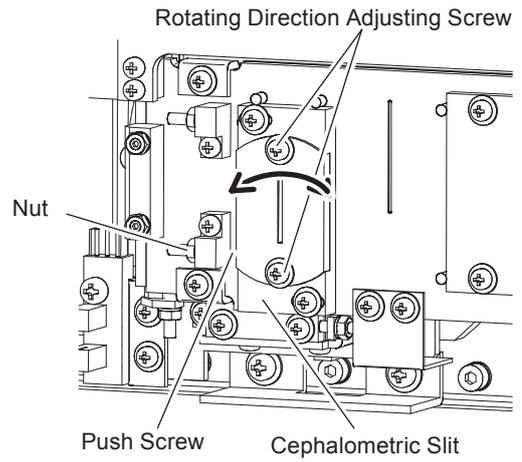


Fig. ⑧ -41

<Adjusting Horizontal Position>

Loosen the horizontal direction adjusting screws shown in the figure. Then, loosen the nut on the push screw. Rotate the push screw and adjust the horizontal position by the thrust-out length of the screw.

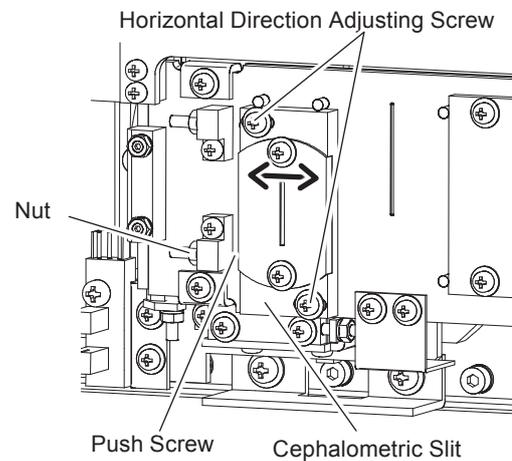


Fig. ⑧ -42

<Adjustment of Vertical Position>

Loosen the 4 x Allen bolts (M8 x L35 with spring washer) shown in the figure.

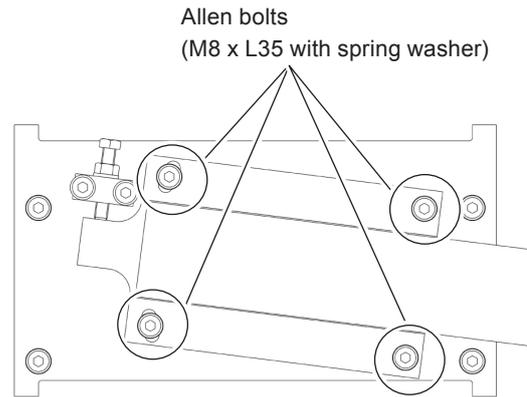


Fig. ⑧ -43

Loosen the nut (M8) shown in the figure. Rotate the Allen bolt (M8 x 45 mm) and adjust the vertical position..

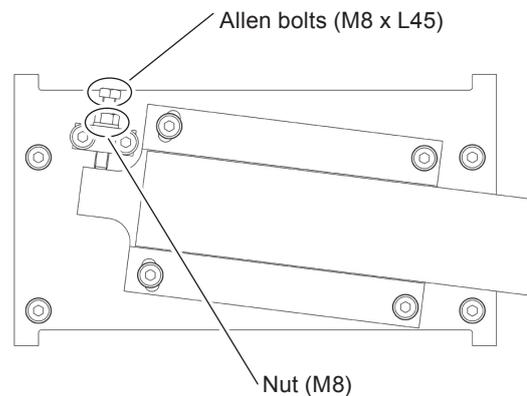


Fig. ⑧ -44

(13) Press the RESET switch on the Control Panel once. Irradiate X-ray again to check.

**NOTE :** Once the adjustments are complete, switch to [ceph], [LA] image acquisition mode from CS Mode. Make sure that X-ray is irradiated to the image reception area of the sensor from the beginning to the end of cephalometric image acquisition.

## B. Sensor Calibration: Cephalometric

### NOTE

- When conducting calibration, remove such adapters as chin rest block, and installation phantom. Make sure that no object interferes with the irradiation path of X-ray beam.
- Sensor calibration cannot be conducted until power is supplied to the sensor for five minutes or more after the sensor is mounted.
- Make sure that the secondary slits, nose support, ear rods or carpus support are not attached on the Cephalometric main unit.
- When conducting a calibration, make sure that the ambient temperature is between 20 and 30 degrees centigrade. The temperature can be checked at the “Camera Temperature” window. When the “Camera Temperature” windows is not displayed, select [View] – [Show temperature] from the top screen in order to display it.

- (1) Press the MODE switch on the Control Panel and switch the display to [CEPH] and [LA]. Press the RESET switch.

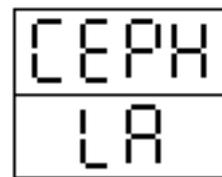


Fig. ⑧ -45

- (2) Activate Dental Imaging Software.

- (3) Select [Tools] – [Maintenance] – [Calibration] from the top menu.

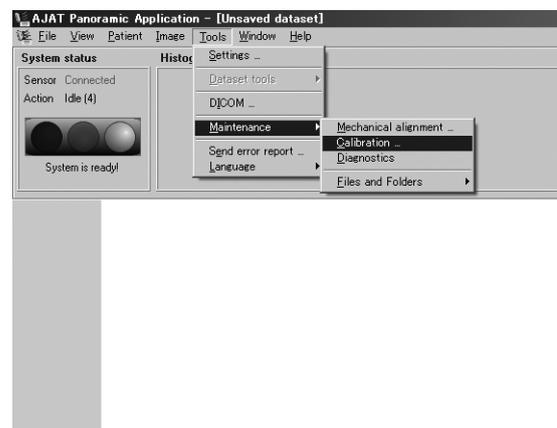


Fig. ⑧ -46

- (4) Panoramic calibration screen is displayed. Click [Calibrate].

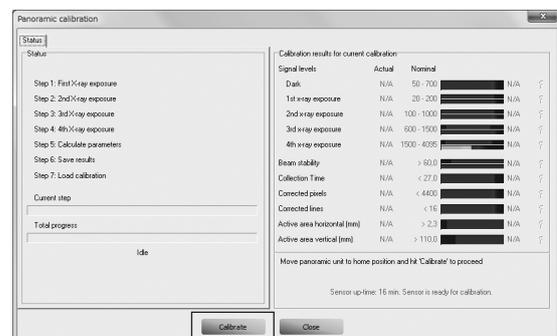


Fig. ⑧ -47

(5) Press [Yes] at the confirmation dialog box.



Fig. ⑧ -48

(6) The process starts from STEP 1 on the “Status” tab display, and each irradiance condition is displayed.

**NOTE :** When the message “20 mm Al” is displayed in the irradiance conditions, attach a 20 mm aluminum block on the irradiation hole (Cephalometric Slit) in order to filter the X-ray. When “No Filter” is displayed, the aluminum block is not used.

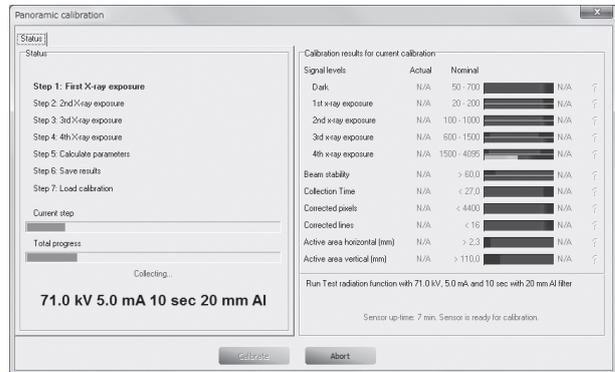


Fig. ⑧ -49

(7) The aluminum block for sensor calibration is found in the small carton box. Use an adhesive tape, etc., to fix the aluminum block on the irradiation hole (Cephalometric Slit) of the electric collimator.

**NOTE :** When fixing the aluminum block, make sure that the adhesive tape, etc. does not intervene with the X-ray exposure field.

**NOTE :** Make sure that the aluminum block is not fixed slanted.

Tool used: Adhesive taper

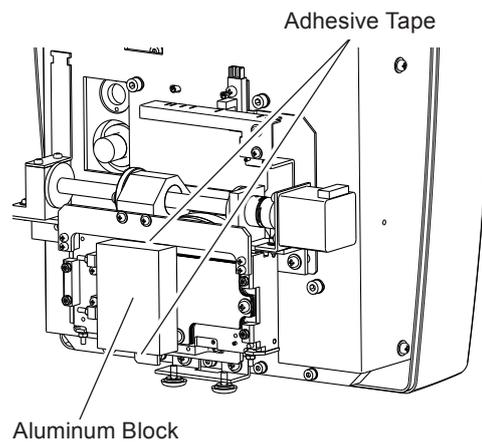


Fig. ⑧ -50

(8) Set the irradiance conditions using the Control Manager and irradiate X-ray.

(9) Follow the display for each STEP and repeat the above procedures.

(10) Press [OK] when the “Done” dialog box is displayed.



Fig. ⑧ -51

(11) After the calibration is complete, attach the nose support and ear rod.

**REF.:** Refer to [④ Equipment Assembly Procedure and Precautions] “2-9. Cephalometric Unit Mounting”

### C. Mechanical Alignment: Secondary Slit

#### **WARNING**

- Do not touch the cephalometric unit when in motion so as to avoid injuries.

(1) Attach the secondary slit to the cephalometric main unit.

REF. : Refer to “2-9. Cephalometric Unit Mounting” “B. Cephalometric Main Unit” on how to mount the secondary unit.

(2) Refer to Steps (1) to (11) in “Mechanical Alignment: Cephalometric” and check the irradiation status while the secondary slit is attached.

(3) If the irradiation result is out of the appropriate parameters, adjust the horizontal position of the secondary slit.

<Adjusting Horizontal Position>

Loosen the 2 x Allen bolts indicated in Fig. ⑧ -52 which fasten the pulley brackets.

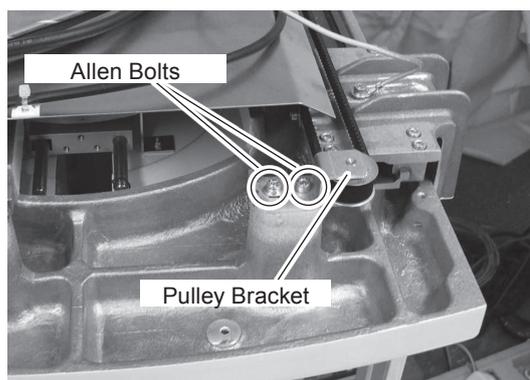


Fig. ⑧ -52

Disengage the belt on the side of cephalo arm from the pulley, and adjust it.

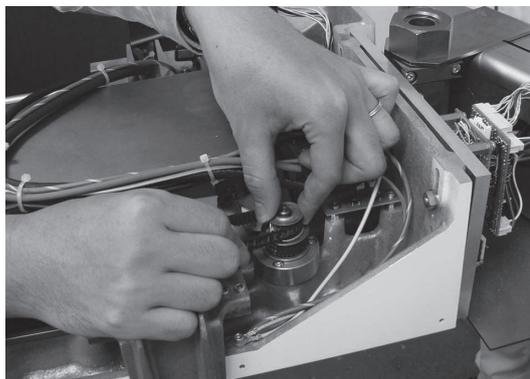


Fig. ⑧ -53

**NOTE** : When fastening the Allen bolts, push the pulley bracket to the direction of the arrow, and fix them with full tension on the belt.

(4) Press the RESET switch on the Control Panel once and conduct checking by irradiating X-ray once again.

**NOTE** :

After making the adjustment, switch the mode from CS to [ceph] and [LA], and check if X-ray is irradiated to the image reception area from the beginning to the end of Cephalo LA image acquisition.

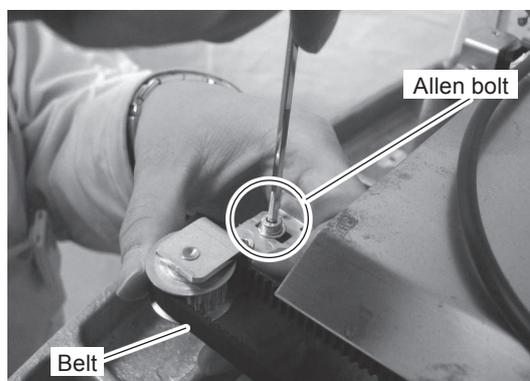


Fig. ⑧ -54

## 2-12. Panoramic fault area checking

### A. Preparation

- (1) Remove the chinrest block from the chinrest block base.

Chinrest block

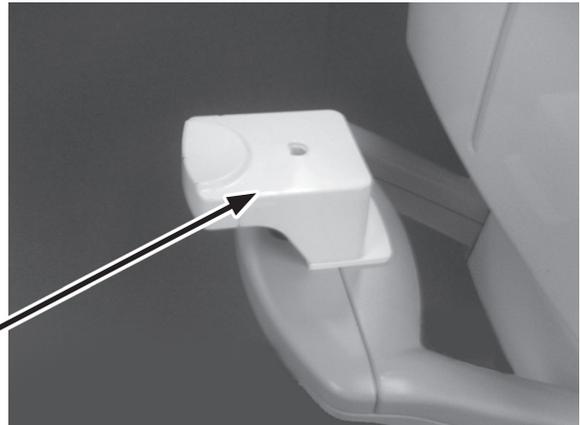


Fig. ⑧ -55: Chinrest block

- (2) Mount the Installation phantom on the chinrest block base.

Installation phantom

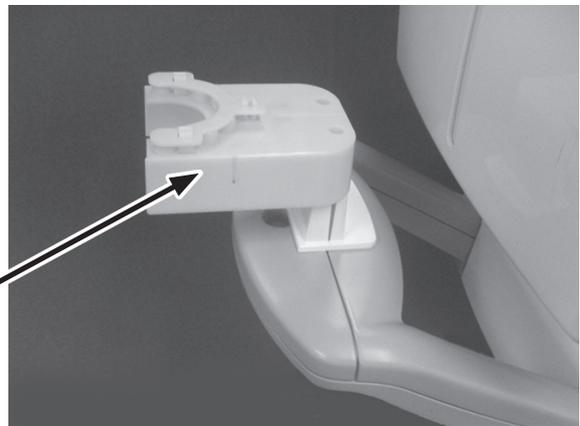


Fig. ⑧ -56: Installation phantom

### CAUTION

- Note that you cannot obtain images correctly unless the Installation phantom is firmly attached.
- Do not attempt to disassemble the Installation phantom as this could cause damage.

## B. Exposure

(1) Set the X-era Smart power switch to ON and then launch Viewer on the connected computer.

(2) To check the image on Viewer using TWAIN, start TWAIN function to display Image Creator window.  
When transferring the image using Drag & Drop function of Image Creator, start up the Image Creator.

**REF.** : For detailed operations, refer to the instruction manual of the Viewer.

(3) Press “NEW” button on Image Creator screen and an initiate image acquisition.

(4) Select standard panoramic exposure (58 kV, 2.0 mA, 16 sec.) on the control panel or on exposure mode setup window of Control Manager.

**REF.** : Refer to the “X-era Smart Operation Manual” for the setting and operation procedures.

(5) Press the X-ray Exposure switch (hand switch) to irradiate the target.

**REF.** : Refer to the “X-era Smart Operation Manual” for the setting and operation procedures.

(6) When Image Creator window is displayed, set the tomographic orbital position to “0.0” and click the “Preview” button.

(7) When transferring image using TWAIN function, Press “OK”. When transferring image using Drag & Drop function, drag the “Drag & Drop” button at the top-left corner of the screen and drop it on the display window of the Viewer.

### C. Evaluation Method

Use the Viewer measurement functions to check whether the captured image meets the approval benchmarks for the circularity and distance between the steel balls.

(1) Click the measurement button to open the measurement window.

**REF.** : For detailed operations, refer to the instruction manual of the Viewer.

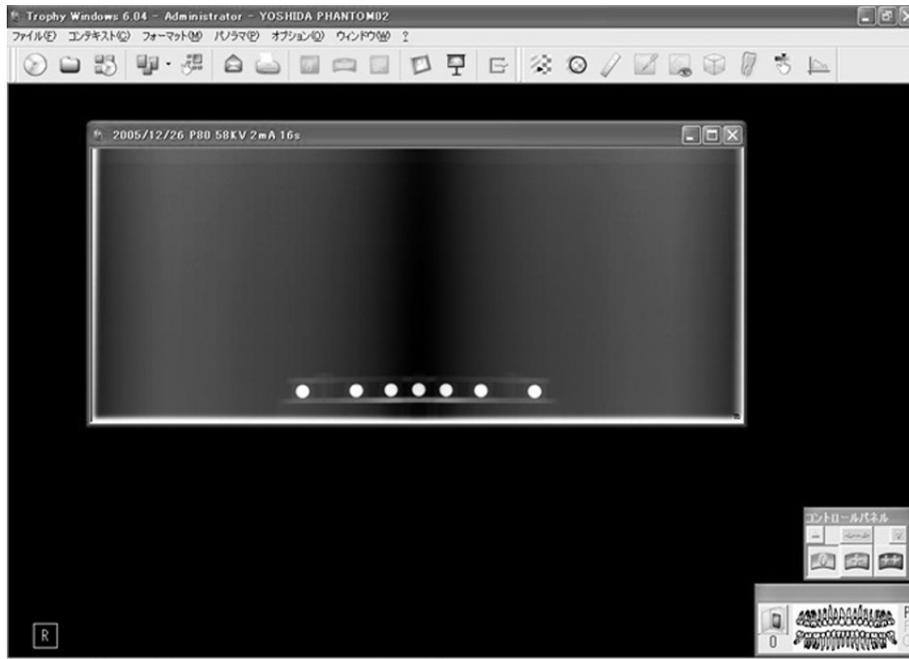


Fig. ⑧ -57: Viewer screen

(2) Measure the circularity of the central steel ball and the distance between the steel balls on each end.

**REF.** : For detailed operations, refer to the instruction manual of the Viewer.

### CAUTION

- The fault areas are narrowest in the center, which impacts on the image projection.

Central steel ball circularity (X and Y directions)

=> Approval benchmarks The diameter of X direction is to be within the range of  $\pm 9\%$  of the diameter of Y direction. The diameter of Y direction is to be within the range of  $\pm 9\%$  of the diameter of X direction.

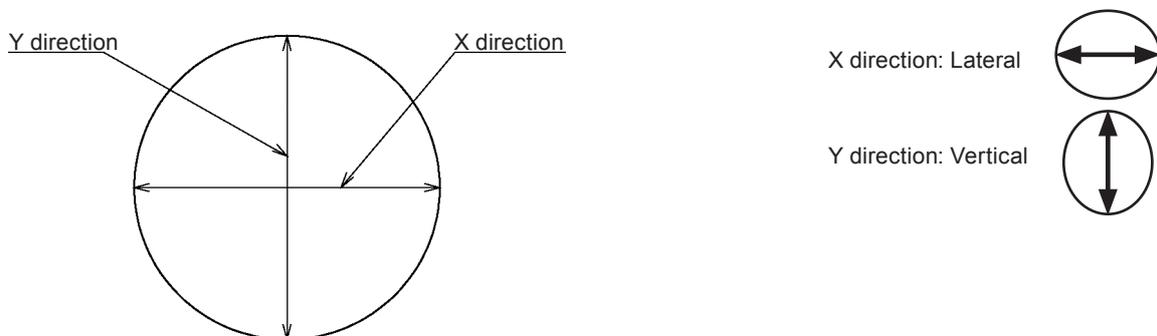


Fig. ⑧ -58: Approval benchmarks

Distance between the steel balls on each end

Check the distance from the steel ball in the center to the steel balls in the right/left end. For the measurement values A and B below, it should be  $|(A-B)/(A+B)| \leq 0.035$ .

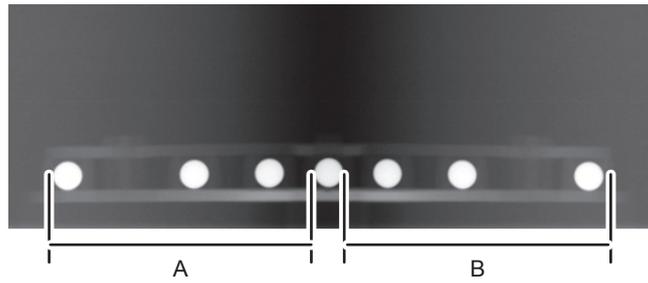


Fig. ⑧ -59

(3) If the fault areas are aligned

If the fault areas are aligned, the image obtained is as shown in Fig. ⑧ -60.

Remove the Installation phantom and re-attach the chinrest block.

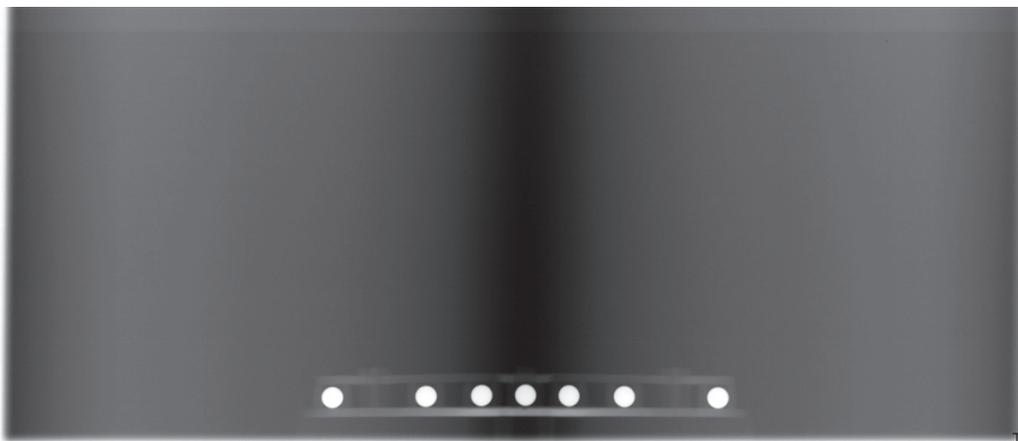


Fig. ⑧ -60: Captured Installation phantom image

(4) If the fault areas are not aligned

If the fault areas are not aligned, the image obtained is as shown in Fig. ⑧ -61 to Fig. ⑧ -63.

- If the image obtained is as shown in Fig. ⑧ -61 to Fig. ⑧ -63, fault area adjustment is required.

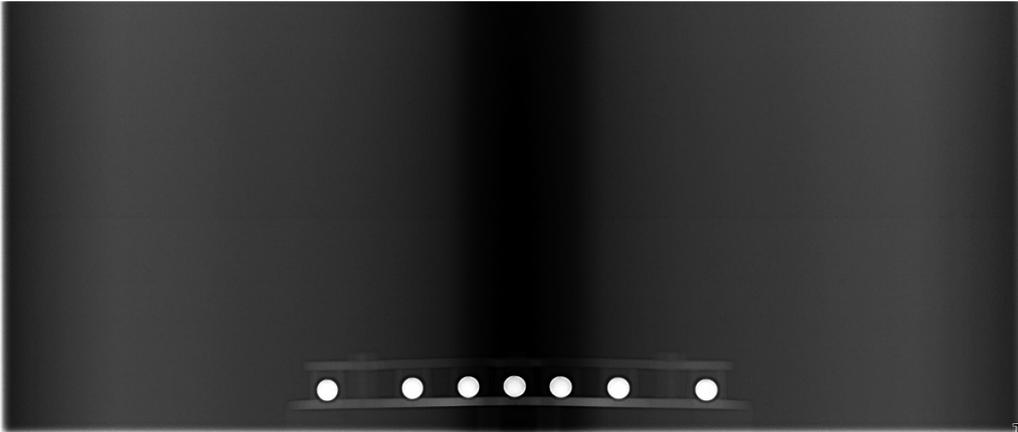


Fig. ⑧ -61: Steel balls spread in the X direction  
(distances between steel balls meet benchmark)

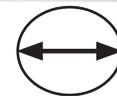


Fig. ⑧ -62: Steel balls spread in the Y direction  
(distances between steel balls meet benchmark)

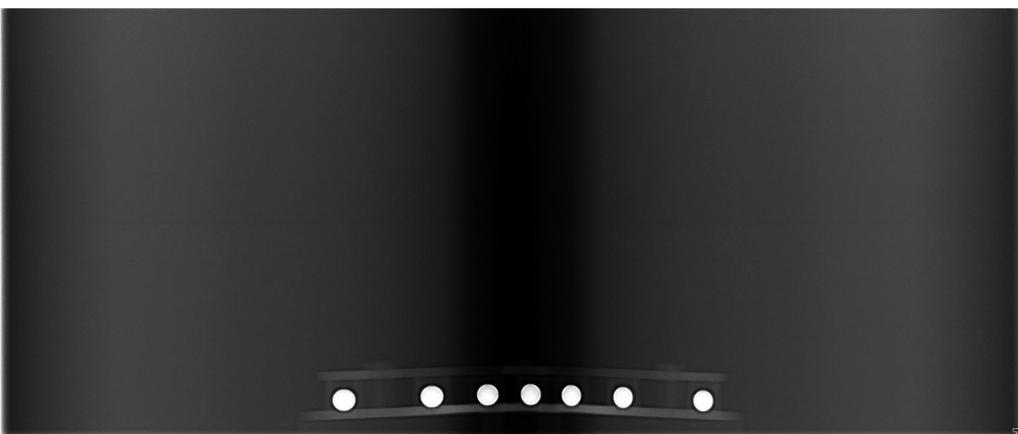


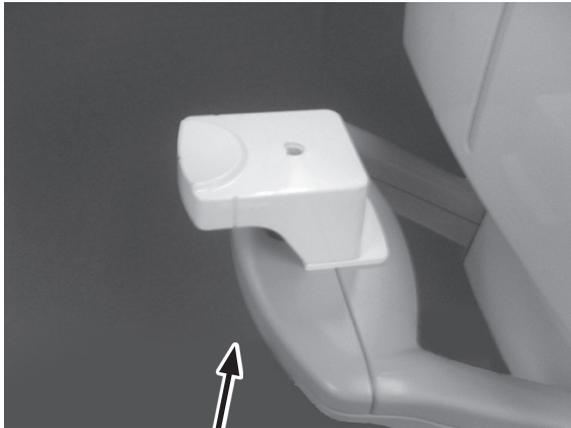
Fig. ⑧ -63: Distances between steel balls incorrect  
(distances between steel balls do not meet benchmark)

## D. Adjustment Method

If the fault areas are not aligned, adjust them as described below.

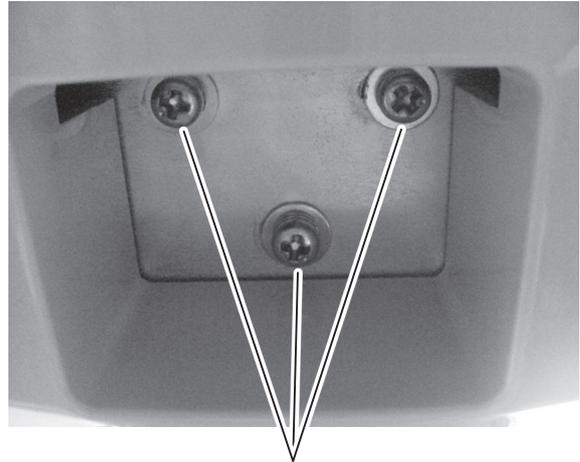
- (1) Loosen the 3 x Phillips pan-head screws (M4 x 12mm) that fasten the chin-rest block base.

Tool used: Phillips screwdriver No. 2



Back of the Chin-rest Block Base

Fig. 8-64: Chin-rest Block Base Adjusting Method



Phillips pan-head machine screws  
(with built-in spring and flat washers)

Fig. 8-65: Back of the Chin-rest Block Base

- (2) Adjust the chinrest block base by moving it in the lateral (left-right) and front-back directions.

(Example 1) If the image in Fig. 8-61 was obtained, adjust the chinrest block base by moving it in the front-back direction so that it is closer to the pillar, without moving it laterally.

(Example 2) If the image in Fig. 8-62 was obtained, adjust the chinrest block base by moving it in the front-back direction so that it is further away from the pillar, without moving it laterally.

(Example 3) If the image in Fig. 8-63 was obtained, adjust the chinrest block base by moving it in the front-back, lateral and rotational directions.

- (3) After making the adjustments, irradiate the Installation phantom again using the procedure in “B. Exposure”.
- (4) After irradiation, check the fault area using the procedure in “C. Evaluation Method”. If the alignment is still not within the approval benchmarks, carry out the adjustment again.
- (5) Confirm that the fault area is aligned, remove the Installation phantom and re-attach the chinrest block.

## 2-13. Center Alignment of Ear Rings

Make sure that the ends of the ear rods on the right and left are in line with the X-ray irradiation hole.

(1) Attach the sensor to the Cephalometric side.

**REF.** : Refer to [④ Equipment Assembly Procedure and Precautions] “2-8. Handling the Sensor” on how to attach the sensor.

(2) Attach the ear rods and nose support on the cephalometric main unit.

**REF.** : Refer to [④ Equipment Assembly Procedure and Precautions] “2-9. Cephalometric Unit Mounting” “B. Cephalometric Main Unit” on how to attach the ear rods and nose support.

(3) Set the positions of the ear rods and nose support to Cephalometric LA positions, and open the ear rod to the maximum width.

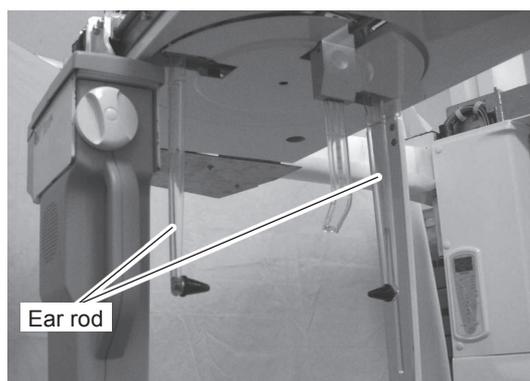


Fig. ⑧ -66

(4) Press the MODE switch on the Control Panel and switch the display to [CARP] and [LA]. Press the RESET switch.

(5) Irradiate X-ray and align the centers of the ear rings in the image acquisition screen.

**Additional Information** : The side with the larger ear ring is the head side.

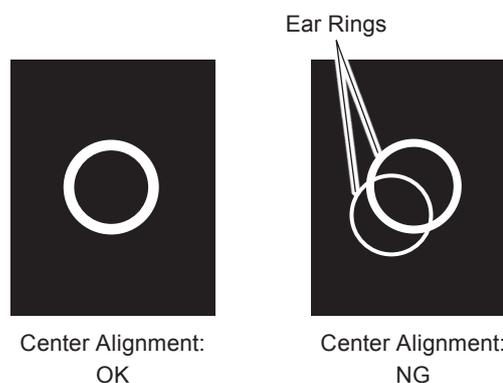


Fig. ⑧ -67

### NOTE :

In Image Creator Version 2.06 or later, Image Creator constructs image with the face facing to the right only in Cephalometric LA image. Therefore, when Ear Ring image is acquired in Cephalometric LA image acquisition mode, the image will be horizontally reversed in comparison with the one acquired in Carpus image acquisition mode. Centering of ear rings, therefore, needs to be done under Carpus image acquisition mode. The following methods can be used in order to make the face in Cephalometric LA image face to the left.

1. Close Image Creator.

(2D Mode: Input password. 3D Mode: Press Close [X] button.)

2. Open “IC.ini” in the installation folder of Image Creator(\*).

(\*1) e.g. "C: \Program Files\YOSHIDA DENTAL\X-ERA SMART Software\Image Creator"

3. Change the following line in "IC.ini" and save the file overwriting the previous one.

Change "Flip Horizontal LA=1" to "Flip Horizontal LA=0".

(6) When there is a misalignment in overlapped ear rings, adjust the positions of the ear rods.

Remove the three screws and binding band shown in the figure and remove the cephalo wiring protective plate.

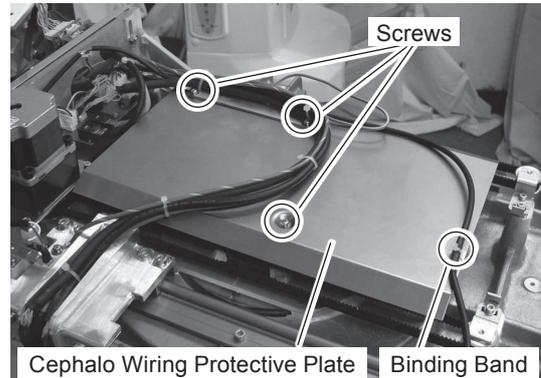


Fig. ⑧ -68

#### <Adjusting Horizontal Position>

Loosen the 2 x Allen bolts shown in the figure. Adjust the horizontal position by the thrust-out length of the plunger position adjusting Allen bolt.

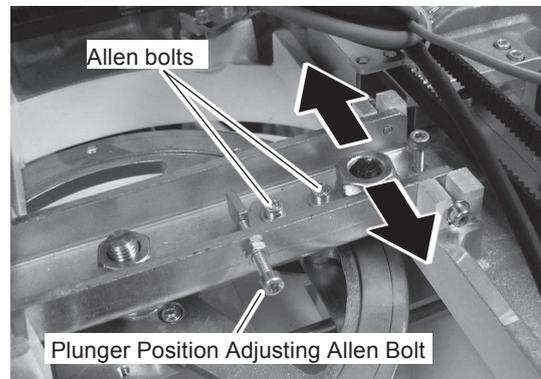


Fig. ⑧ -69

#### <Adjusting Vertical Position>

Loosen the 2 x Allen bolts shown in the figure. Adjust the vertical position by the thrust-out length of the height adjusting Allen bolt.

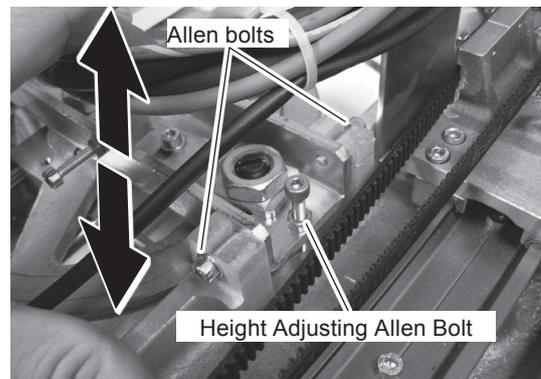


Fig. ⑧ -70

(7) After the adjustment, follow the same steps to acquire an image in Cephalometric Carpus mode, and check the center alignment status of the ear rings.

