FURUNO

INSTALLATION MANUAL

COLOR GPS PLOTTER GP-3300
COLOR VIDEO PLOTTER GD-3300

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PUB.No. IME-43920-D

(TENI) GD/GP-3300

Your Local Agent/Dealer

FIRST EDITION : AUG. 1998
D : JUL. 22,2002

0008083470 0

IME43920D00

SAFETY INSTRUCTIONS

⚠ WARNING

ELECTRICAL SHOCK HAZARD
Do not open the equipment unless totally familiar with electrical circuits and service manual.

Only qualified personnel should work inside the equipment.

Turn off the power at the switchboard before beginning the installation.

Fire or electrical shock can result if the power is left on.

Do not install the equipment where it may get wet from rain or water splash.

Water in the equipment can result in fire, electrical shock or equipment damage.

Be sure that the power supply is compatible with the voltage rating of the equipment.

Connection of an incorrect power supply can cause fire or equipment damage. The voltage rating of the equipment appears on the label above the power connector.

⚠ CAUTION

Ground the equipment to prevent electrical shock and mutual interference.

Observe the following compass safe distances to prevent deviation of a magnetic compass:

	Standard compass	Steering compass
Display unit	1.6 m	1.2 m

TABLE OF CONTENTS

SYSTEM CONFIGURATION

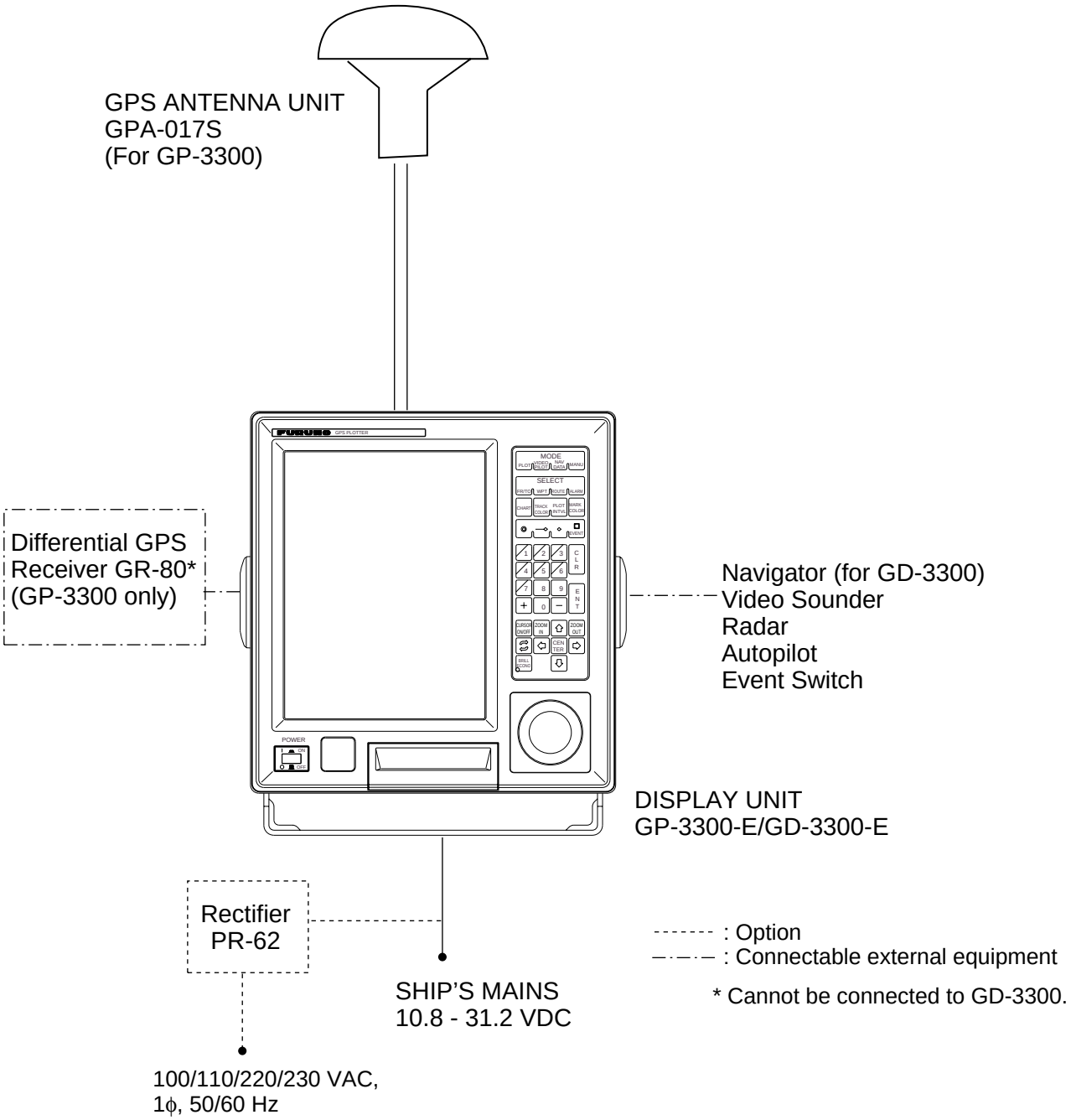

Figure 1 System configuration

EQUIPMENT LISTS

Complete Set

Name	Type	Code No.	Qty	Remarks
Display Unit	GD-3300-E	–	1	GD-3300
	GP-3300-E	–	1	GP-3300
Antenna Unit	GPA-017S		1	GP-3300 only
Spare Parts	SP14-02300	004-399-590	1	GD-3300/GP-3300
Accessories	FP14-02200	004-399-260	1	
Installation Materials*	CP14-05000	004-399-600	1 set	For GP-3300, w/mast installation mounting kit
	CP14-05020	004-400-170		For GP-3300, no mast installation mounting kit
	CP14-05010	004-399-610		For GD-3300

* GP-3300: Power cable, signal cable, antenna cable.
GD-3000: Power cable, signal cable.

Optional Equipment

Name	Type	Code	Qty	Remarks
Rectifier	PR-62 2.5GY5/1.5 NT#5	000-013-485	1	110 VAC
