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FURUNO

# INSTALLATION MANUAL

## SSB RADIOTELEPHONE

MODEL FS-1562-15(150W)
FS-1562-25(250W)

After installation, if necessary, enter user channels and adjust output power referring to separate Service Manual.

FURUNO ELECTRIC CO., LTD.
NISHINOMIYA, JAPAN

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# ⚠ SAFETY INSTRUCTIONS

"**DANGER**", "**WARNING**" and "**CAUTION**" notices appear throughout this manual. It is the responsibility of the installer of the equipment to read, understand and follow these notices. If you have any questions regarding these safety instructions, please contact a FURUNO agent or dealer.

| | |
|---|---|
| ⚠ **DANGER** | This notice indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury. |
| ⚠ **WARNING** | This notice indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
| ⚠ **CAUTION** | This notice indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, or property damage. |

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# SAFETY INFORMATION FOR THE INSTALLER

## ⚠ WARNING



**Only qualified personnel should work inside the equipment.**

This equipment uses high voltage electricity which can shock, burn, or cause death.

**Turn off the power at the ship's mains switchboard before beginning the installation. Post a warning sign near the switchboard to ensure that the power will not be applied while the equipment is being installed.**

Serious injury or death can result if the power is not turned off, or is applied while the equipment is being installed.

## ⚠ CAUTION



**Ground the equipment.**

Ungrounded equipment can give off or receive electro-magnetic interference or cause electrical shock.

**Confirm that the power supply voltage is compatible with the voltage rating of the equipment.**

Connection to the wrong power supply can cause fire or equipment damage. The voltage rating appears on the label at the rear of the equipment.

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# Specifications

## GENERAL

| | |
|---|---|
| **Communication System** | Simplex or semi-duplex |
| **Frequency Range** | 1.6 to 27.5 MHz (transmit)<br>0.1 to 30 MHz (receive) |
| **Frequency Resolution** | Transmit: 100 Hz<br>Receive: 10 Hz |
| **Class of Emission** | J3E (LSB)<br>J3E (USB)<br>H3E (AM compatible)<br>F1B, J2B (for DSC, NBDP terminal)<br>J3C (weather facsimile, reception only) |
| **Frequency Stability** | ±10 Hz |
| **Number Of Channels** | User Channel: 200<br>ITU SSB/Telex Channel<br>2182 kHz (single action) |
| **Ambient Temperature Range** | -20°C to +55°C |
| **Relative Humidity** | 93% at 40°C |
| **Power Supply & Power Consumption** | 24VDC +30 -10%<br>Receive: 2A<br>Transmit(max.): FS-1562-15 ...20 A<br>FS-1562-25 ...40 A |
| **Frequency Selection** | Key or dial encoder |
| **Dimmer** | Illumination for Keyboard and LCD (four levels incl. off) |
| **Dimensions and Mass** | Transceiver<br>105 mm(W) x 256 mm(H) x 300 mm(D), 6.4kg<br><br>Power Amp<br>290mm(W) x 146mm(H) x 294mm(D), 6.0kg |

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## RECEIVER

**Receiving System**

Double-conversion superheterodyne
IF: 54.455 MHz and 455 kHz

**Sensitivity**

Input level to produce SINAD 20 dB

| | J3E | H3E | F1B |
|---|---|---|---|
| 0.1 to 0.3 MHz (*1) | +40 | +54 | |
| 0.3 to 1.6 MHz (*1) | +25 | +39 | |
| 1.6 to 4 MHz (*1) | +16 | +30 | 6 |
| 4 to 30 MHz (*2) | +3 | | -7 |
| | | | (dBμV) |

(*1): at 10 ohms + 250pF (*2): at 50 ohms

**Selectivity**

2.4 kHz at -6 dB (J3E)
6.0 kHz at -6 dB (H3E)
300 Hz at -6 dB (F1B)

**Spurious Response**

Better than 70 dB

**Intermodulation**

Better than 80 dB

**Audio Output**

Internal speaker: 1 W/ 8 ohm
External speaker: 5 W/ 4 ohm
Line output: 0 dBm / 600 ohm

**Other Features**

RF Gain: Adjustable
Squelch: ON/OFF, Activated by voice/signal strength
Dimmer: OFF/Low/Medium/High
Speaker: ON/OFF (Handset always alive)
AGC: ON/OFF
Noise blanker: always ON

## TRANSMITTER

**Output Impedance**

50 ohms

**Output Power**

J3E/H3E: FS-1562-15...150Wpep
FS-1562-25...250Wpep
F1B: FS-1562-15...150W
FS-1562-25...250W
Tune: 10 to 20 W approx.

**Power Reduction**

60W

**Controls**

Output HI/LOW, test/send of two-tone alarm generator, 2182kHz single action key

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## ANTENNA COUPLER

| | |
|---|---|
| **Tuning System** | CPU controlled fully automatic tuning system |
| **Frequency Range** | 1.6 to 27.5 MHz |
| **Input Impedance** | 50 ohms (viewed from transceiver) |
| **Antenna Required** | 7 to 30 m wire or whip |
| **Power Capability** | FS-1562-15...150W<br>FS-1562-25...250W |
| **Tuning Power** | 10 to 20 W |
| **VSWR** | Less than 1.5 |
| **Tuning Time** | Within 2 to 15 seconds<br>Within 0.5 second on pretuned bands |
| **Dummy Load** | Mounted in the COUPLER (10 ohms + 250pF) |
| **Power Requirement** | 15VDC 0.6A (supplied from transceiver) |
| **Ambient Temperature** | -30°C to +70°C at 93% relative humidity |
| **Construction** | Waterproof plastic cabinet, stainless steel mount |
| **Dimensions and Mass** | 297 mm (W) x 390 mm (H) x 90 mm (D),<br>3.1 kg approx. |

## POWER AMP UNIT(PA-2500, only for FS-1562-25)

| | |
|---|---|
| **Input Power** | 60W |
| **Output Power** | 250W |
| **Input/Output Impedance** | 50 ohms |
| **Ambient Temperature** | - 20 to + 55 °C |
| **Power Supply** | 24VDC, 30A |

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# EQUIPMENT LIST

## Complete Set

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Transceiver Unit | FS-1562-15 | 000-055-239 | 1 | For 150W |
| | | FS-1562-25 | 000-057-206 | | For 250W |
| 2 | Antenna Coupler | AT-1560-15-AAS | 000-055-245 | 1 | For 150W, Resin |
| | | AT-1560-15-SUS | 000-055-263 | | For 250W, Stainless steel |
| | | AT-1560-25-AAS | 000-055-255 | | For 150W, Resin |
| | | AT-1560-25-SUS | 000-055-265 | | For 250W, Stainless steel |
| 3 | Power Amp Unit | PA-2500 | 000-057-201 | 1 | For 250W |
| 4 | Accessories | FP05-02010 | 000-055-201 | 1 set | For handset |
| | | FP05-02010 | 000-055-200 | | For microphone (option) |
| | | FP05-02020 | 000-055-202 | | For noise-canceling microphone (option) |
| 5 | Spare Parts | SP05-03700 | 000-055-240 | 1 set | For transceiver unit |
| | | SP05-04100 | 000-057-203 | 1 set | For PA-2500 |
| 6 | Installation Materials | CP05-05600 | 000-054-241 | 1 set | For trans. unit |
| | | CP05-05700 | 000-055-238 | 1 set | For ant. coupler |
| | | CP05-06700 | 000-057-204 | 1 set | For PA-2500 |
| 7 | Cable Assembly | | | | Control/Coax-cable |
| 8 | BK relay kit | | | | For FS-1562-25 |

## Complete Set

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Power Supply | PR-300 | 000-130-431 | 1 | For 150W |
| | | PR-850 | 000-129-040 | | For 250W |
| | | PR-850A | | | |
| 2 | Fan Kit | OP05-54 | 005-944-630 | 1 set | |
| 3 | Piggy-mount Hanger | OP05-95 | 005-950-660 | 1 | |
| 4 | Piggy-mount Hanger w/Fan Kit | OP05-69 | 005-955-650 | 1 set | |
| 5 | Doublet Antenna | E-22 | 000-050-632 | 1 set | |
| 6 | Single Wire Antenna | E-24 | 000-050-634 | 1 set | |
| 7 | Double-span Antenna | E-25 | 000-050-635 | 1 set | |
| 8 | Whip Antenna Lead-in | E-26 | 000-050-636 | 1 set | |
| 9 | Whip Antenna Feeder | E-27 | 000-050-637 | 1 set | |
| 10 | Whip Antenna | FAW-6D | 000-572-128 | 1 set | |
| | | FAW-6R2 | 000-572-108 | | |
| | | FAW-6R2A | 000-107-921 | | |
| 11 | BK Interface | BK-300 | 000-055-478 | 1 set | |
| 14 | AC FAIL Board | 05P0657 | 005-945-870 | 1 set | |
| 15 | Coupler Installation Materials | OP05-12 | 005-923-680 | 1 set | U-bolts for fixing antenna coupler |
| 16 | External Speaker | SEM-21Q | 000-144-917 | 1 | |
| 17 | REMOTE-B Kit | OP05-40 | 005-920-320 | | Current loop, for RB-500/DB-500 |
| 18 | BK Relay Kit | | | | Refer to page 3-2 for FS-1562-15. |

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## Accessories for transceiver unit (FP05-02010; handset type)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Hanger | FP05-02001 | 005-922-690 | 1 | |
| 2 | Tapping Screw | 6x20 SUS304 | 000-800-414 | 6 | |
| 3 | Knob Bolt | KG-B2 M8x20 SUS304 | 000-800-601 | 2 | |
| 4 | Flat Washer | M6 SUS304 | 000-864-129 | 6 | |
| 5 | Hanger Washer | 05-029-0132 | 100-087-911 | 2 | |
| 6 | Knob Washer | 05-029-0135 | 100-100-390 | 2 | |
| 7 | Handset Hanger | 05-024-1001 | 100-095-691 | 2 | |
| 8 | Stopper | 05-024-1002 | 100-095-701 | 1 | |
| 9 | Template | 05-024-1003 | 100-095-711 | 1 | |
| 10 | Tapping Screw | 3x20 SUS304 | 000-801-662 | 6 | |
| 11 | Handset | HS-6000FZ5 | 000-112-623 | 1 | |

## Accessories for transceiver unit (FP05-02000; hand-microphone type option)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Hanger | FP05-02001 | 005-922-690 | 1 | |
| 2 | Tapping Screw | 6x20 SUS304 | 000-800-414 | 6 | |
| 3 | Knob Bolt | KG-B2 M8x20 SUS304 | 000-800-601 | 2 | |
| 4 | Flat Washer | M6 SUS304 | 000-864-129 | 6 | |
| 5 | Hanger Washer | 05-029-0132 | 100-087-911 | 2 | |
| 6 | Knob Washer | 05-029-0135 | 100-100-390 | 2 | |
| 7 | Microphone | DM1620FZI | 000-112-622 | 1 | |

## Accessories for transceiver unit (FP05-02020; noise-canceling mic. type, option)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Hanger | FP05-02001 | 005-922-690 | 1 | |
| 2 | Tapping Screw | 6x20 SUS304 | 000-800-414 | 6 | |

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| | | | | | |
|---|---|---|---|---|---|
| 3 | Knob Bolt | KG-B2 M8 x 20 SUS 304 | 000-800-601 | 2 | |
| 4 | Flat Washer | M6 SUS304 | 000-864-129 | 6 | |
| 5 | Hanger Washer | 05-029-0132 | 100-087-911 | 2 | |
| 6 | Knob Washer | 05-029-0135 | 100-100-390 | 2 | |
| 7 | Noise-canceling Microphone | M112D4509910 | 000-116-487 | 1 | |

### Installation Materials for transceiver unit (CP05-05600)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Power Cable | 05S0932 | 000-130-430 | 1 | with 20A fuse, 2m |
| 2 | Ground Wire | 05S0479 | 000-113-348 | 1 | 2m |

### Installation Materials for antenna coupler (CP05-05700)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Tapping Screw | 5 x 16 SUS304 | 000-805-494 | 4 | |
| 2 | Pipe Seal | 05S0938 | 000-130-472 | 1 | |
| 3 | Copper Strap | 04S0801 | 000-572-187 | 1 | 30 x1200x 0.3mm |
| 4 | Blind Plug | 05-039-6325CR | 100-164-380 | 1 | |

### Installation Materials for antenna coupler (cable assembly)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Control Cable Assy. | 05S0949, 10m | 000-130-484 | 1 | 10m cable suppied, if cable length is not specified. |
| | | 05S0949, 20m | 000-130-485 | | |
| | | 05S0949, 30m | 000-130-486 | | |
| | | 05S0949, 40m | 000-130-487 | | |
| | | 05S0949, 50m | 000-130-488 | | |
| 2 | Coax. Cable Assy. | 05S0462, 10m | 000-113-360 | 1 | 10m cable suppied, if cable length is not specified. |
| | | 05S0462, 20m | 000-113-361 | | |
| | | 05S0462, 30m | 000-113-362 | | |
| | | 05S0462, 40m | 000-113-363 | | |
| | | 05S0462, 50m | 000-113-364 | | |

### Installation Materials for power amp unit (PA-2500, CP05-06700)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Power Cable | 05S0414-1 | 000-113-347 | 1 | |
| 2 | Ground Wire | 05S0479-0 | 000-113-348 | 1 | 2m |

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| | | | | | |
|---|---|---|---|---|---|
| 3 | Control Cable Assy. | 05S9082-0, 2m | 000-134-198 | 1 | Select one. (Between PA-2500 and transceiver) |
| | | 05S9082-0, 5m | 000-135-121 | | |
| | | 05S9082-0, 10m | 000-135-123 | | |
| 4 | Coax. Cable Assy. | 05S9081-0, 2m | 000-134-199 | 1 | Select one. (Between PA-2500 and transceiver) |
| | | 05S9081-0, 5m | 000-135-117 | | |
| | | 05S9081-0, 10m | 000-135-119 | | |

### Spare Parts for transceiver unit (SP05-03700)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Fuse | FGBO 20A 125 VAC | 000-549-015 | 2 | |

### Spare Parts for Power Amp unit (SP05-04100)

| No. | Name | Type | Code No. | Qty | Remarks |
|---|---|---|---|---|---|
| 1 | Fuse | FGBO 30A 125 VAC | 000-549-017 | 2 | |

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# Chapter 1 Installation

## 1.1 Transceiver

### Mounting methods

The transceiver can be mounted one of four ways:

- in the hanger (overhead, bulkhead or tabletop) or
- flush mounting.

### Mounting considerations

When selecting a mounting location;

- Make sure the location is strong enough to support the unit under the conditions of continued vibration and shock normally encountered on the boat. Where necessary, reinforce the mounting location by lining block or doubling plate.
- Locate the unit where it is easily accessible and does not interfere with personnel or operation of other equipment; for example, ship's wheel.
- Select a location where temperature and humidity are moderate and stable. For added ventilation, install the Fan Kit. See page 1-7.

■ **NOTE:** *The piggy-mount hanger (option) permits piggyback mounting the transceiver together with the FURUNO DSC-60 DSC terminal. See page 1-7.*

### Hanger mounting

To mount the transceiver by using the hanger;

1. Using the hanger as a template, mark mounting hole locations.
2. Fix the hanger with tapping screws (supplied). (For extra support, drill six pilot holes and use M5 bolts, nuts and washers instead of the tapping screws.)
3. Set the transceiver to the hanger and fix it with the washers and knobs.

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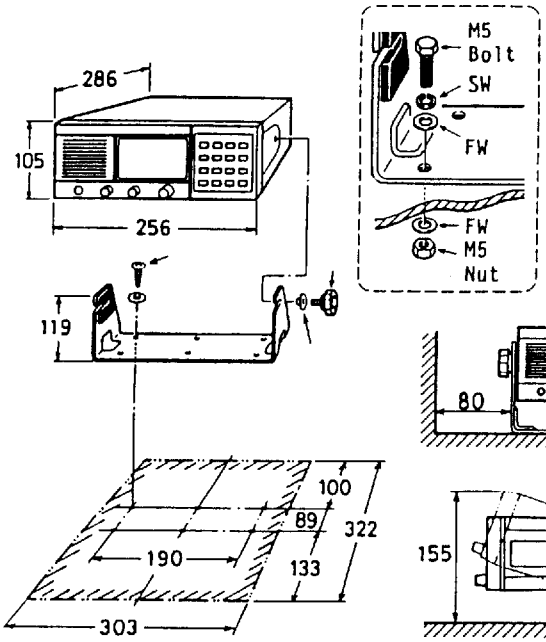




*Figure 1-1 Installing the transceiver* *Figure 1-2 Service clearance*

## Flush mounting

When selecting a mounting location;

- The mounting location should be strong enough to support the weight of the unit. If necessary, fix the unit to a suitable doubling plate.
- Select a place where the LCD can be easily viewed, keeping in mind that the LCD viewing angle is as shown in Figure 1-3.
- Leave sufficient space around the unit to permit dispersal of heat after long transmission.

**Mounting**

This method does not require any additional kit. However, the mounting dimensions must be accurate since the hanger also is installed.

Prepare a cutout in the mounting location as shown in Figure 1-3.

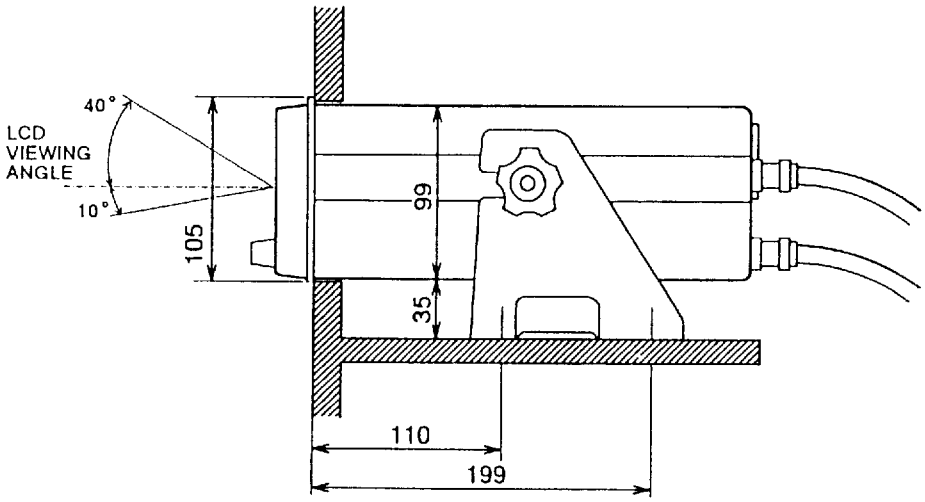



*Figure 1-3 Mounting dimensions for flush mount*

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# 1.2 Antenna Coupler

## Introduction

The antenna coupler is installed between the antenna and the transceiver (or power amp unit for 250W set ), and tunes the antenna to the transmitter.

The importance of a good ground system cannot be overemphasized. Without a good ground, this unit will not work properly—if at all.

## Mounting considerations

The splashproof construction of the antenna coupler permits installation either indoors or outdoors. When selecting a location, keep in mind the following points.

**Outdoor installation**

- The antenna coupler is splashproof, however it is not designed to take a continual soaking. If necessary, seal any opening in the top or sides with silicone sealant.
- Select a location not exposed to salt water spray. Salt water on the antenna insulator may cause unstable operation of the coupler and in the worst case prevent transmission.
- All wires from the coupler to the antenna radiate radio energy. They should be routed away from any grounded conductors such as lifelines, mast shrouds, or fittings.
- For optimum radio energy, locate the coupler as near to the ground as possible.
- The length of the vertical portion of the antenna should be as long as possible.
- Leave enough space around the sides of the unit to permit maintenance and checking.
- Total antenna length should be 7 to 30 meters.

**Indoor installation**

- Locate the unit away from GPS and Satnav receivers and radio equipment to avoid mutual interference.
- The lead-in wire should be as near to the unit as possible.
- Select a place where the unit can be easily maintained, but where it will not interfere with crew or passengers.

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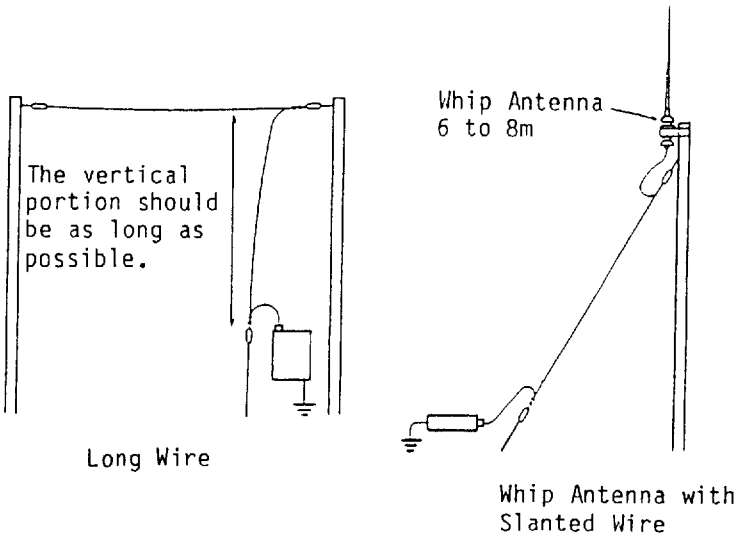




*Figure 1-4 Long wire and whip antenna installations*

## Anti-moisture measure (vent tube)

The vent tube (supplied) prevents moisture from being drawn into the enclosure during atmospheric pressure changes and allows trapped humid air to escape. Install it according to coupler installation method, before mounting the coupler.

### Vertical or horizontal installation

Two vent holes are provided on the coupler, one at the bottom and one on the rear. These are vent holes Ⓑ and Ⓐ in Figure 1-5. The vent tube is set to vent hole Ⓑ at the factory. This location is for vertical installation of the coupler. For horizontal installation, remove the vent tube from vent hole Ⓑ and set it to vent hole Ⓐ. Cover vent hold Ⓑ with seal (supplied), from inside the coupler.

### Overhead installation

Drill a hole of 8 mm diameter in the front cover and mount the vent tube there. See Figure 1-5.

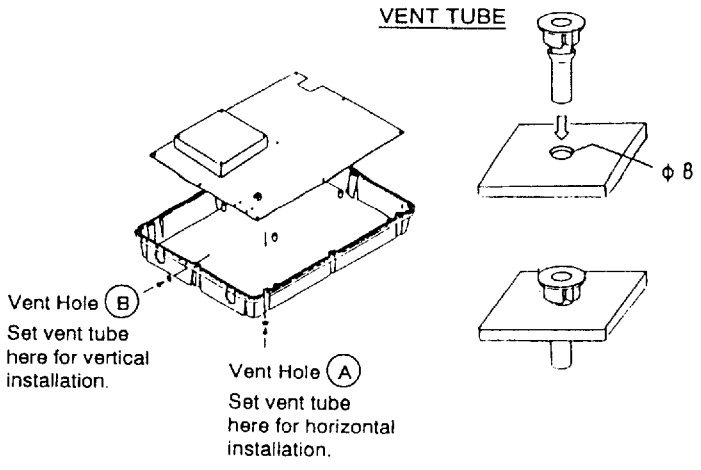



*Figure 1-5 Mounting the vent tube*

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## Mounting

The antenna coupler can be fixed to the floor, bulkhead, overhead or mast. For mounting on the bulkhead, floor or ceiling, fix the coupler with either tapping screws or M5 bolts and nuts. For mounting on the mast, use two U-bolts (optional supply).

