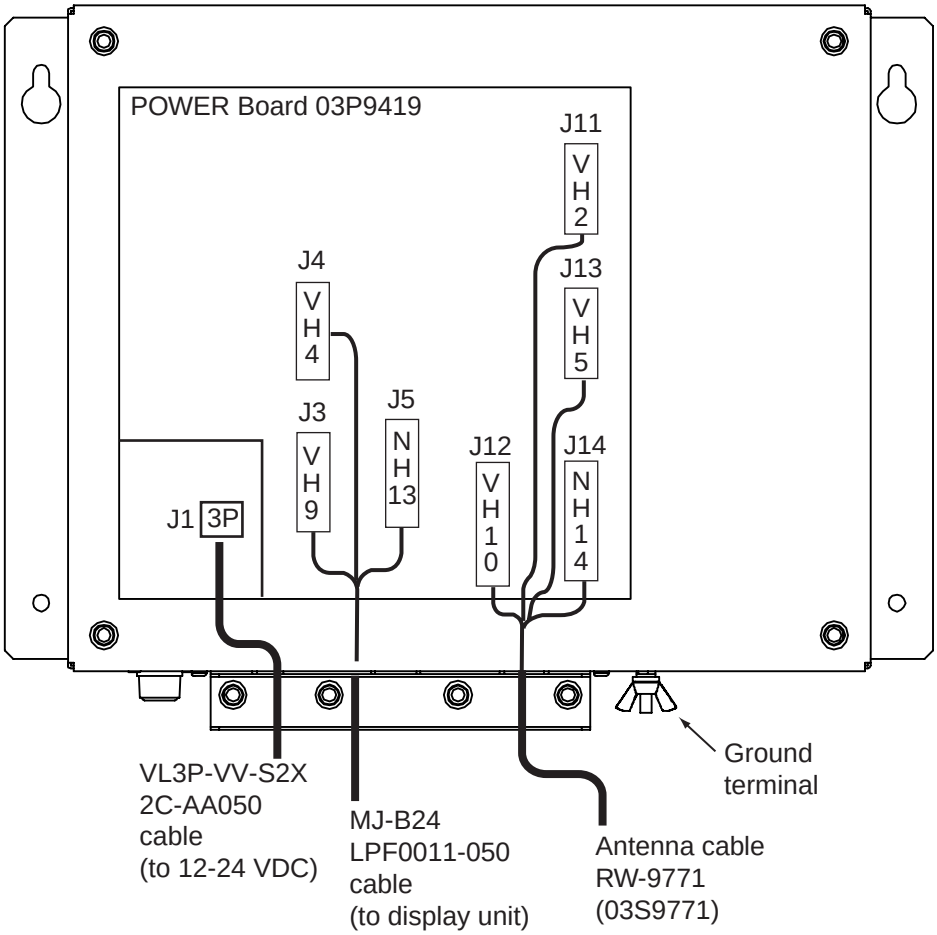
2.2 Wiring the Power Supply Unit

Cabling

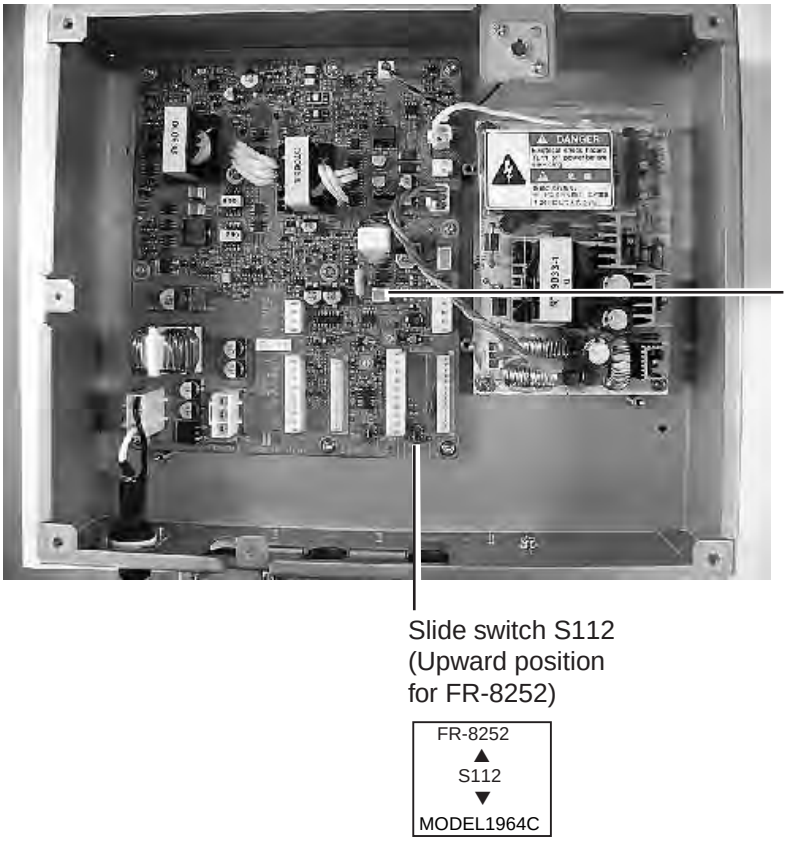
1. Unfasten four screws to remove the cable clamp.
2. Unfasten four screws to remove the cover.
3. Attach the connectors of three cables as shown in the figure below.



4. Lay three cables in respective slots referring to the figure above.
5. Reattach the cover and the cable clamp.
6. Connect a ground wire (local supply, IV-2sq) between the ground terminal and ship's ground.

Jumper block, slide switch setting

The jumper block JP1 and slide switch S112 on the PWR board (03P9419) must be set according to radar model. Open the unit, locate JP1 and S112 and set them as below.



Power supply unit, inside view

Jumper block, slide switch	Function	Setting
JP1	Enables/disables motor slow start circuit.	Short (disable)
S112	TUNE voltage selector (0-12 V, 0-32 V)	Upward position (0-12 V)

Power requirement, replacement of fuses

Power requirement

The power for the power supply unit and display unit must be drawn from the same power switch on the power terminal board.

Replacement of fuses

The power supply unit is shipped with a 15 A fuse(for connection to 12 VDC battery). Replace the fuse with a 7 A (supplied) when the ship's battery is 24 VDC.

2.3 Port for External Devices

External equipments can be connected here as shown below.

NMEA1(7P)	NMEA2(7P)	HDG (6P)	PC/EXT-BUZZER (7P)
NMEA sentence device	NMEA sentence device	Heading sensor	External buzzer, PC, etc.

This equipment can receive the following NMEA 0183 format sentences from other equipment. You will need the optional NMEA cable to connect with external equipment.

- Course: VTG> RMC
- Waypoint: Range: BWR> BWC> RMB, Bearing: BWR> BWC (> RMB*1)
- Heading (True): HDT> VHW> HDG*2> HDM*2> VHW*2
- Heading (Magnetic): HDG> HDM> VHW> HDT*2> VHW*2
- Ship's speed: Over ground: VTG>RMC> VHW, Through water: VHW
- Date: ZDA
- Time: ZDA
- Own ship's position: GNS>GGA>RMC> GLL
- Depth: DPT>DBT
- Wind speed and angle*3: True: MWV>VWT, Relative: MWV>VWR
- Water temperature: MTW

*1: Available when true bearing.
*2: Variation data is required.
*3: True or Relative is changed with menu.

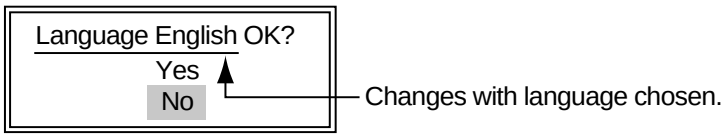
3. SETTING UP THE EQUIPMENT

3.1 Setting Language

At the first power application after installation, choose a language as follows.

1. Press ⏻**/BRILL** key to turn the power on.
   "Now Initializing…" appears and after a while the window below appears.

2. Rotate the trackball to choose language desired and press the **ENTER** key.
   The confirmation window appears.

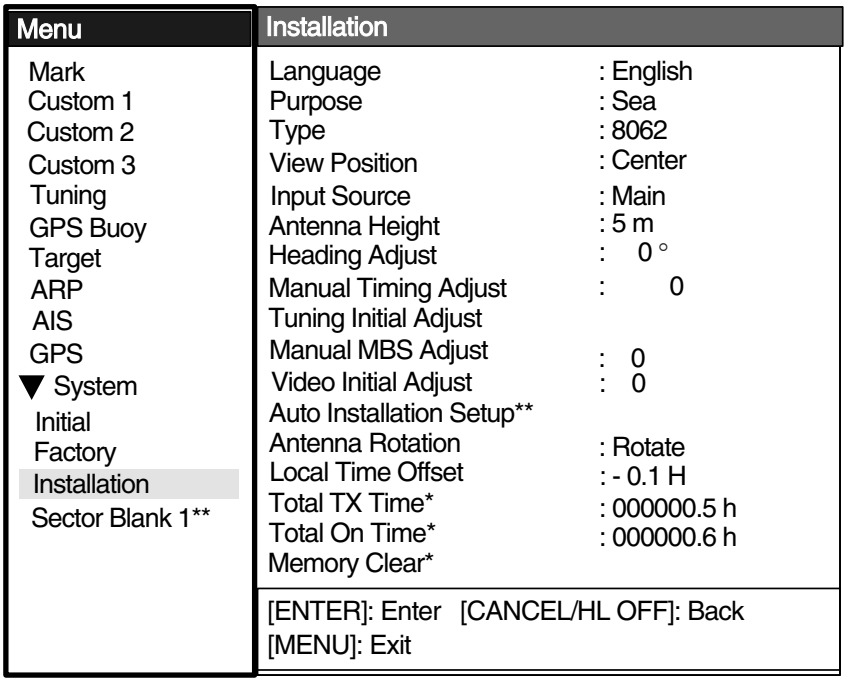


3. Choose **Yes** and press the **ENTER** key.

3.2 Opening the Installation Menu

After you have installed the equipment, set it up as follows.

1. Press the **MENU** key. The main menu appears on the screen.
2. Rotate the trackball downward to choose **Installation**. The installation menu appears in gray to right side of the screen.
3. While pressing down the **CANCEL/HL OFF** key, press the **MENU** key five times to activate the Installation menu.



* : Displayed when scrolled.

** : Set the Sector Blank to "Off" in order to execute Auto Installation Setup in the Installation menu.

4. Press the **ENTER** key. The highlighted cursor appears in the Installation menu.
5. Rotate the trackball downward or upward to choose an item in the Installation menu.
6. Press the **ENTER** key to show setting window.
7. Rotate the trackball downward or upward to choose an option.
8. Press the **ENTER** key to confirm setting.
9. Finally, press the **MENU** key to close the main menu.