	PR-62 2.5GY5/1.5 NT#5	000-013-487		230 VAC
	PR-62 2.5G7/2 NT#5	000-013-489		110 VAC
	PR-62 2.5G7/2 NT#5	000-013-491		230 VAC
RAM Card (Memory card)	00RAM256C-001	004-321-070	1	256 KB
	00RAM512C-002	004-322-230		512 KB
Mast Mounting Installation Kit	CP20-01111	004-365-780	1	
Antenna Cable Assy.	CP14-04400	004-373-070	1	30 m, for antenna cable extension
Antenna Cable Assy.	CP14-04410	004-373-080	1	50 m, for antenna cable extension
Right Angle Mounting Base	No.13-QA330	000-803-239	1	For mounting antenna unit of GP-3300
L-angle Mounting Base	No.13-QA310	000-803-240	1	
Handrail Mounting Base	No.13-RC5160	000-806-114	1	
Cable Assy.	MJ-A6SPF0007-100	000-125-237	1	For autopilot, 10 m, straight, w/6P connector at both ends
	MJ-A6SPF0012-100	000-133-817		For navigator, echo sounder, 10 m, cross, w/6P connector at both ends
	MJ-A6SPF0012-050	000-134-424		For navigator or echo sounder, 5 m, cross, w/6P connector at both ends
	MJ-A6SPF0011-050	000-132-244		For radar, 5 m, cross, w/6P-4P connector
	MJ-A6SPF0011-100	000-132-336		For radar, 10 m, w/6P-4P connector
	MJ-A7SPF0003-050	000-136-730-01		GP-3300, For DGPS, 5 m, w/7P connector at both ends
Signal Cable	MJ-A6SPF0003-050	000-117-603	1	Navigator, echo sounder, autopilot, 5 m, w/6P connector at both ends

Mounting Considerations

The display unit can be installed on a tabletop or on the overhead. When selecting a mounting location keep in mind the following points.

- Install the unit where it can be easily viewed and operated.
- Keep the unit out of direct sunlight.
- Locate the unit well away from a place exposed to rain or water splash.
- Locate the unit away from air-conditioner or heater.
- Select a location where vibration is minimal.
- Be sure the mounting area is well ventilated.
- Select a mounting location of moderate temperature and low humidity.
- Locate the unit well away from equipment which generate a magnetic field.
- Be sure the mounting location is strong enough to support the weight of the unit. If necessary, reinforce the mounting area.