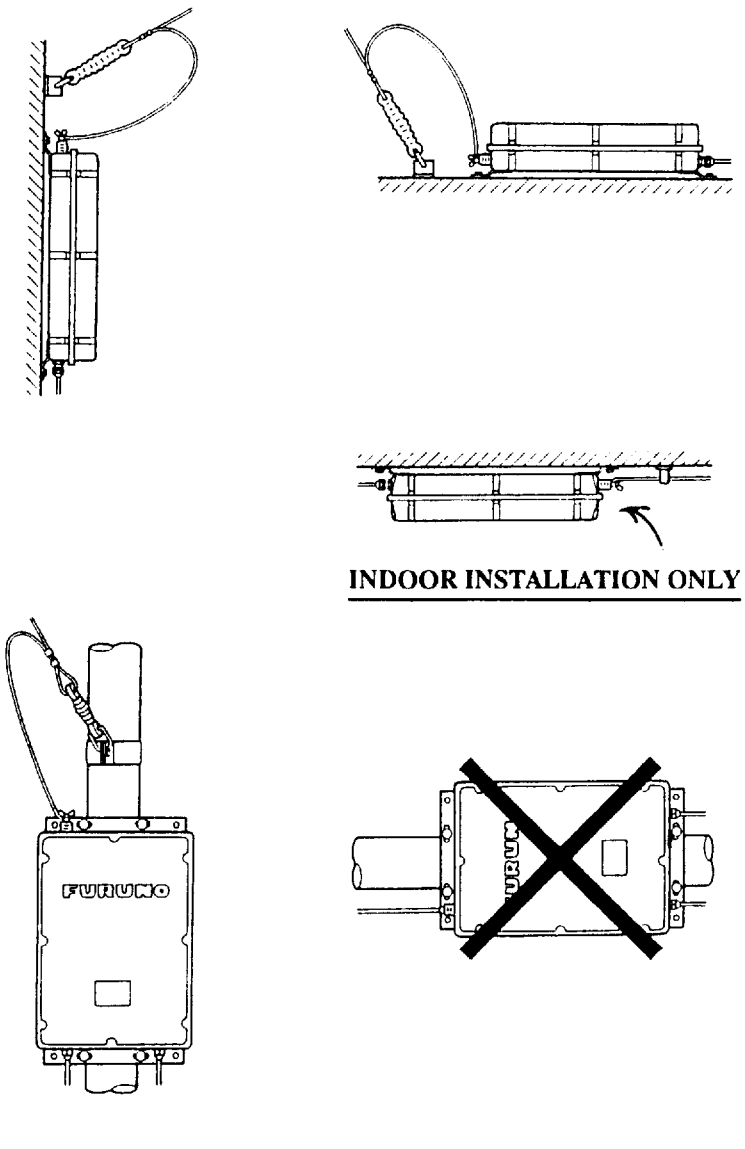



*Figure 1-6 Typical antenna coupler installations*

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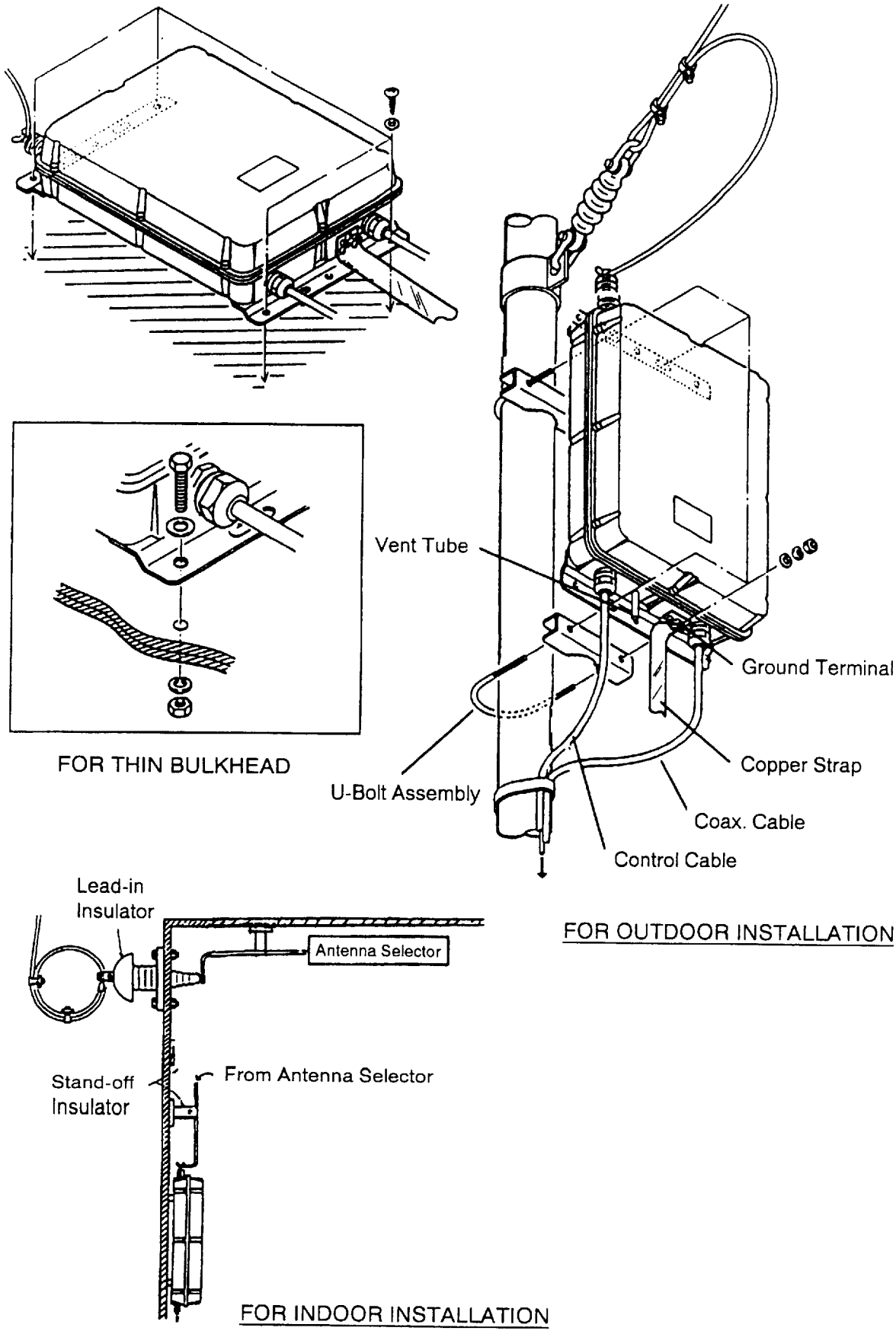




*Figure 1-7 Mounting the antenna coupler*

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# 1.3 Fan Kit and Piggy-Mount Hanger

## Fan kit

### Mounting

The Fan Kit provides cooling air for the transceiver. Install it by referring to the outline drawing on page D-6.

### Connection

Insert the 2P connector from the Fan Kit into the "FAN" cable entrance at the rear of the lower chassis of the transceiver as shown below. Connect it to the FAN terminal J16 of the TX/RX board.

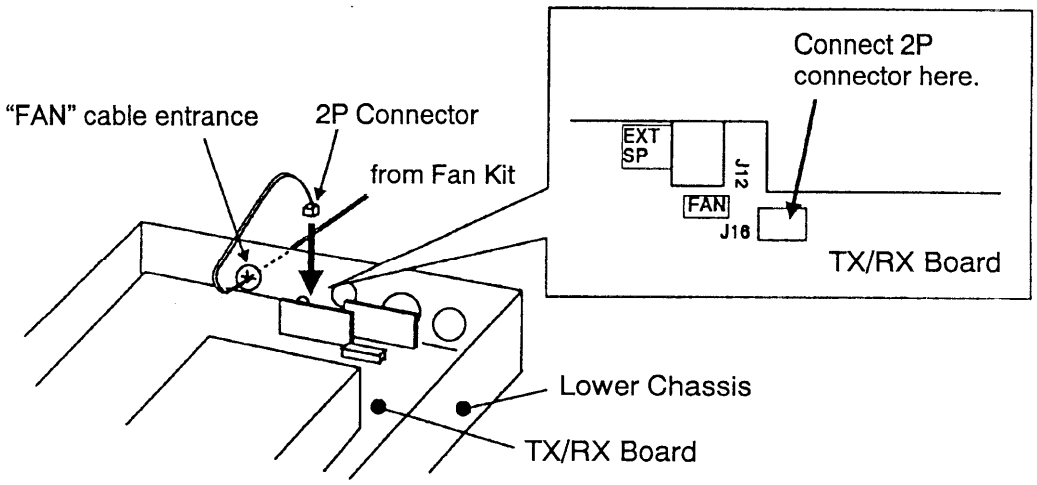



*Figure 1-8 Connection of the Fan Kit*

## Piggy-mount hanger

The piggy-mount hanger permits piggyback mounting of the transceiver together with the FURUNO DSC-60 DSC Terminal. Install it by referring to the outline drawing on page D-7.

When the Fan Kit is required, connect it to the FS-1562 referring to the procedure shown above. If the fan kit is not installed, only the top cover is supplied.

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# 1.4 Ground System

## Introduction

A good antenna can work well only when an efficient RF ground is provided. Without a good ground system, the full potential of this radio cannot be realized.

**⚠ CAUTION**

**Ground the equipment.**

Ungrounded equipment can give off or receive electro-magnetic interference or cause electrical shock.

■ **CAUTION:** *Lack of ground connection or a long ground lead may allow the ground terminal of the antenna coupler to reach a high RF voltage with respect to ground, resulting in a safety hazard.*

## Ground for metallic hull

Run a copper strap (supplied) between the ground terminal of the antenna coupler and the ship's superstructure.

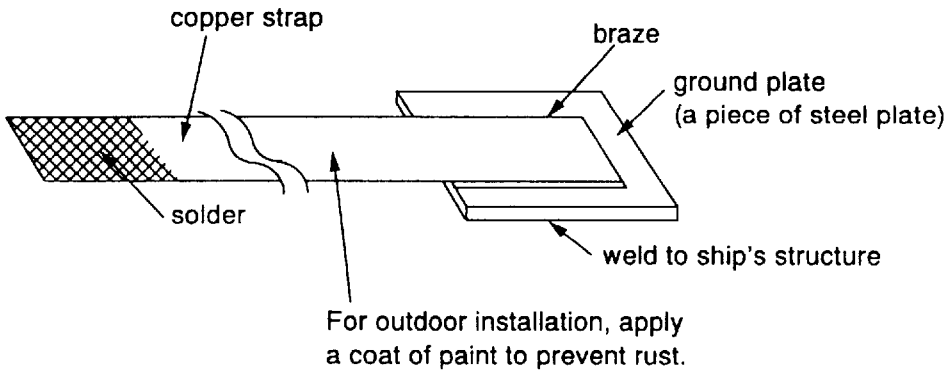



*Figure 1-9 Ground for metallic hull*

## Ground for non-metallic hull

Run a copper strap (supplied) between the ground terminal of the antenna coupler and the radio ground system.

## Transceiver / Power Amp ground

Ground the transceiver and the power amp unit with the ground wire (supplied), to prevent interference and protect against lightning.

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# 1.5 The Antenna

## Introduction

The antenna plays the most important role in radio communication. If it cannot receive or transmit effectively because of improper installation, even the most sophisticated transceiver will be rendered useless.

## Types of antennas

There are various types of SSB antennas. The most commonly used are a long wire and a whip. Whatever antenna is to be used, the antenna coupler can tune a long wire or whip whose total length is 7 to 30 meters (23.3 to 100 feet). Although a longer antenna is preferable when the radio is operated only on low frequencies, use this size of antenna to ensure stable automatic tuning on all bands.

**Long wire antenna**

A long wire antenna is inexpensive and in general provides better performance than a whip antenna, provided the vertical part is long enough.

**Whip antenna**

A whip antenna is easier than a long wire antenna to install and provides good overall coverage of most SSB frequencies. In fact, if you don't plan to venture more than 500 miles from shore and the ground system is excellent, a simple 7 meter (23 feet) whip antenna will probably suffice. A whip is installed as high as possible, away from any nearby objects.

■ **WARNING:** *Touching a transmitting SSB antenna can cause severe burn or shock.*

## Mounting considerations

When selecting a mounting location;

- The length of the vertical portion should be longer than 4 meters, and the slant angle of that part should be within 10 degrees. Separate it as far as possible from:
  stays
  metallic objects
  direction finder antenna
  INMARSAT radome antenna
- Locate the insulator away from funnels and masts.
- If the antenna coupler is installed outdoors, use a lead-in insulator (FURUNO type YA-150(150W) or YA-218(250W) ) to make the connection. If necessary, use a high quality antenna switch and stand-off insulator.
- If the antenna is connected directly to the coupler, use a strain insulator to prevent insulator fatigue.

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# 1.6 Power Amp Unit (PA-2500, 250W only)

## Mounting Considerations

When selecting a mounting location, keep in mind the following points.

- Select a location which provides adequate ventilation.
- The location should be clean and dry.
- The mounting location must be able to support the weight of the unit(6kg) under the conditions of vibration normally encountered aboard the vessel.

## Mounting

The mounting dimensions of the Power Amp Unit are shown in Figure1-10.

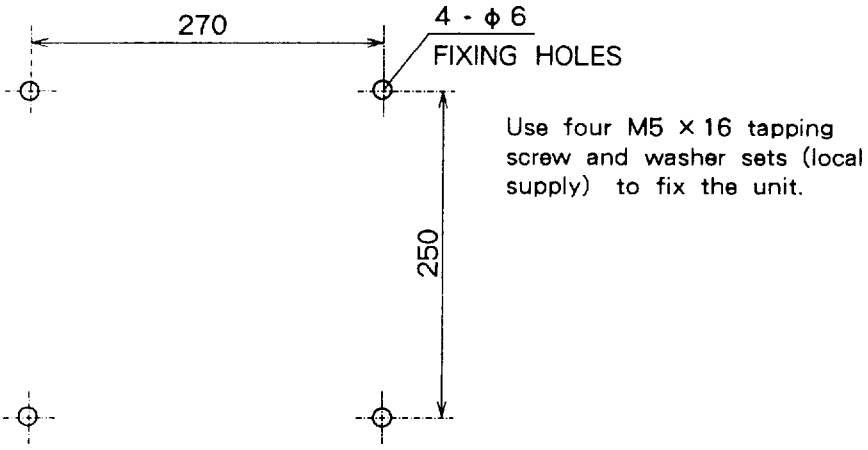



*Figure 1-10 The mounting dimensions of Power Amp Unit*

# 1.7 Power Supply Unit (option)

## Mounting Considerations

When selecting a mounting location, keep in mind the following points.

- Select a location which provides adequate ventilation.
- The location should be clean and dry.
- The mounting location must be able to support the weight of the unit (PR-300:14.5kg, PR-850/PR-850A:35kg) under the continued conditions of vibration normally encountered aboard the vessel.

## Mounting

Refer to the outline drawings attached.

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# Chapter 2 Connections

## 2.1 Connection of Units

Refer to the interconnection diagram on page 2-4 to 2-6.

## 2.2 Power Cable

The FS-1562 comes with a 2-meter power cable with built-in 20A fuses. If a longer cable is necessary, it should be as thick as possible to prevent voltage drop.

## 2.3 AC-DC Power Supply Unit (PR-300 for 150W set)

### Introduction

To the AC-DC Power Supply Unit (PR-300), both 100/110/200/220VAC and 24VDC are supplied. When AC input fails, DC power is directly supplied.

For GMDSS vessels, 24VDC power must be supplied through the radio battery.

### Changing tap connections

Change the tap connections of the transformer as shown below, in accordance with the input voltage.

### Changing fuse

Change the fuse as shown below, in accordance with the ship's mains.

| | |
|---|---|
| 100/110 VAC | 10A |
| 200/220 VAC | 5A |

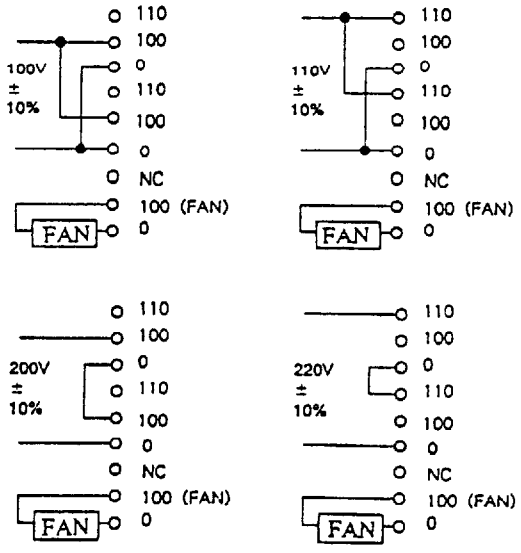



*Figure 2-1 Tap connections in the PR-300*

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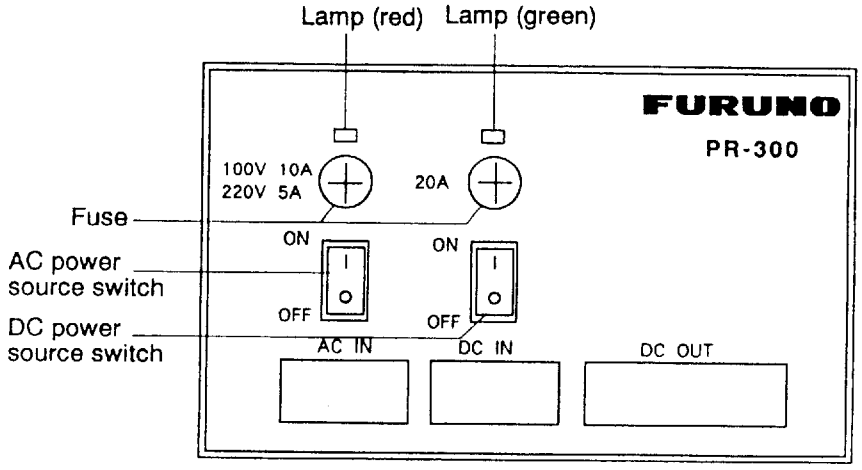




*Figure 2-2 AC-DC power supply unit PR-300*

### Ground

Connect a ground wire between ship's superstructure and a fixing hole on the PR-300.

## 2.4 Power Supply Unit (PR-850/PR-850A for 250W set)

### Introduction

To the Power Supply Unit PR-850, 100/110/120/200/220/240VAC is supplied.
To the Power Supply Unit PR-850A, both 100/110/120/200/220/240VAC and 24VDC are supplied. When AC input fails, DC power is directly supplied. For GMDSS vessels, 24VDC power must be supplied through the radio battery.

### Wiring

Connect cables to the input terminal on the front panel, using crimp-on lugs. For connections to output terminals, bend crimp-on lugs so they do not contact the terminal board cover.

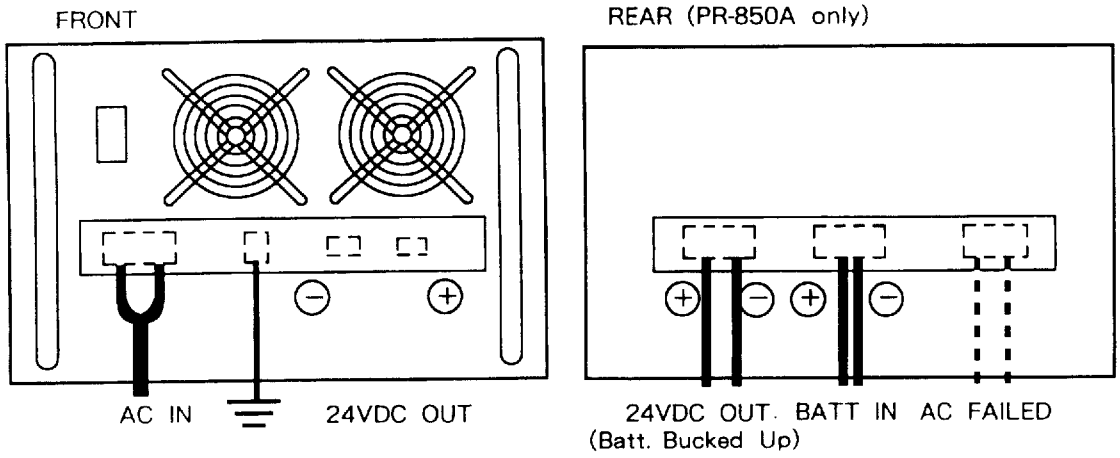



*Fig. 2-3 Connections on PR-850/PR-850A*

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## Selection of Input Voltage

The input voltage is adjustable for 100/110/120/200/220/240 VAC, and is factory-set for 220 VAC. To select other input voltages, open the top cover and change the wiring according to the figure below. After changing the input voltage, correct the front panel sticker accordingly.