Basic Settings

Language: Choose an appropriate language.

Purpose: Choose the purpose of this radar among River, Sea and IEC. The default setting is Sea.

River: To use this radar on a river.

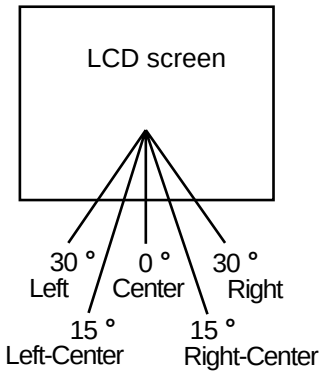
Sea: To use this radar on high seas.

IEC: To use this radar as the type approved radar.

Type: Choose type of this radar among 8062 (6 kW radar), 8122 (12 kW radar) and 8252 (25 kW radar) to agree with the specifications of the antenna unit. The default setting is 8062. Unsuitable setting may result in malfunction.

View Position: Choose the operating position for this radar among Left, Left-Center, Center, Right-Center and Right to view echo colors correctly. The default setting is Center.

Left: When operating this radar at the left side.
Left-Center: When operating this radar at the left-center side.
Center: When operating this radar at center position.
Right-Center: When operating this radar at the right-center side.
Right: When operating this radar at the right side.
Approx. angle of the view position as follows.



Note: The radar echo and trail echo are adjusted by the View Position. The characters are not adjusted. This setting is also reflected on an external monitor (option).

Input Source: Choose the input source between Main and Sub. The default setting is Main.
Main: When using this display unit as main radar.
Sub: When using this display unit as sub display. For Sub, the "Video Initial Adjust" is required (page 3-6).

Antenna Height: Set the height of the antenna above the water surface among 5, 10, 15, 20, 30, 40 and 50 m. The default setting is 15 m.

Antenna Rotation: "Rotate," the default setting, stops transmission when the antenna is not rotating. "Stop" transmits radar pulses without rotating the antenna.

Local Time Offset: To display local time on the screen, set the time difference from the UTC.

Memory Clear: Restore the default settings. However, Purpose, Type, View Position and Input Source are not restored.

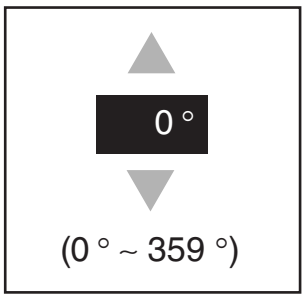
Heading Adjustment

You have mounted the antenna unit facing straight ahead in the direction of the bow. Therefore, a small but conspicuous target dead ahead visually should appear on the heading line (zero degrees).

In practice, you will probably observe some small error on the display because of the difficulty in achieving accurate initial positioning of the antenna unit. The following adjustment will compensate for this error.

1. Set ship's heading toward a suitable target (for example, ship or buoy) at a range between 0.125 and 0.25 nautical mile.

2. Transmit the radar at 0.25 nm range and measure the bearing of that target relative to ship's heading with an EBL.
3. Open the Installation menu, and choose Heading Adjust.
4. Press the **ENTER** key to show the HEADING ADJUST window.



5. Rotate the trackball upward or downward to set the value measured at the step 2 above. Confirm that the target shows dead ahead on the screen.
6. Press the **ENTER** key to conclude the setting.

Auto Installation Setup

When this item is executed, the tuning, timing, video and MBS are automatically adjusted.

Note: Before executing this procedure, confirm that Sector Blank 1 and Sector Blank 2 are off.

1. Transmit the radar at 48 nm range.
2. Choose Auto Installation Setup from the installation menu and press the **ENTER** key.
3. Rotate the trackball to choose **Yes**, and then press the **ENTER** key.
   Automatically, the tune adjustment begins, indicating "Tuning adjusting…." Then, the timing adjustment, video adjustment and MBS adjustment are executed automatically, indicating "Timing adjusting…", "Video adjusting…", and "MBS adjusting…" in that order. After the adjustment is completed, the window disappears.

If you are not satisfied with the result of the Auto Installation Setup, execute Manual Timing Adjust, Tuning Initial Adjust, Manual MBS Adjust and Video Initial Adjust as follows.

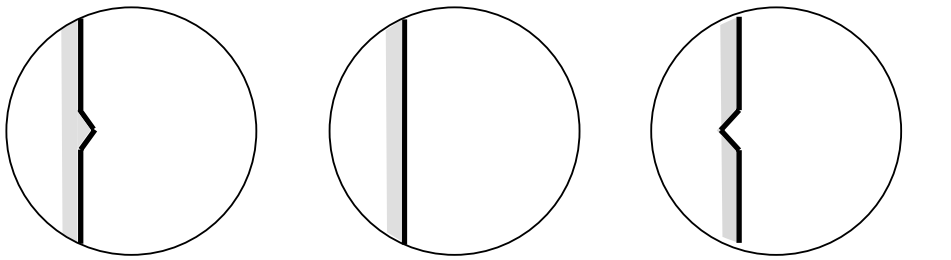
Tuning Initial Adjust

1. Transmit the radar at 48 nm range.
2. Open the Installation menu, and choose Tuning Initial Adjust.
3. Press the **ENTER** key to show the setting window.
4. Rotate the trackball to choose **Yes**, and then press the **ENTER** key. The tune adjustment begins, indicating "Tuning adjusting…." After the adjustment is completed, the window disappears.

Manual Timing Adjust

This adjustment ensures proper radar performance, especially on short ranges. The radar measures the time required for a transmitted echo to travel to the target and return to the source. The received echo appears on the display based on this time. Thus, at the instant the transmitter is fired, the sweep should start from the center of the display (sometimes called sweep origin.)

A trigger pulse generated in the display unit goes to the antenna unit through the signal cable to trigger the transmitter (magnetron). The time taken by the signal to travel up to the antenna unit varies, depending largely on the length of signal cable. During this period the display unit should wait before starting the sweep. When the display unit is not adjusted correctly, the echoes from a straight local object (for example, a harbor wall or straight pier) will not appear with straight edges – namely, they will be seen as “pushed out” or “pulled in” near the picture center. The range of objects will also be incorrectly shown.



Examples of improper and correct sweep timing

1. Transmit on the shortest range and confirm that gain and A/C SEA are properly adjusted.
2. Visually select a target which forms a straight line (harbor wall, straight piers).
3. Open the Installation menu and choose Manual Timing Adjust.
4. Press the **ENTER** key to show the setting window.
5. Rotate the trackball to straighten the target selected at step 2, and then press the **ENTER** key to finish.

Manual MBS Adjust

Main bang (black hole), which appears at the display center on short ranges, can be suppressed as follows.

1. Transmit the radar on the short range.
2. Open the Installation menu and choose Manual MBS Adjust.
3. Press the **ENTER** key to show the setting window.
4. Rotate the trackball to suppress main bang (between 0 and 255).
5. Press the **ENTER** key to finish.

Video Initial Adjust

After completing Auto Installation Setup, you can fine tune the video signal.

1. Transmit the radar and set as follows.
   Gain: one o'clock A/C Sea: zero A/C Rain: zero
   Echo Average: Off Noise Rejecter: Off Interference Rejecter: Med.
2. Open the Installation menu and choose Video Initial Adjust.
3. Press the **ENTER** key to show the setting window.
4. Rotate the trackball to adjust the video so that the white noise slightly appears. The setting range is 0 to 31. The greater the value, the higher the gain.
5. Press the **ENTER** key to finish.

Note: If the display unit is used as a Sub-display, set the "Input Source" to "Sub" and perform the Video Initial Adjust as mentioned above so that the echo presentation on the sub-display is the same as that on the main display.

4. OPTIONAL EQUIPMENT

4.1 ARP Kit ARP-11

The ARP kit provides automatic radar plotter functions to this radar.

Necessary parts

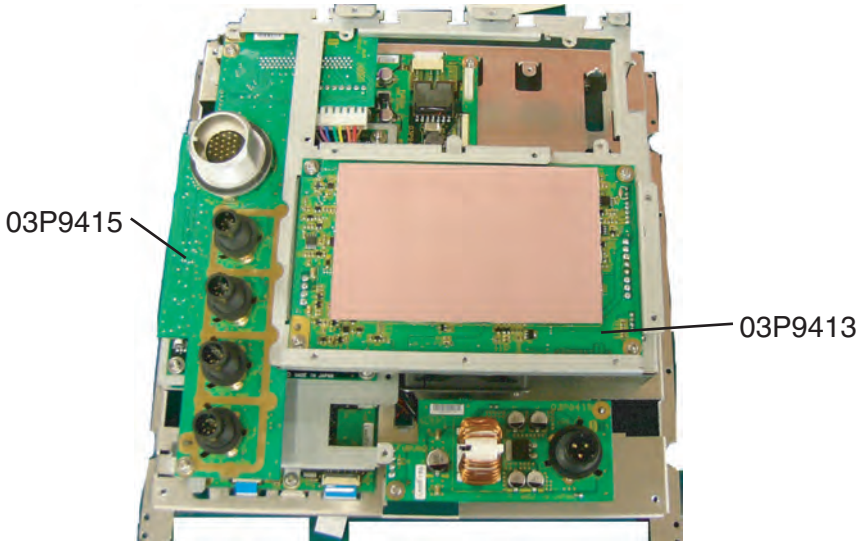
Name: ARP kit
Type: ARP-11
Code no.: 008-523-050

Contents of ARP kit

Name	Type	Code No.	Qty
ARP Board	18P9014B	001-068-900	1
Pan head screw	M3x6 C2700W	000-163-189-10	4
Spacer*	SQ-9	000-159-320-10	1
	SQ-15	000-159-299-10	3
Spring washer*	M3 C5191W	000-168-187-10	3

*Not used

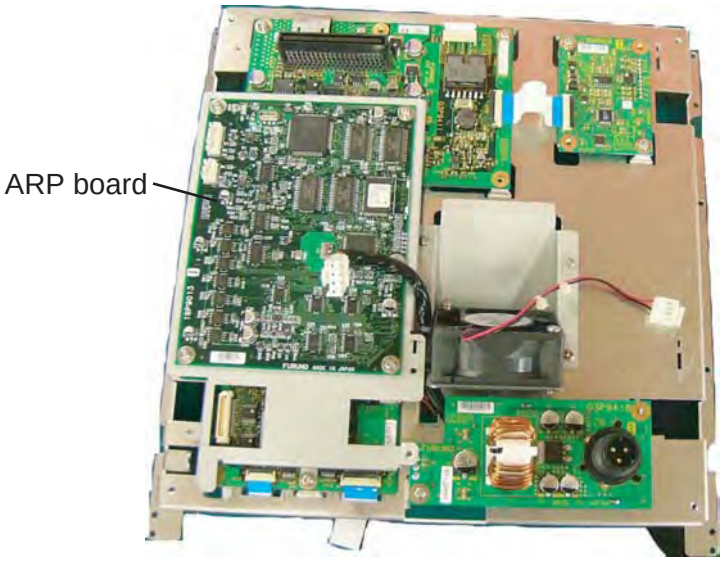
1. Unscrew all connector nuts at the rear of the display unit.
2. Unfasten all screws to remove the display cover.