Mounting Procedure

Follow the procedure below to mount the display unit on a table-top.

1. Fix the hanger to the mounting location with tapping screws (supplied). (For added support, use nuts, bolts and flat washers instead of the tapping screws.)
2. Screw knobs in display unit.
3. Set the display unit to the hanger and tighten knobs.

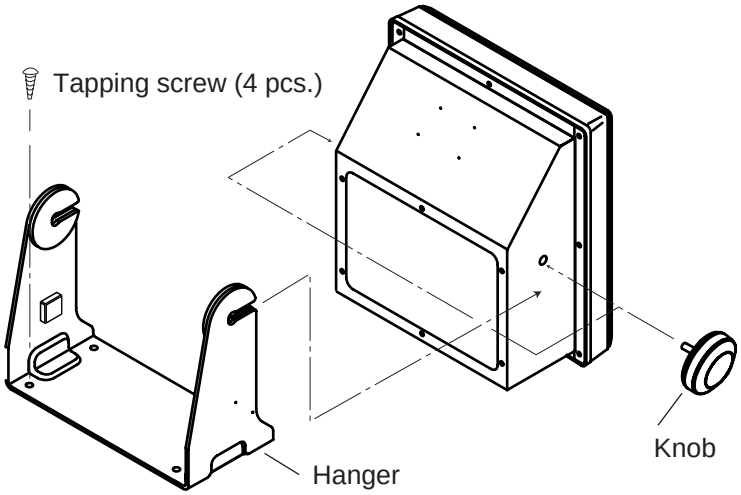

Figure 2 How to mount the display unit

Mounting Considerations

Install the antenna unit referring to the installation diagram on page D-1. When selecting a mounting location for the antenna unit, keep in mind the following points.

- Select a location out of the radar beam. The radar beam will obstruct or prevent reception of the GPS satellite signal.
- Be sure the location offers a clean line-of-sight to satellite. Objects within line-of-sight to a satellite, for example, a mast or funnel, block reception and cause prolonged acquiring time or interruption of position fix.
- Mount the unit as high as possible. Mounting the antenna as high as possible keeps it free of water spray, which can intercept reception of GPS satellite signal, if water spray is frozen.

Extending Antenna Cable Length

The standard cable is 15 m long. 30 m and 50 m long extension cable sets are optionally available.

Extension cable line-up

Fabricate the end of antenna cable and attach the coaxial connector. Details are shown on next page.

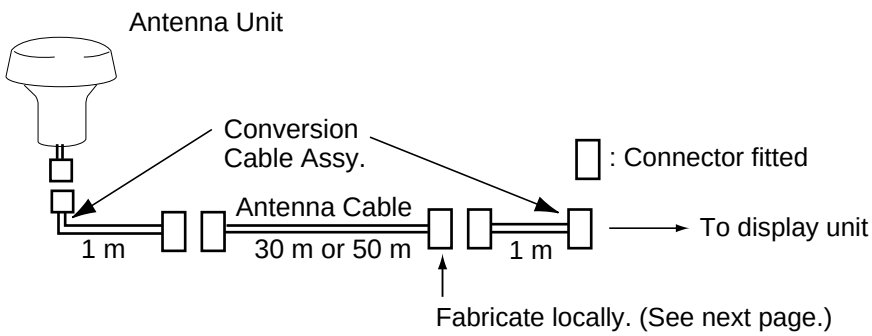

Figure 3 How to extend antenna cable

Waterproofing the connector

Wrap connector with vulcanizing tape and then vinyl tape. Bind the tape end with cable-tie.

