Complies with IEC62923-1/2

FURUNO

Installation Manual
VHF RADIO TELEPHONE
Model **FM-8900S**

FURUNO ELECTRIC CO., LTD.

www.furuno.com

All brand and product names are trademarks, registered trademarks or service marks of their respective holders.

ECF
(Elemental Chlorine Free)
The paper used in this manual
is elemental chlorine free.

FURUNO ELECTRIC CO., LTD.

9-52 Ashihara-cho,
Nishinomiya, 662-8580, JAPAN

・FURUNO Authorized Distributor/Dealer

Pub. No. IME-56800-K1

(ETMI) FM-8900S

A ：APR. 2012
K1：FEB. 25, 2022

0 0 0 1 7 6 2 0 3 1 9

⚠ SAFETY INSTRUCTIONS

⚠ WARNING

HAZARDOUS VOLTAGE.
Can shock, burn or cause serious injury.

Do not work inside the equipment unless totally familiar with electrical circuits.

Do not approach the antenna closer than the distances shown below when the antenna is transmitting.

The antenna emits radio waves that can be harmful to the human body.

RF power density on antenna aperture	Distance	Description required by
100 W/m²	0.12 m	IEC 60945
10 W/m²	0.39 m	IEC 60945
2 W/m²	0.89 m	MPE by FCC

(MPE: Minimum Permissible Exposure)

Turn off the power at the mains switch-board before beginning the install-ation.
Post a warning sign near the switch-board to indicate that power should not be applied while the equipment is being installed.

Electrical shock, serious injury or fire can result if the power is not turned off or is applied while the equipment is being installed.

⚠ CAUTION

Ground the transceiver unit.

Ground the transceiver unit to prevent electrical shock and interference.

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 damage the equipment.

Follow the compass safe distances to prevent interference to a magnetic compass.

	Standard compass	Steering compass
FM-8900S	0.50m	0.30m
IF-8900	2.05m	1.35m
HS-2003	1.50m	0.95m
HS-8900	0.45m	0.30m
HS-8900-W	0.45m	0.30m
HG-8900	1.75m	1.20m
HG-8900-W	1.70m	1.10m
RB-8900	1.40m	0.90m
RB-8900-W	1.40m	0.90m
PR-240	0.90m	0.60m
PR-241	0.85m	0.55m
IF-8500	1.05m	0.70m
SEM-21Q	2.20m	1.50m
RC-8900	2.20m	1.40m

SYSTEM CONFIGURATION

TRX ANT   CH70 RX ANT

HANDSET
HS-2003

EXTERNAL
LOUDSPEAKER
SEM-21Q

PRINTER
PP-520/
PP-8800A

PRINTER
INTERFACE
IF-8500

PRINTER
PP-520

OTHER
RADIO

TRANSCEIVER
UNIT*
FM-8900S

JUNCTION
BOX
IF-8900

NAV
EQUIPMENT

VDR

ALARM
SYSTEM

ALARM UNIT
IC-350

INS/AIS/AMS/
PLOTTER

MIC RECEPTACLE
BOX RBD-VHF (B)

ANALOG WING
HANDSET
HS-6000FZ5/
HS-6000FZ11

MIC RECEPTACLE
BOX RBD-VHF (B)

ANALOG WING
HANDSET
HS-6000FZ5/
HS-6000FZ11

REMOTE STATION
RB-8900/RB-8900-W

REMOTE STATION
RB-8900/RB-8900-W

REMOTE STATION
RB-8900/RB-8900-W

REMOTE STATION
RB-8900/RB-8900-W

VHF CONSOLE* RC-8900

AC/DC POWER
SUPPLY UNIT
PR-240/PR-241

24 VDC

INS/BAM

JUNCTION BOX
IF-8900

SENSOR ADAPTER
MC-3000S

CONNING/AMS

* Transceiver unit or VHF
console installed.

100-115/200-230 VAC   24 VDC
1ø, 50/60 Hz   Battery

Environmental category
Antenna units: Exposed to the weather
All other units: Protected from the weather

EQUIPMENT LISTS

Standard supply

Name	Type	Qty	Remarks
Transceiver Unit	FM-8900S	1	Select one
Installation Materials	CP05-12600	1 set	For transceiver unit w/inst. mat. CP05-12601, cable assy. LP-02-1(7A)-L3000
Accessories	FP05-05730	1 set	For HS-2003-15
	FP05-05720		For HS-2003-15-L
Spare Parts	SP05-06201	1 set	For transceiver unit Fuse (Type: FGBO 125V 7A PDF, Code No.: 000-155-831-10)

Standard supply (for VHF console RC-8900)

Name	Type	Qty	Remarks
VHF Console	RC-8900-N	1	No printer
	RC-8900-A		With printer
Installation Materials	CP05-13101	1 set	For VHF console
Accessories	FP05-05740	1 set	For HS-2003-20-L
	FP05-05750		

Optional equipment

Name	Type	Code no.	Remarks
Junction Box	IF-8900	-	w/Inst. mat. CP05-12701
Remote Station	RB-8900-15	-	Remote handset HS-8900-15, Handset hanger HG-8900, w/Inst. mat. CP05-12801
Remote Station	RB-8900-20	-	Remote handset HS-8900-20, Handset hanger HG-8900, w/Inst. mat. CP05-12801
Watertight Remote Station	RB-8900-W-15	-	Waterproof handset HS-8900-W-15, Waterproof handset hanger HG-8900-W, w/Inst. mat. CP05-12801
Remote Handset	HS-8900-15	000-020-890	
Remote Handset	HS-8900-20	000-020-891	
Watertight Remote Handset	HS-8900-W-15	000-020-924	
Handset Hanger	HG-8900	000-020-892	
Watertight Handset Hanger	HG-8900-W	000-020-925	
Flush Mount Kit	OP05-129	000-020-883	
Hanger Kit	OP05-132	000-020-884	Hanger for transceiver unit, w/accessories
Waterproof Seal	OP05-133	001-174-890	For Junction Box IF-8900, to comply with waterproofing std.

Name	Type	Code no.	Remarks
Rainproof Cover	OP05-134	001-178-740	For transceiver unit
External Loud-speaker	SEM-21Q	001-208-540-00	
Dynamic Mic. Set	OP05-57	000-045-775	Receptacle Box: RBD-VHF(B)-75BG Hanger: AP-102 Handset: HS-6000FZ5 (dynamic mic., curled cable)
Handset Set	OP05-42	000-045-778	Receptacle Box: RBD-VHF(B)-75BG Hanger: AP-102 Handset: HS-6000FZ11 (dynamic mic., straight cable)
MIC Receptacle Box	RBD-VHF(B)-75BG	000-056-094	
Handset Hanger	AP-102	001-081-320-10	
Handset	HS-6000FZ11	000-135-072-10	
Handset	HS-6000FZ5	000-112-623-10	
Recording Paper	TP058-30CL	001-097-110	08S0378 W: 57 mm, L: 30 m
Printer	PP-520	-	
Ribbon Cartridge	7Q1VP80SF	001-198-190-10	
Printer Interface	IF-8500	000-053-895	
Handset	HS-2003-15	000-021-369	w/1.5 m cable, straight connector
Handset	HS-2003-15-L	000-021-367	w/1.5 m cable, elbow connector
Handset	HS-2003-20-L	000-021-368	w/2 m cable, elbow connector
Handset	HS-2003-20	000-054-390	w/ 2m cable
Handset	HS-2003-50S	000-054-391	w/5 m straight cable
Handset Hanger	FP05-05510	005-951-790	For HS-2003
AC/DC Power Supply	PR-240	-	
	PR-241	-	
Ferrite Core	OP86-11	001-594-450	For PR-241
Antenna	CX4-3/FEC	000-193-422-10	
Connector	AP05-01001	005-389-790	
Antenna Fixing Bracket	N173/FEC	001-474-350	For CX4-3/FEC (ϕ49 to 90)
	N174/FEC	001-494-890	For CX4-3/FEC (ϕ30 to 61)
	CP05-14001	001-430-360	Bracket M-15AS1
Printer	PP-8800A	-	w/power cable
Emergency Lamp	NLFL-03W-WB	000-176-706-10	For rack console
Cable Assy	PG05-0053-1	000-158-681-11	Extension cable for HS-2003
Coaxial Cable	RG-10/U-Y *10M*	000-159-411-10	
Coaxial Cable	RG-10/U-Y *20M*	000-159-412-10	
Coaxial Cable	RG-10/U-Y *30M*	000-159-413-10	
Coaxial Cable	RG-10/U-Y *40M*	000-159-414-10	
Coaxial Cable	RG-10/U-Y *50M*	000-159-415-10	
Console Kit	RC-8900-A-T	-	Console: RC-8900-A-T Inst. Mat.: CP05-13201 Accessories: FP05-06801 (No printer) FP05-06800 (With printer)

1. HOW TO INSTALL THE EQUIP-MENT

This chapter shows you how to install the units of the system. The transceiver unit and handset are standard supply. All other units are optional supply. (The junction box is standard supply in some installations.)

1.1 Transceiver Unit FM-8900S

1.1.1 General installation remarks

The transceiver unit can be installed on a desktop (with hanger), under a desktop, overhead, bulkhead, or in a console (requires a flush mount kit). Select a location where the controls can be easily operated and a location that is near the power source and the ground location. Additionally, select a location that meets the following conditions:

- Select a location away from water spray and water splash.
- All outdoor installed connectors on coaxial cables should be fitted with preventive isolation such as vulcanizing tape to protect against water penetration into the antenna cable. Also, apply marine sealant at the antenna base to prevent water intrusion from the screw part of antenna base.
- The location must not be in direct sunlight, because of heat that can increase inside the unit.
- Leave some additional length in cables to allow a service technician to move the radio from its normal location with the cables connected.
- Do not install the unit where flammable gases are stored.
- Select a location that provides good ventilation.
- Make sure the location can hold the weight of the unit under the condition of continued vibration normally found on the ship. If necessary, strengthen the location. For added support use nuts, bolts and washers (instead of self-tapping screws) to fasten the unit.
- Leave enough space at the sides and rear of the unit for maintenance and service purposes and to provide cool air. See the outline drawings at the back of this manual for recommended service space.
- For Solas Convention vessels, the mounting location must satisfy the conditions of Regulations 22 Navigation bridge visibility.
- For installation in a console, select a location where the display can be easily seen.
- The transceiver unit causes interference to a magnetic compass if put too close to the compass. Follow the compass safe distance in the safety instructions to prevent interference to a magnetic compass.

1.1.2 Desktop, bulkhead, overhead installation

1. Use the hanger as a template to mark the fixing holes in the installation location.

2. Fix the hanger to the location with the self-tapping screws and washers (supplied). **(For the overhead mount, use nuts, bolts and washers instead of the self-tapping screws.)**

3. Screw the knob bolts with the washers into the transceiver unit.

4. Set the transceiver unit to the hanger and tighten the knob bolts.

1.1.3 Console installation (flush mount, option)

Requires the optional flush mount kit (OP05-129), the contents of which are shown in the table below. Follow the instructions in the outline drawing to install the unit in a console.

Name	Type	Code no.	Qty
Mounting Plate	05-104-2603	100-370-030-10	1
Self-tapping Screw	5×20	000-802-081	4
Hex Screw	M8×16	000-882-075	2

1.2 VHF Antenna

1.2.1 Requirements for the antenna

Any good quality antenna that meets the requirements shown below can be used.

- Frequency range: 155 to 164 MHz
- Impedance: 50 ohms
- Polarization: Vertical
- Handling power: 30 W
- Quality: Withstand the marine environment

1.2.2 Installation location

The location and installation of different antennas on a ship is important to ensure effective communications. Incorrectly installed antennas will degrade performance of the radio equipment and reduce the range of communications.

Select the location for the antenna considering the following points.

- VHF antennas should be placed in a position which is as elevated and free as possible, with at least 2 meters horizontal separation from constructions made by conductive materials.

- Ideally there should not be more than one antenna on the same level.

- The location of mandatory VHF antennas should be given priority compared with mobile telephone antennas. If they are located on the same level, the distance between them should be at least 5 meters.

1.2.3 Mounting procedure

The basic mounting procedure for the antennas supplied by FURUNO is as follows; however, consult appropriate outline drawing for details.

1. Fasten the antenna bracket to the stanchion.
2. Set the antenna to the antenna bracket and tighten bolts.
3. Screw the coaxial cable plug into the antenna.

1.3 CH70 RX Antenna

The antenna must be separated from the antennas, masts, and other objects that can cause interference. Follow the recommended separation distances in section 1.2.2. The installation procedure is like that for the VHF antenna. See the outline drawing.

1.4 Handset Hanger

Install the handset hanger to the left of the transceiver unit. The location must provide easy access to the front panel controls while you operate the handset. The length of the standard handset cable is 50 cm. Put the handset hanger within 50 cm of the unit. (Longer cables are available.)

1.5 AC-DC Power Supply Unit PR-240/241

For Solas Convention vessels, both AC and DC power must be supplied to the transceiver unit, through an AC/DC power supply. When the AC input fails, DC power is supplied. FURUNO can supply an AC/DC power supply unit, the PR-240/241. Provide protective earth. See chapter 2.

1.5.1 Installation location

Select the location that meets the following conditions:

- Select a location that provides good ventilation.
- The location must be clean and dry.
- Make sure the location can hold the weight of the unit under the condition of continued vibration normally found on the ship.
- The power supply unit will affect the performance of a magnetic compass if put near the compass. Follow the compass safe distance in the safety instructions to prevent the interference to a magnetic compass.
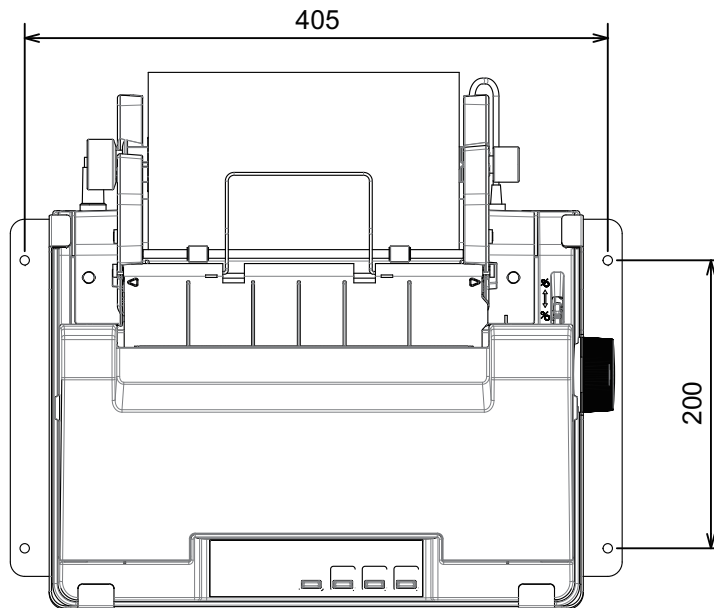
1.6 Printer

1.6.1 Printer PP-520

See the outline drawing for installation instructions.

1. Decide the location for the printer.

2. Set the ink ribbon cartridge and the roll paper to the printer. See the PP-520's Operator's Manual for the procedures.

3. Set the fixtures (left/right) to the printer, and fasten them with four self-tapping screws (ϕ5x20).

1.6.2 Printer PP-8800A

See the outline drawing at the back of this manual for information. This printer cannot be connected to the Printer Interface IF-8500.

1. Make a cutout of 208(W)×133(H) mm in the mounting location.

2. Set the printer to the cutout and fasten the printer with four self-tapping screws (4×16).

1.7 Printer Interface IF-8500

The Printer Interface IF-8500 allows the FM-8900S and other MF/HF radio communication equipment to share the Printer PP-520. See the outline drawing at the back of this manual for installation instructions.

1.8 Loudspeaker SEM-21Q

The loudspeaker can be installed on a desktop, the overhead or a bulkhead. Fasten the loudspeaker with the self-tapping screws, or nuts, bolts and washers. See the outline drawing at the back of this manual for dimensions.

1.9   Junction Box IF-8900

The junction box can be mounted on a desktop or bulkhead, and is required to connect the remote station, wing handset, etc. Put the unit within 5 m of the transceiver unit, because that is the length of the cable connected between the units.

For the bulkhead mount, it is necessary to cover holes in the bottom of the unit to comply with the Ingress Protection Rating IPx2. Waterproof seals (Type: OP05-133, Code no.: 001-174-890) are optionally available for this purpose. Set them to the open holes on the underside of the junction box as shown below, BEFORE installing the junction box.

Fixing hole

Fixing hole

◯ = Hole where to attach waterproofing seal

Card spacer

CABLE SLOT SIDE

To FM-8900S
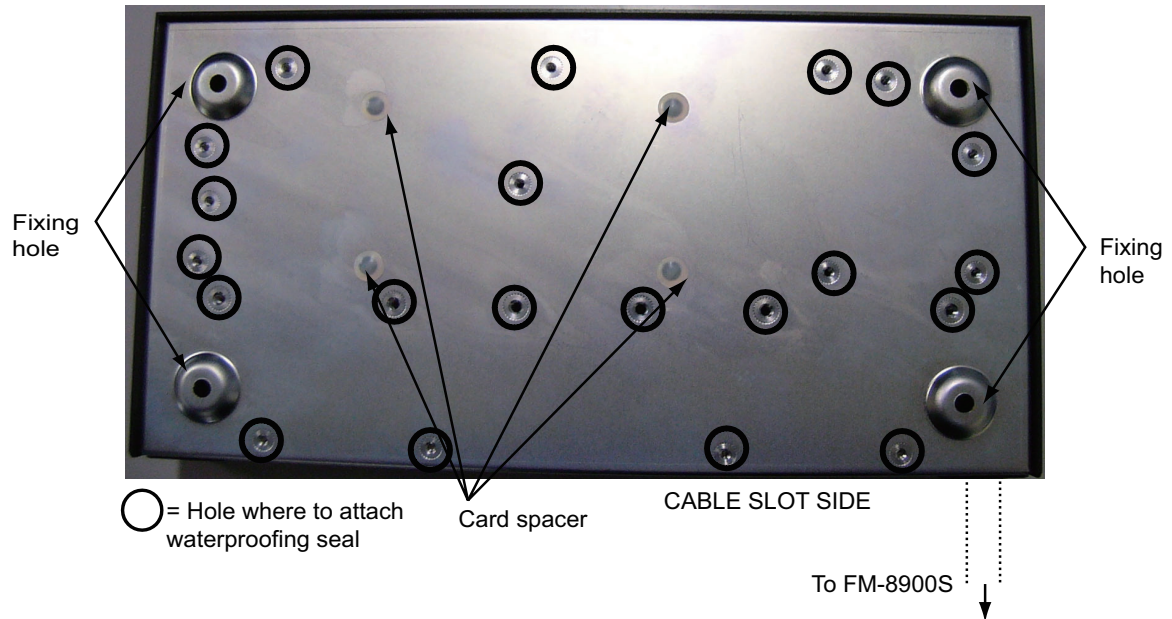
To install the junction box, open the cover and fasten the box with four self-tapping screws (5×20). Close the cover.

1.10 Remote Station RB-8900, Watertight Remote Station RB-8900-W

A maximum of four remote stations can be installed.

1. Remove six screws on the handset hanger.
2. Remove upper chassis of the hanger.
3. Fasten the base of the hanger to a bulkhead with two self-tapping screws (4×20).
4. Connect the cables to the remote station then assemble the remote station.

1.10.1 How to install the Watertight Remote Station outdoors

The Watertight Remote Station RB-8900-W (with Watertight Remote Handset HS-8900-W) can be installed outside if it is contained in a waterproof enclosure. As shown below, apply the silicone sealant to the hanger to waterproof the hanger.

Be sure to put the RB-8900-W in a waterproof enclosure when the unit is installed outside. The waterproofing category of the RB-8900-W is IEC 60529 IP56. However, protect the unit from the weather (IEC 60945).

Before you close the hanger with the silicone sealant (for waterproofing), do the termination setting (only for termination device, see section 2.11) and connect the cables. Do not open the hanger after it has been sealed.

1. Fasten the mounting base with the self-tapping screws. Apply the silicone sealant to the exposed part of those screws.
2. Attach the cable from the transceiver unit or junction box. Apply the silicone sealant to the cable around the cable entrance.
3. Confirm that the plastic washers are in the screw holes. Fasten the cover of the handset hanger. Apply the silicone sealant to the junction between the mounting base and the cover.

2. Apply silicone sealant to cable entrance.
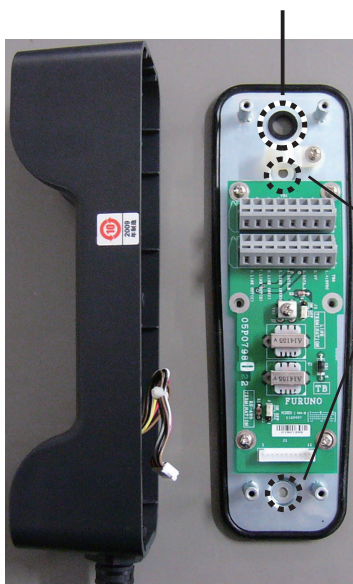
1. Apply silicone sealant to self-tapping screws.

3. Apply silicone sealant to junction.

1.11   VHF Console RC-8900

Install the VHF console where you can easily operate the equipment in the console and do maintenance and service. Meet with shipyard personnel and ship's officer-in-charge to select the best location. The location must meet the following points:

- Select a location where you can operate controls easily.
- Select a location where shock and vibration are the least possible.
- Select a location away from water splash and rain.
- The temperature and humidity of the location must be both stable and moderate.

How to install the console

1. Ask shipyard personnel to tighten six M5 nuts or six M5 bolts to the fixing holes (on the bulkhead), referring to the outline drawing at the back of this manual.
2. Unfasten the cover assembly from the console.
3. Set the VHF console to the bolts.
4. Fasten the console with the bolts or nuts and weld nuts to the bulkhead.
5. Fasten the cover assembly to the console.
    Note: To connect wires after you have hung the console, see section 2.12.
6. Fasten the handset hanger with two screws.
7. To fasten the optional emergency lamp, connect the cable to the terminal board, then fasten the lamp to the console. Refer to the interconnection diagram and outline drawing.

This page is intentionally left blank.

2. CONNECTIONS

Connect external equipment at the rear of the transceiver unit.

CH70 RX ANT
Connect DSC
antenna.

24VDC
Connect power
cable.

GND terminal
Connect ground
wire.

JUNCTION
Connect Junction Box
IF-8900.

SPKR
Connect external
loudspeaker.

ANT
Connect antenna.