Removing the display unit cover

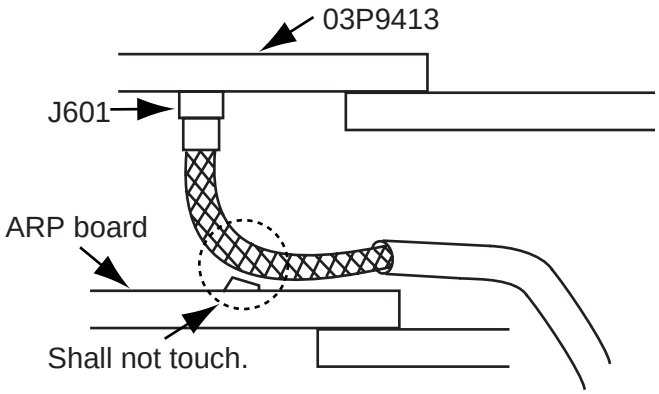
3. Disconnect the printed circuit board 03P9415 and 03P9413.
   Before disconnecting the 03P9413, disconnect J601 and J604 at the back of the board.

4. Mount the ARP board, mating with connectors and fixing it with four screws at the location as shown in the figure below.



5. Remount 03P9415 and 03P9413 at original position and display cover.

Note: After connecting the harness to J601 on 03P9413, bend the harness so that it does not touch the parts on ARP board.



4.2 External Monitor

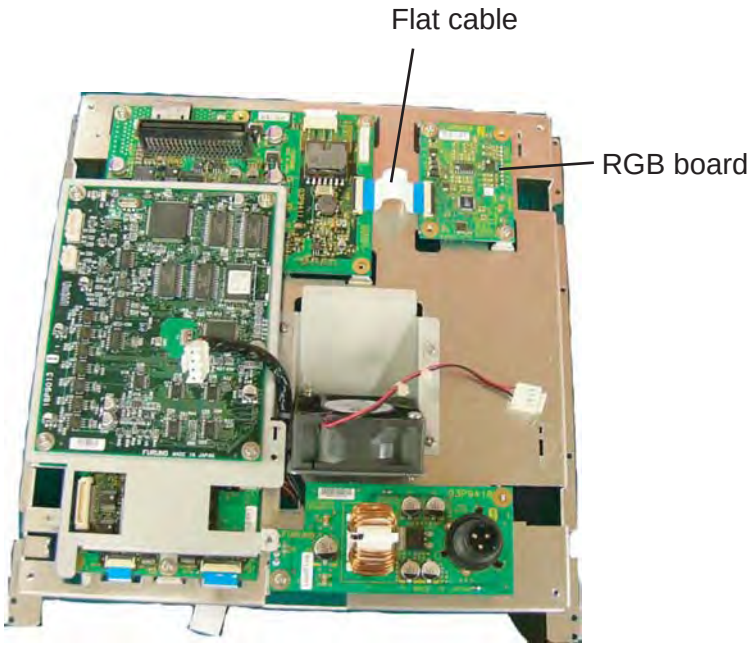
You can display the radar image on an external monitor which accepts industrial standard VGA input using the optional RGB kit OP03-195. Supply monitor and interconnection cable (with HD-15P connectors of male, three rows of 15 pins) locally.

Necessary parts for external monitor

Name: RGB kit
Type: OP03-195
Code No.: 008-553-110

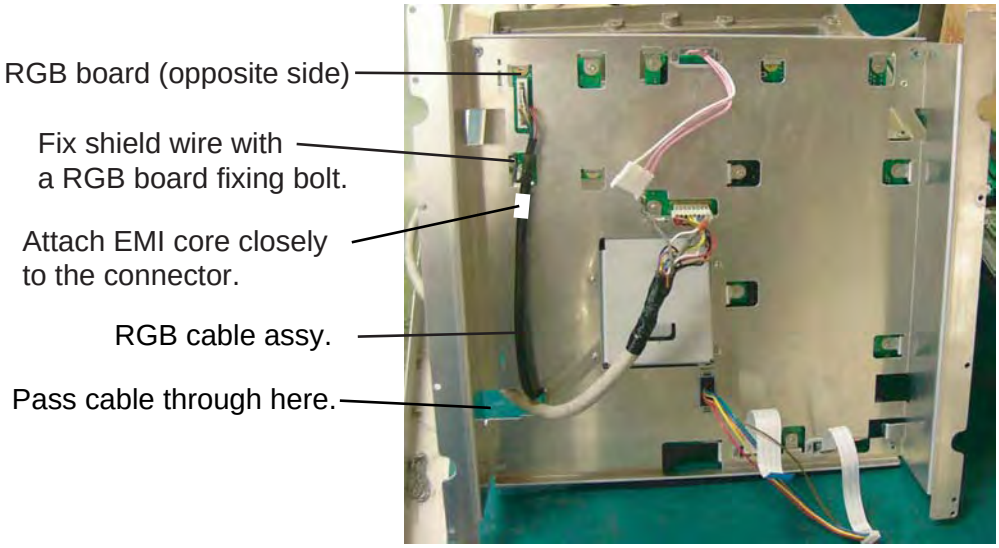
Name	Type	Code No.	Qty
RGB board	03P9492	008-553-680	1
Flat cable	SML2SC34-4X50BDP.5S4	000-155-457	1
Cable assy	15SDS/XHP10-005	000-144-511	1
EMI core	RFC-6	000-144-132-10	1

1. Unscrew all connector nuts at the rear of the display unit.
2. Unfasten all screws to remove the display cover.
3. Disconnect the printed circuit board 03P9415 and 03P9413.
   Before disconnecting the 03P9413, disconnect J601 and J604 at the back of the board.
4. Mount the RGB board with two screws and connect the flat cable at the location shown in the figure below.



5. Remount 03P9415 and 03P9413 at their original locations and display cover.

6. Detach LCD panel from the above assembly. Be sure to disconnect the connector and flat cables.
7. Connect the cable assy. 15SDS/XHP10-005 to the rear side of the RGB board.
8. Fix the shield wire of the cable assy. with a screw used to fix the RGB board.
9. Attach the EMI core RFC-1 to the cable assy. closely to the connector.
10. Pass the signal cable through the hole shown below and then pass it through the "OPTION" port at the rear of the display unit..



11. Reassemble the display unit and cover the hole with soft putty to seal.
12. Fix the EMI core RFC-6 to the cable closely to the display unit.

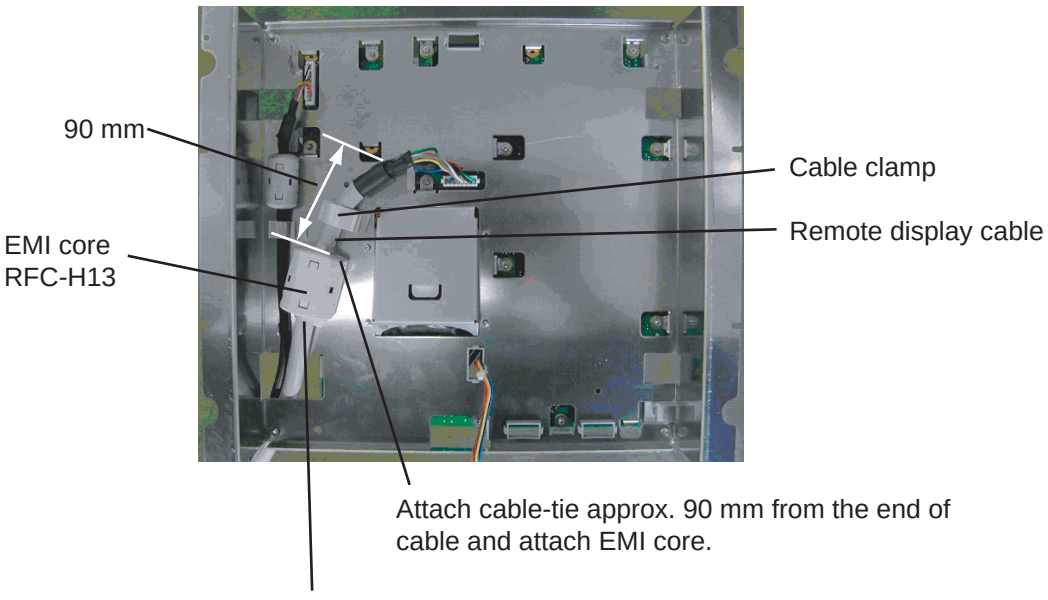
4.3 Remote Display

The FURUNO Display Unit FMD-811, MODEL1832 or GD-280/380, etc. can be connected to this radar as a sub display. The display unit RDP-150 also can be used as a sub display. To interconnect them, use optional cable MJ-B24LPF0008-100/200/300 (see page iv). Also, the EMI core (option) should be attached to the remote display cable to prevent noise.

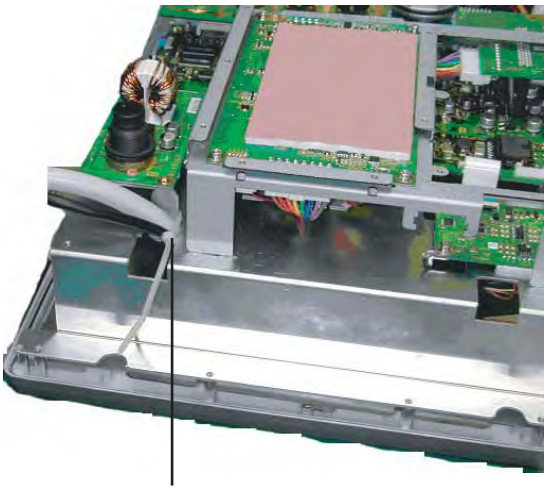
Installation materials for remote display (Type: CP03-31001、Code number: 008-556-830)

	Name	Type	Code no.	Qty
1	EMI core	RFC-H13	000-146-570-10	1
2	Cable clamp	CK-13H	000-102-947-10	1
3	Cable-tie	CV-100N	000-162-167-10	2
4	Cable-tie	CV-150N	000-162-186-10	1

1. Unscrew all connector nuts at the rear of the main display unit.
2. Unfasten all screws to remove the display cover.
3. Pass the signal cable from the “OPTION” port at the rear of the display unit through the hole shown in the figure below and then connect it to the SPU board.
4. Fix the shield wire with a screw used to fixed the SPU board.
5. Attach the EMI core RFC-H13 on the signal cable.
6. Attach cable clamp and fix the cable as shown below.