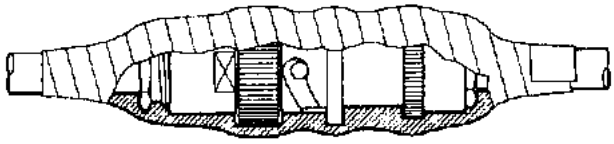

Figure 4 How to waterproof the connector

How to attach the N-P-8DFB connector

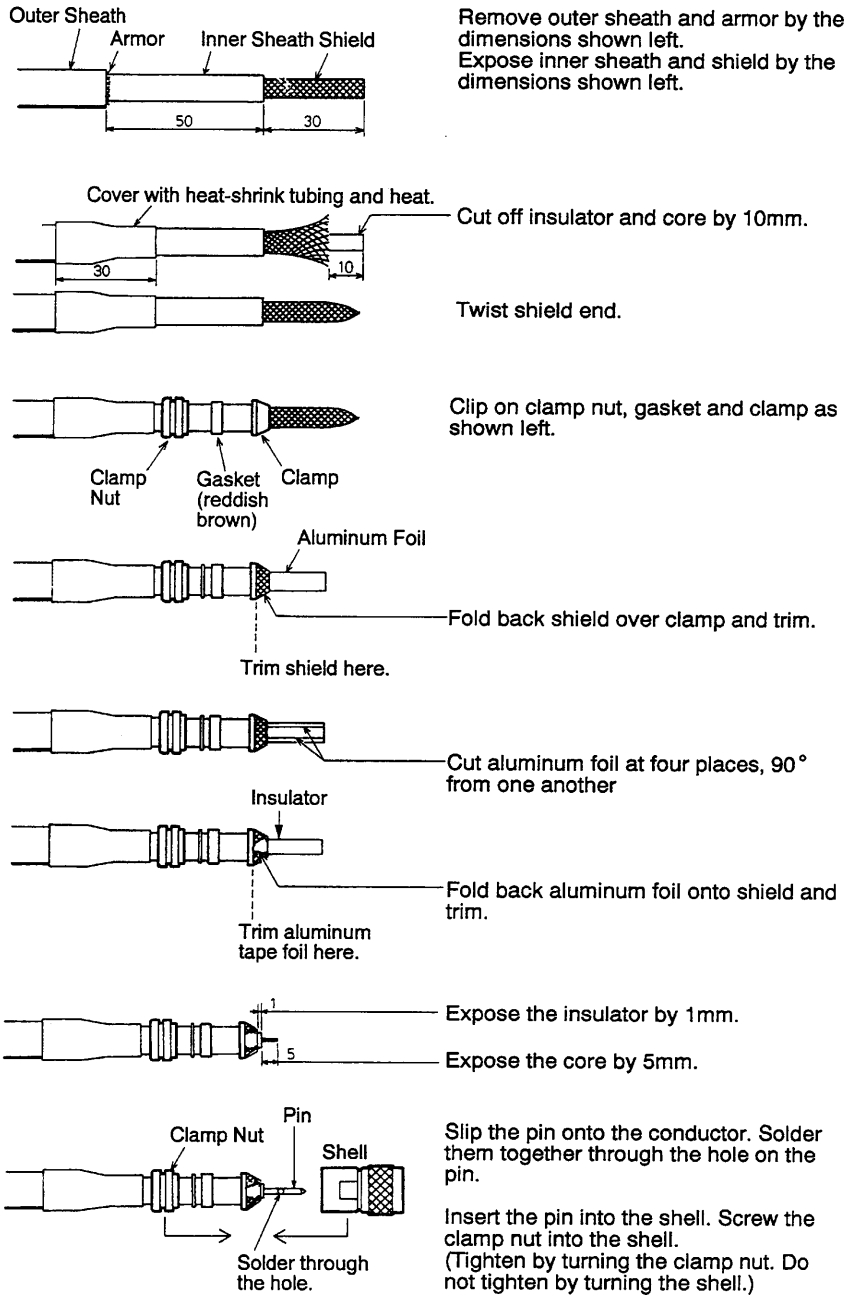

Figure 5 How to attach N-P-8DFB connector

The figure below shows the location of connectors at the rear of the display unit.