(8) Attach the fastening band which was removed at Step (6).

## 2-14. QA Procedure (Panoramic)

### Evaluation Method

- (1) Attach the QA Phantom to the chin rest unit.
- (2) Attach copper plate (0.8 mm) to the head front cover.
- (3) Acquire a panoramic image.
- (4) Evaluate line pairs and low contrast from the image acquired.

Evaluation Criteria (line pairs): Check whether the slit part is visible or not.

As for slit, make sure that 3 (lp/mm) can be confirmed.

Evaluation Criteria (low contrast): Check whether the holes (in four different sizes and positions) are visible or not.

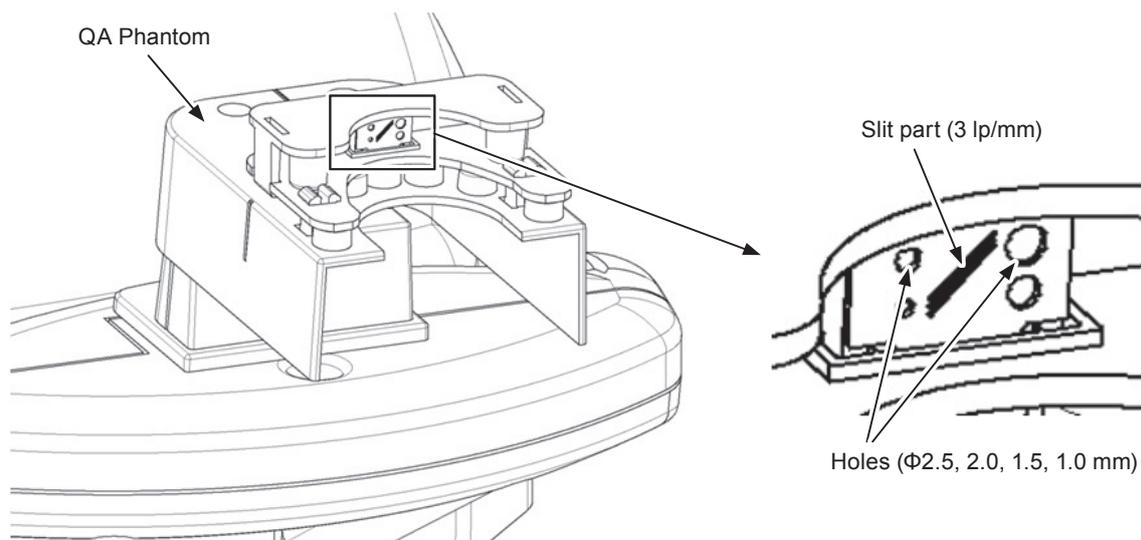


Fig. ⑧ -71

### QA Phantom Image (Panoramic)

#### [Image Acquisition Conditions]

- Tube Voltage 73 kV, Tube Current 6.3 mA, Exposure Time 14s, with Copper plate 0.8 mm
- Tomographic Area Adjustment: 0 mm
- ASC (Cervical Correction): off
- Filter: off



Fig. ⑧ -72

## 2-15. QA Procedure (Cephalometric)

### Evaluation Method

- (1) Attach the QA Phantom used for panoramic image acquisition to Adapter for cephalometric. Make sure that slit part is facing the side of cephalometric Sensor, and fasten it between ear rod parts.
- (2) Attach copper plate (0.8 mm) to the head front cover.
- (3) Acquire a cephalometric image.
- (4) Evaluate line pairs and low contrast from the image acquired.

Evaluation Criteria (line pairs): Check whether the slit part is visible or not.

As for slit, make sure that 3 (lp/mm) can be confirmed.

Evaluation Criteria (low contrast): Check whether the holes (in four different sizes and positions) are visible or not.

\* Procedures are exactly the same as in panoramic evaluation except for the mounting.

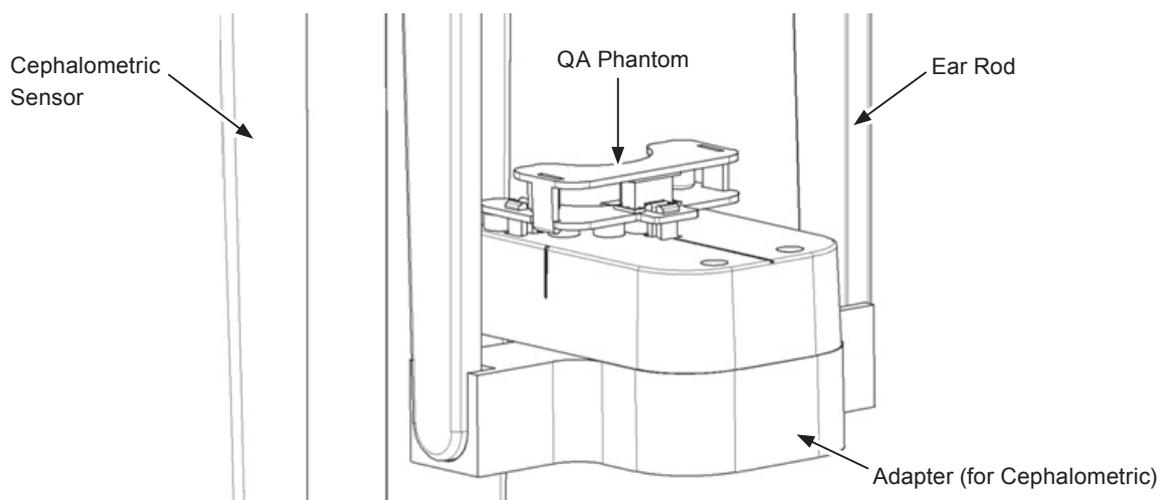


Fig. ⑧ -73

### QA Phantom Image (Cephalometric)

[Image Acquisition Conditions]

- Tube Voltage 82 kV, Tube Current 10 mA, Exposure Time 8s, with Copper plate 0.8 mm
- Filter: off

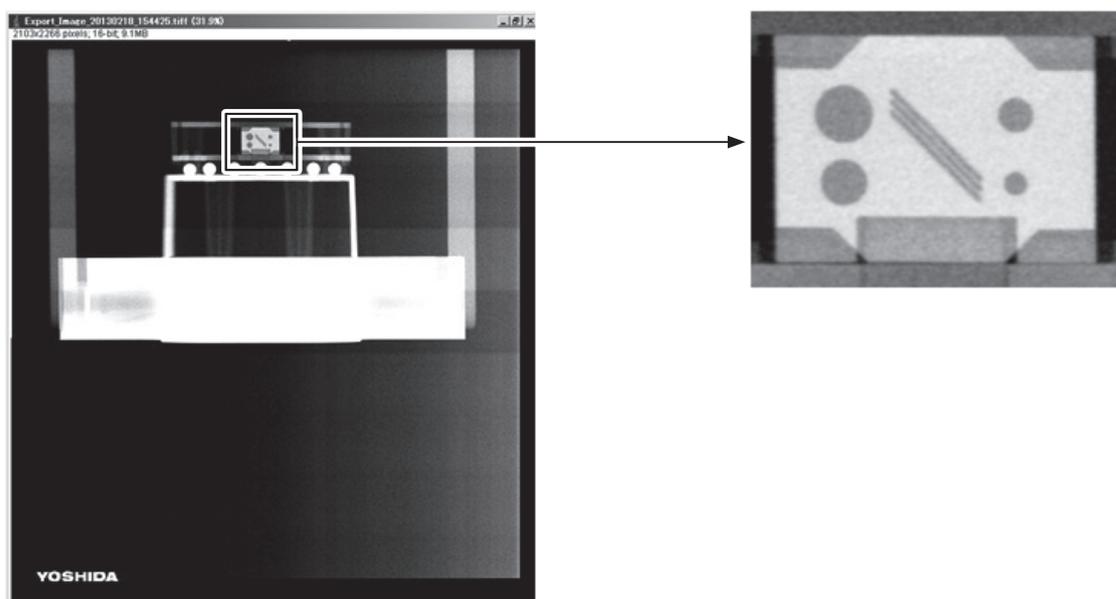


Fig. ⑧ -74

## 2-16. 3D Sensor Adjustment (For equipment with 3D function)

### 2-16-1. Checking the 3D Irradiation Field

**NOTE :** Before making adjustments to 3D settings, it is necessary to conduct mechanical alignment and calibration of Panoramic / Cephalometric.

- (1) Make sure that slits for 3D are attached to electric collimator.

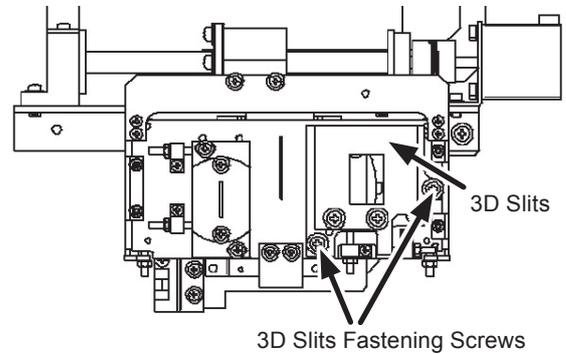


Fig. ⑧ -75

- (2) Activate Adjusting Tool (Channel Correction).

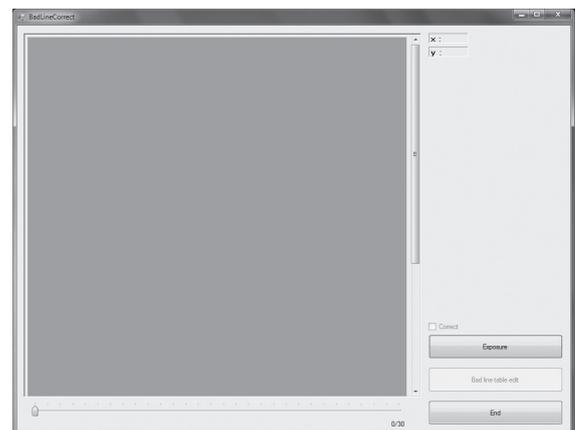


Fig. ⑧ -76

- (3) Activate X-era Smart Control Manager on the computer connected.

**See also :** Refer to [① CS Mode] on how to activate CS Mode.

- (4) Select CS101 and set the following configurations.

Press the Reset Switch on Control Panel.

<CS101 Setting>

- Collimator Position: 3D (Center)
- Sensor Position: 3D (Center)
- Sensor Adjustment Image Acquisition: 3D
- Image Acquisition Conditions: 58 kV, 2.0 mA

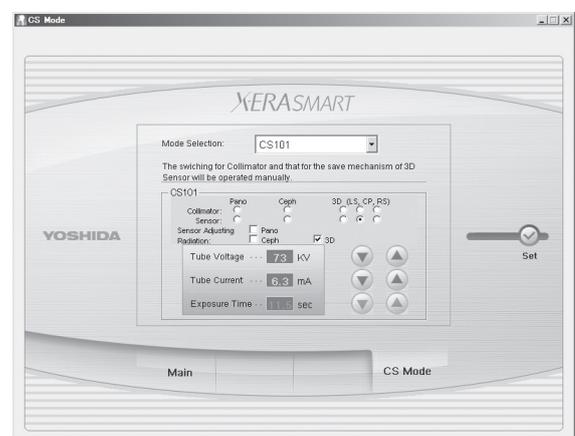


Fig. ⑧ -77

- (5) Press [Exposure] button on Adjusting Tool window, and proceed with image acquisition.
- (6) Image appears in Adjusting Tool. Check to see if there is no deficiencies in radiation fields at upper, lower, left, or right side of the image.

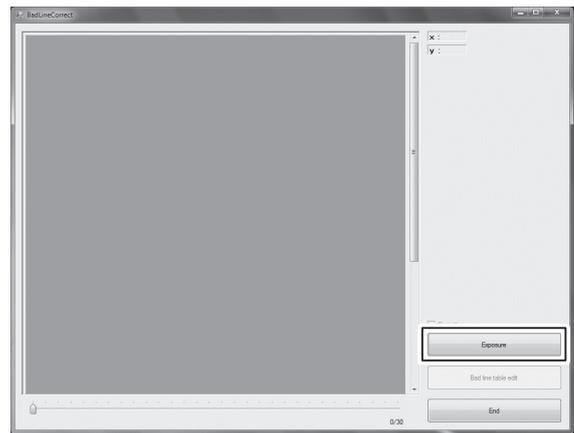


Fig. ⑧ -78

- (7) If there is any deficiency in radiation fields on any side, adjust the 3D Slits following the steps outlined in “2-16-2. Adjusting 3D Irradiation Field”. After adjustment, check the radiation field following the steps (5) - (6).

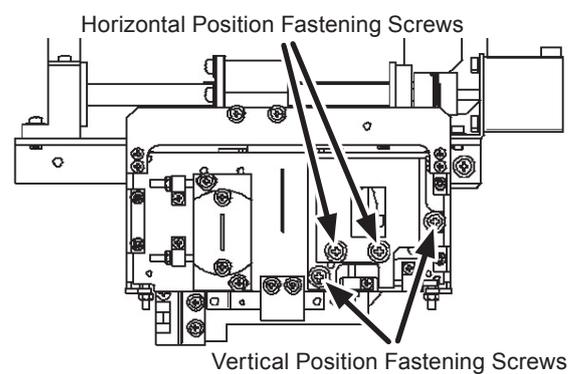


Fig. ⑧ -79

### 2-16-2. Adjusting 3D Irradiation Field

- (1) Loosen the nut fastening the vertical adjustment screw. Press the side of slit gently with the vertical adjustment screw.
- (2) Similarly, loosen the nut fastening the horizontal adjustment screw. Press the side of slit gently with the horizontal adjustment screw.
- (3) Loosen the vertical fastening screw, and adjust the vertical position of the 3D slit by means of the ejection of the vertical adjustment screw.
- (4) After the adjustment is done, tighten the horizontal fastening screw.
- (5) Then, loosen the horizontal fastening screw and adjust the horizontal position of the 3D slit by means of the ejection of the horizontal adjustment screw.
- (6) After the adjustment is done, tighten the horizontal fastening screw.

- (7) Conduct an image acquisition once again after the vertical and horizontal adjustments, and make sure that there is no defect in X-ray irradiation field.

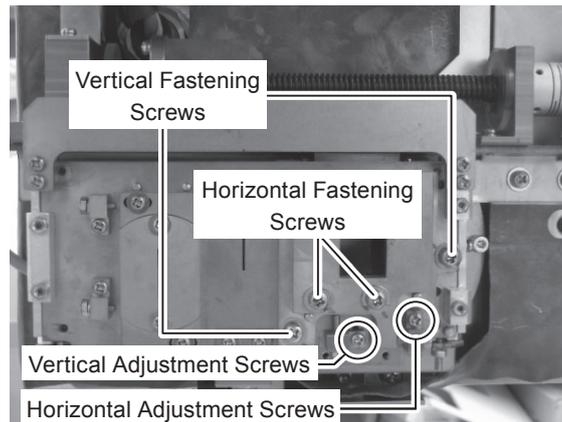


Fig. ⑧ -80: Adjusting 3D Irradiation Field

### 2-16-3. Pin Adjustment

- (1) Place the two pins (thick and thin) as in the figure on the right.

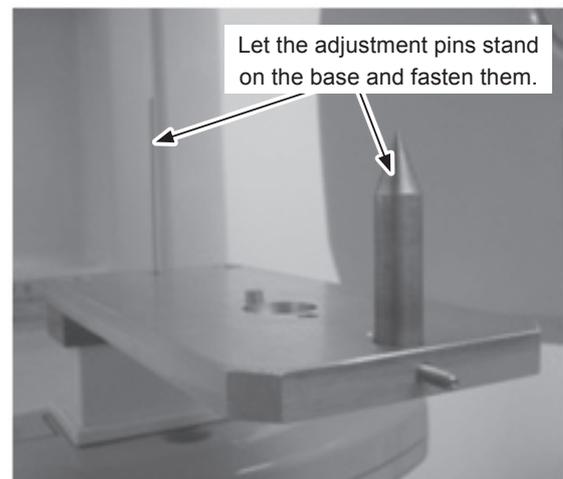


Fig. ⑧ -81

- (2) Activate Pin Adjusting Tool.

- (3) Set the equipment to 3D Oral Mode, and set Tube Voltage and Tube Current as 58 kV and 2 mA respectively.

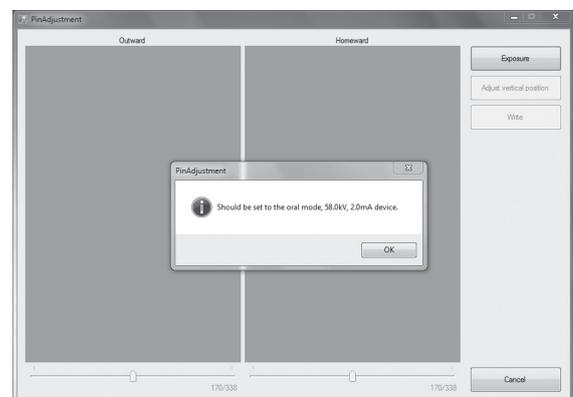


Fig. ⑧ -82

(4) Press [Exposure] button (The equipment turns into Image Acquisition Standby Status).

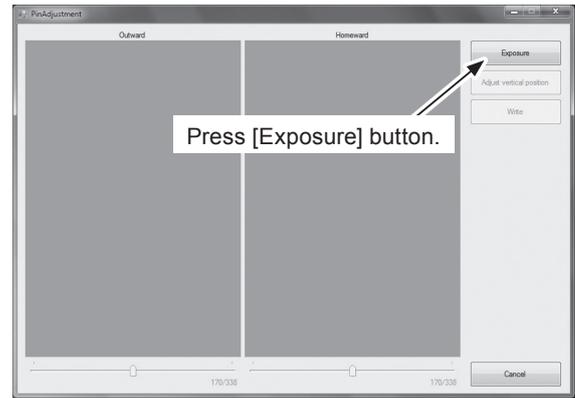


Fig. ⑧ -83

(5) Press X-ray Irradiation Switch and proceed with Image Acquisition. During image acquisition, progress is displayed in the window.

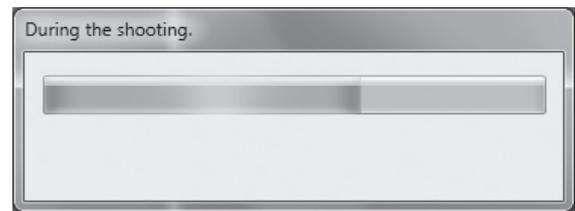


Fig. ⑧ -84

(6) RAW data is generated after image acquisition is complete. Progress window appears while RAW data is being generated. Wait until its completion.

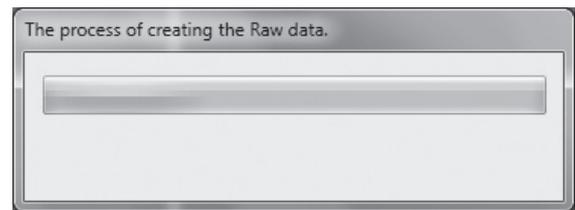
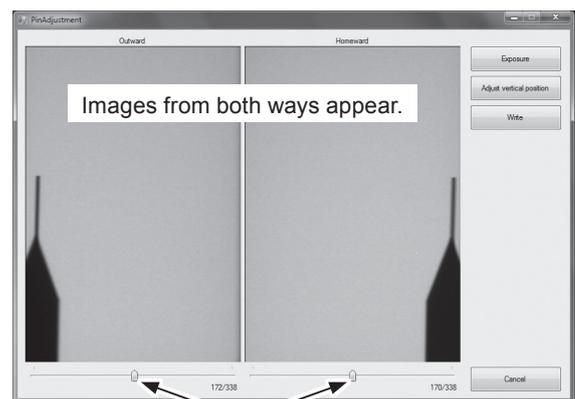


Fig. ⑧ -85

- (7) After RAW data has been generated, images acquired on both ways appear. Check the shift length between tips of two pins (thick and thin).
- WW / WL Adjustment (conducted while mouse's right button is pressed WW: Vertical, WL: Horizontal)
  - Move the view frame using the track bar, and search for a position in which the tips of two pins (thick and thin) match with each other.



Visually search for a tip-matching position using the track bar.

Fig. ⑧ -86

- (8) If a tip-matching position can not be found using at item(7) of the procedure, activate X-era Smart Control Manager and enter into CS103. Additionally, measure shift length in advance, and enter the values according to the measurement.

**See also :** Refer to [① CS Mode] on how to activate CS Mode.

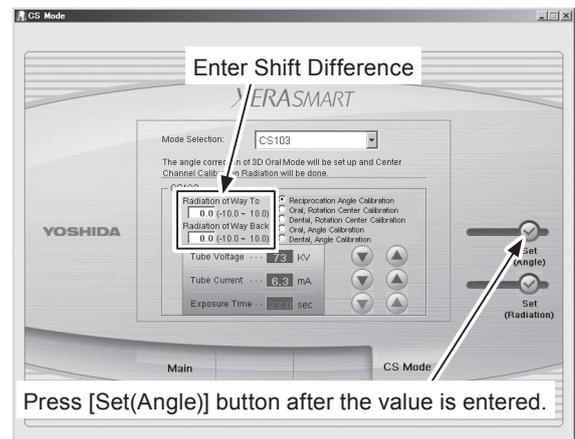


Fig. ⑧ -87

- (9) In order to correct the shift difference between the two pins (thick and thin), enter the shift difference value in CS103 and press [Set (Angle)].

- (10) After the adjustment at item(9) of the procedure, conduct an image acquisition once again, and make adjustments so that the tips of two pins (thick and thin) match each other. (Follow the steps (4) -(7)).

- (11) After checking the position in which the tips of two pins (thick and thin) match each other, press [Adjust vertical position] button.

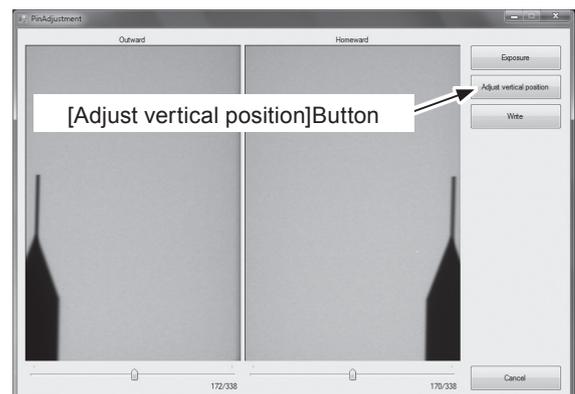


Fig. ⑧ -88

- (12) Vertical Position Adjustment window appears when [Adjust vertical position Button] is pressed.

- (13) If the vertical positions do not match with each other on both ways (in and out), make adjustments using the track bar.

- (14) Press [OK] button and set the vertical position.

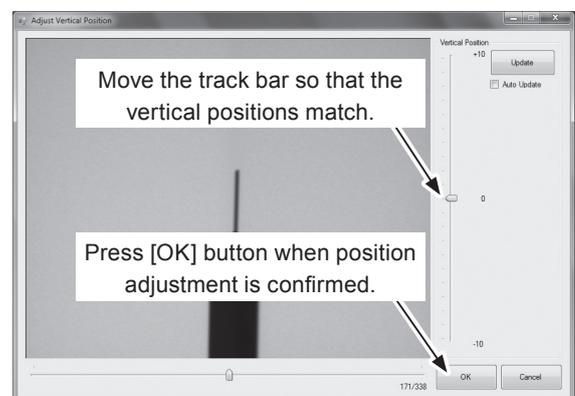


Fig. ⑧ -89

(15) When the vertical position is set, the window returns to the previous one for adjusting pins.

(16) Press [Write] button.

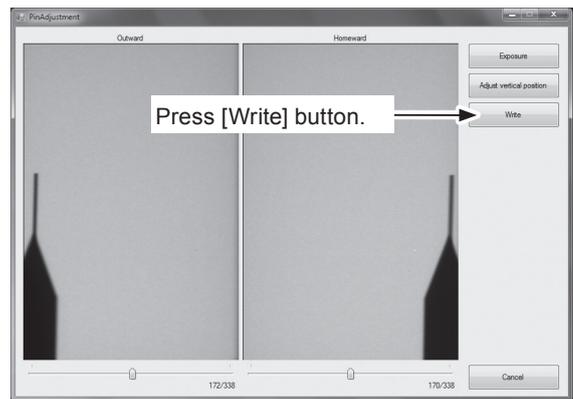


Fig. ⑧ -90

#### 2-16-4. Digital Calibration

(1) Place the phantom as in the figure on the right.



Fig. ⑧ -91

(2) Activate Digital Calibration Tool.

- (3) Set the equipment to 3D Dental Mode, and set Tube Voltage and Tube Current as 68 kV and 2.0 mA respectively.

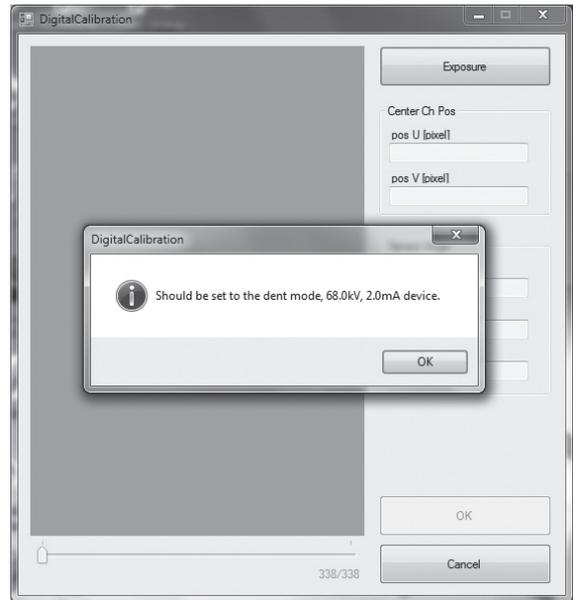


Fig. ⑧ -92

- (4) Press [Exposure] button (The equipment turns into Image Acquisition Standby Status).



Fig. ⑧ -93

- (5) Press X-ray Irradiation Switch and proceed with Image Acquisition. During image acquisition, progress is displayed in the window.

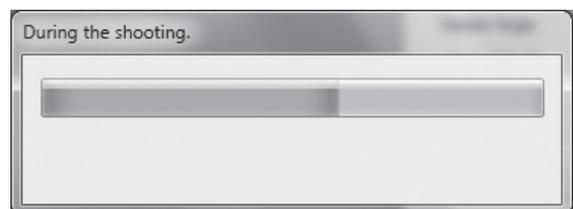


Fig. ⑧ -94

(6) RAW data is generated after image acquisition is complete. Calibration starts after RAW data is generated. Wait until the calibration process is completed.

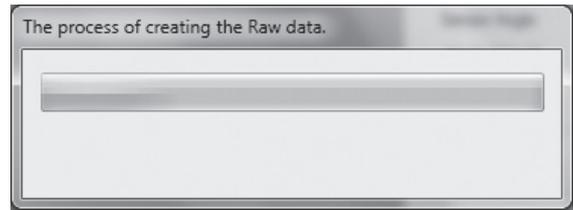


Fig. ⑧ -95

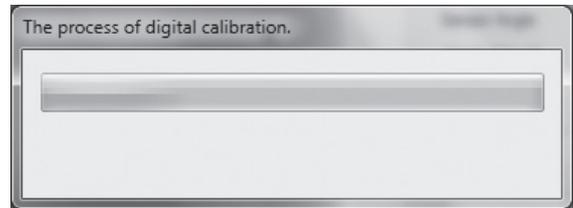


Fig. ⑧ -96

(7) Calibration results are displayed. Make sure the value for Central Channel U is 336 pixels  $\pm$  8 (328 - 344).

**Note :** If the resulting value is not with in the range above, make horizontal adjustments using the douser on 3D Sensor. (For adjustment method, refer to [2-15. Spear Jig Adjustment].)

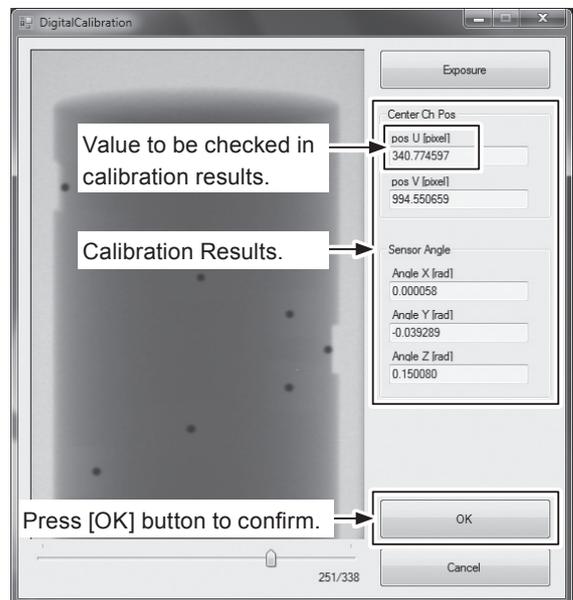


Fig. ⑧ -97

(8) Press [OK] button and confirm the settings.

## 2-17. Spear Jig Adjustment

### 2-17-1. Position Adjustment of X-ray Head

(1) Disconnect the connector on  $\theta$ -axis Motor.

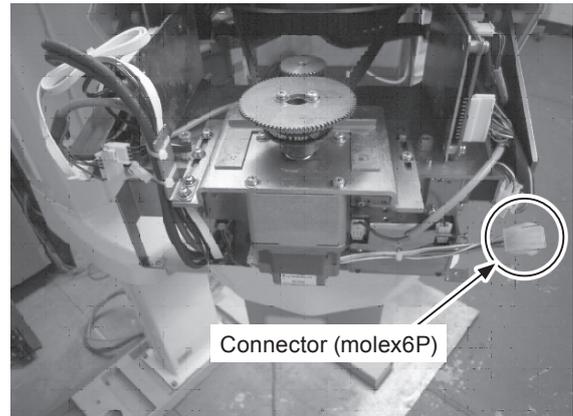


Fig. ⑧ -98

(2) Disconnect the connector on X-axis Motor.  
Rotate the coupling by hand and move the arm's X-axis position to Reset direction.

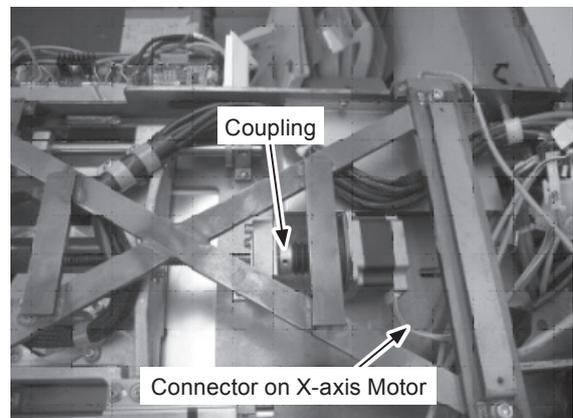


Fig. ⑧ -99

(3) Remove 2 x M6 countersunk screws that fasten X-axis Drive Unit.

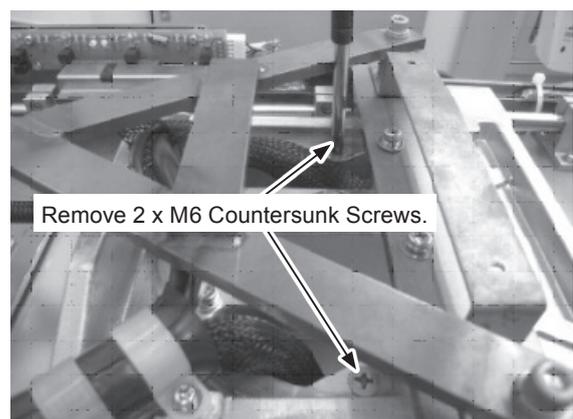


Fig. ⑧ -100

- (4) Insert the T-shaped Block used as 3D Adjustment Spear Jig into the opening of X-axis Drive Unit.

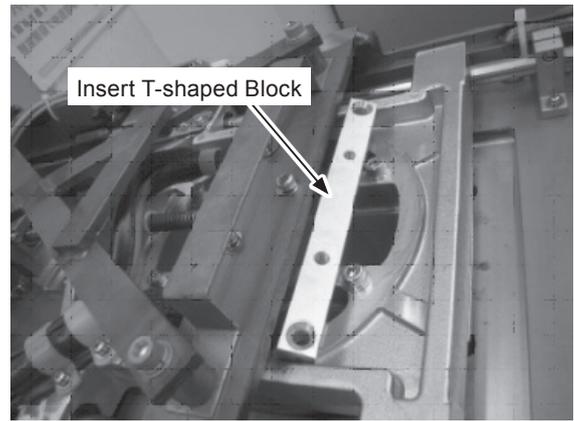


Fig. ⑧ -101

- (5) Attached the T-shaped Block using 2 x M6 Countersunk Screws enclosed with the jig.

**Note :** At this stage, do not tighten the countersunk screws.

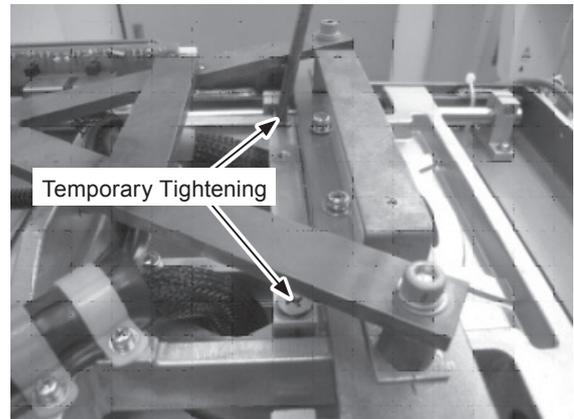


Fig. ⑧ -102

- (6) Attach 2 x Positioning Pins enclosed with the jig, and insert them matching the positions of holes of X-axis Drive Unit.

(If there are no holes to insert Positioning Pins on X-axis Drive Unit, pull the T-shaped Block to near side as the screw holes allow, and retorque to fasten them.)