7. Fix the signal cable to the spacer of the FIL board with a cable tie CV-150N.



Fix the cable to the spacer of FIL board with cable-tie.

8. Reassemble the display unit.

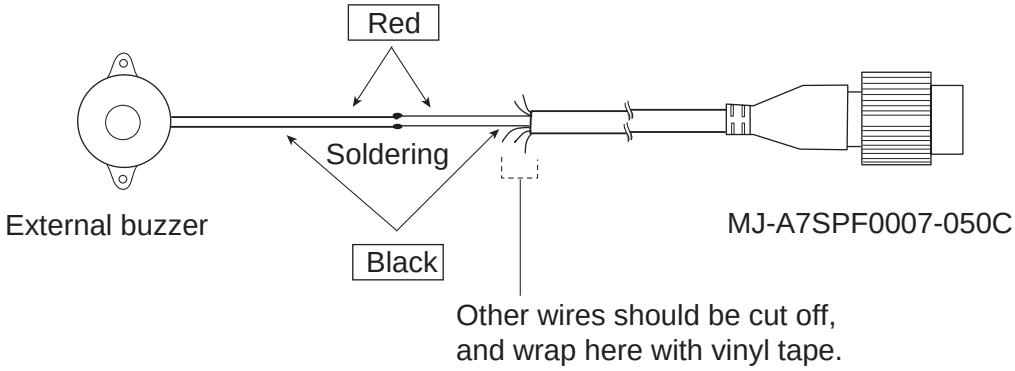
4.4 External Buzzer

The optional external buzzer provides a louder alert when an alarm is violated.

External buzzer
Type: OP03-136
Code no.: 000-086-443

Further, you need the optional cable assy. MJ-A7SPF0007-050C (w/7P connector, 5 m, code no. 000-154-028-10).

1. Attach the MJ-A7SPF0007-050C cable assy. (option) to the PC/EXT-BUZZER port at the rear of the display unit.
2. Cut off the XH connector and cable itself (as necessary) at the end of the external buzzer cable.
3. Solder the cables made at step 2 to the MJ-A7SPF0007-050C cable as shown below.



Connection of external buzzer and display unit
using cable assy. type MJ-A7SPF0007-050C cable

4. Attach the buzzer to the mounting location with double-sided tape or two self-tapping screws (3x15 or 3x20, local supply).

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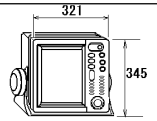
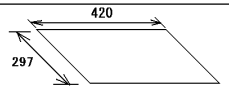
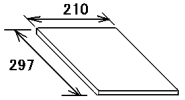
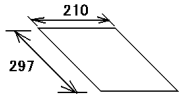
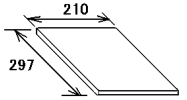
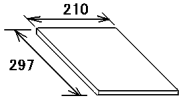
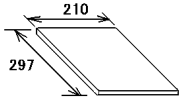
PACKING LIST RDP-150-J/E

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
指示部 DISPLAY UNIT		RDP-150-J/E 000-090-462-00 **	1
予備品 SPARE PARTS			
予備品 SPARE PARTS		SP03-15401 008-553-040-00	1
工事材料 INSTALLATION MATERIALS		**CP03-30900**	
工事材料 INSTALLATION MATERIALS		CP03-30901 008-553-050-00	1
工事材料 INSTALLATION MATERIALS		CP03-30902 008-554-600-00	1
ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-A3SPF0018-050ZC 000-154-025-10	1
図書 DOCUMENT			
ﾌﾗｯｼｭﾏｳﾝﾄﾖｳ型紙 FLUSH MOUNTING TEMPLATE		C32-00601-* 000-160-283-1*	1
技適認証要領 APPLICATION GUIDE		J32-00501-* 000-160-319-1*	1 (*1)

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ﾋｭｰｽﾞ変更のお願い NOTICE FOR FUSE REPLACEMENT		C32-00504-* 000-160-282-1*	1
取扱説明書 OPERATOR'S MANUAL		OM*-35390-* 000-160-017-1* **	1
操作要領書 OPERATOR'S GUIDE		OS*-35390-* 000-160-281-1* **	1
装備要領書 INSTALLATION MANUAL		IM*-35390-* 000-160-275-1* **	1

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

(*1)の書類は、和文仕様専用
(*1) MARKED DOCUMENTS ARE FOR JAPANESE SET ONLY.

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

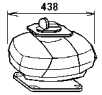
型式/ｺｰﾄﾞ番号が2段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。

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.

PACKING LIST

03GT-X-9852 -0 1/1

RSB-0070-085/RSB-0073-085/RSB-0073-086/RSB-0073-087

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
空中線本体部 ANTENNA UNIT		RSB-0070-085 008-552-970 **	1
工事材料 INSTALLATION MATERIALS			
空中線部工材 ANTENNA INSTALLATION MATERIALS		CP03-30801 008-552-960	1

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

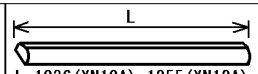
(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

03GT-X-9852

PACKING LIST

19AK-X-9856 -7 1/1

XN10A, XN12A, XN13A, XN12A-N-CKD, XN13A-N-CKD

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
ｱﾝﾃﾅ ANTENNA	 L=1036(XN10A), 1255(XN12A), 1795(XN13A)	XN10A/12A/13A 008-390-960-00 **	1
ｱﾝﾃﾅ工材 ANTENNA INSTALLATION MATERIALS			
工事材料 INSTALLATION MATERIALS		CP03-22901 008-523-690-00	1

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

型式/ｺｰﾄﾞ番号が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.)

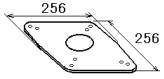
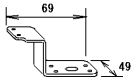
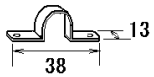
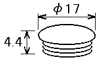
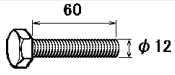
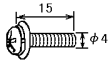
19AK-X-9856

FURUNO

CODE NO.	008-552-960-00	03GT-X-9401 -12
TYPE	CP03-30801	1/2

工事材料表

INSTALLATION MATERIALS

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	シールワッシャー SEAL WASHER		03-001-3002-0 ROHS CODE NO. 300-130-020-10	4	
2	防蝕ゴム CORROSION-PROOF RUBBER MAT		03-142-3001-0 ROHS CODE NO. 100-275-580-10	1	
3	パッキンオサエ PACKING FIXTURE		03-167-2017-0 ROHS CODE NO. 100-327-760-10	1	
4	シールドクランプ SHIELD CLAMP		03-167-2018-1 ROHS CODE NO. 100-327-771-10	1	
5	キャップ KNOB CAP		040-4010 CODE NO. 000-164-929-10	4	
6	ミガキマル平座金 FLAT WASHER		M12 SUS304 CODE NO. 000-167-446-10	4	
7	六角ナット 1シュ HEXAGONAL NUT		M12 SUS304 CODE NO. 000-167-491-10	4	
8	バネ座金 SPRING WASHER		M12 SUS304 CODE NO. 000-167-397-10	4	
9	六角ボルト 全ネジ HEXAGON HEAD SCREW		M12X60 SUS304 CODE NO. 000-162-813-10	4	
10	ナベセムスB WASHER HEAD SCREW *B*		M4X15 C2700W MBNI2 CODE NO. 000-163-193-10	2	

型式/ｺｰﾄﾞ番号が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。

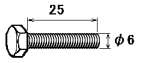
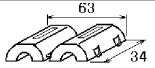
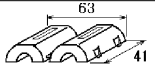
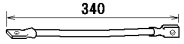
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM.　THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT.
QUALITY IS THE SAME.
（略図の寸法は、参考値です。　DIMENSIONS IN DRAWING FOR REFERENCE ONLY.）

FURUNO

CODE NO.	008-552-960-00	03GT-X-9401 -12
TYPE	CP03-30801	2/2

工事材料表

INSTALLATION MATERIALS

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
11	バネ座金 SPRING WASHER		M6 SUS304 CODE NO. 000-158-855-10	1	
12	ミガキ平座金 FLAT WASHER		M6 SUS304 CODE NO. 000-158-854-10	3	
13	六角ナット 1シュ HEXAGONAL NUT		M6 SUS304 CODE NO. 000-158-856-10	1	
14	六角ボルト HEXAGONAL HEAD BOLT		M6X25 SUS304 CODE NO. 000-162-871-10	1	
15	EMIコア EMI CORE		RFC-13 CODE NO. 000-141-084-11	2	
16	EMIコア EMI CORE		RFC-H13 CODE NO. 000-146-570-10	1	
17	ケーブル組品 CABLE ASSY.		RW-4747 RW-4747-1 CODE NO. 000-566-000-12 000-566-000-01	1	

型式/ｺｰﾄﾞ番号が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。

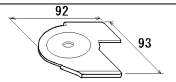
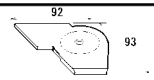
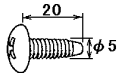
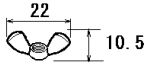
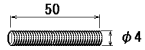
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM.　THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT.
QUALITY IS THE SAME.
（略図の寸法は、参考値です。　DIMENSIONS IN DRAWING FOR REFERENCE ONLY.）

FURUNO

CODE NO.	008-553-050-00	03GT-X-9402 -5
TYPE	CP03-30901	1/1

工事材料表

INSTALLATION MATERIALS

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	防振ｺﾞﾑ(1) RUBBER CUSHION		03-167-1403-3 CODE NO. 100-329-823-10	1	
2	防振ｺﾞﾑ(2) RUBBER CUSHION(2)		03-167-1404-1 CODE NO. 100-337-751-10	1	
3	+ﾄﾗｽﾀｯﾋﾟﾝﾈｼﾞ 1ｼｭ SELF-TAPPING SCREW		5X20 SUS304 CODE NO. 000-162-608-10	4	
4	ﾊﾞﾈ座金 SPRING WASHER		M4 SUS304 CODE NO. 000-167-405-10	4	
5	ﾐｶﾞｷ丸平座金 FLAT WASHER		M4 SUS304 CODE NO. 000-167-455-10	4	
6	冷間圧造蝶ﾅｯﾄ WING NUT		M4 SUS304 CODE NO. 000-167-545-10	4	
7	ﾈ切ﾎﾞﾙﾄ THREADED ROD		M4X50 SUS304 CODE NO. 000-162-679-10	4	

型式/ｺｰﾄﾞ番号が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.

