

FB250

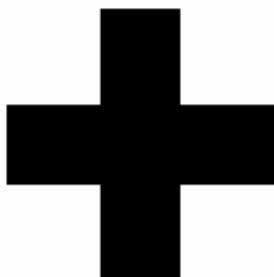
JUE-250

Maritime Satellite Communication Terminal

INSTALLATION MANUAL

7ZPSC0258

ABOUT YOUR SAFETY



CAUTIONS AGAINST HIGH VOLTAGE

Radio and radar devices are operated by high voltages of anywhere from a few hundred volts up to many hundreds of thousands of volts. Although there is no danger with normal use, it is very dangerous if contact is made with the internal parts of these devices. (Only specialists should attempt any maintenance, checking or adjusting.)

There is a very high risk of death by even a few thousand volts, in some cases you can be fatally electrocuted by just a few hundred volts. To circumvent accidents, you should avoid contact with the internal parts of these devices at all costs. If contact is inevitable as in the case of emergency, you must switch off the devices and ground a terminal in order to discharge the capacitors. After making certain that all the electricity is discharged, only then can you insert your hand into the device. Wearing cotton gloves and putting your free hand in your pocket, in order not to use both hands simultaneously, are also very good methods of shock prevention. Quite often, an injury occurs by secondary factors, therefore it is necessary to choose a sturdy and level working surface. If someone is electrocuted it is necessary to thoroughly disinfect the affected area and seek medical attention as soon as possible.

CAUTIONS CONCERNING TREATMENT OF ELECTROCUTION VICTIMS

When you find an electrocution victim, you must first switch off the machinery and ground all circuits. If you are unable to cut off the machinery, move the victim away from it using a non-conductive material such as dry boards or clothing.

When someone is electrocuted, and the electrical current reaches the breathing synapses of the central nervous system inside the brain, breathing stops. If the victim's condition is stable, he or she can be administered artificial respiration. An electrocution victim becomes very pale, and their pulse can be very weak or even stop, consequently losing consciousness and becoming stiff. Administration of first aid is critical in this situation.

FIRST AID

☆Note points for first aid

Unless there is impending danger leave the victim where he or she is, then begin artificial respiration. Once you begin artificial respiration, you must continue without losing rhythm.

- (1) Make contacts with the victim cautiously, there is a risk that you may get electrocuted.
- (2) Switch off the machinery and then move the victim away slowly if you must.
- (3) Inform someone immediately (a hospital or doctor, dial emergency numbers, etc.).
- (4) Lay the victim on his or her back and loosen any constructive clothing (a tie, or belt).
- (5)
 - (a) Check the victim's pulse.
 - (b) Check for a heartbeat by pressing your ear against the victim's chest.
 - (c) Check if the victim is breathing by putting the back of your hand or face near the victim's face.
 - (d) Check the pupils of the eyes.
- (6) Open the victim's mouth and remove any artificial dentifrice, food or chewing gum. Leave the mouth opened and flatten the tongue with a towel or by putting something into the mouth to prevent the victim's tongue from obstructing the throat (If he or she is clenching their teeth and it is difficult to open the mouth, use a spoon or the like to pry open the mouth).
- (7) Continually wipe the mouth to prevent the accumulation of saliva.

☆ If the victim has a pulse but is not breathing
(“Mouth to mouth” resuscitation)

Figure 1

- (1) Place the victim's head facing backward (place something under the neck like a pillow).
- (2) Point the chin upward to widen the trachea.
- (3) Pinch the victim's nose, take a deep breath, then put your mouth over the victim's mouth and exhale completely, making sure that your mouth completely covers the victim's mouth. Then remove your mouth. Repeat this routine 10 to 15 times per minute (holding the nostrils).
- (4) Pinch the victim's nose, take a deep breath, then put your mouth over the victim's mouth and exhale completely, making sure that your mouth completely covers the victim's mouth. Then remove your mouth. Repeat this routine 10 to 15 times per minute (holding the nostrils).
- (5) Pay attention to the victim to notice if he or she starts to breath. If breathing returns, stop resuscitation.
- (6) If it is impossible to open the victim's mouth, put something like a plastic straw or vinyl tube into one of the nostrils then blow air in while covering the mouth and the other nostril.
- (7) Occasionally, when the victim comes back to consciousness, they immediately try to stand up. Prevent this and keep them in a laying position. Give them something warm to drink and be sure that they rest (do not give them any alcohol).

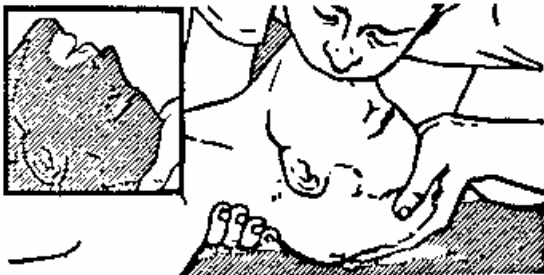
Administering artificial respiration by raising the head.

①



- (1) Raise the back of head, then place one hand on the forehead and place the other hand under the neck. →①
Most victims open their mouth when doing this, making “mouth to mouth” resuscitation easier.

②



- (2) Cover the victim's mouth by opening your mouth widely, then push your cheek against the victim's nose, →②
or pinch the victim's nose to prevent air from leaking out of it. →③

③



- (3) Completely exhale into the lungs.
Exhale into the lungs until the chest is inflates. You have to blow as rapidly as possible for the first 10 times.

“Mouse to mouse” artificial respiration

Figure 1

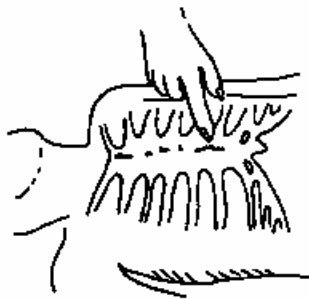
**☆ If the victim has no pulse and is not breathing
(Heart massage in combination with artificial respiration.)**

Figure 2

If the victim has no pulse, his or her pupils are dilated, and if you cannot detect a heartbeat, the heart may have stopped, beginning artificial respiration is critical.

- (1) Put both hands on the diaphragm, with hands on top of each other keeping both arms straight (If your elbows are bent, you cannot push with as much power). Press the diaphragm with your body weight until the chest sinks about 2 cm (about 50 times per minute).
- (2) If administering first aid when alone:
Perform the heart massage about 15 times then blow in twice. Repeat this routine.
If administering first aid with two people:
One person performs the heart massage 15 times, and the other person blows air in twice. Repeat this routine (Heart massage and “mouth to mouth” resuscitation used together).
- (3) Constantly check the pupils and the pulse, if the pupils become normal and the pulse steadies, keep them in a laying position and give them something warm to drink, be sure that they rest (do not give them any alcohol). In any case you have to entrust major decision making to a doctor. Having understanding people around is essential to the victim’s recovery from the mental shock of electrocution.

①



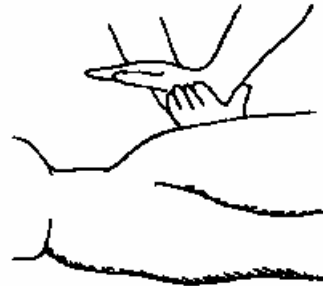
②



③



④



Heart massage in combination with artificial respiration.

Figure 2

PREFACE

Thank you for purchase of the JRC Inmarsat FleetBroadband Mobile Earth Station, JUE-250.

The JUE-250 is an Inmarsat digital satellite communication terminal for Voice (4kbps Speech), and Audio (64kbps 3.1kHz Audio), maximum 284kbps Standard IP service, 32kbps, 64kbps, or 128kbps Streaming IP service, and Short Messaging Service (SMS).

- Please read this manual carefully and carry out proper installation.
- Please keep this manual carefully to be able to refer to.

Please read this manual when questions of use and troubles are caused by any chance.

ATTENTIONS BEFORE INSTALLATION




- JRC cannot accept responsibility for any loss due to incorrect operation, malfunction, and other causes except product guarantee condition and liability by law.
- Some functions of JUE-250 may not work correctly owing to the hardware and software version of equipment connected to JUE-250. Please confirm to the dealer or agent you purchased, or JRC branches whether your equipment is connectable.
- Your communication data are transmitted via Inmarsat system and other global communications system, so some errors may occur in communication the same as the landlines. You are recommended to backup for your important data.
- Your communication data will be protected by digital scrambling of Inmarsat. However, you are recommended to understand that your communication data might be intercepted by special technology and unauthorized access .
- Specifications of JUE-250 and its accessories may change without notice for improvement.

BEFORE INSTALLATION

Concerning the symbols



This manual uses the following symbols to explain the correct operation and to prevent injury or damage to property.

Please read the following before proceeding with this manual.



| | |
|--|---|
|  DANGER | Indicates danger that, if ignored, will result in serious injury or even death. |
|  WARNING | Indicates warning that, if ignored, may result in serious injury or even death. |
|  CAUTION | Indicates caution that, if ignored, may result in injury or damage to property. |

Examples of symbols





The  symbol indicates caution (including DANGER and WARNING). The illustration inside the  symbol specifies the content of the caution more accurately. (This example warns of possible electrical shock.)



The  symbol indicates that performing an action is prohibited. The illustration inside the  symbol specifies the content of the prohibited operation. (In this example disassembly is prohibited.)



The  symbol indicates operations that must be performed. The illustration inside the  symbol specifies obligatory instructions. (In this example unplugging is obligatory.)

* Windows Internet Explorer is a registered trademark of Microsoft Corporation.

Netscape Navigator is a registered trademark of Netscape Communications Corporation.

Concerning warning label



Warning labels are put on the JUE-250, ADE, and BDE.

Do not take off, destroy, or modify these labels.

< Warning Label of ADE >

| <div>INMARSAT FB250</div> <div>MOBILE EARTH STATION</div> <div>MODEL JUE-250</div> <div>SERIAL NO. <div></div></div> <div><div>JRC</div><div>Japan Radio Co., Ltd.</div><div>MADE IN JAPAN</div></div> | <div>ABOVE DECK EQUIPMENT</div> <div>MODEL GSC-451</div> <div>MASS 7.4kg</div> <div>DATE <div></div></div> <div>CE 0191</div> | <div><div><div></div></div><div>WARNING</div></div> <div><div>Distance V.S Radiation Levels</div><table><tr><th>Distance</th><th>Radiation</th></tr><tr><td>0.6m</td><td>10W/m²</td></tr><tr><td>0.2m</td><td>25W/m²</td></tr><tr><td>0.1m</td><td>100W/m²</td></tr></table></div> | Distance | Radiation | 0.6m | 10W/m ² | 0.2m | 25W/m ² | 0.1m | 100W/m ² | <div>Compass safe distance</div> <div>Standard compass : 0.8m</div> <div>Steering compass : 0.5m</div> <div><div>DO NOT PAINT</div><div>RADOME</div></div> |
|--|---|---|----------|-----------|------|--------------------|------|--------------------|------|---------------------|--|
| Distance | Radiation | | | | | | | | | | |
| 0.6m | 10W/m ² | | | | | | | | | | |
| 0.2m | 25W/m ² | | | | | | | | | | |
| 0.1m | 100W/m ² | | | | | | | | | | |

< Warning Label of BDE >

| | | |
|--|--|--|
| INMARSAT FB250 MOBILE EARTH STATION MODEL JUE-250 SERIAL NO. GV [REDACTED] IMEI 35887701 [REDACTED] <small>JRC Japan Radio Co., Ltd.</small> | BELOW DECK EQUIPMENT MODEL GSC-452 MASS 2.2kg DATE [REDACTED] <small>CE 0191</small> |  警告 WARNING  <div> 保守員以外は、装置を 分解しないで下さい NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL. </div> |
|--|--|--|

Notes

IMEI 35887701 **International Mobile Equipment Identity** (IMEI) is a number unique to every [GSM](#) and [UMTS](#) mobile phone. It is usually found printed on the phone underneath the battery and can also be found by dialing the sequence *#06# into the phone.

CE 0191 Attestation number which means safe, high-quality product and suits EU instruction (Free circulation was permitted in the EU signatory).

CAUTIONS DURING INSTALLATION

DANGER



Do not touch any internal parts with your hands or tools to avoid danger of electronic shock.



Do not touch master gyro signal lines with your hands to avoid danger of electrical shock.
The lines always have high voltages even if your JUE-250 power switch is turned off.

CAUTIONS DURING INSTALLATION

WARNING



Do not bring JUE-250 (ADE) close to the fire, or put it in the fire. It causes the explosion and electrical shock.



Do not approach the ADE while transmitting. Strong micro wave might be cause injury.



If an external matter, such as metal fragments, water, liquid, etc., infringe into your JUE-250, turn off the power and contact the dealer or agent you purchased from or one of our JRC branches. Continuous operation may cause fire, electrical shock or malfunction.



Install JUE-250 correctly in accordance with the installation manual.
Inappropriate installation may cause incorrect operation; fire, electrical shock, or malfunction. JUE-250 should be installed by the trained technician or engineer. The installation should be requested to the purchasing dealer, JRC agent or one of the JRC branches.



Install JUE-250 ADE-BDE coaxial cable correctly in accordance with the installation manual of separate volume. Especially waterproof should be treated correctly in accordance with this manual. Inappropriate installation may cause incorrect operation, fire, electrical shock or malfunction. JUE-250 should be installed by the special technician or skilled engineer. The installation should be requested to the purchasing dealer, JRC agent or one of the JRC branches.



Do not turn on the terminal under the primary power except the specific voltage (+19VDC to +31VDC). The primary power except the specific voltage may cause fire, electrical shock or malfunction,



Do not fix or repair the internal equipment of the JUE-250 by yourself.
Any person other than our trained maintenance staff may cause fire or abnormal operation of this equipment or electrical shock. This equipment meets the technical standard of the Ministry of Internal affairs and Communications.



Do not adjust the internal circuit or change the parts because the internal circuit is adjusted strictly. If an abnormal operation is found, please contact to out sales department or nearest branch office.

CAUTIONS DURING INSTALLATION

CAUTION



Before using, read the operation manual carefully.
Inappropriate procedure may cause incorrect operation or malfunction.

<<Above Deck Equipment >>



Keep out of the area within a radius of 4.5meters from your ADE, because ADE transmits microwaves. Strong microwaves may cause injury.
In case of approach within a radius of 4.5meters by necessity, turn off the JUE-250 and stop transmitting.



Do not deliver mechanical shock and/or force, because each unit of your ADE is a precision instrument. Unwanted shock and force may cause malfunction.



Do not paint radome. Painting of radome may cause decrease of the communication quality.

<<Below Deck Equipment>>



Connect the ground terminal of the Main Unit to bulkhead or floor with grounding cable. Poor connection may cause malfunction.

<<Coaxial Cable >>



Install JUE-250 ADE-BDE coaxial cable correctly in accordance with the installation manual of separate volume. Especially waterproof should be treated correctly in accordance with the installation manual. Inappropriate installation may cause incorrect operation, fire, electrical shock or malfunction. Coaxial cable should be installed by the special technician or skilled engineer. The installation should be requested to the purchasing dealer, JRC agent or one of the JRC branches.

<<Coaxial Cable and the other cables>>



Take care not to damage the connectors and the corrosion resistant sheath of cable. Otherwise, a trouble may occur.



Do not pull the cable by gripping connector plug only. Otherwise, a trouble may occur.

APPEARANCE

ADE (Above Deck Equipment)

[GSC-451]

The ADE is installed on the above deck for receiving the signal from the satellite.

The ADE is covered with a radome.

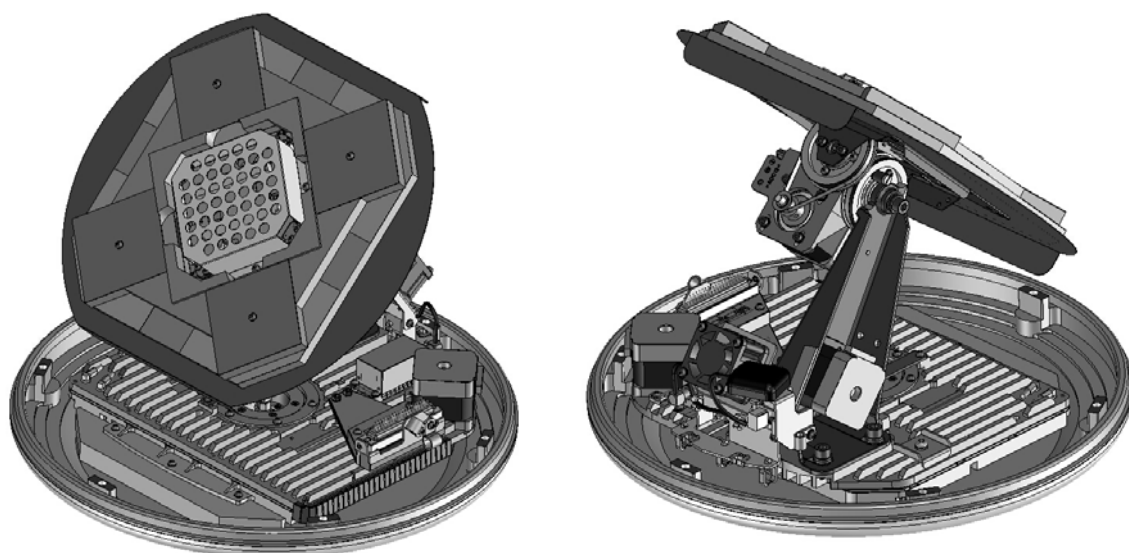


Fig.1 ADE (inside of radome)



Fig.2 ADE appearance

BDE (Below Deck Equipment)

Main Unit [GSC-452]

The BDE is on the below deck and includes the transceiver.

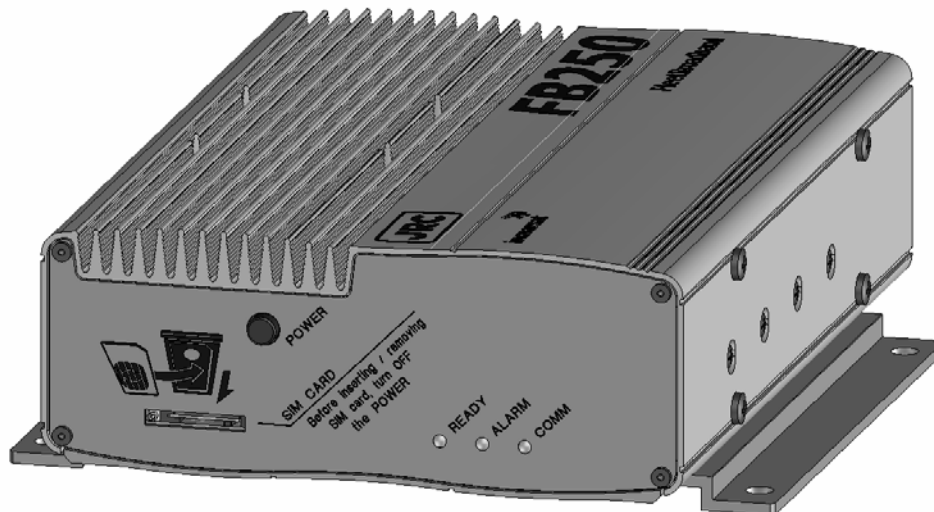
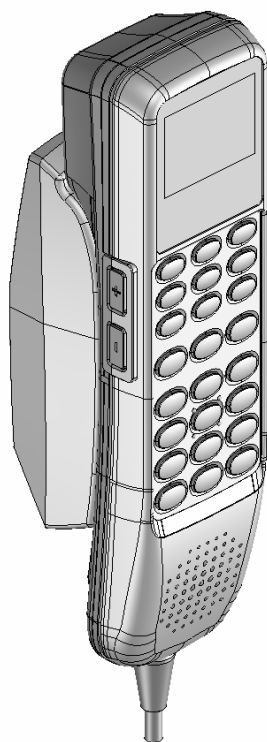


Fig.3 Main unit

Handset [NQW-267]

The Handset is used for voice communication, and is for controlling the terminal.



[Cable length:1m]

Fig.4 Handset

The other components

Coaxial Cable [CFQ-5924A3]

The Coaxial cable connects ADE and BDE.



Fig.5 Coaxial cable

[Cable length:30 m]

Power Supply Cable [7ZCSC0222A]

This cable connects BDE and External PSU.