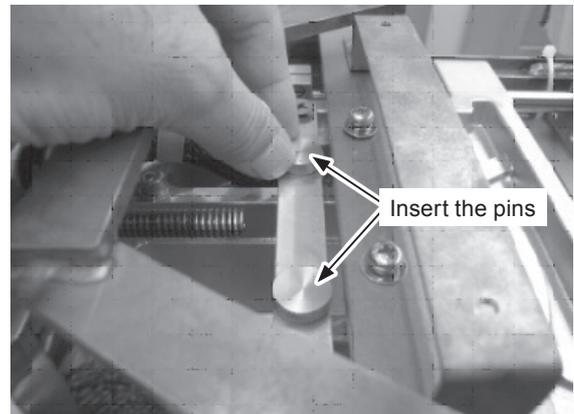


Fig. ⑧ -103

(7) Evenly tighten 2 x M6 countersunk screws, and fix the T-shaped Block.

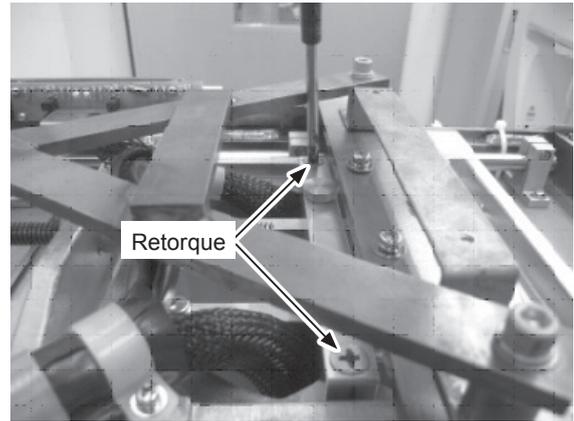


Fig. ⑧ -104

(8) Move the X-axis position of the arm close to reset position, and make the angle 0 degree (parallel to Drive Unit).



Fig. ⑧ -105

(9) Fix the 3D Adjustment Spear Jig to the T-shaped Block using 2 x M6 countersunk screws.

**Additional Information :**

The douser fits into the groove of jig, and R-L Photo Sensor will be positioned along with the edge of jig.

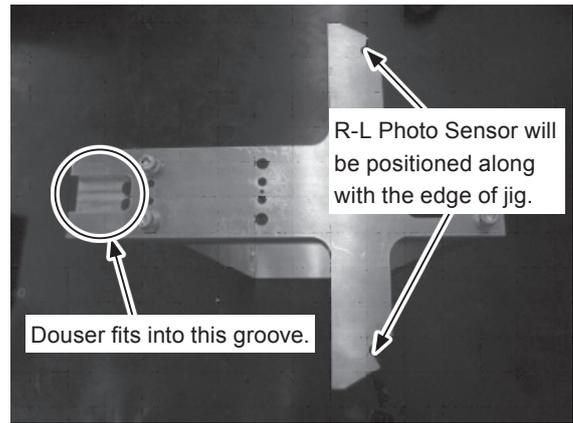


Fig. ⑧ -106

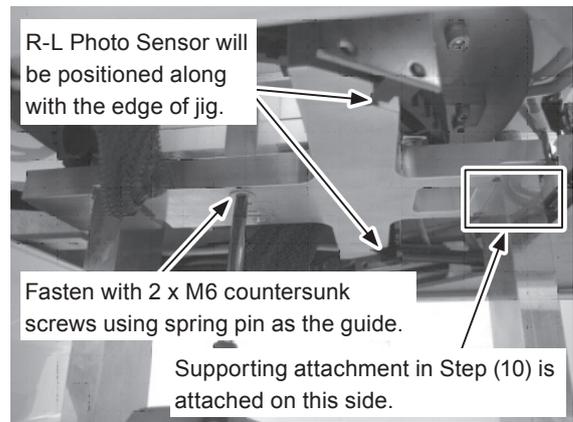


Fig. ⑧ -107

(10) After the spear jig is attached, fix it with supporting attachment.



Fig. ⑧ -108

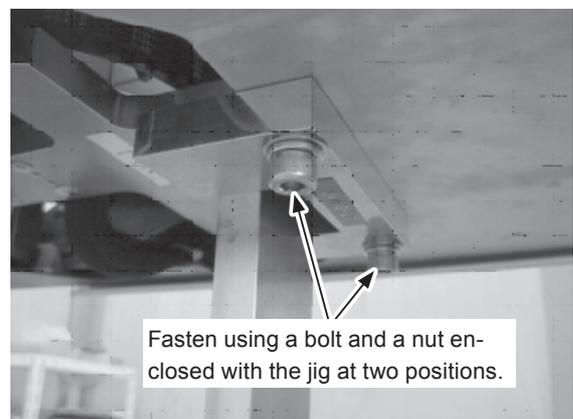


Fig. ⑧ -109

(11) Activate Control Manager from the computer, and enter into CS Mode.

**See also :** Refer to [⑩ CS Mode] on how to activate CS Mode.

(12) Select CS101 and set the following configurations.  
Press the Reset Switch on Control Panel.

<CS101 Setting>

- Collimator Position: 3D (Center)
- Sensor Position: 3D (Center)
- Sensor Adjustment Image Acquisition: 3D
- Image Acquisition Conditions: 58 kV, 2.0 mA

**Note :** Press Reset Switch after each of Collimator Position Setting and Sensor Position Setting respectively.

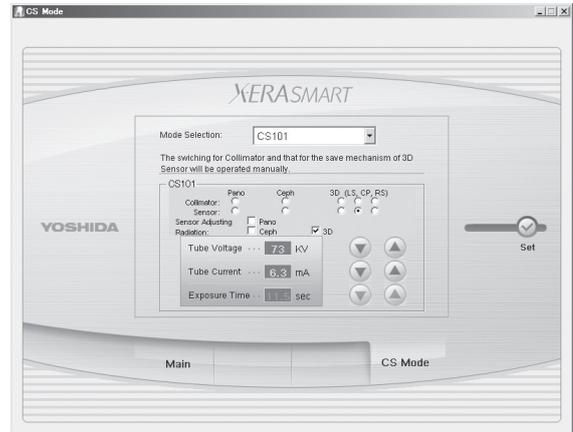
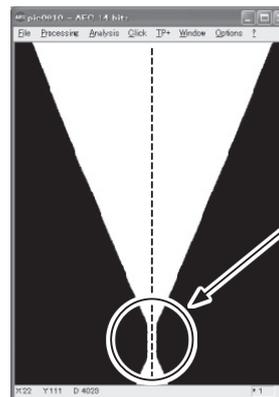


Fig. ⑧ -110

(13) Using 3D Adjustment Tool, acquire and view image.

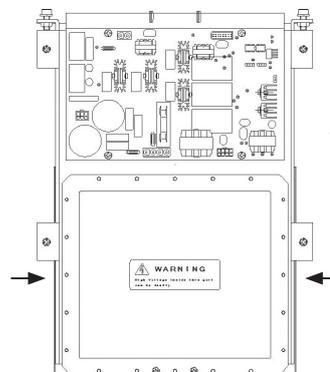
**See also :** Refer to the steps outlined in [2-16-4. Digital Calibration].

(14) Acquire 3D image, and adjust the horizontal position of the head so that the X coordinates of upper and lower end of spear of 3d Adjustment Jig match with each other.



Make sure X coordinates of upper and lower end of spear of 3D Adjustment Jig match with each other.

Fig. ⑧ -111



There are tapped holes on frame metal plate. Push the head part using a long screw.

Fig. ⑧ -112

## 2-17-2. 3D Sensor Position Adjustment (Horizontal Adjustment)

- (1) Enter the following configurations for CS101, and press Reset Switch.

<CS101 Setting>

- Collimator Position: 3D (Center)
- Sensor Position: 3D (Center)
- Sensor Adjustment Image Acquisition: 3D
- Image Acquisition Conditions: 58 kV, 2.0 mA

**Note :** Press Reset Switch after each of Collimator Position Setting and Sensor Position Setting respectively.

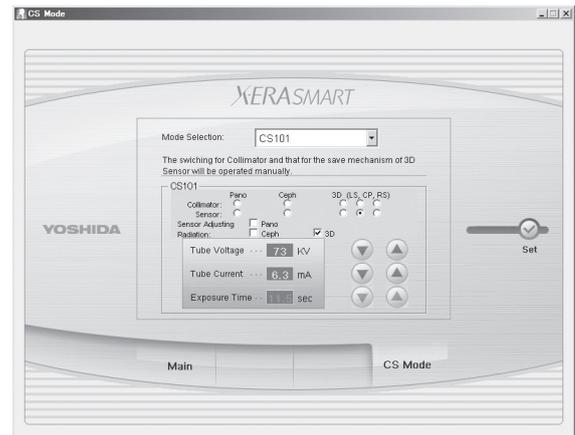
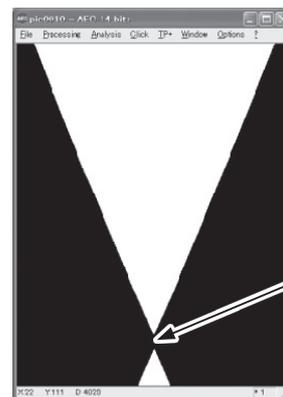


Fig. ⑧ -113

- (2) Using 3D Adjustment Tool, acquire and view image.

**See also :** Refer to the steps outlined in [2-16-4. Digital Calibration].

- (3) Read the X coordinate of spear end. Adjust the shift length from the reference mark 335 using the Douser Adjustment Screws on top of 3D Sensor.



Read the X coordinate of spear end.

Fig. ⑧ -114

- (4) Adjustments can be made using the Douser Adjustment Screws on top of 3D Sensor.
- (5) Remove the Spear Jig and fasten the X-ray Head.
- (6) Attach the 3D Slits to electric collimator.

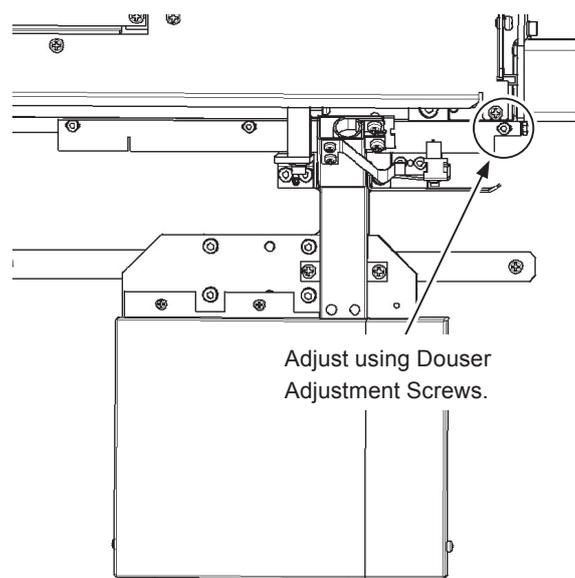


Fig. ⑧ -115

## 2-18. QA Procedure (3D)

- (1) Attach the 3D QA phantom to the chin rest base. Conduct image acquisition in two modes, Dental Mode and Oral Mode.

Conditions for image acquisition are as follows:  
Tube Voltage 71kV, Tube Current 2mA

**Note :** In this image acquisition, do not move the forward/backward position of the arm. If the arm was moved by pressing forward/backward switch, press the reset switch so that the arm returns to the original position before acquiring images.

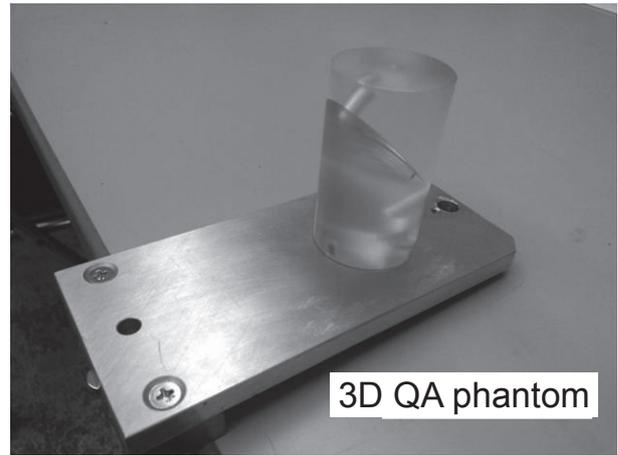


Fig. ⑧ -116

- (2) Displays the acquired image in OnDemand3D. Go through steps (3) to (6) and check the images acquired in two modes, Dental Mode and Oral Mode.

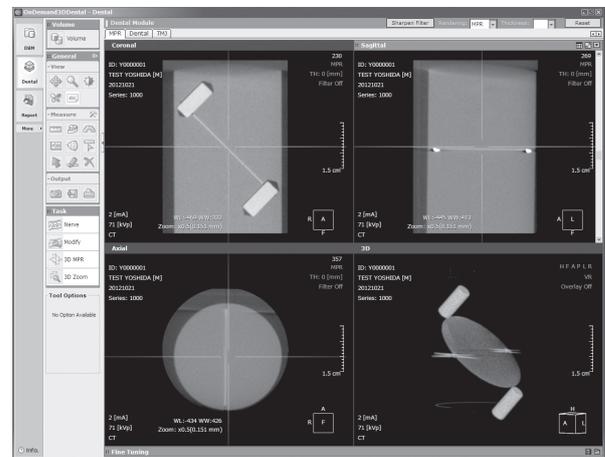


Fig. ⑧ -117

- (3) Adjust the tilt of the crossbar, and measure the distance between the two steel balls.

Acceptance value 29.6 mm to 30.4 mm  
(standard value 30.0 mm)

Component processing - Assembly Tolerance  
Value :  $\pm 0.1\text{mm}$

Measurement Error :  $\pm 0.3\text{mm}$

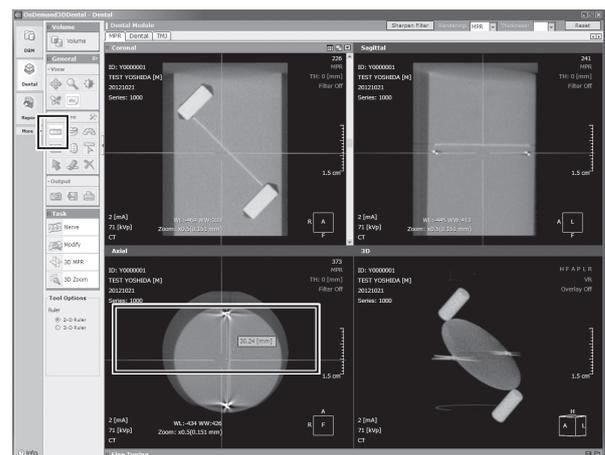


Fig. ⑧ -118

- (4) Measure aluminum disk thickness from Axial image. However, measure it without adjusting the crossbar tilt.

Where to measure is described in the figure on the right. Measuring point is above the lower Teflon pin and below the aluminum disk center. Use the profile function to set the profile so it will be perpendicular to the Aluminum disk shown in the Axial image. Measure the width of the graph when the height of the graph is approximately 50%.

Acceptance value 0.7 mm or less

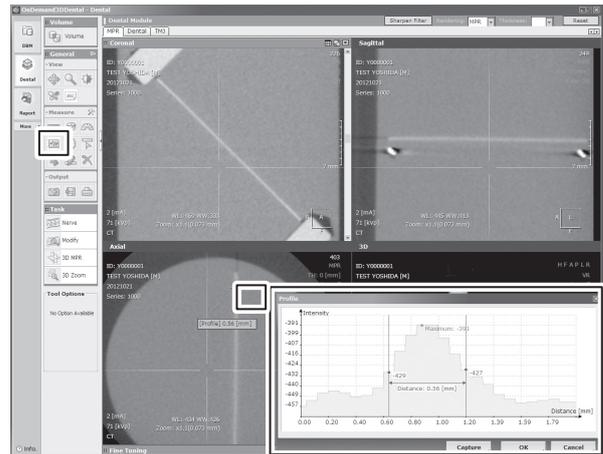


Fig. ⑧ -119

- (5) Measure the short axis diameter of the Teflon pin from Axial image. However, measure it without adjusting the crossbar tilt.

Where to measure is described in the figure on the right. Measuring point is around the center of the lower Teflon pin. Use the profile function to set the profile of the short axis diameter of the Teflon pin shown in the Axial image. Measure the width between the initial rising points in the graph.

Acceptance value 4.6mm to 5.3mm  
(standard value 5.0mm)

Component processing - Assembly  
Tolerance Value : -0.1mm - 0.0mm  
Measurement Error : ±0.3mm

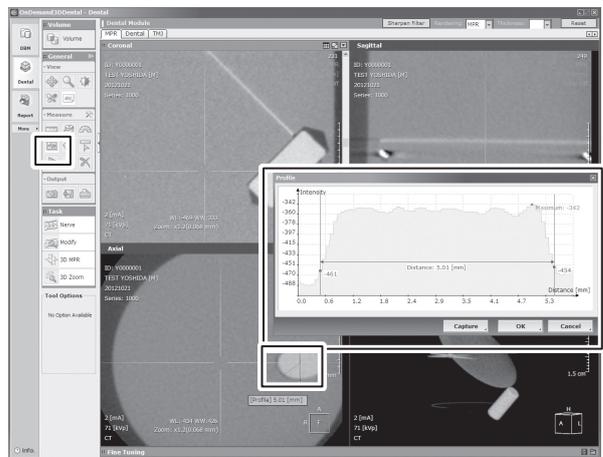


Fig. ⑧ -120

- (6) Find out the standard deviation of pixel values of the acrylic part from the Axial image. However, measure it without adjusting the crossbar tilt.

Where to measure is described in the figure on the right. Measuring point is between the bottom edge of lower Teflon pin and the bottom edge of the image. Use ROI function to read the Std value when acrylic part shown in the Axial image is surrounded by the size of 80 x 160. As shown in the figure on the right, avoid the center of the Axial image when locating the surrounding area with ROI.

Acceptance Value:

For Image Creator Version 2.52 or earlier:

10 or less

For Image Creator Version 2.53 or later:

120 or less

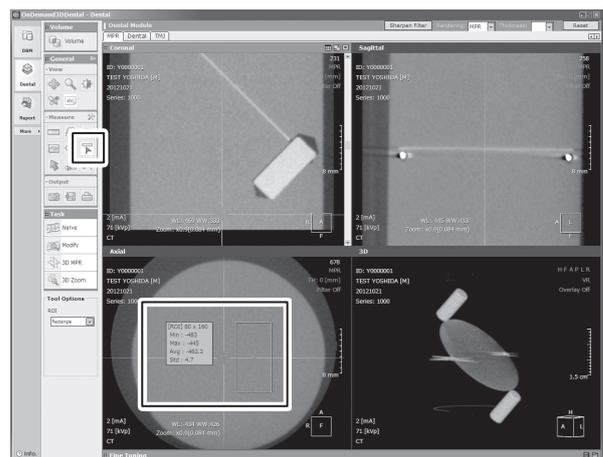


Fig. ⑧ -121

- (7) Attach 3D Calibration Phantom to chin-rest base, and acquire image in Dental and Oral Modes.

Image Acquisition Conditions are as follows:  
 Tube Voltage 71 kV, Tube Current 2 mA



Fig. ⑧ -122

- (8) Display the acquired image on OnDemand3D. Adjust the cross bar position and tilt so that “Upper-end Steel Sphere”, “Lower-end Steel Sphere”, “Mid-height Steel Sphere” can be seen in the Coronal image for images acquired using both Dental and Oral Modes. Measure the distance between Steel Spheres.

Acceptable Values

“Upper-end Steel Sphere” - “Lower-end Steel Sphere”

39.6 mm - 40.4 mm

(Reference Value: 40.0 mm)

“Upper-end Steel Sphere” - “Mid-height Steel Sphere”

37.3 mm - 38.1 mm

(Reference Value: 37.7mm)

“Lower-end Steel Sphere” - “Mid-height Steel Sphere”

37.3 mm - 38.1 mm

(Reference Value: 37.7mm)

(Component Processing - Assembly Tolerance Value:  $\pm 0.1$  mm)

(Measurement Error  $\pm 0.3$  mm)

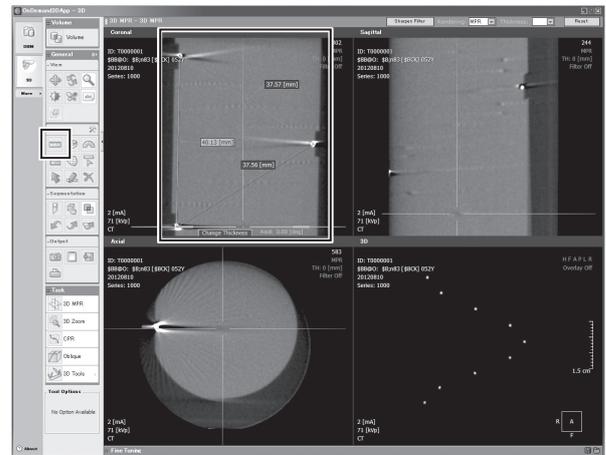


Fig. ⑧ -123

### 3. IEC61223-3-4:2000 X-ray Equipment Image Performance Acceptance Testing Report

#### IEC61223-3-4:2000 X-ray Equipment Image Performance Acceptance Testing Report

① Equipment name, Model name, Type and Serial number

Product name (Model Name)	X-era Smart
Type number	XP73
Serial No. (Manufacturer No.)	

② Accessory checking

Item	Task details	Approval/Performance benchmark	Test result
Accessory checking	Check the equipment accessories	All the accessories listed in "2. Other Components" are included.	
Test report checking	Check the approvals for the contents of the test report supplied with the equipment.	All items are approved.	

③ Main performance and performance specifications (tested items, approval benchmarks and test results)

■ Power Source

Item	Task details	Approval/Performance benchmark	Test result
Power supply (input) voltage checking (under load*)	<p>Set the measuring range of tester to AC Voltage, and connect the power plug of Main Unit into power strip. Connect tester between L Terminal and N Terminal on the power strip. Measure loaded voltage* when power consumption is set at maximum (82kV, 10mA).</p> <p><b>REF.</b> : Before measuring, make sure the specifications described in [① Requirements for Installation Location Facilities] "2. Equipment Requirements for Power, etc."</p> 	±10% of the power voltage (VAC)	
Grounding connection checking	<p>Set the tester measurement range to AC voltage and then use the tester to measure the voltage between the power outlet ground terminal and terminal L and between the power outlet ground terminal and terminal N.</p> <p><b>REF.</b> : Before measuring, make sure the specifications described in [① Requirements for Installation Location Facilities] "2. Equipment Requirements for Power, etc."</p>	<p>Between the earth and L terminals: ±10% of the power voltage (VAC)</p> <p>Between the earth and N terminals: 2 (VAC) or less</p>	
Whether the power cable is correctly connected	Check that the power plug is correctly plugged into the power outlet (no conversion plug used).	Power plug correctly plugged into power outlet with no conversion plug used.	

Confirmation of additional protective earth conductor.	Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.	Make sure that additional protective earth conductors are connected with the common grounding wire for the main body and computer.	
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\* "Under load" refers to a state where the elevation motor or rotating arm motor are running and X-ray irradiation is in progress (including states involving concurrent operation).

■ Main Unit

Item	Task details	Approval/Performance benchmark	Test result
Column fixings checking	Check the fixing locations.	No looseness or play.	
Arm mounting unit installation checking	Check the fixing locations.	No looseness or play.	
Chinrest fixings checking	Check the fixing locations.	No looseness or play.	
Confirmation of cephalometric unit attachment.	Check the fixing locations.	No looseness or play.	
Level checking	Measure whether the arm mounting unit is level.	[Non-3D Type] Levelness: $\pm 0.5$ (°) or less [3D Type] Levelness: $\pm 0.1$ (°) or less	
Damage or soiling	Visually check the exterior of the equipment.	No damage or soiling.	
Confirmation of the equipment's option settings.	Check the equipment's settings by CS100 of the CS mode.	The equipment's specifications and settings need to match each other.	

■ Component Operating Status

Item	Task details	Approval/Performance benchmark	Test result
Slide body vertical movement checking	Press the Up switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The slide body rises when the Up switch is pressed and stops at the highest point stated in the dimensional drawing.	
	Press the Down switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The slide body descends when the Down switch is pressed and stops at the lowest point stated in the dimensional drawing.	
Calibrations of collimator drive and sensor drive (with 3D <sup>(*)</sup> and Cephalometric <sup>(*)</sup> only)	Calibrate the collimator drive and sensor drive using CS102 of CS mode.	The Operating Status: "Calibration has completed" is displayed.	
Rotating arm front-back movement checking	Press the Beam switch on the control panel, switch to positioning mode and press the Forward switch <b>REF.</b> : X-era Smart Operation Manual	The rotating arm moves towards the column when the Forward switch is pressed.	
	Press the Beam switch on the control panel, switch to positioning mode and press the Back switch <b>REF.</b> : X-era Smart Operation Manual	The rotating arm moves away from the column when the Back switch is pressed.	
Confirmation of resetting operations (panoramic, 3D <sup>(*)</sup> , cephalometric <sup>(*)</sup> )	Press the RESET switch on the Control Panel after switching to each of panoramic, 3D <sup>(*)</sup> and cephalometric <sup>(*)</sup> modes. <b>REF.</b> : X-era Smart Operation Manual	By pressing the RESET switch, the rotating arm unit, collimator unit, and sensor unit move to and stop at the image acquisition starting position.	

Item	Task details	Approval/Performance benchmark	Test result
Positioning beam operation checking	Press the Beam switch on the control panel. <b>REF.</b> : X-era Smart Operation Manual	The laser beam, midline beam and anterior teeth fault area laser beams light and correctly illuminate the designated location.	
Confirmation of opening and closing of the head support.	Hold the bottoms of the temporal support and forehead support and slide them.	They should move smoothly.	
Confirmation of opening and closing of the ear rods and nose support (*)	When opening the ear rods, slide them by holding the depressed parts. When opening the nose support, slide it by holding the bottom part.	They should move smoothly.	
Confirmation of cephalo rotating unit operations (*)	Hold the bottom of ear rod and rotate it to the PA or LA position. <b>REF.</b> : X-era Smart Operation Manual	They should move smoothly.	
Exposure operation checking	Select Test mode and then press the X-ray exposure switch (hand switch).	Dashes (--) appear on the control panel kV and mA display. Only while the X-ray exposure switch (hand switch) is pressed, the rotating arm moves and the hand switch box "X-ray" LED and arm mounting unit indicators both light.	
Aging process	Carry out aging using CS95 CS mode.	The aging completed display appears.	
Adjusting the position of X-ray beam (Panoramic)	Adjust the position of X-ray beam. <b>REF.</b> : ⑧ 2-10. A. Mechanical Alignment: Panoramic <b>REF.</b> : ⑧ 2-10. B. Sensor Calibration: Panoramic	Irradiation position of X-ray beam is set correctly and calibration is successful.	
Adjusting the position of X-ray beam (Cephalometric) (*)	Adjust the position of X-ray beam. <b>REF.</b> : ⑧ 2-11. A. Mechanical Alignment: Cephalometric <b>REF.</b> : ⑧ 2-11. B. Sensor Calibration: Cephalometric <b>REF.</b> : ⑧ 2-11. C. Mechanical Alignment: Secondary Slit	Irradiation position of X-ray beam is set correctly and calibration is successful.	
Panoramic fault area checking	Carry out exposure with the Installation phantom installed on the chinrest base.	The desired image is displayed correctly on the computer monitor.	
Ear rings center position confirmation (*)	Adjust the center position of the ear rings. <b>REF.</b> : ⑧ 2-13. Center Alignment of Ear Rings	Center positions of the ear rings are aligned.	
Confirmation of QA image (Panoramic)	Acquire panoramic image using QA phantom. <b>REF.</b> : ⑧ 2-14. QA Procedure (Panoramic)	Line Pairs: Slit part needs to be visible. Low Contrast: Holes need to be visible.	
Confirmation of QA Image (Cephalometric) (*)	Acquire cephalometric image using QA phantom. <b>REF.</b> : ⑧ 2-15. QA Procedure (Cephalometric)	Line Pairs: Slit part needs to be visible. Low Contrast: Holes need to be visible.	
Pin adjustment (*)	Adjust the pins using CS103 of CS mode and 3D Maintenance Tool. <b>REF.</b> : ⑧ 2-16-3. Pin Adjustment	Make sure that the tip of the spear overlaps with the stainless-steel needle for images from both ways.	

Item	Task details	Approval/Performance benchmark	Test result
Checking the 3D irradiation field <sup>(*)</sup>	Adjust the 3D irradiation field using CS101 of CS mode and 3D Maintenance Tool <b>REF.</b> : ② 2-16-1. Checking the 3D Irradiation Field	Make sure that there is no deficiency in X-ray irradiation field of resulting image.	
Digital calibration <sup>(**)</sup>	Calibrate the center channel using 3D Maintenance Tool. <b>REF.</b> : ② 2-16-4. Digital Calibration	Check the “Upper-end Steel Sphere”, “Lower-end Steel Sphere”, “Mid-height Steel Sphere”, and make sure that the distances between them are as follows. <ul style="list-style-type: none"> <li>• “Upper-end Steel Sphere” - “Lower-end Steel Sphere”: 39.6 [mm] - 40.4 [mm]</li> <li>• “Upper-end Steel Sphere” - “Mid-height Steel Sphere”: 37.3 [mm] - 38.1 [mm]</li> <li>• “Lower-end Steel Sphere” - “Mid-height Steel Sphere”: 37.3 [mm] - 38.1 [mm]</li> </ul>	
Confirmation of QA image(3D) <sup>(**)</sup>	Conduct the 3D (Oral / Dental) procedure using the QA phantom for 3D image acquisition. <b>REF.</b> : ② 2-18. QA Procedure (3D)	The following requirements have to be met from in the image acquired. <ol style="list-style-type: none"> <li>1. Distance between two steel spheres 29.6 [mm] - 30.4 [mm]</li> <li>2. Thickness of aluminum disc 0.7 [mm] or less</li> <li>3. Diameter of teflon pin's minor axis 4.6 [mm] - 5.3 [mm]</li> <li>4. Standard deviation of pixel values at acrylic part For Image Creator Version 2.52 or earlier: 10 or less For Image Creator Version 2.53 or later: 120 or less</li> </ol>	

\* Items with <sup>(\*)</sup> only apply to a cephalo-attached equipment.

\*\* The items marked with <sup>(\*\*)</sup> need to be conducted only with 3D type.

#### ④ Testing equipment types

Name	Model (measuring instrument No.)/Manufacturer
Digital tester	
Tape measure	
Level/Digital level	
Installation phantom	(Equipment accessory)

#### ⑤ Testing location, date and supervisor

Testing location	
Testing date	
Testing supervisor	

#### ⑥ Approval

<input type="checkbox"/> pass / <input type="checkbox"/> failure
--

## ⑨ Procedure for Handling Cases where Installation and Disposal are Restricted by Legal Regulations

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This product cannot be disposed of as regular industrial waste. The customer is responsible for the proper disposal of this product with following the each countries'/local governments' regulation/code. For more information, please contact to your dealer.

### Proper Disposal of Electronic Equipment

**NOTE :** The following information is valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.



This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery, and recycling, please take these products to designated collection points where they will be accepted on a free-of-charge basis. Alternatively, in some countries, you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste in accordance with national legislation.

**NOTE :** For Business users in the European Union  
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

- Tubehead(Pb)
- Collimator(Pb)
- All electronic circuits
- Sensor covers(EMC painted)
- 3D Sensor covers(Pb)

## **⑩ Other Items Deemed Mandatory by the Manufacturer**

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There are no other items considered essential by the Yoshida Dental Mfg. Co., Ltd.

## 11 CS Mode

The X-era Smart is equipped with a CS mode to facilitate operation checking during repairs and maintenance.

### **WARNING**

- There is a risk of unintended irradiation in CS mode. Ensure that you fully understand the details. (Cover the first slit in the head unit with lead shielding whenever you carry out X-ray irradiation for purposes other than X-ray beam adjustment or image capture.)  
Never allow the user to use CS mode.

## 1. Switching to CS mode

Switch to CS mode using the X-era Smart Control Manager on the computer.

- Click the “Setup” tab while holding down the Shift key to open the password input window. Then enter the password (p18p18).

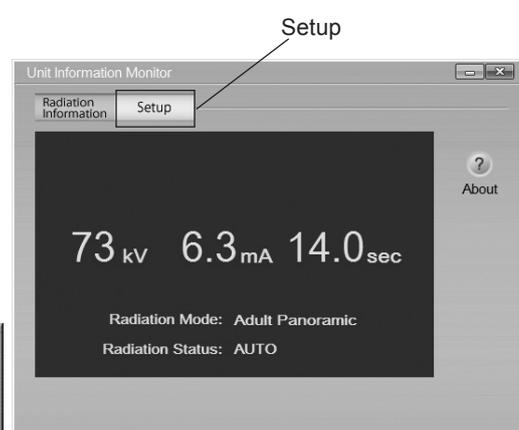


Fig. 11-1: Switching to CS mode

- The CS mode window appears. Clicking ▼ in the mode selection field displays a list of available modes. Select the function to be used.

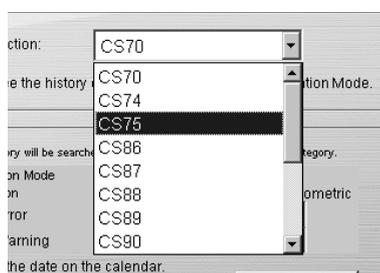


Fig. 11-2: Selecting a CS mode

- c. The window for the selected function appears. A brief explanation of how to use the function is shown in the window. Use the function as described in the explanation



Fig. ⑪-3: CS mode display

## 2. CS Mode Functions

The table below lists the functions available in CS mode.