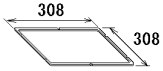
（略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.）

FURUNO

CODE NO.	008-554-600-00	03GT-X-9405 -3
TYPE	CP03-30902	1/1

工事材料表

INSTALLATION MATERIALS

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	Fﾏｳﾝﾄﾖｳｽﾎﾟﾝｼﾞ FLUSH MOUNTING SPONGE		03-167-1601-0 ROHS CODE NO. 100-328-390-10	1	

型式/ｺｰﾄﾞ番号が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.）

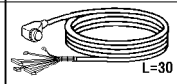
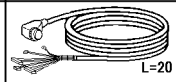
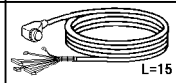
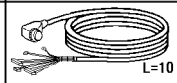
FURUNO

CODE NO.		03GT-X-9403 -0
TYPE		1/1

工事材料表

INSTALLATION MATERIALS

FR-8062/8122

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS		数量 Q'TY	用途／備考 REMARKS
1	ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-B24LPF0012-300		1	選択 TO BE SELECT
			CODE NO.	000-153-622		
2	ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-B24LPF0012-200		1	選択 TO BE SELECT
			CODE NO.	000-153-621		
3	ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-B24LPF0012-150		1	選択 TO BE SELECT
			CODE NO.	000-153-620		
4	ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-B24LPF0012-100		1	選択 TO BE SELECT
			CODE NO.	000-153-619		

03GT-X-9403

FURUNO ELECTRIC CO.,LTD.

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

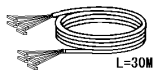
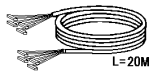
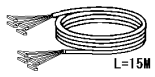
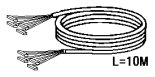
FURUNO

CODE NO.		19AV-X-9402 -0
TYPE		1/1

工事材料表

INSTALLATION MATERIALS

FR-8252

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS		数量 Q'TY	用途／備考 REMARKS
1	ｹｰﾌﾞﾙ組品 CABLE ASSY.		RW-9771 *30M*		1	選択 TO BE SELECTED
			CODE NO.	000-152-869		
2	ｹｰﾌﾞﾙ組品 CABLE ASSY.		RW-9771 *20M*		1	選択 TO BE SELECTED
			CODE NO.	000-152-868		
3	ｹｰﾌﾞﾙ組品 CABLE ASSY.		RW-9771 *15M*		1	選択 TO BE SELECTED
			CODE NO.	000-152-867		
4	ｹｰﾌﾞﾙ組品 CABLE ASSY.		RW-9771 *10M*		1	選択 TO BE SELECTED
			CODE NO.	000-152-866		

19AV-X-9402

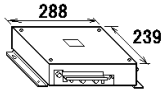
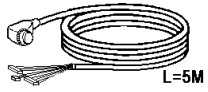
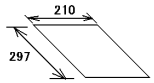
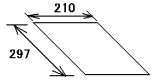
FURUNO ELECTRIC CO.,LTD.

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

PACKING LIST

19AV-X-9855 -3 1/1

PSU-008

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
空中線電源部 POWER SUPPLY UNIT		PSU-008 000-083-617-00	1
予備品 SPARE PARTS			
予備品 SPARE PARTS		SP03-14501 008-444-420-00	1
工事材料 INSTALLATION MATERIALS		**CP03-30600**	
ｹｰﾌﾞﾙｸﾐﾋﾝ CABLE ASSEMBLY		VL3P-VV-S2X2C-AA050 000-152-217-11	1
ｹｰﾌﾞﾙ組品MJ SIGNAL CABLE ASSEMBLY		MJ-B24LPF0011-050+R 000-152-939-12	1
工事材料 INSTALLATION MATERIALS		CP03-30601 008-550-740-00	1
図書 DOCUMENT			
ﾋｭｰｽﾞ変更のお願い NOTIFICATION DOCUMENT		C32-00502-* 000-152-940-1*	1
設定要領書 INTERNAL SETTING(JR/EN)		C32-00505-* 000-153-867-1*	1

型式/ｺｰﾄﾞ番号が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.

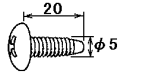
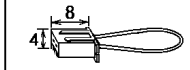
（略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.）

FURUNO

CODE NO.	008-550-740-00	19AV-X-9401 -2
TYPE	CP03-30601	1/1

工事材料表

INSTALLATION MATERIALS

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	ﾅﾄﾗｽﾀｯﾋﾟﾝﾈｼﾞ 1ｼｭ SELF-TAPPING SCREW		5X20 SUS304 CODE NO. 000-162-608-10	4	
2	ｺﾈｸﾀ組品 CONNECTOR ASSY.		XH2P-L40-ACR CODE NO. 000-153-879-10	1	

型式/ｺｰﾄﾞ番号が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。

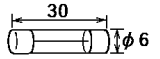
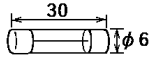
TWO TYPES AND CODES MAY BE LISTED FOR AN ITEM. THE LOWER PRODUCT MAY BE SHIPPED IN PLACE OF THE UPPER PRODUCT. QUALITY IS THE SAME.

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

FURUNO

CODE NO.	008-553-040-00	03GT-X-9301 -1 1/1
TYPE	SP03-15401	BOX NO. P

SHIP NO.	SPARE PARTS LIST FOR	U S E	SETS PER VESSEL

ITEM NO.	NAME OF PART	OUTLINE	DWG. NO. OR TYPE NO.	QUANTITY WORKING PER SET	QUANTITY WORKING PER VES	QUANTITY SPARE	REMARKS/CODE NO.
1	ﾋｭｰｽﾞ FUSE		FGBO 125V 10A PBF			3	
			FGBO 10A AC125V				000-155-826-10
							000-549-065-00
2	ﾋｭｰｽﾞ FUSE		FGBO 125V 15A PBF			3	
			FGBO 15A AC125V				000-155-827-10
							000-549-014-00

MFR'S NAME	FURUNO ELECTRIC CO.,LTD.	DWG NO.	03GT-X-9301	1/1

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

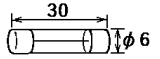
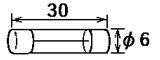
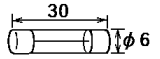
型式/ｺｰﾄﾞ番号が２段の場合、下段より上段に代わる過渡期品であり、どちらかが入っています。 なお、品質は変わりません。

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.

FURUNO

CODE NO.	008-444-420	19AQ-X-9301 -2 1/1
TYPE	SP03-14501	BOX NO. P

SHIP NO.	SPARE PARTS LIST FOR	U S E	SETS PER VESSEL

ITEM NO.	NAME OF PART	OUTLINE	DWG. NO. OR TYPE NO.	QUANTITY WORKING PER SET	QUANTITY WORKING PER VES	QUANTITY SPARE	REMARKS/CODE NO.
1	ﾋｭｰｽﾞ FUSE		FGBO 125V 15A PBF			3	
			FGBO 15A AC125V				000-155-827-10
							000-549-014-00
2	ﾋｭｰｽﾞ FUSE		FGBO 125V 7A PBF			3	
			FGBO 7A AC125V				000-155-831-10
							000-549-013-00
3	ｶﾝｲﾘﾋｭｰｽﾞ FUSE		FGBO 125V 3A PBF			3	
			FGBO 3A AC125V				000-155-830-10
							000-131-845-00

MFR'S NAME	FURUNO ELECTRIC CO.,LTD.	DWG NO.	19AQ-X-9301	1/1

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

型式/ｺｰﾄﾞ番号が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.

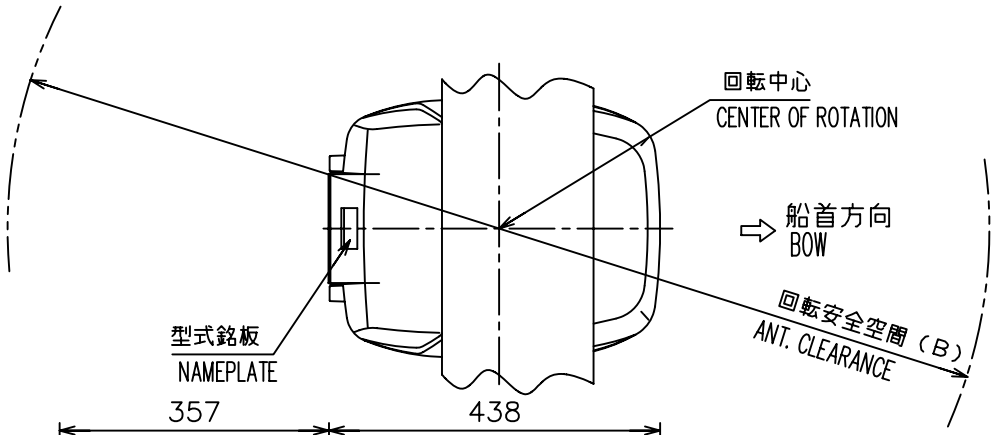
FURUNO

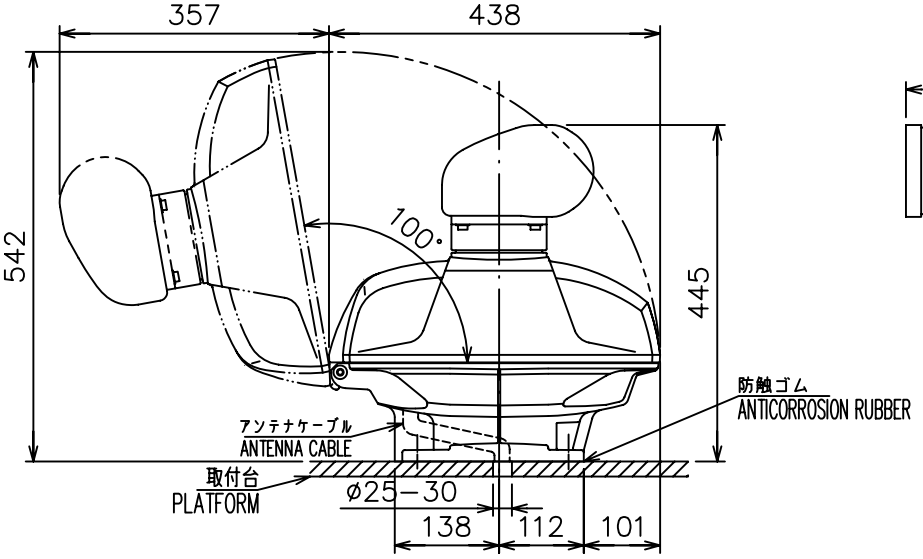
表２　TABLE 2

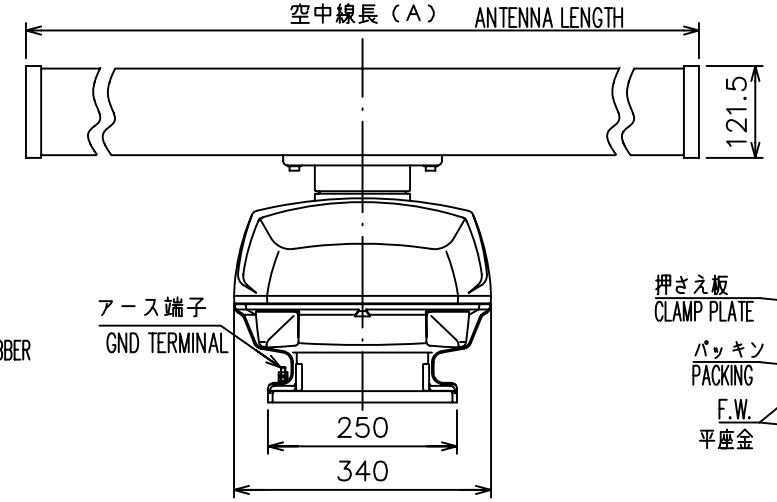
種類　TYPE	XN10A	XN12A	XN13A
空中線長（A） ANT. LENGTH (mm)	1036±10	1255±10	1795±10
回転安全空間（B） ANT. CLEARANCE (mm)	1200	1400	1940
質量（kg） MASS	22	25	27