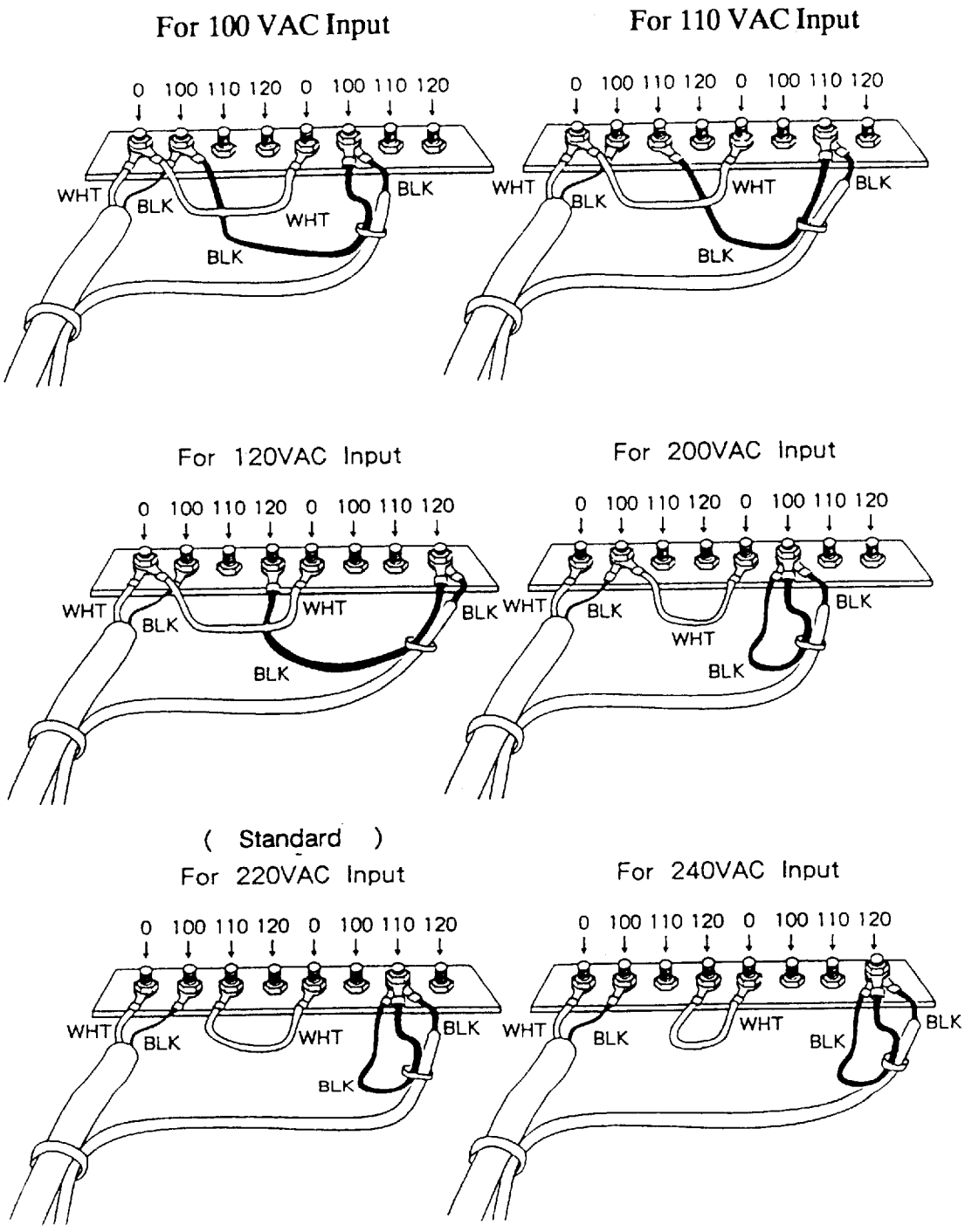



*Figure 2-4 Selection of Input Voltage on PR-850/PR-850A*

## Ground

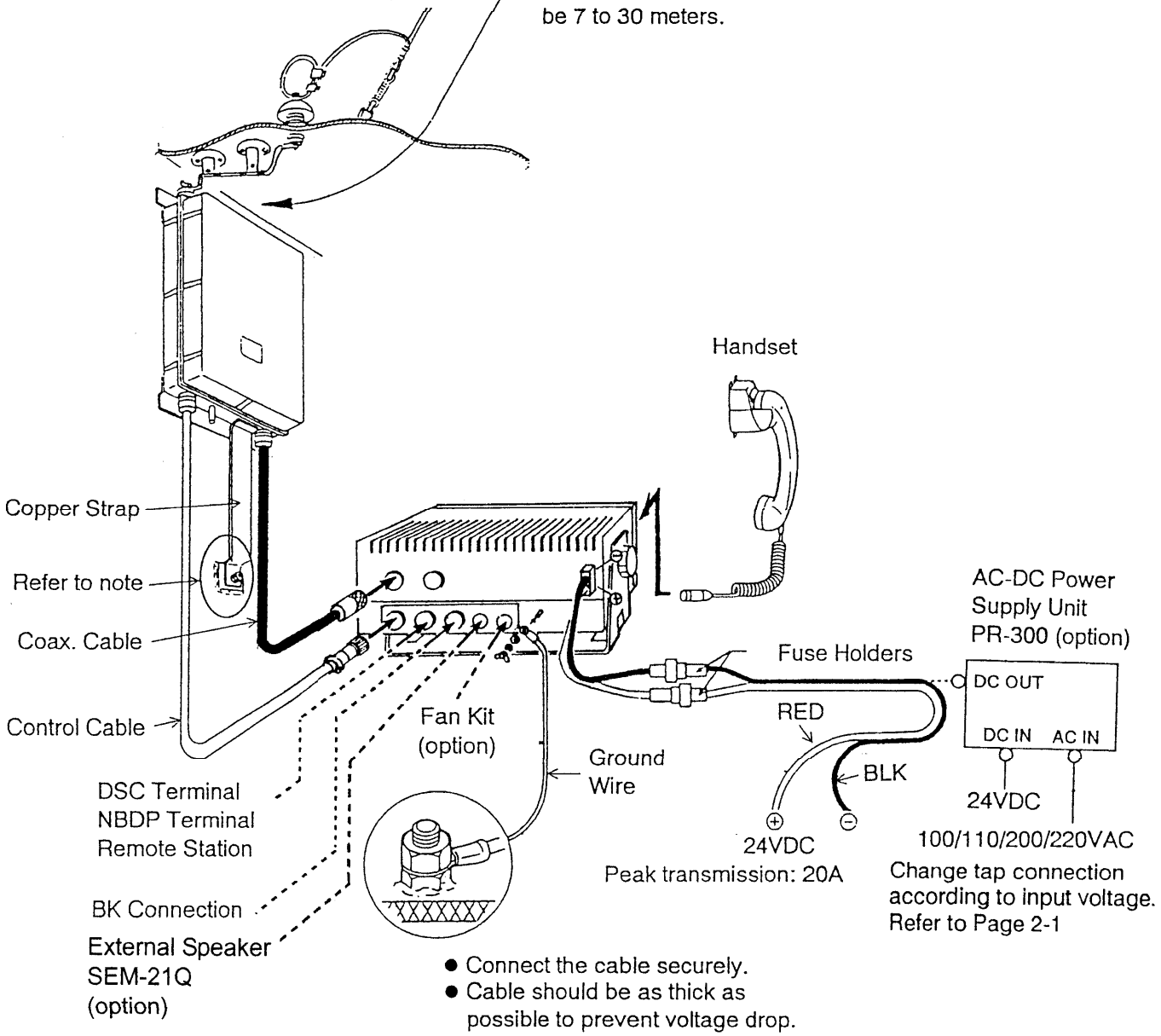
Connect a ground wire between ship's superstructure and a fixing hole on the PR-850/PR-850A.

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**FS-1562-15(150W)**

Note:
Metallic Hull: Weld steel plate w/copper strap to ship's superstructure.
Non-metallic Hull: Connect to radio ground system.

Total length of antenna should be 7 to 30 meters.



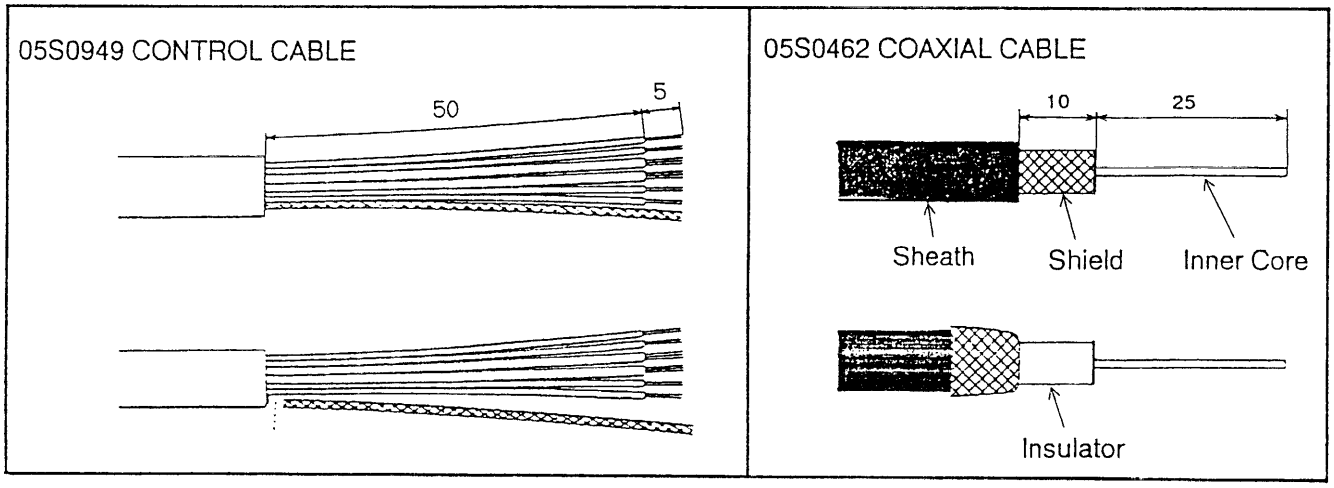




*Figure 2-5 Connections for FS-1562-15(150W) set*

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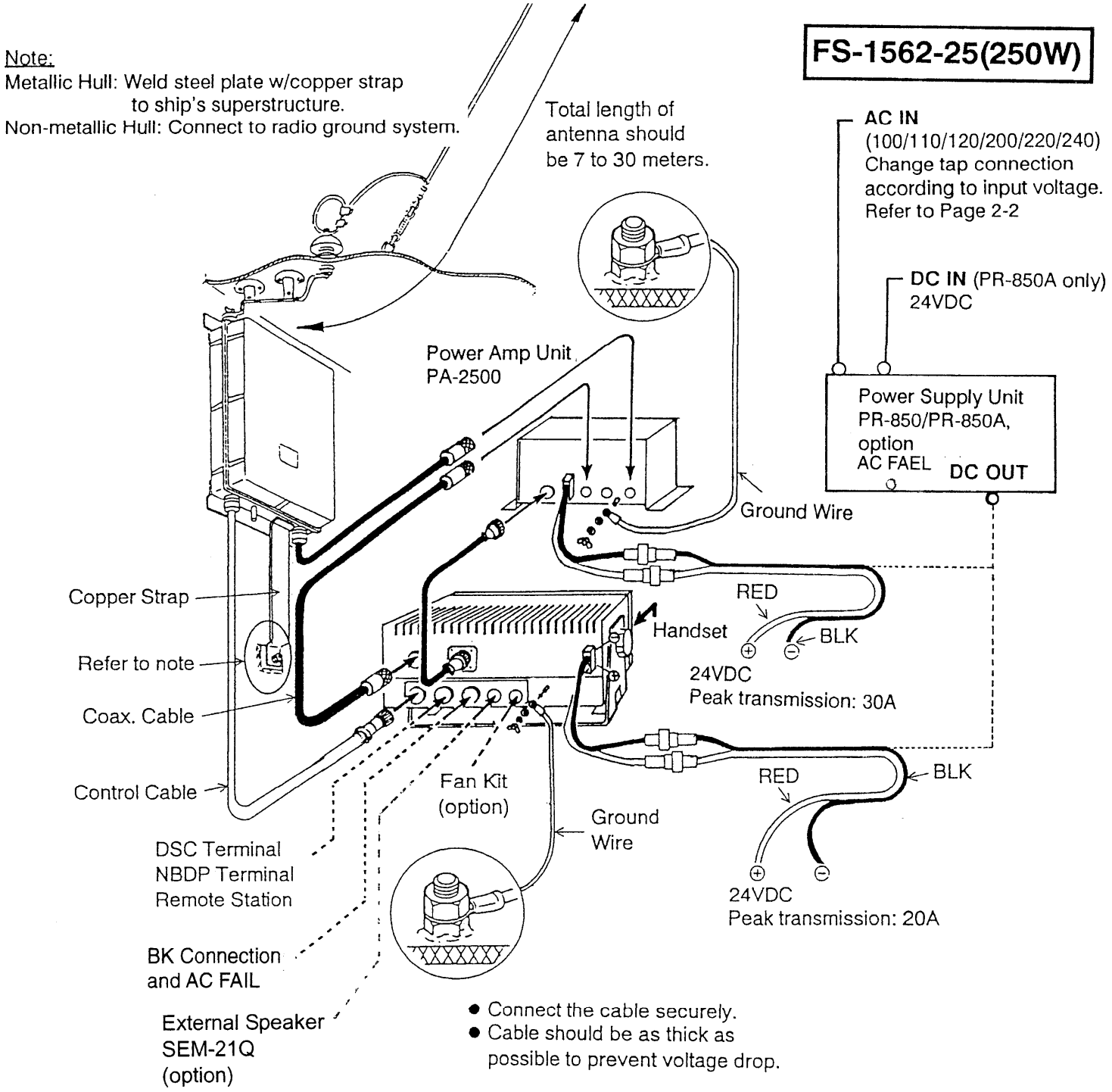



*Figure 2-6 Connectons for FS-1562-25(250W) set*

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**AT-1560-15**
**AT-1560-25**

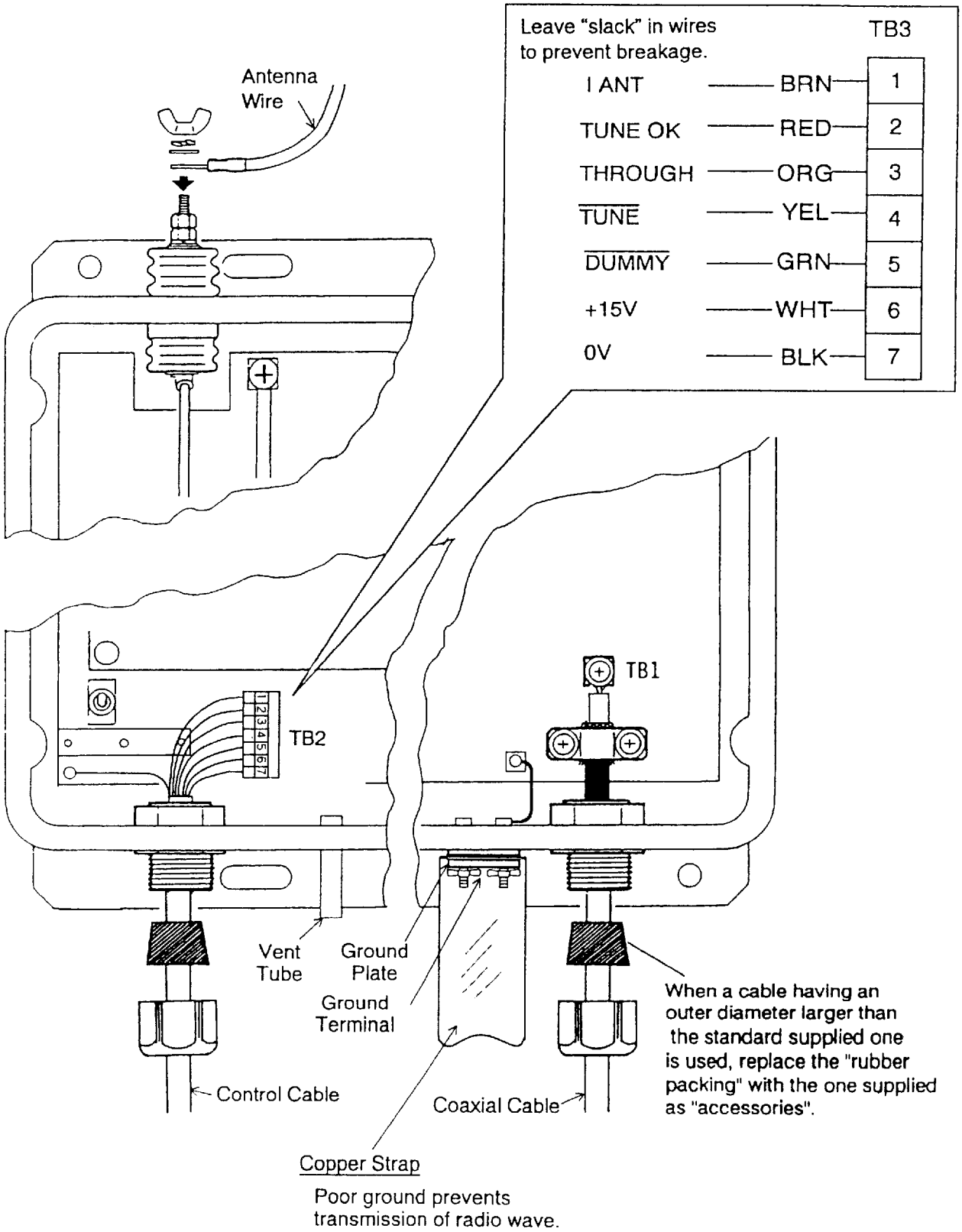



*Figure 2-7 Wirering on the Antenna Coupler*

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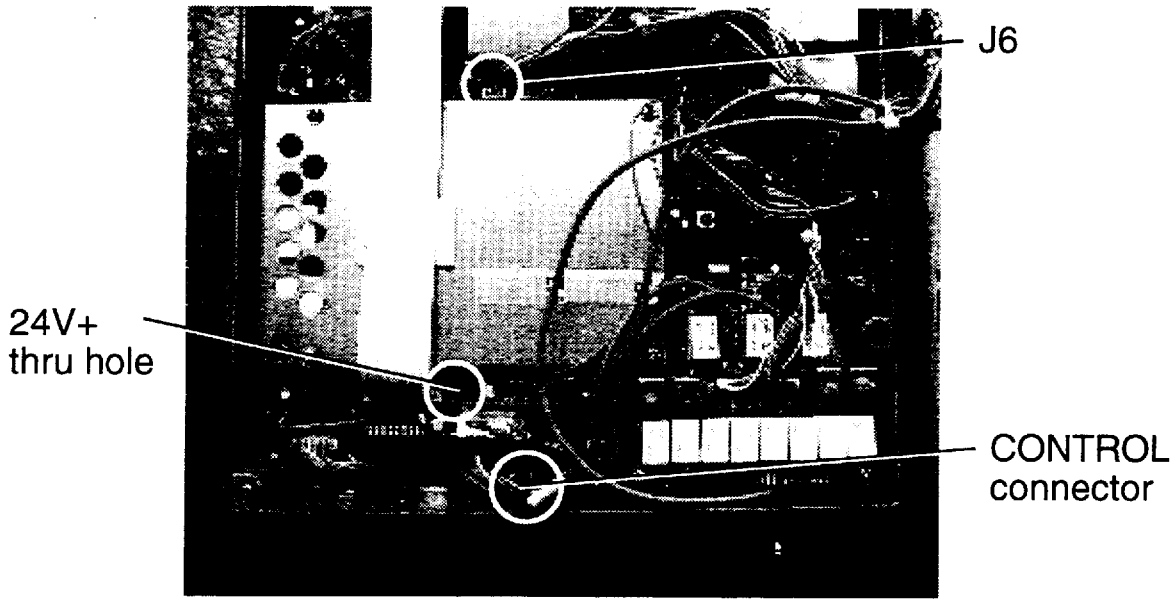
## 2.5 Installation of the AC FAIL Board (option)

The AC FAIL Board functions to, when the FS-1562 operates on AC power through Rectifer PR-850A, automatically reduce Tx Power when AC power fails.

**Procedure**

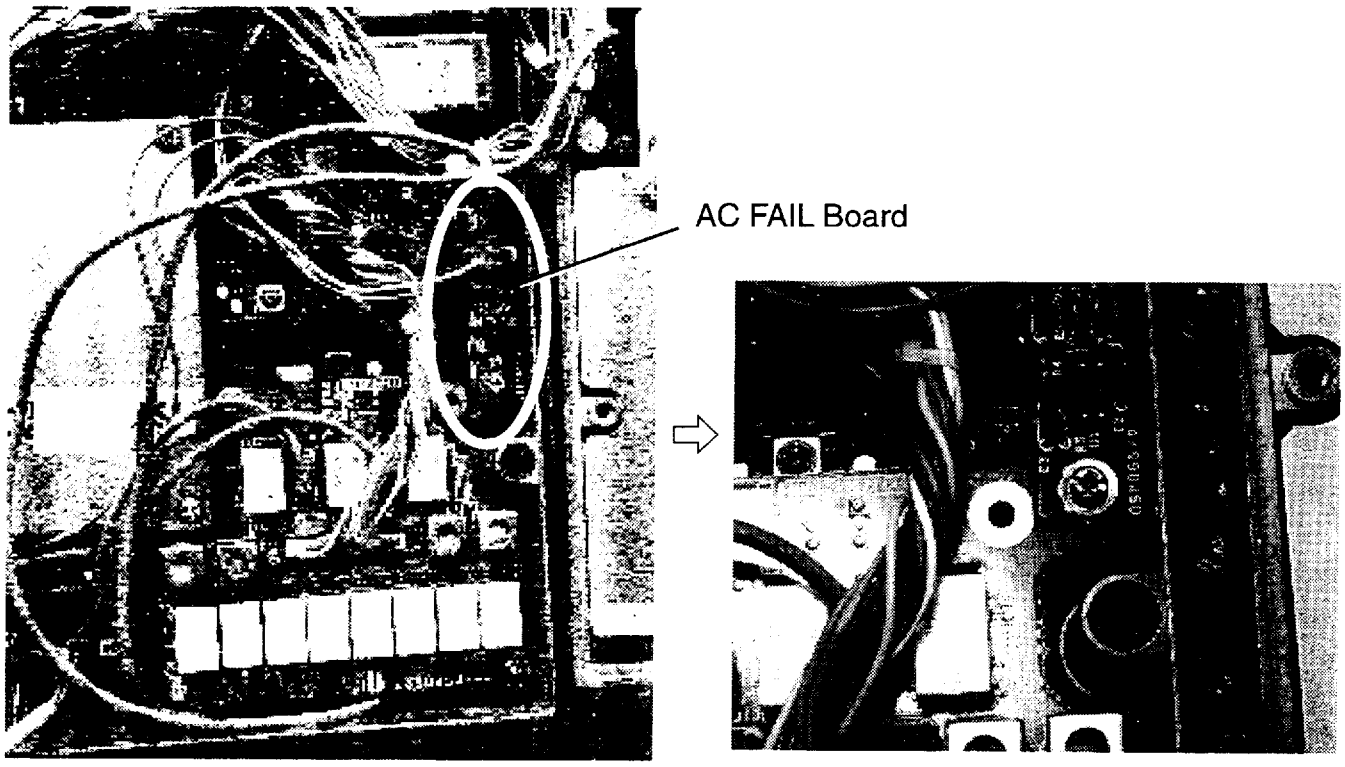
1. Turn off the power. Disconnect the antenna and power cable.

2. Unfasten two screws on the upper chassis and four screws on the lower chassis to open the upper chassis.




*Top view of the lower chassis*

3. Fasten the AC FAIL Board with a screw from the PRESELECTOR Board as shown below.



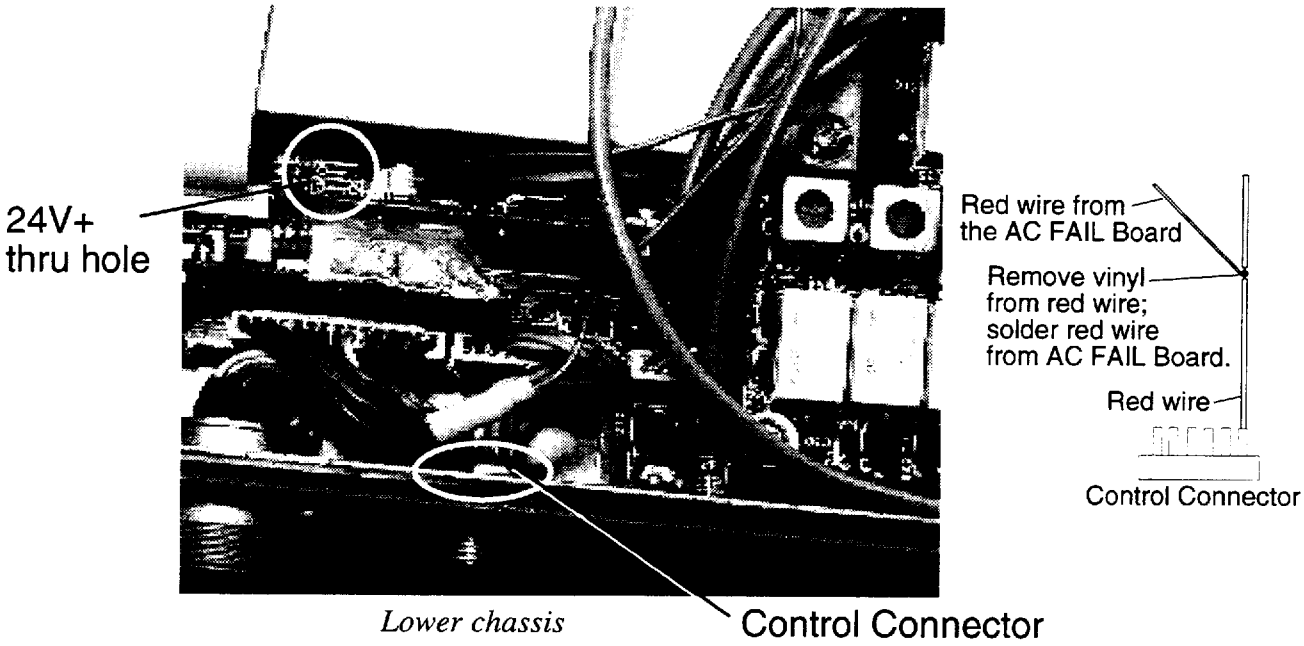

*Lower chassis, AC FAIL Board installed*

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4. Solder the brown wire from the AC FAIL Board to the "24V+" thru hole on the TX/RX Board as shown below.

5. Remove small section of vinyl form red wire of control connector.

6. Solder the red wire from the AC FAIL Board to the red wire of control connector (Refer to page S-5).




7. Tape soldered part.

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8. Remove small section of vinyl from yellow wire of J6 on the TX/RX Board.