PRINTER
Connect Printer
PP-520/PP-8800A.
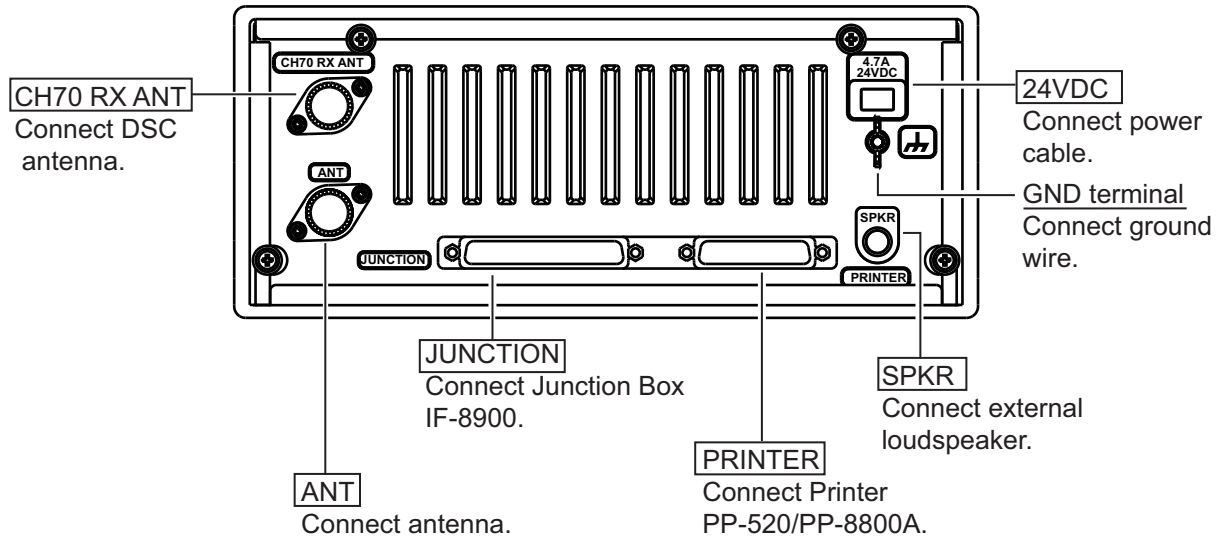
2.1   Power Supply

2.1.1   Solas Convention vessels, 100/220 VAC ship's mains

Solas Convention vessels must supply both AC and DC power to the transceiver unit, through an AC/DC power supply unit. The AC/DC Power Supply Unit PR-240/241 is optionally available. When the AC input fails, the DC power is activated.

Connect the reserve source of energy to the DC IN terminal on the PR-240/241. Connect the AC ship's mains to the AC IN terminal on the PR-240/241.

Be sure to ground the unit.

2.1.2   Radio battery

Attach the connector (supplied) to the power cable and connect the cable to the 24 VDC connector at the rear of the transceiver unit. Connect the wire ends to the radio battery line.

2.2 VHF Antenna

The VHF antenna is connected to the transceiver unit with a 50 ohm coaxial cable, type RG-10/U-Y. Make sure you leave some additional length in the cable for future service and maintenance.

Lay the coaxial cable and fasten an M-type plug to the cable (if necessary) as follows.

1. Remove the sheath by 35 mm.
2. Bare 23 mm of the center conductor. Trim the braided shield by 10 mm and tin.
3. Slide the coupling ring on the cable.
4. Screw the plug assembly on the cable.
5. Solder plug assembly to the braided shield through the solder holes. Solder the contact sleeve to the conductor.
6. Screw the coupling ring into the plug assembly.
7. Screw the plug into the ANT connector at the rear of the transceiver unit.
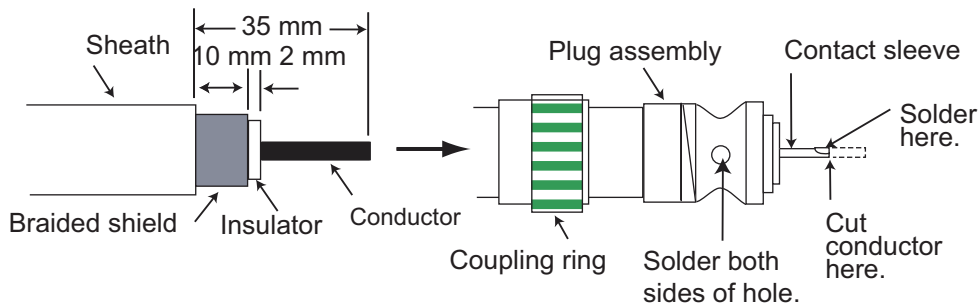
2.3 CH70 RX Antenna

The CH70 RX antenna is connected to the transceiver unit with a 50 ohm coaxial cable, type RG-10/U-Y. Attach an M-type plug to the cable (if necessary) as shown above. Screw the plug into the CH70 RX ANT connector at the rear of the transceiver unit.

2.4 Handset HS-2003

Connect the handset HS-2003 to the HANDSET connector on the front panel.

2.5 How to Ground the Transceiver Unit

Fasten a ground wire (local supply) between the GND terminal at the rear of the transceiver unit and ship's hull (or ground bus).

2.6   Junction Box

The junction box connects external equipment to the transceiver unit. The cable that connects between the junction box and the transceiver unit is pre-connected to the junction box. WAGO connectors connect the external equipment. A terminal opener is provided inside the junction box to open terminals on the connectors. See the illustration below for how to use the opener. Terminal lugs are provided to connect the shield of the TTYCSLA cables.
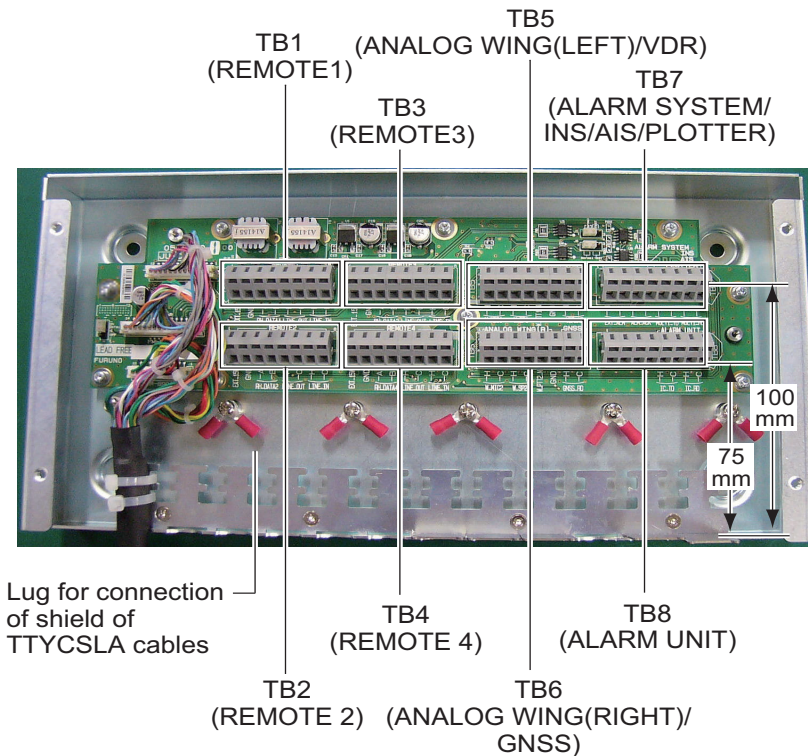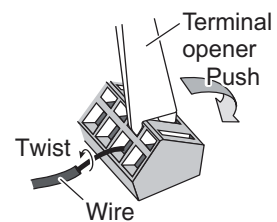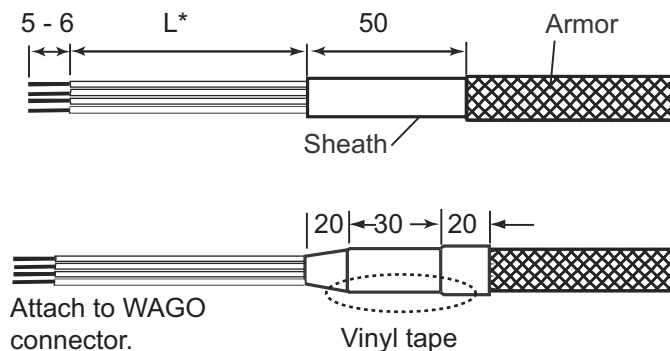

2.6.1   How to prepare the cables of external equipment

The cables shown are JIS (Japan Industry Standard) cables. See the Appendix for the equivalent cables.

Cable MPYC-4 (Alarm system)

L*=Depends on location of connector. See illustration of junction box on page 9 for length.

Cable TTYCSLA-1 (NAV equipment)
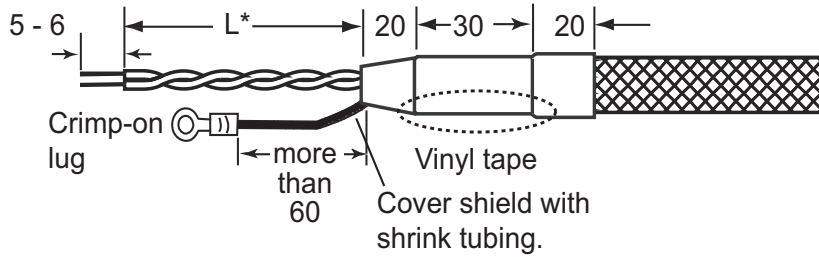
L*=Depends on location of connector. See illustration of junction box on page 9 for length.

Cable TTYCSLA-4 (Alarm Unit IC-350, INS, AIS, Plotter, MIC Receptacle Box, Remote Handset
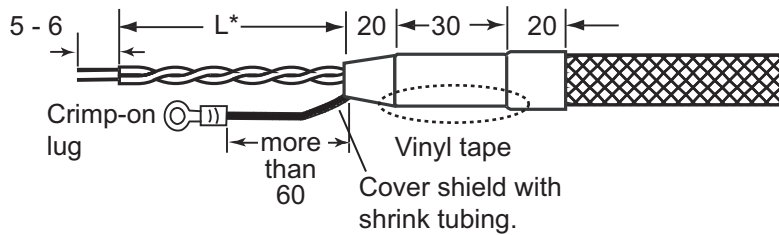
L*=Depends on location of connector. See illustration of junction box on page 9 for length.

2.6.2 Dummy plates in cable slots

Dummy plates are inserted at the factory in all but three cable slots. Remove or insert the dummy plates as necessary. Cover unused cable slots to comply to Ingress Protection Rating IP2x.
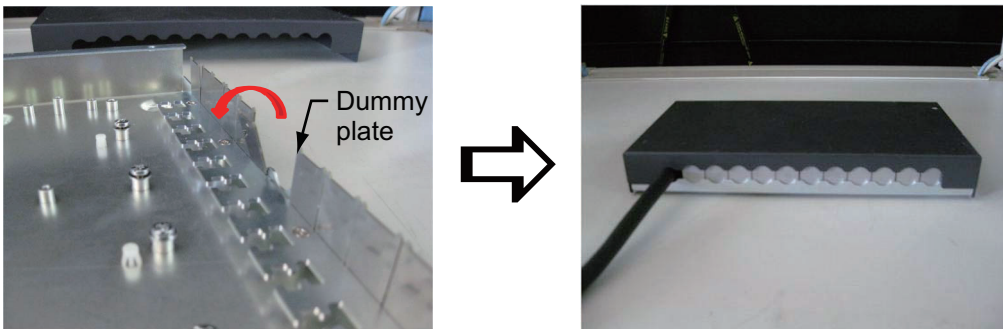
2.6.3 How to fasten the cables to the Junction Box

Connect cables to related connectors. Fasten the cables to the cable posts with two cable ties.
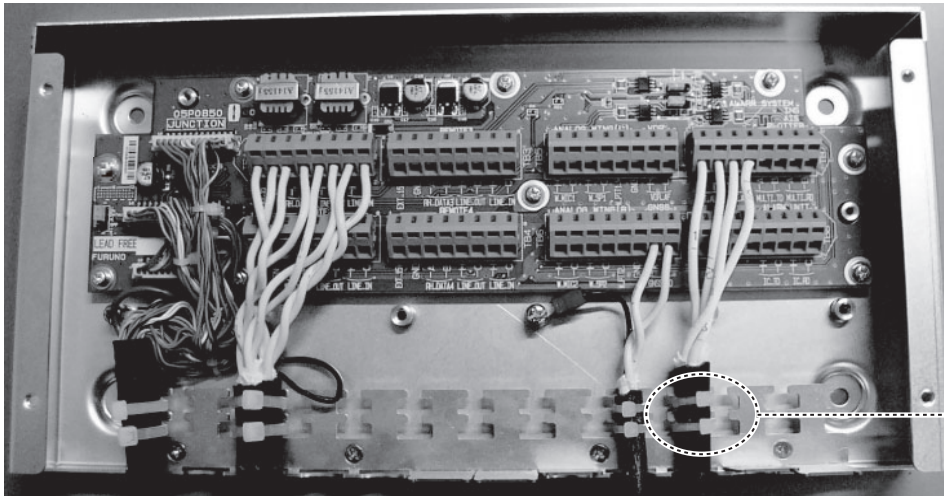
Fasten cable to post with two cable ties.

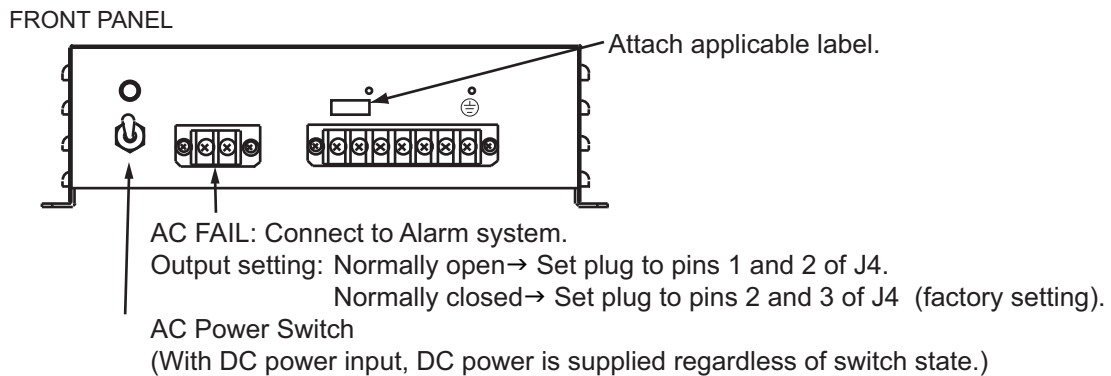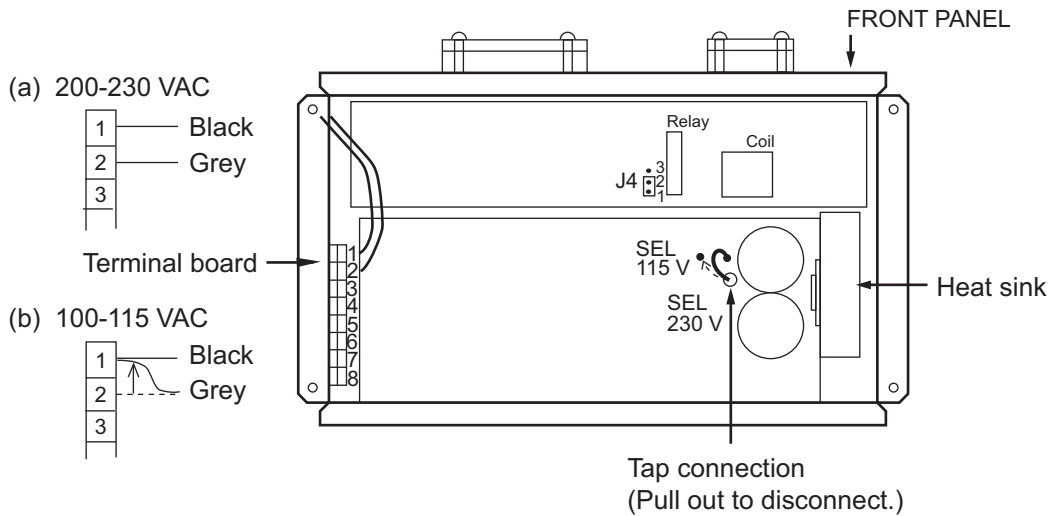## 2.7 How to Connect the Remote Station without the Junction Box
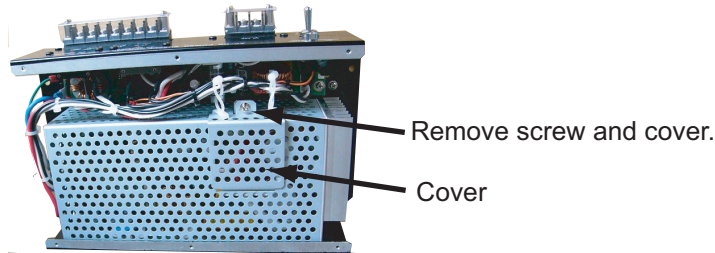
The remote station (MIC receptacle box, etc.) can be connected directly to the transceiver unit, using the D-sub connector supplied as installation materials. Attach the connector to the cable as follows.

Shield tape (metal)
Fold back armor,
and then wind shield
tape along edge of cable.

Cable clamp

Cable

D-sub connector assy. XM3A-3721,
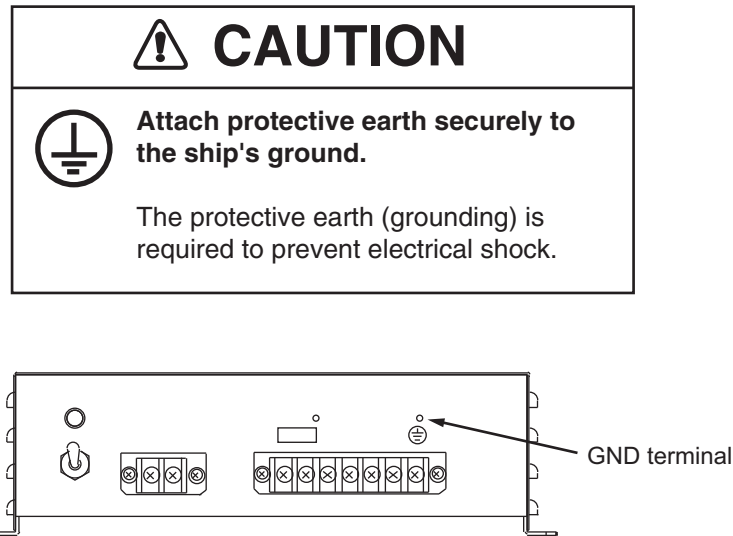Connector hood XM2S-3713
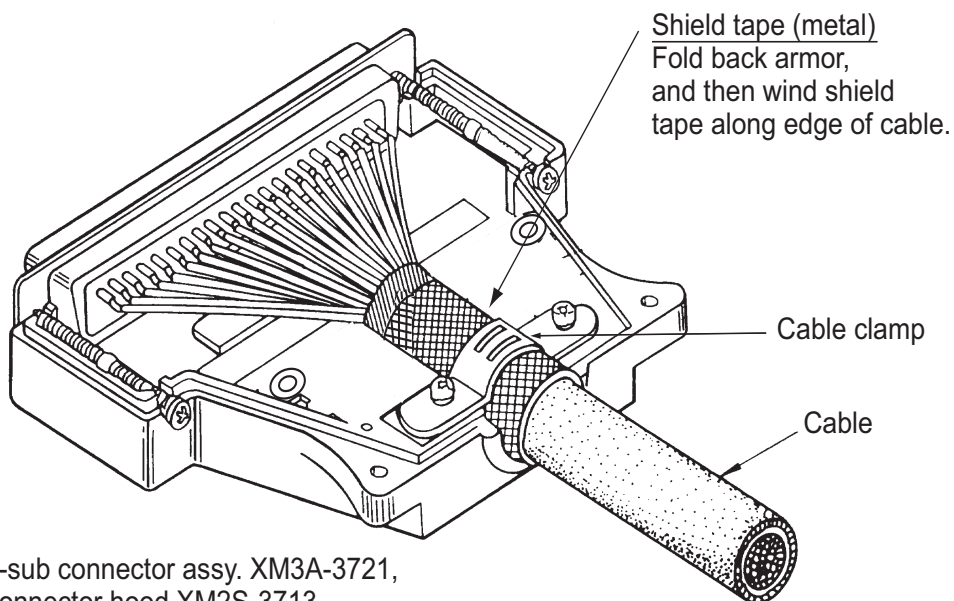
2.8   AC/DC Power Supply Unit PR-240

The AC/DC Power Supply Unit PR-240 is shipped ready for connection to 200-230 VAC. For connection to 100 VAC-115 VAC, change the tap connection and terminal board connection as below. Attach applicable label (supplied in accessories) to the front panel according to the ship's mains.

Power	Tap connection	Terminal board	Label
200-230 VAC	SEL 230 V	(a) in figure below	200-230 VAC, 2.2-1.7 A, 1φ, 50/60 Hz
100-115 VAC	SEL 115 V	(b) in figure below	100-115 VAC, 3.2-2.6 A, 1φ, 50/60 Hz

Remove screw and cover.

Cover

FRONT PANEL

(a) 200-230 VAC

1 — Black
2 — Grey
3

Terminal board

(b) 100-115 VAC

1 — Black
2 — Grey
3

Relay

Coil

J4

SEL 115 V

SEL 230 V

Heat sink

Tap connection
(Pull out to disconnect.)

FRONT PANEL

Attach applicable label.

AC FAIL: Connect to Alarm system.
Output setting: Normally open→ Set plug to pins 1 and 2 of J4.
                 Normally closed→ Set plug to pins 2 and 3 of J4 (factory setting).
AC Power Switch
(With DC power input, DC power is supplied regardless of switch state.)

Protective earth

Connect a IV-2sq wire between the ship's ground and the ground terminal on the PR-240 to prevent electrical shock.

┌─────────────────────────────────────┐
│   ⚠ **CAUTION**   │
├─────────────────────────────────────┤
│ ⏚   **Attach protective earth   │
│   securely to the ship's   │
│   ground.**   │
│   │
│   The protective earth (grounding)│
│   is required to prevent   │
│   electrical shock.   │
└─────────────────────────────────────┘

GND terminal

2.9   When the Handset HS-2003 is not Connected to the Transceiver Unit

When the Handset HS-2003 is not connected to the transceiver unit; namely, the remote handset is used always, turn on [M-HS HOOK] in the [OTHER] menu. See section 4.6.

2.10   Rainproof Cover for Transceiver Unit

The optional rainproof cover kit (Type: 05-104-2601, Code No. 001-174-310-10), consisting of a protective hood and double-sided tape, protects the connectors at the rear of the transceiver unit from rain and water splash. The cover can be used with both the desktop and flush mount installation methods.Connect the cables to the transceiver unit then install the cover as shown below.

② Attach hood to transceiver unit.