[Cable length:5 m]

Fig.6 Power Supply Cable

ABBREVIATIONS

| | |
|--------------|----------------------------|
| ADE | Above Deck Equipment |
| BDE | Below deck Equipment |
| External PSU | External Power Supply Unit |
| FWD | Forward (bow) |
| INMARSAT | INMARSAT Ltd. |
| JB | Junction Box |
| MES | Mobile Earth Station |
| TEL | Telephone |

Contents

| | |
|---|------|
| PREFACE..... | i |
| ATTENTIONS BEFORE INSTALLATION | ii |
| BEFORE INSTALLATION | iii |
| CAUTIONS DURING INSTALLATION | v |
| APPEARANCE..... | vii |
| ABBREVIATIONS | x |
| 1. INTRODUCTION | 1-1 |
| 1-1 Outlines | 1-1 |
| 1-2 Unpacking and visual inspection | 1-1 |
| 1-3 Cable connection diagram..... | 1-2 |
| 1-4 Components | 1-3 |
| 1-4-1 JUE-250 Standard components | 1-3 |
| 1-4-2 Optional components..... | 1-3 |
| 1-5 Configuration (JUE-250 Standard components) | 1-4 |
| 1-5-1 ADE (Above Deck Equipment) [GSC-451] | 1-4 |
| 1-5-2 BDE (Below Deck Equipment) [GSC-452] | 1-5 |
| 1-5-3 Handset [NQW-267]..... | 1-6 |
| 1-5-4 Coaxial cable [CFQ-5924A3]..... | 1-7 |
| 1-6 Installation parts and tools | 1-8 |
| 1-6-1 Supplied parts by JRC | 1-8 |
| 1-6-2 Required cables..... | 1-8 |
| 1-6-3 Required tools..... | 1-8 |
| 1-7 Configuration (Optional components) | 1-9 |
| 1-7-1 Telephone [NQW-132B] | 1-9 |
| 1-7-2 Facsimile [OKI OFFICE 86] | 1-11 |
| 1-7-3 EXT. PSU (External Power Supply Unit) [NBD-577C]..... | 1-12 |
| 1-7-4 TEL JB (Telephone Junction Box) [NQE-3058B]..... | 1-13 |
| 1-7-5 GYRO I/F Box [NQA-2066]..... | 1-14 |
| 1-7-6 Power transformer for Facsimile [DD-118525]..... | 1-15 |
| 2. INSTALLATION | 2-1 |
| 2-1 ADE | 2-1 |
| 2-1-1 Plan of installation site..... | 2-1 |
| 2-2 Design of Pole..... | 2-2 |
| 2-2-1 Example of pole..... | 2-2 |
| 2-2-2 Load specification and basic design. | 2-2 |
| 3. Installation work | 3-1 |
| 3-1 ADE..... | 3-1 |
| 3-1-1 Installation Example1 (Pole installation to ADE fixing) | 3-2 |
| 3-1-2 Installation Example2 (Pole installation to ADE fixing)..... | 3-6 |
| 3-2 BDE Installation..... | 3-10 |
| 3-2-1 Main Unit..... | 3-10 |
| 3-2-2 Handset | 3-17 |

| | | |
|-------|-----------------------------------|------|
| 3-2-3 | GYRO I/F BOX..... | 3-18 |
| 3-2-3 | GYRO I/F setting..... | 3-22 |
| 3-3 | Cable | 3-23 |
| 3-3-1 | Cable routing | 3-23 |
| 3-3-2 | Connection to ADE..... | 3-23 |
| 3-3-3 | Connection to BDE..... | 3-24 |
| 3-3-4 | Connection to primary Power | 3-25 |
| 3-3-5 | Abandonment work | 3-25 |
| 4. | SPECIFICATION | 4-1 |
| 4.1 | JUE-250 Standard components | 4-1 |
| 4.1.1 | ADE and BDE | 4-1 |
| 5. | JRC Network | 5-1 |

1. INTRODUCTION

1-1 Outlines

The JUE-250 Mobile Earth Station (MES) is composed of Above Deck Equipment (ADE) and Below Deck Equipment (BDE).

The ADE consists of Antenna Assembly, Above Deck Unit and Radome, while the BDE consists of Main Unit (MU) and Handset.

1-2 Unpacking and visual inspection

At the time of unpacking, visual inspection should be made for any possible damage during transportation, and also check any missing part in accordance with supplied parts list for installation as shown in Table 1-6-1. If there is damage or missing part, file the claim immediately.

The components are shown in Section 1-4 and the configuration of the ADE and the BDE are shown in Section 1-5.

Be careful to avoid the damage to unit attachment cable or terminals, when transporting or operating the JUE-250.

JUE-250 is a Inmarsat digital satellite communication terminal for 4kbps speech voice service, 9.6kbps G3 FAX, maximum 284bps Standard IP data service, 32kbps, 64kbps, 128kbps or 256kbps Streaming IP data service and Short Messaging Service (SMS).

JUE-250 is shipped with strict quality control and inspection to provide the high quality for consumers. JRC would like to believe you to make long use of the terminal with your satisfaction.

If your JUE-250 has trouble or problem in your operation, please contact the dealer, agent or JRC branches you purchased.

If the contact place is unknown, please confirm on JRC website (refer to chapter 5).

1-3 Cable connection diagram

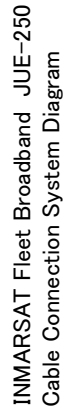


Fig. 1-3 Cable connection diagram

1-4 Components

1-4-1 JUE-250 Standard components

Table 1-4-1 JUE-250 Standard components

| Name of component | Type | Q'ty |
|-----------------------------|------------------------|------|
| ADE | GSC-451 | 1 |
| BDE | GSC-452 | 1 |
| Coaxial cable | CFQ-5924A3/CFQ5924A15* | 1 |
| Handset | NQW-267 | 1 |
| PSU cable (PSU⇔BDE) | 7ZCSC0222A | 1 |
| JUE-250 operation manual | 7ZPSC0256 | 1 |
| JUE-250 installation manual | 7ZPSC0258 | 1 |
| USB driver (CD) | CYB-xx | 1 |
| Inspection result | | 1 |

* The length of CFQ-5924A3 is 30m, and CFQ5924A15 is 15m.

1-4-2 Optional components

Table 1-4-2 Optional components

| Name of component | Type | Q'ty |
|--|--------------|--------|
| Telephone | NQW-132B | 1 |
| Facsimile | OKIOFFICE 86 | 1 |
| Power transformer for Facsimile (100V to 230V) | DD-118525 | 1 |
| External PSU | NBD-577C | 1 |
| TEL JB | NQE-3058B | 1 or 2 |
| RS232 Cable(BDE to PC) | 7ZCSC0196 | 1 |
| GYRO I/F (Interface) Box | NQA-2066 | 1 |
| Terminal Adaptor | MTA128ST | 1 |

1-5 Configuration (JUE-250 Standard components)

1-5-1 ADE (Above Deck Equipment) [GSC-451]

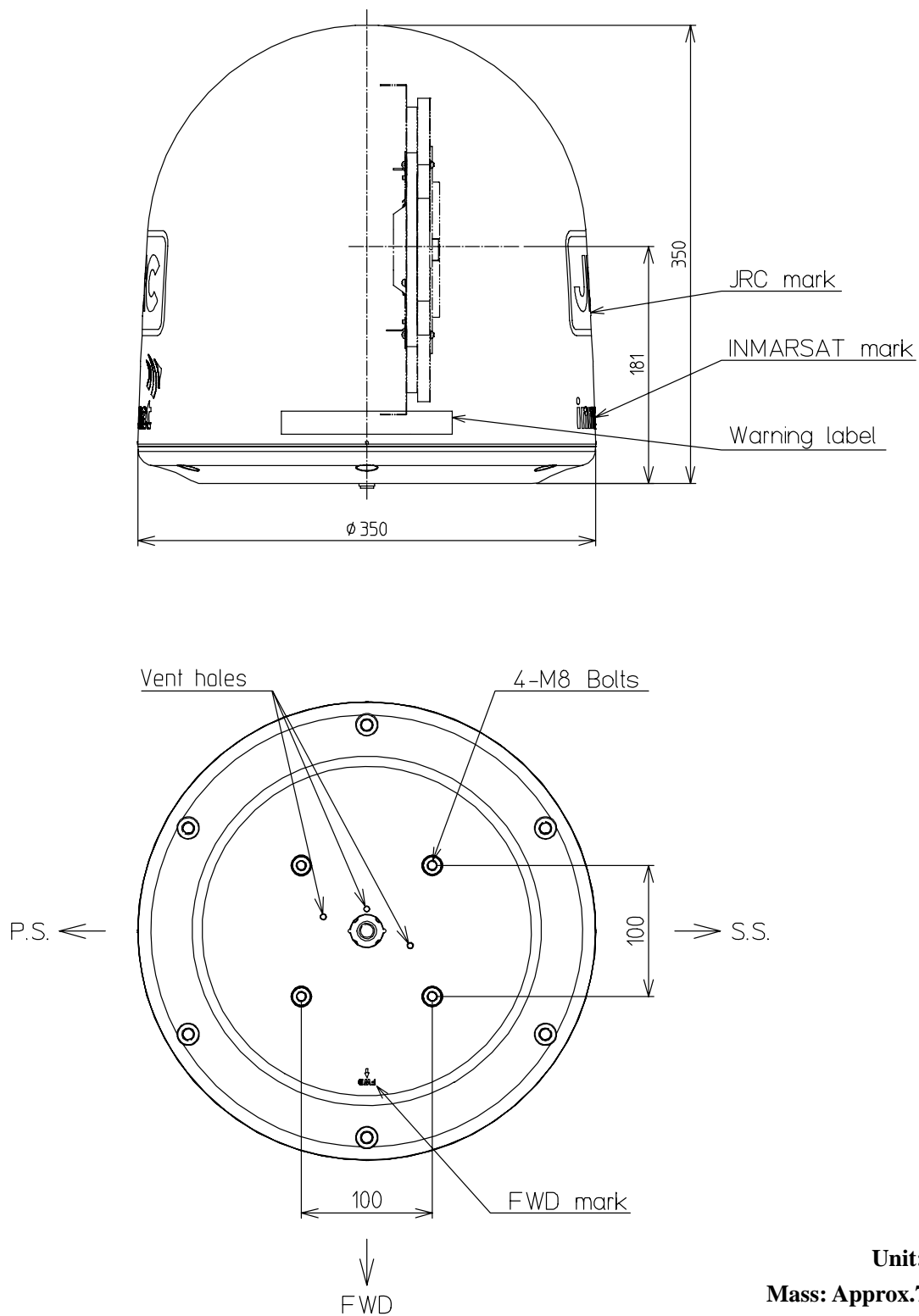
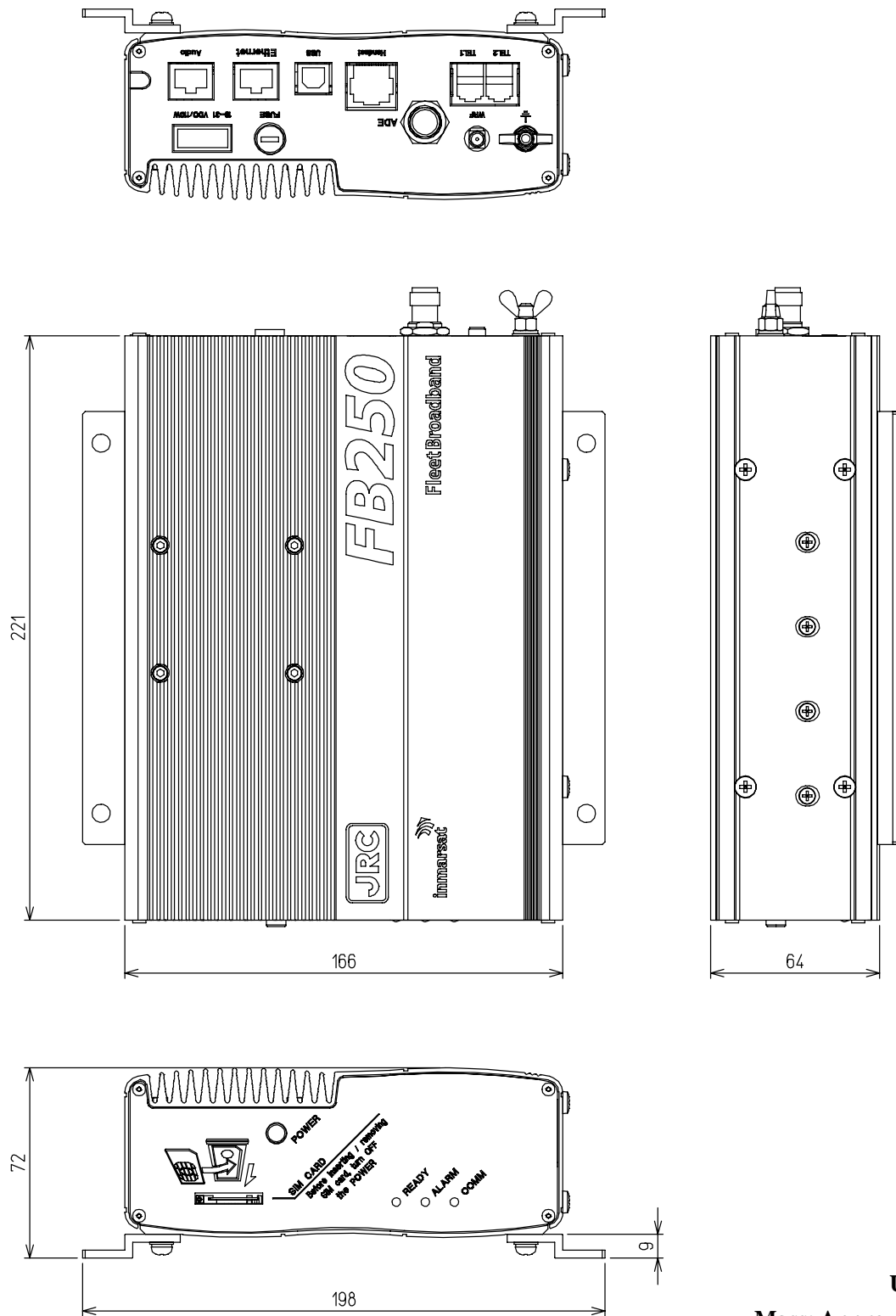


Fig. 1-5-1 ADE

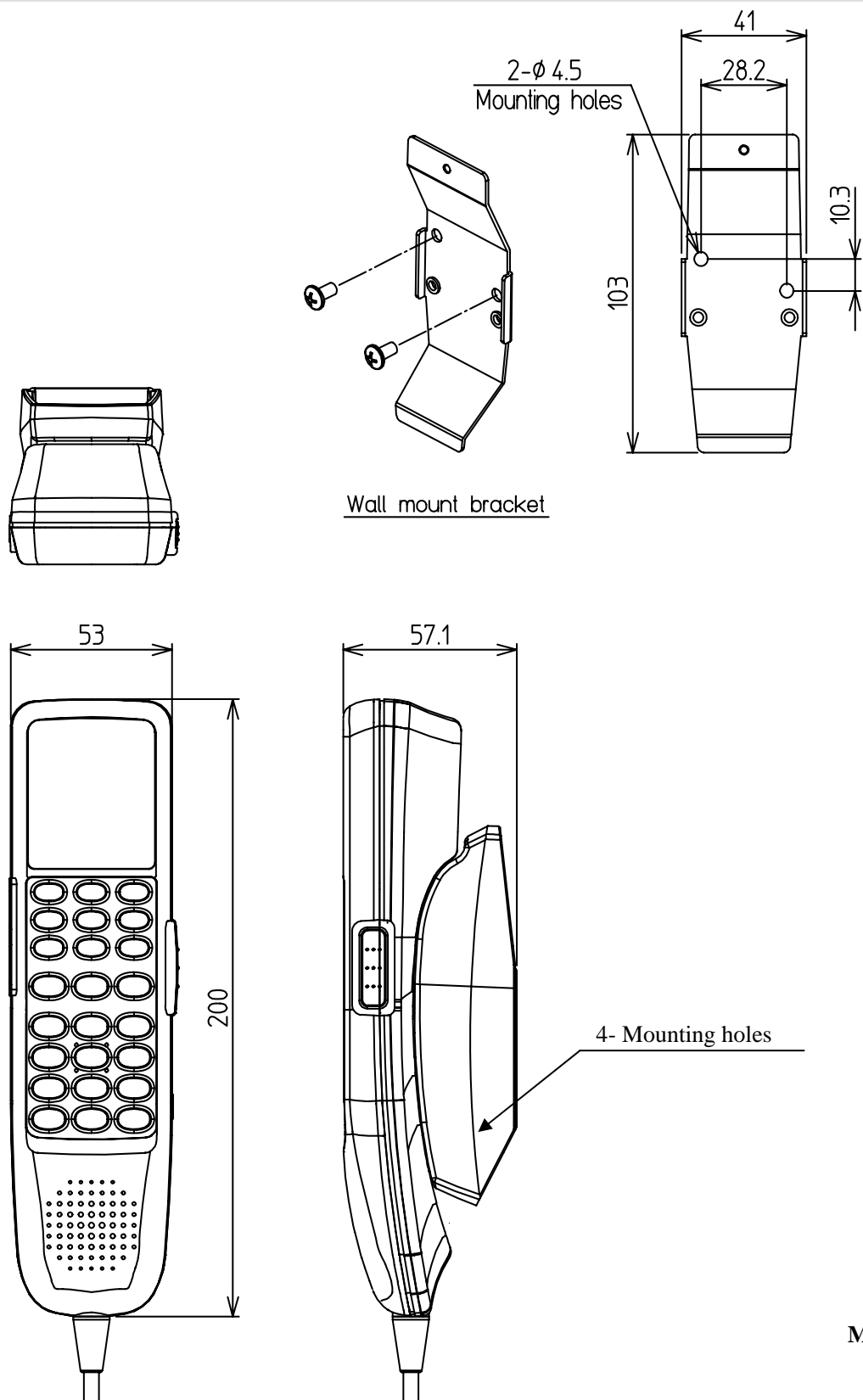
1-5-2 BDE (Below Deck Equipment) [GSC-452]



Unit: mm
Mass: Approx. 2.2 kg

Fig. 1-5-2 BDE

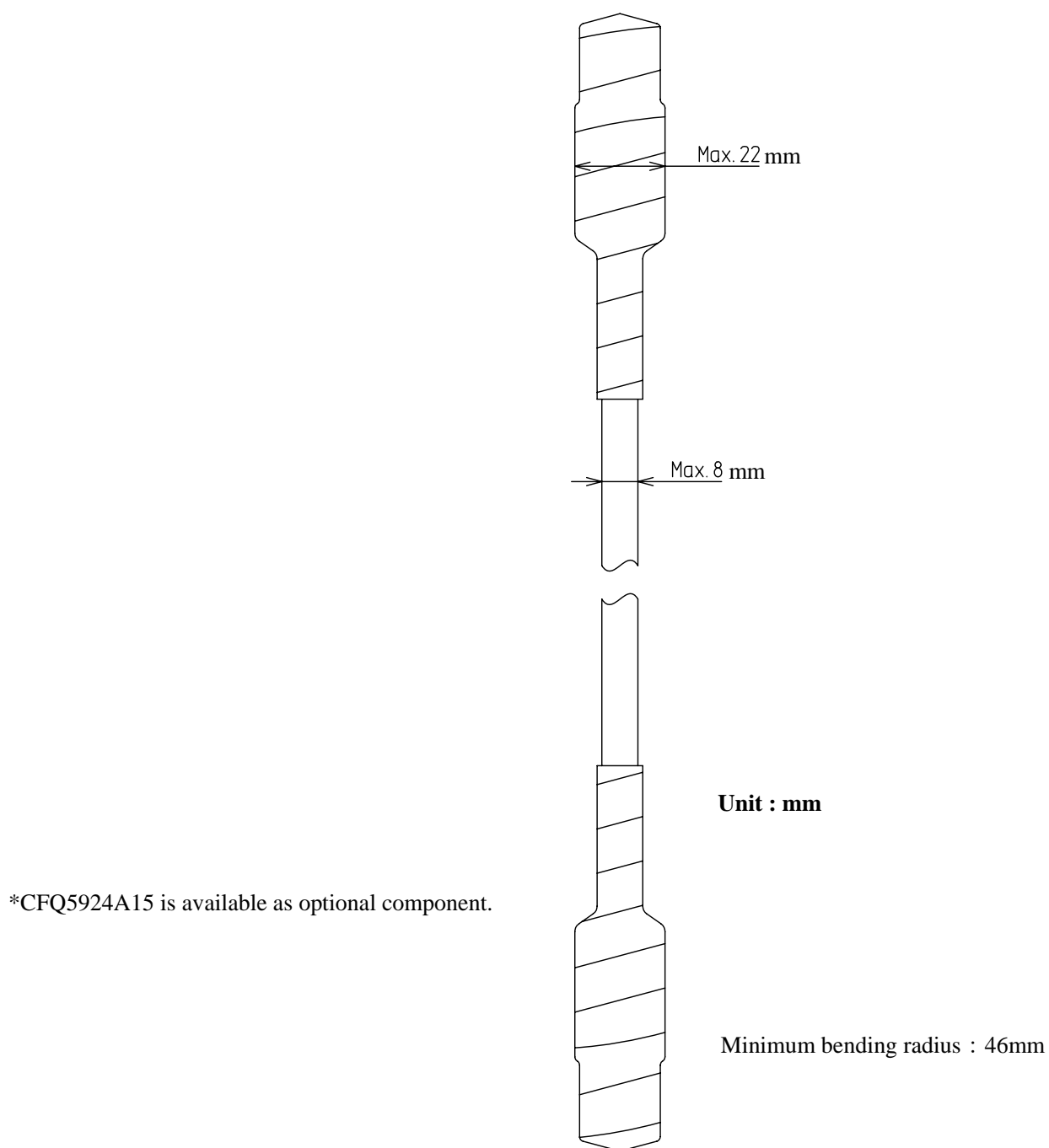
1-5-3 Handset [NQW-267]