CS Mode Functions

Mode Selection	Details
CS70	Allows the history of past errors to be viewed.
CS74	Allows the operation of features such as sensors and switches to be displayed on the computer screen or control panel.
CS75	Allows X-ray exposure without moving the arm. Allows any tube voltage, tube current or X-ray exposure time to be set.
CS86	Allows the angle between the arm limit sensors to be checked using a counter
CS87	Displays the number of X-ray exposure used for maintenance warning messages.
CS88	Displays the total number of X-ray exposure for the equipment.
CS89	Clears the flash memory.
CS90	Can be used to specify whether or not Exhibition mode can be used. Enabling the use of Exhibition mode allows the X-era Smart to be operated and controlled in the same way as in normal mode, but without emitting X-rays.
CS95	Carries out X-ray tube aging.
CS97	Calibrates the angle detection sensor on the rotating arm.
CS98	Calibrates the head support thickness detection sensor.
CS99	Allows the X-ray control circuit board reference voltage to be checked.
CS100	Sets the direction of panoramic image acquisition.
CS101	Manually switches evacuation mechanisms for the electric collimator and 3D sensor.
CS102	Conducts the calibration of the positions of evacuation mechanisms for the electric collimator and 3D sensor.
CS103	Sets the angle adjustment value for 3D Oral mode, and conducts image acquisition for center channel calibration.

## 12 Error Messages

Error No.	Details	Response
Er08	The X-ray exposure switch has been released during image acquisition.	Press the Reset switch on the control panel to recover from the error. Retry.
Er09	The rotating arm has rotated faster than the given speed.	If this error persists, contact your dealer.
Er10	The rotating arm has rotated slower than the given speed.	
Er27	FLASH memory writing error	
Er28	X-ray cannot be irradiated at the specified strength	Immediately contact your dealer.
Er29	X-ray cannot be irradiated at the specified dose.	
Er30	X-ray head temperature has exceeded the given value.	If this error persists, contact your dealer.
Er31	Failure in the X-ray tube head	Immediately contact your dealer.
Er34	Failure in arm sensor AR	
Er39	Failure in arm sensor AL	
Er44	Two or more arm driving sensors including the arm sensor have been activated at the same time.	
Er46	Communication error between CPU circuit board and control panel	If this error persists, contact your dealer.
Er50	When the unit has been activated, the X-ray exposure switch has been pressed in the hand switch box.	Press the Reset switch on the control panel to recover from the error. If this error persists, contact your dealer.
Er54	The arm unit movement does not finish within the given time period.	
Er56	The back-and-forth driving motor movement does not finish within the given time period.	
Er57	Failure in back-and-force driving sensor. A wrong combinations of arm driving sensors have been activated at the same time.	Immediately contact your dealer.
Er59	Motor control error. Image acquisition control has abnormally terminated.	If this error persists, contact your dealer.
Er60	Arm unit driving control error. Arm unit driving motor control has abnormally terminated.	
Er62	Back-end-forth driving motor error. Back-and-forth driving motor control has abnormally terminated.	
Er67	A major difference has observed between the arm unit driving pulse and the value detected by the arm position detector.	Press the Reset switch on the control panel to recover from the error. If this error persists, contact your dealer.
Er68	The value detected by the arm position detector has exceeded the normal range of operation due to running idle.	
Er69	The timing between the back-and-forth driving motor pulse and the toggling of back-and-forth driving sensor ON and OFF has exceeded the normal range.	
Er71	X-ray tube head control error	
Er73	Communication error between CPU circuit board and hand switch box	
Er75 (*)	Cephalometric relay board communication error	
Er 79(**)	3D sensor slide position error	
Er80 (*)	Collimator switching limit sensor error	

Error No.	Details	Response
Er81 (*)(**)	Collimator switching position error	Press the Reset switch on the control panel to recover from the error. If this error persists, contact your dealer.
Er82	Sensor (detachable) is not attached to Docking Station (Panoramic) when acquiring panoramic image.	
	The sensor unit (detachable) is not detached to the docking station unit (Panoramic) when acquiring a 3D image.	
Er83 (*)	Sensor (detachable) is not attached to Docking Station (Cephalometric) when acquiring cephalometric image.	
Er84 (*)	Motor movement of the Cephalometric unit did not complete properly.	

\* Only for a Cephalo-attached equipment

\*\* For equipment with 3D function

#### Caution Message code

Error No.	Details	Response
FL01	Notice of service maintenance services. Total No. of radiation has exceeded 2,000.	It is recommended that you will perform regular checks. Contact your dealer.
FL02	The exposure switch has been pressed during selecting exposure conditions.	It will be cancelled by the reset switch on the Control panel. Contact your dealer if it happens frequently.
FL03	The exposure switch has been pressed during X-ray cooling time period.	
FL05(**)	The head fixator for 3D image acquisition is attached other than in 3D image acquisition mode.	Pressing the reset switch on the control panel releases the error. Remove the head fixator for 3D image acquisition.
FL06(**)	The head fixator for 3D image acquisition is not attached in 3D image acquisition mode.	Pressing the reset switch on the control panel releases the error. Attach the head fixator for 3D image acquisition.

\*\* For equipment with 3D function

## ⑬ Specifications

Item	Specifications				
Equipment type	Digital panoramic X-ray equipment, arm-type X-ray CT equipment				
Product name (Model name)	X-era Smart				
Type number	XP73				
Mode of operation	Continuous operation with intermittent loading				
High-voltage generator	DC rectification				
X-ray tube focal spot size	0.5 mm×0.5 mm				
X-ray tube cooling method	Oil cooling				
Nominal maximum electric power(combination of X-ray tube voltage and tube current at maximum output)	0.82 kW (82 kV, 10 mA)				
Tube voltage	58, 60, 63, 65, 68, 71, 73, 76, 79, 82 kV (±5%)				
Tube current	2.0, 2.5, 3.2, 4.0, 5.0, 6.3, 8.0, 10 mA (±15%)				
Exposure time	Panoramic	Adult	8, 14, 16 sec	± (10%+1 ms)	
		Child	6.4, 11.2, 12.8 sec		
	TMJ	4 sec × 2			
	Single	0.10, 0.12, 0.16, 0.20, 0.25, 0.32, 0.40, 0.50, 0.63, 0.80, 1.00, 1.20, 1.60, 2.00, 2.50, 3.20 sec			
	Cephalometric / Carpus image acquisition (*)		8, 10 sec		
	3D Oral image radiography (**)		11.5 seconds x 2		
	3D Dental image acquisition (**)		11.5 seconds		
Photographing direction	Panoramic, TMJ , 3D Oral : Clockwise / Counter Clockwise 3D Dental : Clockwise rotation				
Image magnification factor	Panoramic image acquisition, TMJ image acquisition	1.2 - 1.29			
	Cephalometric / Carpus image acquisition (*)	1.1			
Filter type	Add Filter 1.5 mmAl				
	Radiation orifice plate 0.17 mmAl Criteria : Tube Voltage / Current = 85 kV / 12 mA				
Total filtration	2.5 mmAl equivalent or over (at Tube voltage : 82 kV)				
Leakage dose	0.88 mGy/h or less				
Leakage dose calculation standards	Tube voltage 82 kV, tube current 10 mA, Duty cycle 1:40				
Duty cycle	1:40				
Radiation dose (CTDI <sub>100</sub> ) (²)	Standard image acquisition : 3D Oral 58 kV, 2.0 mA: 2.0 mGy (center value), 2.0 mGy (surrounding value)				
	Other image acquisition conditions (when the standard image acquisition is set as 1) 3D Oral 71 kV, 6.3mA: 5.7 (center value), 5.7 (surrounding value) 82 kV, 10.0mA: 13 (center value), 12 (surrounding value) 3D Dental 58 kV, 2.0mA: 0.58 (center value), 0.56 (surrounding value) 71 kV, 6.3mA: 3.3 (center value), 3.1 (surrounding value) 82 kV, 10.0mA: 7.8 (center value), 6.6 (surrounding value)				

Item	Specifications	
Linearity of X-ray output	±5%	
Pixel	100 μm isotropic/pixel	
	Matrix 64 × 1510 (Panoramic) 64 × 2266 (Cephalometric) 672 x 992(3D)	
Dimensions of the radiation field of the image reception area	6.4 mm × 151 mm (Panoramic), 6.4 mm × 226.6 mm (Cephalometric)	
SID/SOD (Panoramic)	485 mm / 350 mm	(19.1 inch / 13.8 inch)
SID/SOD (Cephalometric) (*)	1650 mm / 1500 mm	(65.0 inch / 59.1 inch)
SID/SOD(3D) (**)	570mm/350mm	(22.4inch/13.8inch)
FOV (**)	3D Oral image radiography	Diameter 77mm, height 54mm
	3D Dental image acquisition	Diameter 40mm, height 57mm
Emergency stop method	Deadman-type / emergency stop switch	
Rated power	Number of phases : Single phase	
	Frequency : 50 Hz/60 Hz	
	Power supply voltage : AC 100 V - 120 V±10 / AC 220 V - 240 V±10	
	Input : 2.0 kVA	
	Apparent Resistance Of Supply Mains R ≤0.3 Ω	
Wiring circuit breaker (fuse) type and capacity	AC 100 V - 120 V	20 A over-current release
	AC 220 V - 240 V	10 A over-current release
Classification	Class I, Type B ⚡	
Durable period	10 years (when prescribed maintenance and inspections are performed)	
Up-and-down stroke	800 mm (short type: 400 mm)	
Weight	Standing position wall-mount: Panoramic type: 130 kg	
	Standing position wall-mount short type: Panoramic type: 125 kg	
	Standing position wall-mount long type: Panoramic type: 135 kg	
	Standing position base-mount (with an optional base (*3)): Panoramic type: 155 kg	
	Standing position base-mount short type (with an optional base (*3)): Panoramic type: 150 kg	
	Standing position base-mount long type (with an optional base (*3)): Panoramic type: 160 kg	
	Standing position wall-mount: Cephalometric type: 170 kg	
	Standing position wall-mount short type: Cephalometric type: 165 kg	
	Standing position wall-mount long type: Cephalometric type: 175 kg	
	Standing position base-mount (with an optional base (*3)): Cephalo- metric type: 195 kg	
	Standing position base-mount short type (with an optional base (*3)): Cephalometric type: 190 kg	
	Standing position base-mount long type (with an optional base (*3)): Cephalometric type: 200 kg	

Item	Specifications	
Weight	Standing position wall-mount: 3D type 140 kg	
	Standing position wall-mount short type: 3D type 135kg	
	Standing position wall-mount long type: 3D type 145kg	
	Standing position base-mount (with an optional base (* <sup>3</sup> )): 3D type 165kg	
	Standing position base-mount short type (with an optional base (* <sup>3</sup> )): 3D type 160kg	
	Standing position base-mount long type (with an optional base (* <sup>3</sup> )): 3D type 170kg	
	Standing position wall-mount: 3D Cephalometric type 180kg	
	Standing position wall-mount short type: 3D Cephalometric type 175kg	
	Standing position wall-mount long type: 3D Cephalometric type 185kg	
	Standing position base-mount (with an optional base (* <sup>3</sup> )): 3D Cephalometric type 205kg	
	Standing position base-mount short type (with an optional base (* <sup>3</sup> )): 3D Cephalometric type 200kg	
	Standing position base-mount long type (with an optional base (* <sup>3</sup> )): 3D Cephalometric type 210kg	
Operating condition	Temperature	10 to 40°C (50 to 104°F)
	Relative humidity	30 to 75% (no condensation)
	Atmospheric pressure	700 to 1060 hPa
Required storing and shipping condition	Temperature	5 to 45°C (41 to 113°F)
	Humidity	30 to 75% (no condensation)
	Atmospheric pressure	700 to 1060 hPa
Recommended PC Performance, specifications	(1) CPU : Intel Core2 Duo 3.0 GHz or faster	
	(2) RAM : DDR3 2 GB or larger (4GB or larger (**))	
	(3) HDD : 80 GB or larger	
	(4) Resolution of monitor : True Color (24 bit RGB), SXGA (1280 × 1024) or higher	
	(5) Network : Dedicated Gigabit Intel / 3Com / Marvell chipset	
	(6) OS : Microsoft Windows® XP SP3 Microsoft Windows® 7 SP1 (Microsoft Windows® Vista is not supported.)	
	(7) PC and monitor must have CE marking	
Recommended PC	HP Z400 Workstation (Microsoft Windows® 7 32 bit)	
Recommended Viewer	Trophy Windows (V6.12.12.0), MEDIA DENT (V6), DBS Win (ver. 5.2.0), Apteryx Imaging (ver.3.12), SIDEXIS XG (ver. 2.52)	

\* For equipment with Cephalometric

\*\* For equipment with 3D function

- \*1 This product is automatically stopped when the thermal circuit breaker attached to the X-ray tube head senses the temperature of  $60 \pm 5^{\circ}\text{C}$  ( $140 \pm 41^{\circ}\text{F}$ )
- \*2 The position of the phantom when  $\text{CTDI}_{100}$  is measured is where the rotating center of the arm and the central axis of the phantom are matched, and the central point of the length of the probe in the phantom at the direction of the axis and the height of focal point of the Z-ray bulb are matched.
- \*3 Add 5kg in case of optional wide base.
- \*4 Peak tube potential (Tube voltage) and Tube current are calculated from a reference-voltage signal (feedback signal) measured at the control PCB by using a digital multimeter. The waveform of the signals will become stable within 0.1 sec from the beginning of exposure, however response of multimeter needs few seconds therefore the exposure time during the measurement is set to a time, which is enough to measure a sufficiently stable reference-voltage signals.
- \*5 This product employs a laser and was evaluated to CDRH 21 CFR Parts 1010 and 1040 using additional allowance of Laser Notice 50 and determined to be a Class 2 Laser Product with Class 2 Laser radiation.

This product complies with the following standards.

IEC 60601-1: 1988/A1: 1991/A2: 1995  
 IEC 60601-1-2: 2001/A1: 2004  
 IEC 60601-1-3: 1994  
 IEC 60601-1-4: 1996/A1: 1999  
 IEC 60601-1-6: 2004  
 IEC 60601-1-8: 2006  
 IEC 60601-2-7: 1998  
 IEC 60601-2-28: 1993  
 IEC 60601-2-32: 1994  
 IEC 60601-2-44: 2001/A1: 2002  
 IEC 60336: 2005  
 IEC 61223-3-4: 2000  
 IEC 61223-3-5: 2004  
 IEC 60825-1: 2007  
 IEC 62304: 2006  
 IEC 62366: 2007  
 UL 60601-1: 2003  
 CAN/CSA -C22.2 No. 601-1-M90

This product complies with DHHS 21 CFR Chapter I, Subchapter J at the date of manufacture.  
 X-era Smart is in conformity with the provisions of Council Directive 93/42/EEC as amended by the Directive 2007/47/EC concerning medical devices.  
 Performance Standards and European Union Directive 93/42/EEC (Medical Devices Directive).



## ⑭ Dimensional Drawings

### 1. Standing position wall-mount: Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

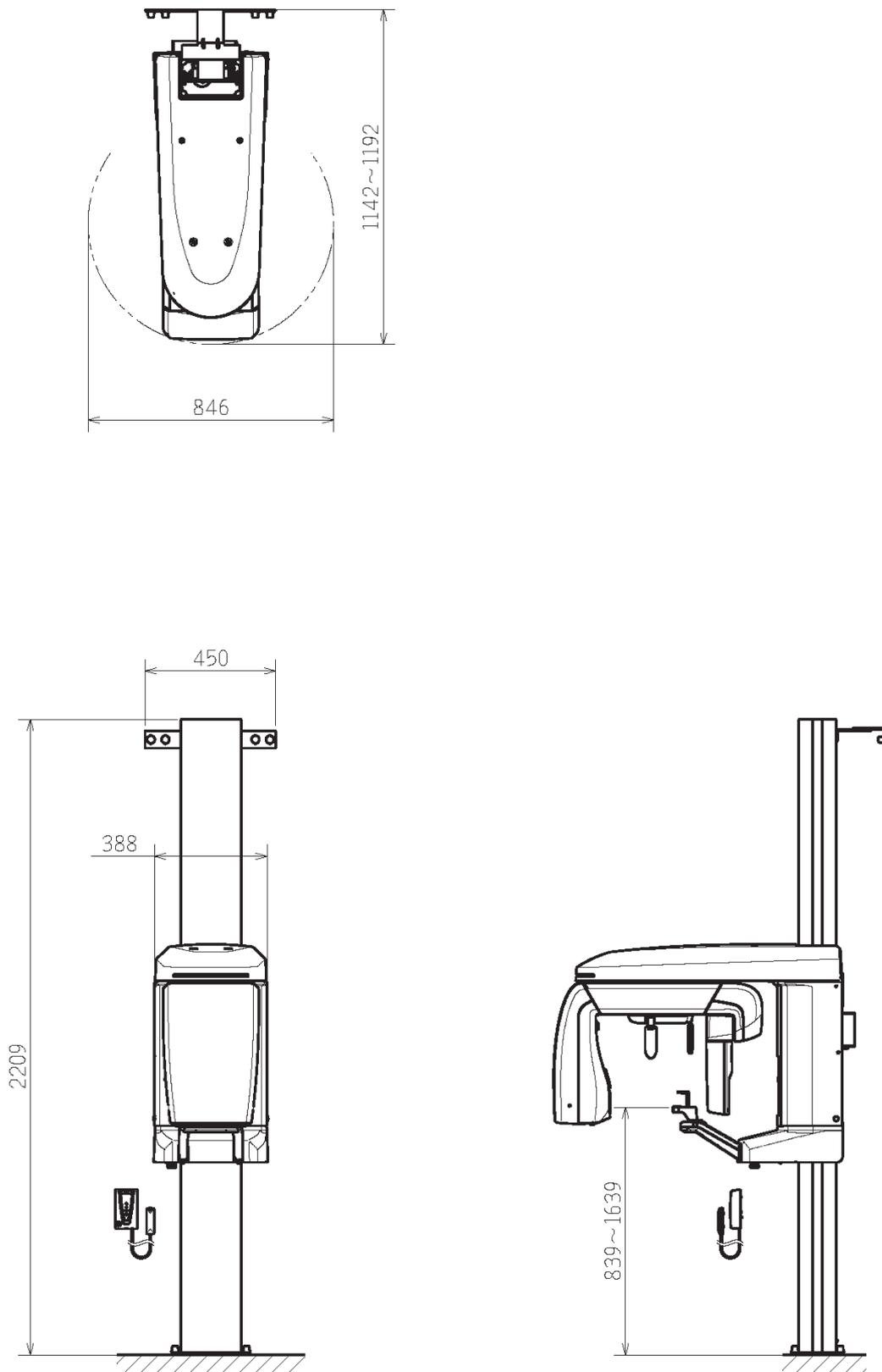


Fig. ⑭ -1: Standing position wall-mount: Panoramic type

## 2. Standing position wall-mount short type: Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

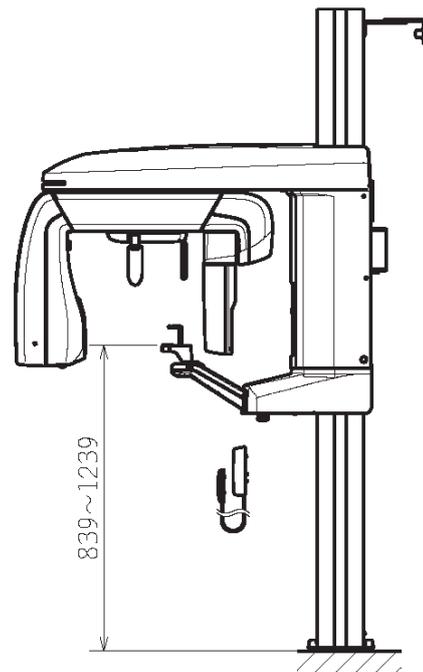
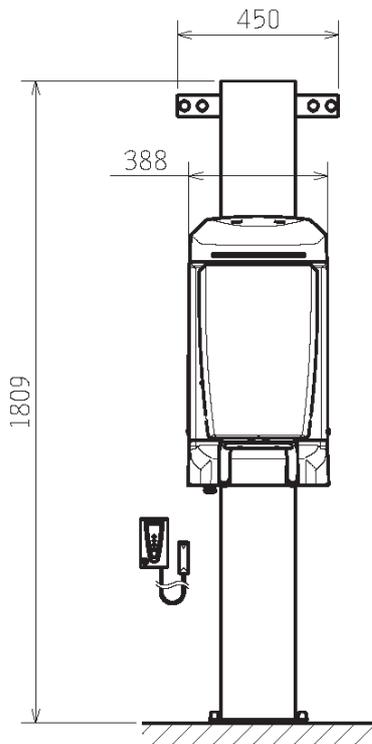
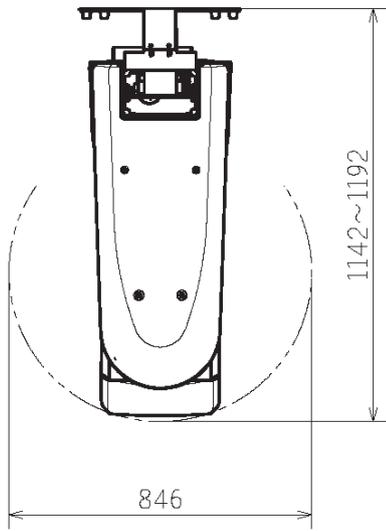


Fig. ⑭ -2: Standing position wall-mount short type: Panoramic type

### 3. Standing position wall-mount long type: Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

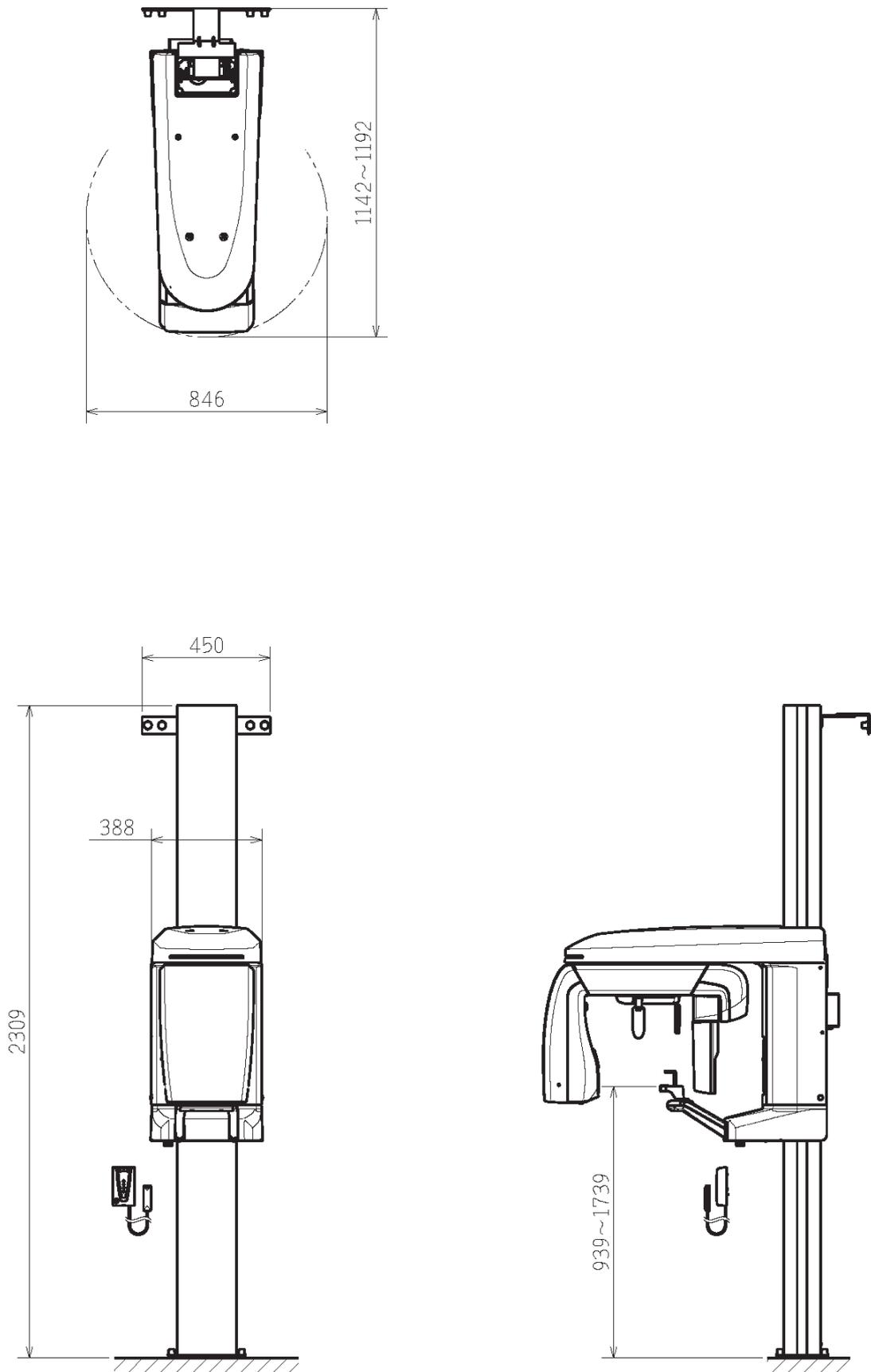


Fig. ⑭ -3: Standing position wall-mount long type: Panoramic type

#### 4. Standing position wall-mount: 3D type

Unit: mm  
(1 inch = 25.4 mm)

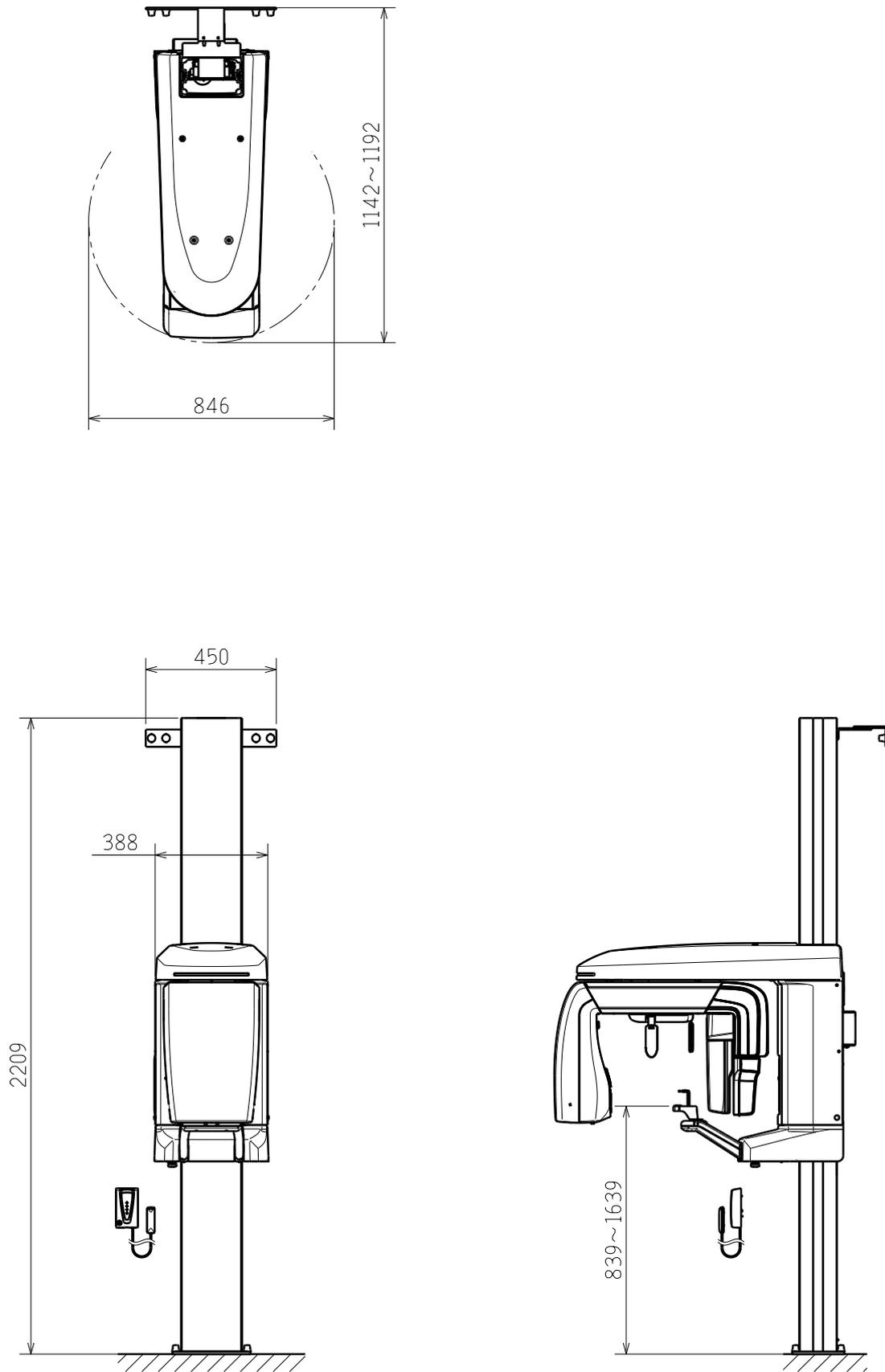


Fig. ⑭ -4: Standing position wall-mount: 3D type

## 5. Standing position wall-mount short type: 3D type

Unit: mm  
(1 inch = 25.4 mm)

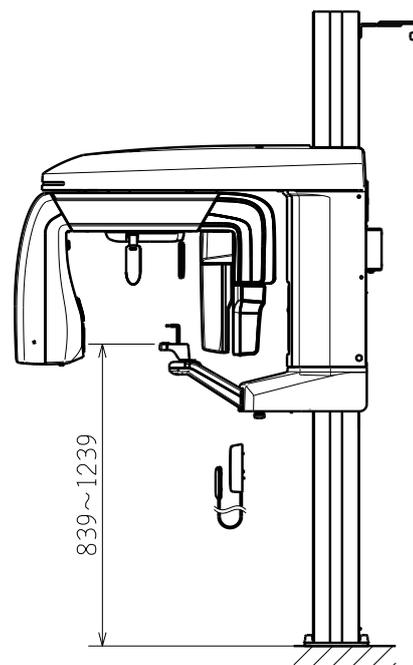
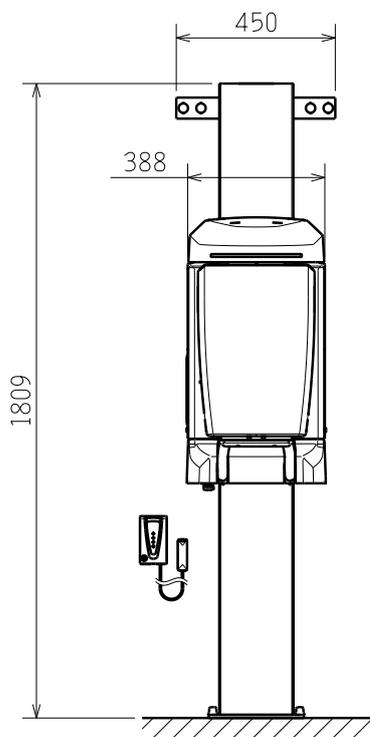
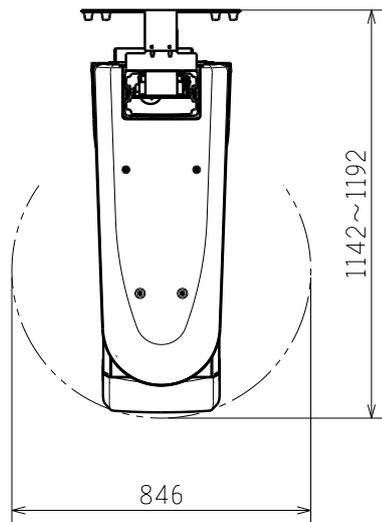


Fig. ⑭ -5: Standing position wall-mount short type: 3D type

## 6. Standing position wall-mount long type: 3D type

Unit: mm  
(1 inch = 25.4 mm)