① Attach double-sided tape.
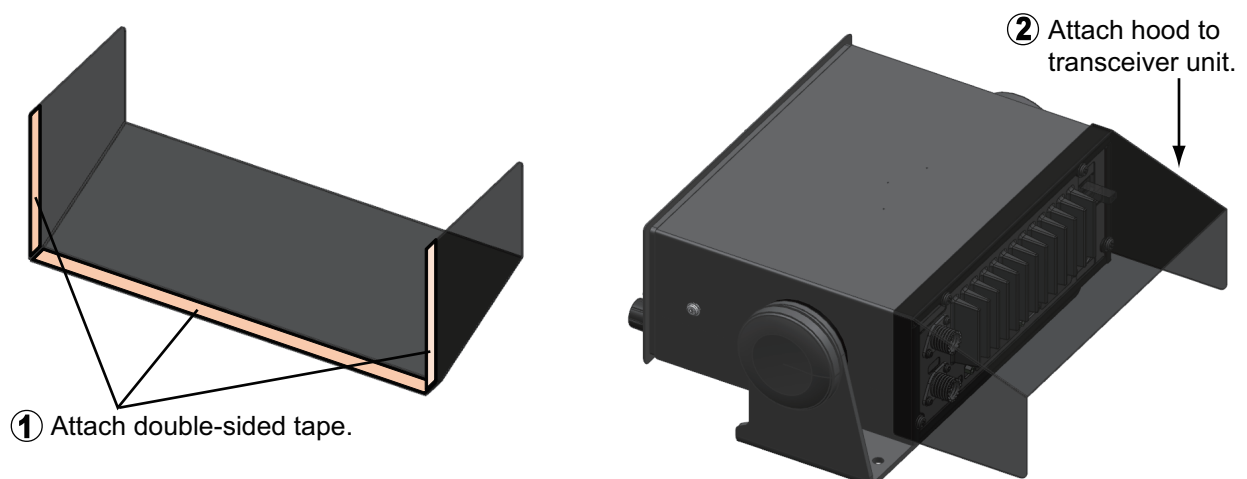
2.11 Jumper Setting for Termination

For termination on the remote stations, open the remote handset hanger as shown below. The default setting for J2 is "ON" (jumper block connected to pins 2 and 3). Confirm this setting. Re-connect the connector to the circuit board. Confirm that the plastic washers are in the screw holes in the handset hanger then close the hanger. Do this for all remote stations.

```
            ┌─────────────┐
            │ TRANSCEIVER │
            │    UNIT     │
            └──────┬──────┘
         ┌─────────┴─────────┐
         │     JUNCTION      │
         │       BOX         │
         └─┬─────┬─────┬─────┬┘
    ┌──────┴┐ ┌──┴───┐ ┌┴────┐ ┌┴─────┐
    │REMOTE │ │REMOTE│ │REMOTE│ │REMOTE│
    │STATION│ │STATION│ │STATION│ │STATION│
    └───────┘ └──────┘ └──────┘ └──────┘
```
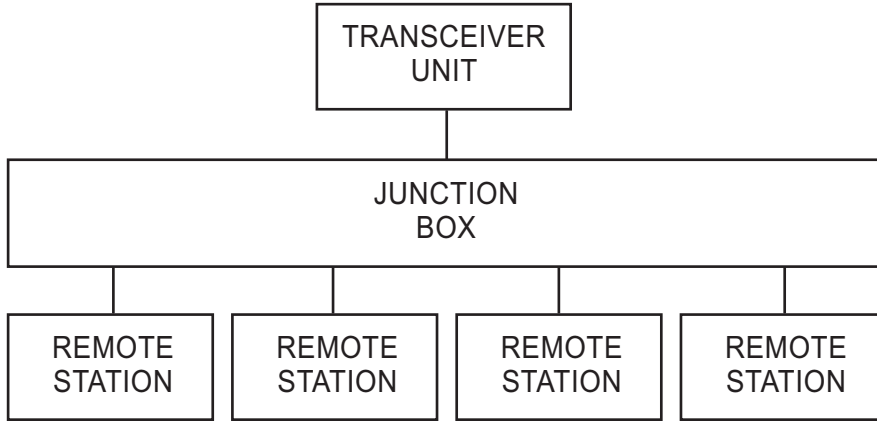
A maximum of four remote stations can be connected.
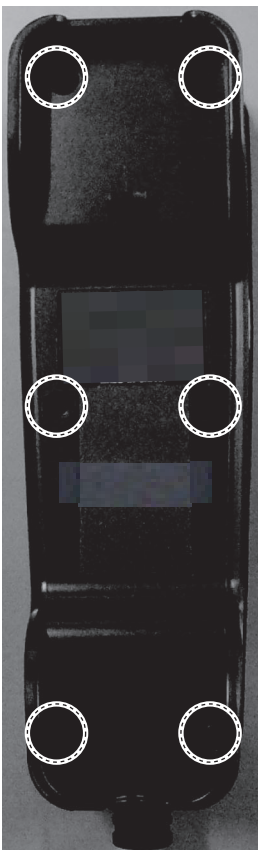
Unfasten six screws.
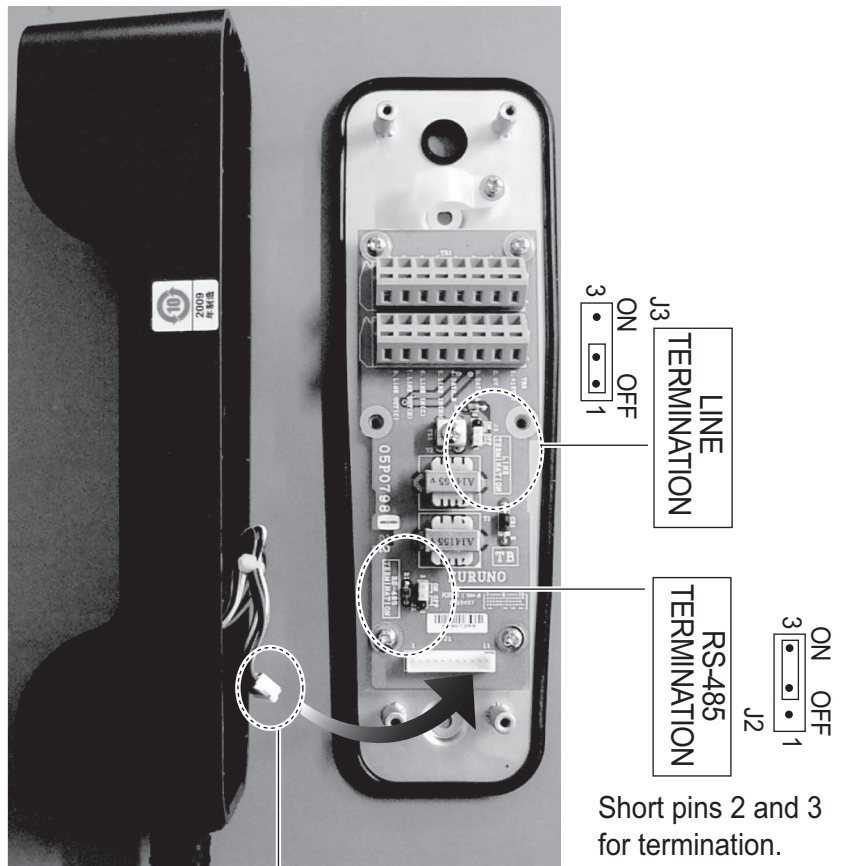
Disconnect connector from circuit board.

LINE TERMINATION

RS-485 TERMINATION

Short pins 2 and 3 for termination.

2.12   VHF Console

Install the VHF console following Chapter 3, then following the procedure in this section.

VHF console

1. Remove the cover assembly and printer assembly (or concealing lid) from the console. For the printer assembly, remove the cables connected to the transceiver unit and the terminal board.
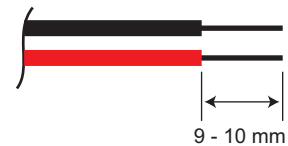
Cover assy.

Printer assy.
(or concealing lid)
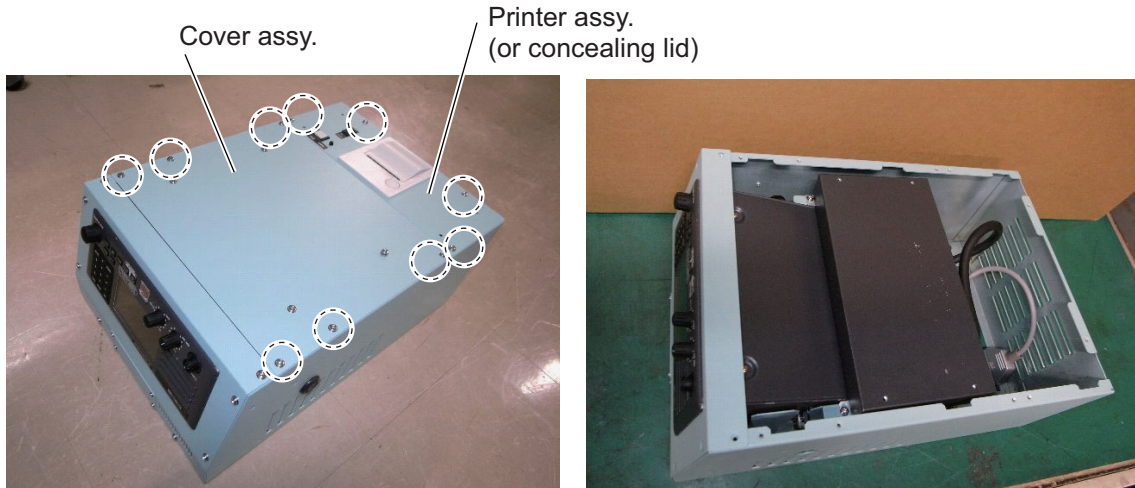
2. Connect the power cable from the power supply to the terminal board 1 (+) and 2 (-).

Terminal board

Power cable
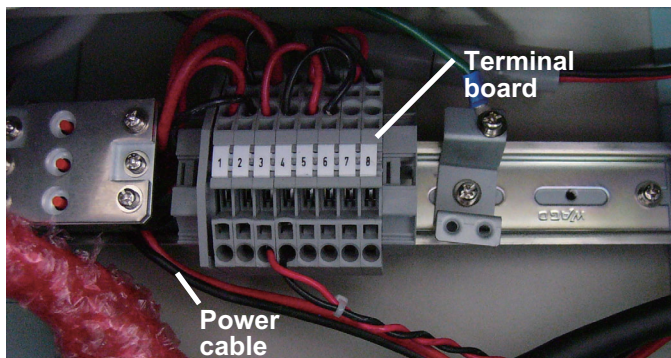
Terminal Board Connection

1. Process conductor

9 - 10 mm

2. Wiring

1) Insert screwdriver (blade: 3.5x0.5 mm) to square hole.
2) Press screwdriver in direction of arrow to open spring in round hole.
3) Insert wire to round hole.
4) Remove screwdriver.

Square hole

Round hole
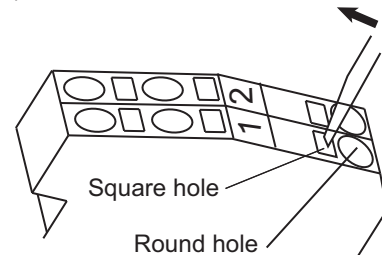
3. Connect the antenna coaxial cable as shown below.


GNSS cable

How to connect the coaxial cable:
1. Make a loop in the coaxial cable.
2. Fasten the coaxial cable to the GNSS cable with a cable tie.
3. Fasten the coaxial cable to the coaxial connector from the Junction Box.

4. Connect the ground wire from the ship to each ground terminal for the transceiver unit and the junction box.

5. Connect the cables from external equipment to the junction box and transceiver unit.

6. Fix the printer assembly (or concealing lid) and the cover assembly.

Emergency lamp

The emergency lamp can be installed on the left or right side (default arrangement) of the rack. For installation on the left side, unfasten the four screws from the front panel of the emergency lamp, rotate the emergency lamp 180° then refasten the screws.

1. Remove four screws from the right or left side of the rack.

2. Fasten the emergency lamp to the rack, with the four screws removed at step 1.

Emergency lamp

Cable entry

3. Insert the cable from the emergency lamp base into the cable entry of the rack. Connect the cable to the terminal board, referring to the interconnection diagram at the back of this manual.

4. Connect the emergency lamp connector to the emergency lamp.
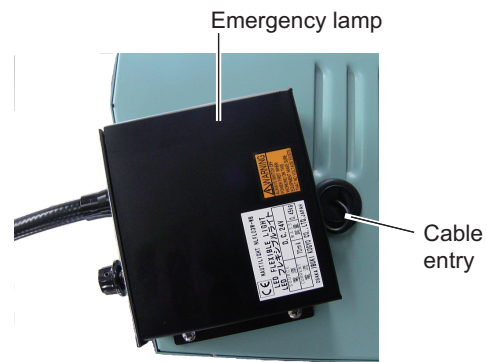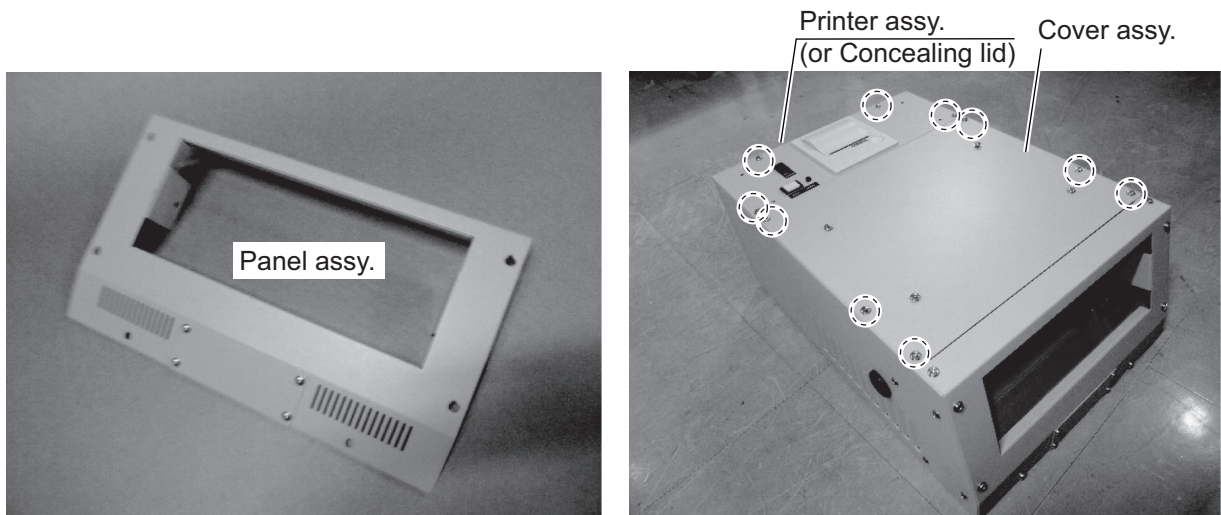
2.13 I/O Data

Data	Input/Output	Sentence, priority order
UAIS VHF Data-link Message	Input	VDM
Alert Acknowledge	Input	ACK
Alert State	Output	ALR
DSC information, Expanded DSC	Output	DSC, DSE
Equipment Information	Input/Output	PFEC
Position Info, Position Fix	Input	GNS>GGA>RMC>GLL
Target Latitude and Longitude	Output	TLL*
Time Info	Input	ZDA>RMC

* The TLL sentence can be output by selecting [TLL-S] on the [OTHER] menu of the [SERVICE] menu.
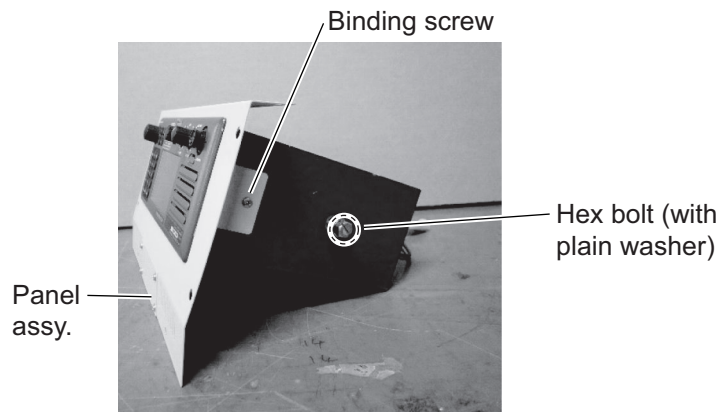
3. HOW TO ASSEMBLE THE VHF CONSOLE KIT

A VHF console kit is required to install the transceiver unit in the VHF console. There are two types of consoles, with a printer and without a printer.

1. Remove the cover assembly, the panel assembly and the printer assembly (or concealing lid) from the console. For the printer assembly, remove the cable connected to the terminal board.


Panel assy.

Printer assy. (or Concealing lid)   Cover assy.

2. Fasten the panel assembly to the transceiver unit with the binding screws (use binding screws of the transceiver unit). Loosely insert M8×16 hex bolt (with plain washer) at both sides of the transceiver unit.
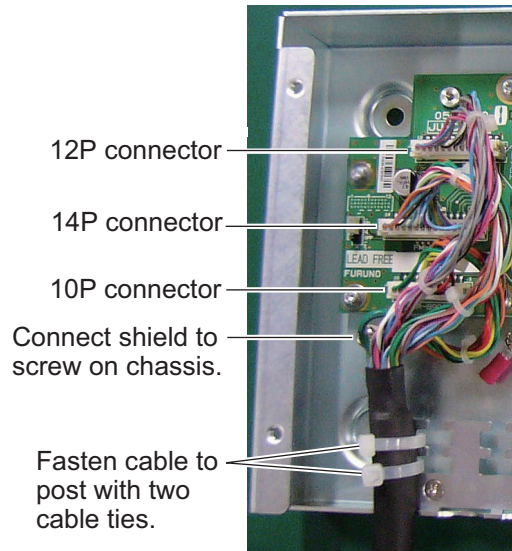

Binding screw

Hex bolt (with plain washer)

Panel assy.

3. Set the transceiver unit to the console upside down. Fasten the transceiver unit to the rack case as shown below.

Insert console upside down.

Hex bolt

Rack case

Spacer

Transceiver unit

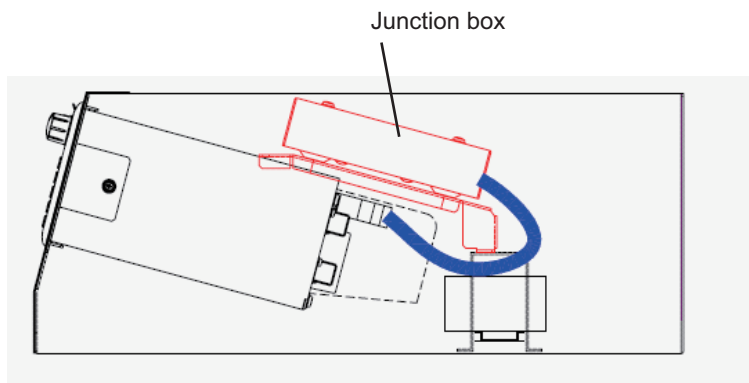Hex bolt

Spacer

Plain washer
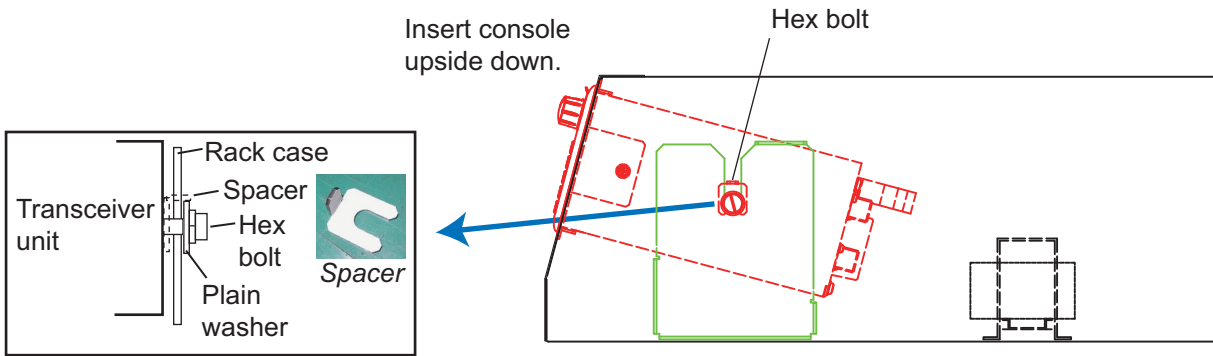
4. Replace the cable attached to the junction box with the cable (55 cm, 37-pin D-sub) supplied with the console kit. Connect the cable (37-pin D-sub) attached to the junction box to the transceiver unit.

12P connector

14P connector

10P connector

Connect shield to screw on chassis.

Fasten cable to post with two cable ties.

Replace original cable with cable assembly DSUB37M-PHX3-L550.

5. Fasten the junction box to the console and connect it to the transceiver unit.

Junction box

6. Connect the following to the transceiver unit:

    • fuse to the power connector on the transceiver unit

    • For the console with printer, connect the printer cable to the PRINTER port. (For no printer, fasten the concealing lid.)

    • ground wire

Ground wire

Printer cable

Connect power cable to the power connector on the transceiver unit.
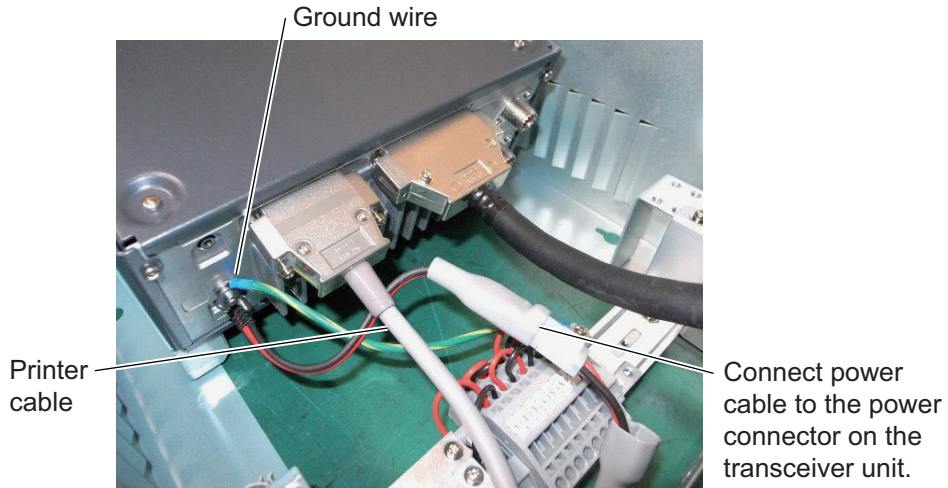
7. Fasten the cover assembly.

Note: If the console assembly is to be installed on the hull, see sections 1.11 and 2.12.
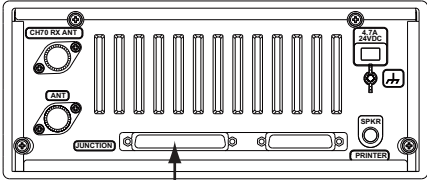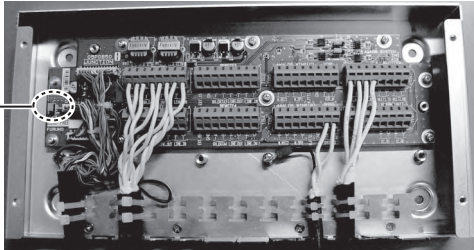
This page is intentionally left blank.

4. INITIAL SETTINGS

This chapter shows you how to enter the initial settings, which requires a password. Refer to FURUNO Information for the password. Entry of the MMSI and ATIS ID* numbers also requires a short inside the junction box or at the rear panel of the transceiver unit. Under no condition can the password or the location of the shorting points be released to the operator.
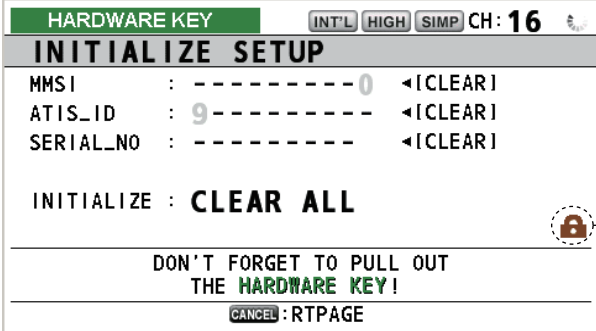
* ATIS is the acronym meaning Automatic Transmitter Identification System. ATIS is used on inland waterways in various countries in mainland Europe to identify ships. At the end of every transmission the radio sends a unique FFSK data signal that contains the user or ship's unique ATIS call sign. The FFSK signal identifies you to marine coast stations and inland stations.

4.1 How to Register the MMSI and ATIS ID

1. Do one of the procedures shown in the illustration below to enable the registering of the MMSI and ATIS ID numbers.

TRANSCEIVER UNIT	JUNCTION BOX
Use a shorting link or the like to short pin 6 and 23 on the supplied D-SUB connector. Attach the connector to the JUNCTION connector (D-sub connector, 37 pin) at the rear of the transceiver unit. Connect supplied connector here.	Open the junction box and set the jumper block J4 to pins 2 and 3 (OFF position) as shown below. **NOTICE**: Jumper blocks J5 and J6 are for testing at the factory. Do not change the settings.