9. Solder the blue wire from the AC FAIL Board to the yellow wire of J6 on the TX/RX Board.

10. Tape soldered part.

11. Remove small section of vinyl from red wire of J6 on the TX/RX Board.

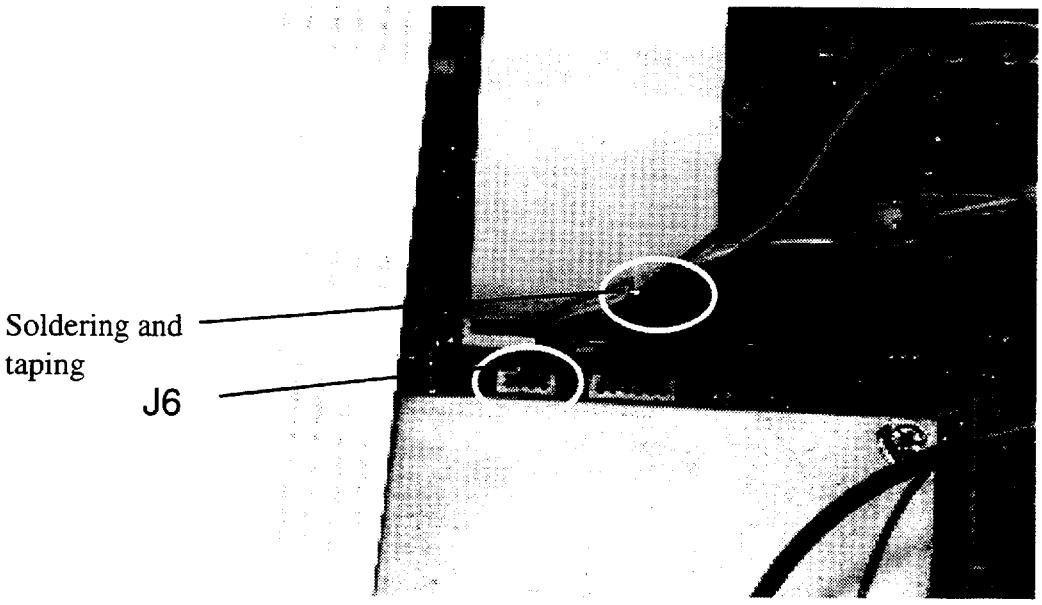
12. Solder the green wire from the AC FAIL Board to the red wire of J6 on the TX/RX Board.

13. Tape soldered part.

14. Remove small section of vinyl from orange wire of J6 on the TX/RX Board.

15. Connect the yellow wire from the AC FAIL Board to the orange wire of J6 on the TX/RX Board.

16. Tape soldered part.




*Lower chassis*

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# Chapter 3 Connection of External Equipment

## 3.1 NBDP Terminal DP-6

The DP-6 has a remote control function which automatically sets class of emission and frequency data at the FS-1562.

**Remarks on connection**

Connect the DP-6 to the FS-1562 with a 13-pair twisted cable. FURUNO can supply this cable in lengths of 1 m, 3 m or 5 m and with or without connector. For the cable with no connectors, attach connector types SRCN (FS-1562 side) and D-sub (DP-6 side). And for the cable with connectors, detach the D-sub connector at the FS-1562 end of the cable and connect the wires to the SRCN connector on the FS-1562.

## 3.2 DSC Terminal DSC-60

Connect the DSC-60 to the REMOTE terminal of the FS-1562.

**Remarks on connection**

When both the DP-6 and DSC-60 are to be connected, connect via the Distributor DB-120. Refer to page S-3.

## 3.3 Remote Station RB-500

To enable connection of the RB-500, the REMOTE-A Board is replaced at the factory with the REMOTE-B Board (current loop). If more than two RB-500s are to be installed, connect them via the Distributor DB-500. Refer to page S-2 for connection.

## 3.4 Distributors(DB-500/DB-120)

**DB-500**

The DB-500 enables connection of four external equipment: one NBDP, one DSC and two remote stations (see Figure 3-1), or four remote stations. For further details, refer to the installation manual for the DB-500.

**DB-120**

The DB-120 enables connection of two external equipment: one NBDP and one DSC terminal. Refer to the interconnection diagram on page S-4.

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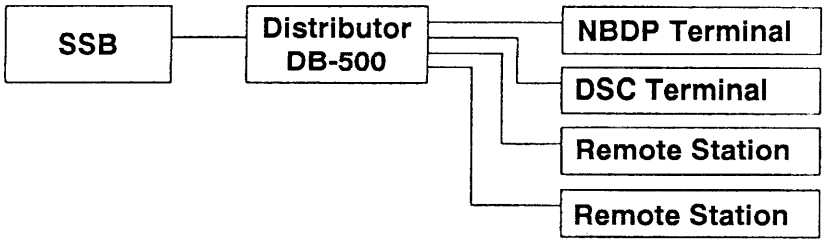




*Figure 3-1 Connection of Distributor DB-500*

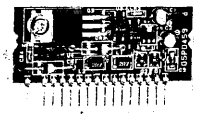
## 3.5 BK (Break-in) Connection

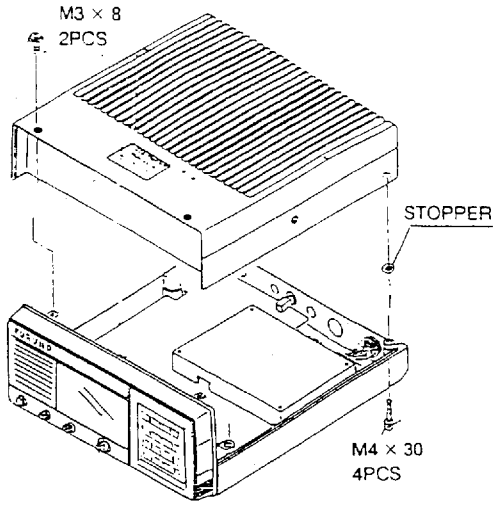
### Introduction

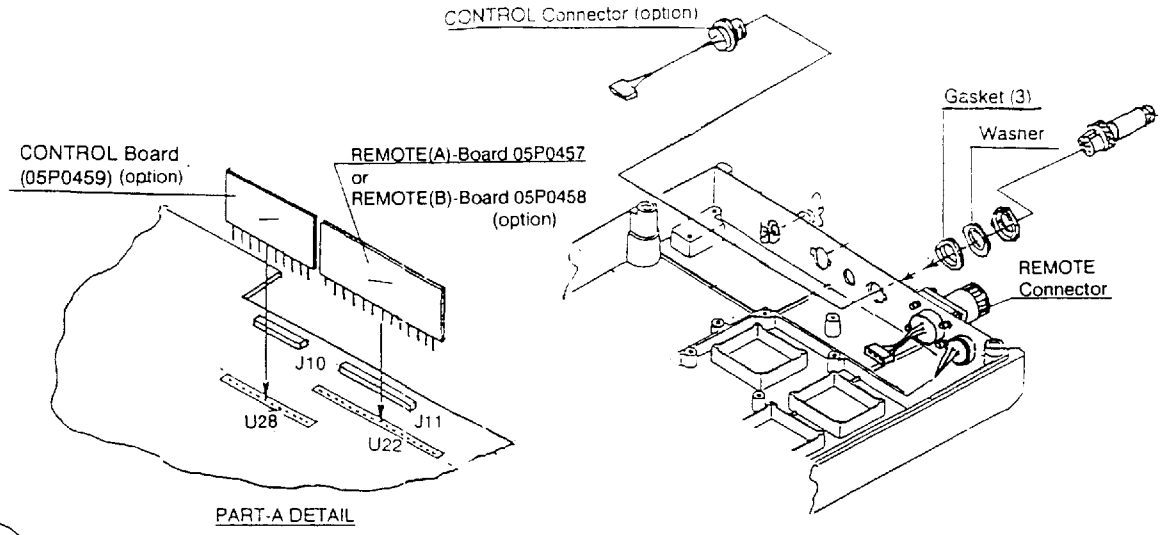
BK connections necessary when the FS-1562 is installed together with a HF receiver or transceiver. The BK relay (circuit) functions to mete the receiver when it and the FS-1562 are operated together. With no BK connection, the receiver or transceiver may generate noise or its front end may be damaged by strong signals when the radio is transmitted. For connection of BK Interface (BK-300) with FS-1562, refer to Installation manual of BK Interface (IMC-50830).

### Parts required

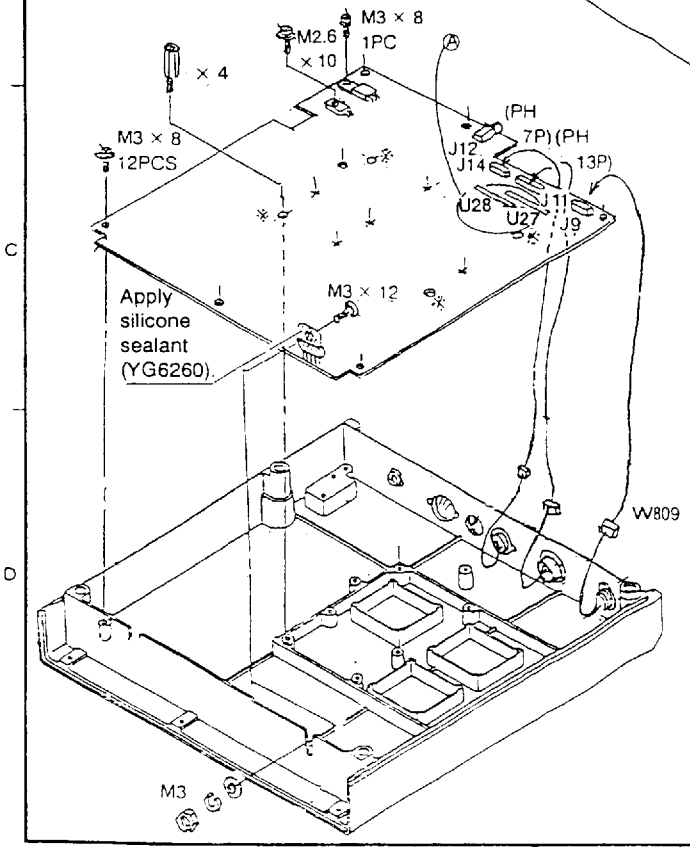
The BK relay kit consists of the following parts. (FS-1562-15 optionally supplied)

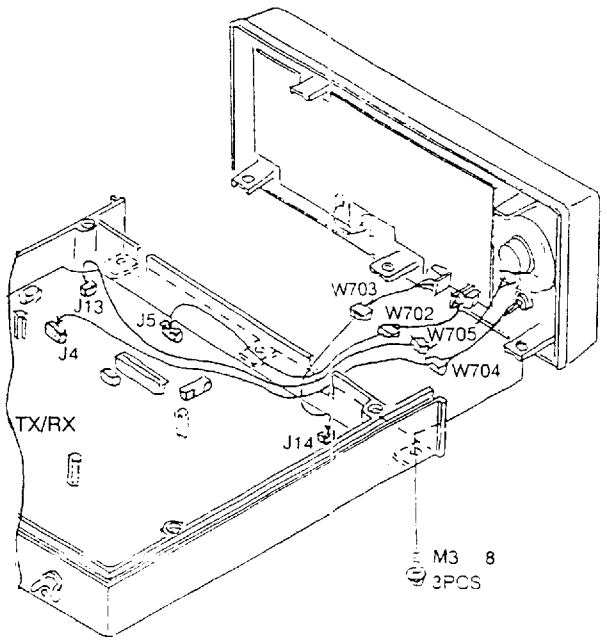
| Name | Type | Code No. | Figure |
|---|---|---|---|
| CONTROL Board | 05P0459 | 005-517-520 |  |
| Connector Assy. | 05S0846-0 | 000-125-319 |  |
| Gasket | 05-029-0122-2 | 100-878-420 |  |
| Washer | 16.2x22.0x0.5 SUS 304 | 000-801-849 |  |

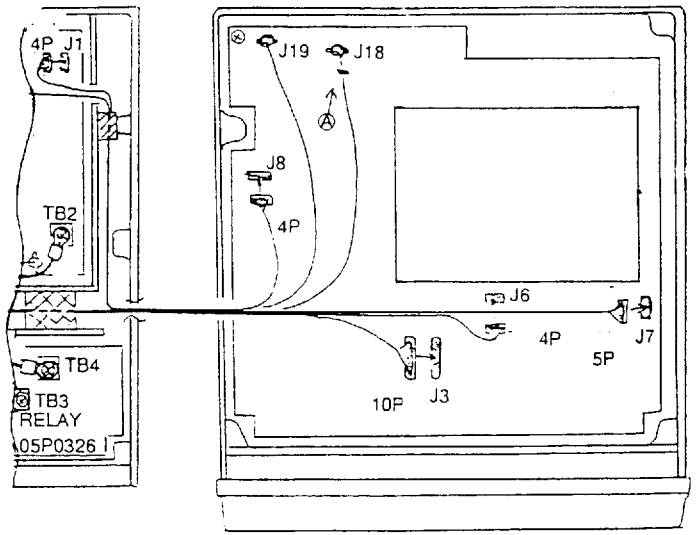



PART-A DETAIL




| | |
|---|---|
| APPROVED | TITLE: GUIDE FOR FIXING REMOTE & CONTROL BOARDS AND CONNECTORS |
| CHECKED | |
| DRAWN | DWG. NO. |



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## Connection of floating ground radiotelephone (FS-5000, etc.)

Connect the FS-1562 to the FS-5000 with a connection cable of 0.75mm$^2$ or larger (3C cable, or equivalent), as shown in Figure 3-2.

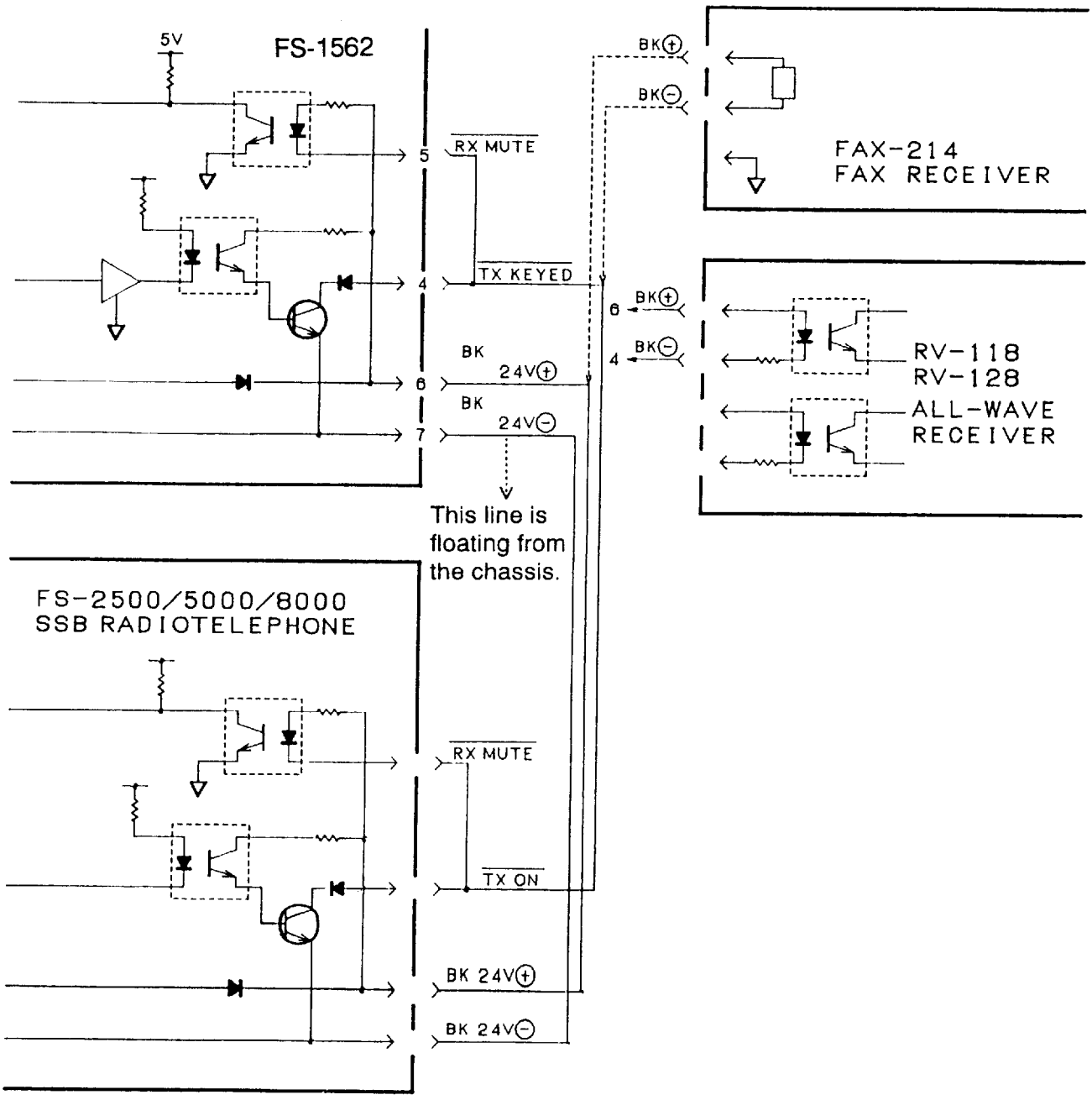



*Figure 3-2 Connection of floating ground radiotelephone*

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# Chapter 4 Installation Checks

## 4.1 Introduction

After completing the installation, check the FS-1562 and all units connected to it for proper connection and operation.

## 4.2 Visual Check

Before turning on the radiotelephone, visually check it as follows.

**Antenna**

- Are fixing bolts, wire clips, shackles securely tightened?
- Are the antenna and/or coaxial lead-in waterproofed?
- Is the antenna wire securely connected to the coupler?
- Make sure no mechanical stress is applied to the antenna terminal of the antenna coupler.

**Antenna coupler**

- Is the unit perfectly grounded by using a copper strap?
- Is the vent tube installed in proper location?
- Are all wirings correctly made?

**Transceiver**

- Is the unit grounded with the supplied ground wire? Length of the wire is as short as possible? If length of the wire is long, use copper strap. (local supply)
- Are all wirings correctly made?
- Are all connectors securely tightened?

**Power Amp Unit (250W only)**

- Is the unit grounded with the supplied ground wire? Length of the wire is as short as possible? If length of the wire is long, use copper strap. (local supply)
- Are all wirings correctly made?
- Are all connectors securely tightened?

## 4.3 Self-test

Carry out self-test, referring to PART 2 of the Operator's Manual.

## 4.4 Performance Check

**Receiver**

1) Set the controls on the front panel as follows.

| | | | |
|---|---|---|---|
| Speaker: | ON | Squelch: | OFF |
| AGC: | ON | Sensitivity: | Max |

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2) Confirm that a signal can be received on each band. If noise or signal is weak, check the antenna lead-in section, coaxial cable connection and ground connections.

**Transmitter**

1) On each band, confirm that the antenna is automatically tuned when the [TX TUNE] key is pressed. ("OK" appears when tuning is completed successfully.) Automatic tuning time of the antenna should take no longer than 15 seconds. If you find a channel which takes more than 15 seconds to tune, recheck antenna length.

2) Communicate with the handset, confirming that antenna current (IA) changes with voice level.

## 4.5 User Channel

Register permitted frequency, referring to the Service Manual.

## 4.6 Manual 2182 kHz Tuning Preset

For safety measure, it is required that 2182 kHz be tunable both automatically and manually. The setup to enable manual tuning, in the event the antenna tuner system fails, is made with the DIP switches in the Antenna Coupler.
Call a coast station and tell your situation. Be sure not to transmit during silent period (00 to 03 min. 30 to 33 min. of every hour).

1. Remove the top cover of the Antenna Coupler. Set the Manual- AUTO switch (Coupler Board) to AUTO.

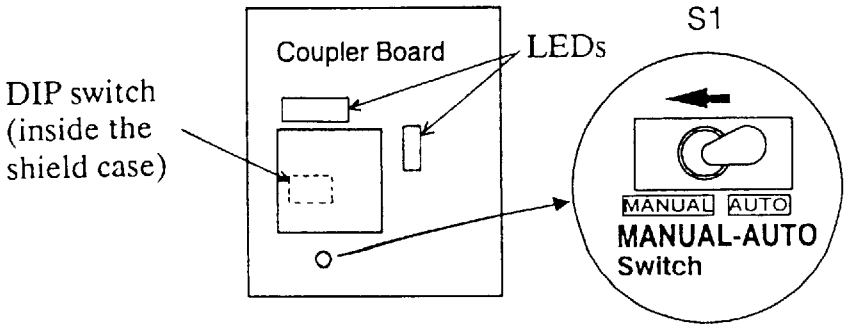



*Figure 4-1 MANUAL-AUTO Switch on the Coupler Board*

2. Turn the Transceiver on.
3. Press the **2182** key.
4. Press the **TX TUNE** key. "TUNE" appears on the LCD. "OK" appears when tuning is completed. Record the status (on or off) of LEDs CR1-CR22 on the Coupler board.
5. Set S1 to MANUAL.

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6. Set DIP Switches S4 thru S6 according to LED status recorded in step 4.

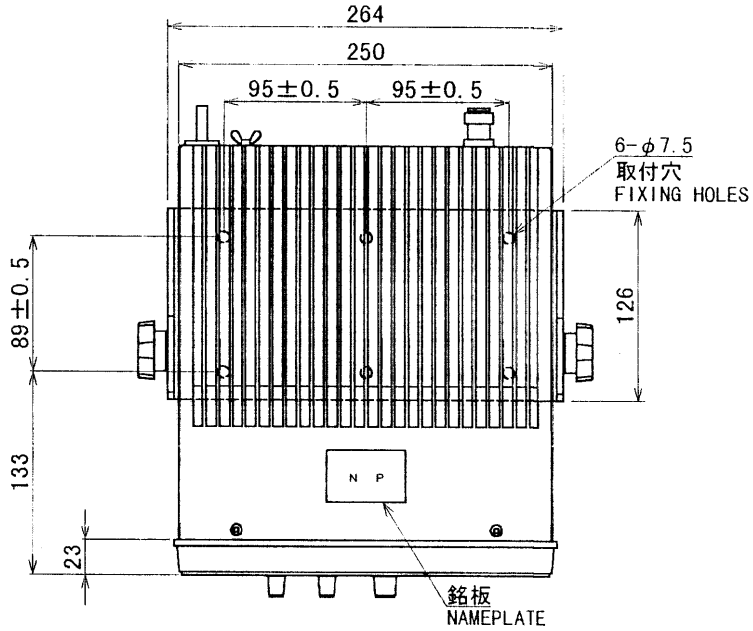
| DIP Switch | | LED |
|---|---|---|
| S4 | #8 | CR1 |
| | 7 | CR2 |
| | 6 | CR3 |
| | 5 | CR4 |
| | 4 | CR5 |
| | 3 | CR6 |
| | 2 | CR7 |
| | 1 | CR8 |
| S5 | #8 | CR9 |
| | 7 | CR10 |
| | 6 | CR11 |
| | 5 | CR12 |
| | 4 | CR13 |
| | 3 | CR14 |
| | 2 | CR15 |
| | 1 | CR16 |
| S6 | #8 | CR17 |
| | 7 | CR18 |
| | 6 | CR19 |
| | 5 | CR20 |
| | 4 | CR21 |
| | 3 | CR22 |

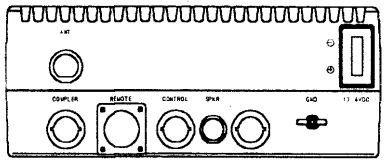
Be sure that S6 #1 is set to "OFF" any time.

7. Return the switch to AUTO, confirming that LEDs do not change. If different, repeat step 6.
8. Set S1 to MANUAL.
9. Making sure it is not silent time, communicate with the handset. Confirm that IA changes with voice level.
10. Set S1 to AUTO. Close the cover of the Antenna Coupler.