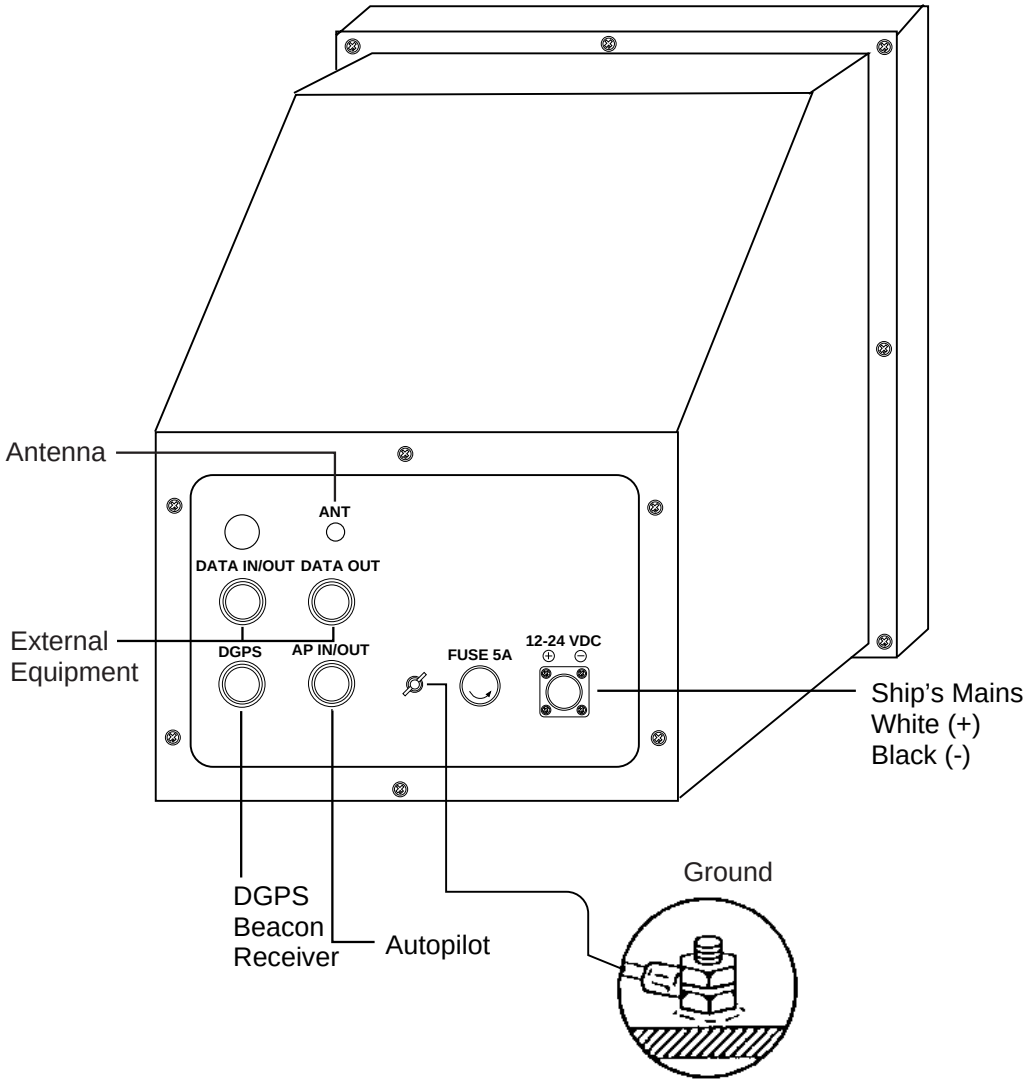

Figure 6 Wiring

Grounding

The display unit contains CPU circuits that radiate noise, which can interfere with other radio equipment. Ground the unit to prevent mutual interference.

⚠ CAUTION

Ground the equipment to prevent mutual interference.

DGPS BEACON RECEIVER GR-80 CONNECTION (GP-3300 only)

The GR-80 DGPS Beacon Receiver may be connected to the GP-3300 to further improve position accuracy.