2. Turn on the transceiver unit. The [INITIALIZE SETUP] menu appears, with the indication "HARDWARE KEY" and the "lock icon" shown.

Lock icon (brown)

3. Enter the password. The lock icon turns green, the shackle of the lock opens and the cursor selects the MMSI. Push the **CH** knob to show the MMSI input box.

MMSI input box
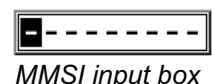
4. Use the numeric keys to enter the MMSI. Confirm the number then push the **CH** knob to submit the number.

5. **If applicable**, enter the ATIS ID like how you entered the MMSI.
   Note: You can re-enter the MMSI/ATIS ID if it is wrong. Select the applicable
   ◄[CLEAR] then push the **CH** knob. You are asked if it is OK to clear the number.
   Select [Yes] then push the **CH** knob. Select the number location then push the **CH**
   knob. Reenter the number.

6. Turn off the transceiver unit.

7. Do one of the following according to the action taken at step 1 to write the MMSI
   (and ATIS ID if applicable) to the memory.
   Junction box: Restore the jumper block to its original position (connect jumper
   block to pins 1 and 2) and close the junction box.
   Transceiver unit: Remove the connector.

Note: If you do not restore the jumper block to its original position or remove the short-ing link, the message "HARDWARE KEY" appears at the top-left corner of the standby screen.
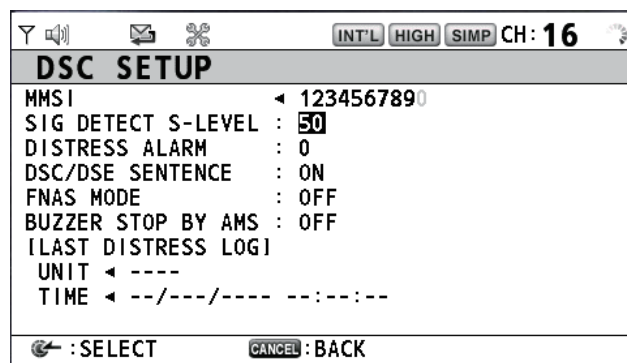
4.2 Service Menu

A password is required to open the [SERVICE] menu. Refer to the appropriate FURU-NO Information for how to open the [SERVICE] menu.
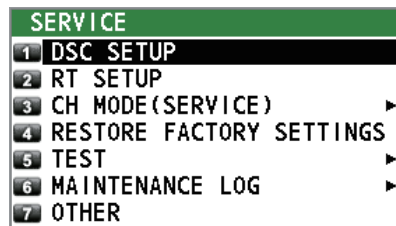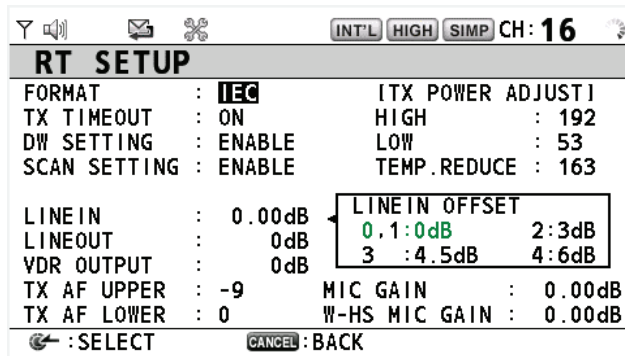

4.2.1 DSC SETUP menu

The [DSC SETUP] menu configures the radiotelephone's DSC section. Normally, ad-justment of the items in this menu is not required. For information, see the Service Manual.

4.2.2 RT SETUP menu

The [RT SETUP] menu has the initial settings for the radiotelephone section. Normally, adjustment of the items in this menu is not required. For information, see the Service Manual.
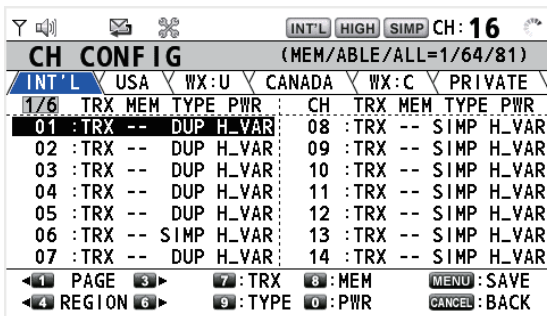

4.2.3 CH MODE (SERVICE) menu

The [CH MODE (SERVICE)] menu has the following sub-menus.

CH CONFIG

The [CH CONFIG] menu sets the TRX state, communication type and output power for every channel. Normally, adjustment of the items in this menu is not required. For information, see the Service Manual.

[TRX] settings and meanings	
[---]	Channel not in use.
[RX]	Channel set to receive only.
[TRX]	Channel can send and receive.

REGION SETTINGS

The [REGION SETTINGS] menu sets the available regions in the [USER] menu. Regions which are disabled in the [REGION SETTINGS] menu will not be displayed in the [USER] menu. Set the available regions at installation.
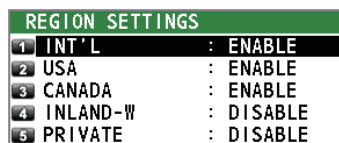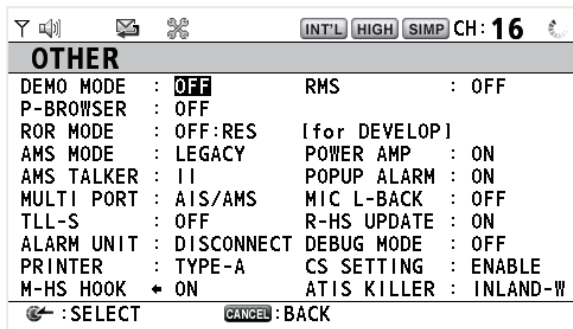

Note 1: [INLAND-W] option is not available if the ATIS-ID is not set.

Note 2: Regions already assigned in the [USER] menu cannot be disabled.

4.2.4 OTHER menu

```
Y (1))      ✉  ✂          INT'L  HIGH  SIMP  CH: 16  ⚡
 OTHER
DEMO MODE   : OFF       RMS          : OFF
P-BROWSER   : OFF
ROR MODE    : OFF:RES   [for DEVELOP]
AMS MODE    : LEGACY    POWER AMP    : ON
AMS TALKER  : II        POPUP ALARM  : ON
MULTI PORT  : AIS/AMS   MIC L-BACK   : OFF
TLL-S       : OFF       R-HS UPDATE  : ON
ALARM UNIT  : DISCONNECT DEBUG MODE  : OFF
PRINTER     : TYPE-A    CS SETTING   : ENABLE
M-HS HOOK   ← ON        ATIS KILLER  : INLAND-W
 ⏎ :SELECT        CANCEL :BACK
```

[for DEVELOP]

The items in this column are for use by developers. Do not change the settings.

P-BROWSER: Activate or deactivate the parameter browser, which is controlled from a PC. For use by the service technician.

AMS MODE: [AMS MODE] selects whether an AMS (Alert Management System) is connected to this radio or not. AMS includes Bridge Alert Management System (BAMS).
There are three choices; [LEGACY], [AlertIF1] and [AlertIF2].
[AlertIF1] uses the following input/output sentences: ALR/ACK.
[AlertIF2] uses the following input/output sentences: ALF, ALC, ARC, HBT, ACN for BAMS.

MULTI PORT: Select the equipment connected to the serial port. [AIS/AMS] (AIS transponder/AMS (Alert Management System)), [PLOTTER] (Navigational Plotter) or [INS] (Integrated Navigation System).

ALARM UNIT: Select [CONNECT] if the Alarm Unit IC-350 is connected to the radiotelephone.
PRINTER: Choose the printer model connected to the radiotelephone.
[TYPE-A]: PP-520
[TYPE-B]: PP-8800A
[OTHER]: Other printer

M-HS HOOK: Select where the main handset is connected. When the handset is not connected to the transceiver unit, and this setting is [NORMAL] (default setting), the system recognizes OFFHOOK state, preventing use of the remote station.
[NORMAL]: Select if the handset is connected to the transceiver unit.
[F(ON)]:The software forcibly sets ONHOOK state at the transceiver unit. Use this setting if the handset is not connected to the transceiver unit; namely, the remote handset is used always.
[F(OFF)]: The software forcibly sets OFFHOOK state.

4.3   Settings Inside the Transceiver Unit

Various jumper blocks are provided inside the transceiver unit to customize the system according to local regulations, user requirements, specifications, etc.

4.3.1   MIC type, MULTI SIO port receive format type, alarm output

Turn the transceiver unit upside down. Remove the cover to show the MAIN board (05P0843). Set the jumper blocks as required, referring to the illustration below. Jumper block information is also printed on the label on the inside cover.
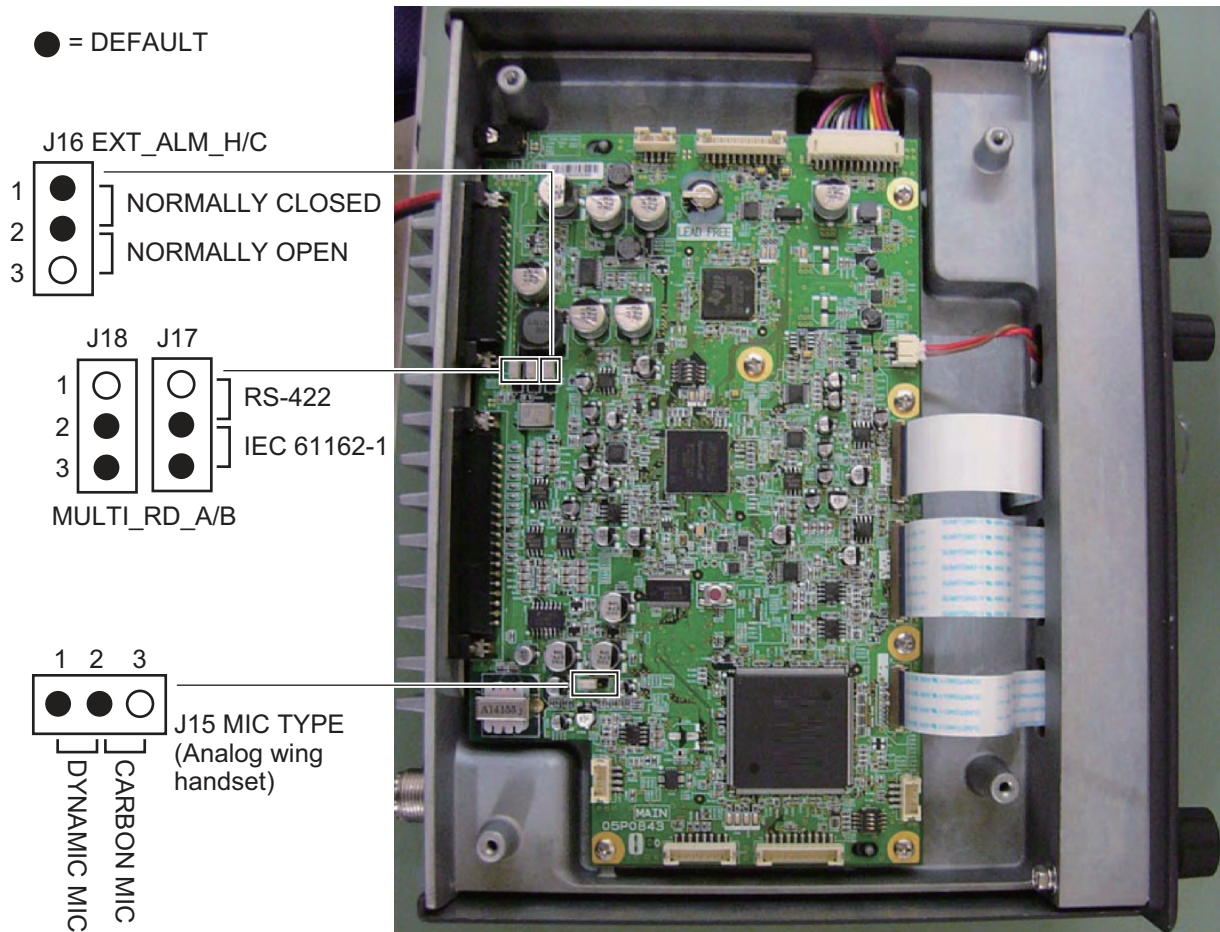
J15: Set the type of analog wing handset MIC used, carbon or dynamic.
**J16**: Define alarm output, normally closed or normally open.
J17, J18: Select the type of receiving circuit to use on the MULTI SIO port, RS-422 or IEC 61162-1 (Opt-Coupler). Set both jumpers to the same setting.

4.3.2 VHF antenna only

If a CH70 antenna is not installed, CH70 can be received with a VHF TX-RX antenna. Do the modification below to enable CH70 reception with a VHF TX-RX antenna. Note however that CH70 cannot be received during VHF transmission.

Remove the outer cover and the shield cover to show the TRX_WR Board (05P0841).Connect the supplied mini-pin assy. as shown below.
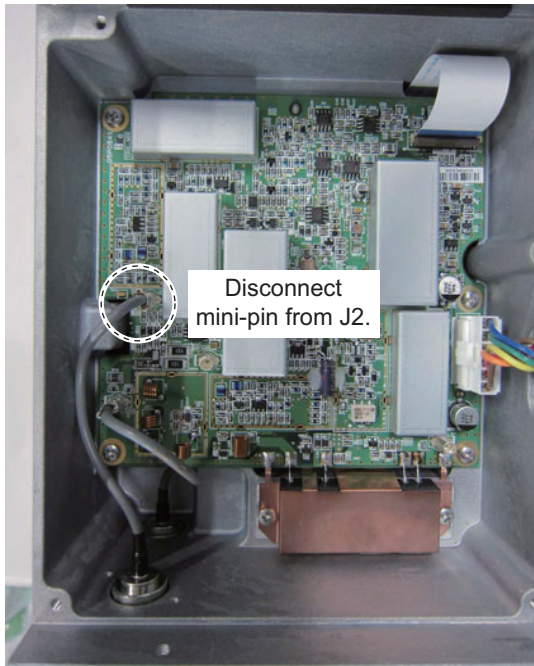
1. Disconnect the mini-pin from J2.
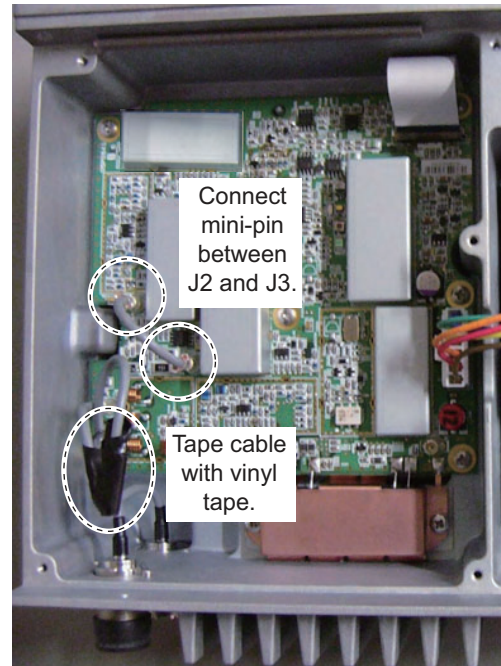
2. Connect the supplied mini-pin assy. between J2 and J3. Use vinyl tape to attach the cable disconnected at step 1 to the chassis or the W9 connector assy.

APPX. 1 JIS CABLE GUIDE

Cables listed in the manual are usually shown as Japanese Industrial Standard (JIS). Use the following guide to locate an equivalent cable locally.

JIS cable names may have up to 6 alphabetical characters, followed by a dash and a numerical value (example: DPYC-2.5).
For core types D and T, the numerical designation indicates the *cross-sectional Area (mm^2)* of the core wire(s) in the cable.
For core types M and TT, the numerical designation indicates the *number of core wires* in the cable.

1. Core Type
D: Double core power line
T: Triple core power line
M: Multi core
TT: Twisted pair communications
    (1Q=quad cable)

2. Insulation Type
P: Ethylene Propylene Rubber

3. Sheath Type
Y: PVC (Vinyl)

4. Armor Type
C: Steel

5. Sheath Type
Y: Anticorrosive vinyl sheath

6. Shielding Type
SLA: All cores in one shield, plastic tape w/aluminum tape
-SLA: Individually shielded cores, plastic tape w/aluminum tape

DPYCY

TPYCY

MPYC-4

TTYCSLA-4

```
          1 3 4 5  6
EX: TTYCYSLA - 4
  Designation type └ # of twisted pairs ┘
```

```
          1 2 3 4
   MPYC - 4
  Designation type ┘ # of cores ┘
```

The following reference table lists gives the measurements of JIS cables commonly used with Furuno products:

Type	Core Area	Core Diameter	Cable Diameter	Type	Core Area	Core Diameter	Cable Diameter
DPYC-1.5	1.5mm^2	1.56mm	11.7mm	TTYCSLA-1	0.75mm^2	1.11mm	9.4mm
DPYC-2.5	2.5mm^2	2.01mm	12.8mm	TTYCSLA-1T	0.75mm^2	1.11mm	10.1mm
DPYC-4	4.0mm^2	2.55mm	13.9mm	TTYCSLA-1Q	0.75mm^2	1.11mm	10.8mm
DPYC-6	6.0mm^2	3.12mm	15.2mm	TTYCSLA-4	0.75mm^2	1.11mm	15.7mm
DPYC-10	10.0mm^2	4.05mm	17.1mm	TTYCY-1	0.75mm^2	1.11mm	11.0mm
DPYCY-1.5	1.5mm^2	1.56mm	13.7mm	TTYCY-1T	0.75mm^2	1.11mm	11.7mm
DPYCY-2.5	2.5mm^2	2.01mm	14.8mm	TTYCY-1Q	0.75mm^2	1.11mm	12.6mm
DPYCY-4	4.0mm^2	2.55mm	15.9mm	TTYCY-4	0.75mm^2	1.11mm	17.7mm
MPYC-2	1.0mm^2	1.29mm	10.0mm	TTYCY-4SLA	0.75mm^2	1.11mm	19.5mm
MPYC-4	1.0mm^2	1.29mm	11.2mm	TTYCYSLA-1	0.75mm^2	1.11mm	11.2mm
MPYC-7	1.0mm^2	1.29mm	13.2mm	TTYCYSLA-4	0.75mm^2	1.11mm	17.9mm
MPYC-12	1.0mm^2	1.29mm	16.8mm	TTPYCSLA-1	0.75mm^2	1.11mm	9.2mm
TPYC-1.5	1.5mm^2	1.56mm	12.5mm	TTPYCSLA-1T	0.75mm^2	1.11mm	9.8mm
TPYC-2.5	2.5mm^2	2.01mm	13.5mm	TTPYCSLA-1Q	0.75mm^2	1.11mm	10.5mm
TPYC-4	4.0mm^2	2.55mm	14.7mm	TTPYCSLA-4	0.75mm^2	1.11mm	15.3mm
TPYCY-1.5	1.5mm^2	1.56mm	14.5mm				
TPYCY-2.5	2.5mm^2	2.01mm	15.5mm				
TPYCY-4	4.0mm^2	2.55mm	16.9mm				

PACKING LIST FM-8900S-A-J, FM-8900S-A-J-HK, FM-8900S-A-E, FM-8900S-A-E-HK

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット　UNIT			
送受信機 TRANSCEIVER UNIT	221 108 258	FM-8900S-A 000-020-889-00　**	1
予備品　SPARE PARTS			
予備品 SPARE PARTS		SP05-06201 001-174-160-00	1
付属品　ACCESSORIES		FP05-05730	
ハンドセット HANDSET	200　L=0.3M	HS-2003-15 000-021-362-00	1
ハンドセットハンガー組品 BRACKET FOR HANDSET	57 208	FP05-05510 005-951-790-00	1
付属品 ACCESSORIES		FP05-05511 005-951-920-00	1
工事材料　INSTALLATION MATERIALS		GP05-12600	
ケーブル(クミヒン) CABLE ASSEMBLY	L=3M	LP-02-1(7A)-L3000 000-176-274-11	1

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
工事材料 INSTALLATION MATERIALS		CP05-12601 001-174-170-00	1
図書　DOCUMENT			
取扱説明書 OPERATOR'S MANUAL	210 297	OM*-56800-* 000-176-198-1*　**	1
操作要領書 OPERATOR'S GUIDE	210 297	OS*-56800-* 000-176-200-1*　**	1
装備要領書 INSTALLATION MANUAL	210 297	IM*-56800-* 000-176-202-1*　**	1
遭難警報フロー(VHF/MF) DISTRESS ALERT CHART (VHF/MF)	210 297	*52-00101-* 000-809-269-1*　**	1
遭難通信要領 PROCEDURE FOR DISTRESS VHF	210 297	TIC-56800-* 000-176-225-1*	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

(略図の寸法は、参考値です. DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。

TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.
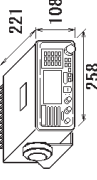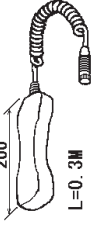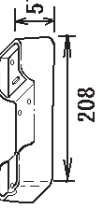
C5680-Z01-E

PACKING LIST　FM-8900S-A-J-V, FM-8900S-A-J-V-HK, FM-8900S-A-E-V, FM-8900S-A-E-V-HK

05EQ-X-9852-4　1/1

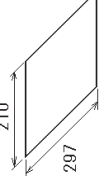| NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット　UNIT			
送受信機 TRANSCEIVER UNIT	221 / 108 / 258	FM-8900S-A 000-020-889-00　**	1
付属品　ACCESSORIES		FP05-05730	
ハンドセット HANDSET	200　L=0.3M	HS-2003-15 000-021-362-00	1
ハンドセットハンガー組品 BRACKET FOR HANDSET	57 / 208	FP05-05510 005-951-790-00	1
付属品 ACCESSORIES		FP05-05511 005-951-920-00	1
工事材料　INSTALLATION MATERIALS		CP05-12600	
ケーブル(クミヒン) CABLE ASSEMBLY	L=3M	LP-02-1(7A)-L3000 000-176-274-11	1
工事材料 INSTALLATION MATERIALS		CP05-12601 001-174-170-00	1
図書　DOCUMENT			
取扱説明書 OPERATOR'S MANUAL	210 / 297	OM*-56800-* 000-176-198-1*　**	1

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
操作要領書 OPERATOR'S GUIDE	210 / 297	OS*-56800-* 000-176-200-1*　**	1
装備要領書 INSTALLATION MANUAL	210 / 297	IM*-56800-* 000-176-202-1*　**	1
遭難警報フロー(VHF/MF) DISTRESS ALERT CHART(VHFMF)	210 / 297	*52-00101-* 000-809-269-1*　**	1
遭難通信要領 PROCEDURE FOR DISTRESS VHF	210 / 297	TIC-56800-* 000-176-225-1*	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

(略図の寸法は、参考値です。DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。

TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.
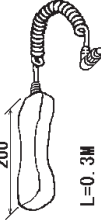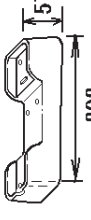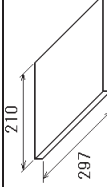
C5680-Z02-E

PACKING LIST

FM-8900S-N-J-V, FM-8900S-N-J-V-HK, FM-8900S-N-E-V, FM-8900S-N-E-V-HK, FM-8900S-N-E-V-HK

UNIT ユニット
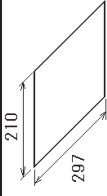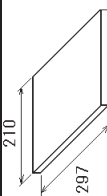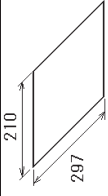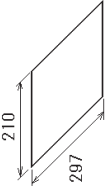
NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
送受信機 TRANSCEIVER UNIT	221 / 108 / 258	FM-8900S-N 000-020-920-00**	1