Unit: mm
Mass: 0.5 kg

Fig. 1-5-3 Handset

1-5-4 Coaxial cable [CFQ-5924A3]



| Type | Length | Mass |
|------------|-------------------|-------------|
| CFQ-5924A3 | 30m(± 1.0 m) | Under 2.3kg |
| CFQ5924A15 | 15m(± 0.5 m) | Under 1.4kg |

Fig. 1-5-4 Coaxial cable

1-6 Installation parts and tools

1-6-1 Supplied parts by JRC

Table 1-6-1 Supplied parts by JRC for Installation

| No. | Part | Description | Q'ty | Material | Application |
|-----|-------------------|-------------|------|----------|--------------------|
| 1 | Hex. bolt B8x25 | BRTG04310 | 4 | SUS304 | ADE fixing |
| 2 | Absorption sheet | MTT 311265 | 1 | | ADE fixing |
| 3 | Earth cable | MPXP 33501 | 1 | | |
| 4 | Fixing screwM4x20 | BRTG04831 | 1 | SUS304 | Earth cable fixing |
| 5 | Fixing screwM5x16 | BRTG05285 | 4 | SUS304 | |
| 6 | Nylon clip | BRBP00005 | 1 | | |
| 7 | Connector cover | MTV304176A | 1 | | |

1-6-2 Required cables

Table 1-6-2 Required cables

| | |
|---|-------------------------------|
| Coaxial Cable (ADE-BDE Cable): JRC type.CFQ-5924A3/CFQ5924A15 | |
| Length | 30m/15m |
| Cable diameter | 8mm (not including connector) |
| Minimum bending radius | 46mm |
| Remarks | With TNC connectors |

1-6-3 Required tools

Table 1-6-3 Required Tools

| No. | Tool | Description (unit: mm) |
|-----|-----------------------|---------------------------------------|
| 1 | Socket wrench set | 1 set |
| 2 | Opened- ended spanner | Nominal 13 (for M8) |
| 3 | Opened- ended spanner | Nominal 18 (for M12) |
| 4 | Screw driver | 1 set (including cross point drivers) |
| 5 | Hex. wrench | M8, M12 |

1-7 Configuration (Optional components)

1-7-1 Telephone [NQW-132B]

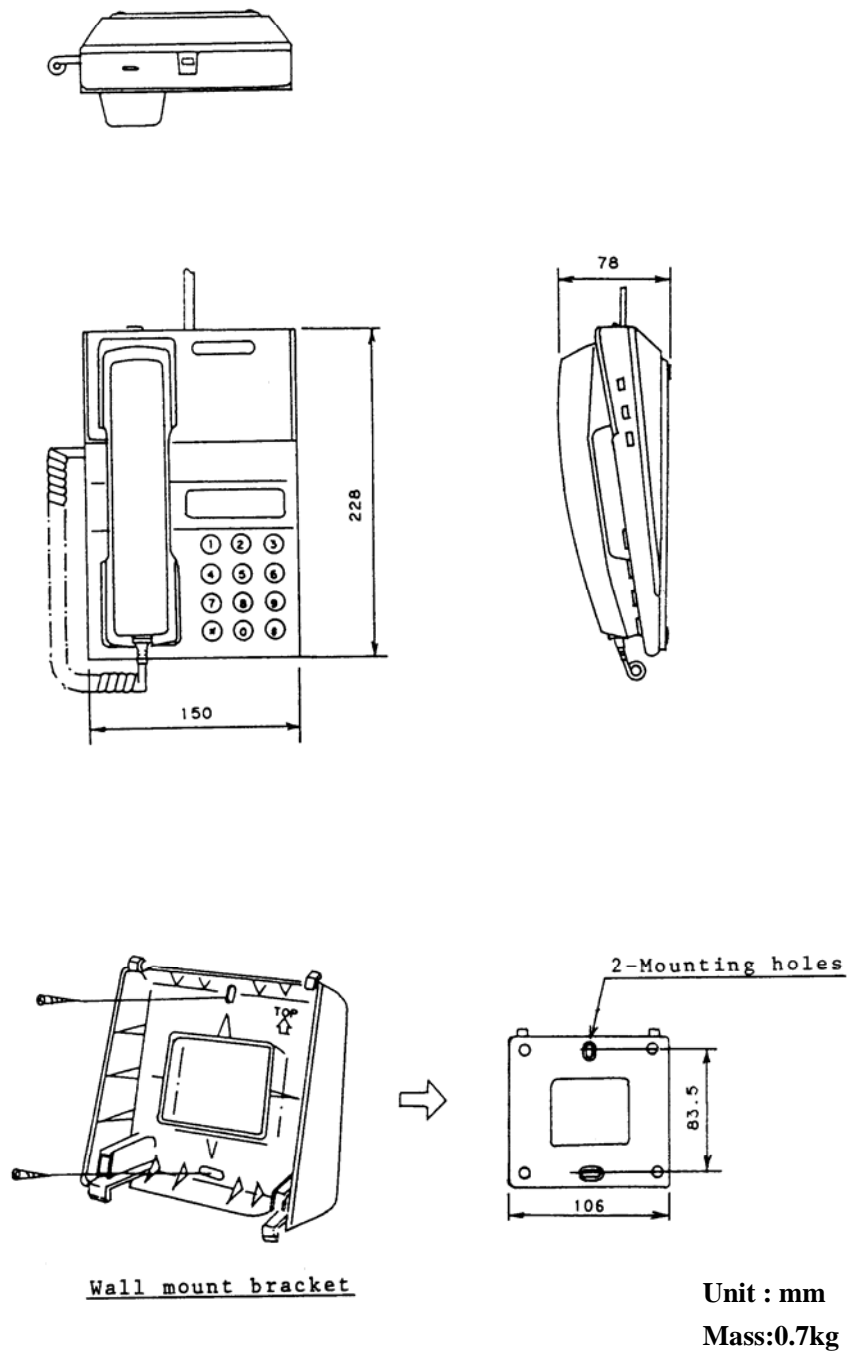


Fig. 1-7-1a Telephone

Telephone mounting procedure

Wall mount

1. Required parts

The following required parts for wall mount are attached to the telephone.

| Parts number | Description | Q'ty |
|--------------|--------------------|------|
| ① | Wall mount bracket | 1 |
| ② | Wood screw 3.8×16 | 2 |

2. Installation procedure

- (1) Fix the wall mount bracket ① on the wall with two wood screws ② .
See Fig. I.

Note

Do not tighten up wood screws too much, because wall mount bracket will be distorted.

- (2) Catch the upper side ditches ③ of the telephone base by the upper side bosses ① of the wall mount and catch the lower side ditches ④ of the telephone base by the lower side bosses ② of the wall mount. See Fig. II .

Desk top

Fix the telephone on the desk with the Velcro attached to the telephone base.

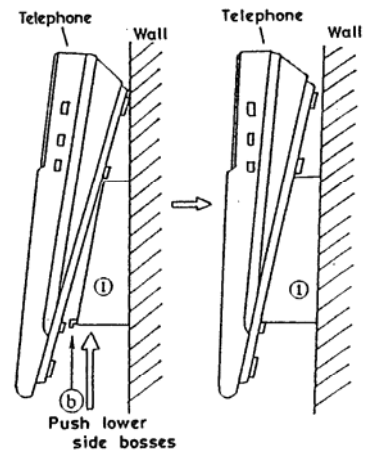
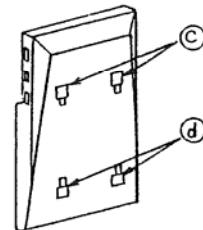
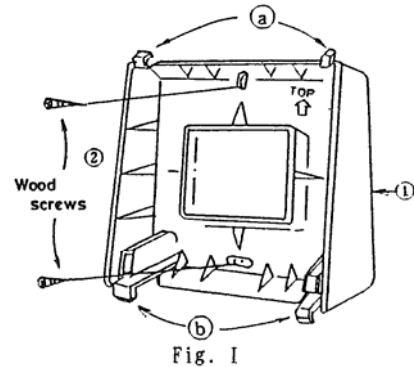
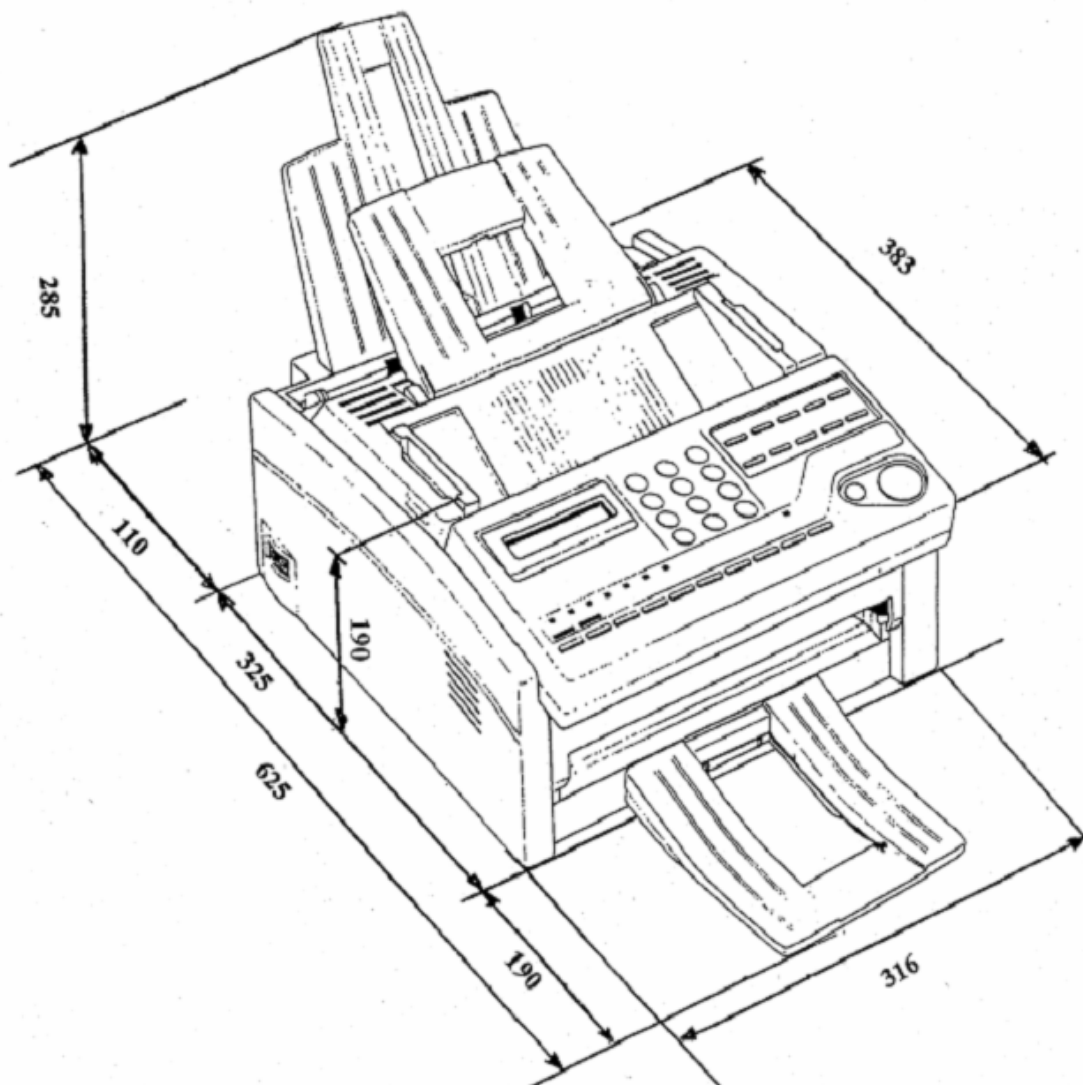


Fig. II

Fig. 1-7-1b Telephone mounting procedure

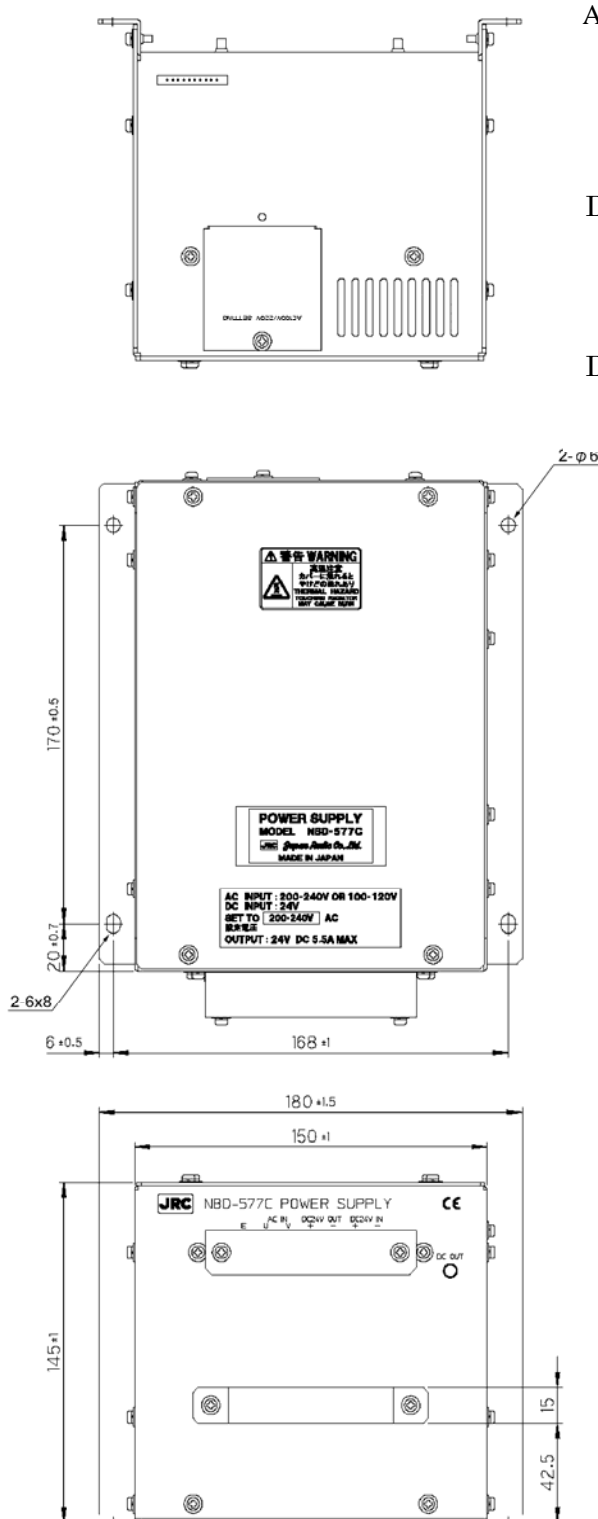
1-7-2 Facsimile [OKI OFFICE 86]



Unit: mm
Mass. approx. 8 kg

Fig. 1-7-2 Facsimile

1-7-3 EXT. PSU (External Power Supply Unit) [NBD-577C]



AC input

Voltage: +110VAC / +220VAC

Voltage range:

+90VAC to +132VAC / +180V AC to +264VAC

Frequency: 50Hz/60Hz

DC input

Voltage: +24VDC

Voltage range:

+21.6VDC to +31.2VDC

DC output

Voltage: +24VDC (Typical)

Caution

Before installation, proceed the following.

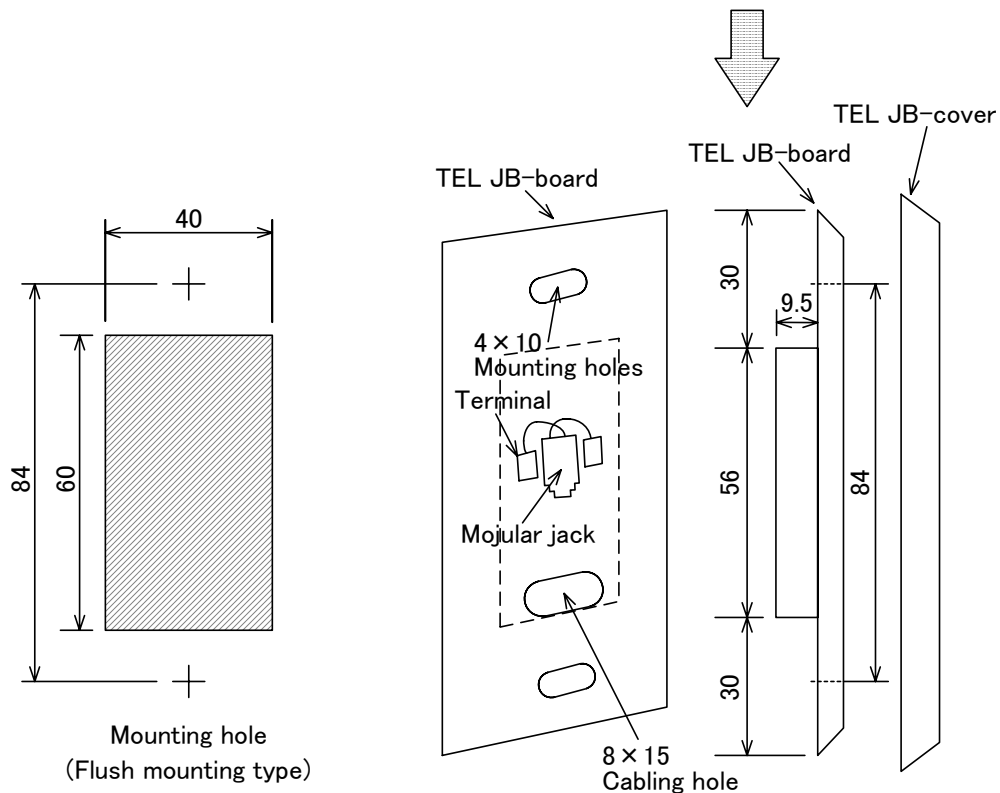
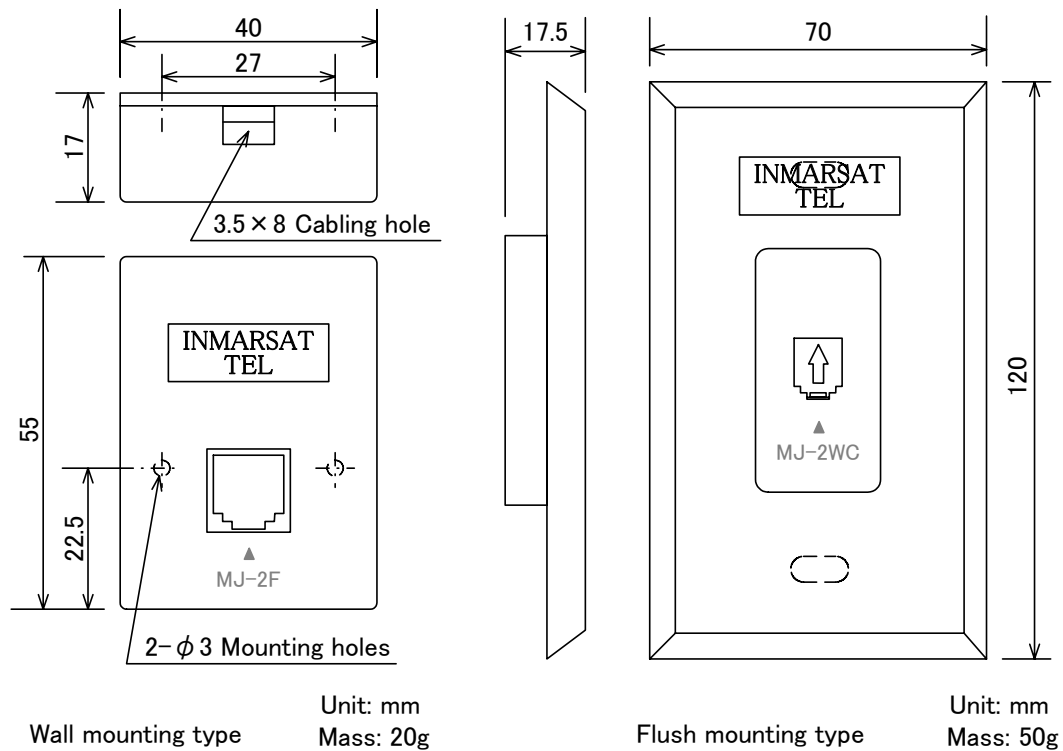
1. Set the inner plug "P1" to suitable receptacle according to the input voltage.
2. Stick the attached label for voltage indication on the name plate according to the input voltage.

Unit: mm

Mass. approx. 5.4 kg

Fig. 1-7-3 External PSU (Power Supply Unit)

1-7-4 TEL JB (Telephone Junction Box) [NQE-3058B]



Note: Wall mounting type & flush mouting type makes one set.
A name seal "INMARSAT TEL" is attached to this set.