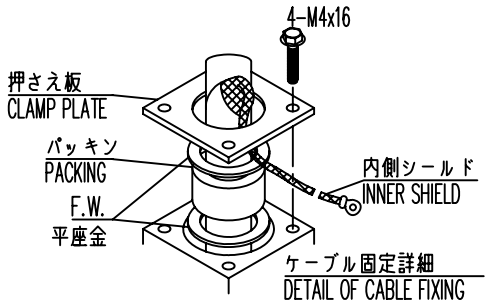
表１ TABLE 1

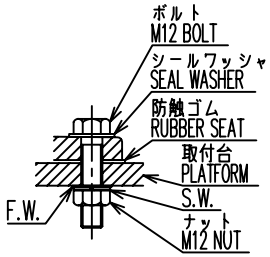
寸法区分（mm） DIMENSION	公差（mm） TOLERANCE
L≦50	±1.5
50<L≦100	±2.5
100<L≦500	±3
500<L≦1000	±4
1000<L≦2000	±5

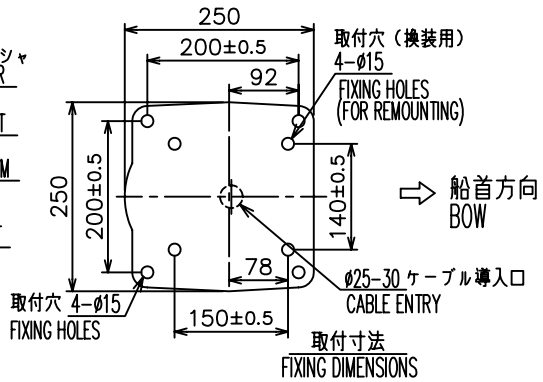












注記　1）　指定なき寸法公差は表１による。
　　2）　取付にはM12ボルトを使用のこと。
　　3）　空中線部の取付台にø25−30のケーブル導入口を開ける。

NOTE　1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
　　2. USE M12 BOLTS FOR FIXING THE UNIT.
　　3. MAKE A CABLE ENTRY HOLE ø25−30 ON PLATFORM.

DRAWN 1/Jul/09 T.YAMASAKI		TITLE	RSB−0070/0072/0073
CHECKED 1/Jul/09 T.TAKENO	OTHERS	名称	空中線部
APPROVED 8/Jul/09 R. Esumi	MODEL1942M2,MODEL1954Cser. FR−7062ser, FR−8062ser.		外寸図
SCALE 1/10	MASS 表2参照 SEE TABLE 2	NAME	ANTENNA UNIT
DWG.No. C3539−G03− B	REF.No. 03−142−300G−5		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO

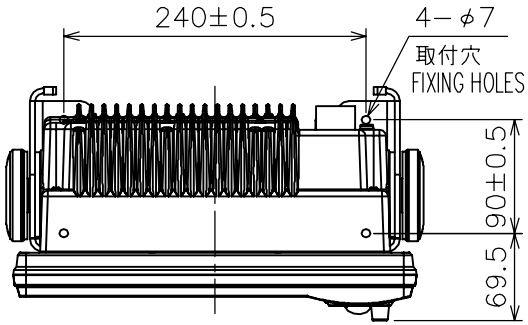
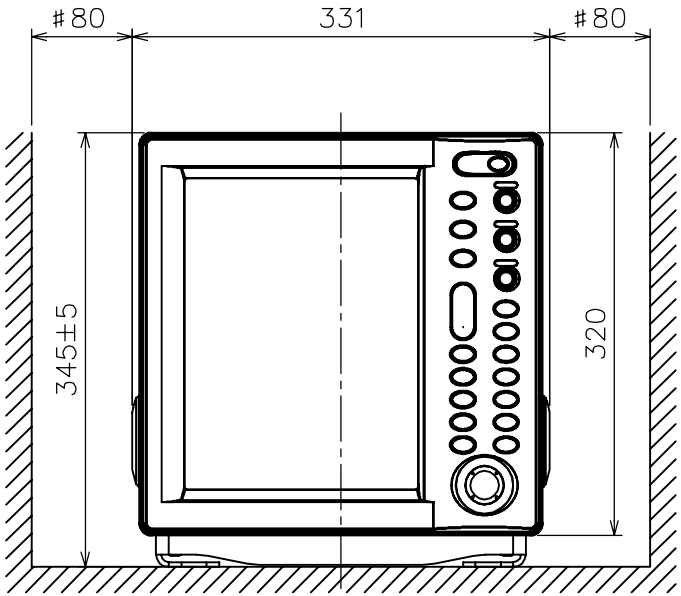
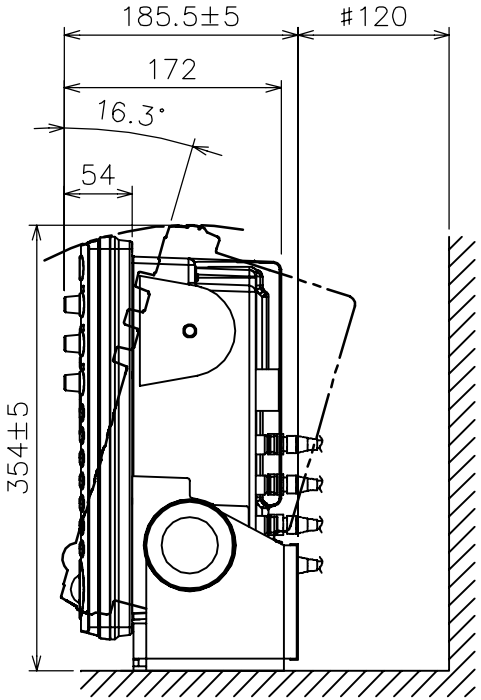
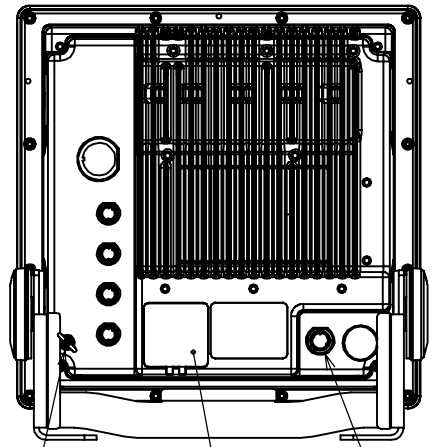


表 1 TABLE 1

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







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５×２０を使用のこと。

NOTE
1) #: MINIMUM SERVICE CLEARANCE.
2) TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
3. USE SELF-TAPPING SCREWS 5x20 FOR FIXING THE UNIT.

DRAWN Jan. 10, '06 E. MIYOSHI		TITLE	RDP-150
CHECKED TAKAHASHI. T		名称	指示部（卓上装備）
APPROVED Y. Hatai	FR-8062/8122/8252		外寸図
SCALE 1/6 MASS 6.9 ±10% kg	質量にハードカバー、ケーブルは含まない MASS DOES NOT INCLUDE HARD COVER NOR CABLE.	NAME	DISPLAY UNIT (TABLETOP MOUNT)
DWG.No. C3539-G02- B	REF.No. 03-167-1110G-2		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO

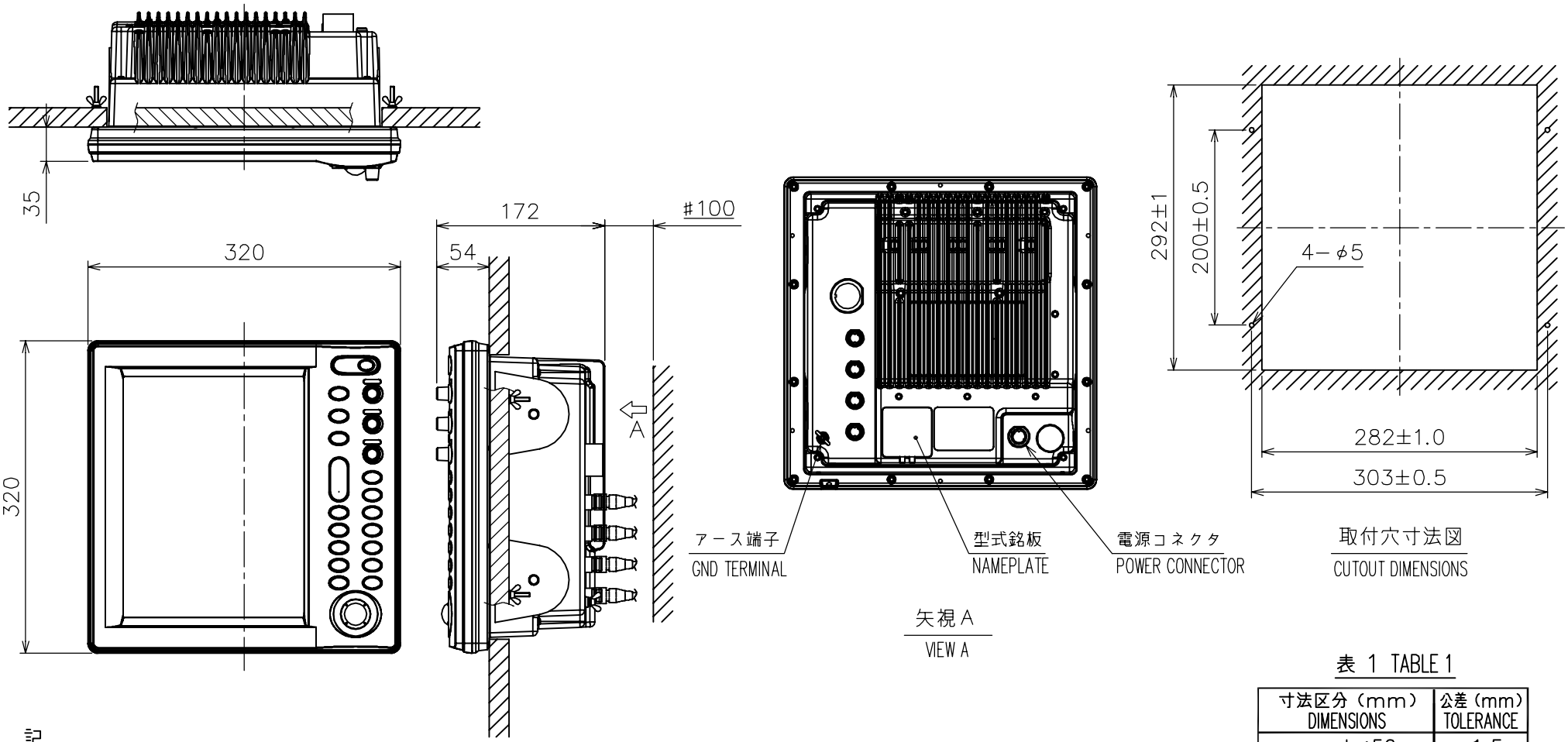


表 1 TABLE 1

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

注　記

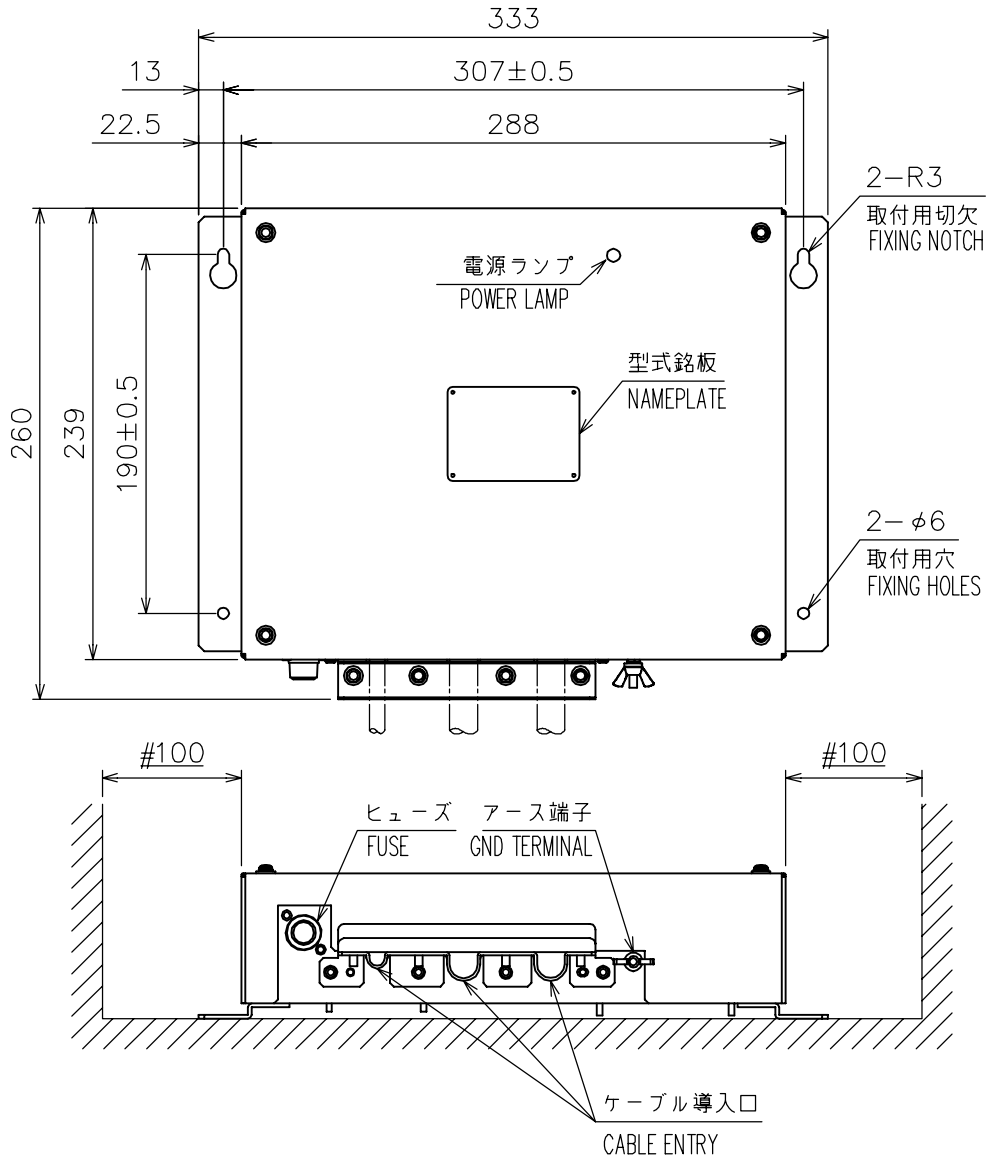
1）＃印寸法は最小サービス空間寸法とする。
2）指定外の寸法公差は表１による。
3）取付はＭ４Ｘ５０寸切りボルト、Ｍ４平座金、
　Ｍ４バネ座金、Ｍ４蝶ナット使用のこと。

NOTE

1. #: MINIMUM SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
3. USE M4X50 BOLTS, M4 FLAT WASHERS, M4 SPRING WASHERS AND M4 WING NUTS FOR FIXING THE UNIT.

DRAWN Dec. 6, '05 E. MIYOSHI			TITLE RDP-150
CHECKED TAKAHASHI. T			名称 指示部（埋込装備）
APPROVED Y. Hatai		FR-8062/8112/8252	外寸図
SCALE 1/6	MASS 6.1 ±10% kg	質量にハードカバー、ケーブルは含まない MASS DOES NOT INCLUDE HARD COVER NOR CABLE.	NAME DISPLAY UNIT (FLUSH MOUNT)
DWG.No. C3539-G01- B		REF.No. 03-167-100G-1	OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.



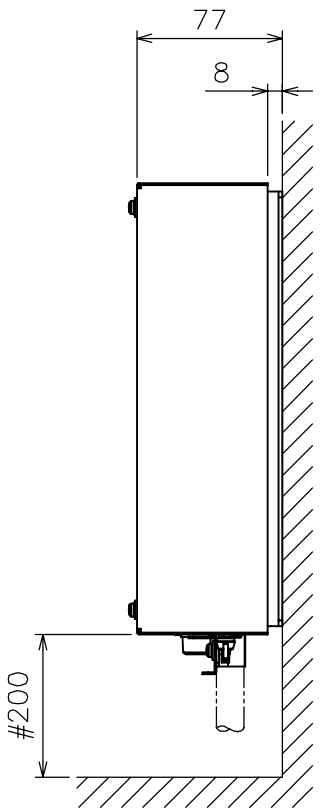


表 1　TABLE 1

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

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グネジ呼び径5×20を使用のこと。

NOTE

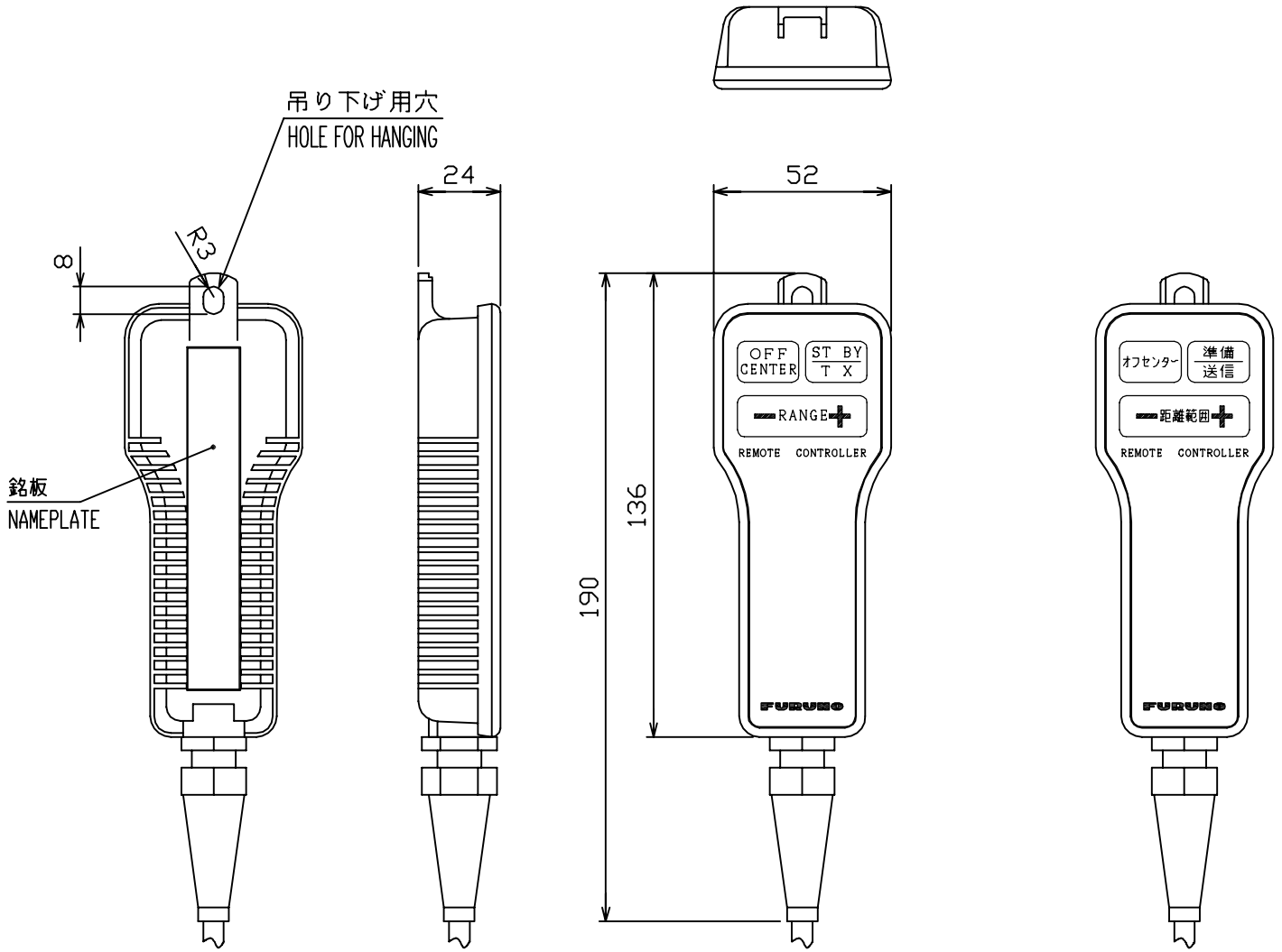
1. #: MINIMUM SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
3. USE SELF-TAPPING SCREWS 5x20 FOR FIXING THE UNIT.