付属品 ACCESSORIES   FP05-05720

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ハンドセット HANDSET	200 / L=0.3M	HS-2003-15-L 000-021-364-00	1
ハンドセットハンガー組品 BRACKET FOR HANDSET	57 / 208	FP05-05510 005-951-790-00	1
付属品 ACCESSORIES		FP05-05511 005-951-920-00	1

工事材料 INSTALLATION MATERIALS   CP05-12600

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ケーブル（クミヒン） CABLE ASSEMBLY	L=3M	LP-02-1(7A)-L3000 000-176-274-11	1
工事材料 INSTALLATION MATERIALS		CP05-12601 001-174-170-00	1

図書 DOCUMENT

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
取扱説明書 OPERATOR'S MANUAL	210 / 297	OM*-56800-* 000-176-198-1*	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

（略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.）

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
操作要領書 OPERATOR'S GUIDE	210 / 297	OS*-56800-* 000-176-200-1*	1
装備要領書 INSTALLATION MANUAL	210 / 297	IM*-56800-* 000-176-202-1*	1
遭難警報フロー (VHF /MF) DISTRESS ALERT CHART (VHFMF)	210 / 297	*52-00101-* 000-809-269-1*	1
遭難通信要領 PROCEDURE FOR DISTRESS VHF	210 / 297	TIC-56800-* 000-176-225-1*	1

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。

TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

C5680-Z11-D

P A C K I N G   L I S T

HG-8900/-W

NAME UNIT	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット			
ハンドセットハンガー HANDSET HANGER	57 208	HG-8900* 000-020-882-00　**	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z06-A

P A C K I N G   L I S T

HS-8900-15/20, HS-8900-W-15

NAME UNIT	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット			
リモートハンドセット REMOTE HANDSET	200	HS-8900-* 000-020-880-00　**	1

コード番号末尾の[**]は、選択品の代表コードを表します。
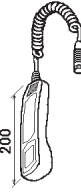CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z05-A

PACKING LIST

RB-8900-15/20, RB-8900-W-15

NAME		OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット	UNIT			
ハンドセットハンガー HANDSET HANGER		57 208	HG-8900-* 000-020-882-00 **	1
リモートハンドセット REMOTE HANDSET		200	HS-8900-* 000-020-880-00 **	1
工事材料	INSTALLATION MATERIALS			
工事材料 INSTALLATION MATERIALS			CP05-12801 001-174-260-00	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.
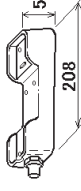
型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z04-A

PACKING LIST

IF-8900

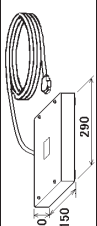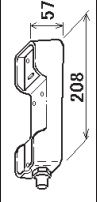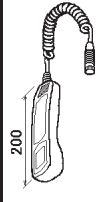| NAME		OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット	UNIT			
接続箱 JUNCTION BOX		40 150 290	IF-8900 000-020-877-00	1
工事材料	INSTALLATION MATERIALS			
工事材料 INSTALLATION MATERIALS			CP05-12701 001-174-210-00	1

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z03-A

FURUNO

工事材料表
INSTALLATION MATERIALS

CODE NO.	001-174-210-00	05EQ-X-9402-0
TYPE	CP05-12701	1/1

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	+トラスタッピンネジ 1シュ SELF-TAPPING SCREW	20 φ5	5X20 SUS304 CODE NO. 000-162-608-10	4	
2	コンベ ツクス CABLE TIE	150	CV-150N CODE NO. 000-162-186-10	22	

FURUNO ELECTRIC CO .,LTD.

C5680-M02-A

FURUNO

工事材料表
INSTALLATION MATERIALS

CODE NO.	001-199-600-00	05EQ-X-9407-1
TYPE	CP05-12601	1/1

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	+トラスタッピンネジ 1シュ SELF-TAPPING SCREW	20 φ6	6X20 SUS304 CODE NO. 000-162-613-10	4	
2	ミニピンクミヒン(1) MINI PIN ASSY(1)	L=70	L-70 CODE NO. 000-165-834-10	1	
3	コネクタフード (XM2) CONNECTOR HOOD	70	XM2S-3713 CODE NO. 000-176-092-10	1	
4	コネクタ (XM3) CONNECTOR	69 14 12	XM3A-3721 CODE NO. 000-176-295-10	1	

FURUNO ELECTRIC CO .,LTD.

KR

C5680-M07-B

PACKING LIST

RC-8900-SN-＊ , RC-8900-SN-＊-HK

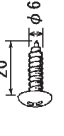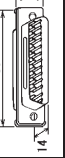| NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
VHFコンソール VHF CONSOLE	330 / 190 / 480	RC-8900-SN-＊	1
		000-022-191-00 ＊＊	
付属品 ACCESSORIES		FP05-05740	
ハンドセット HANDSET	200 L=0.6M	HS-2003-20-L	1
		000-021-366-00	
ハンドセットハンガー組品 BRACKET FOR HANDSET	57 / 208	FP05-05510	1
		005-951-790-00	
工事材料 INSTALLATION MATERIALS			
INSTALLATION MATERIALS		CP05-13101	1
		001-197-090-00	
図書 DOCUMENT			
取扱説明書 OPERATOR'S MANUAL	210 / 297	OM＊-56800-＊	1
		000-176-198-1＊	
操作要領書 OPERATOR'S GUIDE	210 / 297	OS-＊-56800-＊	1
		000-176-200-1＊	
装備要領書 INSTALLATION MANUAL	210 / 297	IM＊-56800-＊	1
		000-176-202-1＊	
遭難警報フロー(VHF/MF) DISTRESS ALERT CHART (VHFMF)	210 / 297	＊52-00101-＊	1
		000-809-269-1＊	
遭難通信要領 PROCEDURE FOR DISTRESS VHF	210 / 297	T1C-56800-＊	1
		000-176-225-1＊	

コード番号末尾の(＊＊)は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "＊＊" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER
PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z12-B

FURUNO

工事材料表 INSTALLATION MATERIALS
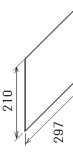
		CODE NO.	001-174-260-00	05EQ-X-9403 -0 1/1
		TYPE	CP05-12801	

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	+トラスタッピンネジ 1シュ SELF TAPPING SCREW	16 φ4	4X16 SUS304	2	
			CODE NO. 000-162-605-10		
2	ホイリカワッシャー WASHER	φ10	M4	2	
			CODE NO. 000-168-234-10		

型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。

TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT.
QUALITY IS THE SAME. DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)
(略図の寸法は、参考値です。

FURUNO ELECTRIC CO ., LTD.

C5680-M03-A

Left Sheet

PACKING LIST

RC-8800-*N/*A-*/HK

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
VHFコンソール / VHF CONSOLE	440 330 190	RC-8800-*N/*A 000-054-240-00 **	1
付属品 ACCESSORIES		FP05-05800	
ハンドセット / HANDSET	200 L=1.5M	HS-2003-15 000-015-996-00	1
ハンドセットハンガー組品 / BRACKET FOR HANDSET	57 208	FP05-05510 005-951-790-00	1
工事材料 INSTALLATION MATERIALS			
INSTALLATION MATERIALS		CP05-10201 005-371-850-00	1
図書 DOCUMENT			
取扱説明書 / OPERATOR'S MANUAL	210 297	OM*-56420-* 000-149-929-1* **	1
操作要領書 / OPERATOR'S GUIDE	210 297	OS*-56420-* 000-149-933-1* **	1
装備要領書 / INSTALLATION MANUAL	210 297	IM*-56420-* 000-149-931-1* **	1
遭難警報フロー (VHF/MF) / VHF/MF DISTRESS ALERT FLOW	210 297	*52-00101-* 000-809-269-1* **	1
遭難通信要領書 (和/英) / DISTRESS PROCEDURE	210 297	TIC-56420-* 000-149-935-1*	1

コード番号末尾の[**]は、選択品の代表コードを表します。
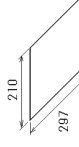CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.
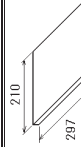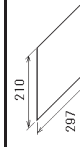
型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5642-Z11-F

Right Sheet

PACKING LIST

RC-8900-SA-* , RC-8900-SA-*-HK

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
VHFコンソール / VHF CONSOLE	330 190 480	RC-8900-SA-* 000-022-194-00 **	1
付属品 ACCESSORIES			
ハンドセット / HANDSET	200 L=0.6M	HS-2003-20-L 000-021-366-00	1
ハンドセットハンガー組品 / BRACKET FOR HANDSET	57 208	FP05-05510 005-951-790-00	1
感熱記録紙 / RECORDING PAPER	58	TP058-30CL 000-154-047-11	1
工事材料 INSTALLATION MATERIALS			
INSTALLATION MATERIALS		CP05-13101 001-197-090-00	1
図書 DOCUMENT			
取扱説明書 / OPERATOR'S MANUAL	210 297	OM*-56800-* 000-176-198-1*	1
操作要領書 / OPERATOR'S GUIDE	210 297	OS*-56800-* 000-176-200-1*	1
装備要領書 / INSTALLATION MANUAL	210 297	IM*-56800-* 000-176-202-1*	1
遭難警報フロー (VHF/MF) / DISTRESS ALERT CHART (VHFMF)	210 297	*52-00101-* 000-809-269-1*	1
遭難通信要領 / PROCEDURE FOR DISTRESS VHF	210 297	TIC-56800-* 000-176-225-1*	1

コード番号末尾の[**]は、選択品の代表コードを表します。
CODE NUMBER ENDING WITH "**" INDICATES THE CODE NUMBER OF REPRESENTATIVE MATERIAL.
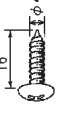
型式/コード番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

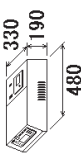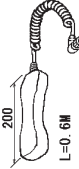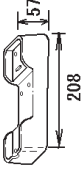(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

C5680-Z13-C   JP

FURUNO

表1 TABLE 1

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

電源
SOURCE

アース端子
GND TERMINAL

信号コネクタ
SIGNAL CONNECTOR

背面
REAR VIEW

信号コネクタ
SIGNAL CONNECTOR

コネクタカバー（オプション）
CONNECTOR COVER (OPTION)

#130

25

282

216

15°

5

17±3

96±3

171.5

取付穴
4－φ7.5
FIXING HOLES

80±0.5

85

265

210±0.5

100

75

型式銘板
NAMEPLATE

#100

108

300

258

143

#100

信号コネクタ
SIGNAL CONNECTOR

注 記
1) 指定外の寸法公差は表1による。
2) #印寸法は最小サービス空間寸法とする。
3) 取付用ネジは＋トラスタッピンネジ6×20を使用のこと。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. #: MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ6x20 FOR FIXING THE UNIT.

DRAWN	25/Apr/2012 T.YAMASAKI			TITLE	FM-8900S
CHECKED	25/Apr/2012 H.MAKI			名称	送受信機（卓上装備）
APPROVED	25/Apr/2012 Y.NISHIYAMA	FM-8900S		外寸図	
SCALE	1/4	MASS 4.2 kg	質量はケーブル・コネクタカバーを含まず。 MASS DOES NOT INCLUDE CABLE/CONNECTOR COVER.	NAME	TRANSCEIVER UNIT (TABLETOP MOUNT)
DWG.No.	C5680-G01-B	REF.No.	05-104-2506-2		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

D-2

FURUNO

FURUNO ELECTRIC CO., LTD.

電源 SOURCE
アース端子 GND TERMINAL
信号コネクタ SIGNAL CONNECTOR
信号コネクタ SIGNAL CONNECTOR
背面 REAR VIEW
4-下穴位置 PILOT HOLES
信号コネクタ SIGNAL CONNECTOR

122±0.5
277±0.5
260±1
105±1
280±1
30±1

取付穴寸法図（参考図）
CUTOUT DIMENSIONS

#130
25
280
214
7
17±3

コネクタカバー（オプション）
CONNECTOR COVER (OPTION)

取付穴 4-φ6 FIXING HOLES
140
122±0.5
295
277±0.5
258
108

信号コネクタ SIGNAL CONNECTOR

型式銘板 NAMEPLATE
型式銘板 NAMEPLATE

表1 TABLE 1

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

TITLE	FM-8900S
名称	送受信機（埋込装備）
	外寸図
NAME	TRANSCEIVER UNIT (FLUSH MOUNT)
	OUTLINE DRAWING

DRAWN	25/Apr/2012	T.YAMASAKI		
CHECKED	25/Apr/2012	H.MAKI		
APPROVED	25/Apr/2012	Y.NISHIYAMA	FM-8900S	
SCALE	1/4	MASS	4.2	kg
DWG.No.	C5680-G02-B	REF.No.	05-104-251G-2	

質量はケーブル，コネクタカバーを含みます。
MASS DOES NOT INCLUDE CABLE/CONNECTOR COVER.

注記
1) 指定外の寸法公差は表1による。
2) #印寸法は最小サービス空間寸法とする。
3) 取付用ネジは＋トラスタッピンネジ呼び径5×15を使用のこと。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. #: MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ5x15 FOR FIXING THE UNIT.

FURUNO

ケーブル導入口
CABLE ENTRY

取付穴
2-φ4.5
FIXING HOLES

42

145±0.5

22

57

208

65

信号コネクタ
SIGNAL CONNECTOR

型式銘板
NAMEPLATE

型式銘板
NAMEPLATE

PTT

35

55

200

信号コネクタ
SIGNAL CONNECTOR

ハンドセットハンガー
HG-8900
HANDSET HANGER

ケーブル導入口
CABLE ENTRY

(208)

φ12

#150

(77)

57

ハンドセット
HS-8900
HANDSET

注記 1) 指定外の寸法公差は表１による。
2) #印寸法は最小サービス空間寸法とする。
3) 取付用ネジはトラスタッピンネジ呼び径４×１６を使用のこと。

NOTE 1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. #: MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ4x16 FOR FIXING THE UNIT.

TITLE	RB-8900, HG-8900		
名称	リモートステーション		
	外寸図		
NAME	REMOTE STATION		
	OUTLINE DRAWING		

FURUNO ELECTRIC CO., LTD.

DRAWN	26/Dec/2011 T.YAMASAKI			
CHECKED	26/Dec/2011 H.MAKI			
APPROVED	27/Dec/2011 Y.NISHIYAMA	FM-8900S	質量はハンドセット、ハンガーを含む。	
SCALE	1/3	MASS 0.7 ±10% kg	MASS INCLUDES HANDSET/HANGER.	
DWG.No.	C5680-G03- A	REF.No.	05-104-550G-1	

FURUNO

型式銘板
NAMEPLATE

100±0.8

240±0.7

取付穴
4-φ6
FIXING HOLES

φ15 MAX.
最大ケーブル径
MAXIMUM CABLE DIA.

ケーブル導入口
CABLE ENTRY

付属ケーブル
ATTACHED CABLE

290

#10

#10

表1 TABLE 1

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

40

3

#10

150

#200

ケーブル長 L=4950+250
CABLE LENGTH

注記
1） 指定外の寸法公差は表1による。
2） #印寸法は最小サービス空間寸法とする。
3） 取付用ネジはトラスタッピンネジ呼び径5×20を使用のこと。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. #: MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ5x20 FOR FIXING THE UNIT.

DRAWN	26/Dec/2011	T.YAMASAKI	TITLE	IF-8900
CHECKED	26/Dec/2011	H.MAKI	名称	接続箱
APPROVED	27/Dec/2011	Y.NISHIYAMA		外寸図

質量はケーブルを含まず。
MASS DOES NOT INCLUDE CABLE.

FM-8900S
MASS 1.6 ±10% kg

NAME JUNCTION BOX
OUTLINE DRAWING

| SCALE | 1/2 | C5680-G04- A |
| DWG.No. | | REF.No. 05-104-350G-2 |

FURUNO ELECTRIC CO., LTD.

FURUNO

55   35

200

512±40

型式銘板
NAMEPLATE

PTT

表 1 TABLE 1

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

信号コネクタ
SIGNAL CONNECTOR
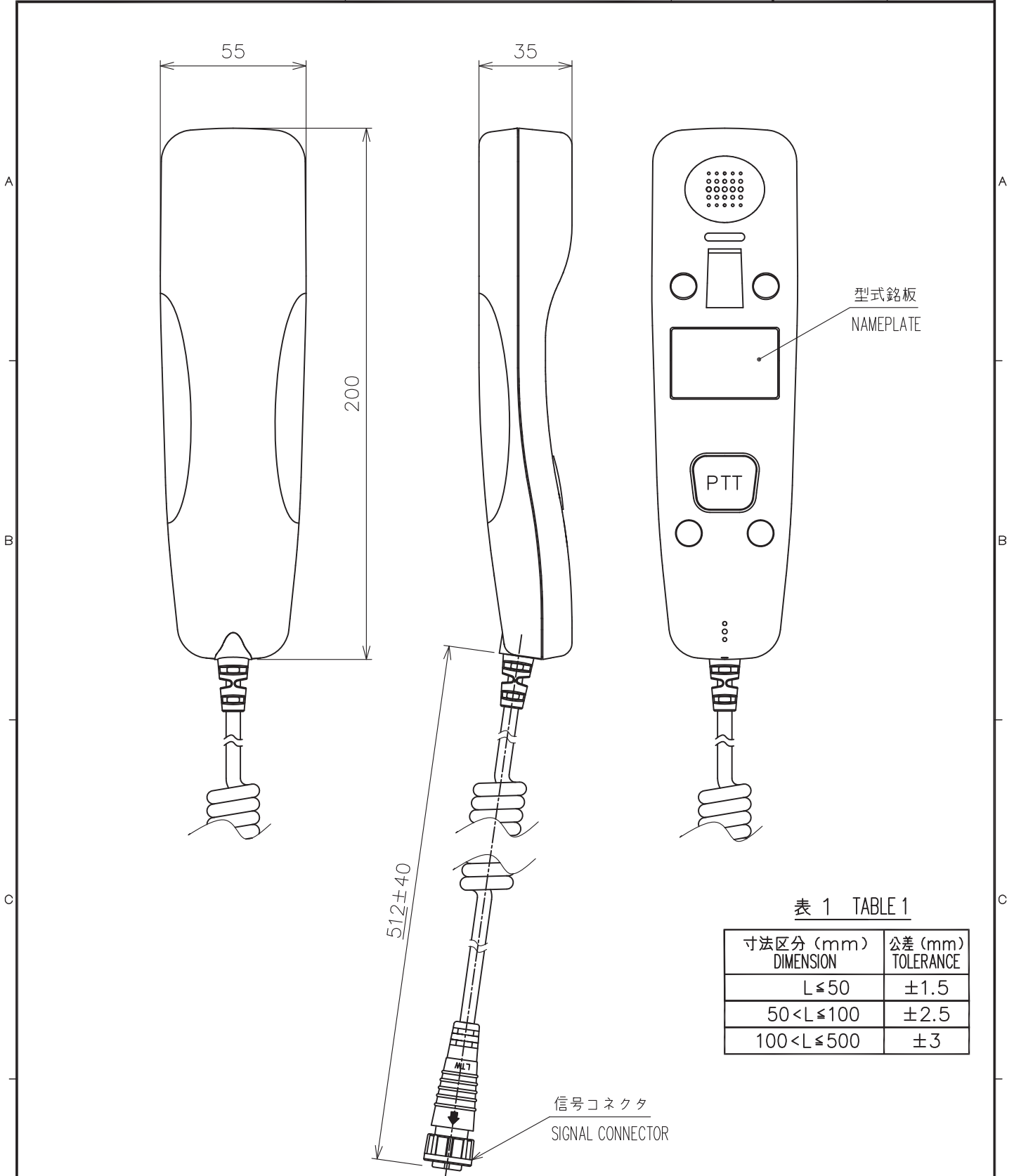
注 記　　指定外の寸法公差は表1による。
NOTE　　TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.

DRAWN 13/Apr/2012 T.YAMASAKI		TITLE HS-2003-15
CHECKED 13/Apr/2012 H.MAKI		名称 ハンドセット
APPROVED Y. Hatai	FM-8900S FM-8800D/S	外寸図
SCALE 1/2	MASS 0.20 kg ±10% 質量はカールコードを含む。MASS INCLUDES CABLE.	NAME HANDSET
DWG. No. C5642-G10-D	REF. No. 05-093-200G-3	OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

表1 TABLE 1

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

通気口
AIR VENT

187

#10

#100

取付穴
4-φ6
FIXING HOLES

警告ラベル
SAFETY INSTRUCTIONS

型式銘板
NAMEPLATE

286

272±1

167

100±1

33.5

18

端子台
TERMINAL BOARD

電源貼りマーク
POWER LABEL

#50

4

258

#50

4

81

AC-DC POWER SUPPLY PR-240

AC BREAKER
DC BREAKER
AC IN
DC IN 24 VDC
DC OUT 24 VDC

AC FAIL

AC (GREEN)
BATT/DC (RED)
ON I
OFF O
POWER
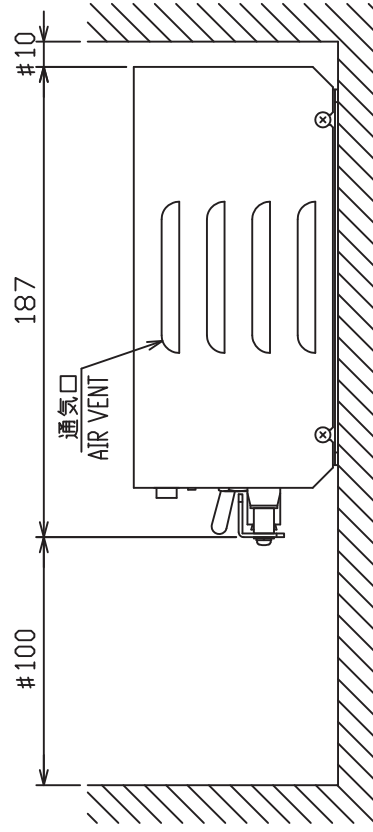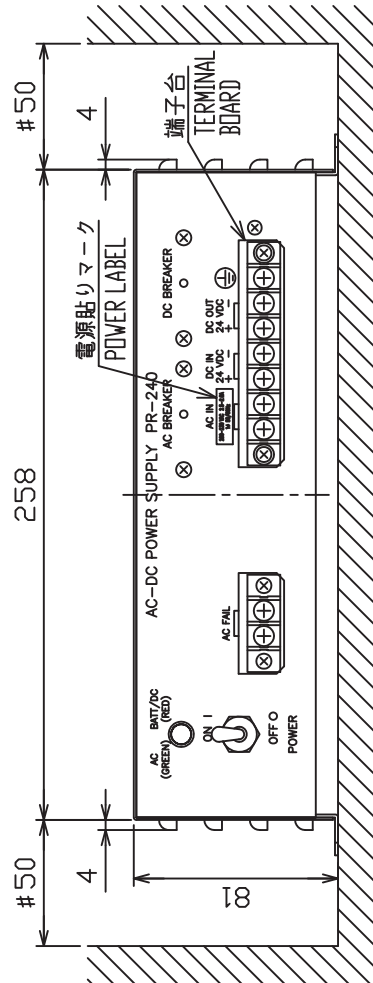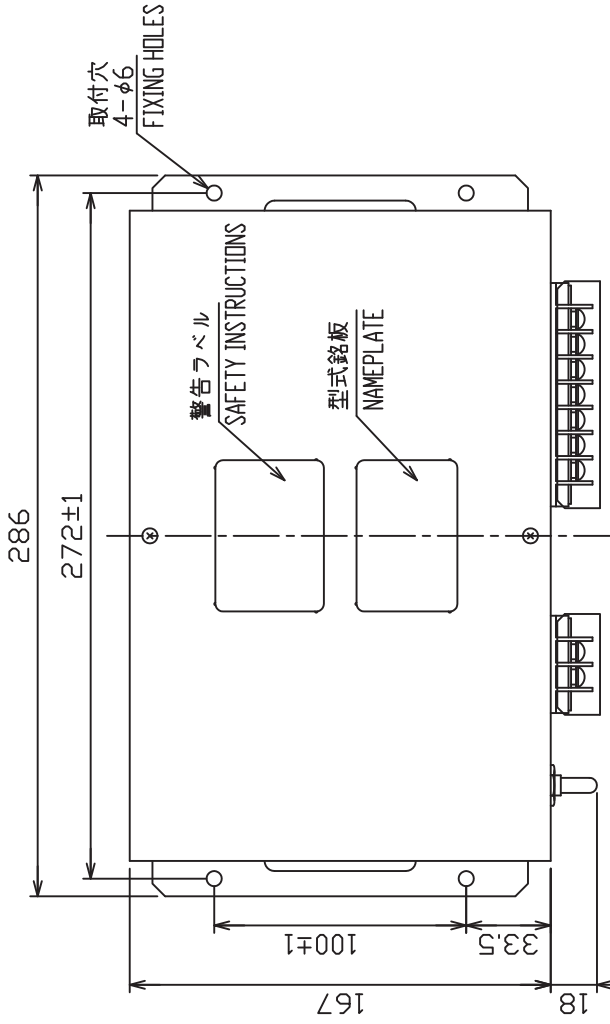
注記 1）指定なき寸法公差は表1による。
2）#印寸法は最小サービス空間寸法とする。
3）取付用ネジは＋トラスタッピンネジ 呼び径4×16を使用のこと。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. # MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ4x16 FOR FIXING THE UNIT.