Fig. 1-7-4 TEL JB (Telephone Junction Box)

1-7-5 GYRO I/F Box [NQA-2066]

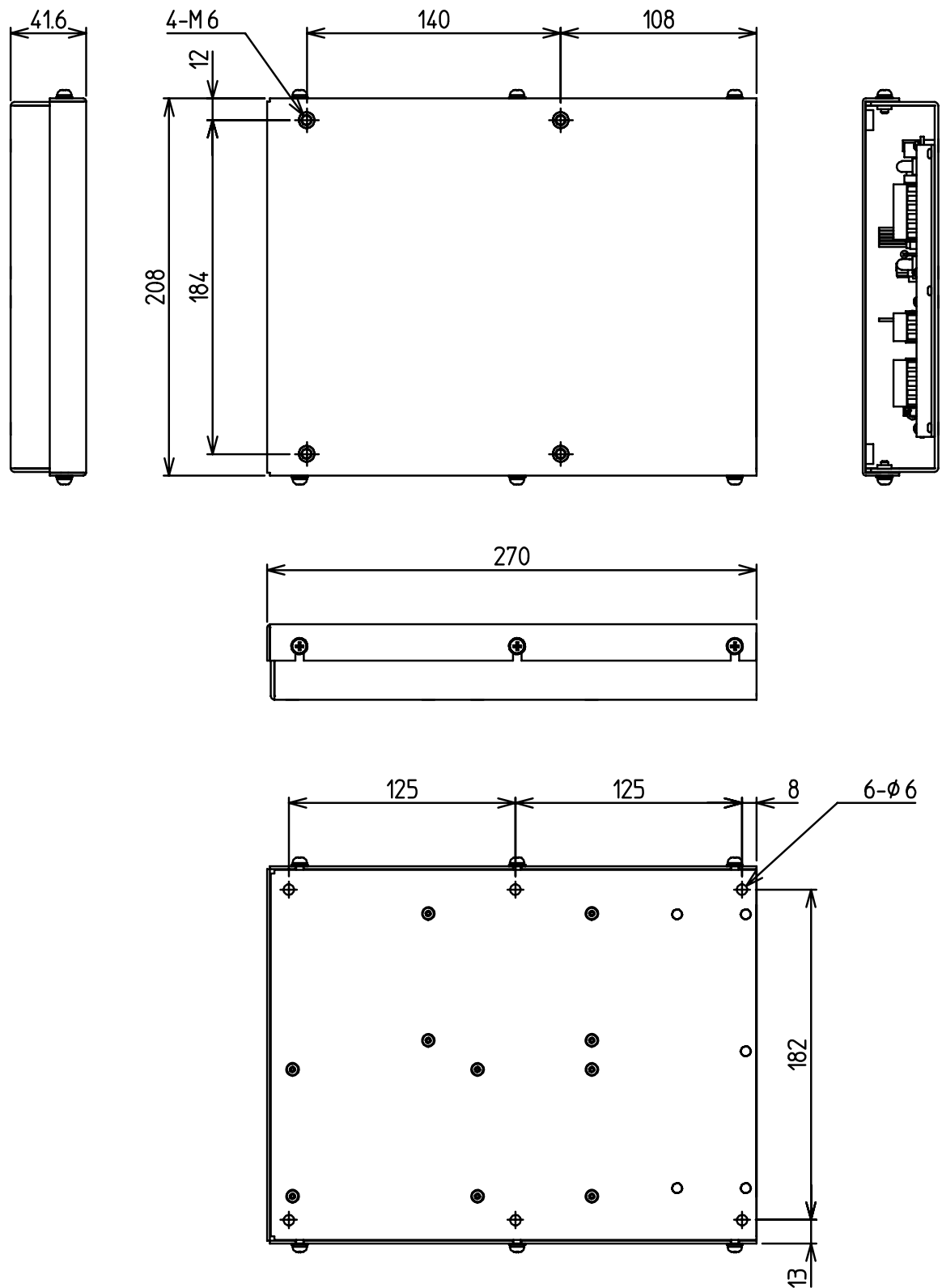
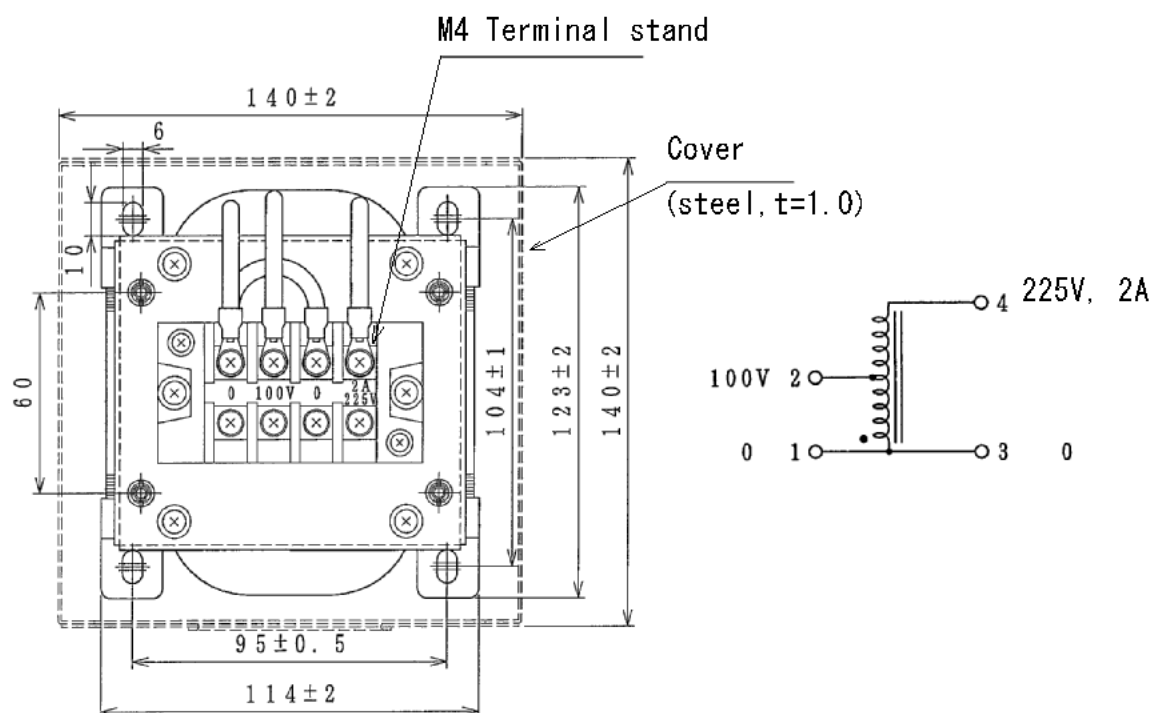


Fig. 1-7-5 GYRO I/F Box

Unit : mm
Mass : 2.5kg

1-7-6 Power transformer for Facsimile [DD-118525]

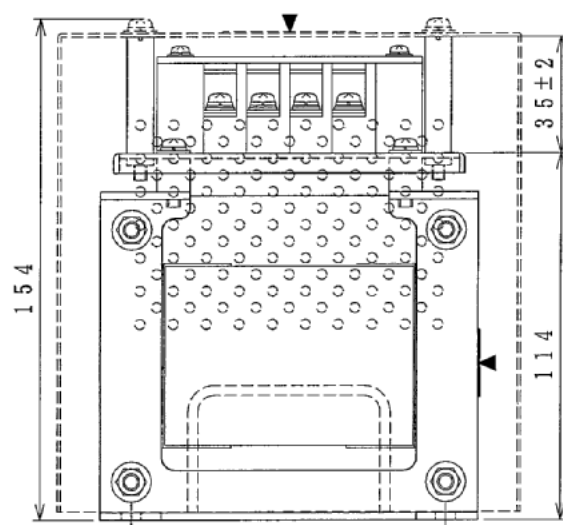


Electrical Performances

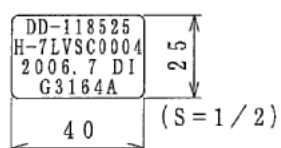
| | |
|-----------------------------|-------------------------|
| Frequency | 50/60Hz |
| Maximum power | 450VA |
| Efficiency | 90% or more |
| Voltage regulation | 5% |
| Voltage allowable tolerance | ±5% |
| Temperature rise | Up to 55°C |
| Insulation class | A-type insulation class |
| Input voltage | 100V ± 10% |

Unit : mm

Mass : 7.1kg (including cover)



Below mentioned label is put on the place of ▼ marks.



label (seal or label)

Fig. 1-7-5 Power transformer for Facsimile

2. INSTALLATION

2-1 ADE

Antenna assembly is composed of three axes controlled by servo mechanism. This mechanism is designed and manufactured with careful consideration for long use under the severe environmental condition at sea.

When the ADE is installed in higher position to avoid the physical obstruction, the ADE may be often exposed to the severe vibration condition. Therefore, special attention should be paid in such an installation site to reduce vibrations.

NOTE

- ADE should be installed **5m** or more away from MF/HF antenna.
- ADE should be installed **3m** or more away from VHF.
- ADE should be installed **5m** or more away from Direction finder.
- ADE should be installed more than **2m** from outside of the rotating area of radar scanner and also avoid transmission area of radar scanner.
- ADE should be installed avoiding heat and smoke of funnel and much dust.
- ADE should be installed avoiding severe vibration and shock.

2-1-1 Plan of installation site

Decide the installation site and antenna height, which satisfies the above NOTE and which can reduce the physical obstruction between a satellite and the ADE.

2-2 Design of Pole

Pole should be designed on the basis of load specification.

2-2-1 Example of pole

Design a pole with referring to Fig. 3-1-1a, and 3-1-2a.

2-2-2 Load specification and basic design.

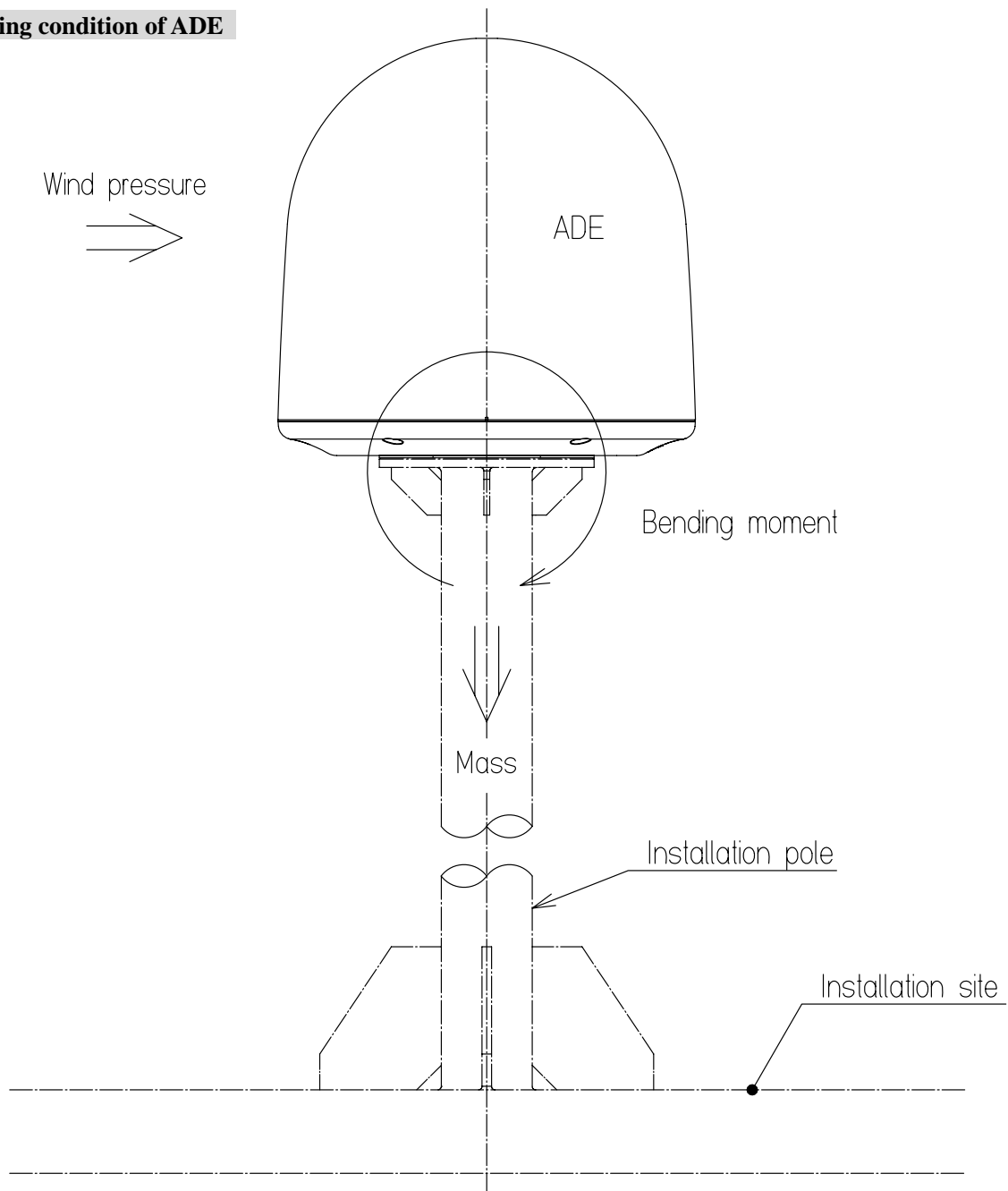
Load specification at the top of installation pole is shown in Fig. 2-2-2a.

Actual load applied on the installation site should be calculated according to the height of installation pole.

The structure of installation site should have adequate stiffness to withstand against the Mass, bending moment and vibration of the ADE and installation pole.

Check the vibration level on sea trial as much as possible. Allowable vibration level is 0.7G (686 gal) or less at the top of installation pole as shown in Fig. 2-2-2b. Also, the vibration level will be easily known by Fig. 2-2-2b.

Loading condition of ADE



| | |
|--|---------------|
| ADE Mass (Including ADE installation parts) | Approx. 7.4kg |
| Maximum wind pressure at wind velocity (Wind speed:52m/sec) | 30N |
| Maximum bending moment at wind velocity (Wind speed:52m/sec) | 15Nm |

Fig. 2-2-2a Loading condition of ADE

Allowable acceleration of ADE

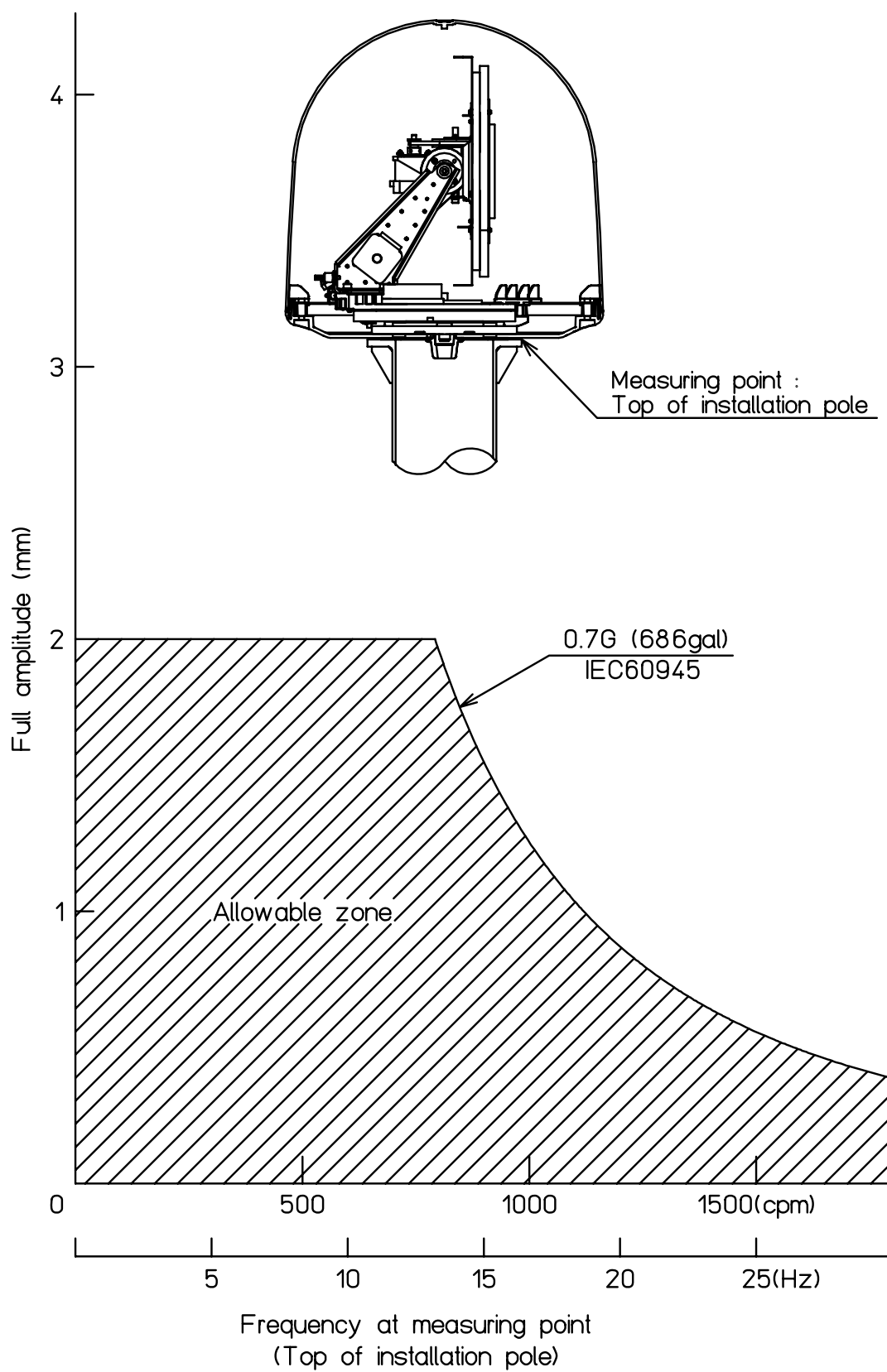


Fig. 2-2-2b Allowable acceleration

3. Installation work

3-1 ADE

The ADE should be installed in accordance with the following procedure.

- (1) Weld the pole to installation site to the FWD mark on the ADE facing to ship's forward. At this time, the FWD mark on the ADE should be in the range of $\pm 1.5^\circ$ to forward. (Refer to Fig. 1-5-1.)
- (2) Put through the ADE-BDE cable (coaxial cable) into connector cover.
- (3) Attach the Coaxial cable to the connector of the bottom of radome.
- (4) Spread the silicon sealant on the ditch in the upper part of connector cover in the proper quantity, and install it at the bottom of radome. At this time, confirm that the vent hole is not sealed with the silicon sealant very well. (Refer to Fig. 3-1-1b or Fig. 3-1-2b.)
- (5) Taping at the bottom of connector cover. (Refer to Fig. 3-1-1c or 3-1-2c.)
- (6) Stick absorption sheets on the top of the installation pole. (Refer to Fig. 3-1-1b or 3-1-2b.)
- (7) Install the ADE on the pole. The FWD mark of radome base should be in the range of $\pm 1.5^\circ$ to forward. (Refer to Fig. 1-5-1.)
- (8) Take enough loosening to the cable when mounting radome. After mounting ADE fixing screw, spread the Silicon Sealant on the screw hole and surface of bolt when installed.
- (9) Wrap the cable at least one time to the pole and fix it so that the cable does not receive any power. (Refer to Fig. 3-1-1d or 3-1-2d.)

Recommended support structure

Installation on mast

Pole should be installed on the top of the mast or top of the platform having sufficient strength.

Whole mast structure should have adequate stiffness against the mass, bending moment and vibration of ADE and installation pole.



CAUTION



Keep out of the area within a radius of 4.5meters from your ADE, because ADE transmits microwaves. Strong microwaves may cause injury.

Turn JUE-250 off and stop transmitting if you approach within a radius of 4.5meters by necessity.



Do not deliver mechanical shock and/or force, because each unit of your ADE is a precision instrument. Unwanted shock and force may cause malfunction.



Do not paint radome. Painting of radome may cause decrease of the communication quality.