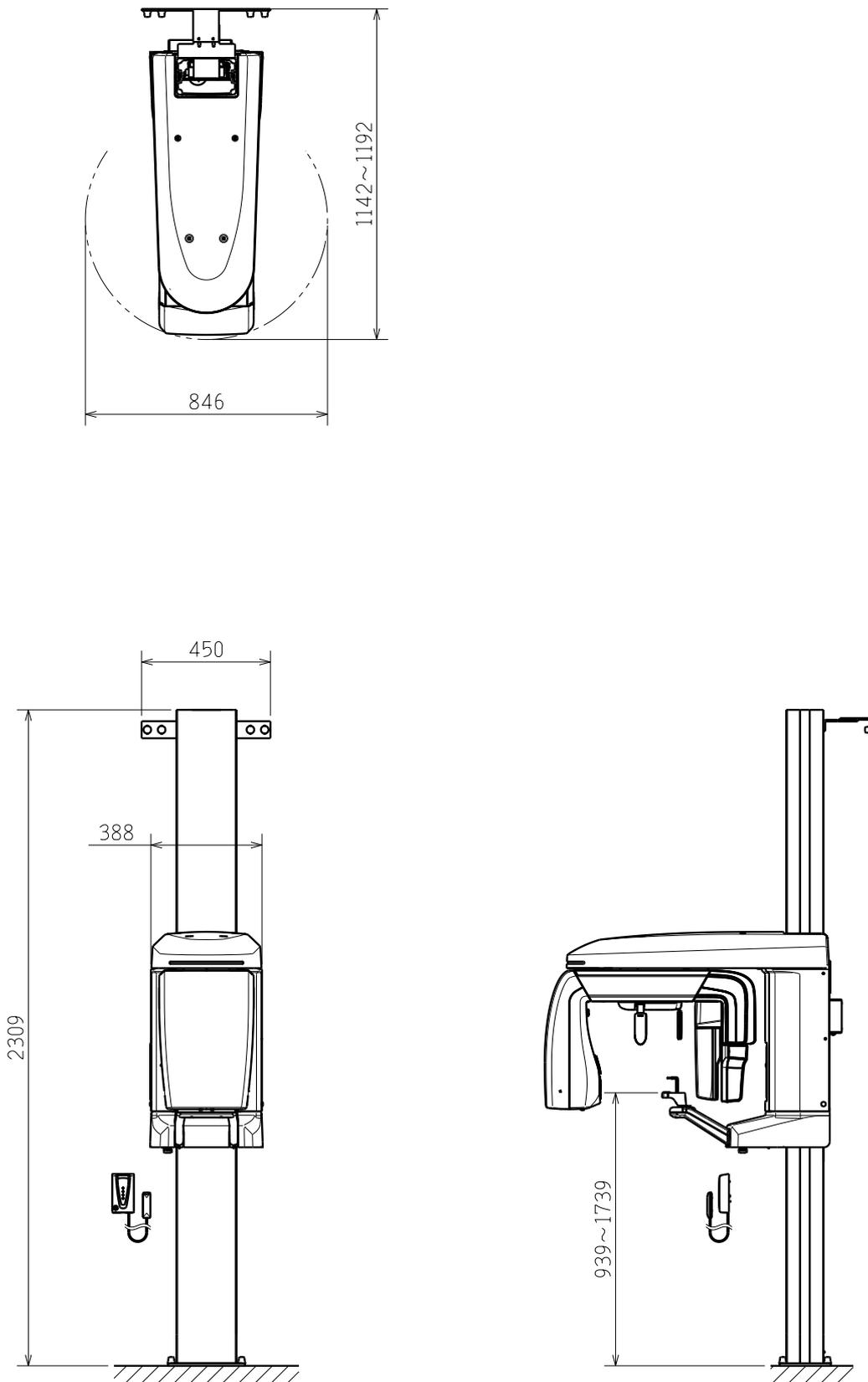


Fig. ⑭ -6: Standing position wall-mount long type: 3D type

## 7. Standing position base-mount (with an optional base) : Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

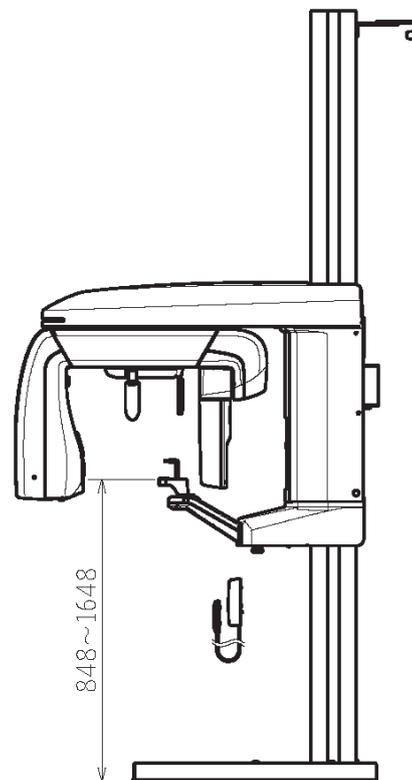
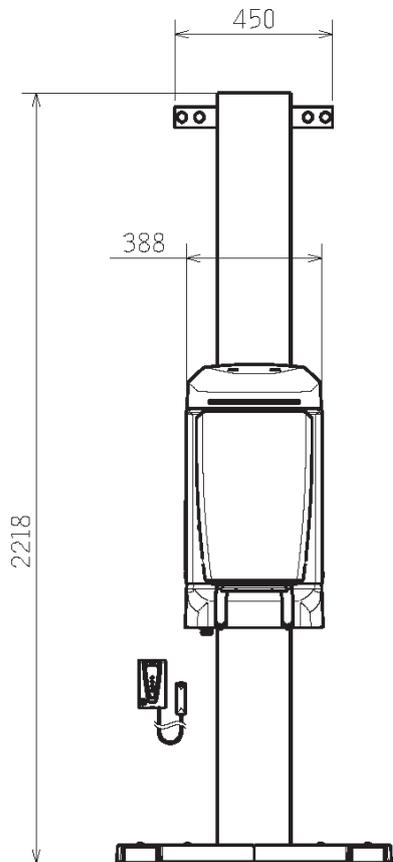
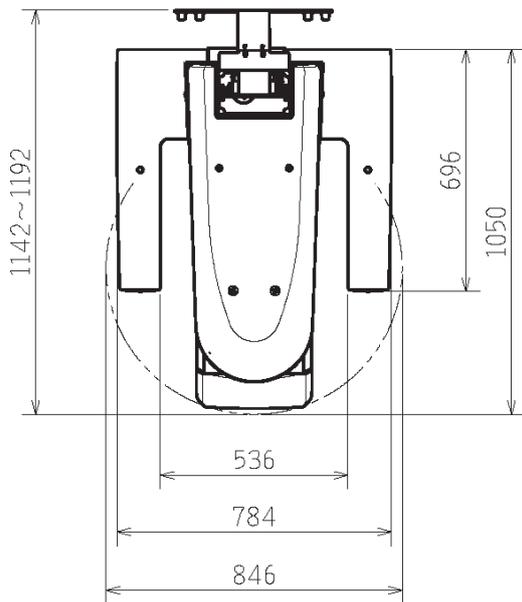


Fig. ⑭ -7: Standing position base-mount (with an optional base) : Panoramic type

## 8. Standing position base-mount short type (with an optional base) : Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

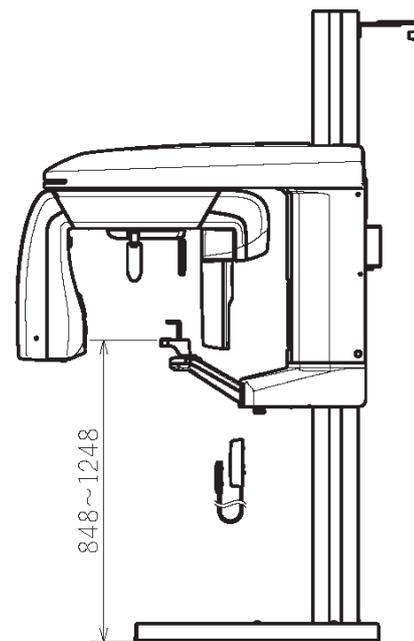
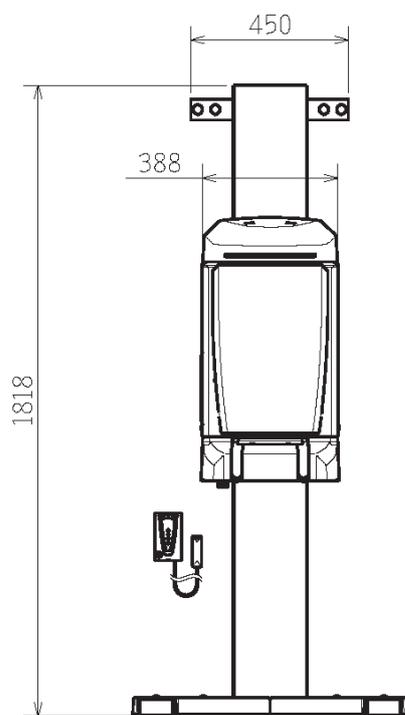
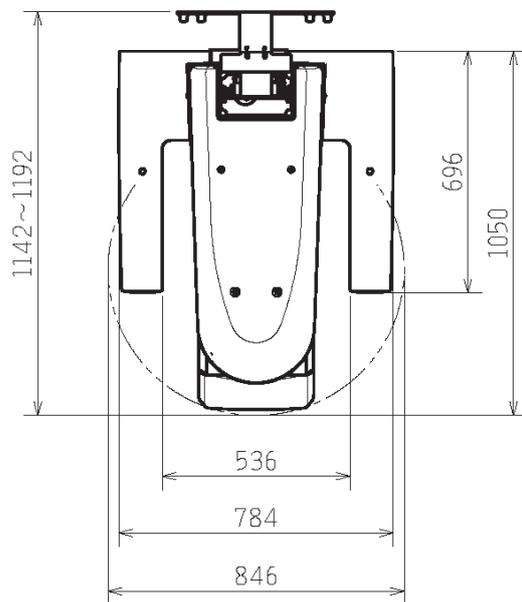


Fig. ⑭ -8: Standing position base-mount short type (with an optional base) : Panoramic type

**9. Standing position base-mount long type (with an optional base) :  
Panoramic type**

Unit: mm  
(1 inch = 25.4 mm)

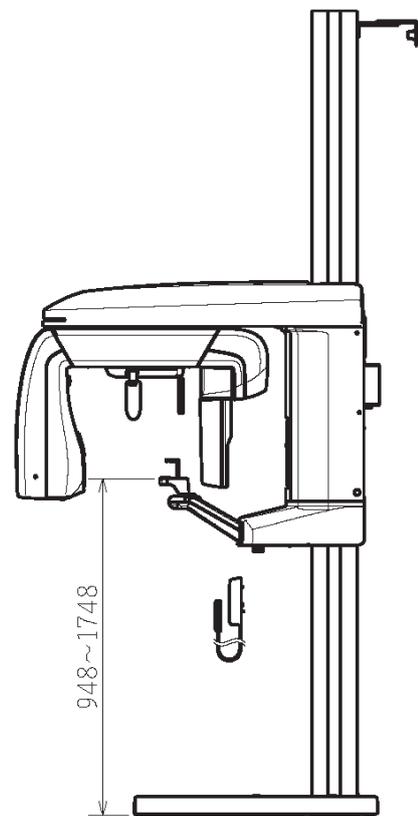
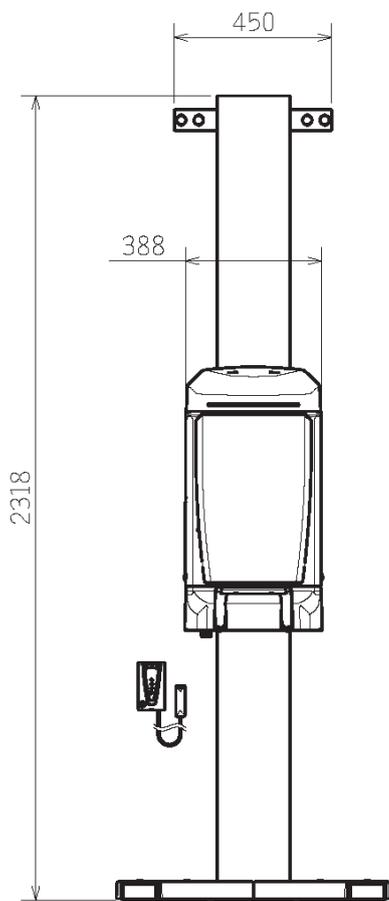
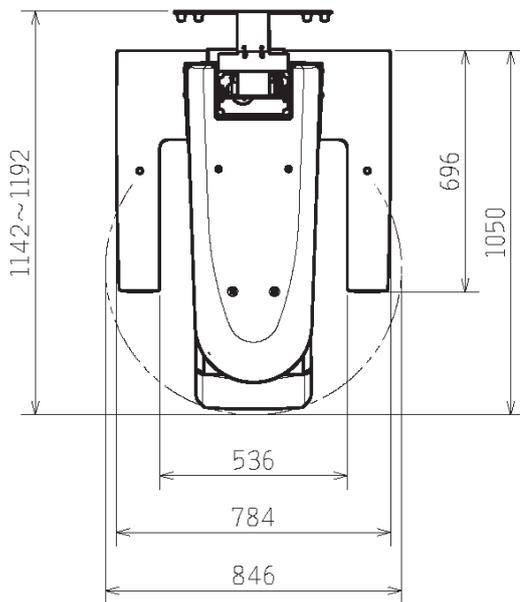


Fig. ⑭ -9: Standing position base-mount long type (with an optional base) : Panoramic type

# 10. Standing position base-mount (with an optional base) : 3D type

Unit: mm  
(1 inch = 25.4 mm)

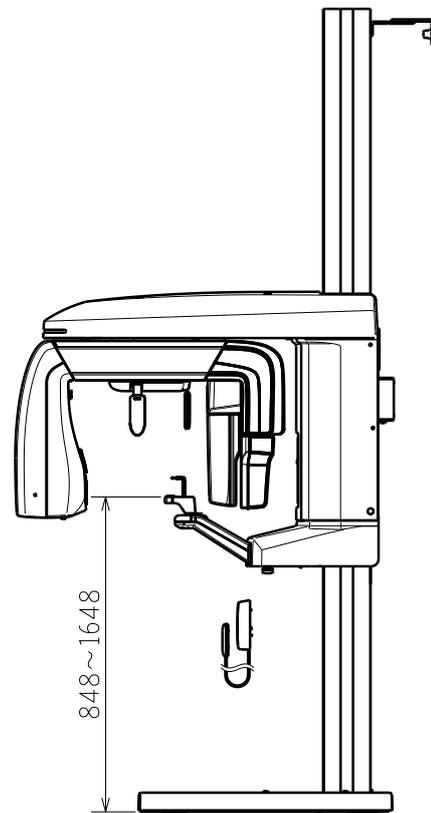
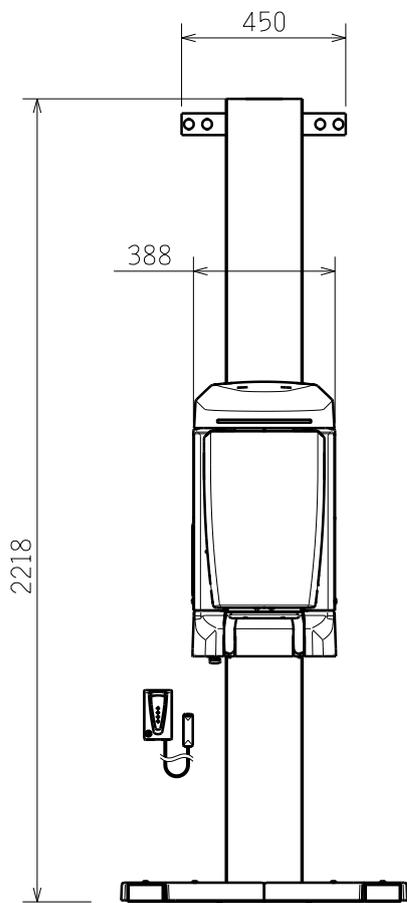
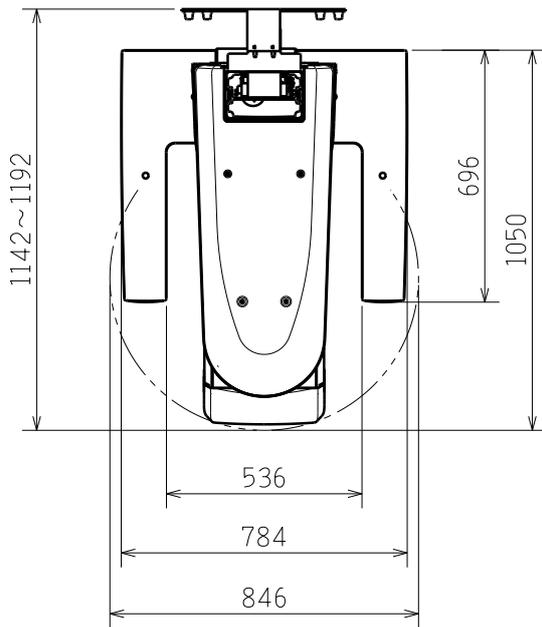


Fig. ⑭ -10: Standing position base-mount (with an optional base) : 3D type

# 11. Standing position base-mount short type (with an optional base) : 3D type

Unit: mm  
(1 inch = 25.4 mm)

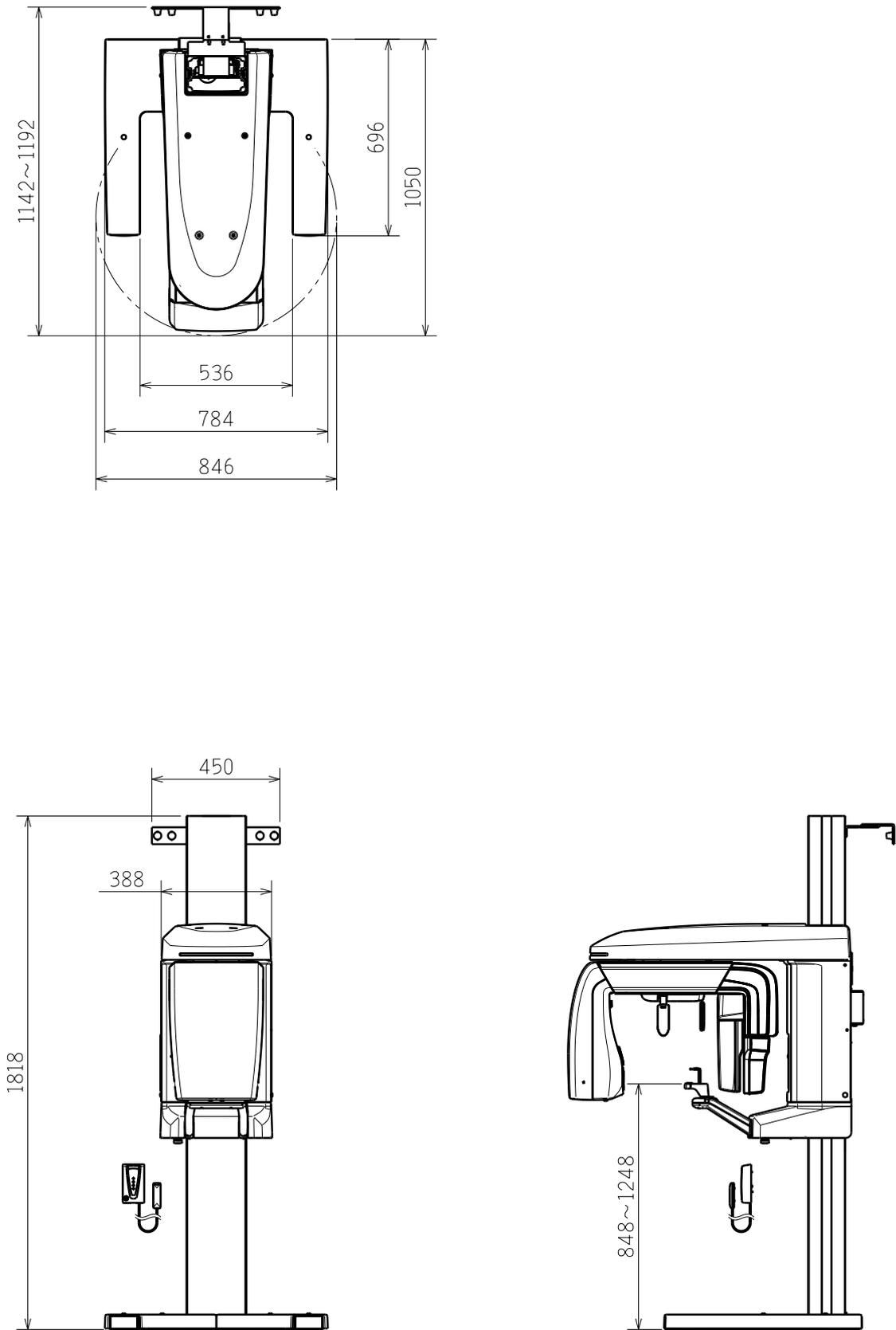


Fig. ⑭ -11: Standing position base-mount short type (with an optional base) : 3D type

## 12. Standing position base-mount long type (with an optional base) : 3D type

Unit: mm

(1 inch = 25.4 mm)

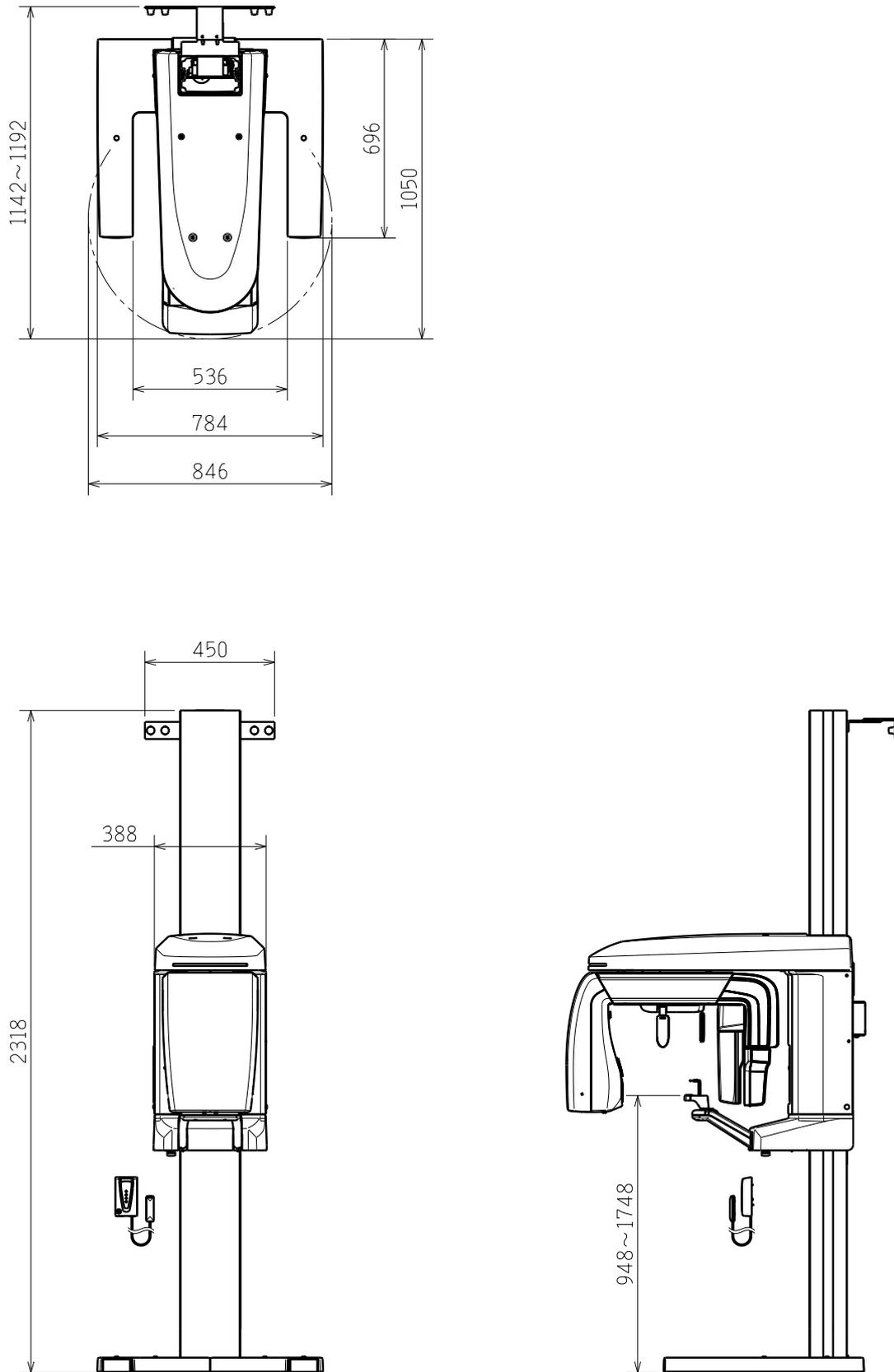


Fig. ⑭ -12: Standing position base-mount long type (with an optional base) : 3D type

### 13. Standing position base-mount (with an optional wide base): Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

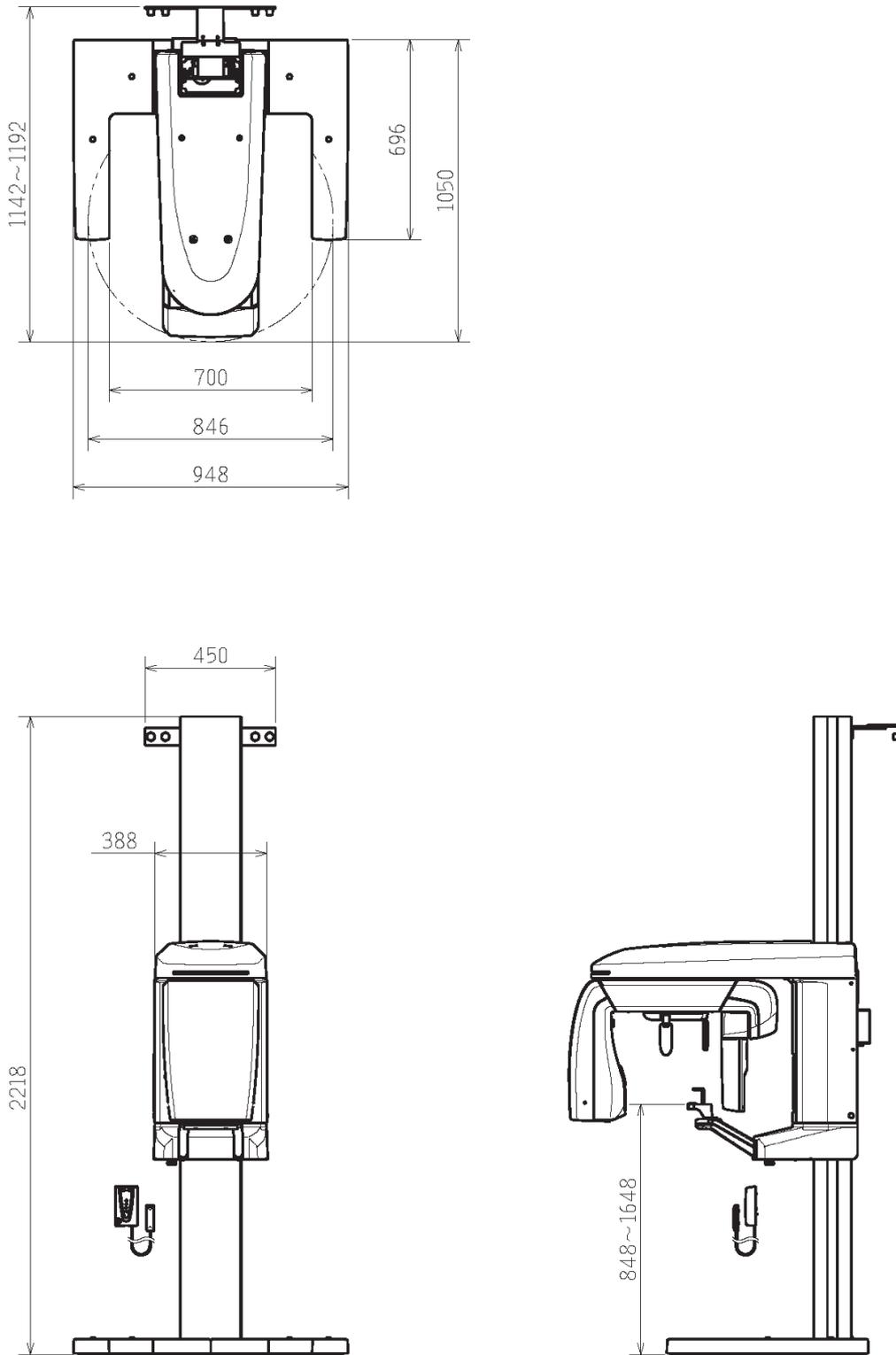


Fig. ⑭ -13: Standing position base-mount (with an optional wide base): Panoramic type

# 14. Standing position base-mount short type (with an optional wide base): Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

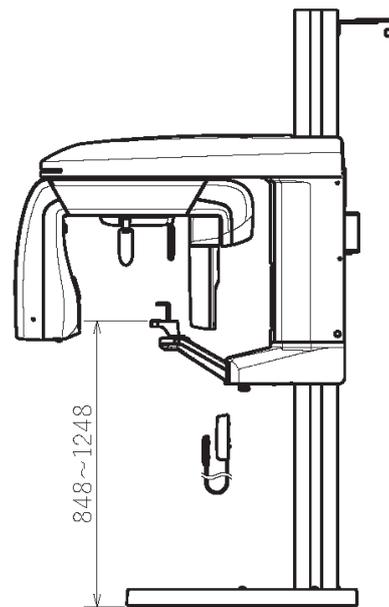
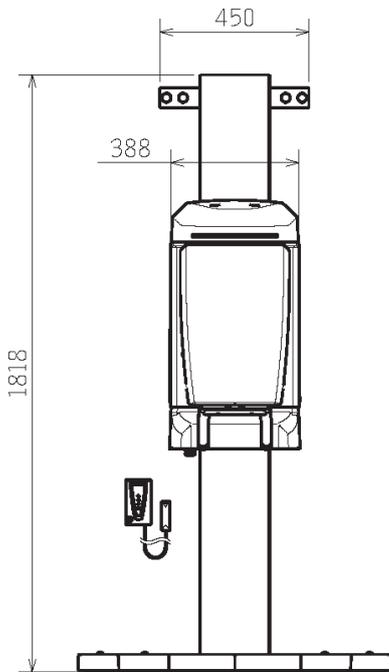
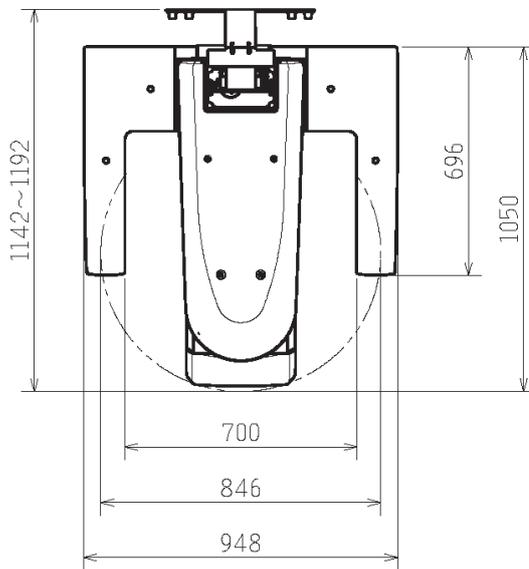


Fig. ⑭ -14: Standing position base-mount short type (with an optional wide base): Panoramic type

# 15. Standing position base-mount long type (with an optional wide base): Panoramic type

Unit: mm  
(1 inch = 25.4 mm)

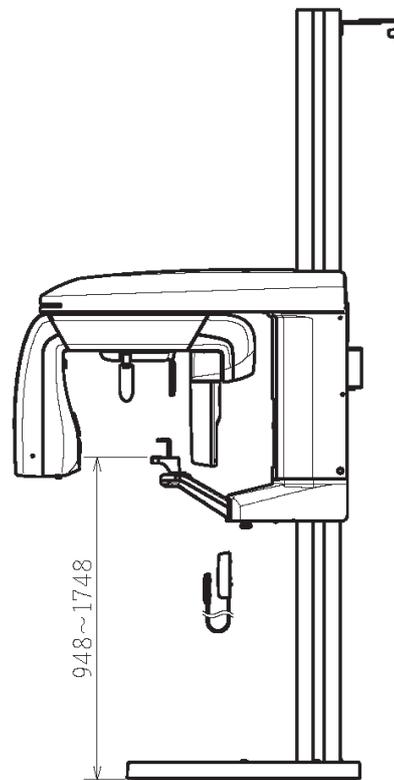
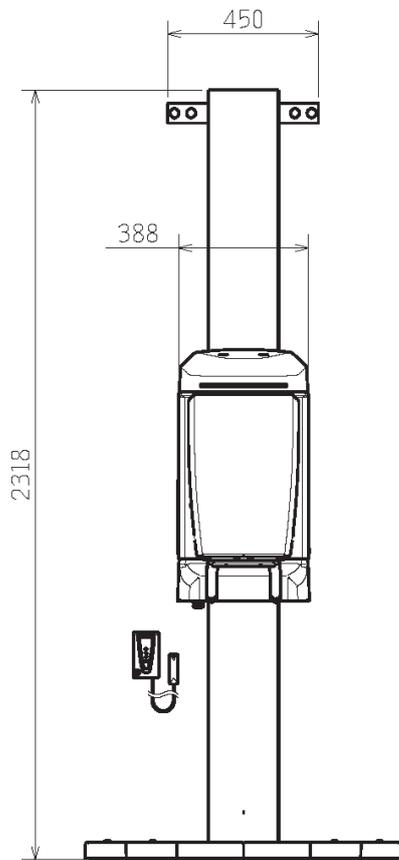
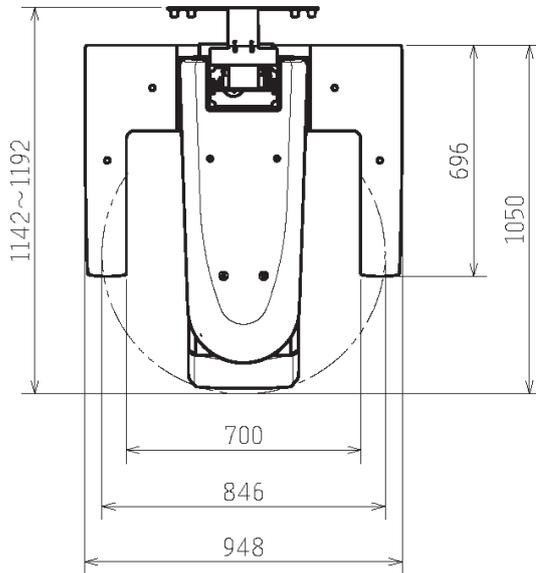


Fig. ⑭ -15: Standing position base-mount long type (with an optional wide base): Panoramic type

## 16. Standing position base-mount (with an optional wide base): 3D type

Unit: mm  
(1 inch = 25.4 mm)