DRAWN	25/Sep/09 T.YAMASAKI	TITLE	PR-240
CHECKED	25/Sep/09 T.TAKENO	名称	AC/DC電源ユニット
APPROVED	26/Oct/09 R.Esumi		外寸図
SCALE	1/3 MASS 3.2 ±10% kg	NAME	AC/DC POWER SUPPLY UNIT
DWG.No.	C5003-G03-J		OUTLINE DRAWING
REF.No.	24-003-500G-4		

FURUNO ELECTRIC CO., LTD.

FURUNO

FURUNO

表1 TABLE 1

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

注記 1) 指定外の寸法公差は表1による。
2) #印寸法は最小サービス空間寸法とする。
3) 取付用ネジはトラスタッピンネジ呼び径5×20を使用のこと。

NOTE 1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. # MINIMUM SERVICE CLEARANCE.
3. USE TAPPING SCREWS φ5x20 FOR FIXING THE UNIT.

ロール紙 ROLL PAPER
取付金具 FIXTURE

#120
357.5
138
176
(15)

(373)
80.5
277
200±0.5
42.5
24.2
366
405±1
取付穴 4×φ6.5 FIXING HOLES

#100
425
#50
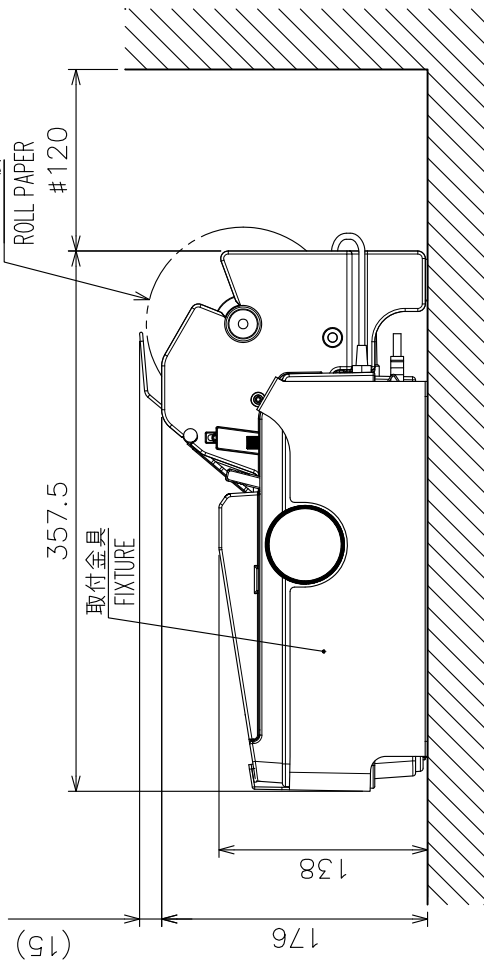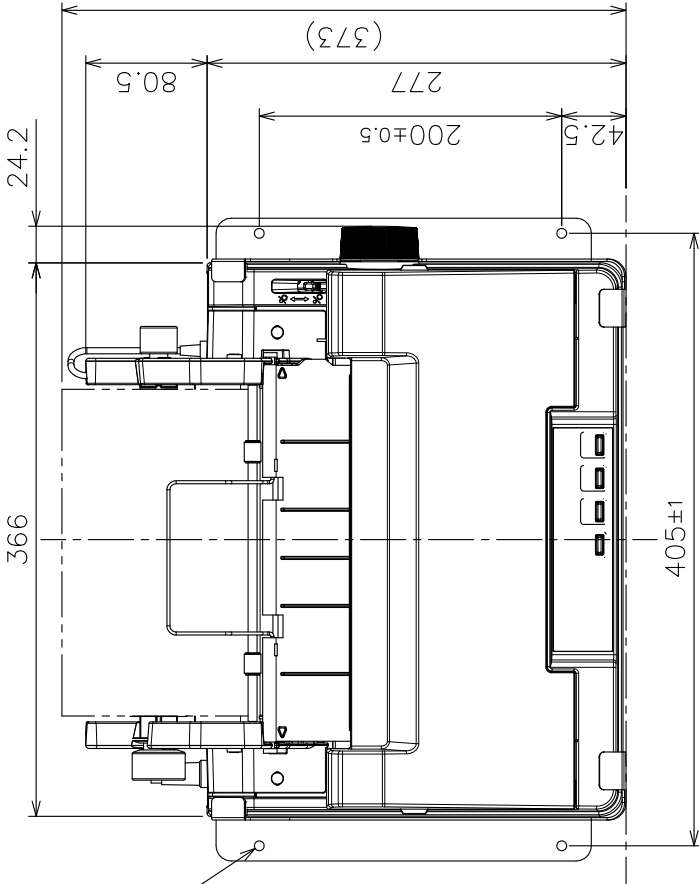
TITLE	PP-520		
名称	プリンタ		
	外寸図		
NAME	PRINTER	OUTLINE DRAWING	
DRAWN	6/Jul/2012 T.YAMASAKI		
CHECKED	6/Jul/2012 H.MAKI		
APPROVED	6/Jul/2012 Y.NISHIYAMA		
SCALE 1/5	MASS 5.5 kg		
DWG.No. C5080-G02-A	REF.No. 16-023-551G-1		

質量はロール紙を含まず MASS DOES NOT INCLUDE ROLL PAPER

FURUNO ELECTRIC CO., LTD.

A / B / C

FURUNO

表1 TABLE1

寸法区分 (mm)\nDIMENSION	公差 (mm)\nTOLERANCE
L≤50	±1.5
50<L≤100	±2.5
100<L≤500	±3

アース端子\nGND TERMINAL

矢視A\nVIEW A

電源コネクタ\nPOWER CONNECTOR

ケーブル導入口\nCABLE ENTRY

#100

141

130

#60

⇦A

取付穴寸法\nCUTOUT DIMENSIONS

208±1

133±1

電源スイッチ\nPOWER SWITCH

電源ランプ\nLAMP

型式銘板\nNAMEPLATE

プリンタ\nPRINTER

4-φ5 (取付穴)\nFIXING HOLES

220±0.5

240

120±0.5

140
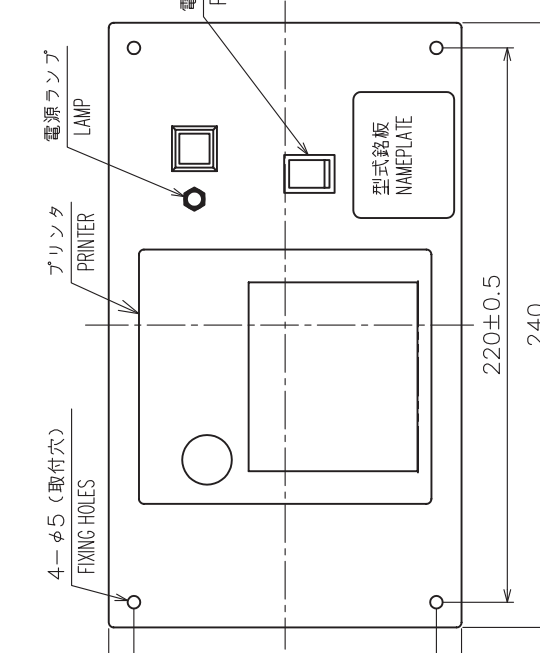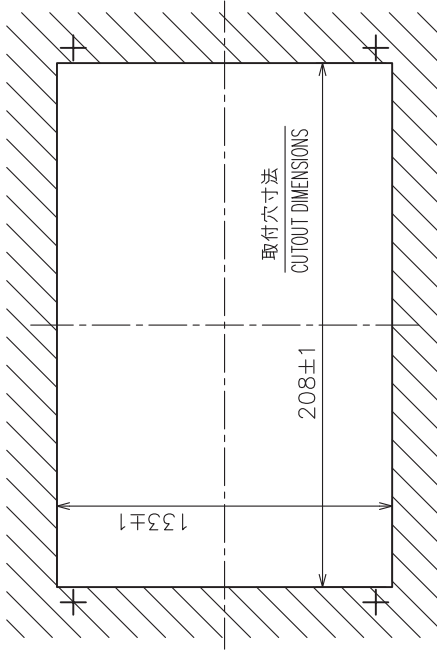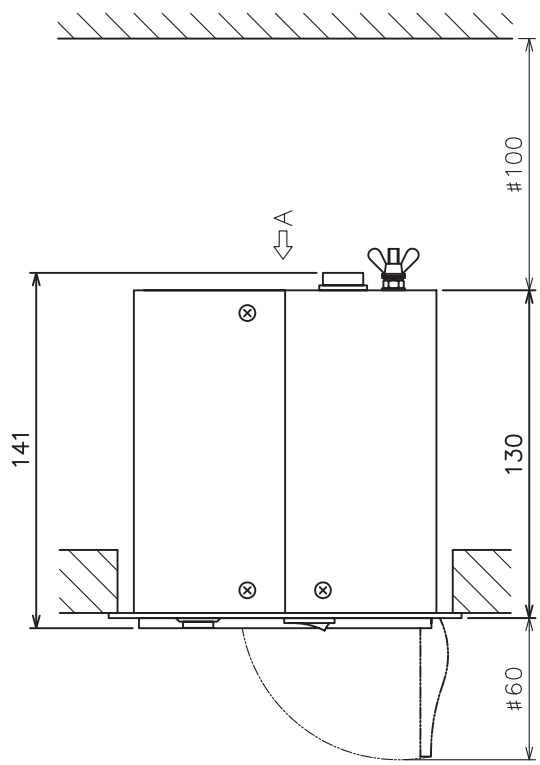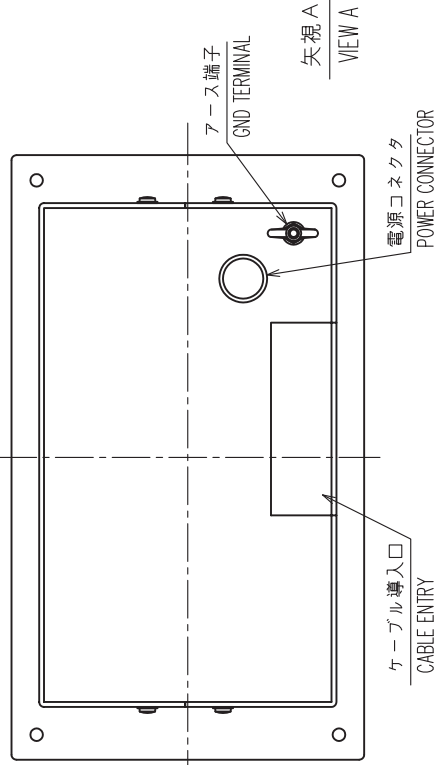
注記 1) #印寸法は最小サービス空間寸法とする。
2) 指定外の寸法公差は表1による。
3) 取付用ネジはトラスタッピンネジ呼び径4×16を使用のこと。

NOTE 1. #: MINIMUM SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
3. USE TAPPING SCREWS 4x16 FOR FIXING THE UNIT.

DRAWN	29/Aug/2016	T.YAMASAKI	TITLE	PP-8800A
CHECKED	29/Aug/2016	H.MAKI	名称	プリンタ (埋込装備)
APPROVED	30/Aug/2016	H.MAKI		外寸図
	FM-8800D/S		NAME	PRINTER (FLUSH MOUNT)
SCALE 1/3	MASS 1.4 ±10% kg			OUTLINE DRAWING
DWG.No. C5642-G16-C		REF.No. 05-093-791G-1		

FURUNO ELECTRIC CO., LTD.

92

70±0.5

270

260±0.5

243

#100

240

5

15

銘板
NAMEPLATE

アース端子
GND TERMINAL

4-φ5 取付穴
FIXING HOLES

76
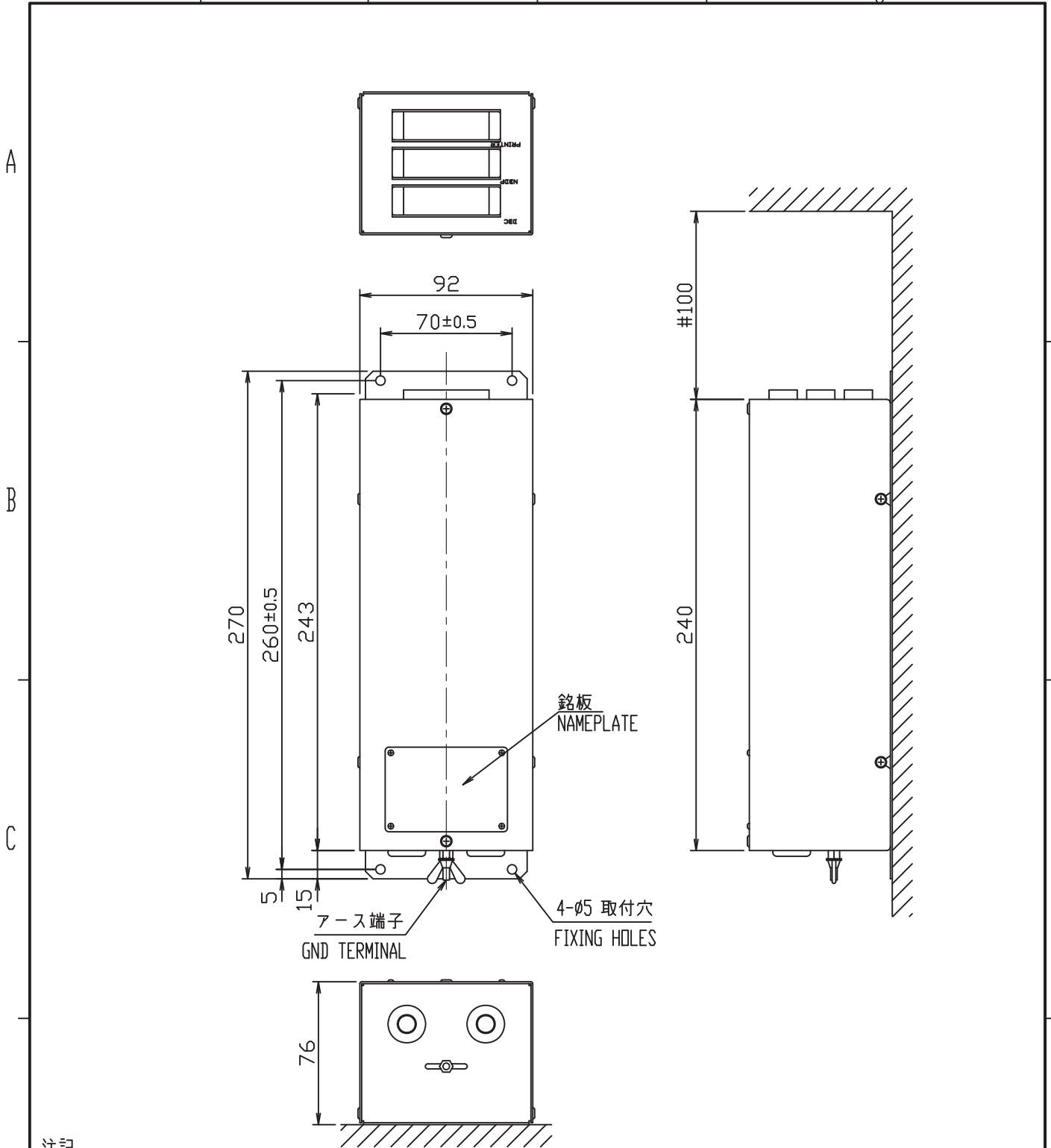
注記
1）指定なき寸法公差は表1による。
2）#：最小サービス空間寸法。

NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
2. #: MINIMUM SERVICE CLEARANCE.

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

DRAWN Sep. 6 '06 T.YAMASAKI			TITLE IF-8500
CHECKED Sep. 6 '06 T.TAKENO			名称 プリンタインターフェイス
APPROVED Sep. 21' 06 T. Matsuguchi	FM-8500		外寸図
SCALE 1/3	MASS 0.7 kg ±10%		NAME PRINTER INTERFACE
DWG.No. C5603-G05- C		05-073-2100-G1	OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

ø10

※

ø20

1146±30

④

200

70

①

3

ø26

この高さより上にマストが
突出しないようにすること。
THE MAST SHOULD NOT
BE BEYOND THIS HEIGHT.

ø17±2

②

80

※ 斜線部は自己融着テープを巻き
　更にビニールテープを巻いて
　防水処理をおこなうこと。

SEAL WITH SELF-BONDING TAPE AND
PVC TAPE FOR WATERTIGHTNESS.

※

※

③

マスト MAST
ø50以下
ø50 OR LESS

50Ω 同軸ケーブル
COAX CABLE
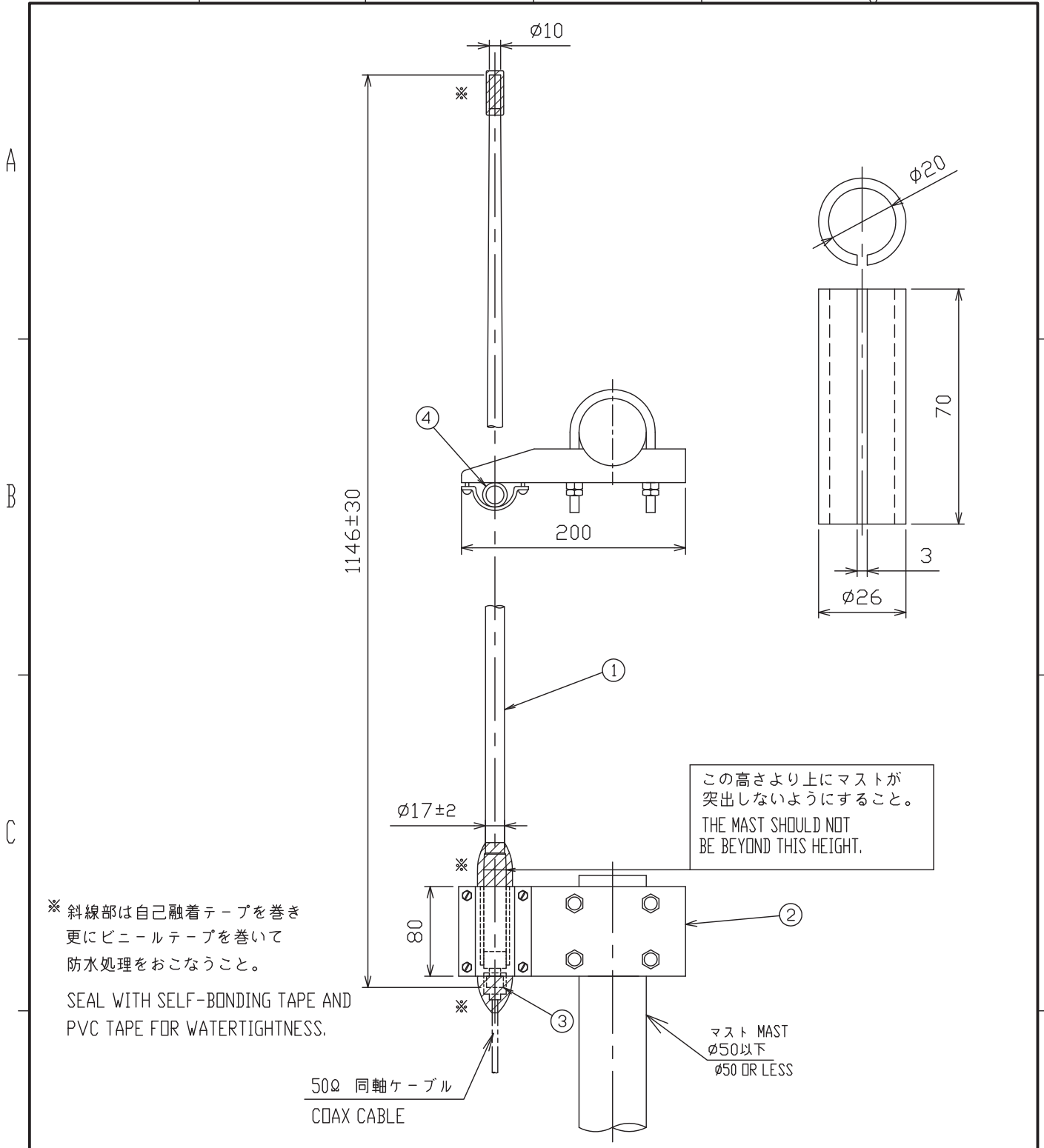
品番 ITEM	品　名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.No.	摘要 REMARKS
4	固定用パイプ LINER PIPE	硬質塩ビ VINYL CHLORIDE	1		
3	同軸コネクタ COAX. CONNECTOR		1		M-R
2	アンテナ取付金具 ANTENNA BRACKET	SUS	1 式 SET	4-310071	0.6kg
1	アンテナ棒 ANTENNA ELEMENT	FRP	1		0.25kg

DRAWN 4/Aug/2017 T.YAMASAKI		TITLE FAB-151D
CHECKED 4/Aug/2017 H.MAKI		名称 １５０ＭＨｚ ホイップアンテナ
APPROVED 10/Aug/2017 H.MAKI		外寸図
SCALE 1/5	MASS 0.85 kg ±10%	NAME 150MHz WHIP ANTENNA
DWG.No. C5013-019-L	4-110718	OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

表1（Table1）

寸法区分（mm） Dimension	公差（mm） Tolerance
L ≤ 50	±1.5
50 < L ≤ 100	±2.5
100 < L ≤ 500	±3
500 < L ≤ 1000	±4
1000 < L ≤ 2000	±5

73

品目 ITEM	型式 MODEL	材質 MATERIAL
アンテナ金具 FIXING PLATE	N173F/174F	SUS316
ナット1/2 NUT1/2	SW30	C3603B
Uボルト U-BOLT	M8	SUS316
座金・ナット WASHER/NUT	M8	SUS316

表3（Table3）

A
C B φ7

27
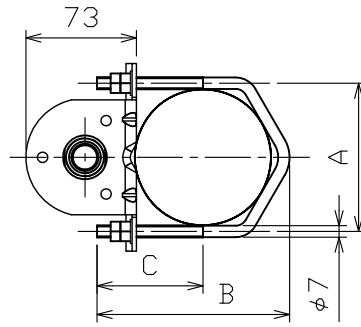
ナット締付手順
1. アンテナを対辺27のスパナで固定し
   ナット1をトルク40N・mで締付ける。
2. 1と同様にアンテナを固定し、
   ナット2をトルク80N・mで締付ける。

NUT FASTENING PROCEDURE
1. FIX THE ANTENNA WITH 27 WIDTH SPANNER,
   THEN FASTEN THE NUT 1 W/TORQUE 40N・m.
2. FIX THE ANTENNA SAME AS STEP 1,
   THEN FASTEN THE NUT 2 W/TORQUE 80N・m.