3-1-1 Installation Example1 (Pole installation to ADE fixing)

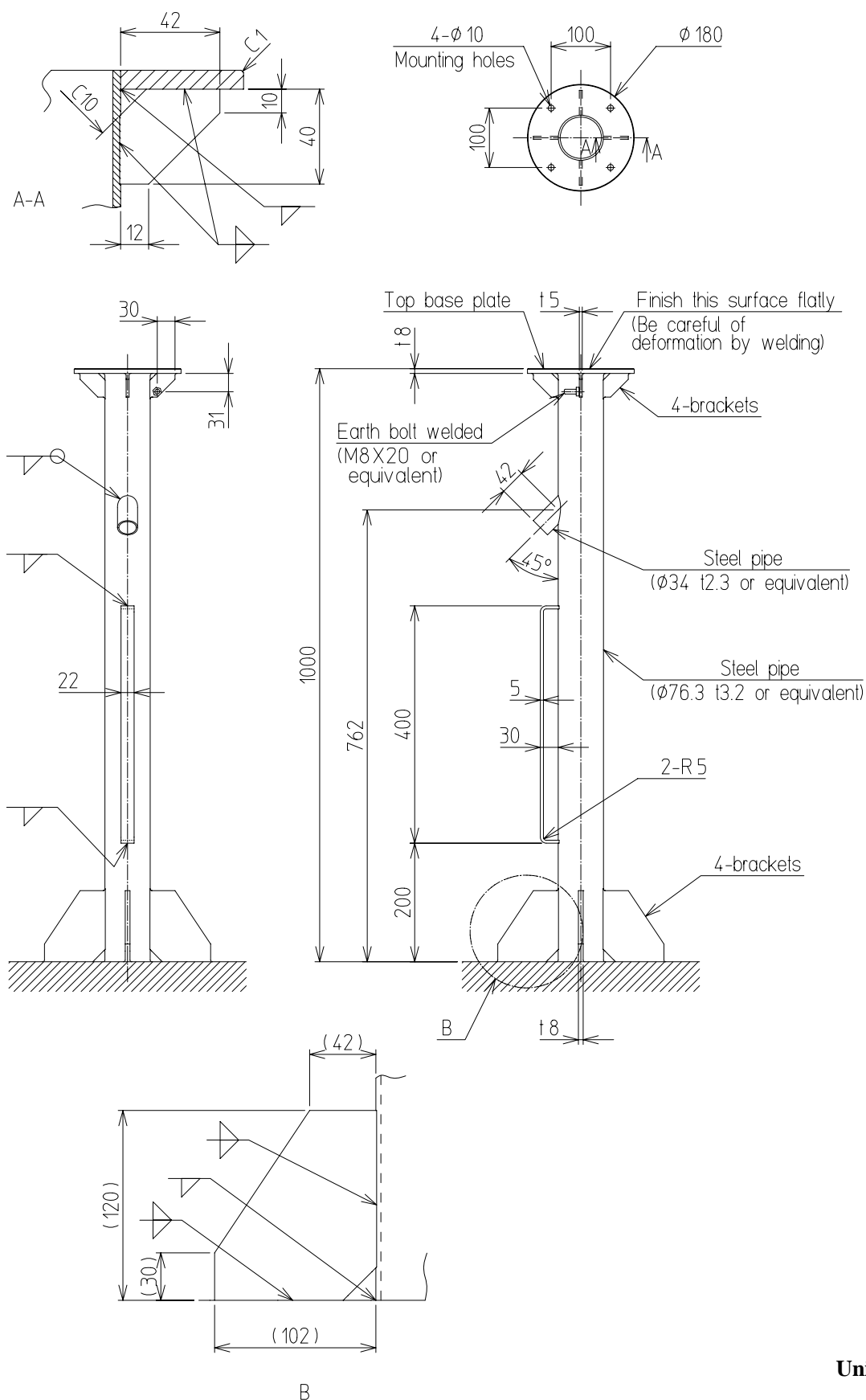


Fig.3-1-1a Pole designing (Installation Example1)

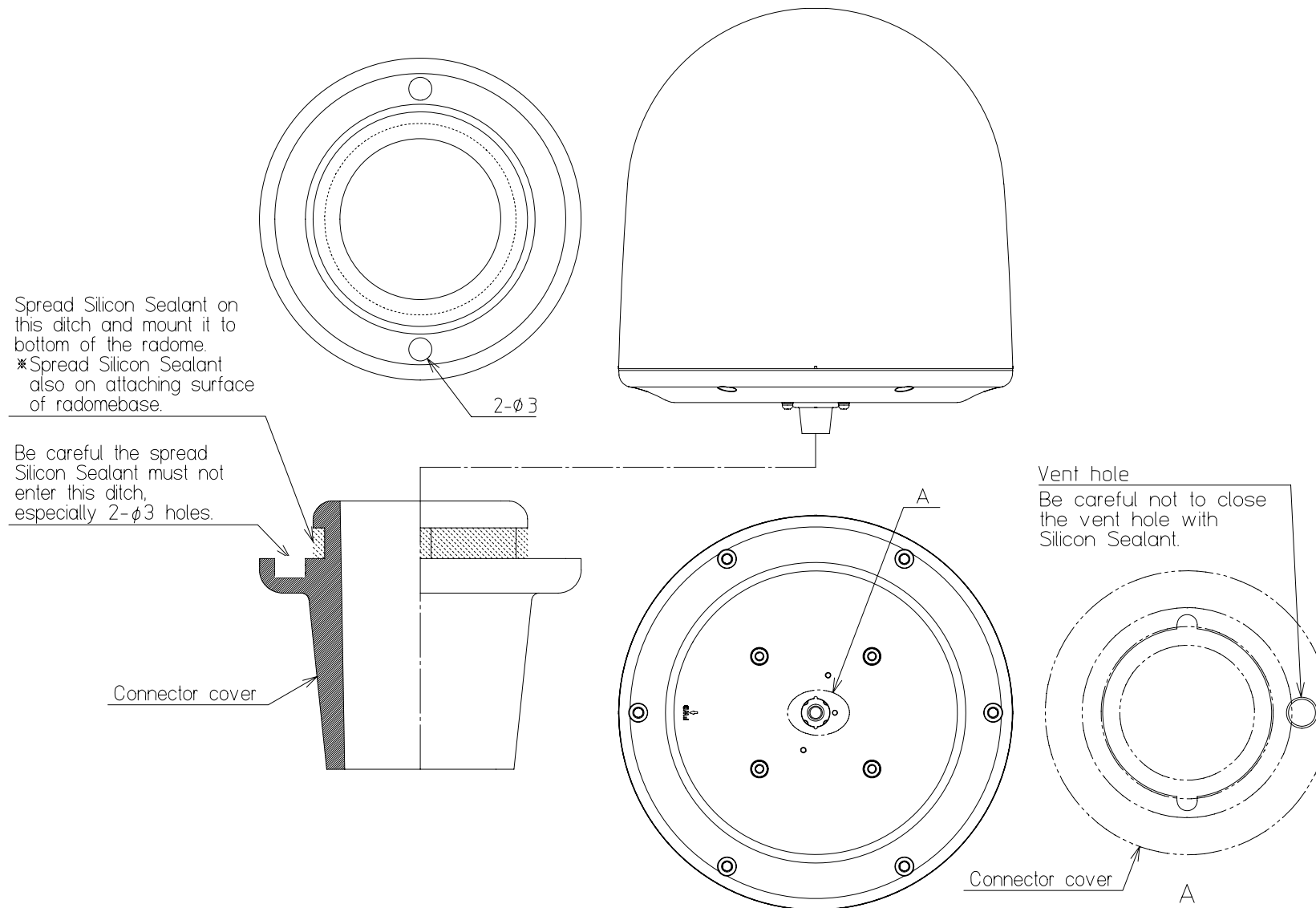
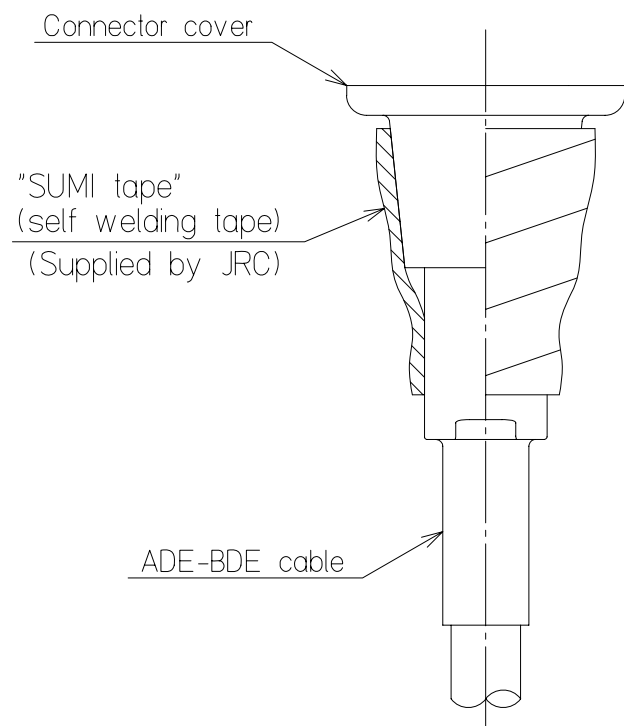
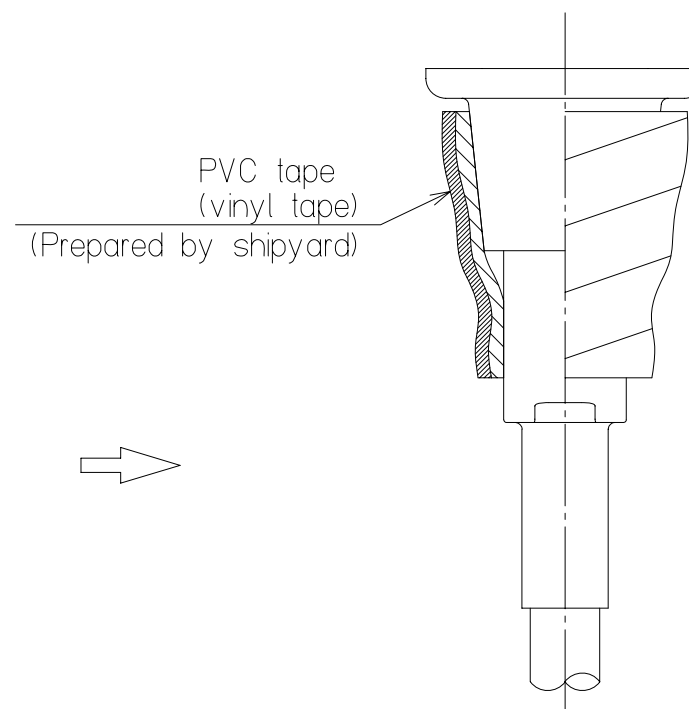


Fig.3-1-1b Spreading Silicon Sealant (Installation Example1)



Connector Protecting Procedure

1. Bandage the "SUMI tape" (self welding tape) twice around the connectors and cables with stretching the tape up to length twice.
2. Bond the "SUMI tape" quickly by grip.



Connector Protecting Pecedure

1. Bandage the PVC tape (vinyl tape) 3 laps without stretching.
2. Bond the PVC tape tightly by grip.

Fig.3-1-1c Taping connector cover (Installation Example1)

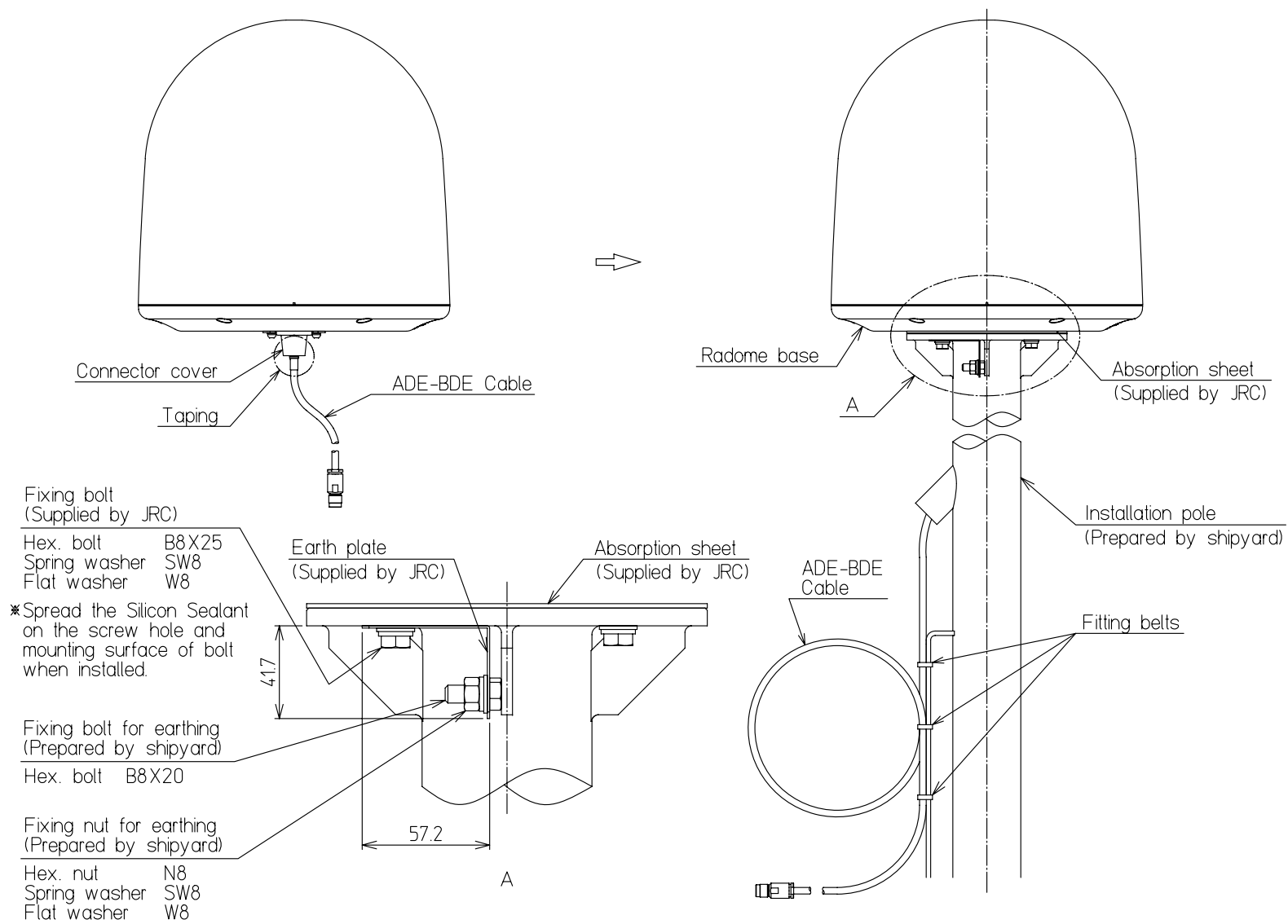
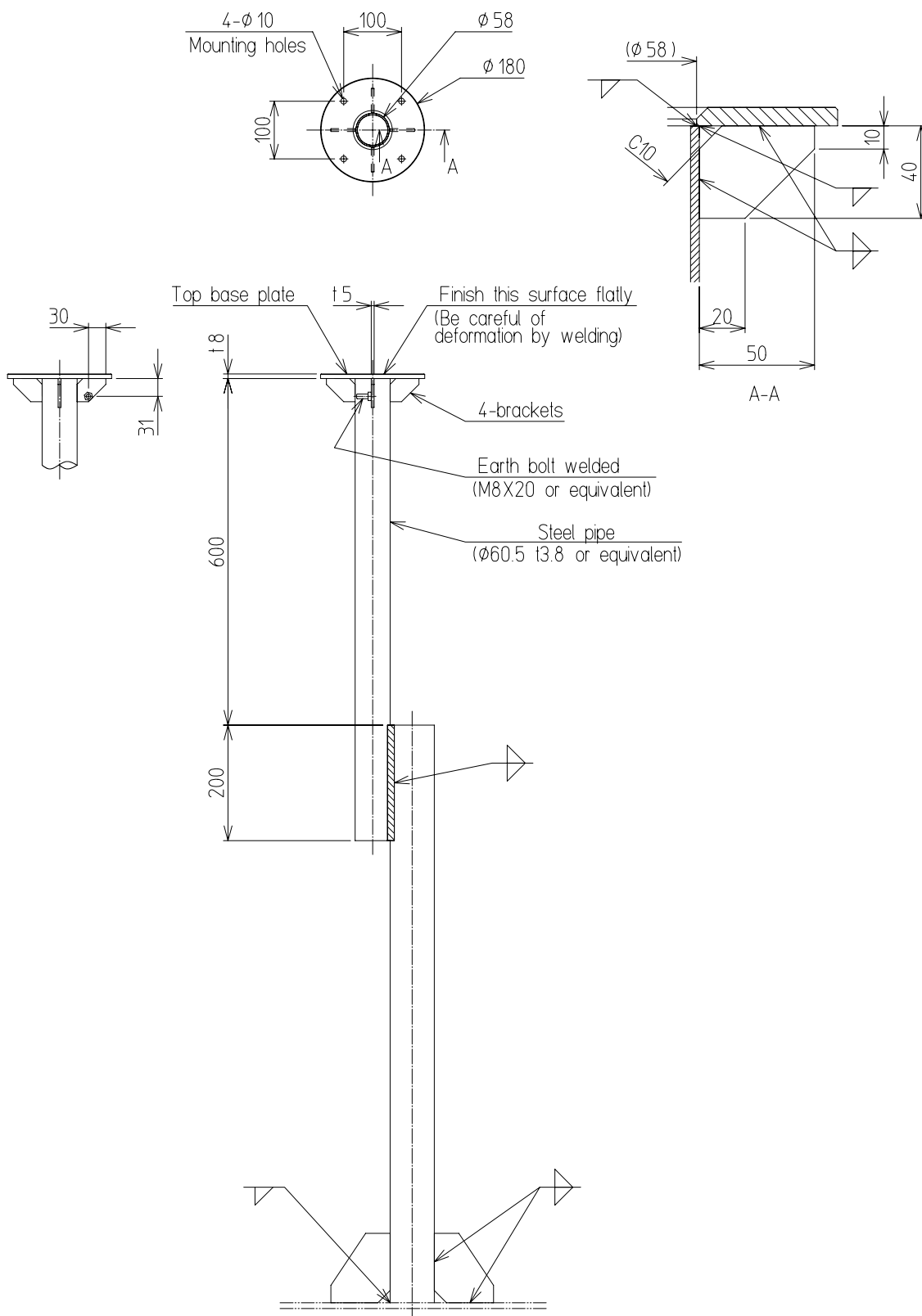


Fig.3-1-1d Cable Fixing (Installation Example1)

3-1-2 Installation Example2 (Pole installation to ADE fixing)



Unit:mm

Fig.3-1-2a Pole designing (Installation Exmample2)