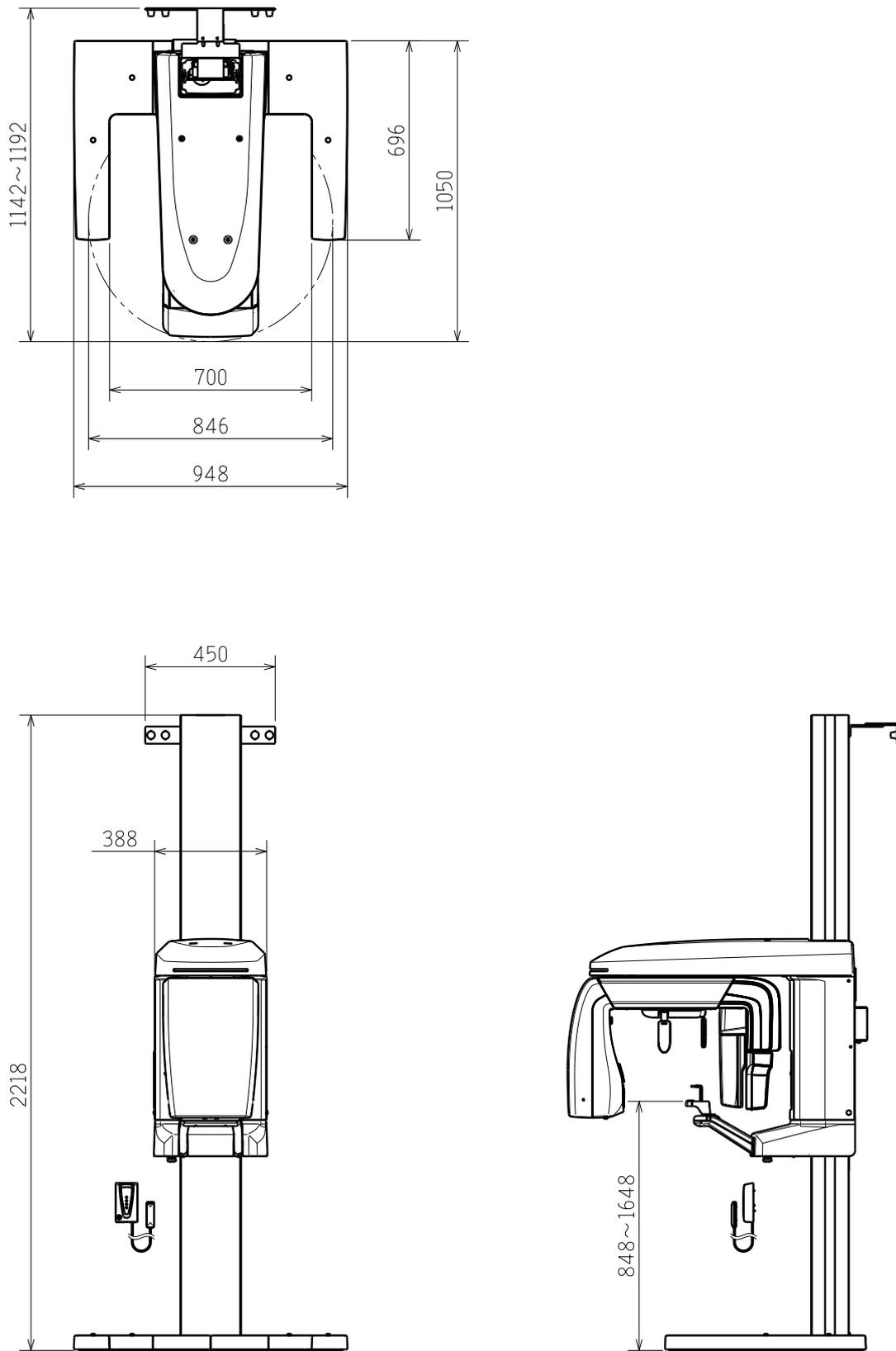


Fig. ⑭ -16: Standing position base-mount (with an optional wide base): 3D type

# 17. Standing position base-mount short type (with an optional wide base): 3D type

Unit: mm  
(1 inch = 25.4 mm)

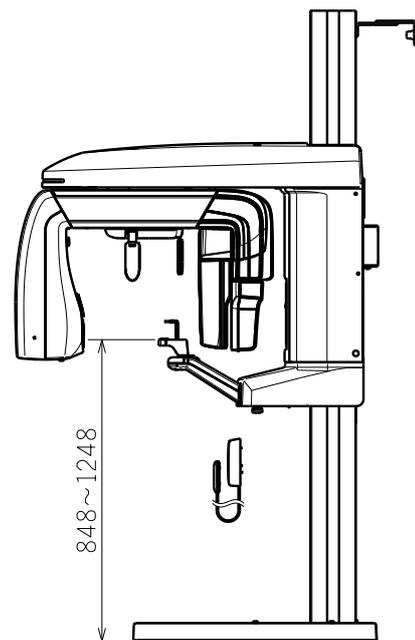
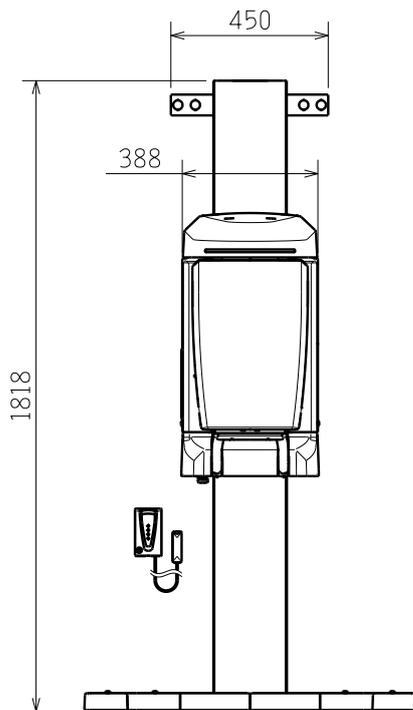
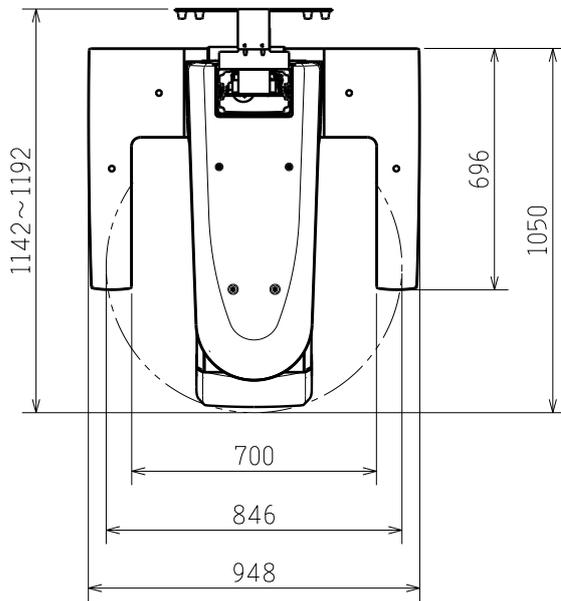


Fig. ⑭ -17: Standing position base-mount short type (with an optional wide base): 3D type

# 18. Standing position base-mount long type (with an optional wide base): 3D type

Unit: mm  
(1 inch = 25.4 mm)

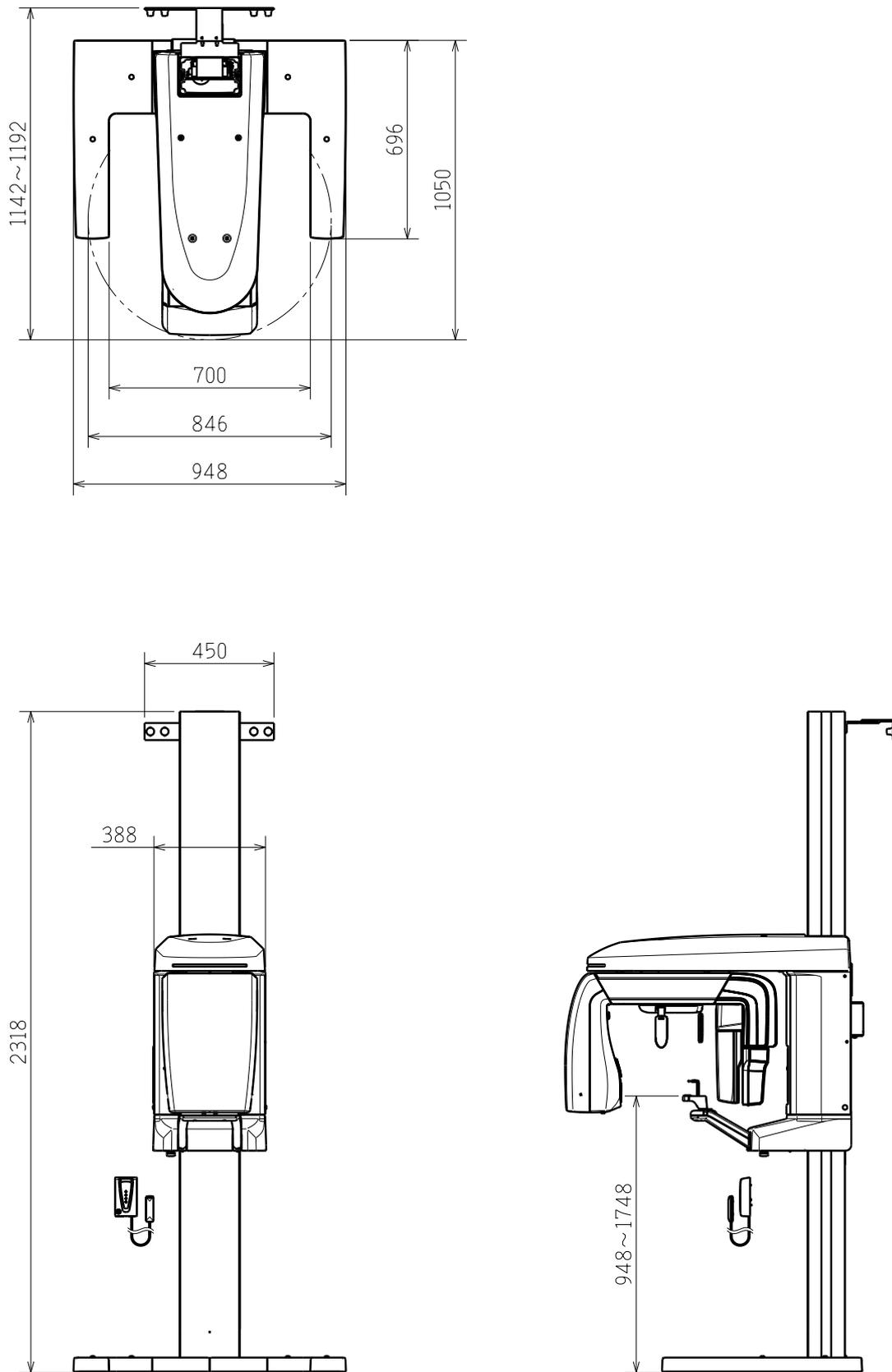


Fig. ⑭ -18: Standing position base-mount long type (with an optional wide base): 3D type

# 19. Standing position wall-mount: Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

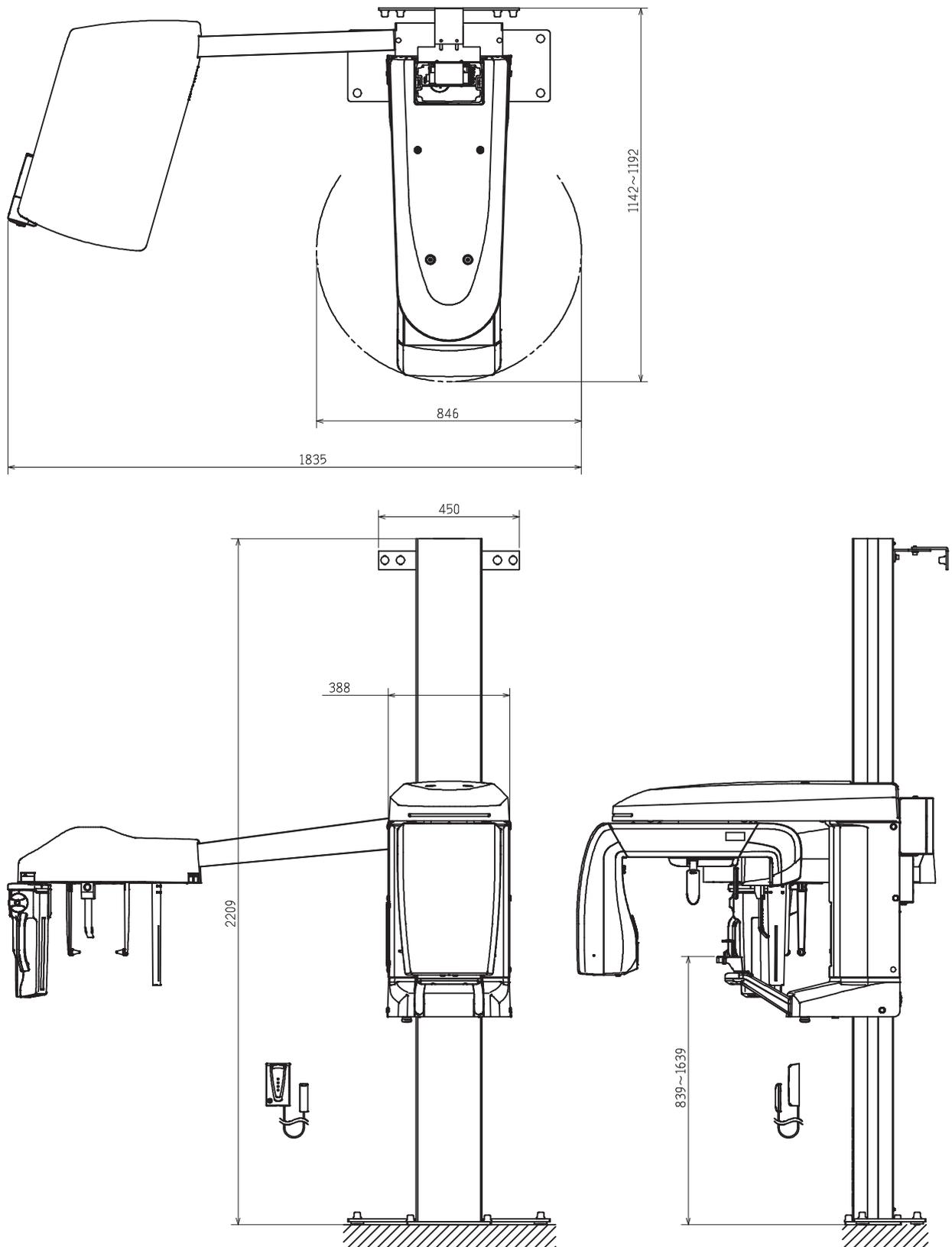


Fig. 14 -19: Standing position wall-mount: Cephalometric type

## 20. Standing position wall-mount short type: Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

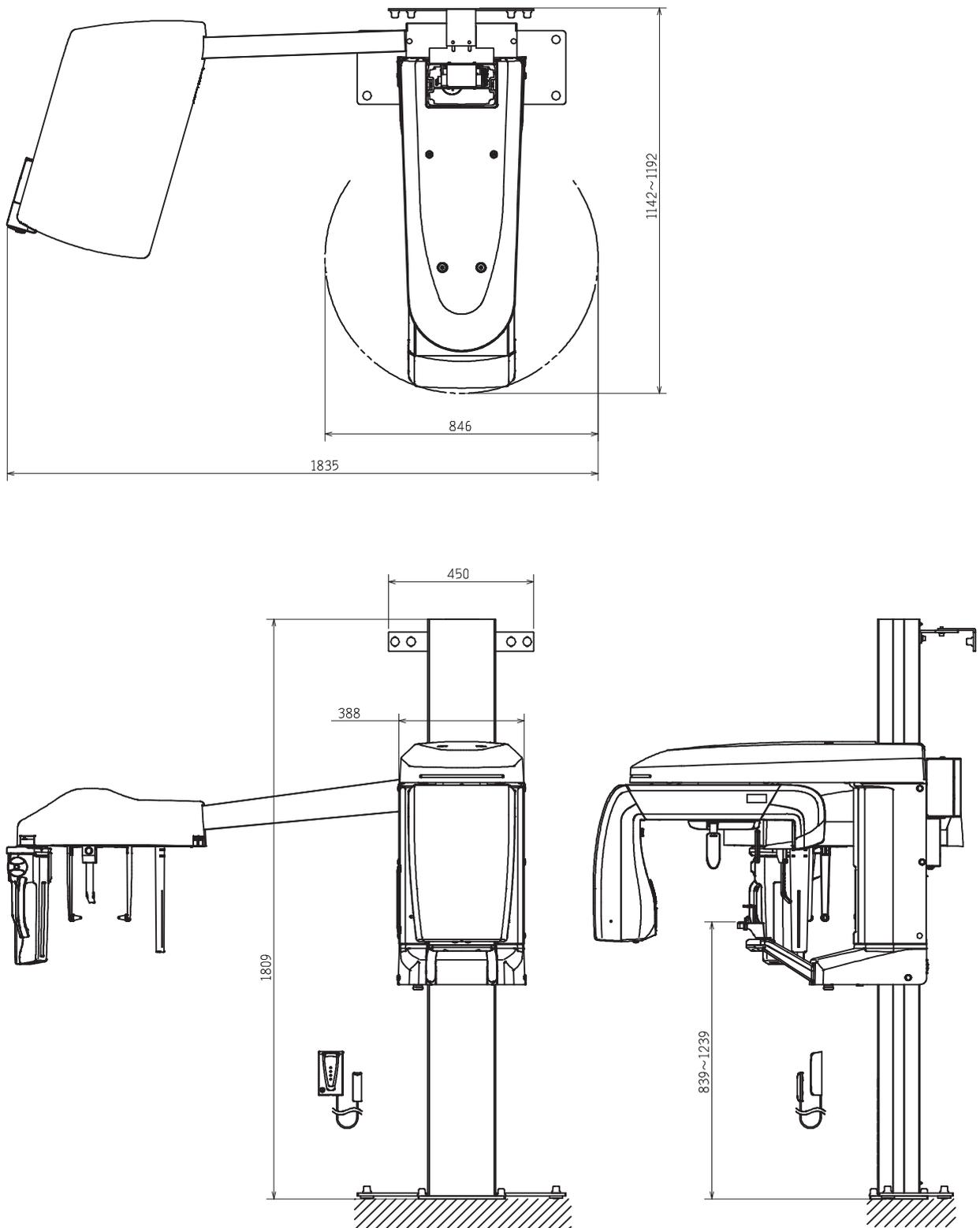


Fig. ⑭ -20: Standing position wall-mount short type: Cephalometric type

## 21. Standing position wall-mount long type: Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

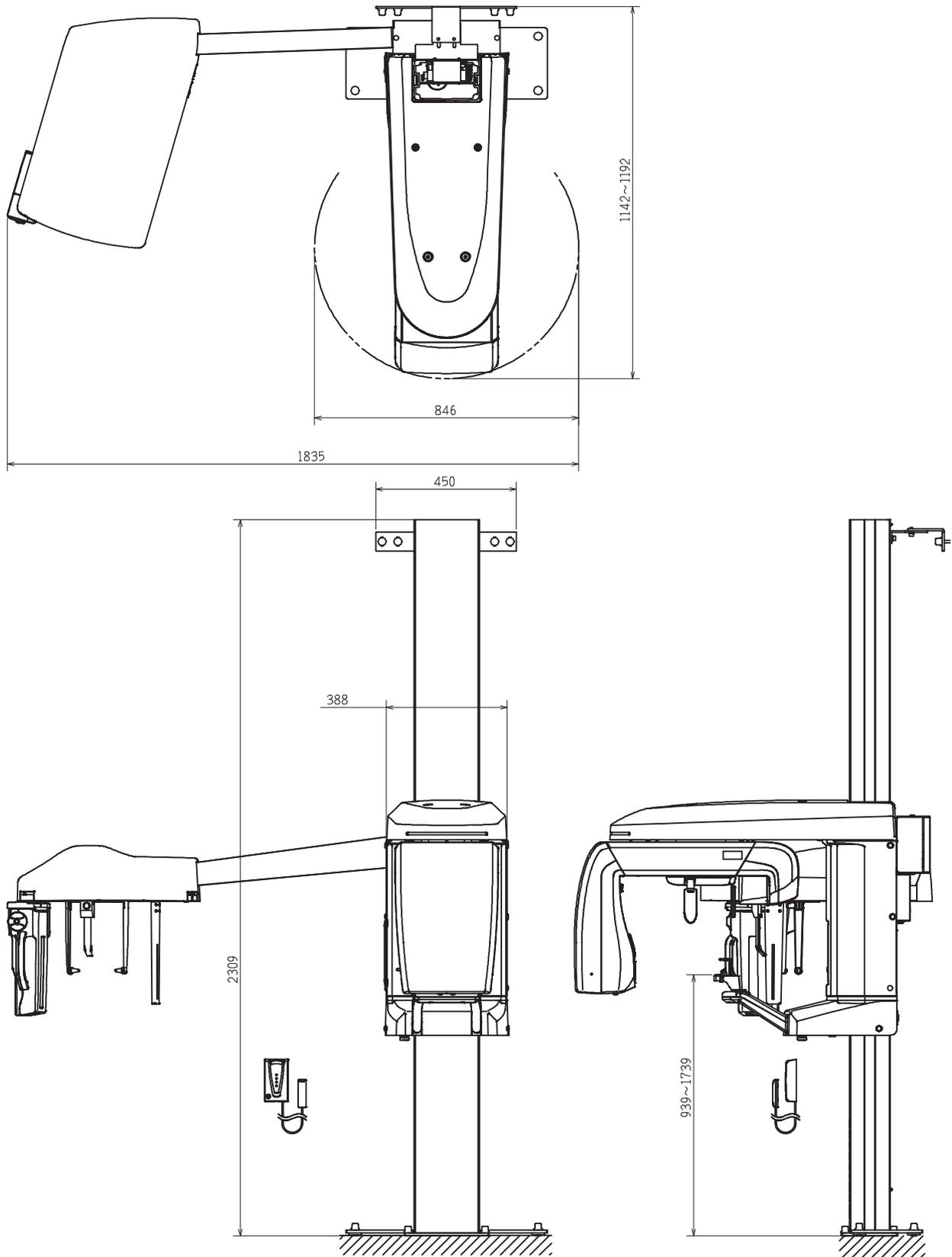


Fig. ⑭ -21: Standing position wall-mount long type: Cephalometric type

## 22. Standing position wall-mount: 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

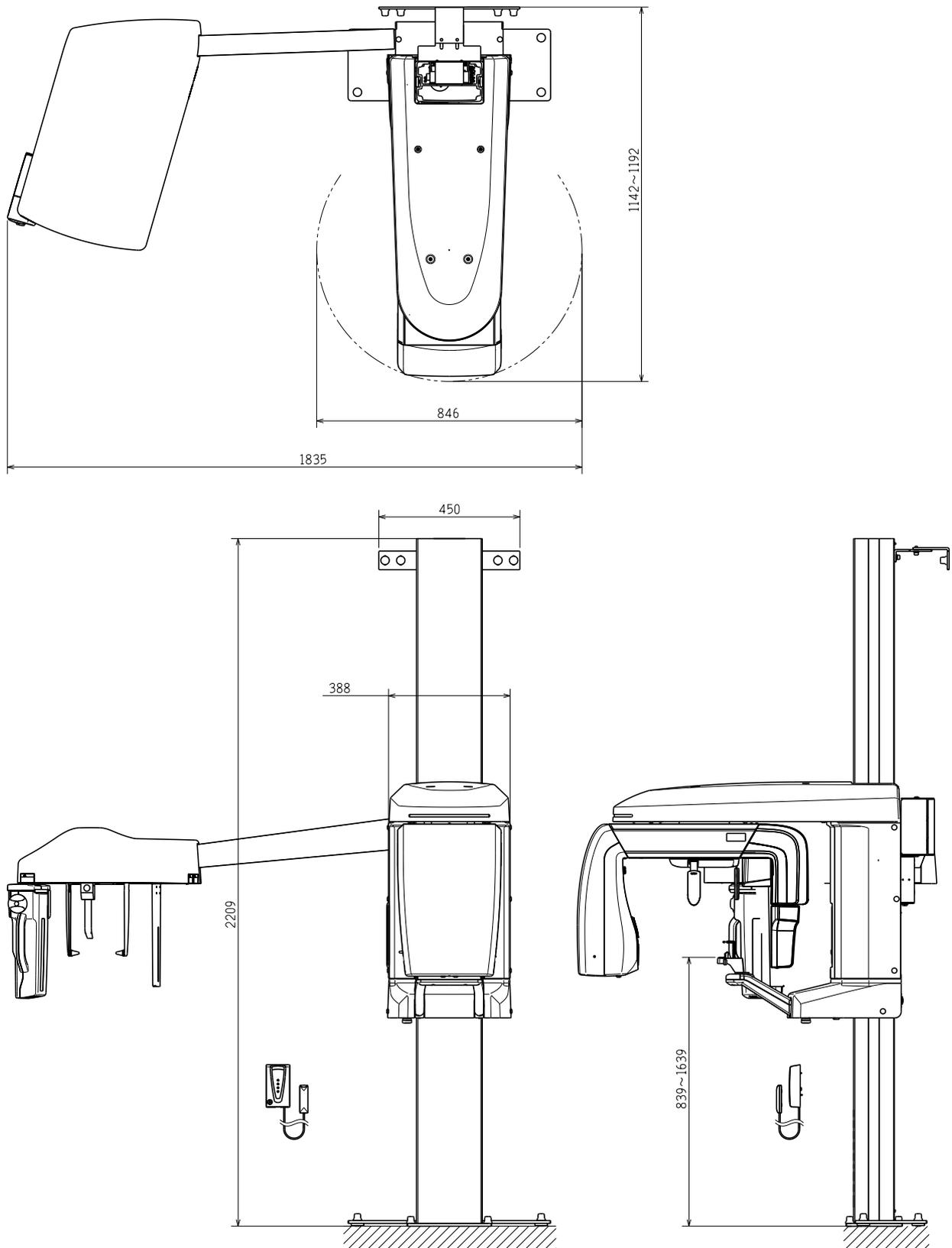


Fig. ⑭ -22: Standing position wall-mount: 3D Cephalometric type

### 23. Standing position wall-mount short type: 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

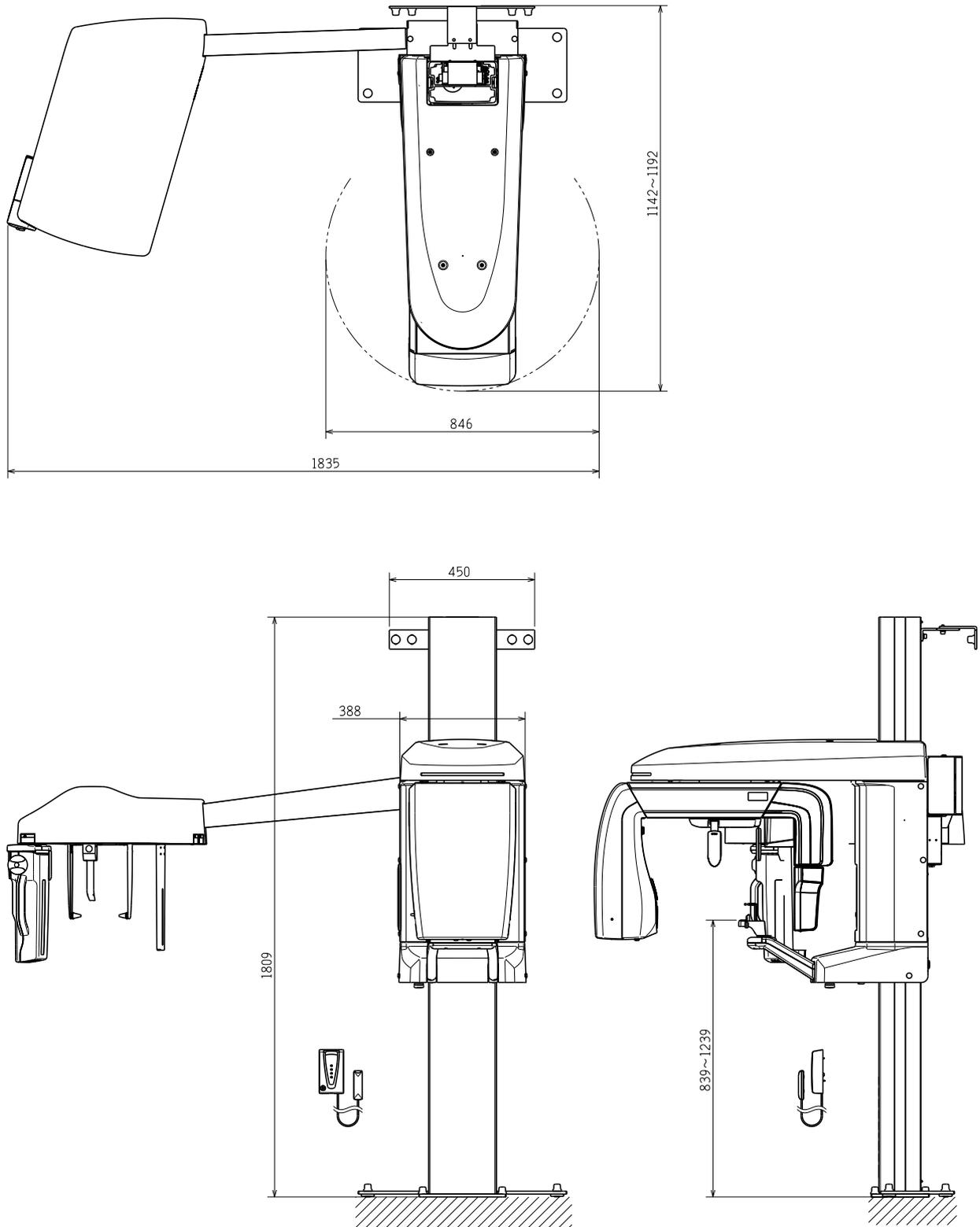


Fig. ⑭ -23: Standing position wall-mount short type: 3D Cephalometric type

## 24. Standing position wall-mount long type: 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

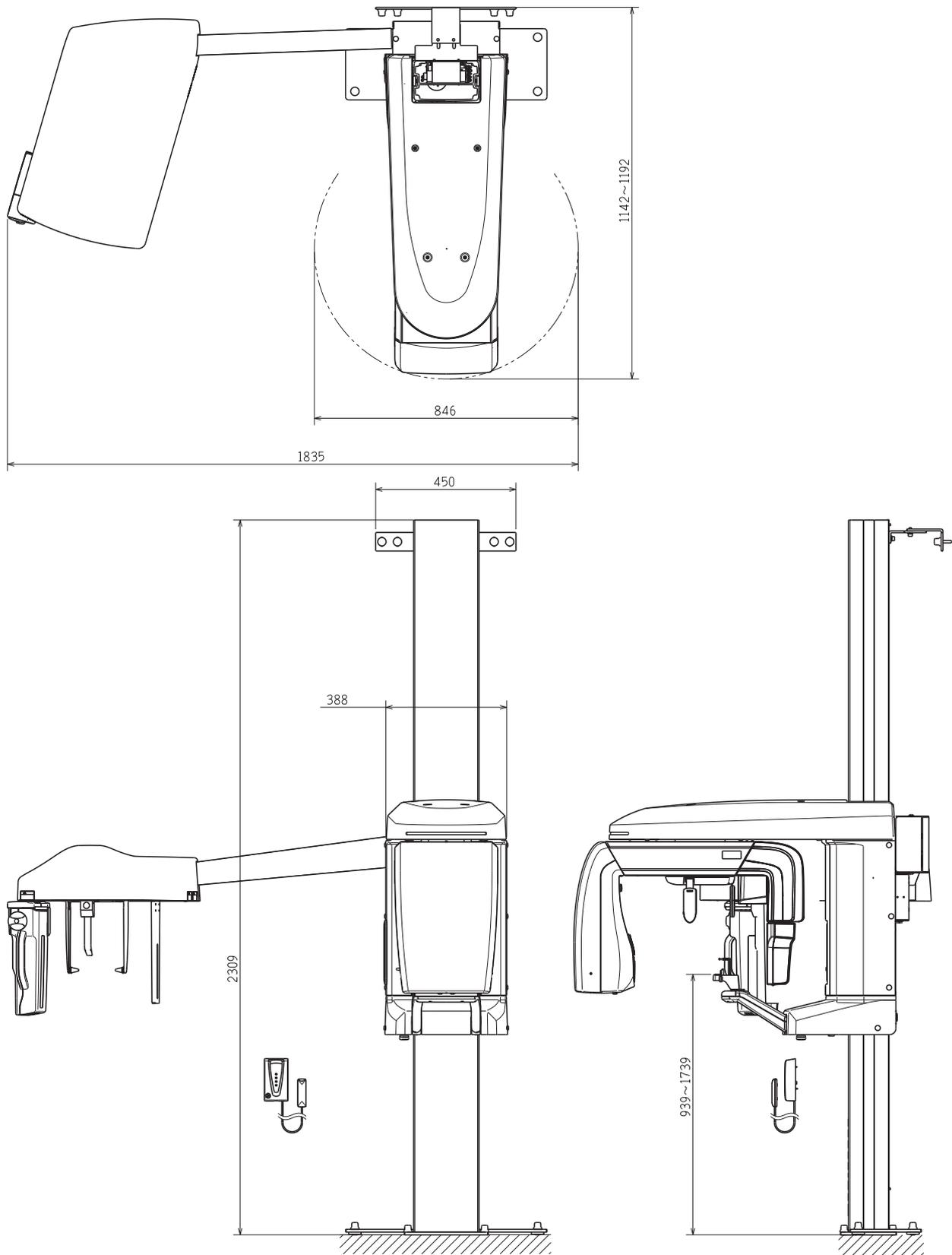


Fig. ⑭ -24: Standing position wall-mount long type: 3D Cephalometric type

## 25. Standing position base-mount (with an optional base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

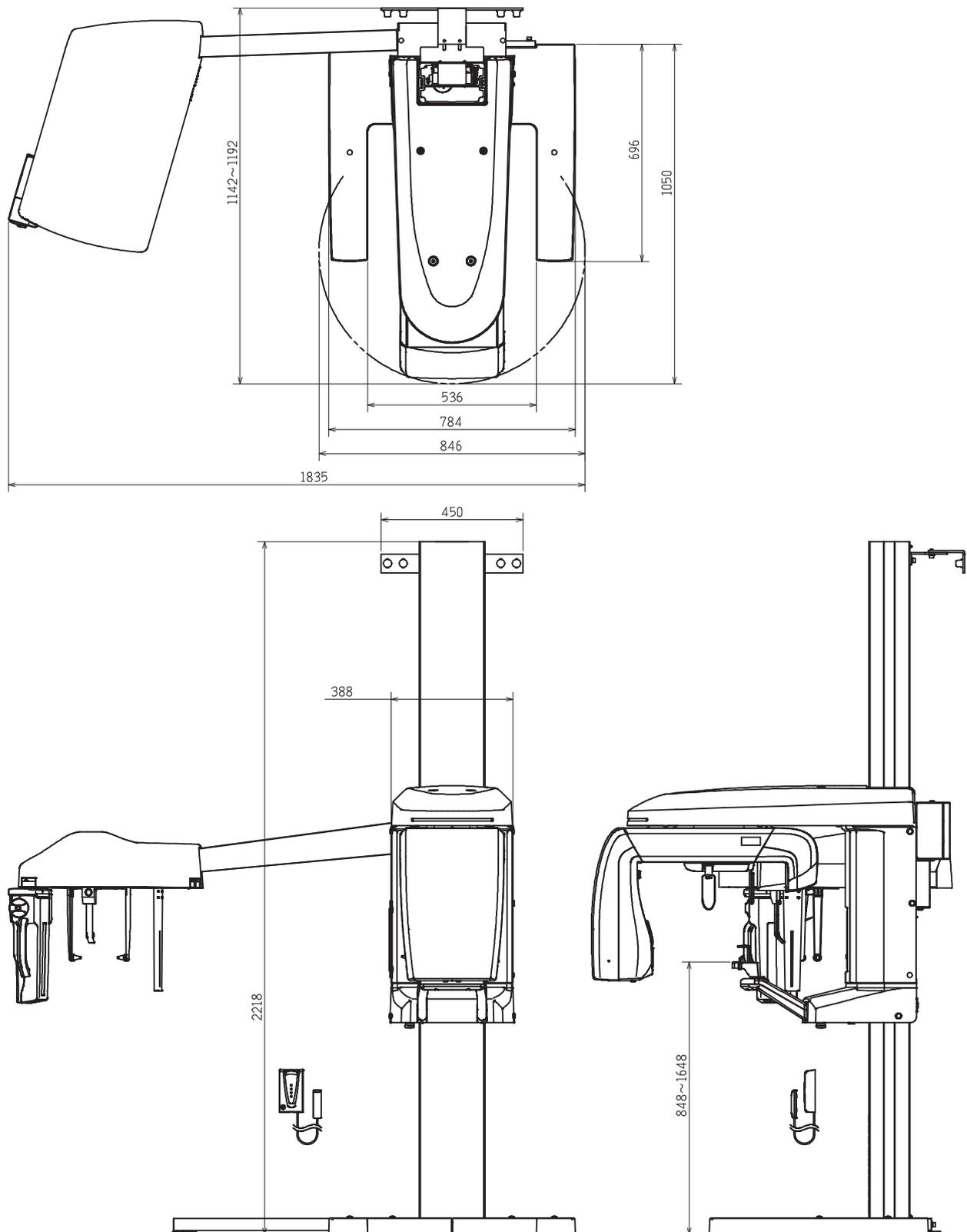


Fig. ⑭ -25: Standing position base-mount (with an optional base): Cephalometric type