DRAWN Apr. 8, '05 E. MIYOSHI		TITLE	PSU-008
CHECKED TAKAHASHI. T		名称	空中線電源部
APPROVED Y. Hatai	MODEL 1964C		外寸図
SCALE 1/4	MASS 2.7 ±10% kg	NAME	POWER SUPPLY UNIT
DWG.No. C3548-G01- A	19-025-400G-0		OUTLINE DRAWING

FURUNO

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



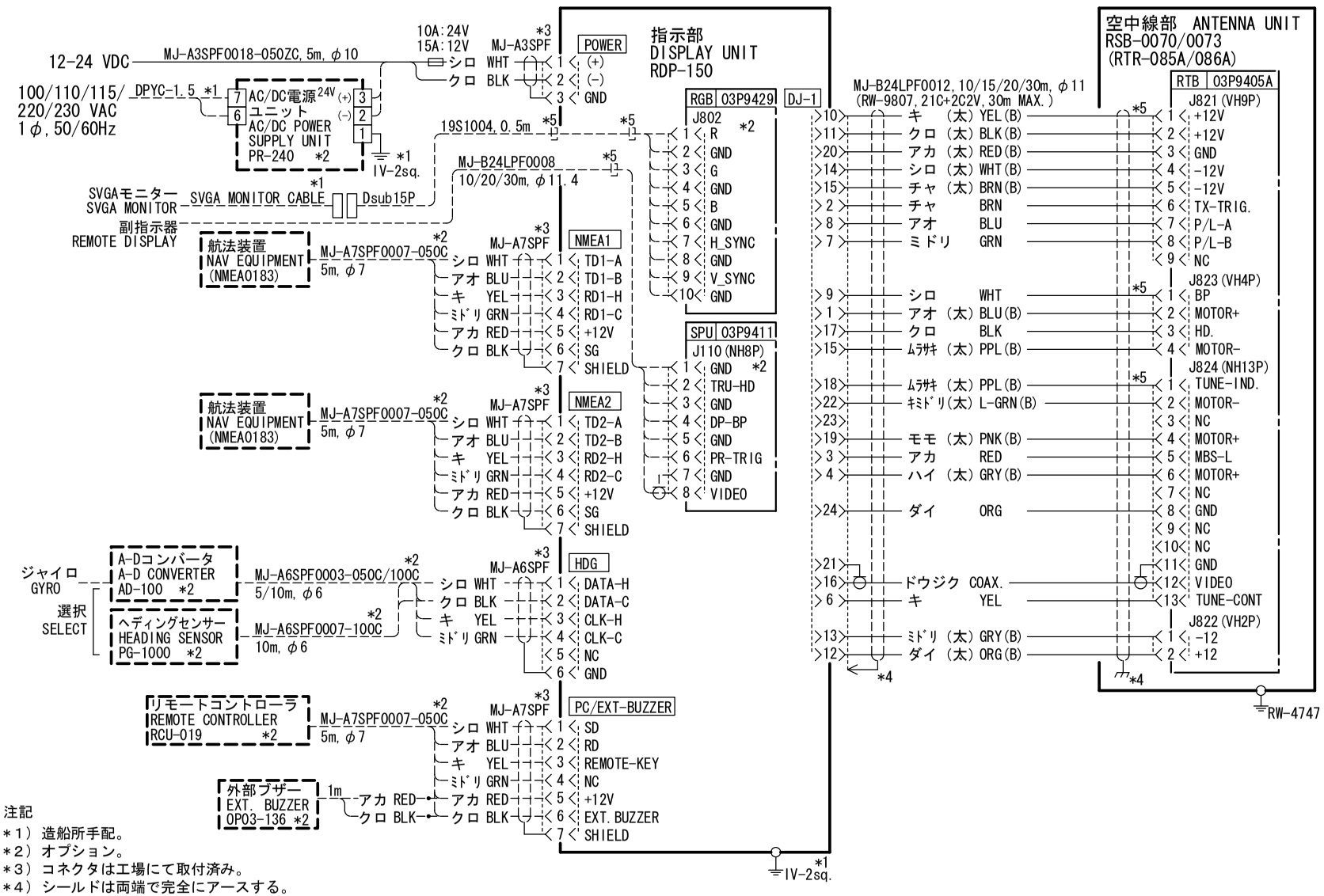
注記
寸法公差は表1による。

NOTE
TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

DRAWN Apr. 22, '05 E. MIYOSHI		TITLE	RCU-009/019
CHECKED TAKAHASHI. T	MODEL 1933CR	名称	リモートコントローラ
APPROVED Y.Hatai	MODEL 1941R M2 FR-7041R M2		外寸図
SCALE 1/2 MASS 0.35 ±10% kg	質量はケーブル重さを含む MASS W/ CABLE	NAME	REMOTE CONTROLLER
DWG No. C3492-G01- F	03-142-130G-1		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO



注記
*1) 造船所手配。
*2) オプション。
*3) コネクタは工場にて取付済み。
*4) シールドは両端で完全にアースする。
*5) ＥＭＩコアを取り付ける。

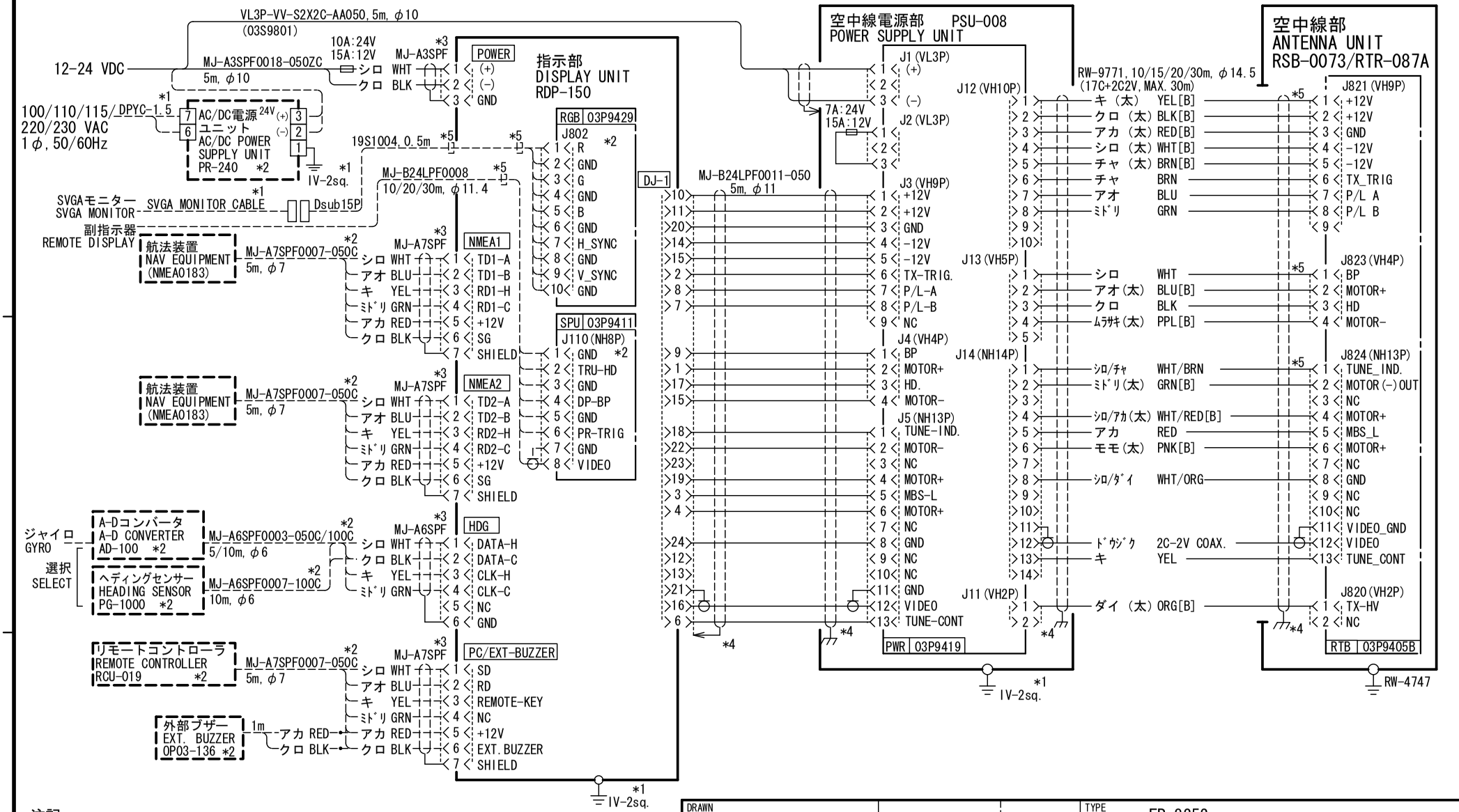
NOTES
*1: SHIPYARD SUPPLY.
*2: OPTION.
*3: FITTED AT FACTORY.
*4: GROUND SHIELD EFFECTIVELY AT BOTH ENDS.
*5: ATTACH EMI CORES.

DRAWN 25/Mar/2011 T.YAMASAKI			TITLE FR-8062/8122
CHECKED 25/Mar/2011 H.MAKI			名 称 船舶用レーダー
APPROVED			相互結線図
SCALE	MASS kg		NAME MARINE RADAR
DWG.No. C3539-C01- G	REF.No. 03-167-6003-3		INTERCONNECTION DIAGRAM

S-1

FURUNO ELECTRIC CO., LTD.

FURUNO



注記
*1）造船所手配。
*2）オプション。
*3）コネクタは工場にて取付済み。
*4）シールドは両端で完全にアースする。
*5）ＥＭＩコアを取り付ける。

NOTE
*1: SHIPYARD SUPPLY.
*2: OPTION.
*3: FITTED AT FACTORY.
*4: GROUND SHIELD EFFECTIVELY AT BOTH ENDS.
*5: ATTACH EMI CORES.

DRAWN 25/Mar/2011 T.YAMASAKI			TYPE FR-8252
CHECKED 25/Mar/2011 H.MAKI			名 称 船舶用レーダー
APPROVED 24/Jan/2011 Y.NISHIYAMA			相互結線図
SCALE	MASS kg		NAME MARINE RADAR
DWG.No. C3541-C01- H	REF.No. 03-167-6005-3		INTERCONNECTION DIAGRAM