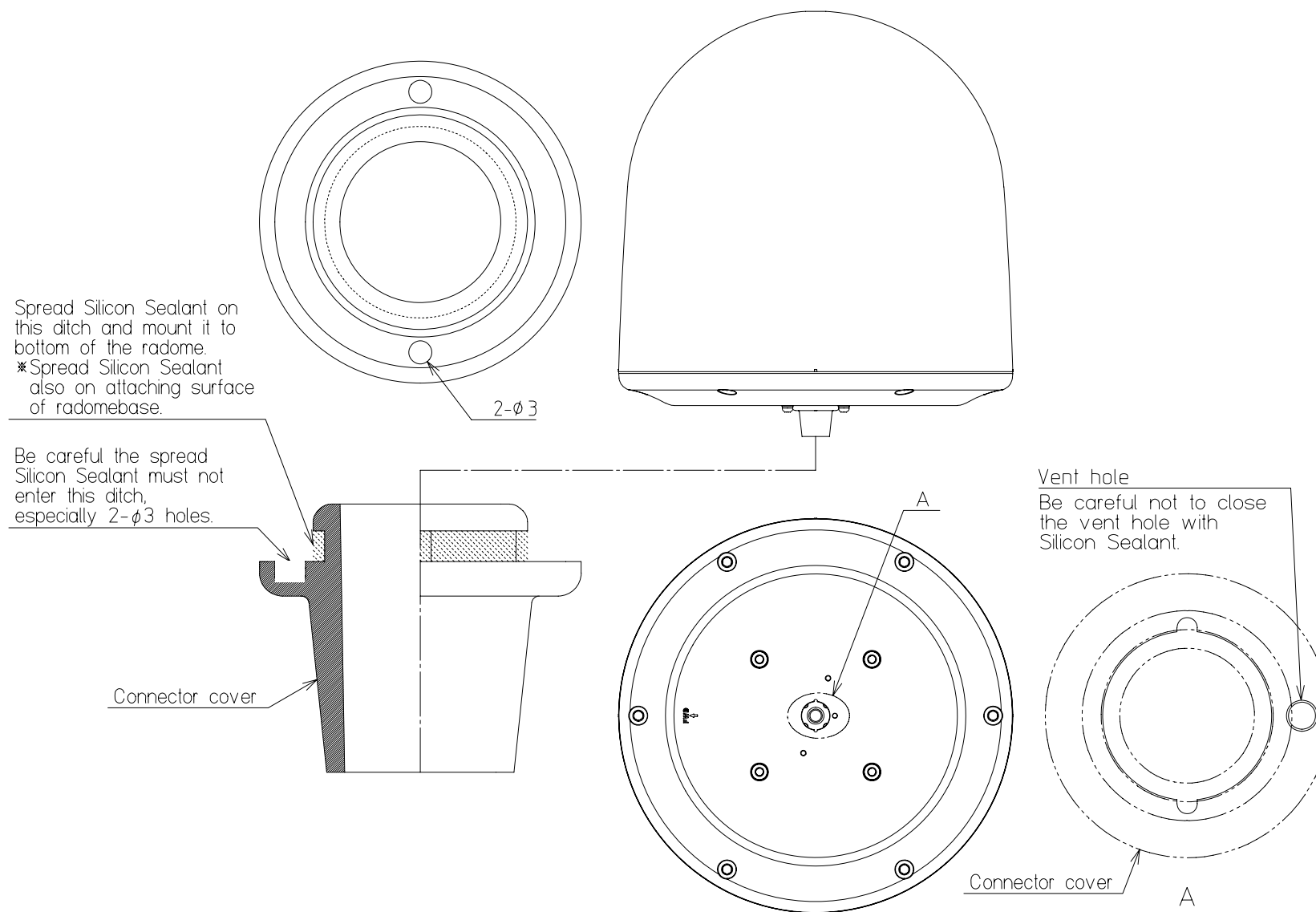
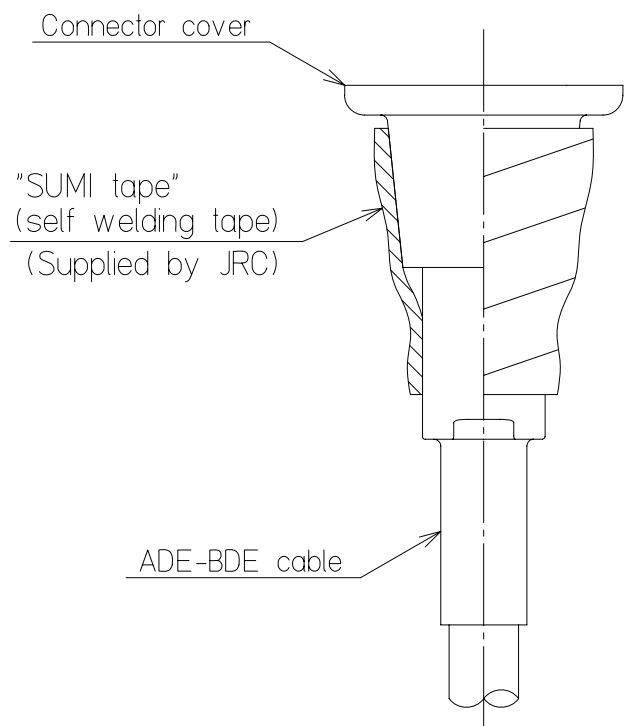
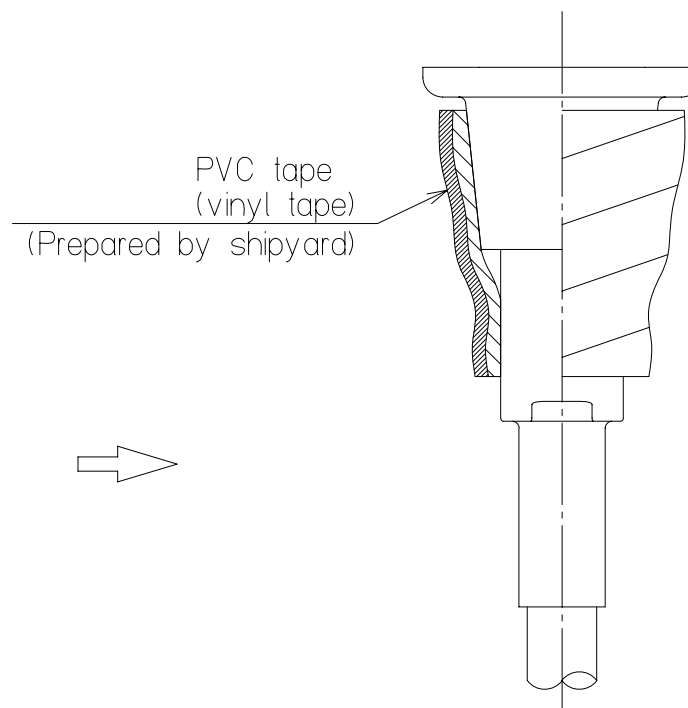


Fig.3-1-2b Spreading Silicon Sealant (Installation Example2)

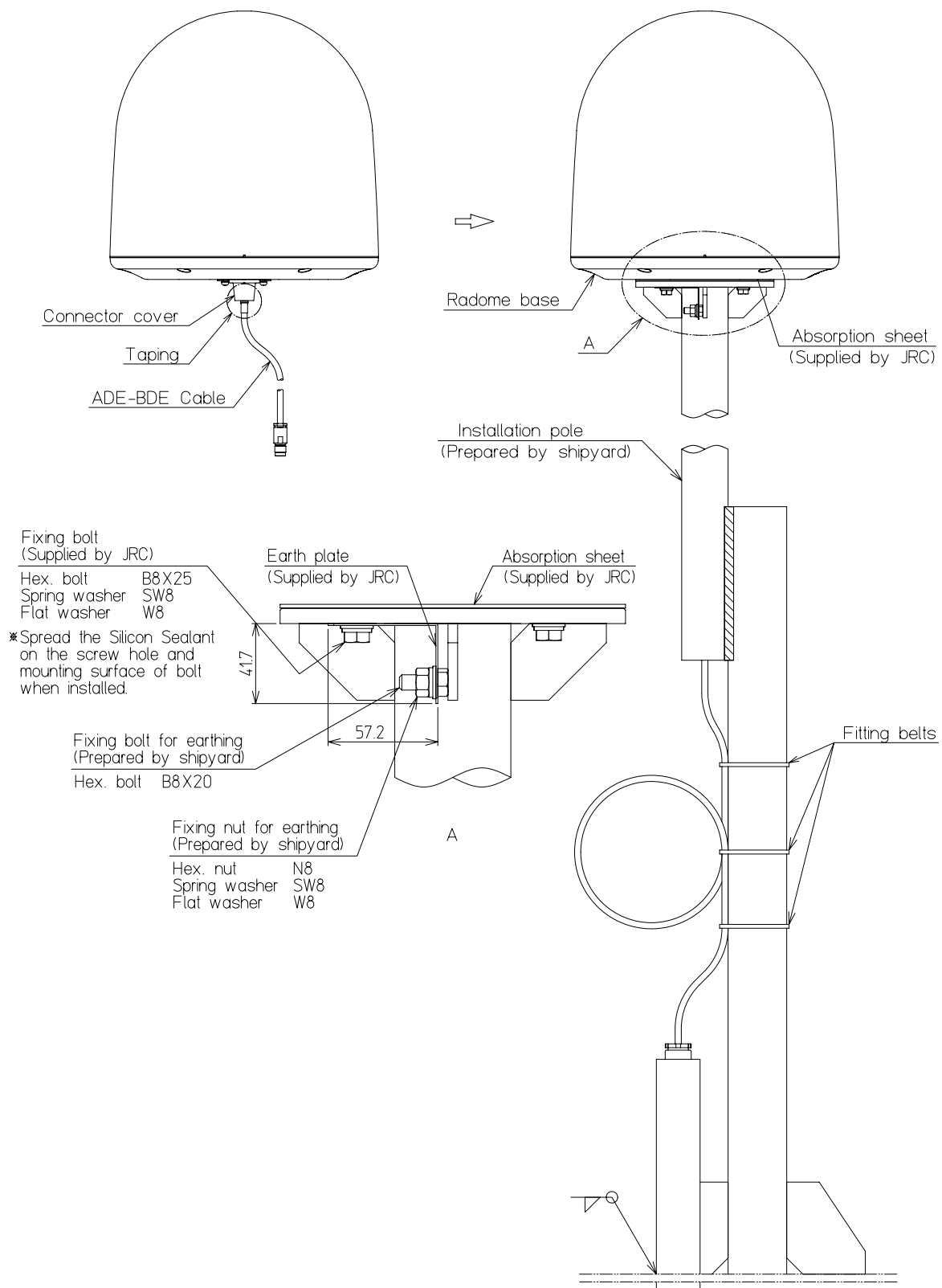


- Connector Protecting Procedure
1. Bandage the "SUMI tape" (self welding tape) twice around the connectors and cables with stretching the tape up to length twice.
 2. Bond the "SUMI tape" quickly by grip.



- Connector Protecting Procedure
1. Bandage the PVC tape (vinyl tape) 3 laps without stretching.
 2. Bond the PVC tape tightly by grip.

Fig.3-1-2c Taping connector cover (Installation Example2)



Unit:mm

Fig.3-1-2d ADE Fixing (Installation Example2)

3-2 BDE Installation

Installation site of Main Unit, Handset should be determined taking into consideration their feasibility and maintainability.

NOTE

- The Main Unit and Handset should be installed **2.5** m or more away from MF/HF antenna feeders. Otherwise, it may cause malfunction.
- The earth terminals of Main Unit should be grounded with cable. Otherwise, it may cause malfunction.
- Do not insert nonconforming cards into the SIM card slot of Main Unit front panel.
Do not insert wrong side of the card.
These may cause slot malfunction.
- If antenna bar is displayed fewer than 3, communication-connection rate may fall due to the system design depending on communication mode, although READY is displayed in STATUS area of the LCD.



CAUTION



Connect the ground terminal of the Main Unit to bulkhead or floor with grounding cable.
Poor connection may cause malfunction.

3-2-1 Main Unit

Main Unit should be installed in accordance with the following procedure:

- (1) Mount Earth cable to bulkhead.
- (2) Connect Earth cable and each cables to Main Unit.

Ensure Main Unit installing dimensions to be agreed with the dimensions of Fig. 3-2-1e.

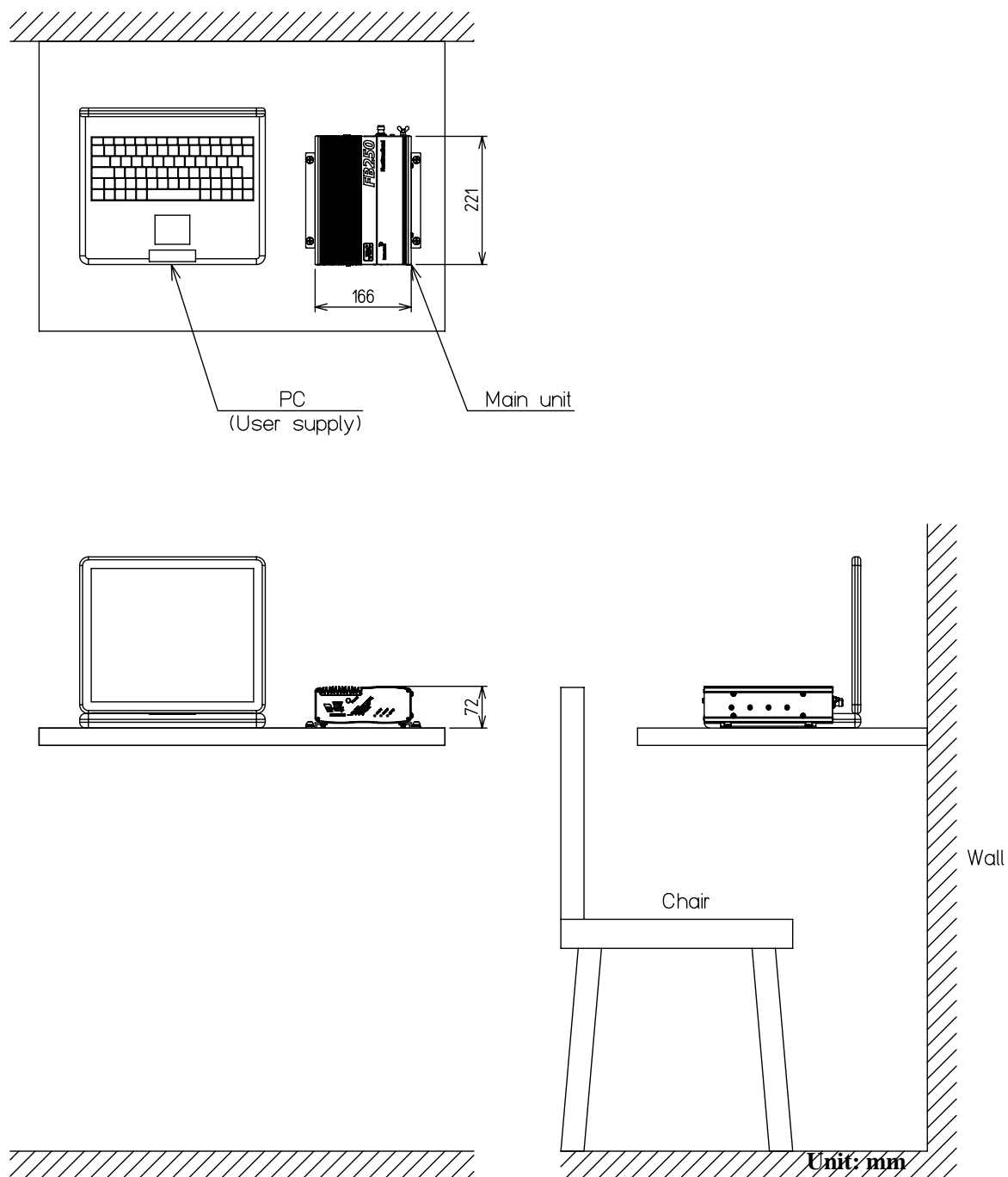


Fig. 3-2-1a BDE Layout (Example1)

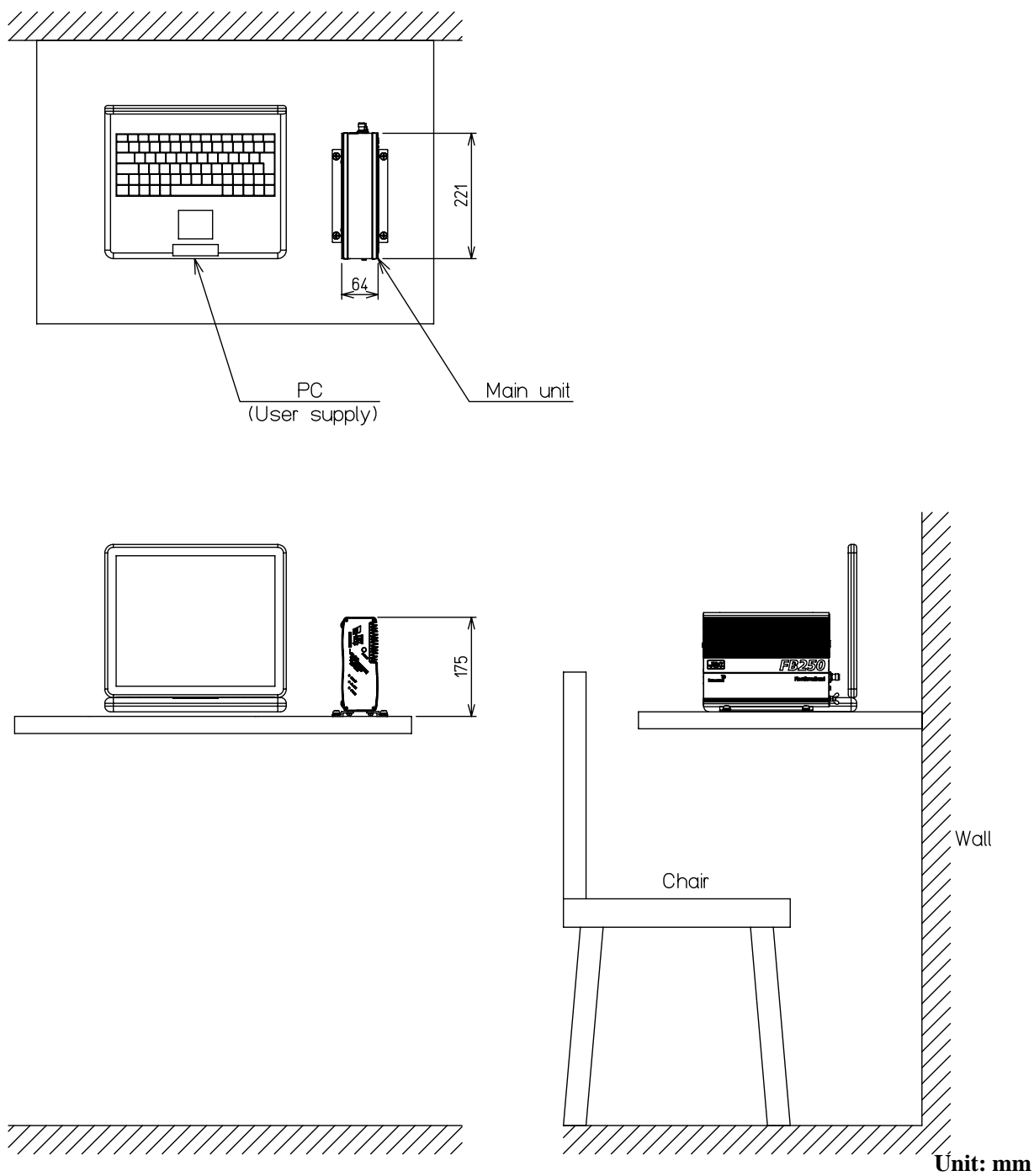
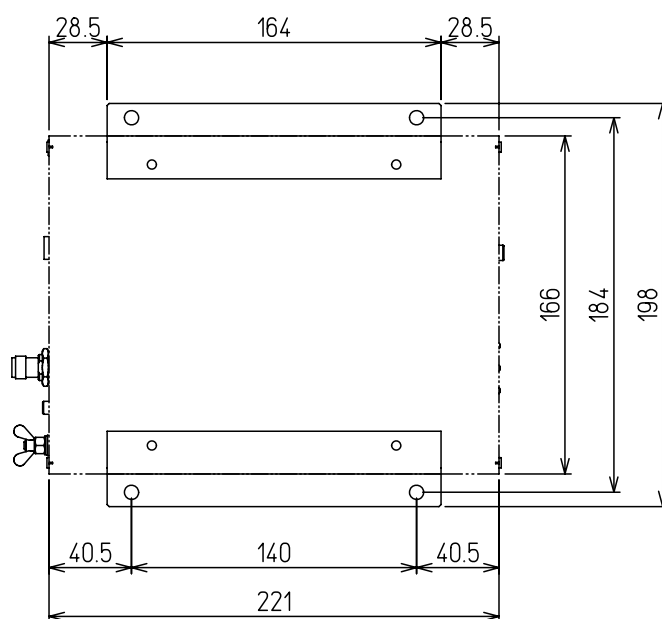
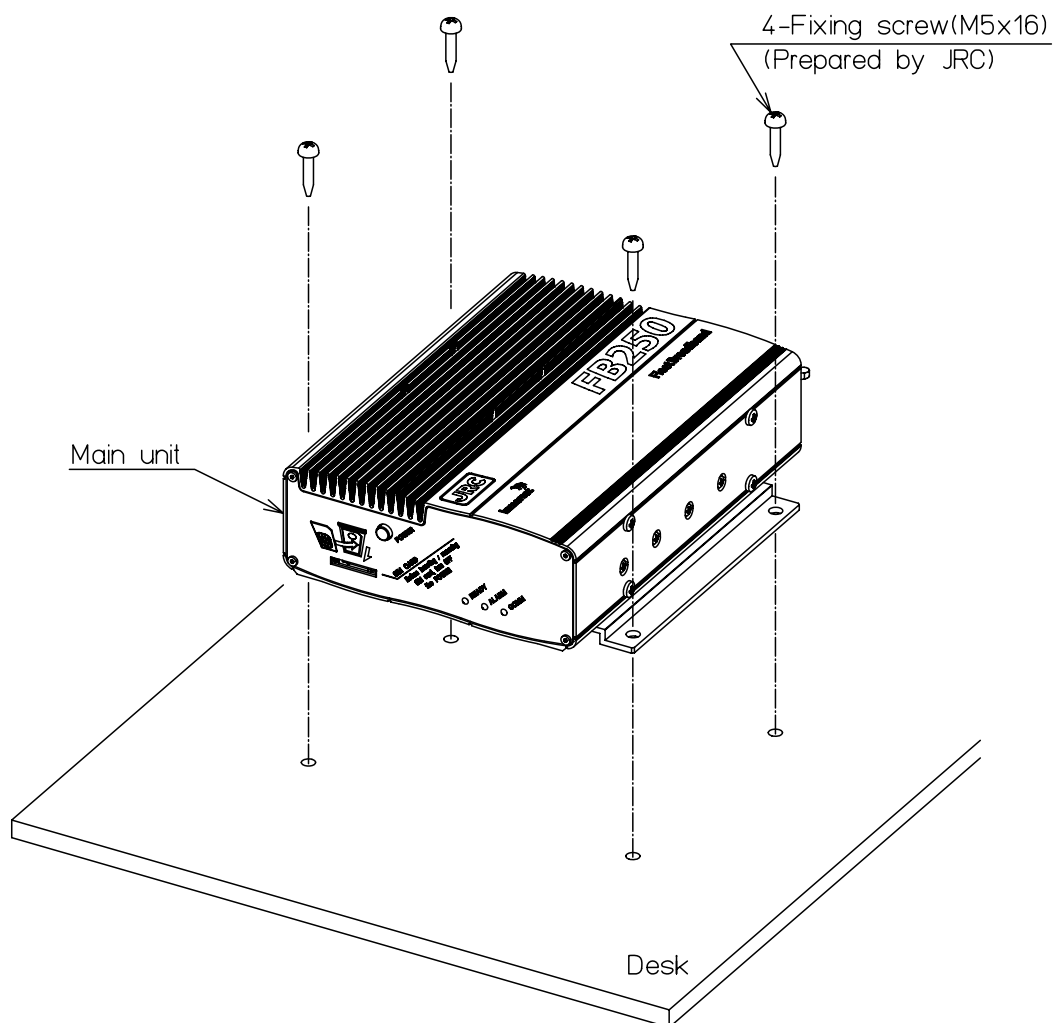
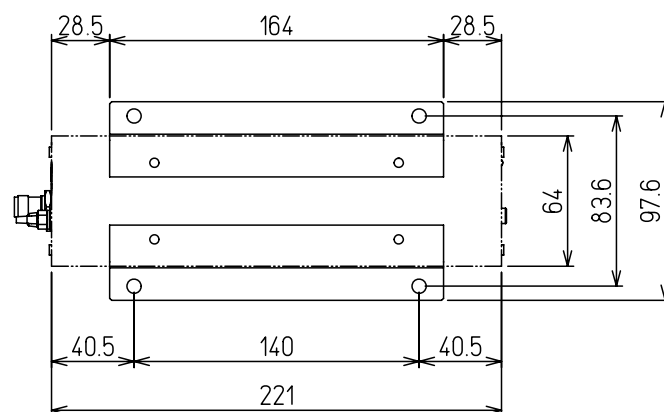
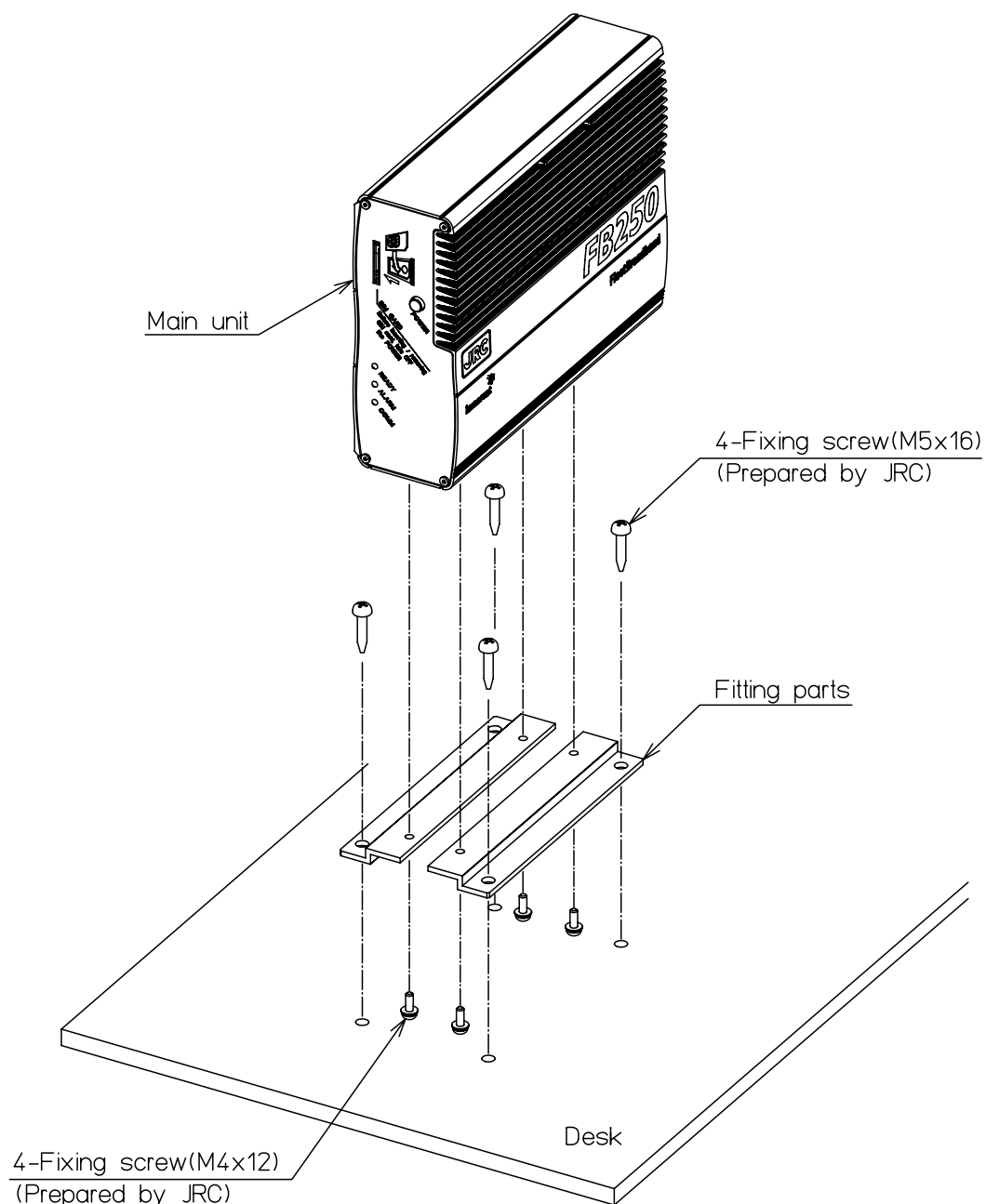