アンテナ金具
FIXING PLATE

NUT 1
NUT 2
（対辺 30）
（30 WIDTH）

M8 NUT 1 (12-15 N・m)
M8 NUT 2 (25-30 N・m)

取付部詳細（尺度:1/3）
DETAIL FOR FIXING (SCALE:1/3)

1211

※:斜線部は自己融着テープを巻き
さらにビニールテープを巻いて
防水処理をすること。
塗りつぶし部はシール剤を塗布
すること。
SEAL WITH SELF-BONDING TAPE AND
PVC TAPE FOR WATERTIGHT.
APPLY SEALANT AT THE SOLID MARK.

CX4-3/FEC

マストがこの高さより上に
突出しないこと。
MAST SHOULD NOT BE BEYOND
THIS HEIGHT.

アンテナ金具
FIXING PLATE

シール剤
SEALANT

ナット
NUT

9
61.2
99.4
62
61.2
99.4
124
140
55

50Ω同軸ケーブル
COAX. CABLE (50Ω)

ナットM8
NUT
座金M8
WASHER

Uボルト
U-BOLT

マスト（垂直）
MAST (VERTICAL)

マスト（水平）
MAST (HORIZONTAL)

表2（Table2）

注記 1）指定外の寸法公差は表1による。
NOTE 1. TABLE 1 INDICATES TOLERANCE OF
DIMENSIONS WHICH IS NOT SPECIFIED.
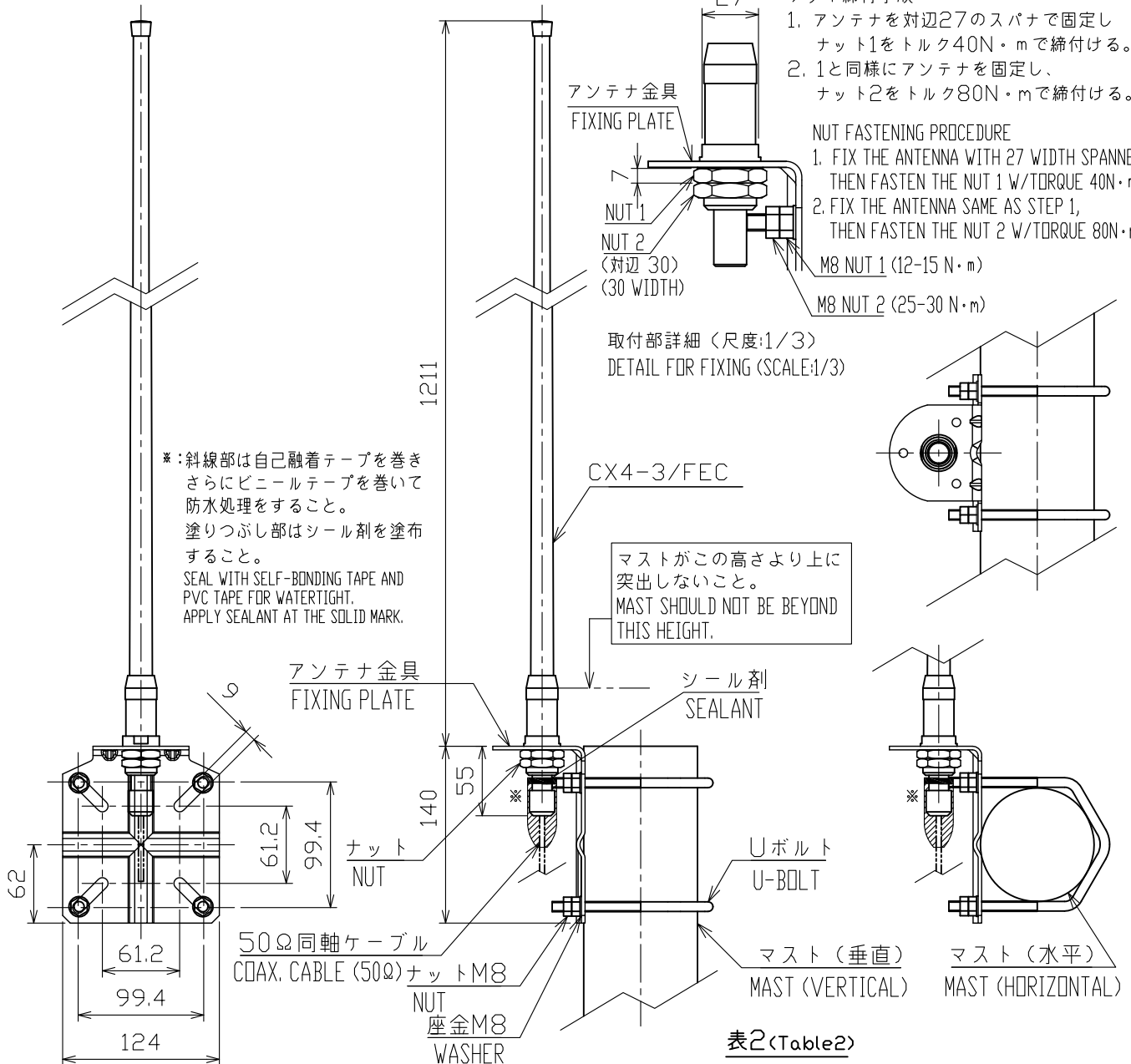
アンテナ金具型式 FIXING PLATE	Uボルト型式 U-BOLT TYPE	適合マスト径 MAST DIAMETER	A	B	C
N173F/FEC	412-0051-01	Ø49 – Ø90	98	127	70
N174F/FEC	412-0024-02	Ø30 – Ø61	69	117	83

DRAWN	18/Nov/2021 T.YAMASAKI		TITLE	CX4-3/FEC
CHECKED	18/Nov/2021 H.MAKI		名称	アンテナ
APPROVED	9/Dec/2021 H.MAKI			外寸図
SCALE 1/5	MASS 1.2 ±10% kg	質量は取付金具を含まず。 MASS DOES NOT INCLUDE FIXTURE.	NAME	ANTENNA
DWG. No. C5013-G04-G	REF. No. 05-104-355G-3			OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

矢視 A-A
SECTION A

φ20~45

φ45~80

φ10

①

1146±30

②

この高さより上にマストが
突出しないようにすること。

THE MAST SHOULD NOT
BE BEYOND THIS HEIGHT.

φ17±2

※

A

38

A

※

④

φ26

③

50Ω同軸ケーブル
COAX CABLE

φ20~80 マスト
MAST
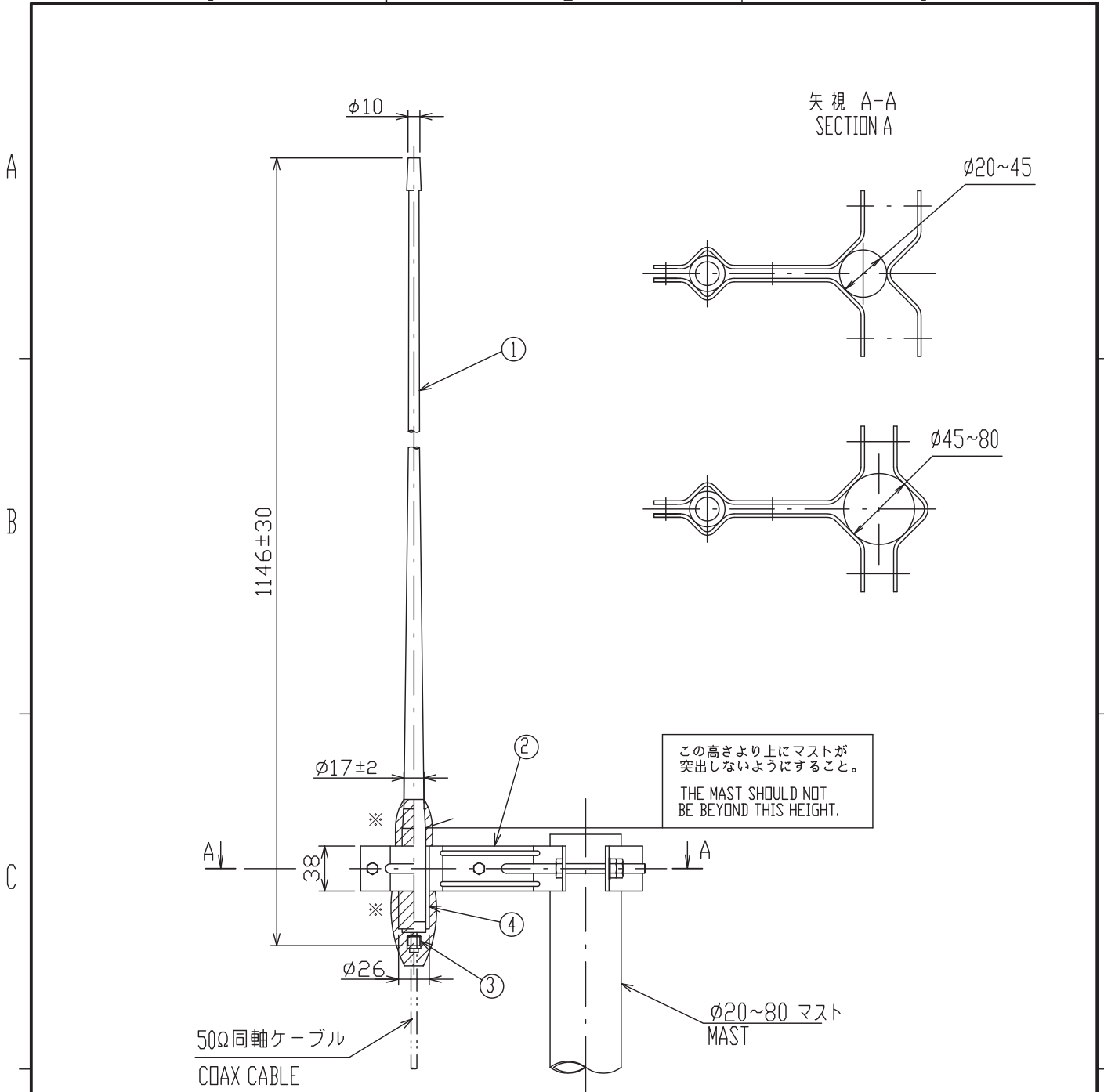
※： 斜線部は自己融着テープを巻き
　　さらにビニールテープを巻いて
　　防水処理を行うこと。
SEAL WITH SELF-BONDING TAPE AND
PVC TAPE FOR WATERTIGHTNESS.

品番 ITEM	品 名 NAME	材 質 MATERIAL	数 量 QTY	図 番 DWG. No.	摘 要 REMARKS
4	固定用パイプ LINEAR PIPE	硬質塩ビ VINYL CHLORIDE	1		
3	同軸コネクタ COAX. CONNECTOR		1		M-R
2	アンテナ取付金具 ANTENNA BRACKET	SUS316L	1 式 SET	M-15AS	t2.5
1	アンテナ棒 ANTENNA ELEMENT	FRP	1	FAB-151D	0.25 kg

DRAWN	4/Aug/2017 T.YAMASAKI	TITLE	FAB-151D + M-15AS1
CHECKED	4/Aug/2017 H.MAKI	名称	150MHzホイップアンテナ(取付金具)
APPROVED	10/Aug/2017 H.MAKI		外寸図
SCALE 1/5	MASS 0.7 kg ±10%	質量は取付金具を含む。 MASS INCLUDES BRACKET.	NAME 150MHz WHIP ANTENNA w/ BRACKET
DWG. No. C5011-042-G	REF. No.		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

表1 TABLE 1

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

25.2 25.2

3-ø5 取付穴
FIXING HOLES

9

120

125

66.2

39

120

12

22 22

3-ø5 取付穴
FIXING HOLES

ケーブル
CABLE
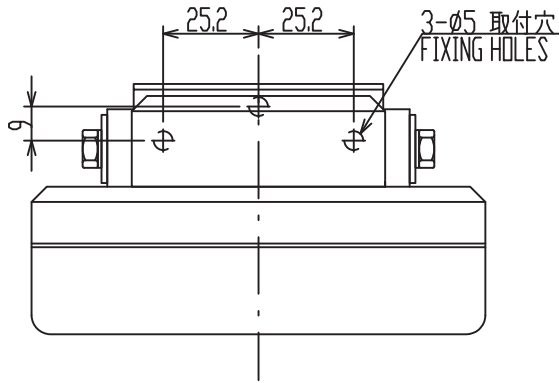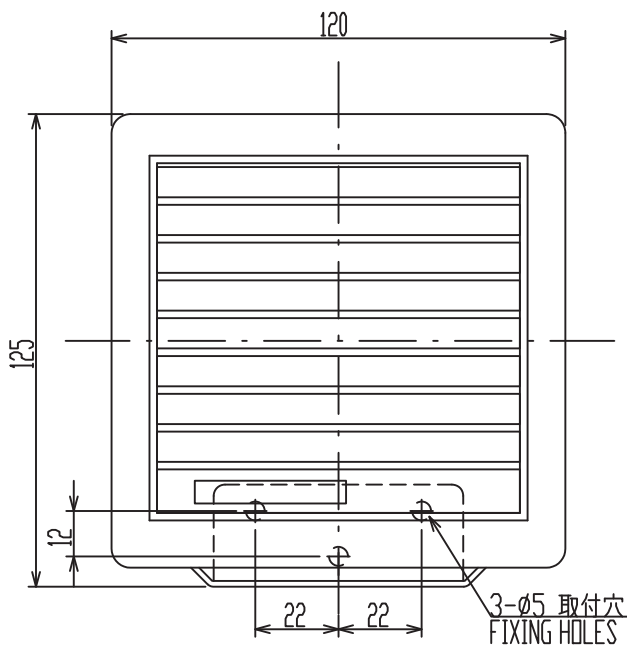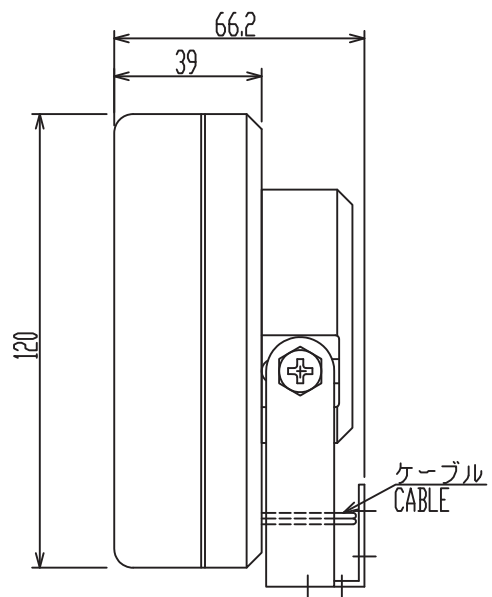
注記 1 ）指定外寸法公差は表1による。
NOTE 1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.

DRAWN Nov.25,'06 E. MIYOSHI		TITLE SEM-21Q
CHECKED TAKAHASHI. T		名称 スピーカ
APPROVED Y. Hatai		外寸図
SCALE 1/2	MASS 0.54 ±10% kg	質量は2.8mケーブルを含む MASS W/ 2.8m CABLE	NAME LOUDSPEAKER
DWG.No. C5016-G07-C	REF.No.	OUTLINE DRAWING

6
R3
11
R6.5

A部詳細（尺度１：２）
DETAIL FOR A (SCALE: 1/2)

40
#50
330
40
#50

#100（非常灯取付時）
FOR LAMP INSTALLATION

#100（非常灯取付時）
FOR LAMP INSTALLATION

EMERGENCY LAMP (OPTION)
非常灯（オプション、左右選択）
SELECT LEFT OR RIGHT

(266)
190
75°
21
600以上 600 MIN.

170±0.5
480
170±0.5
140
35
40

プリンタ
PRINTER

端子台
TERMINAL BOARD

#60
#50

250
298±0.5

A
6－取付穴
FIXING HOLES
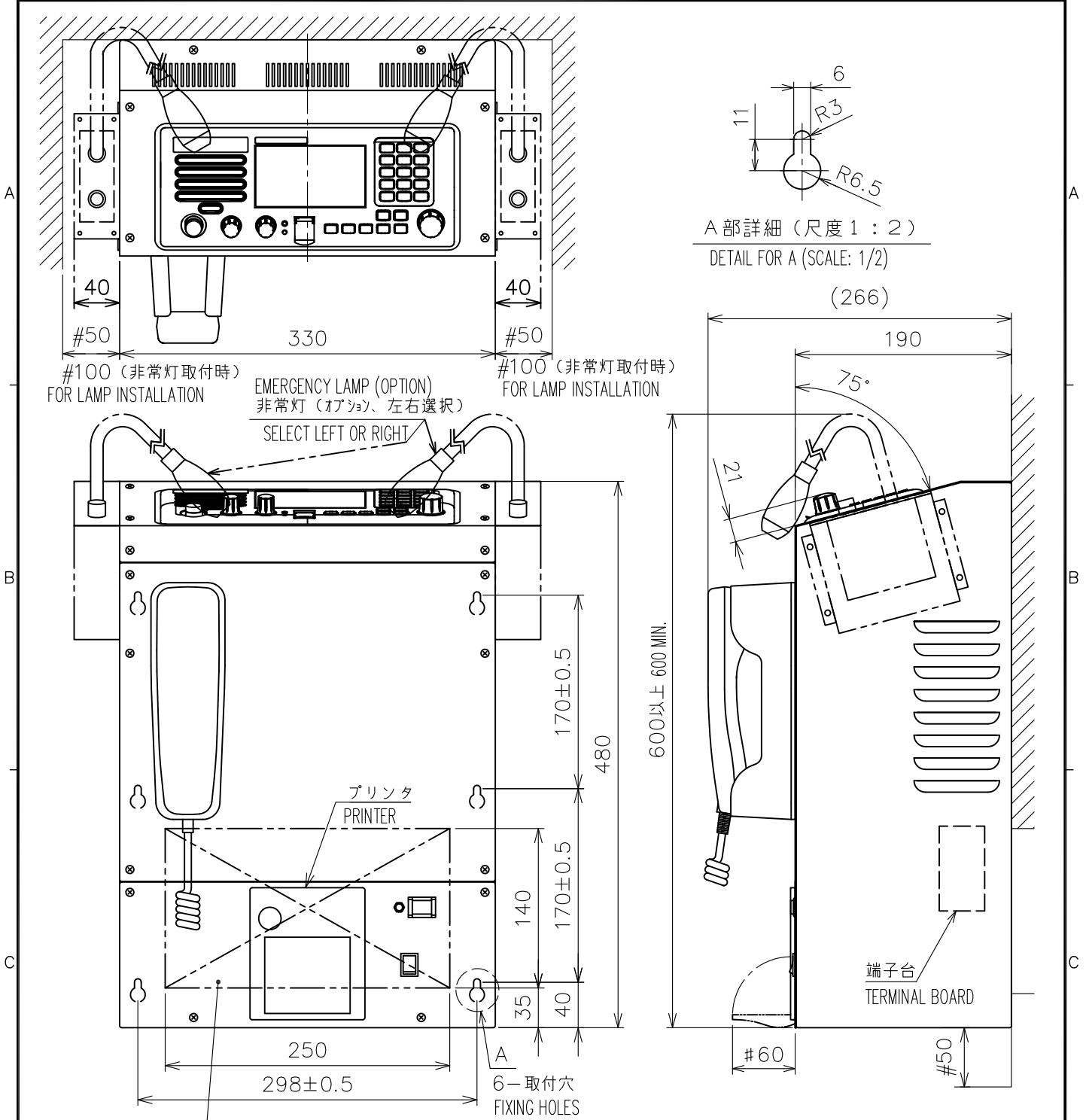
配線用穴（壁側）
CABLE ENTRY (REAR)

表　1　TABLE 1

寸法区分（mm） DIMENSION	公差（mm） TOLERANCE
L≦50	±1.5
50<L≦100	±2.5
100<L≦500	±3
500<L≦1000	±4

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

NOTE　　1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
　　　　　2. #: MINIMUM SERVICE CLEARANCE.

DRAWN 29/Aug/2016 T.YAMASAKI		TITLE RC-8900-SA
CHECKED 29/Aug/2016 H.MAKI		名称 VHFコンソール（壁掛ラック、プリンタ付）
APPROVED 31/Aug/2016 H.MAKI	FM-8900S	外寸図
SCALE 1/5　MASS 15 ±10% kg	質量はプリンタを含む。 MASS INCLUDES PRINTER.	NAME VHF CONSOLE (RACK W/ PRINTER)
DWG. No. C5680-G05-F	REF. No. 05-104-850G-8	OUTLINE DRAWING
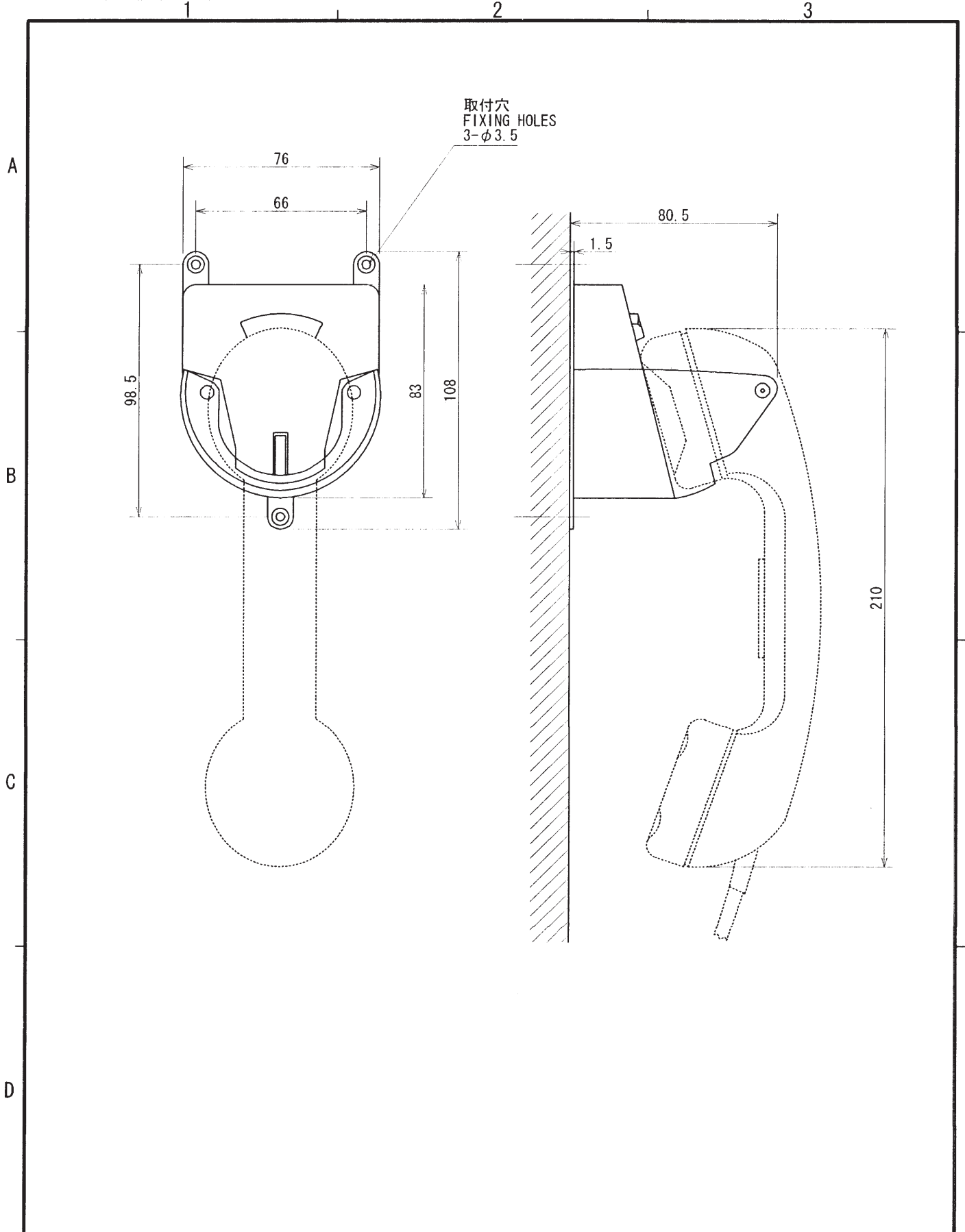
FURUNO ELECTRIC CO., LTD.