## 26. Standing position base-mount short type (with an optional base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

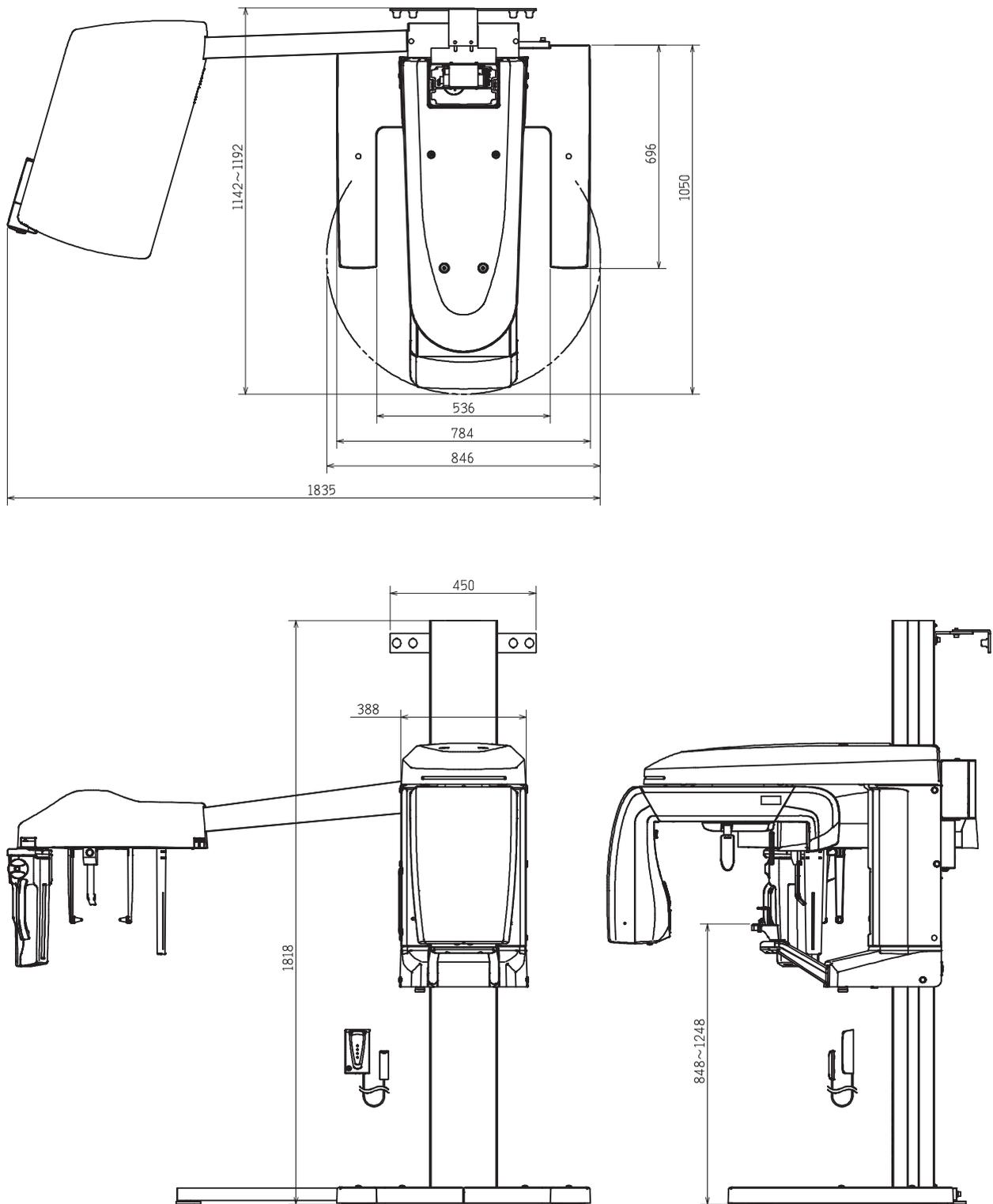


Fig. ⑭ -26: Standing position base-mount short type (with an optional base): Cephalometric type

## 27. Standing position base-mount long type (with an optional base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

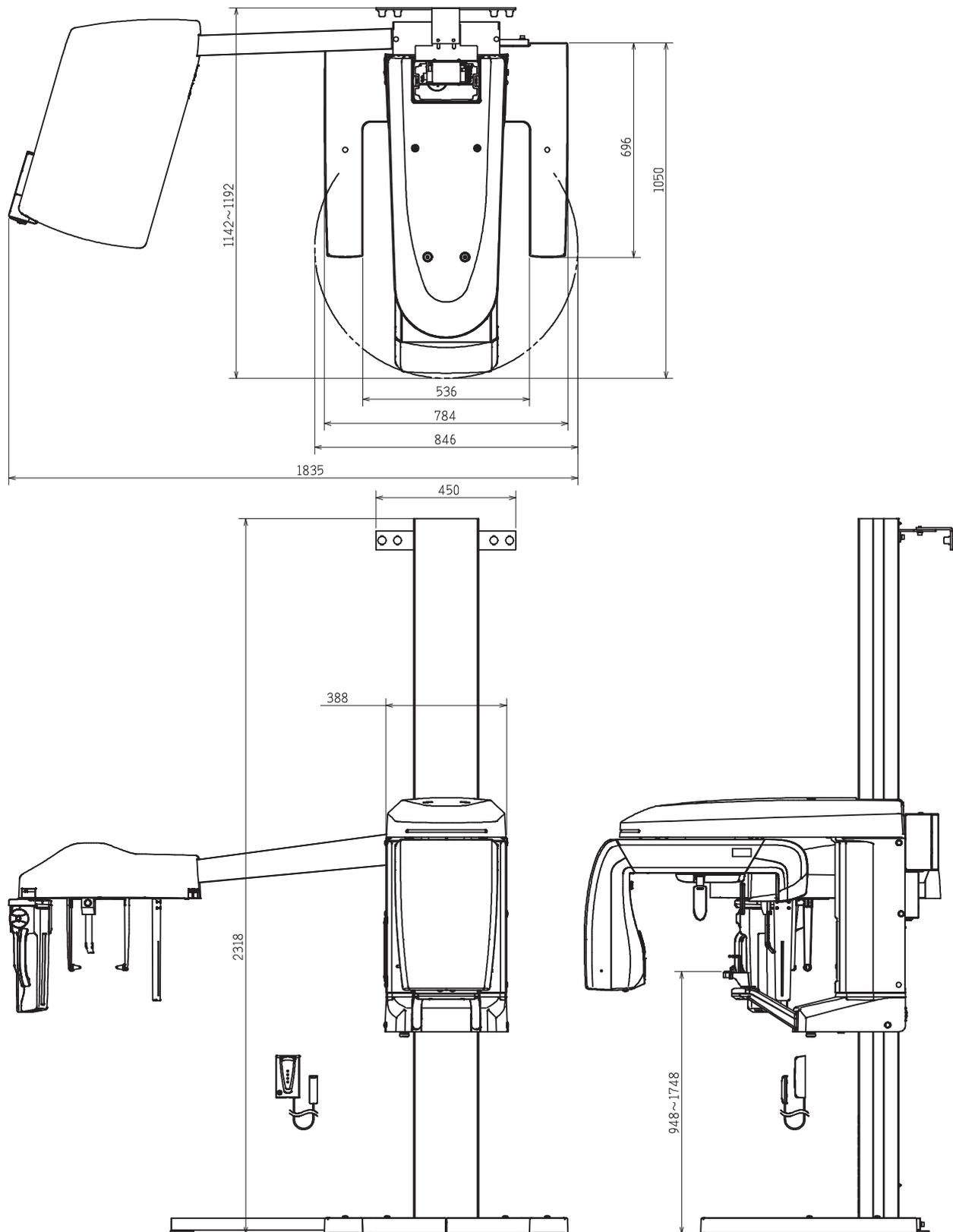


Fig. ⑭ -27: Standing position base-mount long type (with an optional base): Cephalometric type

## 28. Standing position base-mount (with an optional base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

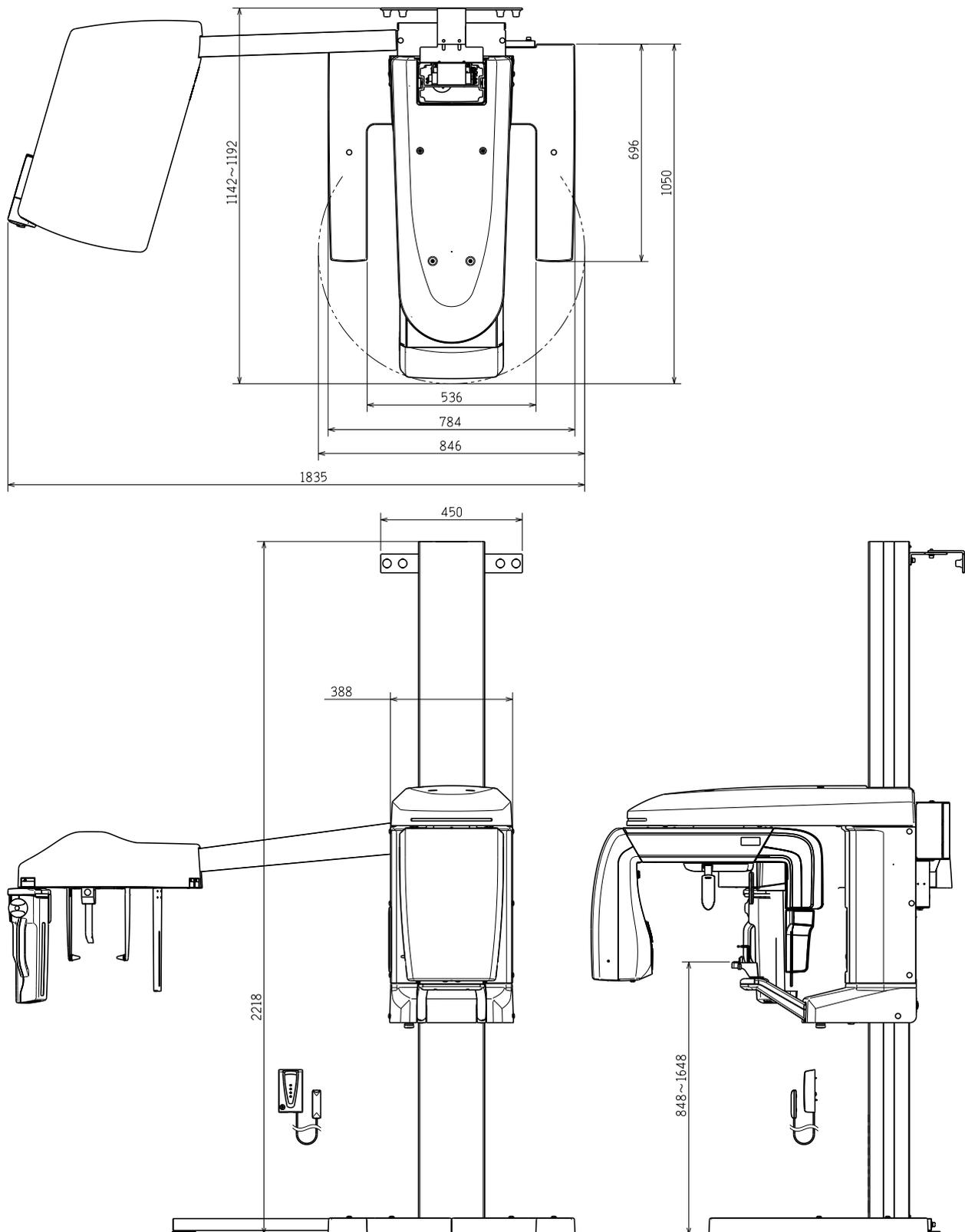


Fig. ⑭ -28: Standing position base-mount (with an optional base): 3D Cephalometric type

## 29. Standing position base-mount short type (with an optional base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

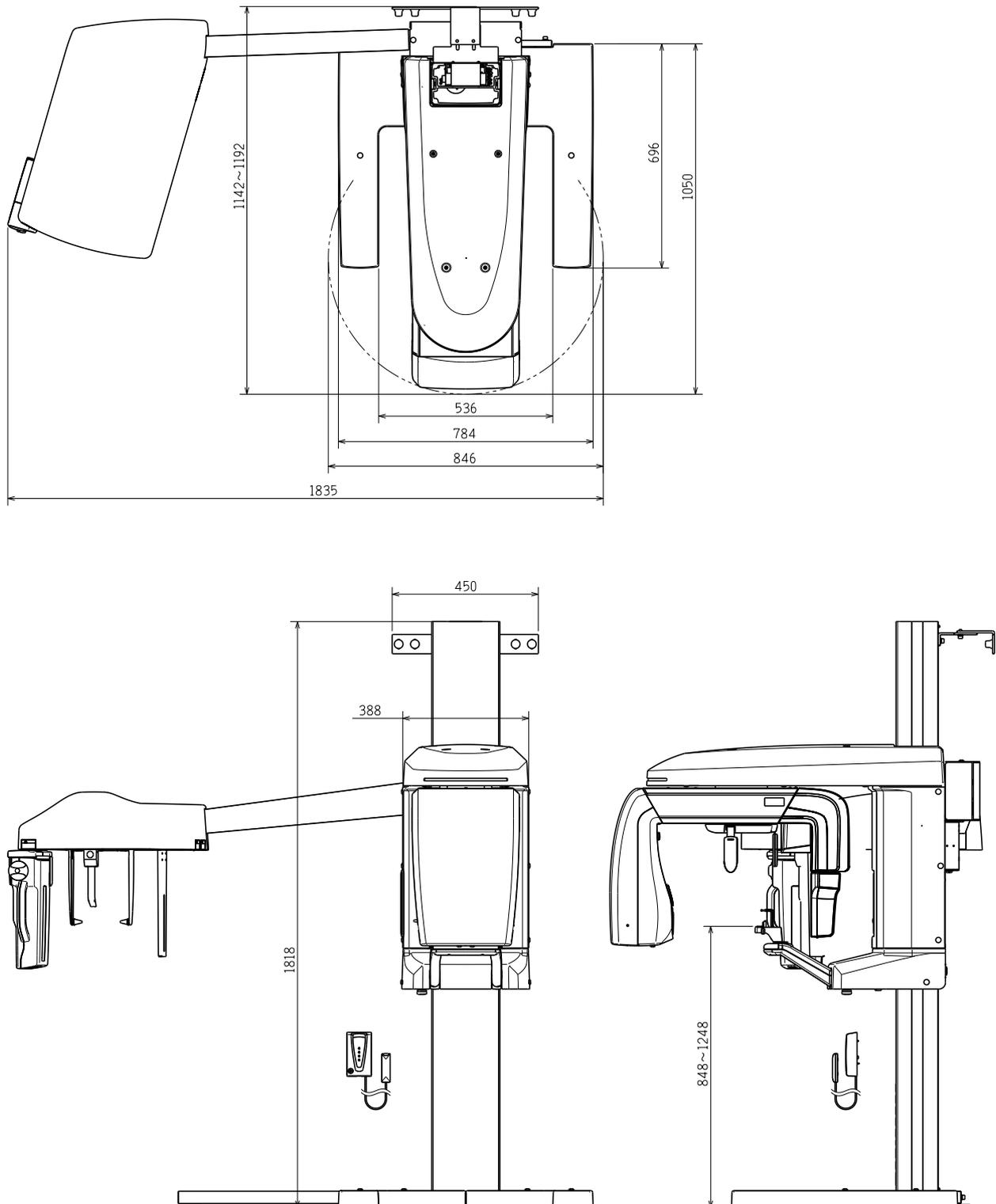


Fig. ⑭ -29: Standing position base-mount short type (with an optional base): 3D Cephalometric type

### 30. Standing position base-mount long type (with an optional base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

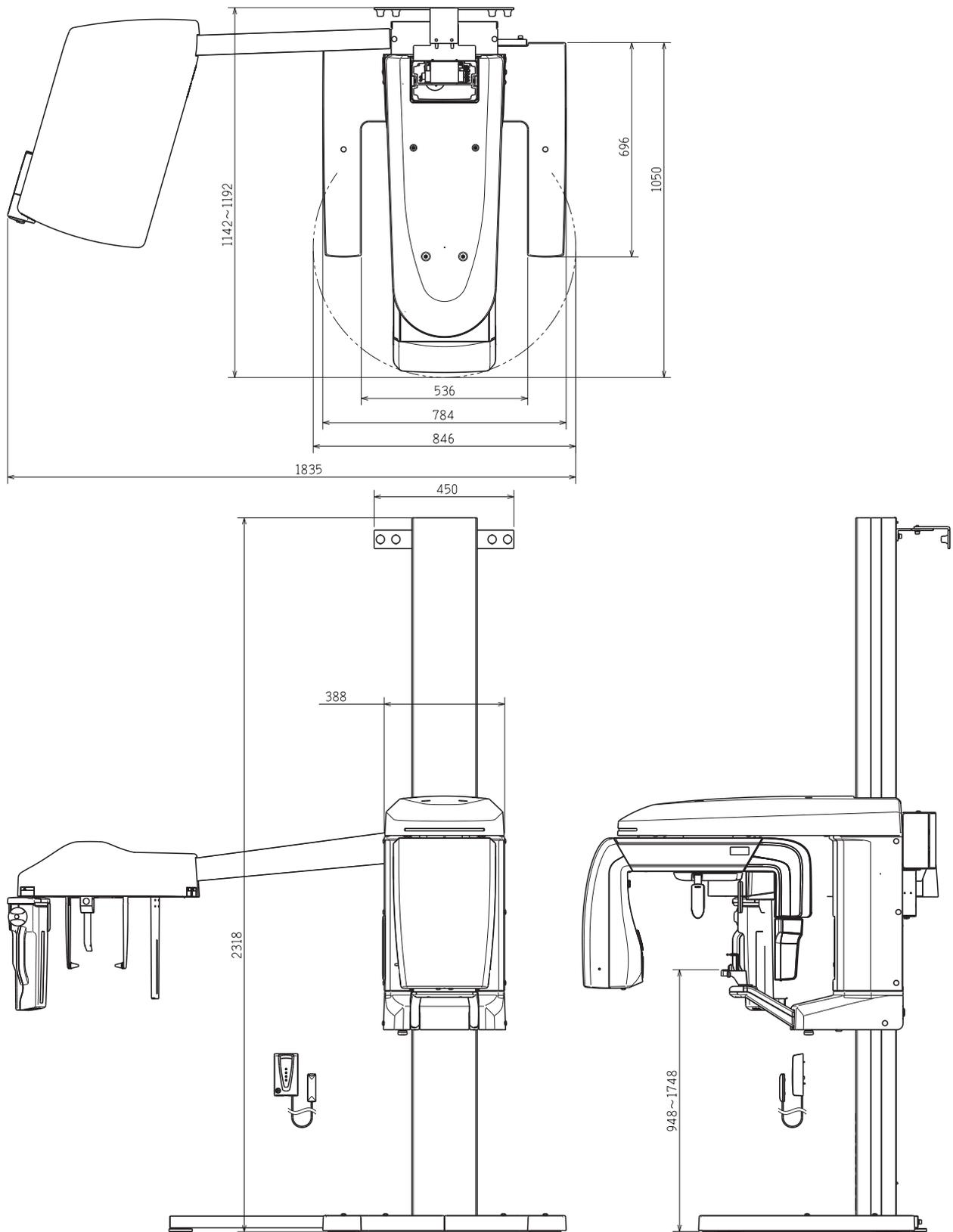


Fig. 14 -30: Standing position base-mount long type (with an optional base): 3D Cephalometric type

### 31. Standing position base-mount (with an optional wide base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

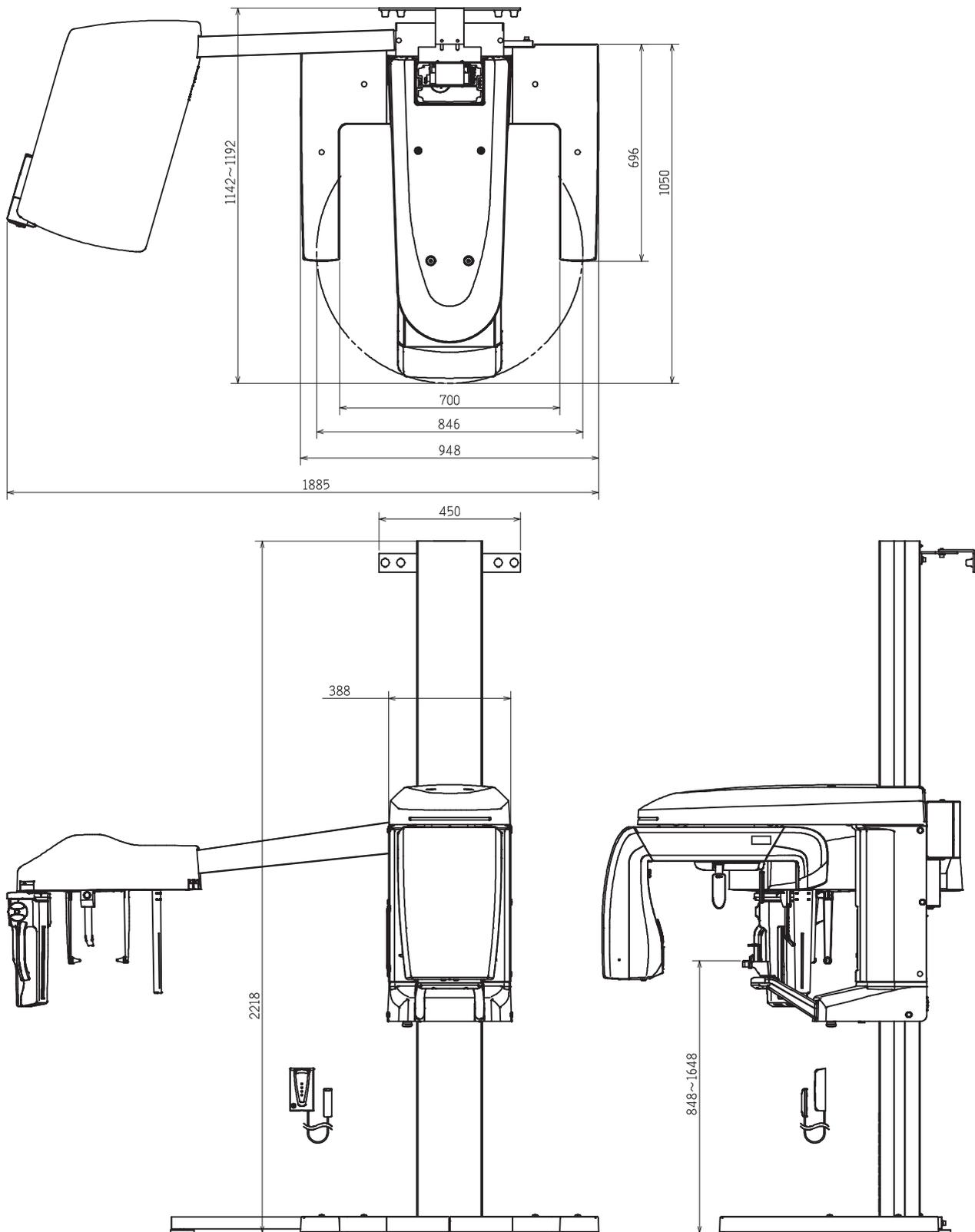


Fig. 14 -31: Standing position base-mount (with an optional wide base): Cephalometric type

### 32. Standing position base-mount short type (with an optional wide base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

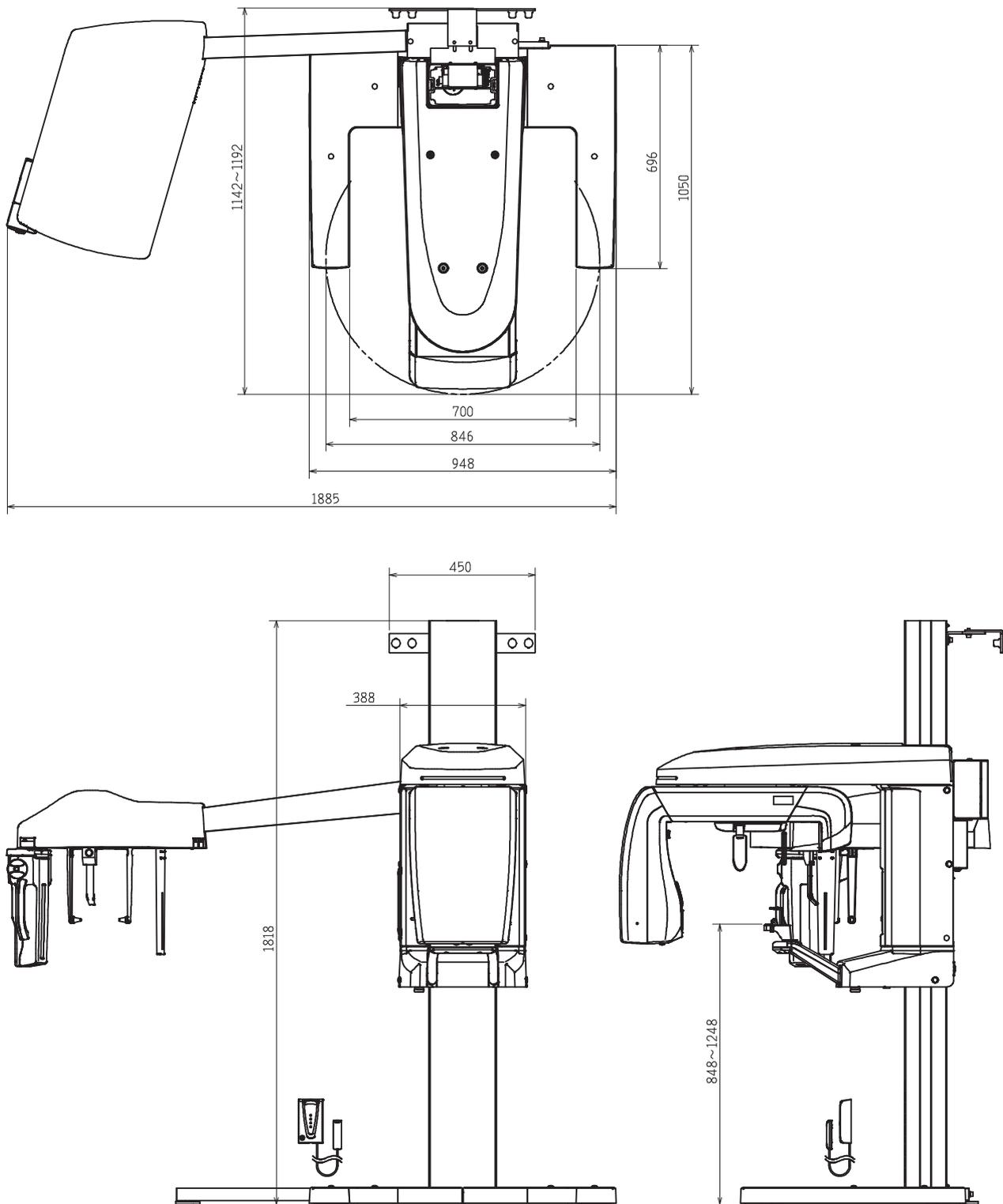


Fig. ⑭ -32: Standing position base-mount short type (with an optional wide base): Cephalometric type

### 33. Standing position base-mount long type (with an optional wide base): Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

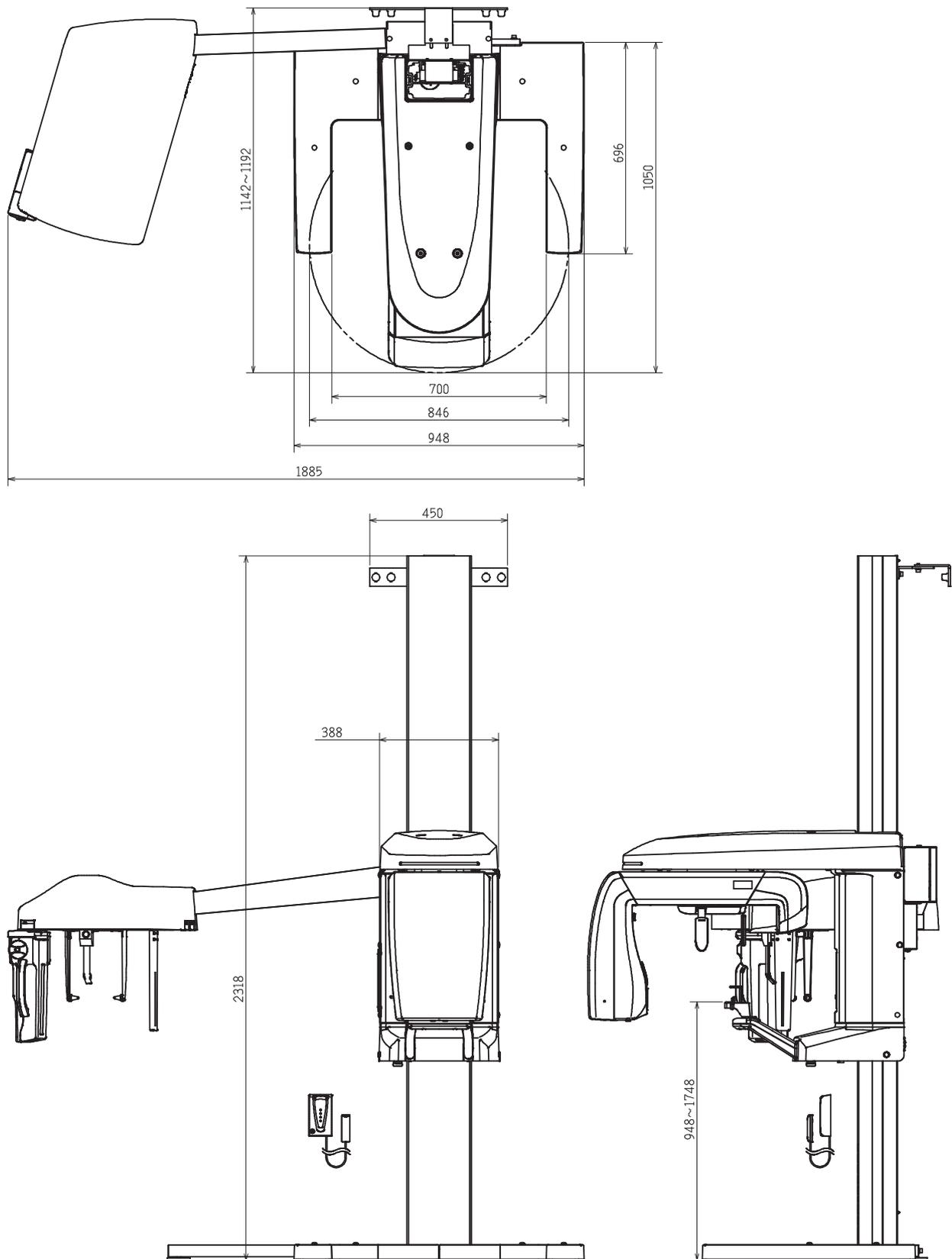


Fig. ⑭ -33: Standing position base-mount long type (with an optional wide base): Cephalometric type