Fig. 3-2-1b BDE Layout (Example2)



Unit: mm

Fig. 3-2-1d BDE Fixing (Example1. Horizontal setup)



Unit: mm

Fig.3-2-1c BDE Fixing (Example2. Vertical setup)

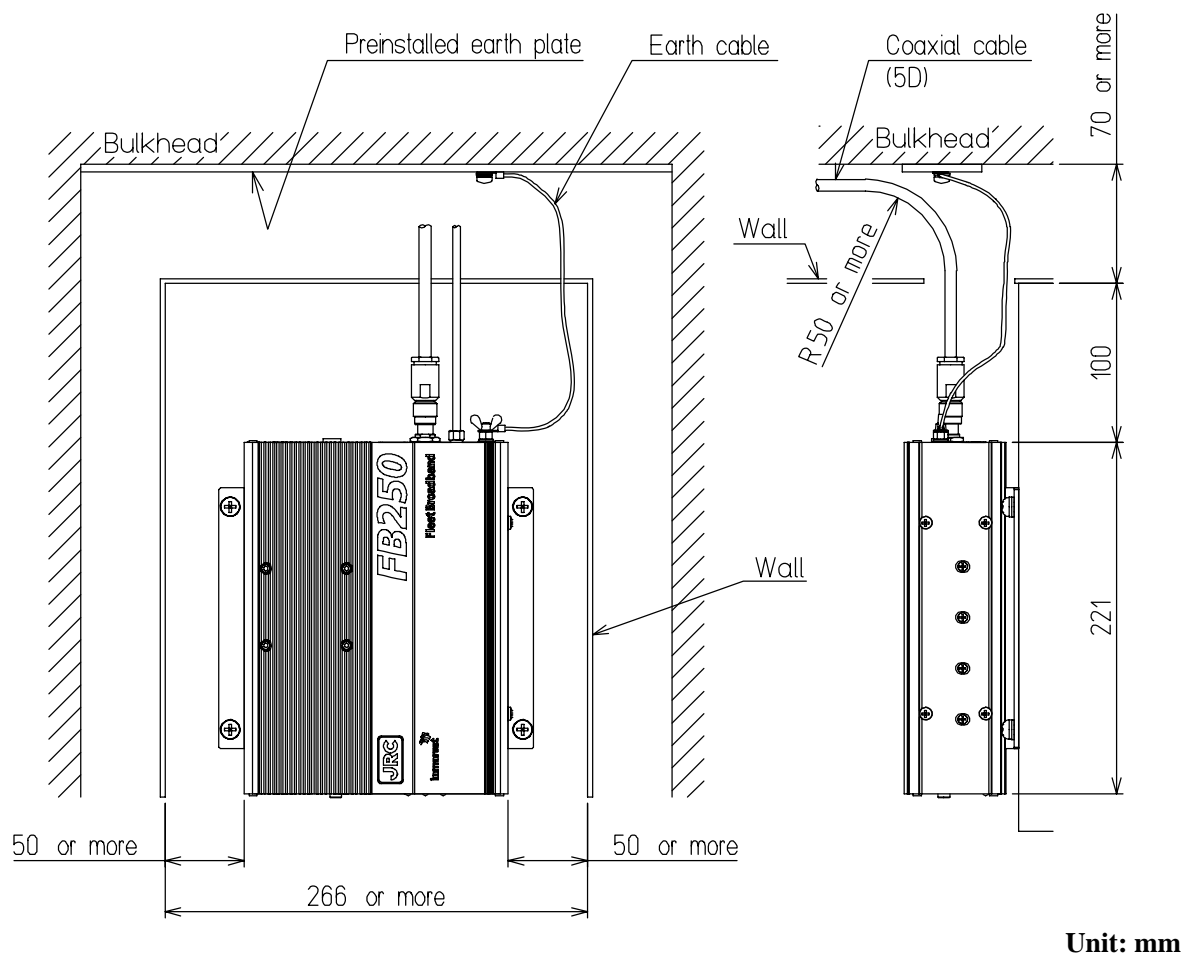


Fig.3-2-1e Cable connecting to Main unit

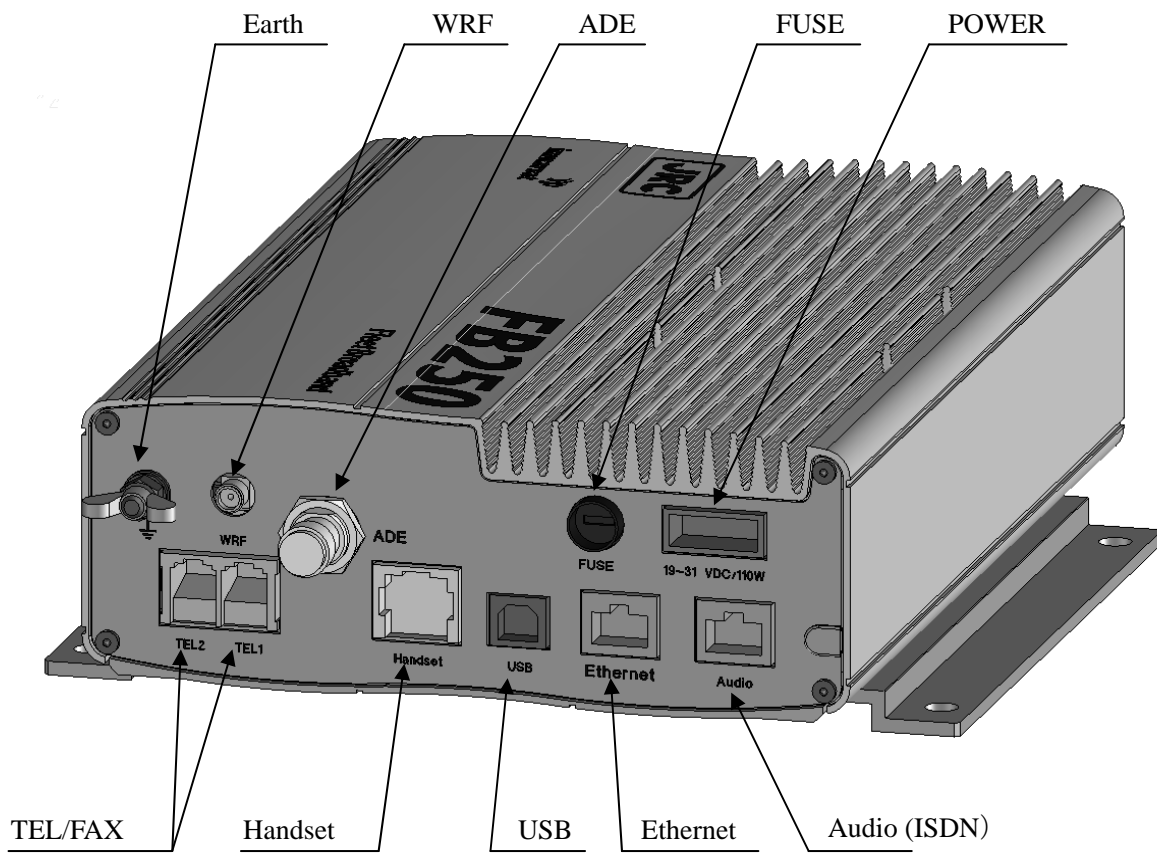


Fig. 3-2-1f Rear view of Main unit

3-2-2 Handset

1. Required parts

The following required parts for wall mount are attached to the Handset.

| Parts number | Description | Q'ty |
|--------------|--------------------|------|
| 1 | Wall mount bracket | 1 |
| 2 | Wood screw 4 × 10 | 2 |
| 3 | Screw 3 × 6 | 1 |

2. Installation procedure

- (1) Fix the mount bracket **1** on the wall with two fixing screws **2**.

NOTE

Do not tighten up fixing screws too much, because the mount bracket will be distorted

- (2) Catch the lower side ditches of the holder **a** by the lower side bending of mount bracket **b**.
Fix the mount bracket with fixing screw **3**.

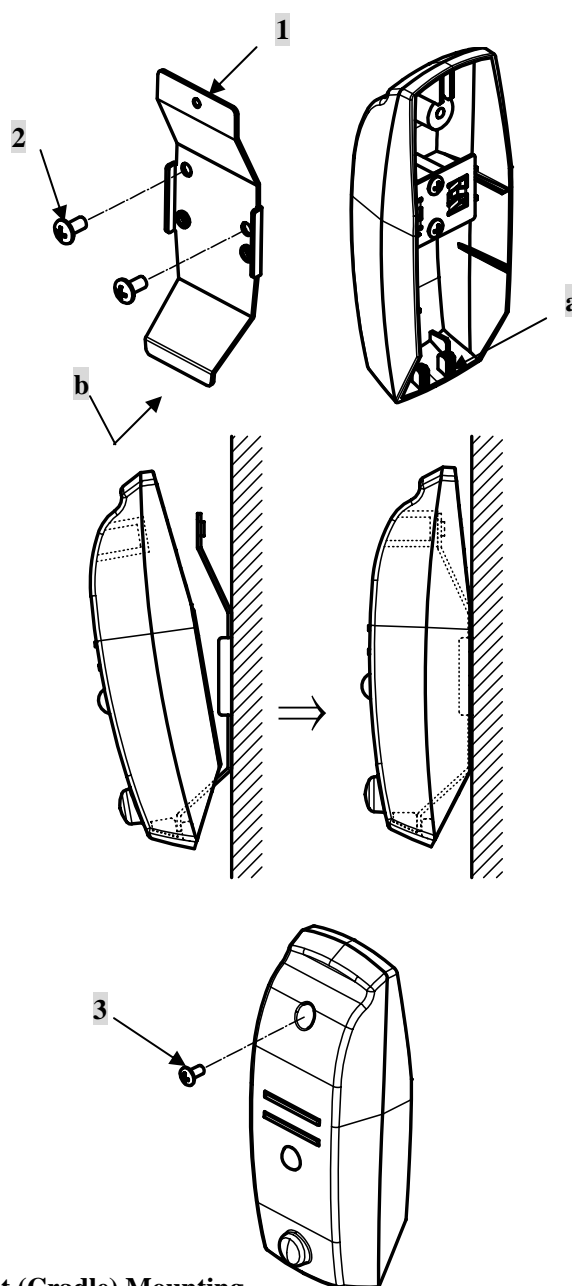


Fig. 3-2-2 Handset (Cradle) Mounting

3-2-3 GYRO I/F BOX

Install the GYRO I/F box and BDE referring to following procedure.

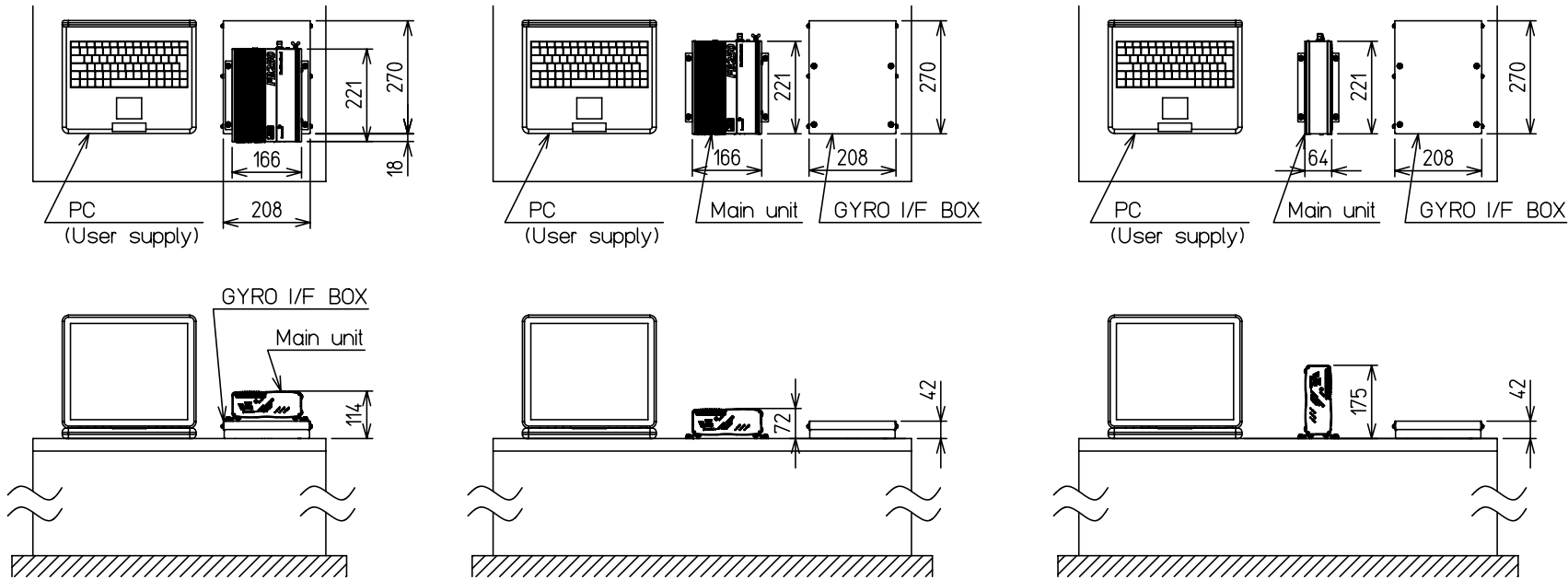


Fig. 3-2-3a BDE layout
(All-in-one type)

Fig. 3-2-2b BDE layout
(Separate type)

Fig. 3-2-2c BDE layout
(Separate and vertical type)

Fig.3-2-2c Fixing procedure of GYRO I/F box and Main unit
(*Only when GYRO is used)

Unit: mm

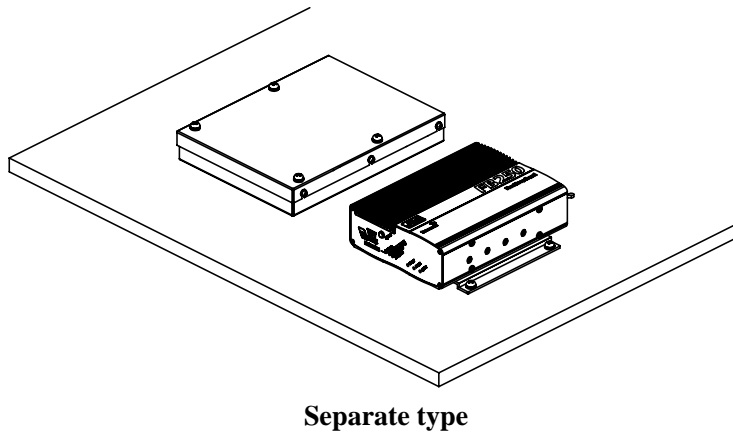
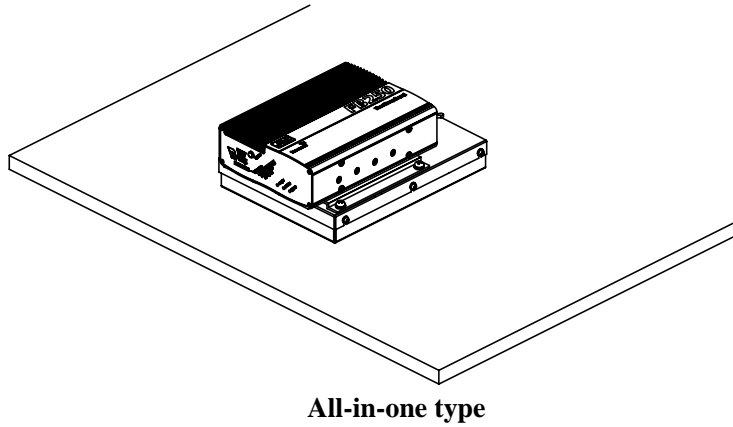