■ **Note**: *If necessary a frequency other than 2182 kHz can be selected as manual tuning frequency. Similar to the above procedure record the status of LEDs CR1-CR22 during automatic tuning of an often-used frequency and set DIP Switches S4 to S6 according to LED status.*

FURUNO

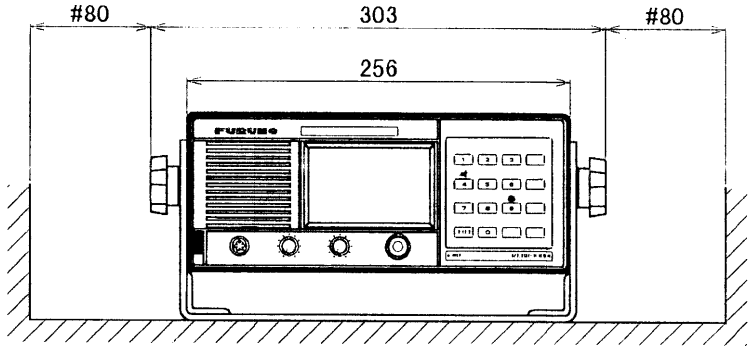


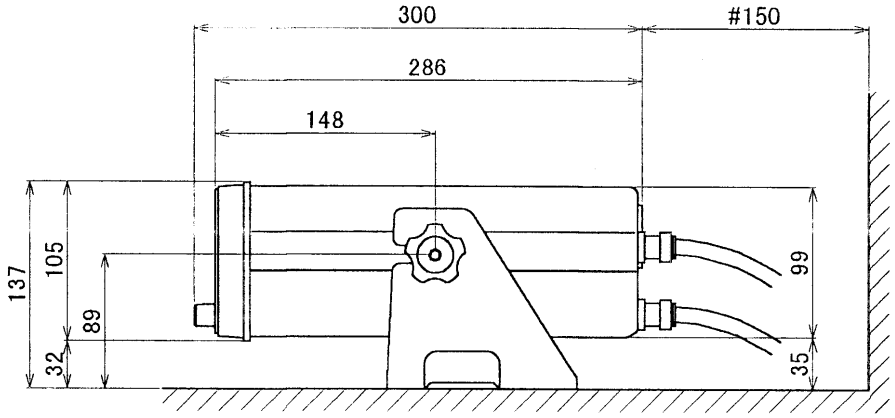




背面図
REAR VIEW

| 寸法区分 (mm) DIMENSION | 公差 (mm) TOLERANCE |
|---|---|
| 0 ＜ L ≦ 50 | ±1．5 |
| 50 ＜ L ≦ 100 | ±2．5 |
| 100 ＜ L ≦ 500 | ±3 |

表 1
TABLE 1




注 記 1） #印寸法は最小サービス空間寸法とする。
2） 指定外の寸法公差は表１による。
3） 取付用ネジはＭ６ボルトまたはコーチボルト呼び径６を使用のこと。
4） 装備ケーブルはサービス時、本体を前方に十分引き出せるよう余裕を持たせること。

NOTE 1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
3. USE M6 BOLTS OR COACH BOLTS φ6 FOR FIXING UNIT.
4. KEEP ENOUGH CABLE LENGTH BEHIND UNIT.

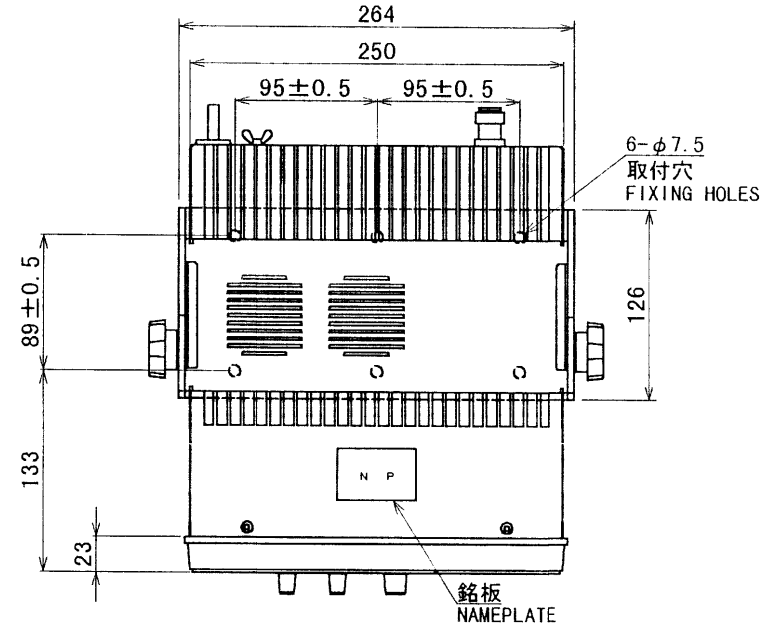
| | | | |
|---|---|---|---|
| DRAWN Feb 3'00 T.YAMASAKI | | | TITLE FS-15/75/2550/1552/1562 |
| CHECKED Feb 4'00 K.Fujiwara | | | 名称 デジタルMF/HF送受信装置 |
| APPROVED Feb 4'00 K.Fujiwara | | | 外寸図 |
| SCALE 1/5 | MASS ±10% 6.4 kg | | NAME SSB TRANSCEIVER |
| DWG. No. C5574-G02- C | | 05-062-3200-G0 | OUTLINE DRAWING |

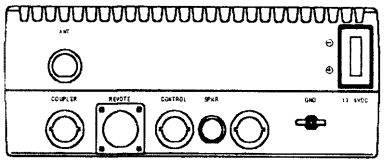
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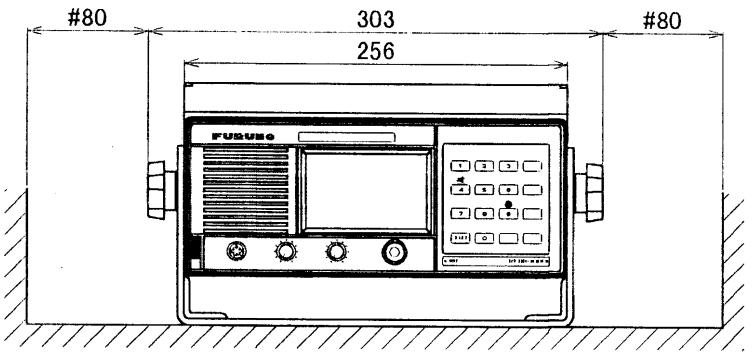


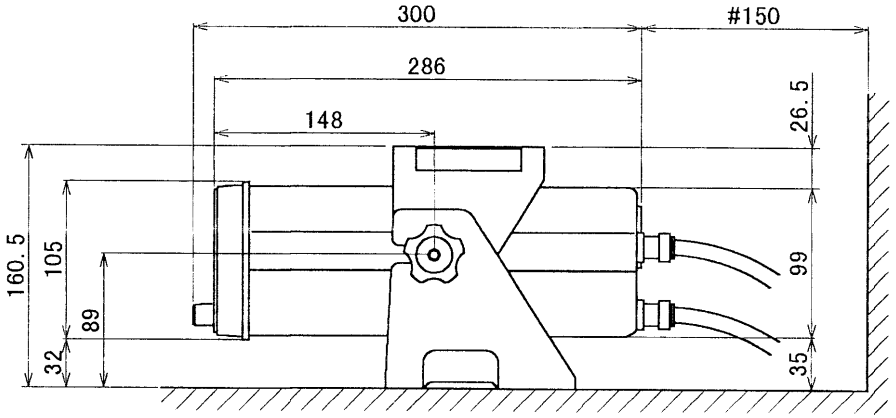



背面図
REAR VIEW

| 寸法区分 (mm) DIMENSION | 公差 (mm) TOLERANCE |
|---|---|
| 0 ＜ L ≦ 50 | ±1．5 |
| 50 ＜ L ≦ 100 | ±2．5 |
| 100 ＜ L ≦ 500 | ±3 |

表 1
TABLE 1




注 記 1） #印寸法は最小サービス空間寸法とする。
2） 指定外の寸法公差は表１による。
3） 取付用ネジはＭ６ボルトまたはコーチボルト呼び径６を使用のこと。
4） 装備ケーブルはサービス時、本体を前方に十分引き出せるよう余裕を持たせること。

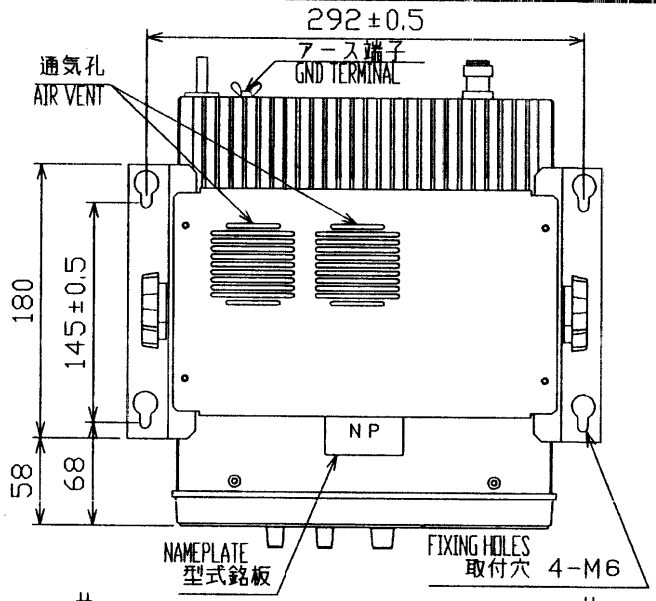
NOTE 1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
3. USE M6 BOLTS OR COACH BOLTS φ6 FOR FIXING UNIT.
4. KEEP ENOUGH CABLE LENGTH BEHIND UNIT.

| | | |
|---|---|---|
| DRAWN Feb 3 '00 T.YAMAZAKI | | TITLE FS-15/75/2550/1552/1562 |
| CHECKED Feb 4 '00 K.KASUKAWA | | 名称 デジタルMF/HF送受信装置（冷却ファン付） |
| APPROVED Feb 9 '00 K.FURUNO | | 外寸図 |
| SCALE 1/5 | MASS ±10% 6.5 kg | NAME SSB TRANSCEIVER W/ HANGER & FAN KIT |
| DWG. No. C5573-G02- E | | OUTLINE DRAWING |

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| 寸法区分（mm） DIMENSIONS | 公差（mm） TOLERANCE |
|---|---|
| 0<L≦50 | ±1.5 |
| 50<L≦100 | ±2.5 |
| 100<L≦500 | ±3 |

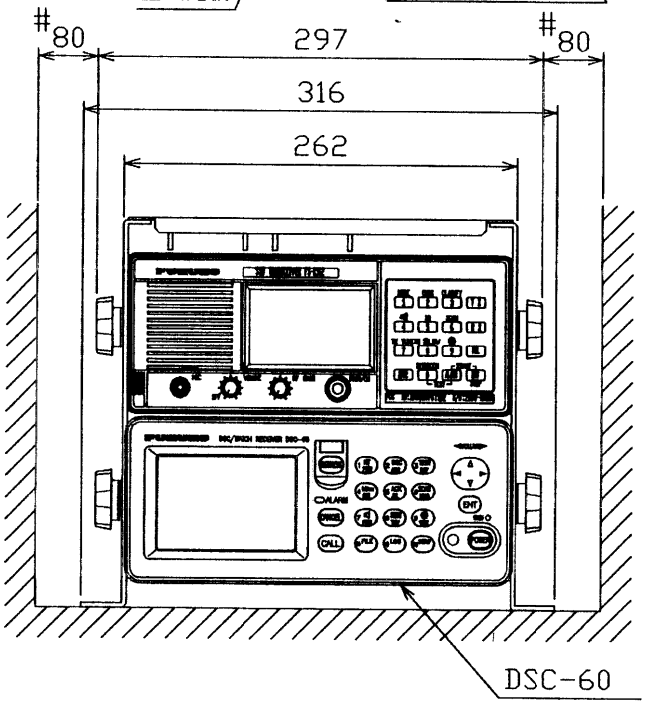
表1 TABLE1

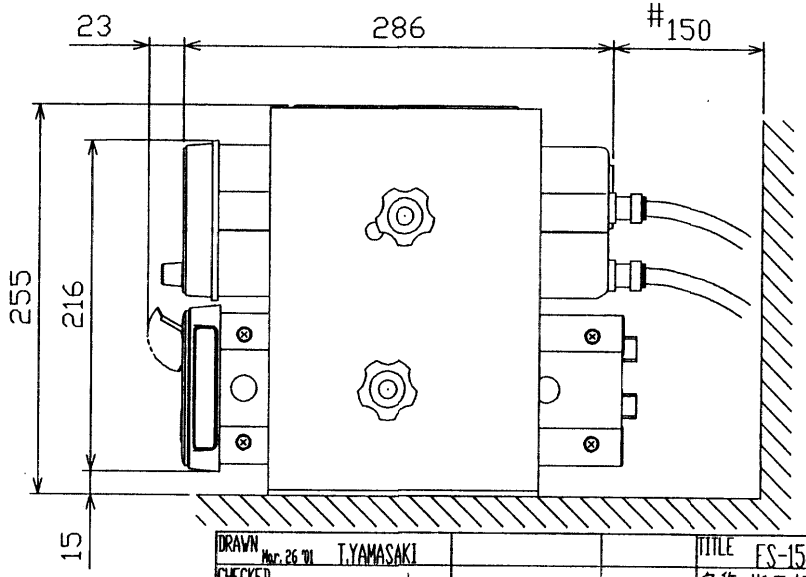
注　記

1）＃印寸法は最小サービス空間寸法とする。
2）指定外の寸法公差は表1による。
3）取付用ネジはM6ボルト、またはコーチボルト呼び径6を使用のこと。
4）装備ケーブルはサービス時、指示部を前方に十分引き出せるよう余裕を持たせること。

NOTE

1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
3. USE M6 BOLTS OR COARCH SCREWS φ6 FOR FIXING THE UNIT.
4. KEEP SUFFICIENT CABLE LENGTH BEHIND THE UNIT.




| | | | |
|---|---|---|---|
| DRAWN Mar. 26 '01 T.YAMASAKI | | | TITLE FS-1562 |
| CHECKED Mar 27 '01 Y.K | | | 名称 指示部（二段ハンガー） 外寸図 |
| APPROVED Mar 28 '01 S.Yokoyama | | | NAME DISPLAY UNIT W/ HANGER OUTLINE DRAWING |
| SCALE 1/5 | MASS 12 ±10% kg | | |
| DWG No. C5573-G03-A | | 05-062-330G-0 | |

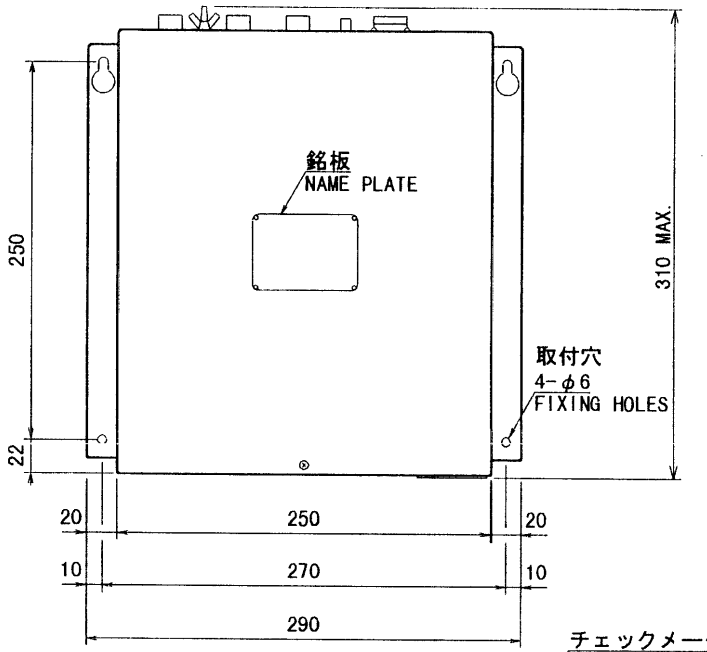
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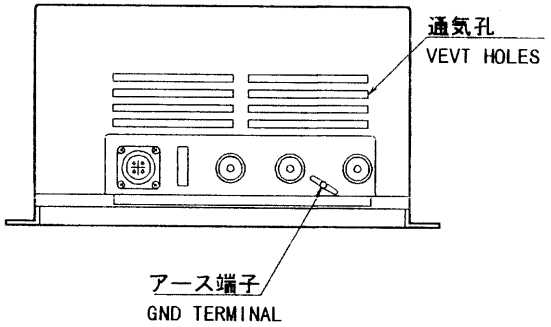
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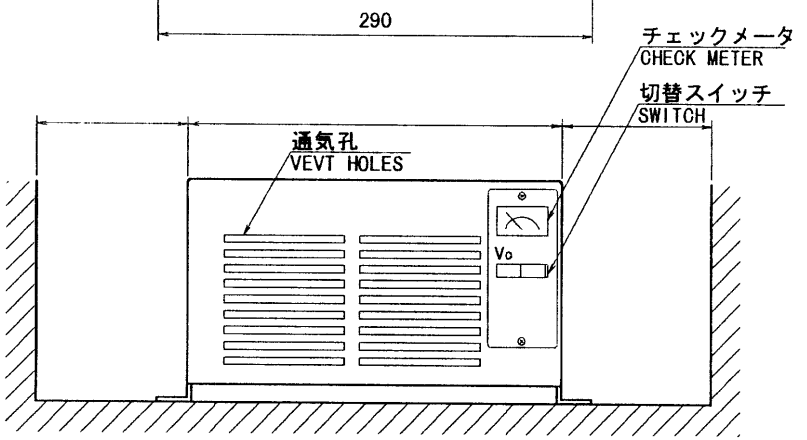
FURUNO

表1 TABLE 1

| 寸法区分(mm) DIMENSION | 公差(mm) TOLERANCE |
|---|---|
| 0 < L ≦ 50 | ±1.5 |
| 50 < L ≦ 100 | ±2.5 |
| 100 < L ≦ 500 | ±3 |

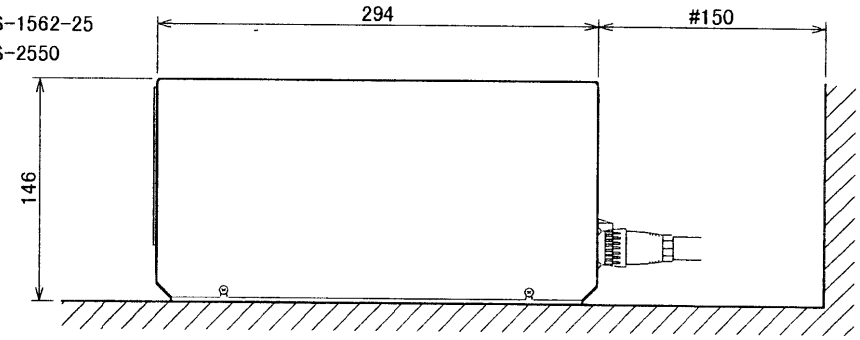



FOR PA-2500J ONLY
PA-2500Jのみ

PA-2500— FS-1562-25
PA-2500J— FS-2550




注記
1）指定なき寸法公差は表1による。
2）取付には＋トラスタッピンネジ呼び径5x20を使用のこと。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
2. USE TAPPING SCREWS 5x20 FOR INSTALLATION.

| | | | |
|---|---|---|---|
| DRAWN June.26'00 T.YAMASAKI | | | TITLE PA-2500, PA-2500J |
| CHECKED June26'00 Y.Kim | | | 名称 パワーブスター |
| APPROVED June26'00 Y.Kim | | FS-2550 FS-1562 | 外寸図 |
| SCALE 1/5 | MASS 6 ±10% kg | | NAME POWER BOOSTER |
| DWG. No. C5596-G01- D | | | OUTLINE DRAWING |

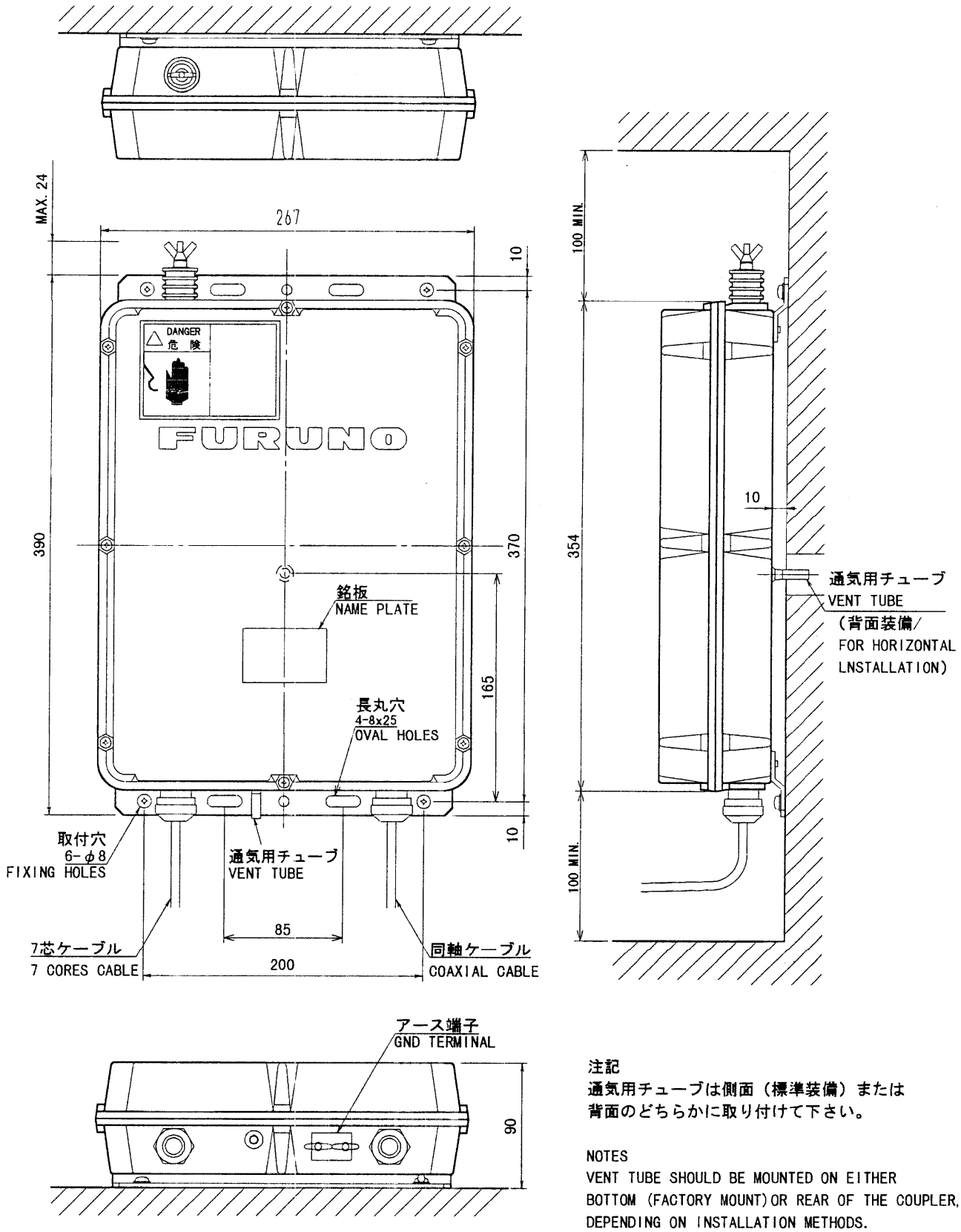
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注記
通気用チューブは側面（標準装備）または
背面のどちらかに取り付けて下さい。

NOTES
VENT TUBE SHOULD BE MOUNTED ON EITHER
BOTTOM (FACTORY MOUNT) OR REAR OF THE COUPLER,
DEPENDING ON INSTALLATION METHODS.

| | | | |
|---|---|---|---|
| DRAWN June 26'00 T.YAMASAKI | | | TITLE AT-1560, AT-1560-25 |
| CHECKED June 26 '00 Y.Kina | FS-2550 | | 名称 アンテナカプラー |
| APPROVED June 26 '00 Y.Kina | FS-15/75<br>FS-1562-15/25 | | 外寸図 |
| SCALE 1/4 | MASS 3.2 kg | | NAME ANTTENA COUPLER |
| DWG. No. C5574-G01- D | | | OUTLINE DRAWING |