### 34. Standing position base-mount (with an optional wide base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

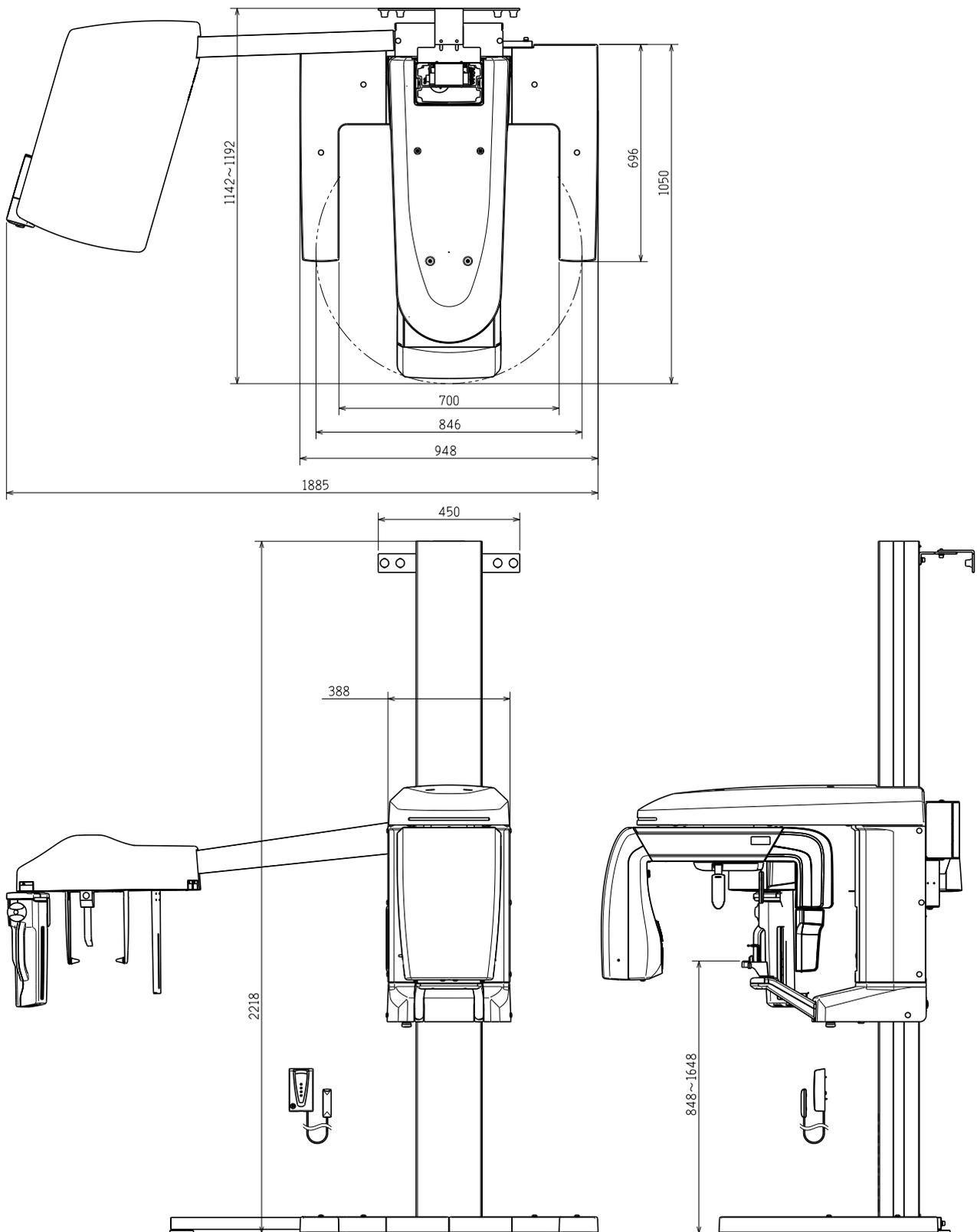


Fig. ⑭ -34: Standing position base-mount (with an optional wide base): 3D Cephalometric type

### 35. Standing position base-mount short type (with an optional wide base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

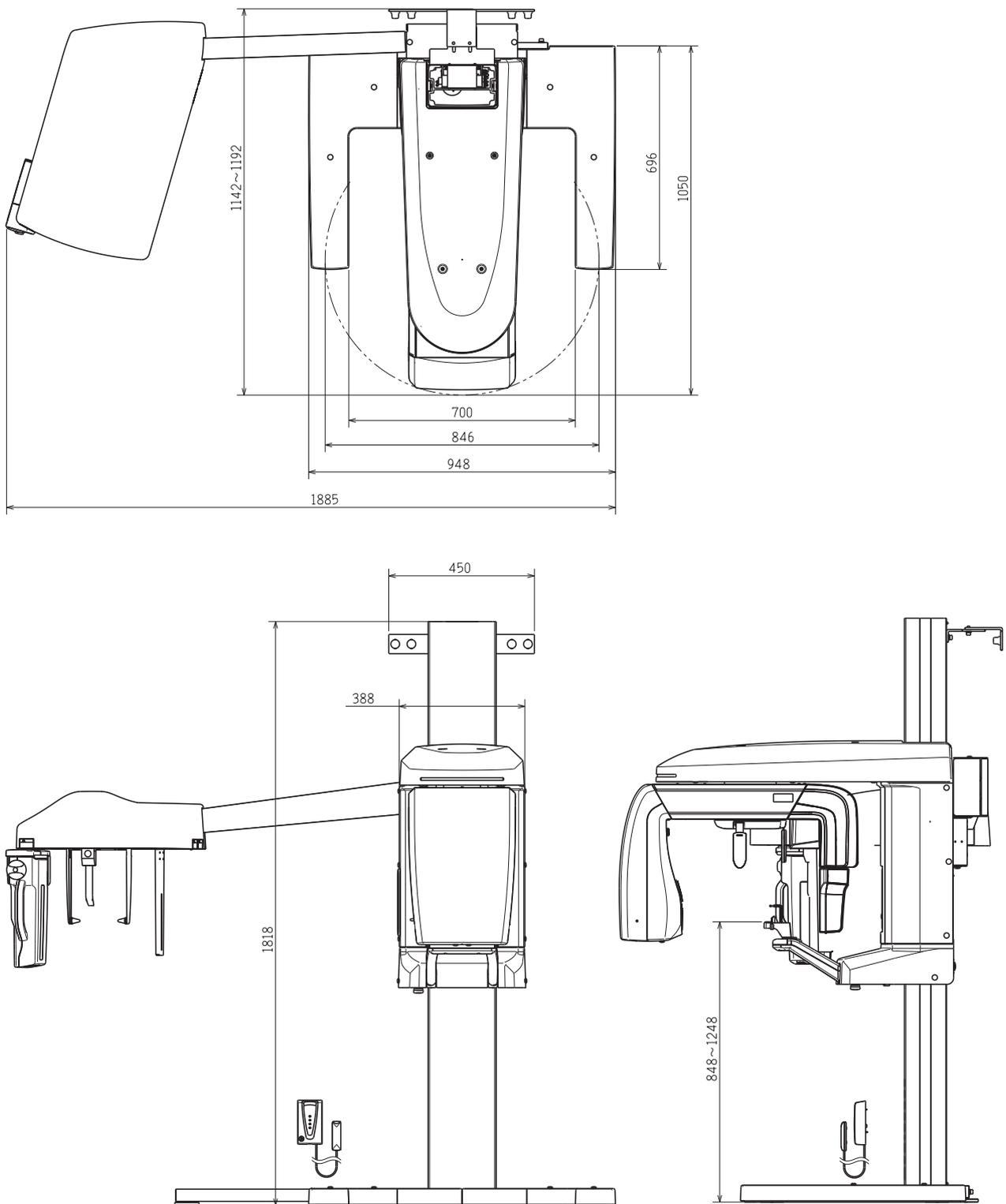


Fig. ⑭ -35: Standing position base-mount short type (with an optional wide base): 3D Cephalometric type

### 36. Standing position base-mount long type (with an optional wide base): 3D Cephalometric type

Unit: mm  
(1 inch = 25.4 mm)

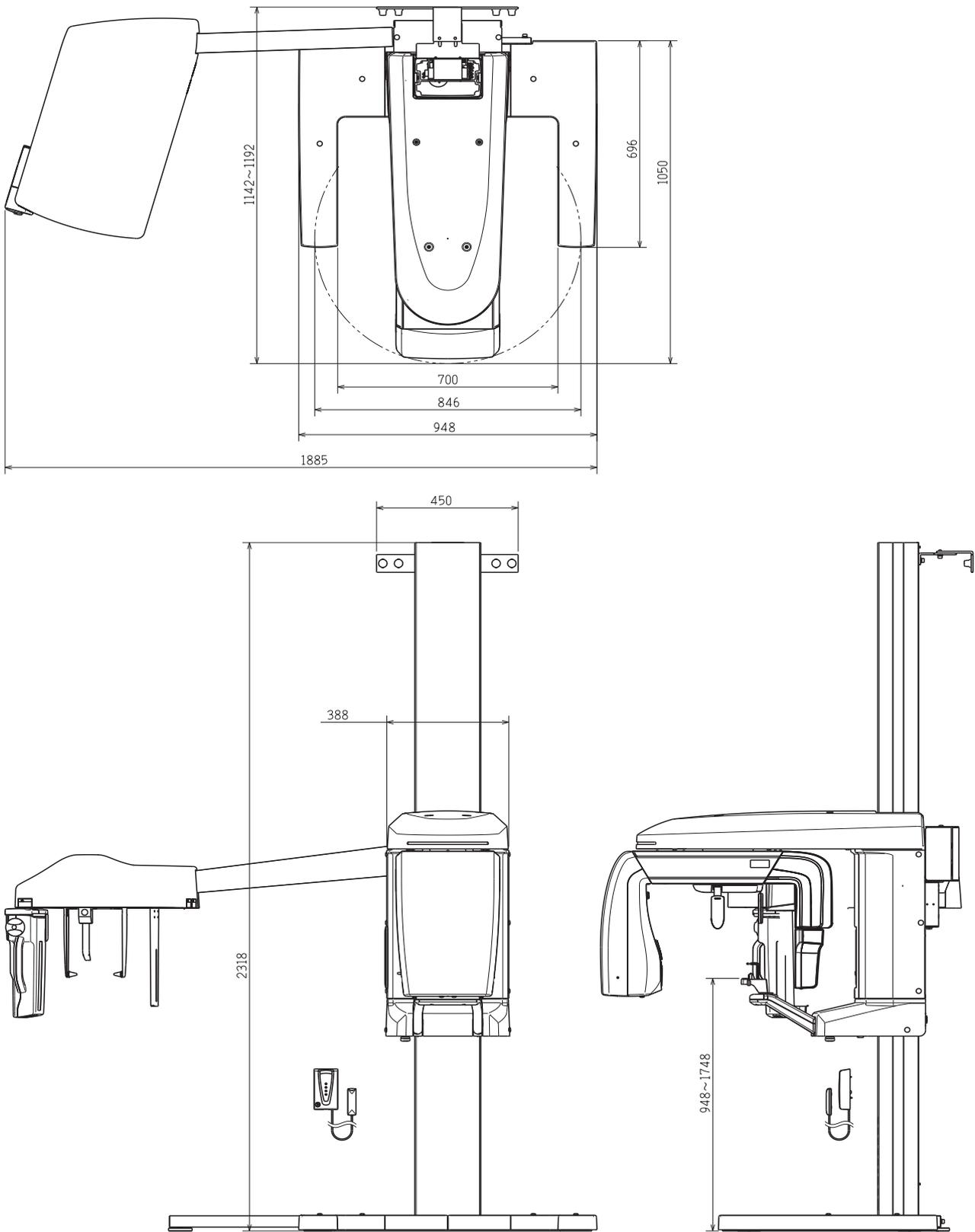
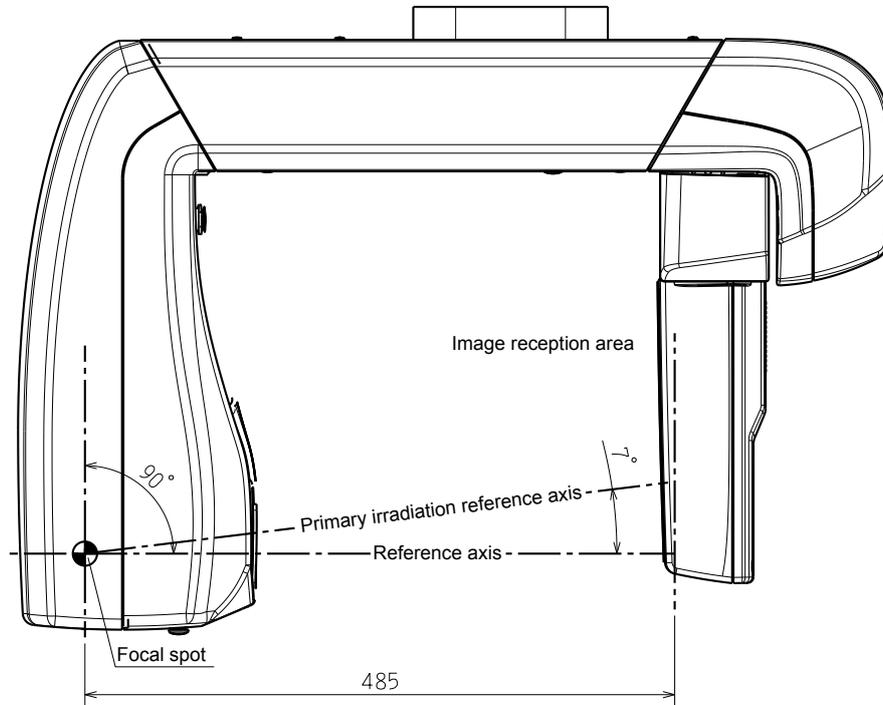


Fig. 14 -36: Standing position base-mount long type (with an optional wide base): 3D Cephalometric type

### 37. Angles of the Image Reception Area and Reference Axis and the Distance between the Focal spot to Image Reception Area

(For equipment with panoramic function only, or Cephalometric)

Unit: mm  
(1 inch = 25.4 mm)



(For equipment with 3D function, or 3D function and Cephalometric)

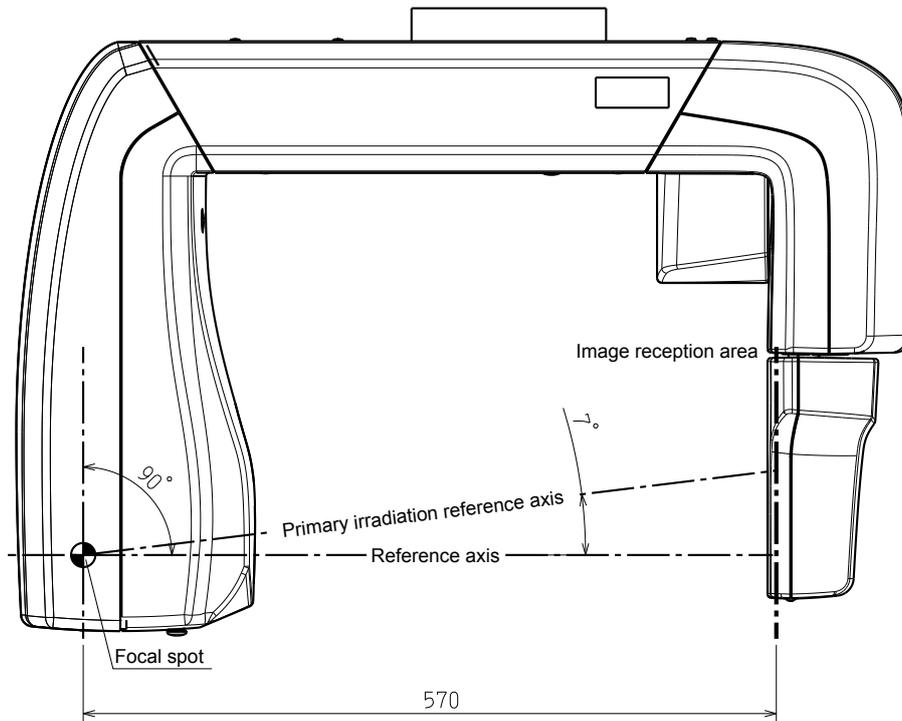
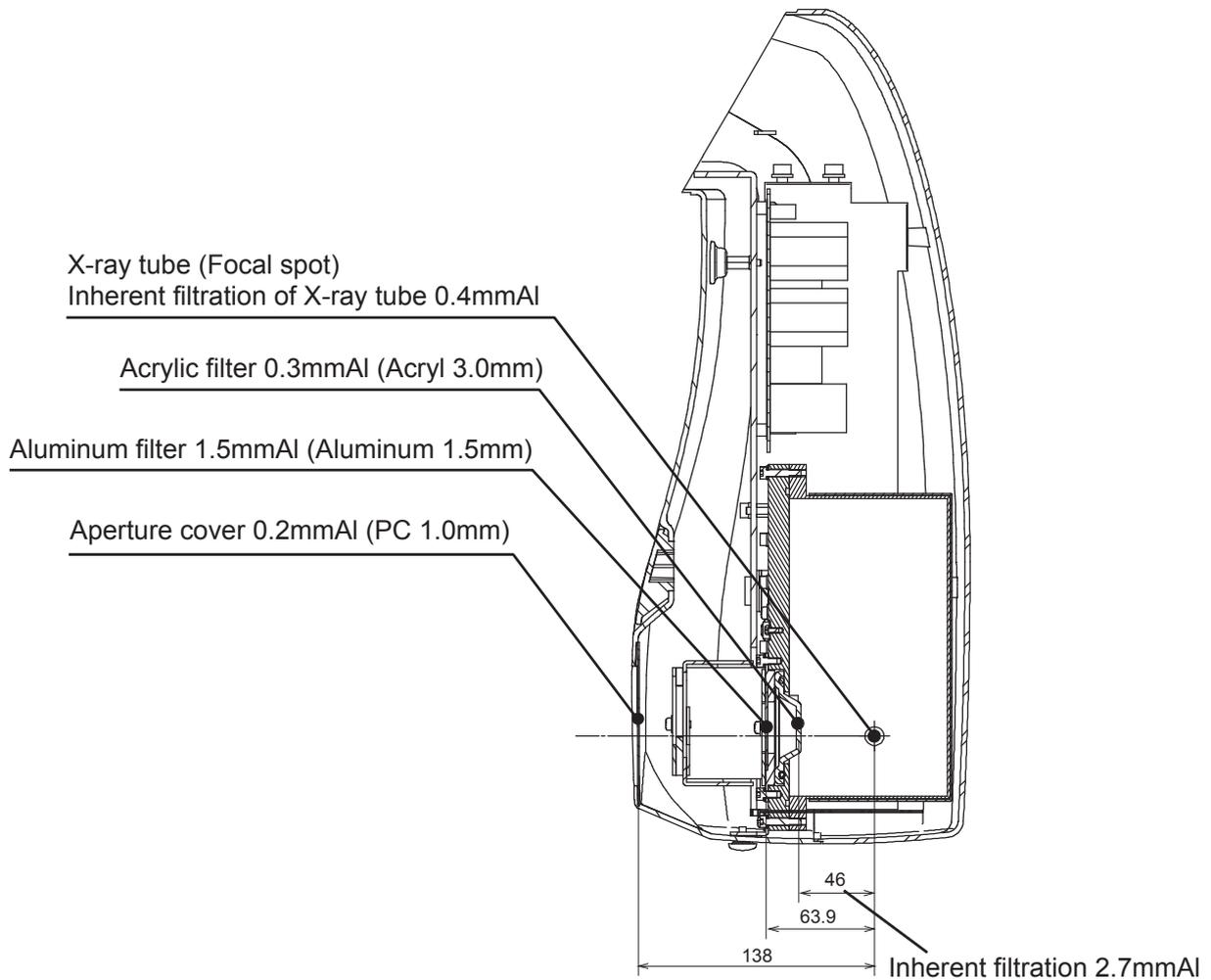


Fig. 14 - 37: Angles of the image reception area and reference axis and the distance between the focal spot to image reception area

### 38. Inherent Filtration and Total Filtration

Unit: mm  
(1 inch = 25.4 mm)



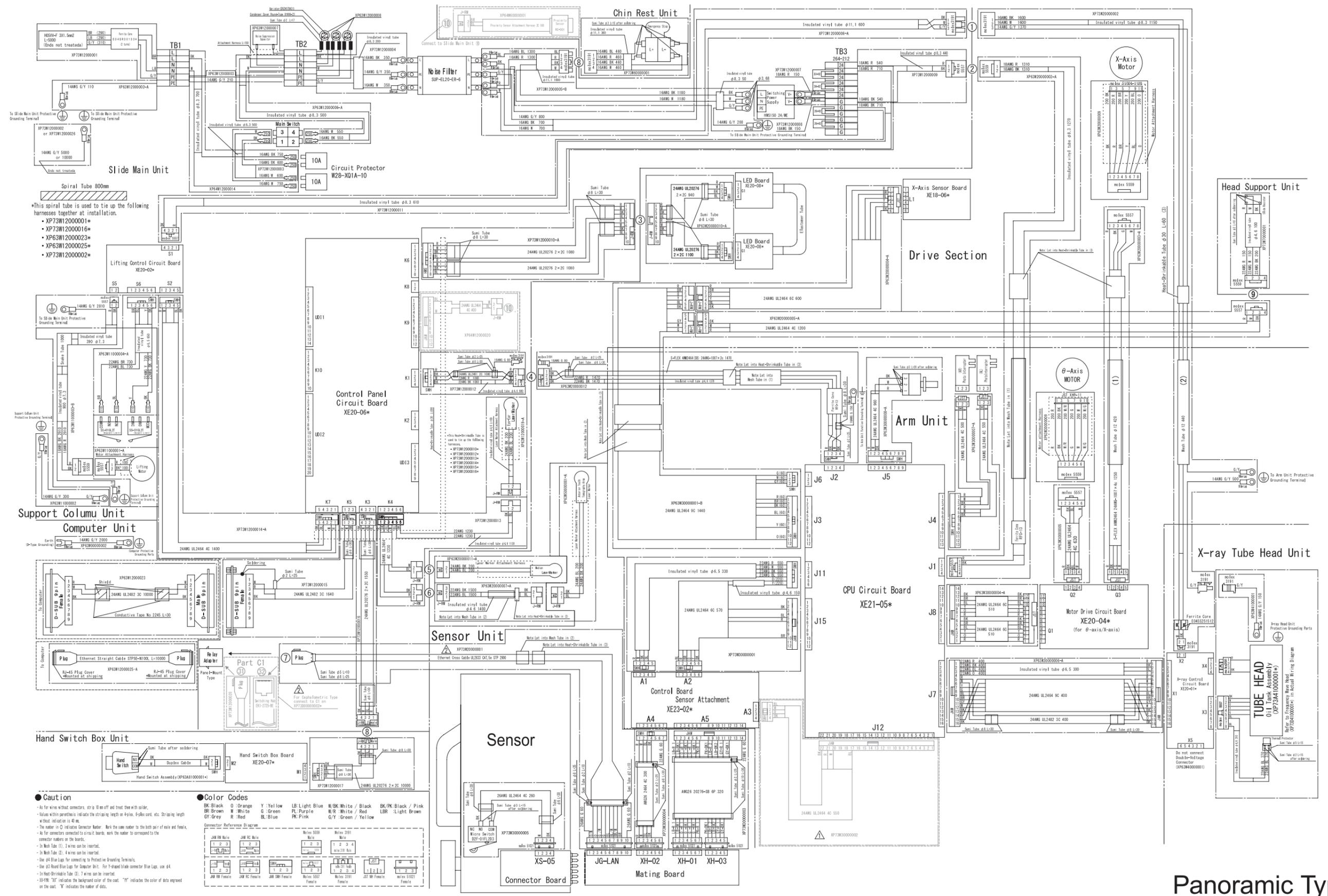
Total filtration : more than 2.5mmAl / 82k

Fig. ⑭ -38: Inherent filtration and total filtration

#### CAUTION

- To achieve the specified total filtration, ensure that the head front cover (irradiation port plate) is always fitted.

# 15 Wiring Diagram



### Caution

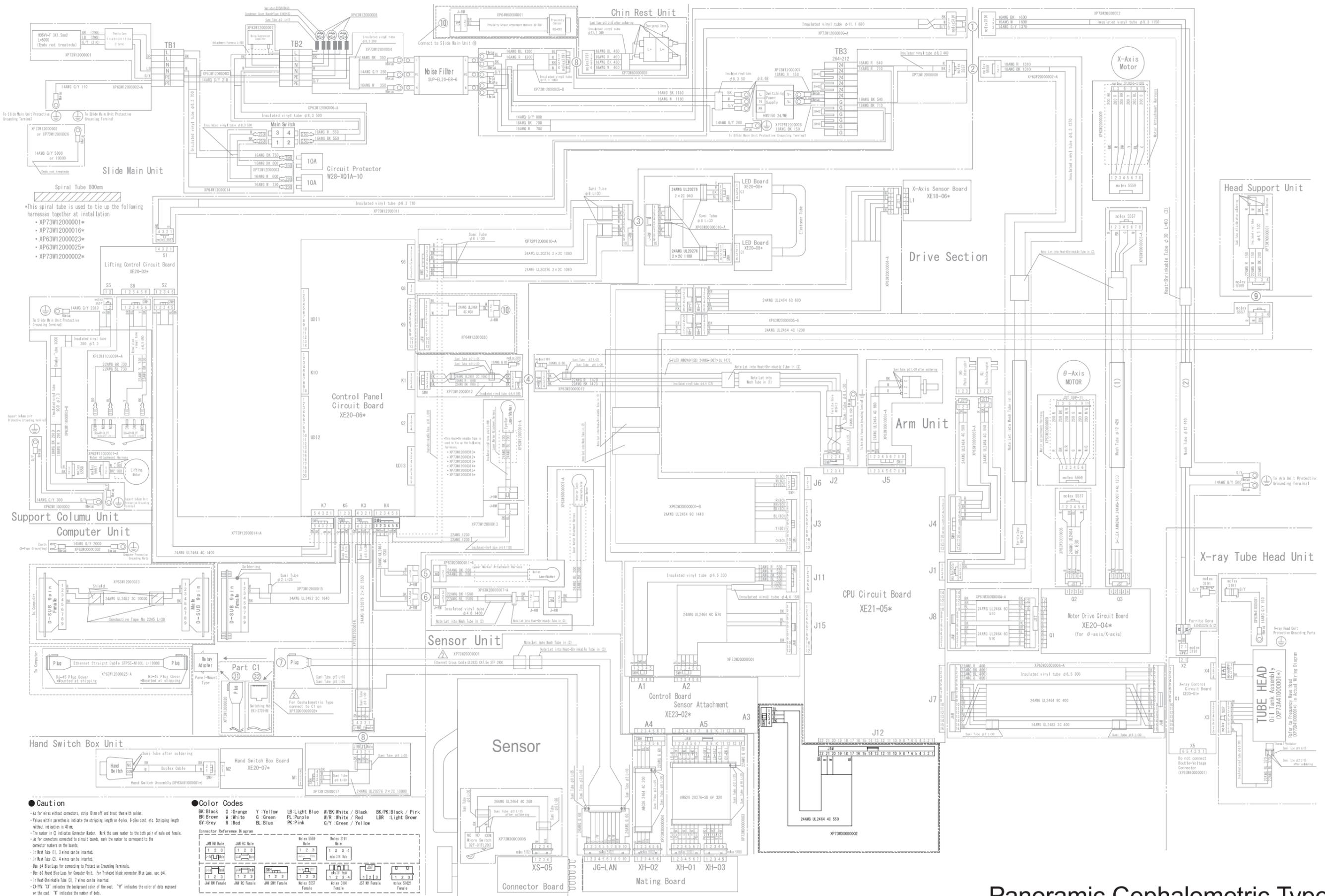
- As for wires without connectors, strip 10 mm off and treat them with solder.
- Values within parentheses indicate the stripping length on Apico, E-plus cord, etc. Stripping length without indication is 40 mm.
- The motor is O-releaser detector. Mark the same number to the both pair of wire and female.
- As for connectors connected to circuit boards, mark the number to correspond to the connector numbers on the boards.
- In Mesh Tube (1), 3 wires can be inserted.
- In Mesh Tube (2), 4 wires can be inserted.
- Use #3 Blue Lugs for connecting to Protective Grounding Terminal.
- Use #3 Round Blue Lugs for connector Unit. For Y-shaped slide connector Blue Lugs, use #4.
- In Heat-Shrinkable Tube (2), 7 wires can be inserted.
- In-YM "Y" indicates the background color of the coat. "Y" indicates the color of data engraved on the coat. "Y" indicates the number of dots.

### Color Codes

BK: Black	O: Orange	Y: Yellow	LB: Light Blue	W/BK: White / Black	BK/PK: Black / Pink
BR: Brown	W: White	G: Green	PL: Purple	WR: White / Red	LR: Light Brown / Pink
GY: Grey	R: Red	BL: Blue	PK: Pink	G/Y: Green / Yellow	

Connector Reference Diagram

JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female
JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female
JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female
JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female	JW R10 Male	JW R10 Female



**Caution**

- As for wires without connectors, strip 10 mm off and treat them with solder.
- Values within parentheses indicate the stripping length of 4-wire, 6-wire, etc. Stripping length without indication is 40 mm.
- The number in ( ) indicates Connector Number. Mark the same number to the both pair of male and female.
- As for connectors connected to circuit boards, mark the number to correspond to the connector numbers on the boards.
- In Mesh Tube (1), 3 wires can be inserted.
- In Mesh Tube (2), 4 wires can be inserted.
- Use #4 Blue Lugs for connecting to Protective Grounding Terminals.
- Use #5 Round Blue Lugs for Computer Unit. For F-terminated cable connector 3-wire Lugs, use #4.
- In Mesh Strippable Tube (3), 3 wires can be inserted.
- 3-1/2" (91.5 mm) "X" indicates the background color of the coat. "Y" indicates the color of dots spread on the coat. "V" indicates the number of dots.

**Color Codes**

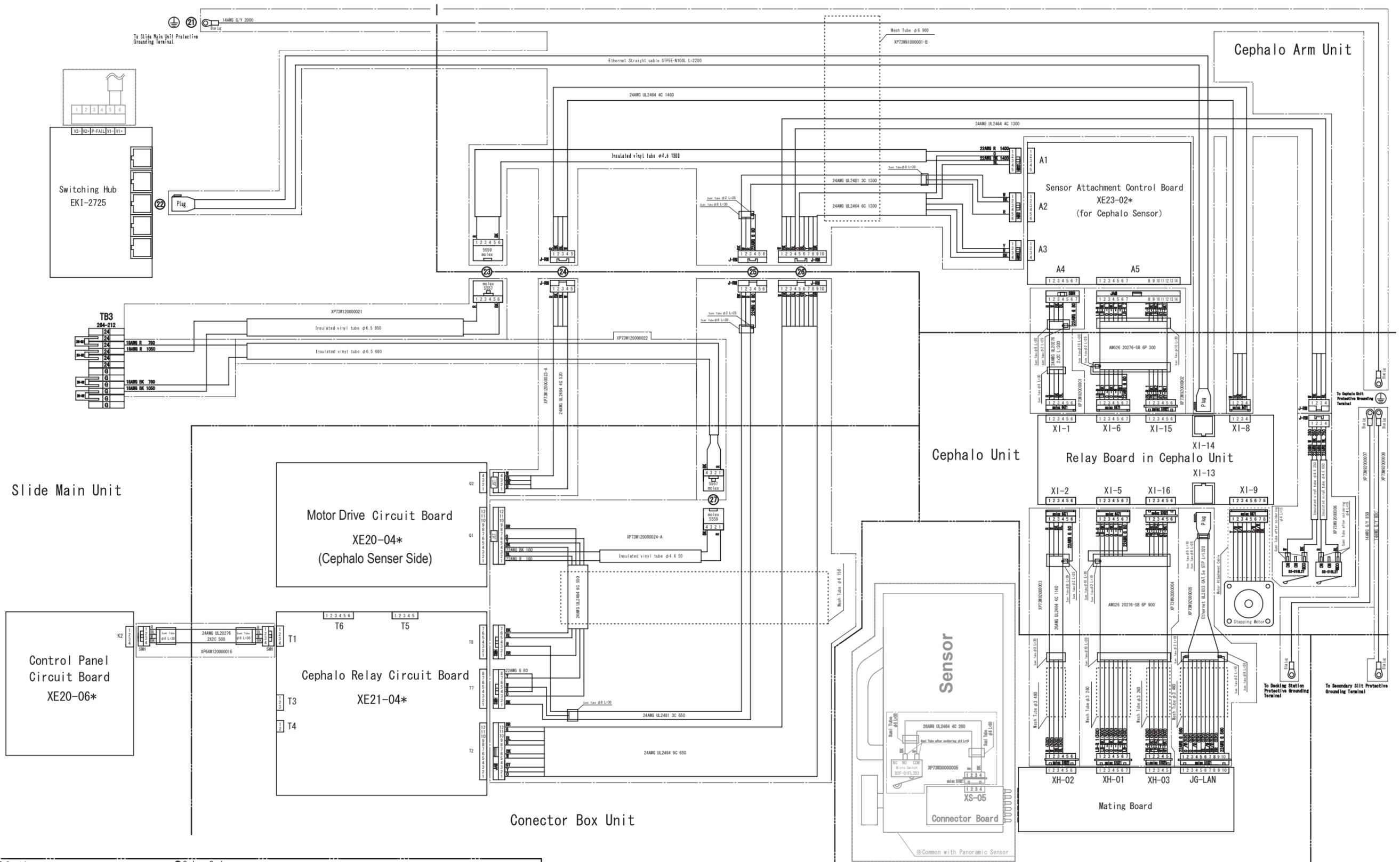
- BK: Black
- BR: Brown
- GY: Grey
- OR: Orange
- W: White
- GR: Green
- RED: Red
- Y: Yellow
- G: Green
- LB: Light Blue
- PL: Purple
- PK: Pink
- W/BK: White / Black
- W/R: White / Red
- G/Y: Green / Yellow
- BK/PK: Black / Pink
- LBR: Light Brown



# Panoramic Cephalometric Type







**Caution**

- As for wires without connectors, strip 10 mm off and treat them with solder.
- Values within parenthesis indicate the stripping length on 4-pole, 6-pole cord, etc. Stripping length without indication is 40 mm.
- The number in  $\bigcirc$  indicates Connector Number. Mark the same number to the both pair of male and female.
- As for connectors connected to circuit boards, mark the number to correspond to the connector numbers on the boards.
- BK-YW: "Y" indicates the background color of the coat. "Y" indicates the color of dots engraved on the coat. "N" indicates the number of dots.

**Color Codes**

BK: Black	O: Orange	Y: Yellow	LB: Light Blue	W/BK: White / Black	BK/PK: Black / Pink
BR: Brown	W: White	G: Green	PL: Purple	W/R: White / Red	LBR: Light Brown
GR: Grey	R: Red	BL: Blue	PK: Pink	G/Y: Green / Yellow	

**Connector Reference Diagram**

Wire 5559	Wire 3191														
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# X-era Smart Installation Manual

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