取付穴
FIXING HOLES
3-φ3.5

76

66

98.5

83

108

80.5

1.5

210

TITLE AP-102
名称 ハンドセットハンガー

外寸図

NAME HANDSET HANGER

OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO

1　　　　　　2　　　　　　3

A

210

B

10m APPROX.

C

回路図 SCHEMATIC DIAGRAM

アオ BLU
シロ WHT ── < 1 < 0V
アカ RED ── < 2 < PTT
── < 3 < MIC-H
SHIELD ── < 4 < MIC-C
クロ BLK ── < 5 < PHONE
ミドリ GRN ── < 6 < NC

D
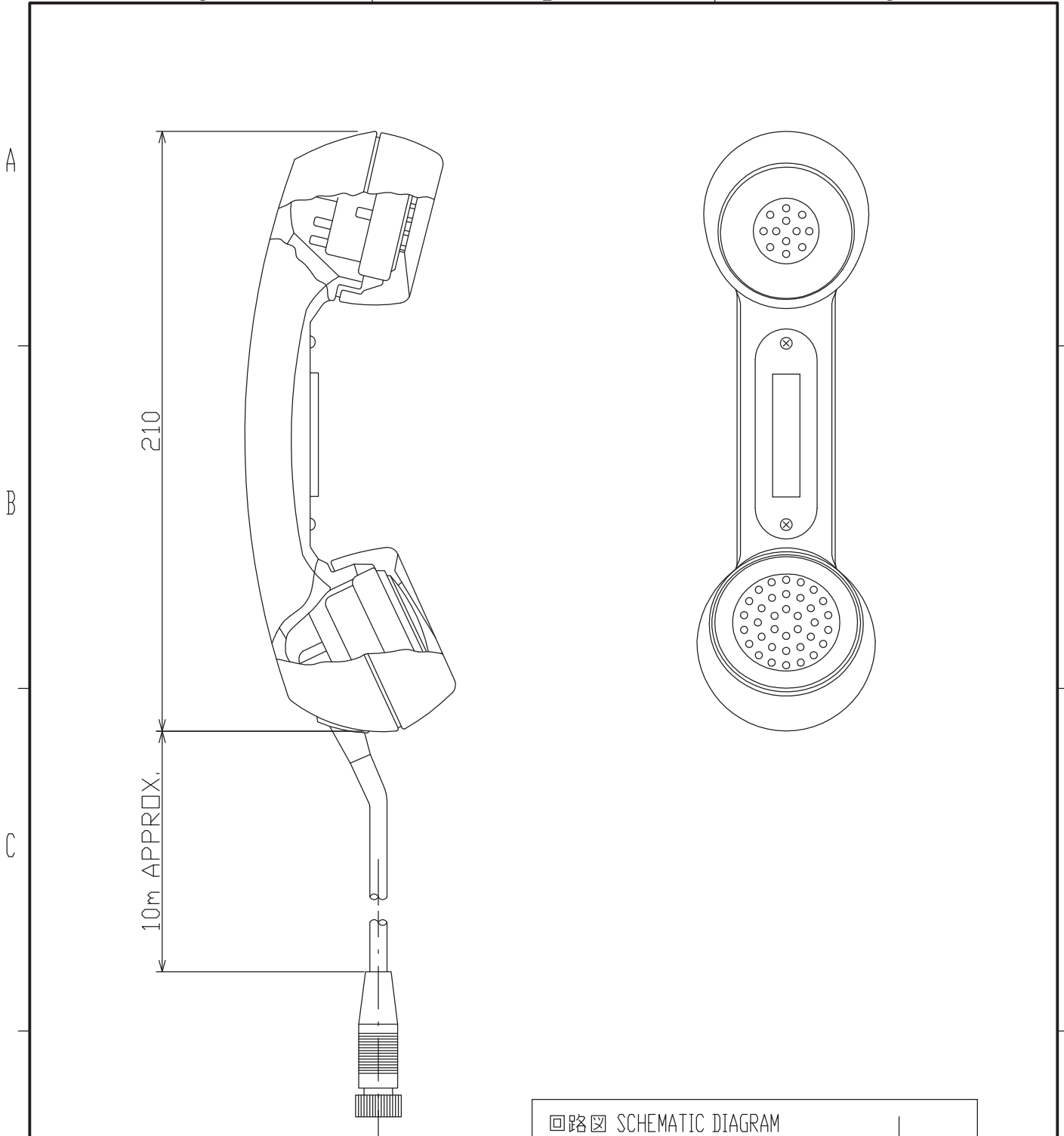
材質 MATERIAL	ＡＢＳ樹脂 ABS RESIN	
色　COLOR	黒	BLACK
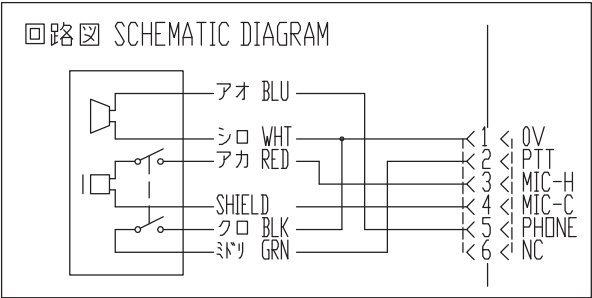
DRAWN	Dec. 22 '03　T.YAMASAKI		TITLE	HS-6000FZ11
CHECKED	Dec. 22 '03　T.TAKENO		名称	ハンドセット
APPROVED	T. Matsuguchi Dec. 26 '03			外寸図
SCALE　1/2	MASS　0.5 kg		NAME	HANDSET
DWG.No.　C5015-G11-A				OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO

210

〈260〉

〈100〉

回路図 SCHEMATIC DIAGRAM

アオ BLU
シロ WHT ― 1 ― 0V
アカ RED ― 2 ― PTT
― 3 ― MIC-H
SHIELD ― 4 ― MIC-C
クロ BLK ― 5 ― PHONE
ミドリ GRN ― 6 ― NC

材質 MATERIAL	ABS樹脂 ABS RESIN
色 COLOR	黒 BLACK
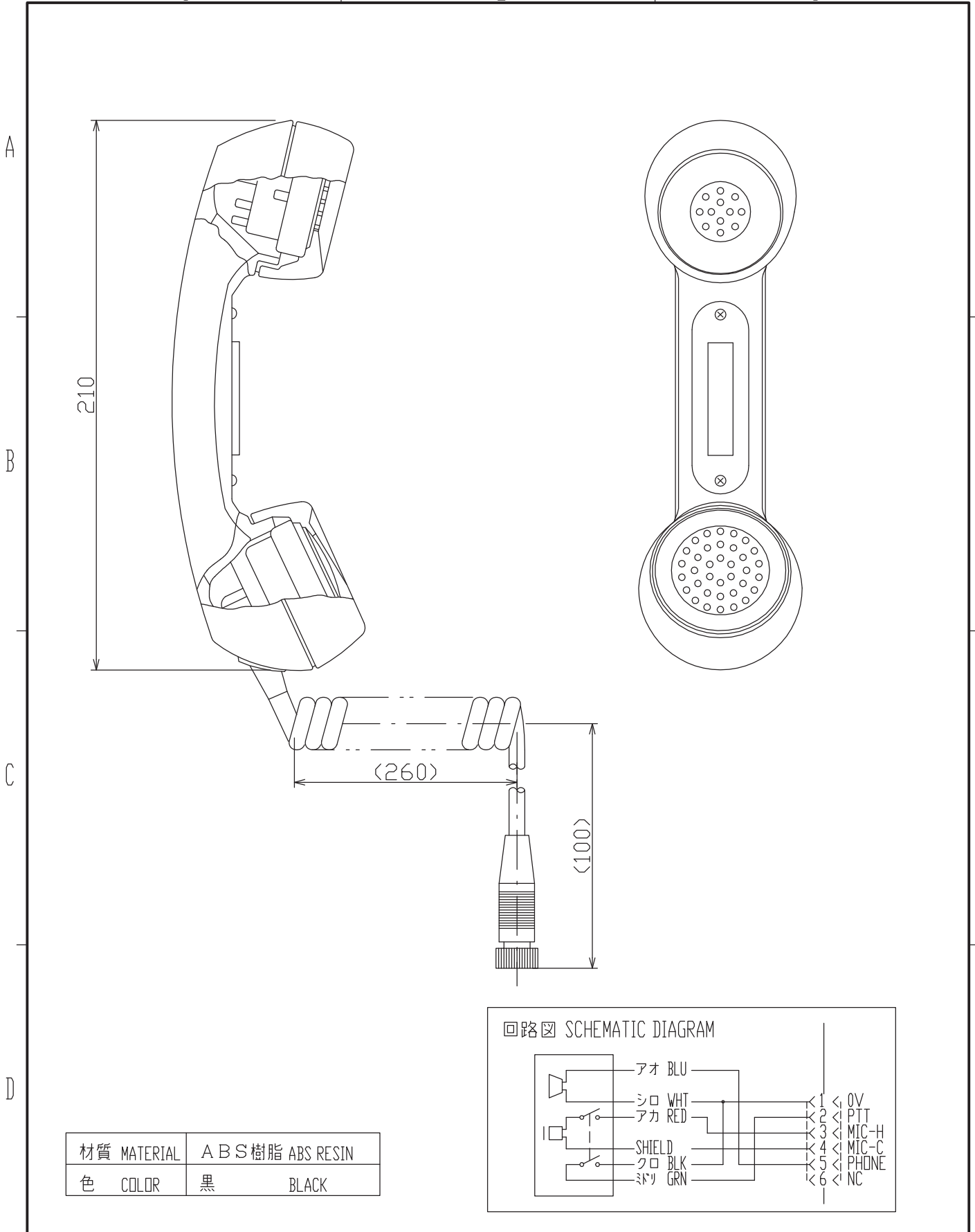
DRAWN Dec. 22 '03 T.YAMASAKI		TITLE HS-6000FZ5
CHECKED Dec. 22 '03 T.TAKENO		名称 ハンドセット
APPROVED Dec. 26 '03 T.Mizuguchi		外寸図
SCALE 1/2 MASS 0.3 kg		NAME HANDSET
DWG.No. C5015-024- D		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FM-8900S Interconnection Diagram

T/R用アンテナ *2
ANTENNA FOR T/R
*1 RG-10/UY, MAX. 50m M-P-7

CH70 WR用アンテナ *2
ANTENNA FOR CH70 WR
*1 RG-10/UY, MAX. 50m M-P-7

ハンドセット
HANDSET
HS-2003

外部スピーカ
EXT. SPEAKER
SEM-21Q *2
2.8m φ3.5

24VDC
(+) アカ RED 16S0084, 5m
(−) クロ BLK
GND シロ WHT

プリンタ
PRINTER *2
PP-510/520
57FE-17JE-BC10PL3000, 3m

57FE-336-205W-ROHS 5m

RADIOTELEPHONE
プリンタインターフェイス
PRINTER INTERFACE
IF-8500 *2

24VDC
LP-02-1(7A)-L3000, 3m 7A
RED (+)
BLK (−)

100-230VAC
1φ, 50-60Hz
DPYC-1.5 *1

AC/DC電源ユニット
AC/DC POWER SUPPLY UNIT
PR-240 *2
IN OUT
24 VDC
DPYC-2.5 *1
IV-2sq. *1

または OR

24 VDC
DPYC-2.5 *1

100-230VAC
1φ, 50-60Hz
TPYC-1.5 *1

CON1
1 H AC/DC電源ユニット
2 C AC/DC POWER SUPPLY UNIT
3 GND PR-241 *2
CON9
DC IN (+)
DC OUT (+)
(−)

送受信機 TRANSCEIVER UNIT FM-8900S

JUNCTION
ANT J1
CH70 RX ANT J2
HANDSET
SPKR
PRINTER
24VDC
GND

DSUB37M-PHX3-L5000, 5m *2

W_MIC-H 1
W_MIC-C 2
W_SP-H 3
W_SP-C 4
W_PTT_N 5
GND 6
VDR_AF-H 7
VDR_AF-C 8
IC_TD-H 9
IC_TD-C 10
IC_RD-H 11
IC_RD-C 12
MULTI_TD-A 13
MULTI_TD-B 14
MULTI_RD-A 15
MULTI_RD-B 16
EXT_ALM-H 17
EXT_ALM-C 18
ALM_ACK-H 19
ALM_ACK-C 20
GNSS_RD-H 21
GNSS_RD-C 22
PROTECT 23
DATA_DIR 24
DATA1-A 25
DATA1-B 26
DATA2-A 27
DATA2-B 28
LINE_OUT-H 29
LINE_OUT-C 30
LINE_IN-H 31
LINE_IN-C 32
EXT_15V 33
GND 34
EXT_15V 35
GND 36
F. GND 37

IV-2sq. *1

接続箱 JUNCTION BOX IF-8900 *2

J1: 1-10 J2: 1-14 J3: 1-14

TB1
EXT_15V 1
GND 2
RH_DATA1-A 3
RH_DATA1-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TTYCSLA-4, MAX. 100m *1

TB2
EXT_15V 1
GND 2
RH_DATA2-A 3
RH_DATA2-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

同上 DITTO

TB3
EXT_15V 1
GND 2
RH_DATA3-A 3
RH_DATA3-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TB4
EXT_15V 1
GND 2
RH_DATA4-A 3
RH_DATA4-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TB5
W_MIC1-H 1
W_MIC1-C 2
W_SP1-H 3
W_SP1-C 4
W_PTT1_N 5
GND 6
VDR_AF-H 7
VDR_AF-C 8

TTYCSLA-4, MAX. 20m *1
TTYCSLA-1, MAX. 50m *1 VDR

TB6
W_MIC2-H 1
W_MIC2-C 2
W_SP2-H 3
W_SP2-C 4
W_PTT2_N 5
GND 6
GNSS_RD-H 7
GNSS_RD-C 8

TTYCSLA-4, MAX. 20m *1
TTYCSLA-1, MAX. 50m *1 航法装置 NAV EQUIPMENT

TB7
EXT_ALM-H 1
EXT_ALM-C 2
ALM_ACK-H 3
ALM_ACK-C 4
MULTI_TD-A 5
MULTI_TD-B 6
MULTI_RD-A 7
MULTI_RD-B 8

MPYC-4, MAX. 50m *1 アラームシステム ALARM SYSTEM
TTYCSLA-4, MAX. 50m *1
TD-A / TD-B / RD-A / RD-B INS/AIS/AMS/PLOTTER

TB8
NC 1
NC 2
NC 3
NC 4
IC_TD-H 5
IC_TD-C 6
IC_RD-H 7
IC_RD-C 8

TTYCSLA-4, MAX. 50m *1 アラームユニット ALARM UNIT IC-350

IV-1.25sq. *1

Right side

TB1
1-8
リモートハンドセットハンガー
REMOTE HANDSET HANGER
HG-8900/8900-W

TB3
FG

リモートハンドセット
REMOTE HANDSET
HS-8900/8900-W

リモートステーション
REMOTE STATION
RB-8900/8900-W *2

TB1 マイクレセプタクルボックス MIC RECEPTACLE BOX
1 MIC RECEPTACLE
2 BOX
3
4 RBD-VHF(B) *2
ウィングハンドセット
WING HANDSET *2
HS-6000FZ5
HS-6000FZ11

TB1 マイクレセプタクルボックス MIC RECEPTACLE BOX
1 MIC RECEPTACLE
2 BOX
3
4 RBD-VHF(B) *2
ウィングハンドセット
WING HANDSET *2
HS-6000FZ5
HS-6000FZ11

Title block

DRAWN 1/Apr/2021 T. YAMASAKI
CHECKED 1/Apr/2021 H. MAKI
APPROVED 31/May/2021 H. MAKI
SCALE | MASS kg
DWG. No. C5680-C01- H
REF. No. 05-104-2001-0

TITLE FM-8900S
名称 国際VHF無線電話装置
相互結線図
NAME VHF RADIOTELEPHONE
INTERCONNECTION DIAGRAM

FURUNO ELECTRIC CO., LTD.

注記
*1) 造船所手配。
*2) オプション。

NOTE
*1: SHIPYARD SUPPLY.
*2: OPTION.

T/R用アンテナ *2
ANTENNA FOR T/R
RG-10/UY, MAX. 50m　*1　M-P-7　05SO9654 0.5m

CH70 WR用アンテナ *2
ANTENNA FOR CH70 WR
RG-10/UY, MAX. 50m　*1　M-P-7

ハンドセット
HANDSET
HS-2003

外部スピーカ
EXT. SPEAKER
SEM-21Q *2　2.8m　φ3.5

プリンタ
PRINTER
UTP-58E

インターフェイス
I/F
05P0541

*3

S1
FL1
TB1
CB3 CB1 CB2 CB3
24VDC　DPYC-2.5　*1
RED - (+)
BLK - (−)

非常灯 *2
EMERGENCY LAMP
NLEL-Q3W-WB

CB1, CB2　6.3A
CB3　2A

IV-2sq.　*1

送受信機 TRANSCEIVER UNIT FM-8900S

JUNCTION
ANT　J1
CH70 RX ANT　J2
HANDSET
SPKR
PRINTER
24VDC
GND

DSUB37M-PHX3-L550, 0.55m　*2

W_MIC-H C1
W_MIC-C C2
W_SP-H C3
W_SP-C C4
W_PTT_N C5
GND C6
VDR_AF-H C7
VDR_AF-C C8
IC_TD-H C9
IC_TD-C C10
IC_RD-H C11
IC_RD-C C12
MULTI_TD-A C13
MULTI_TD-B C14
MULTI_RD-A C15
MULTI_RD-B C16
EXT_ALM-H C17
EXT_ALM-C C18
ALM_ACK-H C19
ALM_ACK-C C20
GNSS_RD-H C21
GNSS_RD-C C22
PROTECT C23
DATA_DIR C24
DATA1-A C25
DATA1-B C26
DATA2-A C27
DATA2-B C28
LINE_OUT-H C29
LINE_OUT-C C30
LINE_IN-H C31
LINE_IN-C C32
EXT_15V C33
GND C34
EXT_15V C35
GND C36
F.GND C37

接続箱 JUNCTION BOX IF-8900 *2

J1
1 2 3 4 5 6 7 8 9 10
J2
1 2 3 4 5 6 7 8 9 10 11 12
J3
1 2 3 4 5 6 7 8 9 10 11 12 13 14

TB1
EXT_15V 1
GND 2
RH_DATA1-A 3
RH_DATA1-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TB2
EXT_15V 1
GND 2
RH_DATA2-A 3
RH_DATA2-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

同上 DITTO

TB3
EXT_15V 1
GND 2
RH_DATA3-A 3
RH_DATA3-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TB4
EXT_15V 1
GND 2
RH_DATA4-A 3
RH_DATA4-B 4
LINE_OUT-H 5
LINE_OUT-C 6
LINE_IN-H 7
LINE_IN-C 8

TB5
W_MIC1-H 1
W_MIC1-C 2
W_SP1-H 3
W_SP1-C 4
W_PTT1_N 5
GND 6
VDR_AF-H 7
VDR_AF-C 8

TB6
W_MIC2-H 1
W_MIC2-C 2
W_SP2-H 3
W_SP2-C 4
W_PTT2_N 5
GND 6
GNSS_RD-H 7
GNSS_RD-C 8

TB7
EXT_ALM-H 1
EXT_ALM-C 2
ALM_ACK-H 3
ALM_ACK-C 4
MULTI_TD-A 5
MULTI_TD-B 6
MULTI_RD-A 7
MULTI_RD-B 8

TB8
NC 1
NC 4
IC_TD-H 5
IC_TD-C 6
IC_RD-H 7
IC_RD-C 8

TTYCSLA-4, MAX. 100m　*1

TB1
リモートハンドセットハンガー
REMOTE HANDSET HANGER
HG-8900/8900-W

リモートハンドセット
REMOTE HANDSET
HS-8900/8900-W

TB3　FG

リモートステーション
REMOTE STATION
RB-8900/8900-W *2

TB1 マイクレセプタクルボックス
MIC RECEPTACLE BOX
RBD-VHF(B) *2
TTYCSLA-4, MAX. 20m　*1

ウィングハンドセット *2
WING HANDSET
HS-6000FZ5
HS-6000FZ11

TTYCSLA-1, MAX. 50m　*1　VDR

TTYCSLA-1, MAX. 50m　*1
航法装置 NAV EQUIPMENT

MPYC-4, MAX. 50m　*1
アラームシステム ALARM SYSTEM

TTYCSLA-4, MAX. 50m　*1
INS/AIS/AMS/PLOTTER
TD-A TD-B RD-A RD-B

TTYCSLA-4, MAX. 50m　*1
アラームユニット
ALARM UNIT
IC-350

GND

RACK CONSOLE

注記
＊1）造船所手配。
＊2）オプション。
＊3）Nタイプでは支給なし。

NOTE
*1: SHIPYARD SUPPLY.
*2: OPTION.
*3: NOT SUPPLIED FOR RC-8900-N.

DRAWN	12/Mar/2013 T. YAMASAKI		TITLE	RC-8900-A/N
CHECKED	12/Mar/2013 H. MAKI		名称	国際VHF無線電話装置(ラック組込)
APPROVED	14/Mar/2013 Y. NISHIYAMA	FM-8900S		相互結線図
SCALE	MASS kg		NAME	VHF RADIOTELEPHONE (RACK CONSOLE)
DWG. No. C5680-C02- G	REF. No. 05-104-8001-0			INTERCONNECTION DIAGRAM

FURUNO ELECTRIC CO., LTD.

S-3

FURUNO ELECTRIC CO., LTD.

TITLE	FM-8900S
名称	国際VHF無線電話装置
	相互結線図
NAME	VHF RADIOTELEPHONE
	INTERCONNECTION DIAGRAM

DRAWN	27/Jul/2020	T. YAMASAKI
CHECKED	27/Jul/2020	H. MAKI
APPROVED	29/Jul/2020	H.MAKI
SCALE	MASS	kg
DWG. No.	C5680-C03- G	REF. No. 05-104-2001-0

注記
*1) 造船所手配。
*2) オプション。
NOTE
*1: SHIPYARD SUPPLY.
*2: OPTION.