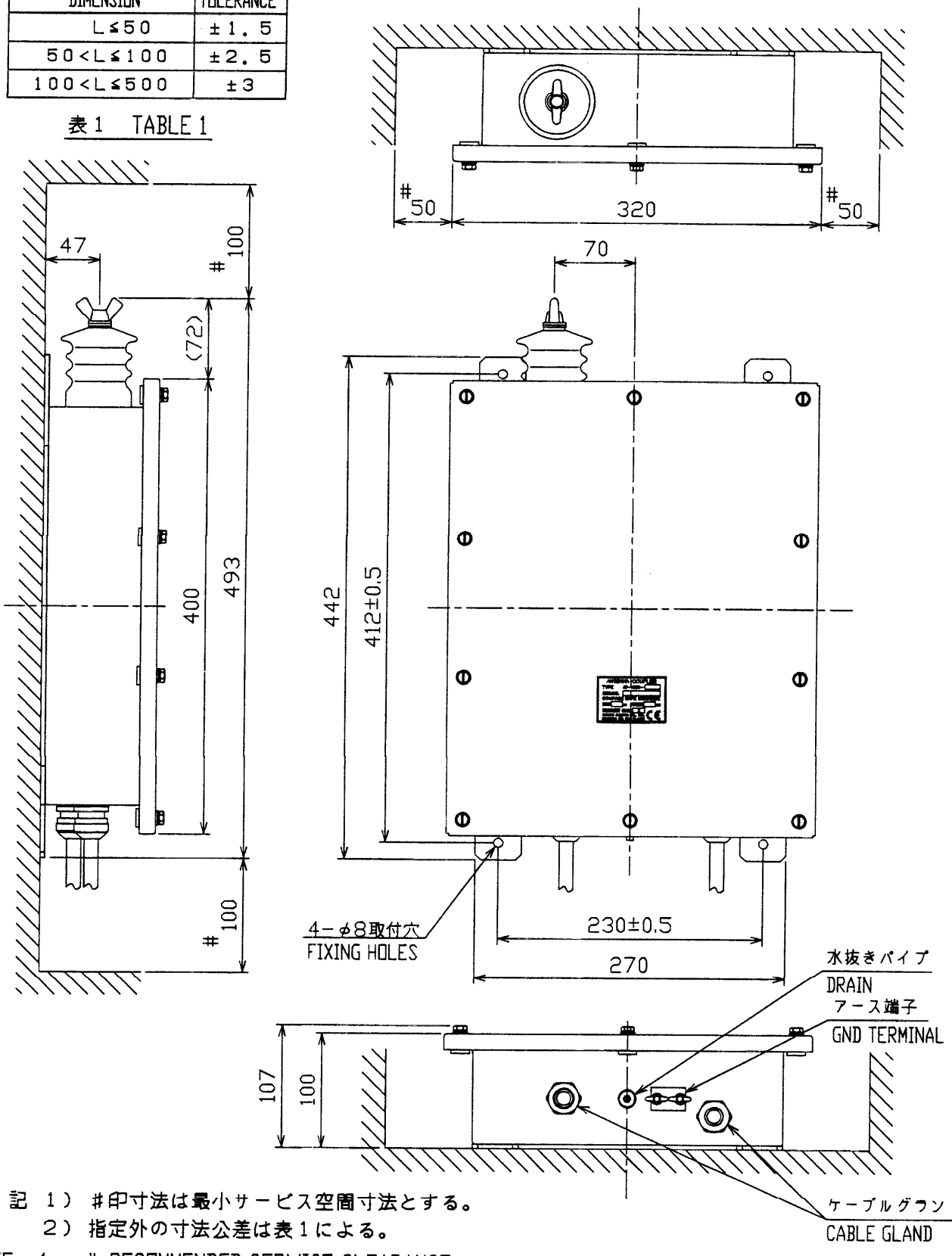
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| 寸法区分（mm） DIMENSION | 公差（mm） TOLERANCE |
|---|---|
| L≦50 | ±1.5 |
| 50<L≦100 | ±2.5 |
| 100<L≦500 | ±3 |

表1 TABLE 1




注 記 1） #印寸法は最小サービス空間寸法とする。
2） 指定外の寸法公差は表1による。

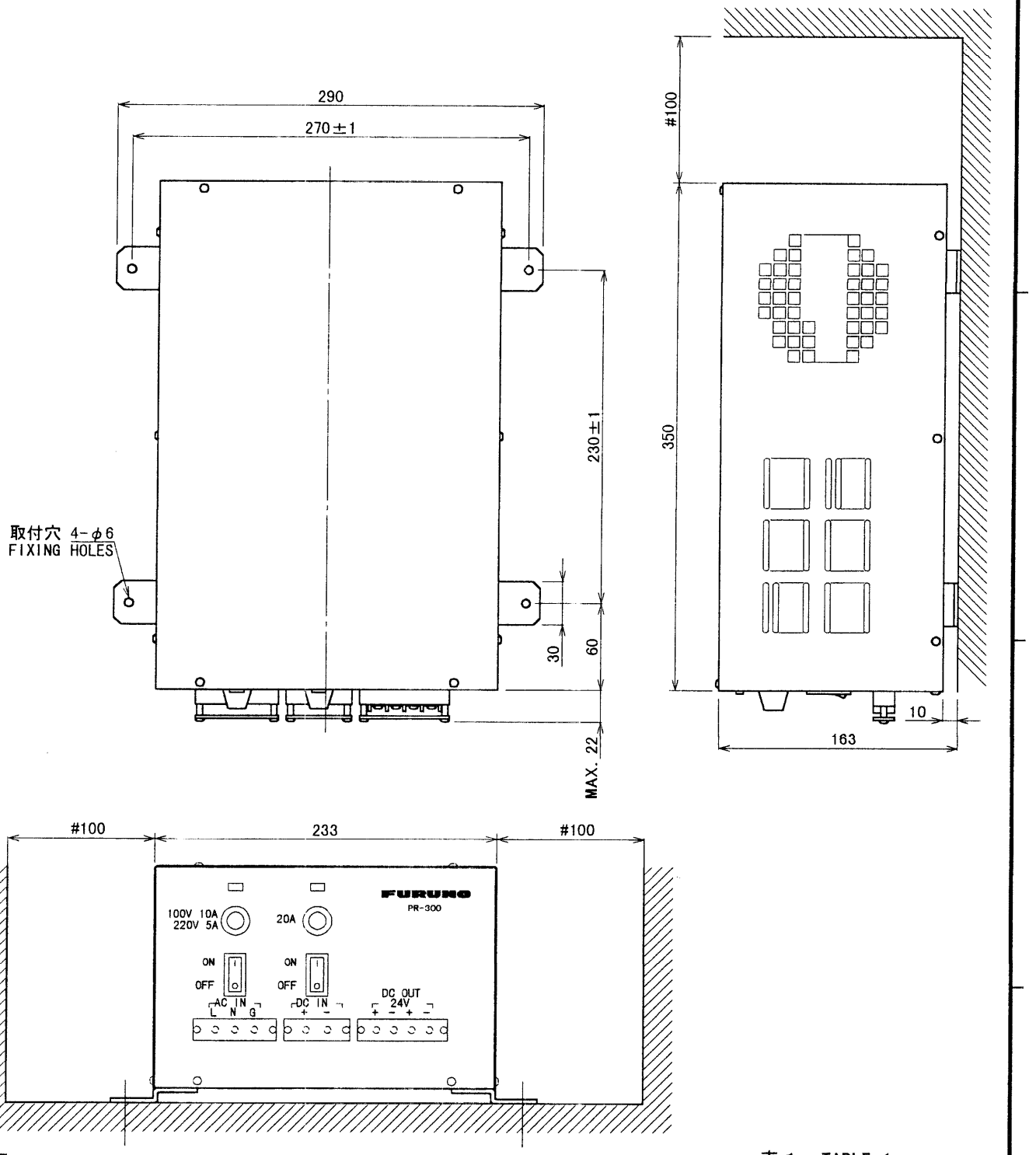
NOTE 1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

| | | | |
|---|---|---|---|
| DRAWN Jul.16 '01 T.YAMASAKI | | | TITLE AT-1560-15/25-SUS |
| CHECKED July/6'01 | | | 名称 アンテナカプラー |
| APPROVED July/6'01 | | FS-1562-15/25 | 外寸図 |
| SCALE 1/5 | MASS 8.7 ±10% kg | | NAME ANTENNA COUPLER |
| DWG.No. C5572-G03-A | | 05-029-030G-2 | OUTLINE DRAWING |

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注記

1）#：推奨する最小サービス空間寸法。

2）指定なき寸法公差は表1による。

NOTE:

1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

表1 TABLE 1

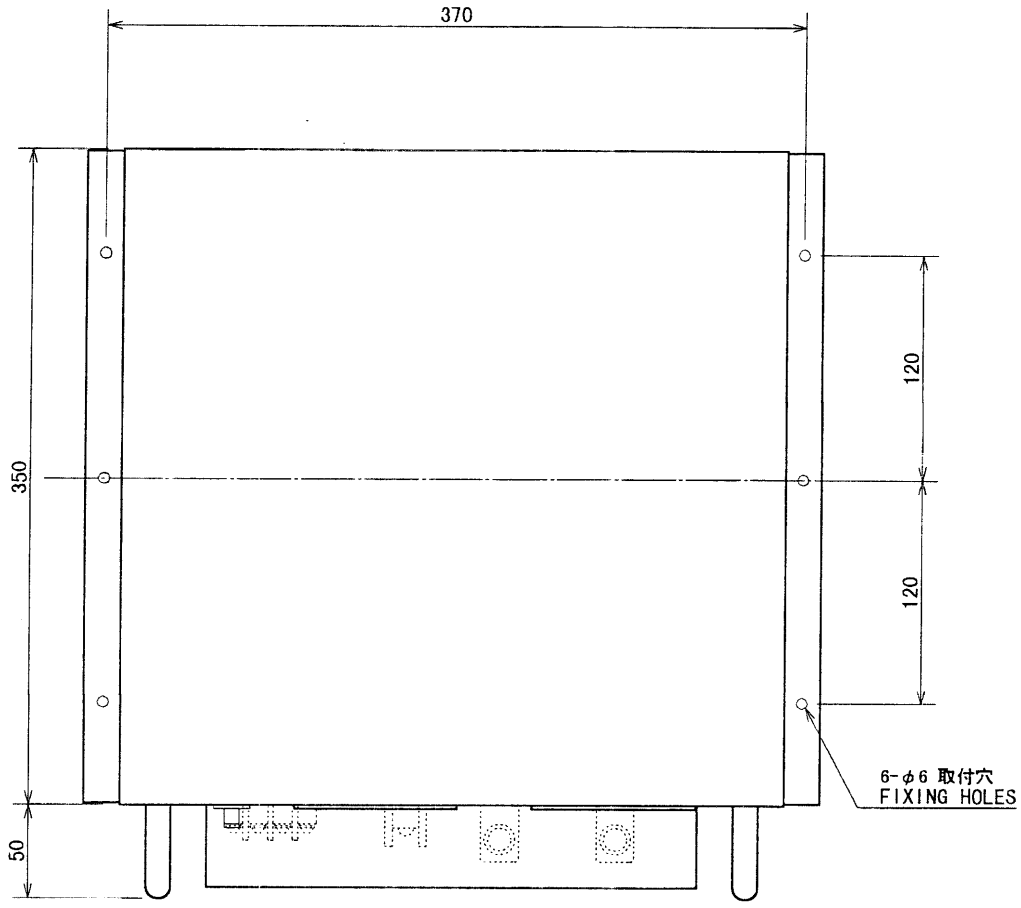
| 寸法範囲 (mm) DIMENSION | 公差 (mm) TOLERANCE |
|---|---|
| 0 ＜ L ≦ 50 | ±1.5 mm |
| 50 ＜ L ≦ 100 | ±2.5 mm |
| 100 ＜ L ≦ 500 | ±3 mm |

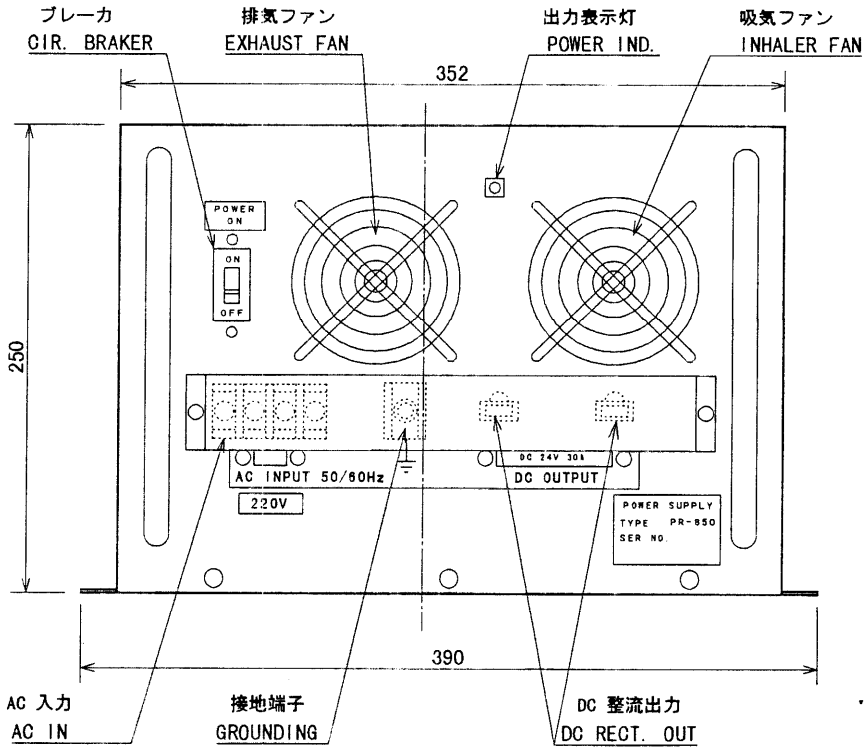
| | | | |
|---|---|---|---|
| DRAWN June.19'00 T.YAMASAKI | | TITLE | PR-300 |
| CHECKED June 19 '00 T. Kuno | | 名称 | AC-DC電源ユニット |
| APPROVED June 19 '00 T. Kuno | | | 外寸図 |
| SCALE 1/4 | MASS ±10% 14.5 kg | NAME | AC-DC POWER SUPPLY UNIT |
| DWG. No. C5003-G02- D | | | OUTLINE DRAWING |

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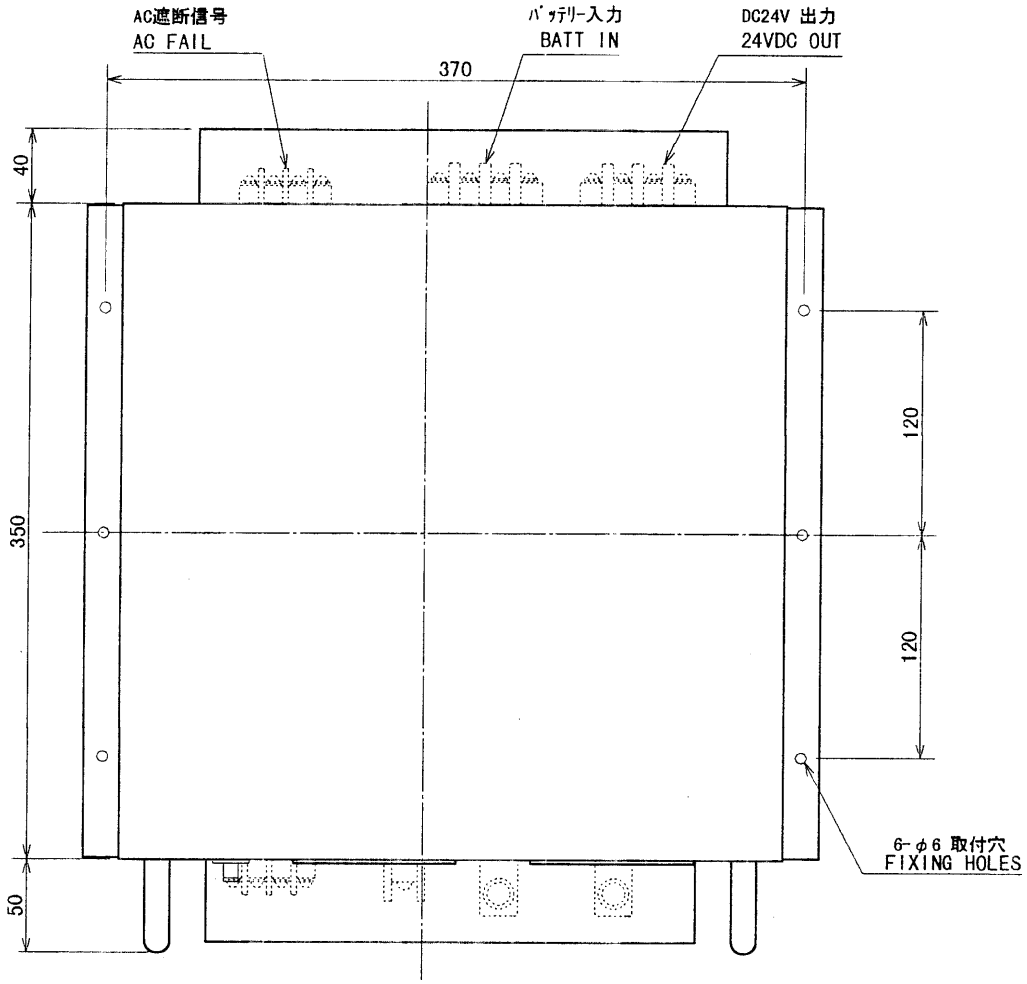



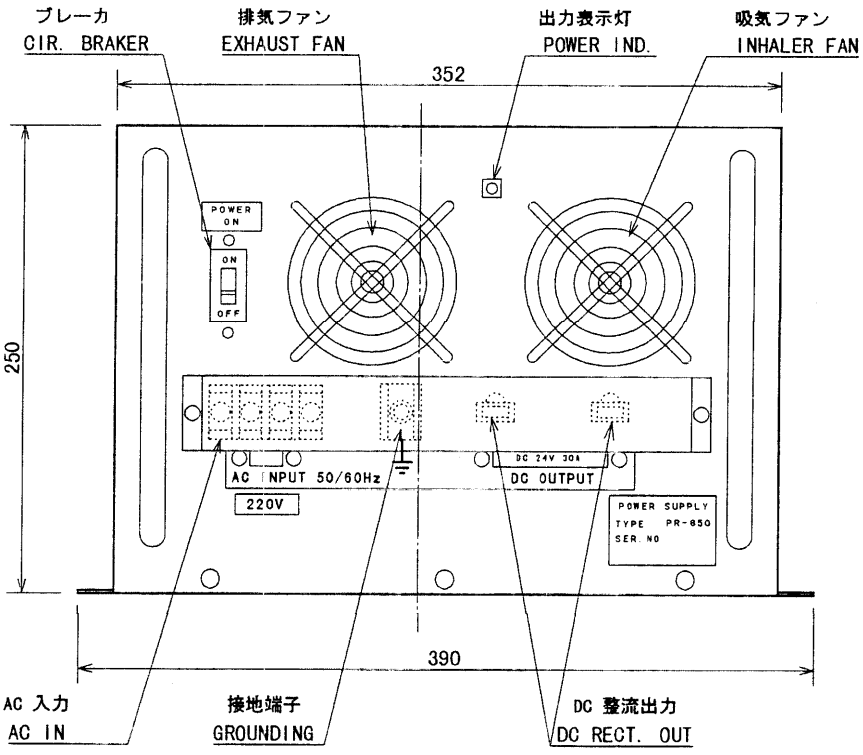

| | | | |
|---|---|---|---|
| DRAWN June.27'00 T.YAMASAKI | | TITLE | PR-850 |
| CHECKED June27'00 T.Kim | | 名称 | AC電源ユニット |
| APPROVED June27'00 T.Kim | | | 外寸図 |
| SCALE 1/4 | MASS 35 kg | NAME | AC POWER SUPPLY UNIT |
| DWG. No. C5519-G04-C | | | OUTLINE DRAWING |

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| | | | |
|---|---|---|---|
| DRAWN June 27 '00 T. YAMASAKI | | TITLE | PR-850A |
| CHECKED June 27 '00 T. Kuni | | 名称 | AC-DC電源ユニット |
| APPROVED June 27 '00 T. Kuni | | | 外寸図 |
| SCALE 1/4 | MASS 35 kg | NAME | AC-DC POWER SUPPLY UNIT |
| DWG. No. C5519-G11-E | | | OUTLINE DRAWING |

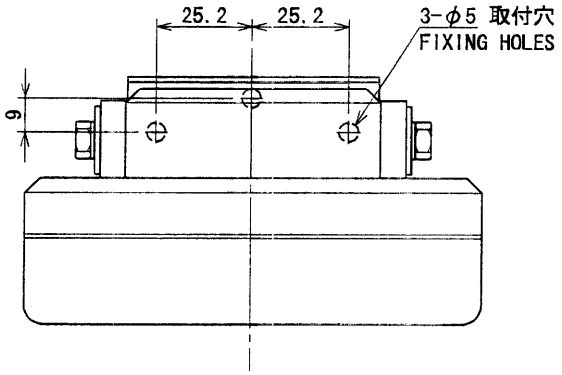
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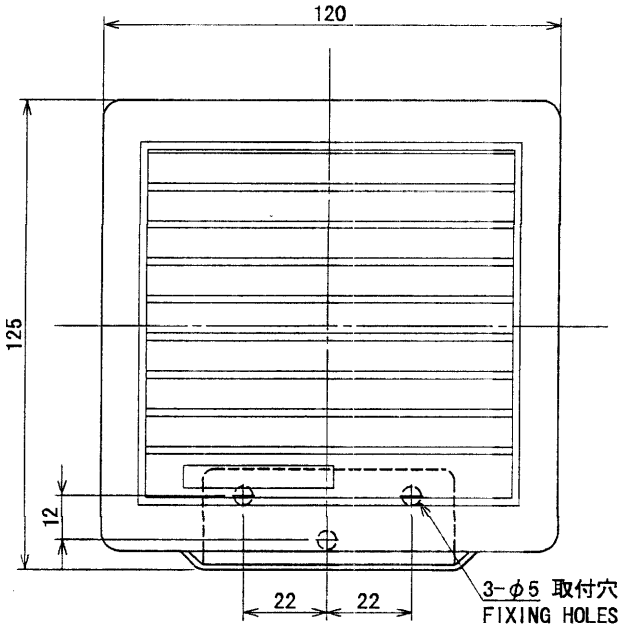
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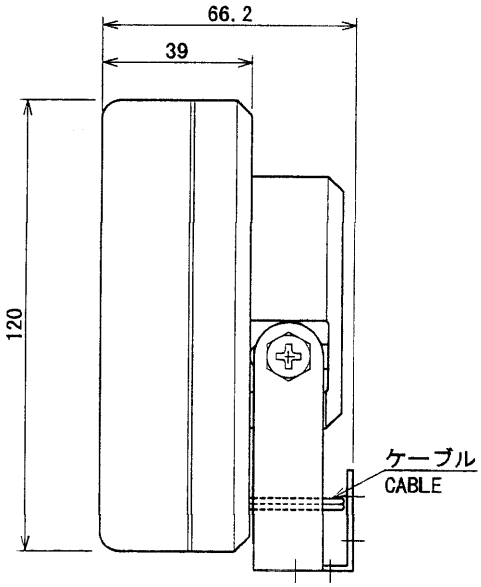


表1　TABLE 1

| 寸法区分(mm) DIMENSION | 公差(mm) TOLERANCE |
|---|---|
| 0 ＜ L ≦ 50 | ±1.5 |
| 50 ＜ L ≦ 100 | ±2.5 |
| 100 ＜ L ≦ 500 | ±3 |