Fig.3-2-2d BDE layout (horizontal installation)
(*Only when GYRO is used)

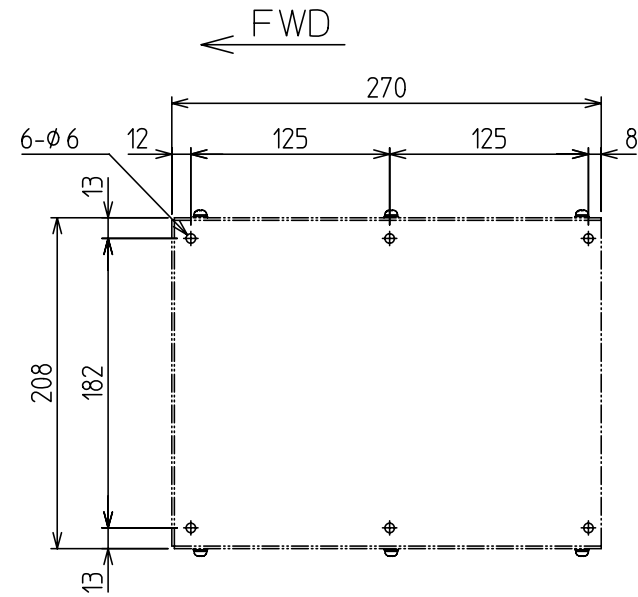
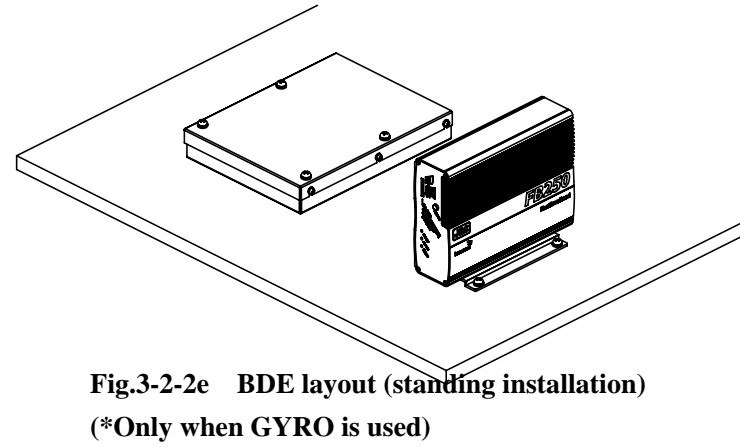


Fig.3-2-2f Position relation of mounting holes and GYRO I/F box

Unit: mm

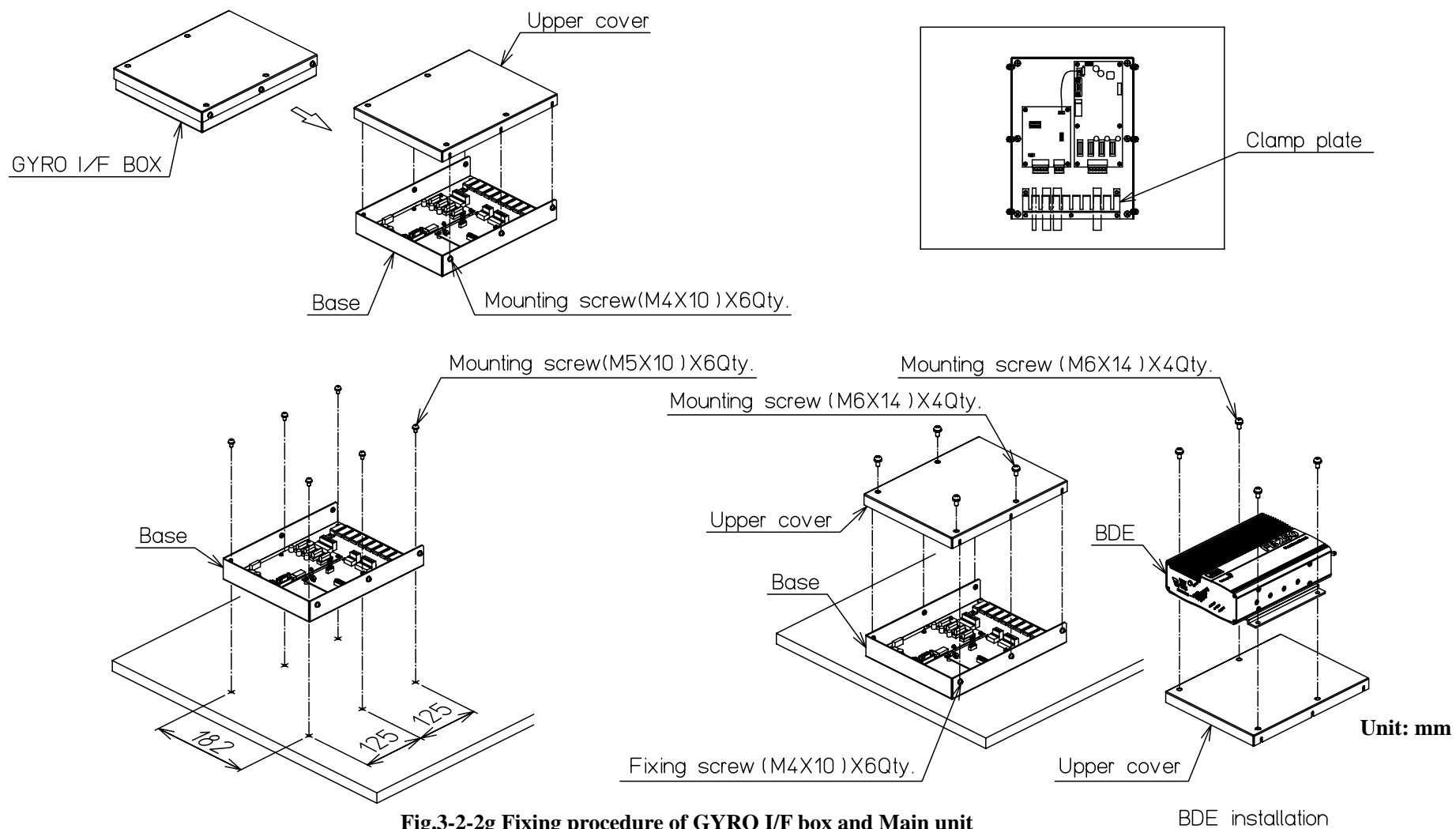


Fig.3-2-2g Fixing procedure of GYRO I/F box and Main unit
 (*Only when GYRO is used)

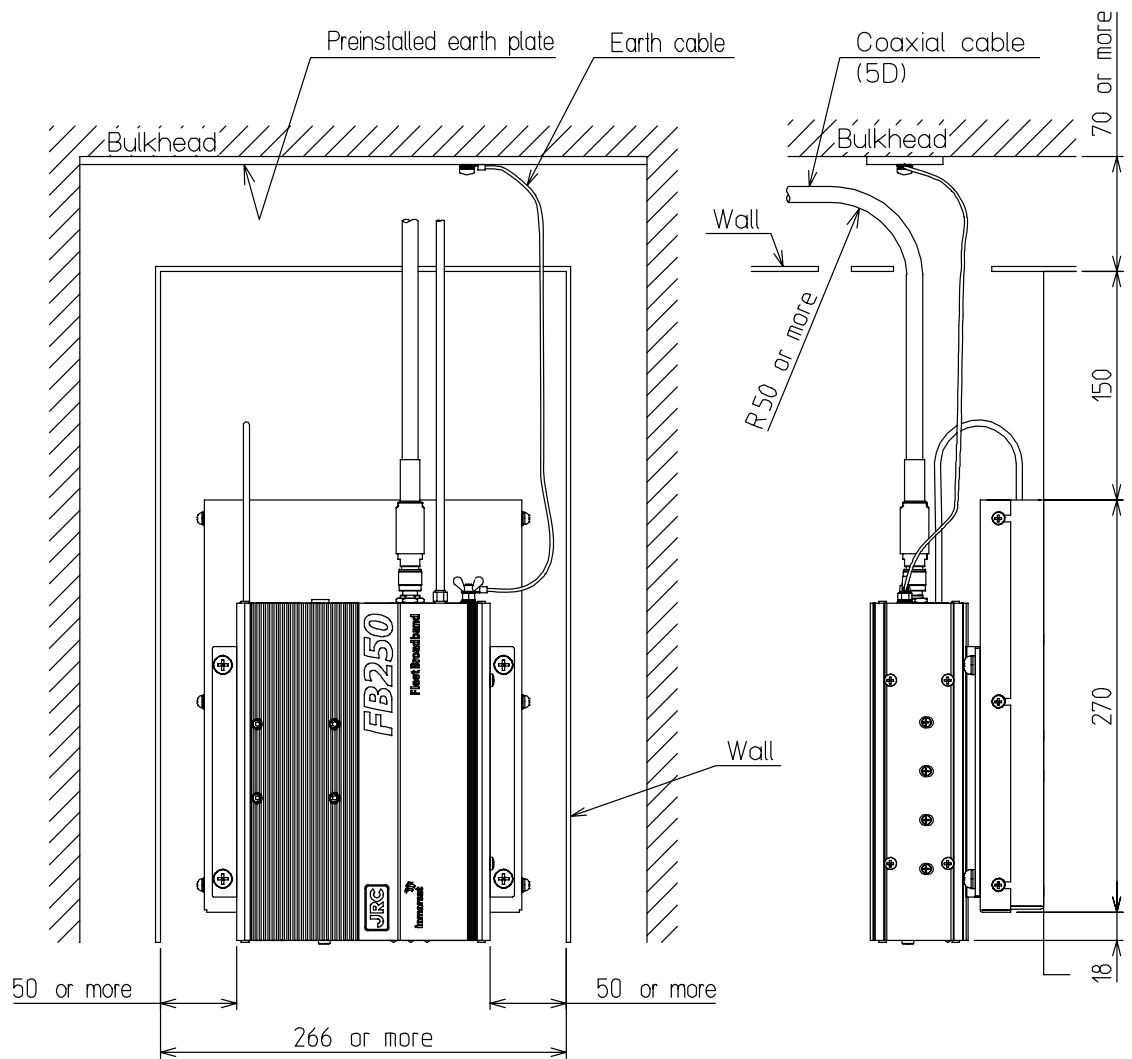


Fig. 3-2-2h Cable connecting to Main unit
 (*Only when GYRO is used)

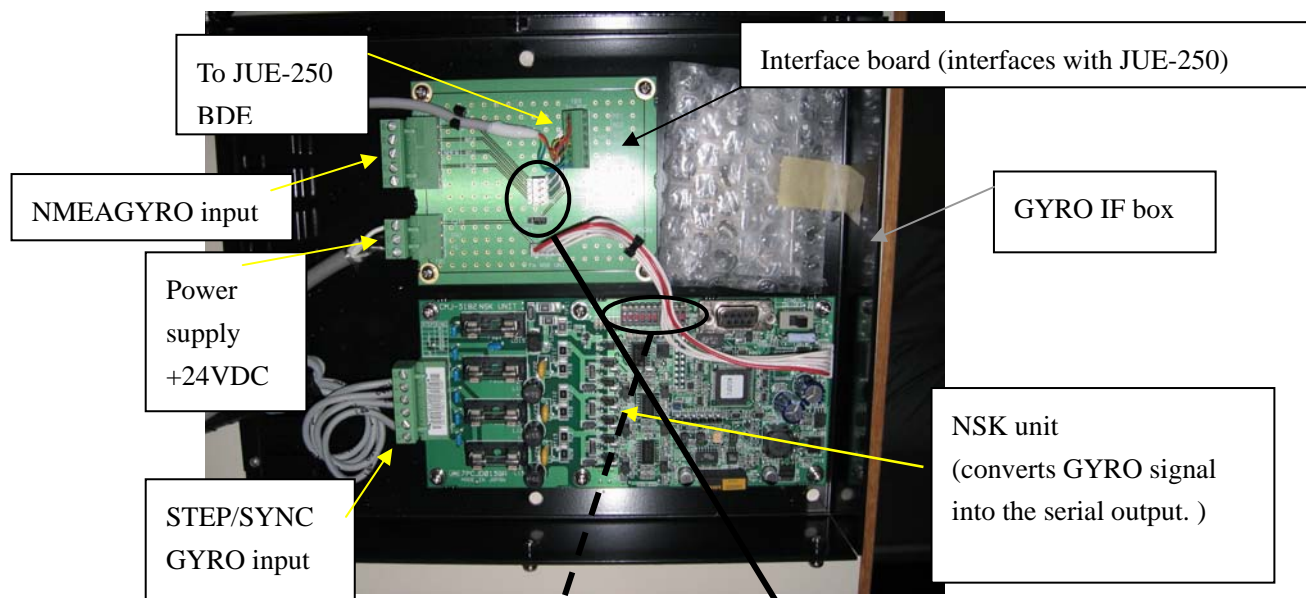
Unit: mm

3-2-3 GYRO I/F setting

Connect the GYRO which outputs HDT (Heading) sentence every 200ms or less , when NMEA output GYRO is connected.

The antenna may not point to a satellite at quick turning when the HDT sentence output is 1 second.

Set hatched columns as indicated in the following figure.



| TB2 | |
|-----------|--|
| NMEA GYRO | |
| RD1 | |
| RD2 | |
| SD1 | |
| SD2 | |
| FG | |

| TB1 | |
|-------|--|
| POWER | |
| +24V | |
| GND | |
| FG | |

| TB11 | |
|------|------|
| STEP | SYNC |
| | R1 |
| 1 | S1 |
| 2 | S2 |
| 3 | S3 |
| | R2 |
| 5 | |

DANGER
 高圧危険

| TB3 | |
|----------------|--|
| to BDE | |
| GYRO RD1(RED) | |
| GYRO RD2(BRN) | |
| GYRO SD1(ORG) | |
| GYRO SD2(YEL) | |
| NMEA-/NSK(GRN) | |
| GND(BLU) | |

| | |
|------|-----------|
| TP1 | |
| NMEA | STEP/SYNC |
| TP2 | |

| S201 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|---------|-----|-----|-----|-----|-----|-----|-----|-----|
| TYPE | STEP | ON | | | | | | | |
| | SYNC | OFF | | | | | | | |
| RATIO | 36X | | ON | ON | | | | | |
| | 90X | | OFF | ON | | | | | |
| | 180X | | ON | OFF | | | | | |
| | 360X | | OFF | OFF | | | | | |
| DIRECTION | REV | | | | ON | | | | |
| | NORM | | | | OFF | | | | |
| OUTPUT TIMING | RESERVE | | | | | ON | ON | | |
| | 1S | | | | | OFF | ON | | |
| | 100mS | | | | | ON | OFF | | |
| | 50mS | | | | | OFF | OFF | | |
| SIMULATOR | TEST | | | | | | | ON | |
| | NORM | | | | | | | OFF | |
| ERR TIMING | 5S | | | | | | | | ON |
| | 0.2S | | | | | | | | OFF |

| S202 | | 1 | 2 |
|------------|---------|-----|-----|
| VERSION UP | UP DATE | ON | |
| | NORM | OFF | |
| RESERVE | RESERVE | | ON |
| | RESERVE | | OFF |

3-3 Cable

Cable connection system diagram is shown in Fig1-3, Connection to Main Unit is shown in Fig.3-2-1f. Cable connection should be made in accordance with these figures.

3-3-1 Cable routing

NOTE

Do not cut off the ADE-BDE coaxial cable. Coil and secure the coaxial cable in convenient compartment such as between the Main Unit and bulkhead.
Otherwise, a trouble may occur.



CAUTION

<<Coaxial cable>>



Install JUE-250 ADE-BDE coaxial cable correctly in accordance with the installation manual. Especially waterproof should be treated correctly in accordance with the installation manual. Inappropriate installation may cause incorrect operation, fire, electrical shock or malfunction. Coaxial cable should be installed by the special technician or skilled engineer. The installation should be requested to the purchasing dealer, JRC agent or one of the JRC branches.

<<Coaxial cable and the other cables>>



Take care not to damage the connectors and the corrosion resistant sheath of cable.
Otherwise, a trouble may occur.



Do not pull the cable by gripping connector plug only.
Otherwise, a trouble may occur.

- (1) The connector plugs installed on both coaxial cable ends are adaptable to connector receptacles of either ADE or BDE.
- (2) The minimum bending radius of cable is 46mm (When using standard cable).
- (3) Referring to Fig.1-3, route cables.

3-3-2 Connection to ADE

Connection of ADE coaxial cable to ADE should be made in accordance with the following procedure.

- (1) The connector cover is passed through the cable first.
- (2) Connect the connector of Coaxial cable to the connector of ADE, which is on the central bottom of ADE.
- (3) Screw the connector cover into bottom of ADE.
- (4) Wrap the tape around the lower part of connector cover.

3-3-3 Connection to BDE

Cable connection to Main Unit and Junction Box should be performed in accordance with the following procedure.

NOTE

Do not connect or disconnect the coaxial cable when the main unit turns on.
Power is supplied from ADE connector on back of the Main Unit, a short circuit may cause malfunction.

- (1) Connect the Coaxial cable to the coaxial connector on back of the Main Unit.
- (2) Connect the Power cable to the connector on back of the Main Unit.
- (3) Confirm the Coaxial and Power cable have been connected completely.
- (4) Connect the Handset cable to the Handset port on back of the Main Unit.

NOTE

When Handset is installed in the room with MF/HF transmitter, keep the Handset cable 2.5m or more away from MF/HF antenna feeders.

3-3-4 Connection to primary Power

NOTE

Perform above item 3-3-1 through 3-3-3 completely before connection of Primary Power cable.
Otherwise, you will get electrical shock and/or a trouble may occur.

(1) Connect the power cable to convenient ship's Power distribution box (refer to Fig.1-3).

Connector pin number, signal name and color is as follows;

- 1 : +24VDC RED
- 2 : Frame GND GRN
- 3 : Signal GND BLK

(2) Connect power cable referring to fig. 1-3 when External PSU (NBD-577C) is used.

3-3-5 Abandonment work

- Keep the rule of the pertinent local government when you abandon the package materials of the JUE-250.
- Keep the rule of the local government when you abandon the JUE-250 (ADE).

For details, contact the dealer, our service office (Refer to the list of offices at the end of the volume) or a concerned local government.

4. SPECIFICATION

4.1 JUE-250 Standard components

4.1.1 ADE and BDE

| | | | | | |
|-----------------------------|---------|-------------------------------------|---|---------------------|--|
| 1. Frequency | | Transmit | 1626.5 to 1660.5 MHz | | |
| | | Receive | 1525.0 to 1559.0 MHz | | |
| 2. Channel Step | | | 1.25kHz | | |
| 3. Maximum E.I.R.P | | | +15.1dBW + 1/-2dB | | |
| 4. G/T | | | -15.5dBK | | |
| 5. Antenna | | Type | 0.30Φ flat | | |
| | | Polarization | Right-Hand Circular Polarization (RHCP) | | |
| | | Radome | AES | | |
| | | QPSK π /4-QPSK 16QAM | | | |
| 7. Primary Power | | Voltage | +19VDC to +31VDC | | |
| | | Current | Under 2A, as the time of receipt | | |
| | | Maximum | Under 4.5 A, as the time of transmitted, and optional equipments are connected. | | |
| 8. Dimension | | ADE | Φ 350mm x h350mm | | |
| | | BDE | h166mm x w64mm x d221mm | | |
| Mass | | ADE | 7.4kg | | |
| | | BDE | 2.2kg | | |
| 9. Environmental Conditions | | | | | |
| 1) Temperature | | ADE | -25°C to +55°C | | |
| | | BDE | -15°C to +55°C | | |
| 2) Relative Humidity | | | Up to +40°C, 95% | | |
| 3) Vibration | | Complying with IEC60945 4th Edition | | | |
| 4) Ship’s Motion | | Motion | Amplitude | Period | |
| | | Roll | +30° | 8 s | |
| | | Pitch | +10° | 6 s | |
| | | Yaw | +8° | 50 s | |
| | | Surge | +0.2g | | |
| | | Sway | +0.2g | | |
| | | Heave | +0.5g | | |
| | | Turning Rate | +6° /s | 1deg/s ² | |
| | Headway | 30knots | | | |

| | |
|--------------------------|---|
| 5) Solar Radiation (ADE) | Infrared Radiation 500 watts / m ² |
| | Ultraviolet Radiation 54watts / m ² |
| 6) Icing (ADE) | Up to 25mm |
| 7) Precipitation | Up to 100mm / hour |
| 8) Wind | Up to 100knots in operation |

5.JRC Network

Please contact the dealer from which you purchased the device or our marketing offices that is nearest to you for any question as to the after-sales service.

JRC web site

| | |
|-----------------|---|
| JRC Tokyo Japan | http://www.jrc.co.jp |
| JRC Amsterdam | http://www.jrcams.nl |
| JRC Seattle | http://www.jrcamerica.com |

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