注記

1）指定なき寸法公差は表1による。

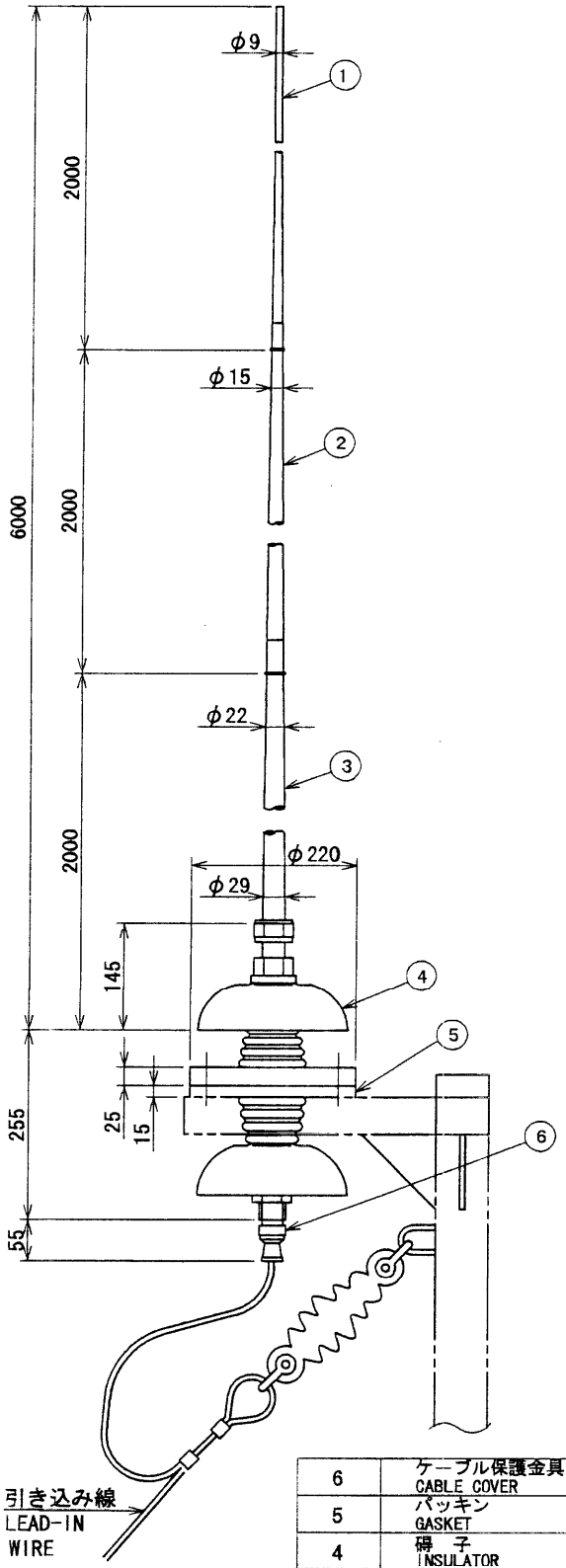
NOTE

1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

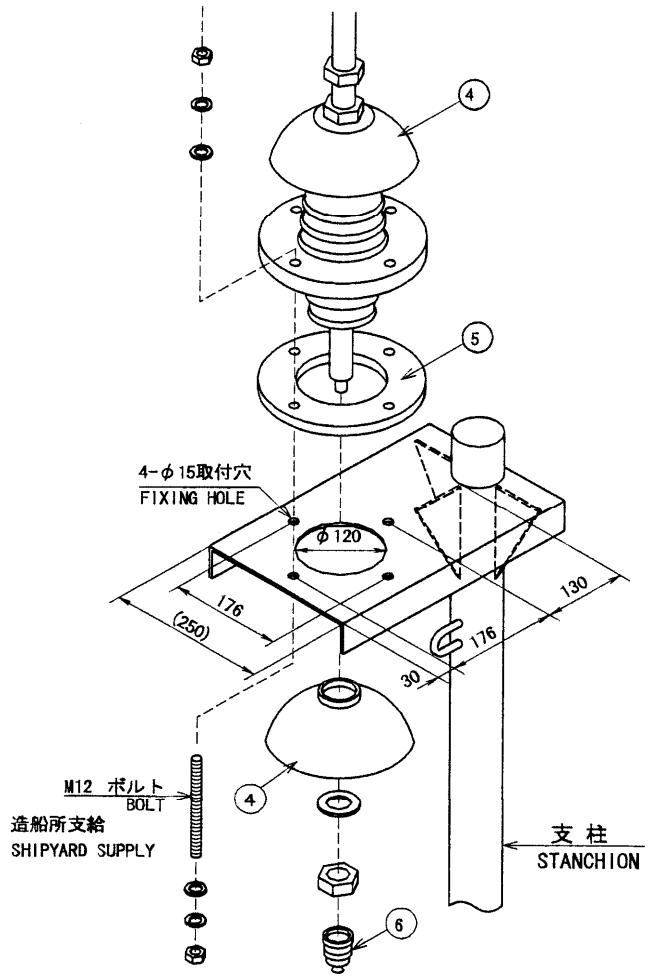
| | | | |
|---|---|---|---|
| DRAWN May 23 '01 T. YAMASAKI | | TITLE | SEM-21Q |
| CHECKED May 24 '01 T. Kim | | 名称 | スピーカ |
| APPROVED May 25 '01 Y. Kim | | | 外寸図 |
| SCALE 1/2 | MASS 0.54 kg ±10% 質量は2.8mケーブルを含む MASS W/ 2.8m CABLE | NAME | LOUDSPEAKER |
| DWG. No. C5016-G07- A | | | OUTLINE DRAWING |

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取付金具（造船所手配）装備例
FABRICATION OF MOUNTING BASE
(SHIPYARD SUPPLY)




| ITEM 品番 | NAME 品名 | MATERIAL 材質 | Q'TY 数量 | DWG No. 図番 | REMARKS 摘要 |
|---|---|---|---|---|---|
| 6 | ケーブル保護金具 CABLE COVER | BRASS | 1 | | |
| 5 | パッキン GASKET | CR | 1 | | φ220x15t |
| 4 | 碍子 INSULATOR | RESIN | 1 | | |
| 3 | 基部素子 BASE ELEMENT | FIBERGLASS | 1 | | |
| 2 | 継素子 MIDDLE ELEMENT | FIBERGLASS | 1 | | |
| 1 | 上部素子 TOP ELEMENT | FIBERGLASS | 1 | | |

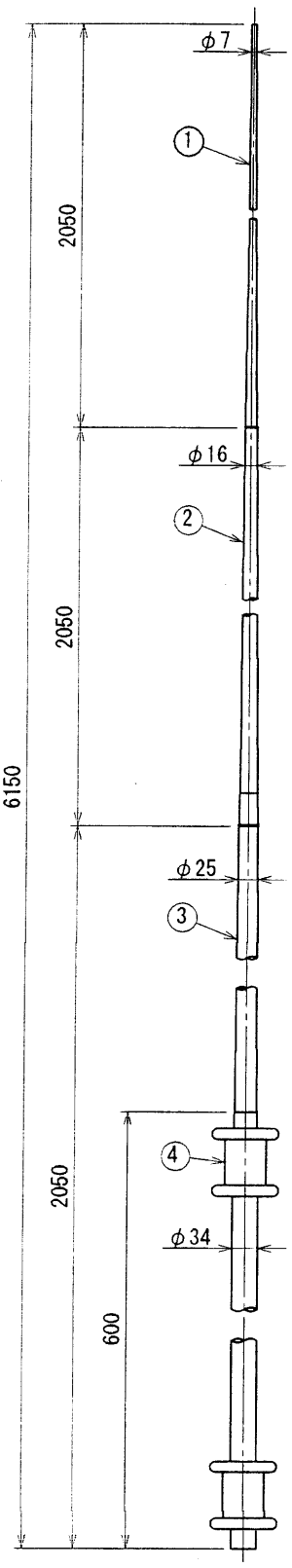
| | |
|---|---|
| DRAWN | Sep27 '00 TYAMASAKI |
| CHECKED | Sep27 '00 Y.Kuni |
| APPROVED | Sep27 '00 Y.Kuni |
| SCALE | 1/10 |
| MASS | 10 kg ±10% |
| DWG. No. | C5011-034- B |
| TITLE | FAW-6D |
| 名称 | 6 m ホイップアンテナ 外寸図 |
| NAME | 6 m WHIP ANTENNA OUTLINE DRAWING |

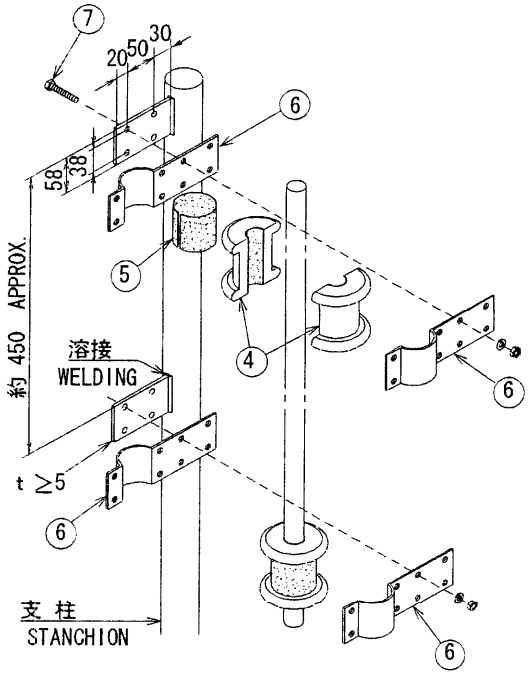
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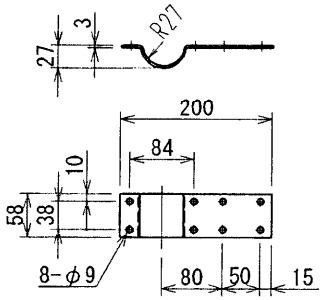
D-12



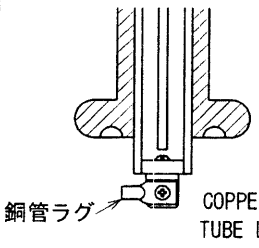




装備例 （支柱造船所手配）
EXAMPLE OF INSTLLATION

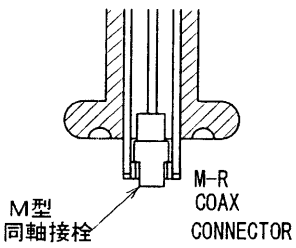
取 付 金 具
BRACKET




FAW-6R2




FAW-6RP2




| 品番 ITEM | 品名 NAME | 材質 MATERIAL | 数量 Q'TY | 図番 DWG.No | 摘要 REMARKS |
|---|---|---|---|---|---|
| 7 | ボルト／ナット BOLT/NUT | SUS | 16 PAIRS | BRACKET (000-571-590) | M8 |
| 6 | 取付金具 SUPPORT ARM | SUS | 2 PAIRS | | t=3mm |
| 5 | 緩衝ゴム板 CUSHION RUBBER | ネオプレンゴム NEOPRENE | 1 | FAW-6R2 (000-572-109) OR FAW-6RP2 (000-572-108) | t=2mm |
| 4 | 上部ホルダー UPPER HOLDER | FRP | 1/2x2 | | |
| 3 | 基部素子 LOWER ELEMENT | グラスファイバ FIBERGLASS | 1 | | |
| 2 | 継素子 MIDDLE ELEMENT | グラスファイバ FIBERGLASS | 1 | | |
| 1 | 上部素子 UPPER ELEMENT | グラスファイバ FIBERGLASS | 1 | | |

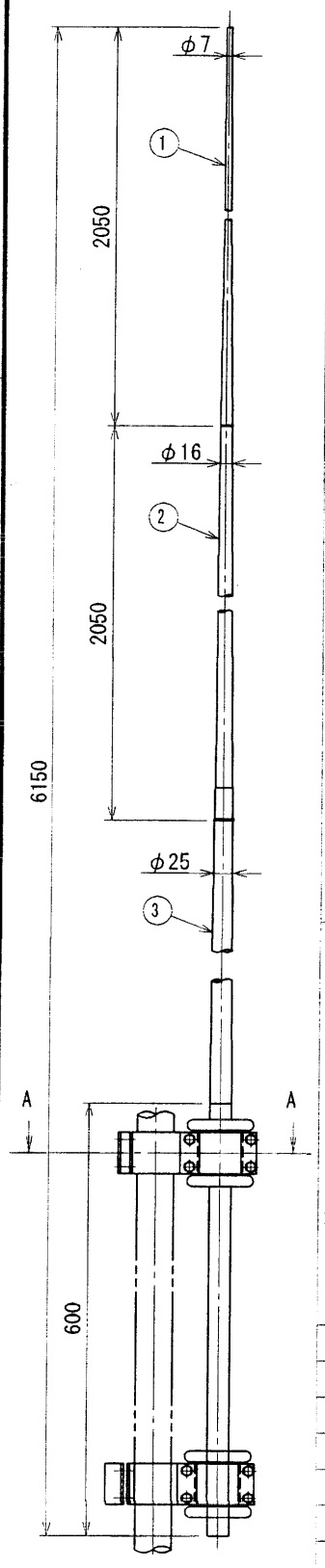
| | | | |
|---|---|---|---|
| DRAWN | Sep 27'00 T.YAMASAKI | TITLE | FAW-6R2/6RP2 |
| CHECKED | Sep 27 '00 T.Kimi | 名称 | ホイップアンテナ |
| APPROVED | Sep 27 '00 T.Kimi | | 外寸図 |
| SCALE | 1/10 | MASS ±10% ELEMENT:3 kg | NAME WHIP ANTENNA |
| DWG. No. | C5011-038- D | | OUTLINE DRAWING |

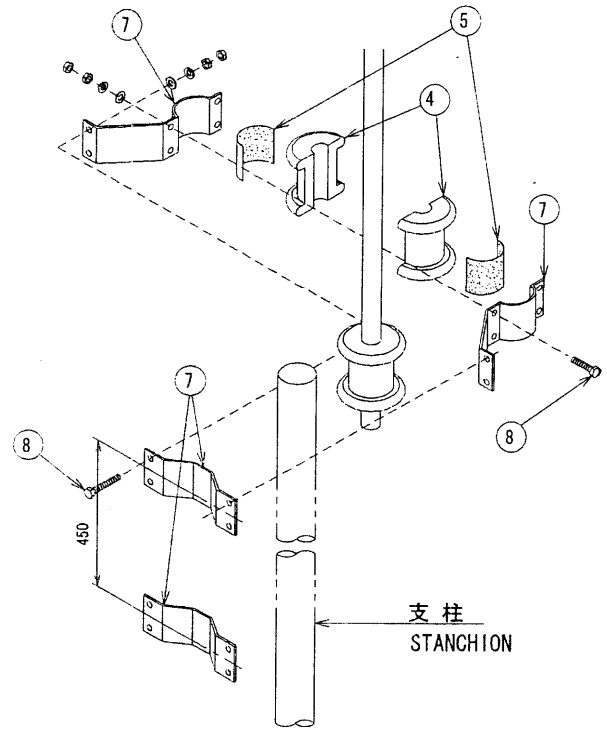
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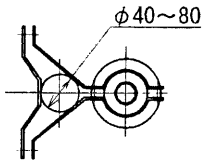
D-13

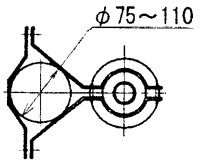


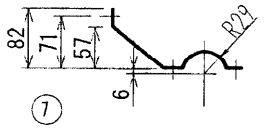




装備例 （支柱造船所手配）
EXAMPLE OF INSTALLATION

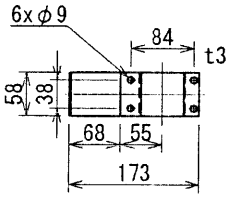
矢視
SECTION A-A



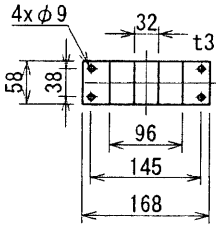

⑦



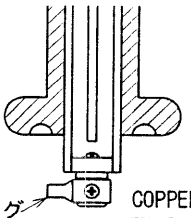




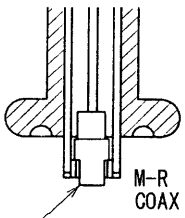
⑥




FAW-6R2A




FAW-6RP2A



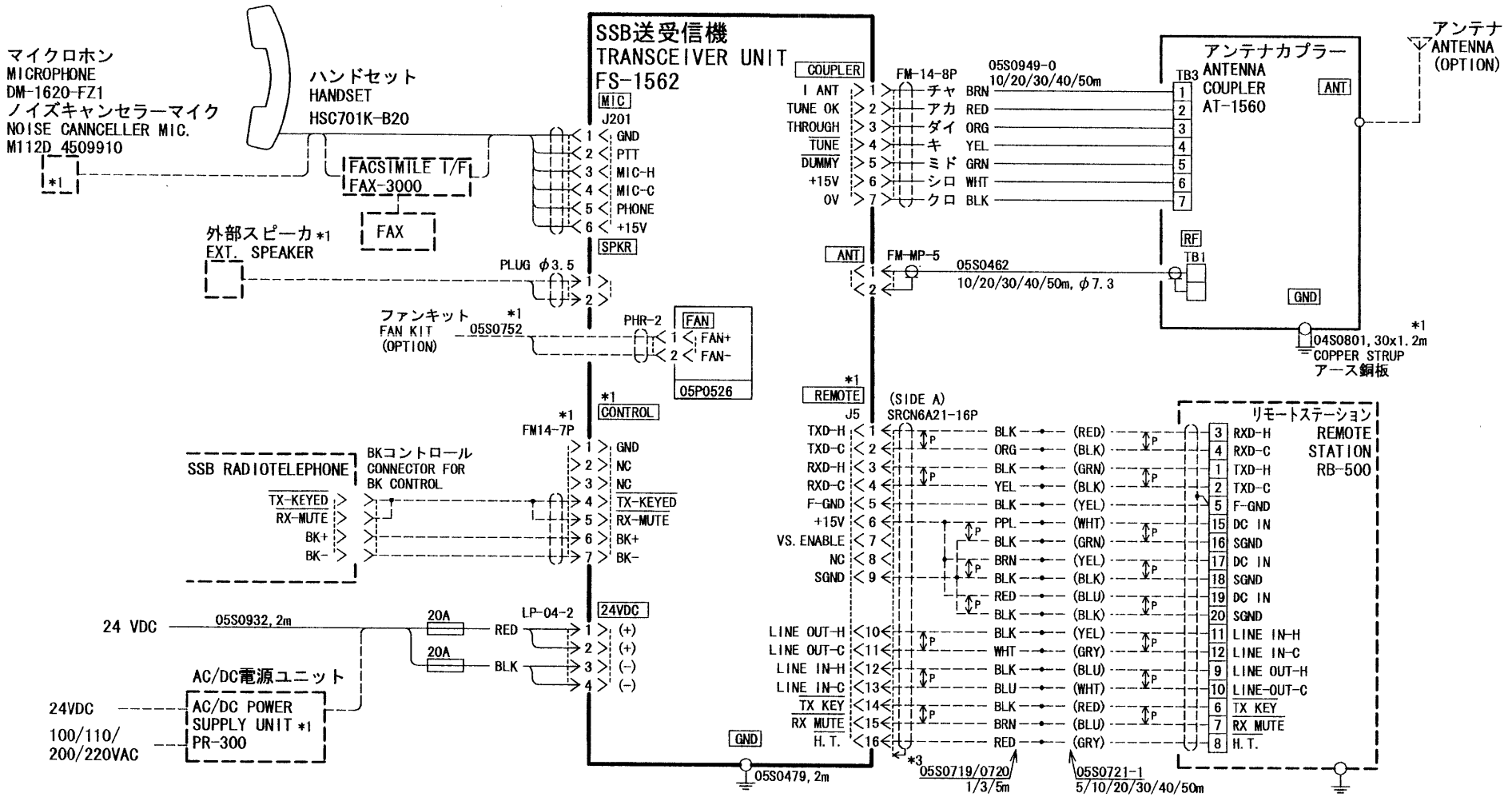

| ITEM | NAME | MATERIAL | Q'TY | DWG No | REMARKS |
|---|---|---|---|---|---|
| 8 | ボルト／ナット BOLT/NUT | SUS305 | 8 PAIRS 8 PAIRS | AKB-6HA (000-107-691) | M8x80 M8x35 |
| 7 | 取付金具 SUPPORT ARM | SUS305 | 4 | | t=3mm |
| 6 | 押え金具 FIXING BRACKET | SUS305 | 2 | | t=3mm |
| 5 | 緩衝ゴム板 CUSHION RUBBER | ネオプレンゴム NEOPREN | 1 | FAW-6R2 (000-572-109) OR FAW-6RP2 (000-572-108) | |
| 4 | 上部ホルダー UPPER HOLDER | FRP | 1/2x2 | | |
| 3 | 基部素子 LOWER ELEMENT | グラスファイバ FIBER GLASS | 1 | | |
| 2 | 継素子 MIDDLE ELEMENT | グラスファイバ FIBER GLASS | 1 | | |
| 1 | 上部素子 UPPER ELEMENT | グラスファイバ FIBER GLASS | 1 | | |

DRAWN Sep 27 '00 T.YAMASAKI
CHECKED Sep 27 '00 T.K
APPROVED Sep 27 '00 T.K
SCALE 1/10
MASS ELEMENT: 3 ±10% BRACKET: 1 kg
DWG. No. C5011-040- C

TITLE FAR-6R2A/6RP2A
名称 ホイップアンテナ 外寸図
NAME WHIP ANTENNA OUTLINE DRAWING

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注記
＊1）オプション。
＊2）造船所手配。
＊3）シールドをコネクタクランプでアースする。

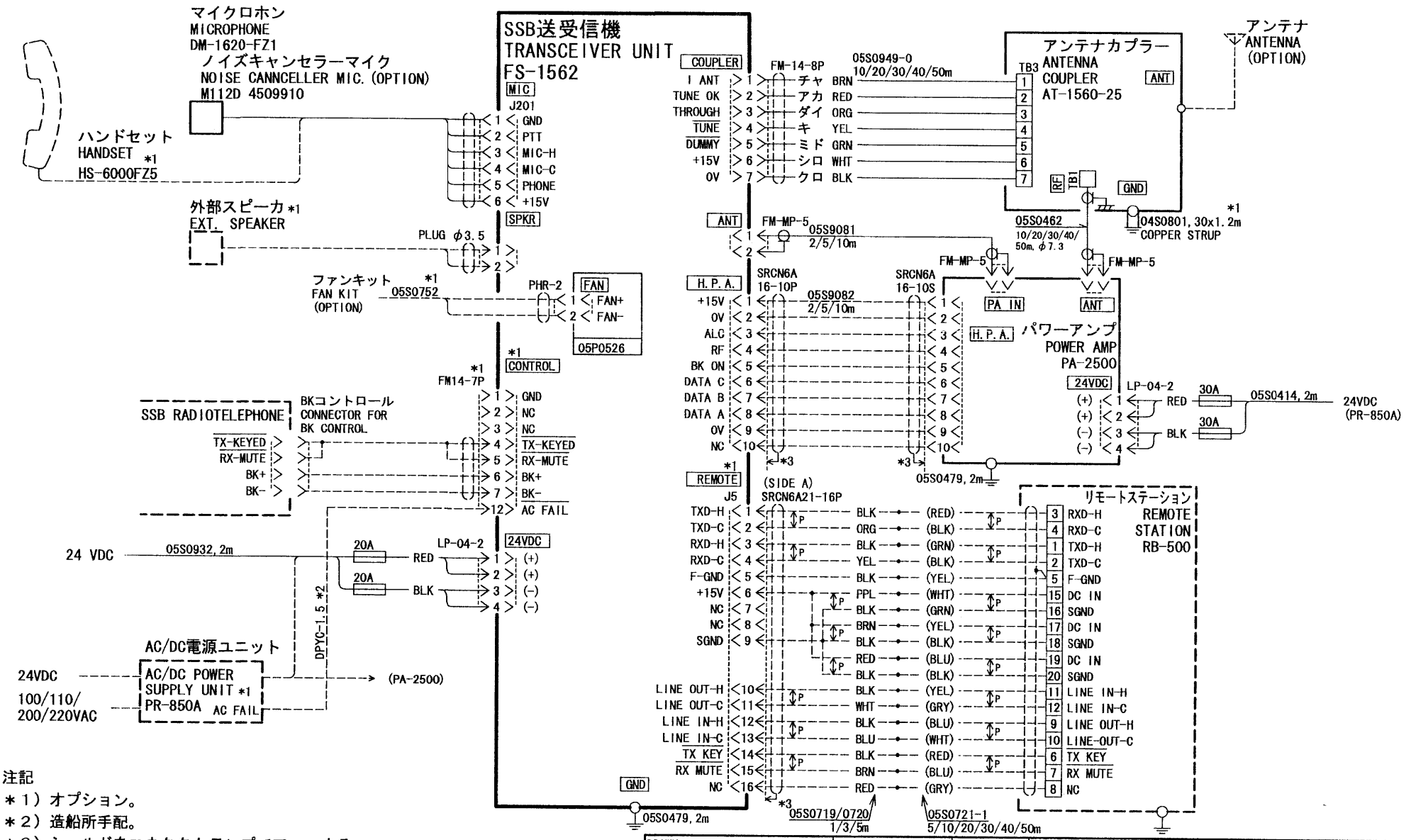
NOTE
*1. OPTION.
*2. SHIPYARD SUPPLY.
*3. GROUND THRU CONNECTOR CLAMP.

| | | | |
|---|---|---|---|
| DRAWN Aug. 9 '01 T. YAMASAKI | | TITLE | FS-1562 |
| CHECKED Aug 9 '01 K. | | 名称 | SSB 送受信機 |
| APPROVED Aug 9 '01 K. | | | 相互結線図 |
| SCALE | MASS kg | NAME | RADIOTELEPHONE |
| DWG. No. C5572-C01- H | | | INTERCONNECTION DIAGRAM |

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注記
＊1）オプション。
＊2）造船所手配。
＊3）シールドをコネクタクランプでアースする。

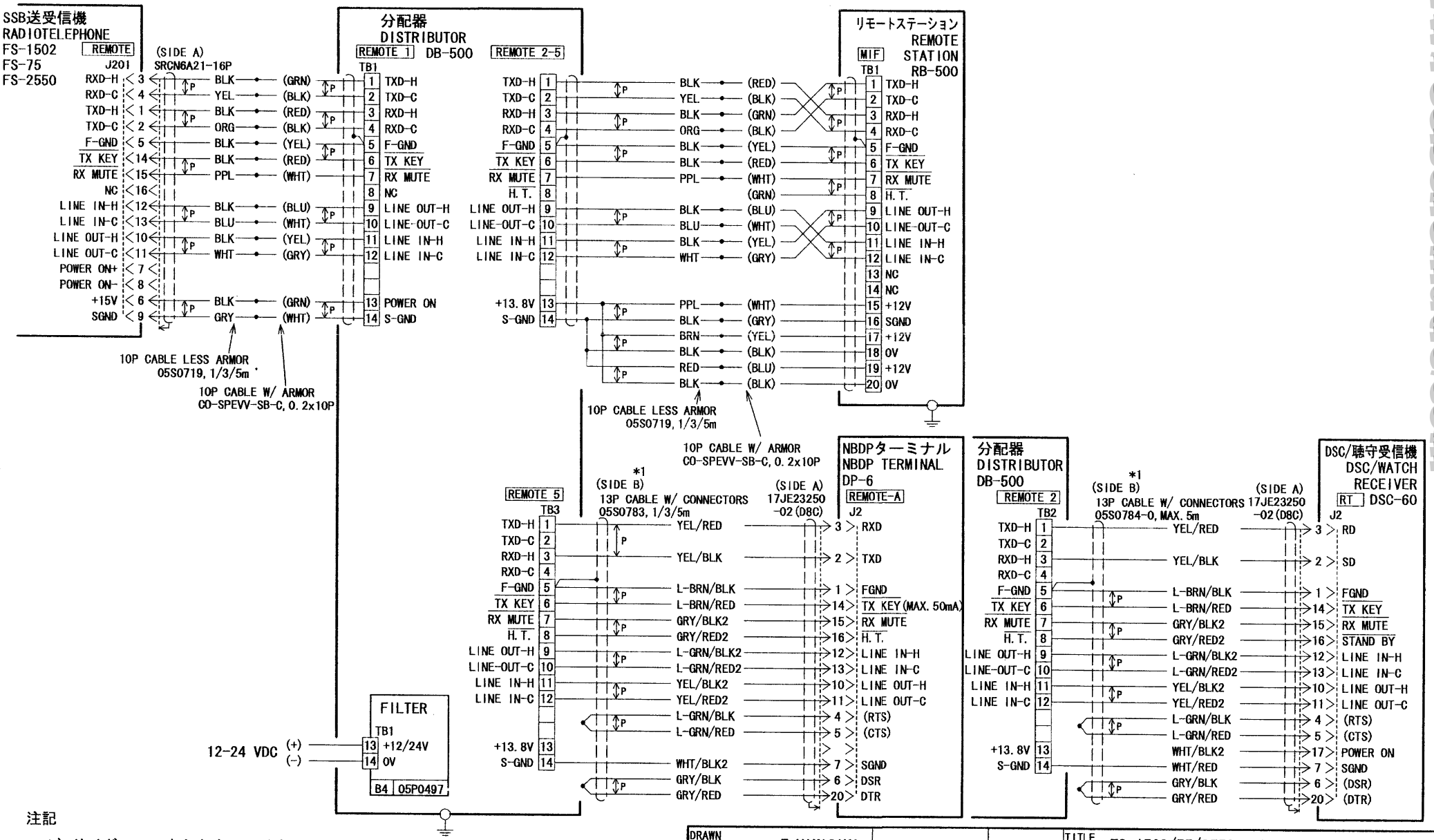
NOTE
*1. OPTIONAL SUPPLY.
*2. SHIPYARD SUPPLY.
*3. GROUND THRU CONNECTOR CLAMP.

| | | |
|---|---|---|
| DRAWN Aug. 9 '01 T. YAMASAKI | | TITLE FS-1562-25 |
| CHECKED Aug 9 '01 T.K | | 名称 SSB 送受信機 |
| APPROVED Aug 9 '01 T.K | | 相互結線図 |
| SCALE / MASS kg | | NAME RADIOTELEPHONE |
| DWG. No. C5596-C01- D | | INTERCONNECTION DIAGRAM |



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注記

＊1）サイドBのコネクタを取り外す。

NOTE

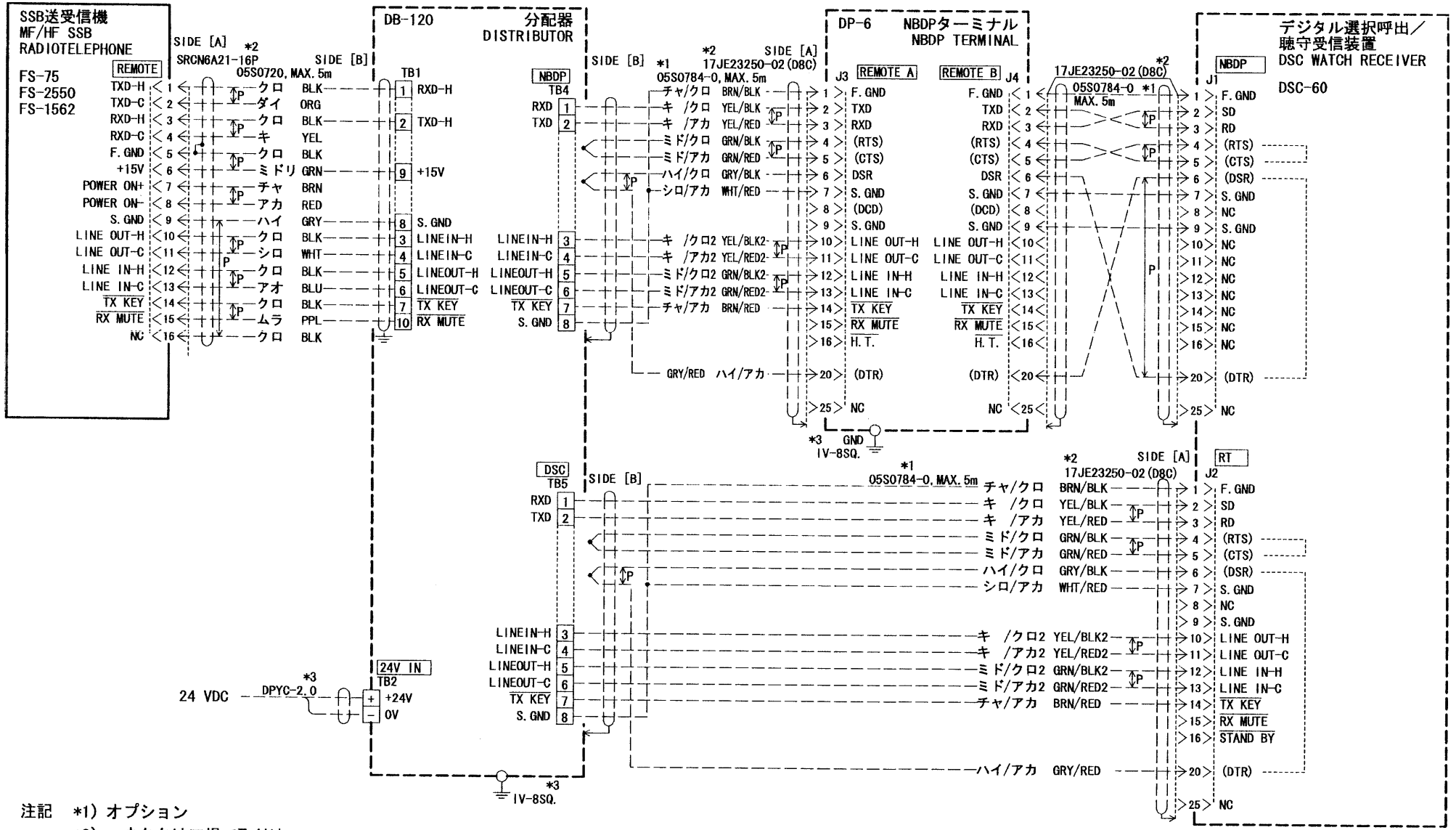
*1. REMOVE CONNECTOR PLAG AT SIDE B.

| | | |
|---|---|---|
| DRAWN Aug. 9 '01 T. YAMASAKI | | TITLE FS-1562/75/2550 + DB-500 |
| CHECKED Aug 9 '01 | | 名称 SSB送受信機 |
| APPROVED Aug 9 '01 | | 相互結線図 |
| SCALE / MASS kg | | NAME SSB RADIOTELEPHONE |
| DWG No. C5596-C02- A | | INTERCONNECTION DIAGRAM |

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注記　*1）オプション
　　*2）コネクタは工場で取付済み。
　　*3）造船所手配。

NOTE　*1. OPTION
　　*2. CONNECTOR PLUGS FITTED AT FACTORY.
　　*3. SHIPYARD SUPPLY.

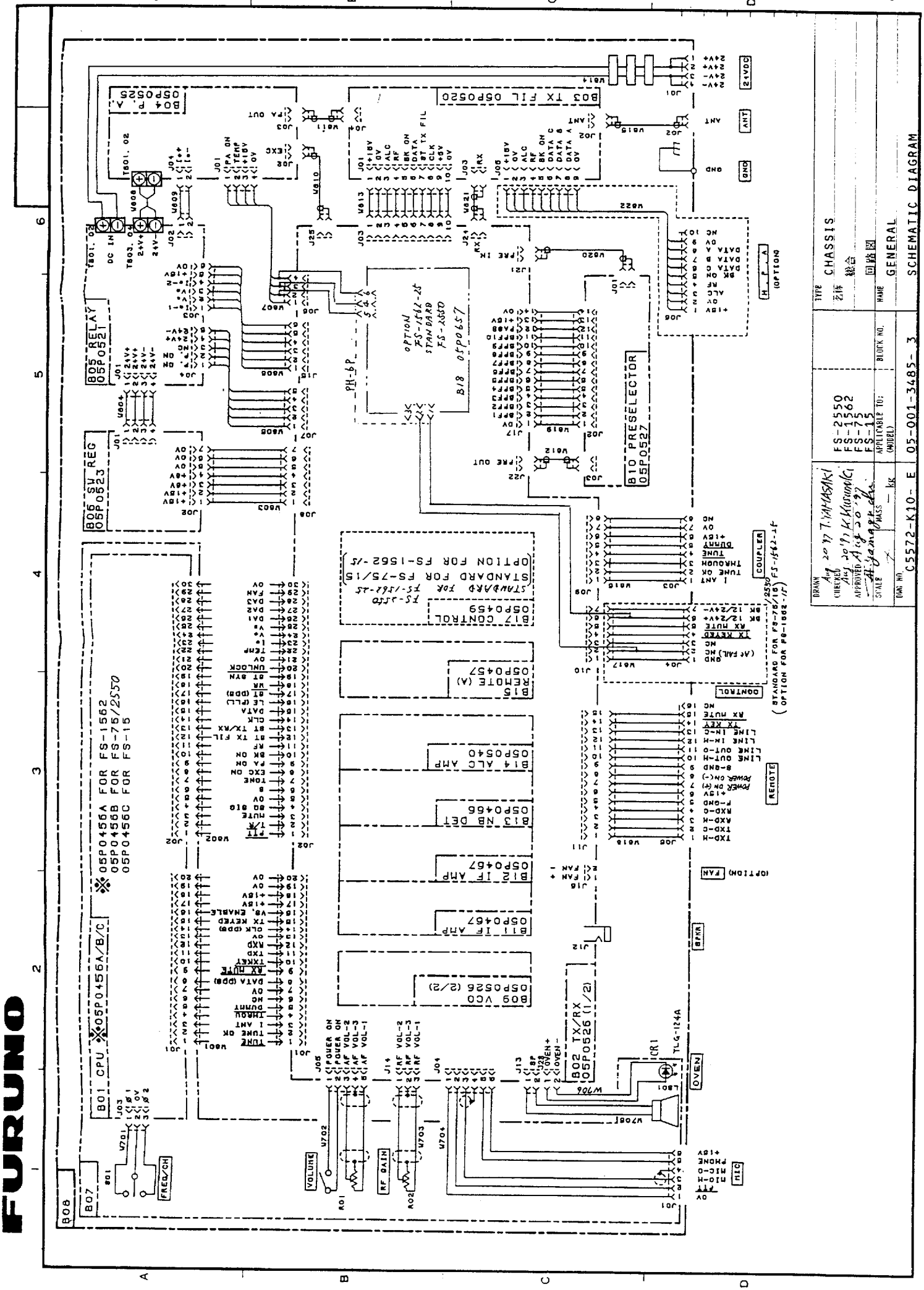
| | | | |
|---|---|---|---|
| DRAWN Aug. 8 '01 T. YAMASAKI | | TITLE | DSC-60 (REMOTE) |
| CHECKED Aug 9 '01 | | 名称 | デジタル選択呼出／聴守受信装置 |
| APPROVED Aug 9 '01 | | | 相互結線図 |
| SCALE　MASS kg | | NAME | DSC/WATCH RECEIVER |
| DWG No. C5628-C06- A | | | INTERCONNECTION DIAGRAM |



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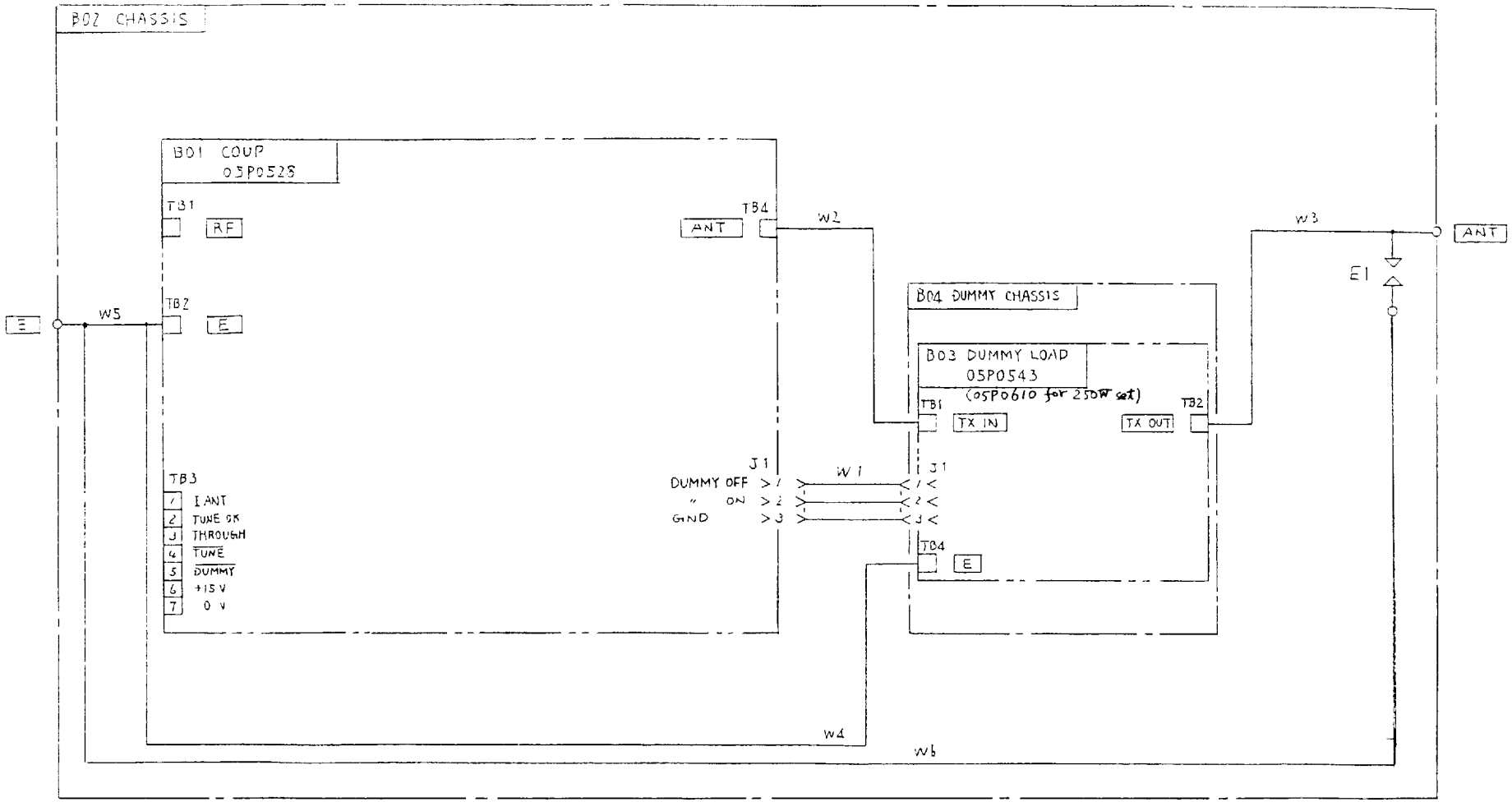
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| | | | | |
|---|---|---|---|---|
| DRAWN | Aug 20 '97 T.YAMASAKI | | TYPE | CHASSIS |
| CHECKED | Aug 20 '97 K.Kawauchi | FS-2550<br>FS-1562<br>FS-75<br>FS-15 | | 総合 |
| APPROVED | Aug 20 '97 H.Yamagata | APPLICABLE TO: (MODEL) | BLOCK NO. | 回路図 |
| SCALE | — | MASS — kg | NAME | GENERAL |
| DWG NO. | C5572-K10- E | 05-001-3485- 3 | | SCHEMATIC DIAGRAM |

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| | | | |
|---|---|---|---|
| 承認 APPROVED | May 31 '93 M. IKEDA | 名称 TITLE | アンテナカプラー ANTENNA COUPLER |
| 検図 CHECKED | May-31-'93 T. SHITO | 2B02 AT-1560 | |
| 製図 DRAWN | May-31-'93 | 図番 DWG.NO. | C5572-K03-B |

FS-1562
FS-15/75/2550

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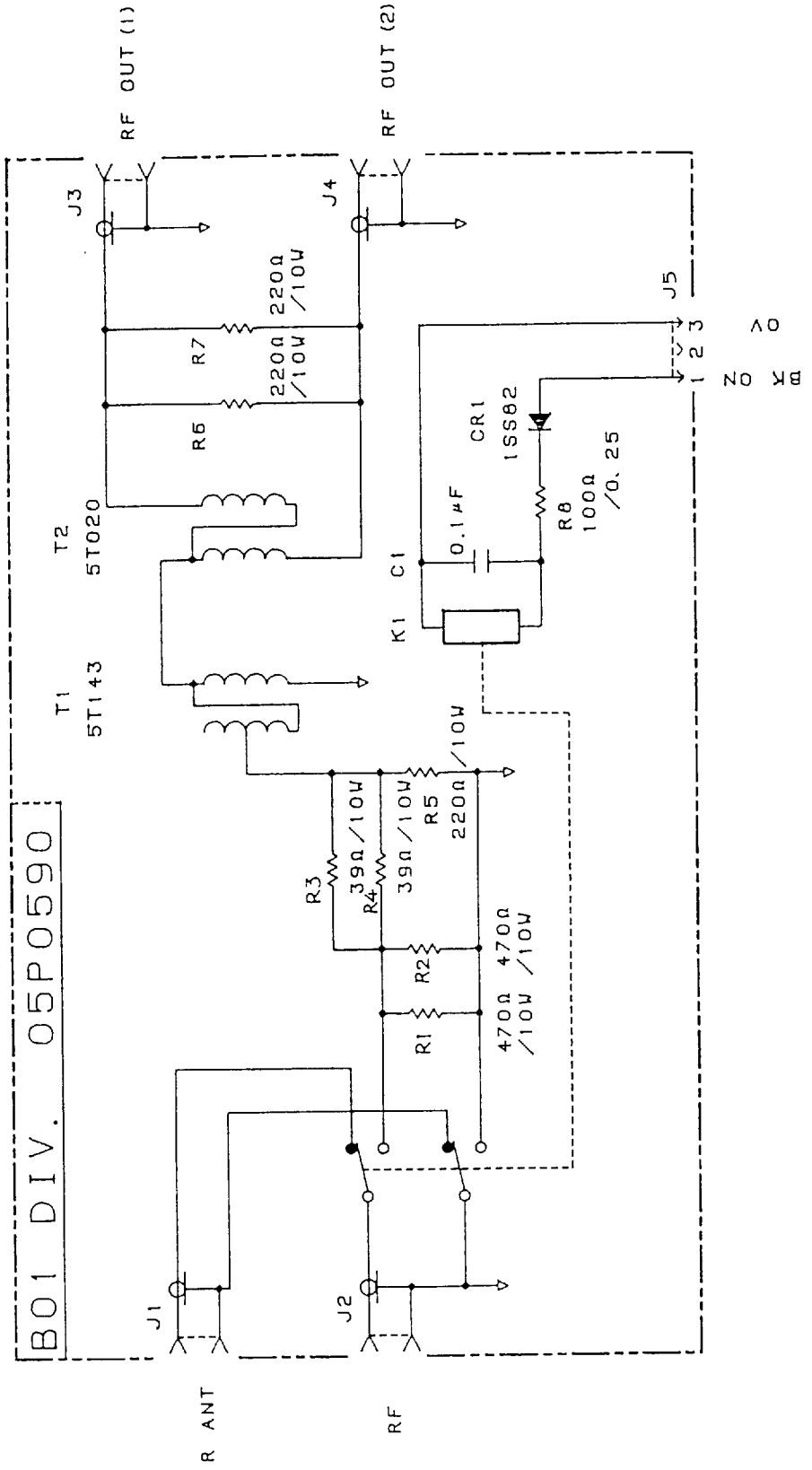
S-6

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S - 7




| | | | | |
|---|---|---|---|---|
| REMARKS | | | TYPE 05P0590 | |
| | | | 名称 分配基板 | |
| DRAWN T.Y / APPROVED T.SATO | PA-2500 | B 1 | NAME DIVIDER BOARD | |
| SCALE ∞ / MASS — kg | APPLICABLE TO: (MODEL) | BLOCK NO. | DWG NO. C5596-K02- | B |

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