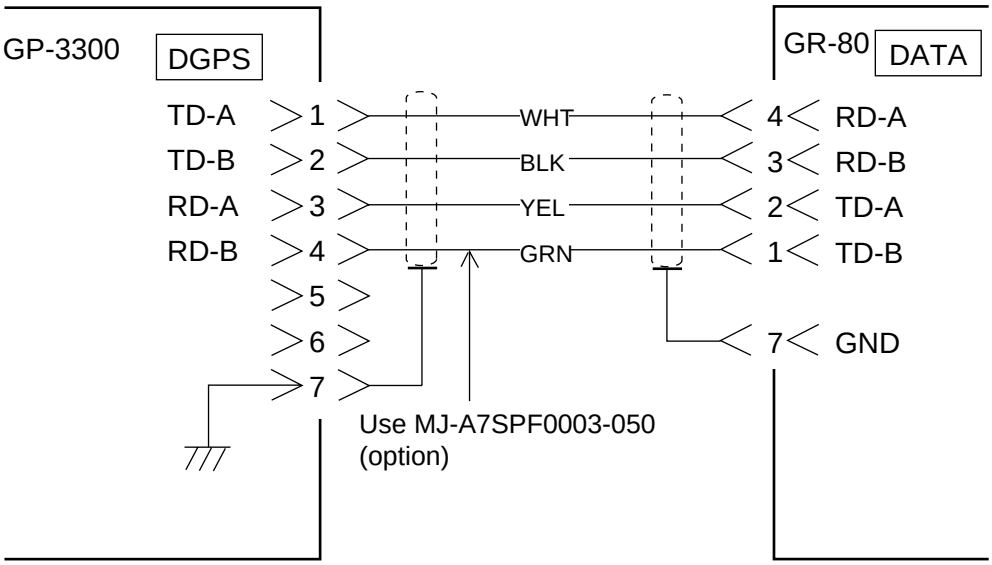

Figure 7 Connection of DPGS beacon receiver GR-80

GD/GP-3300

Displaying the initial settings menu

1. Turn on the unit.
2. Press [MENU] and [8] to display the INITIAL SETTINGS menu.

8 INITIAL SETTINGS

*	PAGE CHANGE (TO GPS INITIAL SETTINGS)	
*	INTERNAL NAV	= [ON] OFF
	EXTERNAL NAV	= [GPS] LC LA DC DR OFF
	I/O DATA FORMAT	= [CIF] NMEA183 NMEA180/182
	L/L SMOOTHING	= 00(0-15) L/L
▶	PLOT INTERVAL 1	= [TIME] (00M10S) DIST (0.10NM)
	PLOT INTERVAL 2	= TIME (00M10S) [DIST] (0.10NM)
	WAYPOINT MARK	= [ON] OFF
	EVENT MARK	= [ON] OFF
	TRACK(HOLD PLOT)	= [ON] OFF
	LINE (HOLD PLOT)	= ON [OFF]
	MAGNETIC DEVIATION	= [AUTO] (07°W) MAN (06°E) (0~99)
	BEARING	= TRUE [MAGNETIC]
	COURSE VECTOR	= VECTOR [LINE] OFF
	MARK SIZE	= [LARGE] SMALL
	CURSOR SIZE	= [LARGE] SMALL
	OWN SHIP MARK	= LARGE [SMALL]
	TRACK WIDTH	= THICK [THIN]
	RANGE UNIT	= [NM] Km SM
	VTD AVG TIME	= 10MIN
	DATE	= 1998-04-10 (YYYY-MM-DD)
	TIME	= 10: 01: 50
	EXTERNAL CLOCK	= [ON] OFF
	AUTOPILOT DISPLAY	= [ON] OFF
	TD INDICATION	= LA LC [OFF]

*: For GP-3300 only.

Figure 8 INITIAL SETTINGS menu

Navigator selection

Position information, which is used to plot ship's track, can be fed from the internal GPS receiver (GP-3300 only) or an external navigator. Select one as follows.

3. For the GP-3300, if you are going to use the internal GPS receiver, simply confirm that INTERNAL NAV is set to ON.
4. Press [↓] to select EXTERNAL NAV.
5. Select navigator; GPS, Loran C, Loran A, Decca, or Dead Reckoning.

I/O data format

If position data is fed from an external navigator, select the output format of the navigator as follows.

6. Select I/O DATA FORMAT.
7. Select I/O data format of navigator connected.

Note 1: *Input and output cannot be selected independently.*
Note 2: *I/O data talker (GP) cannot be changed.*

Time and date

8. Select DATE.
9. Enter year in four digits and month and day in two each. Enter leading zeroes in case of single digit month or day.
10. Select TIME.
11. Enter UTC time.

For the GD-3000, press [ENT] followed by [MENU] to finish.
For the GP-3300, go to the next page.

Entering antenna height

1. Press [↑] to place cursor on PAGE CHANGE (TO GPS INITIAL SETTINGS).

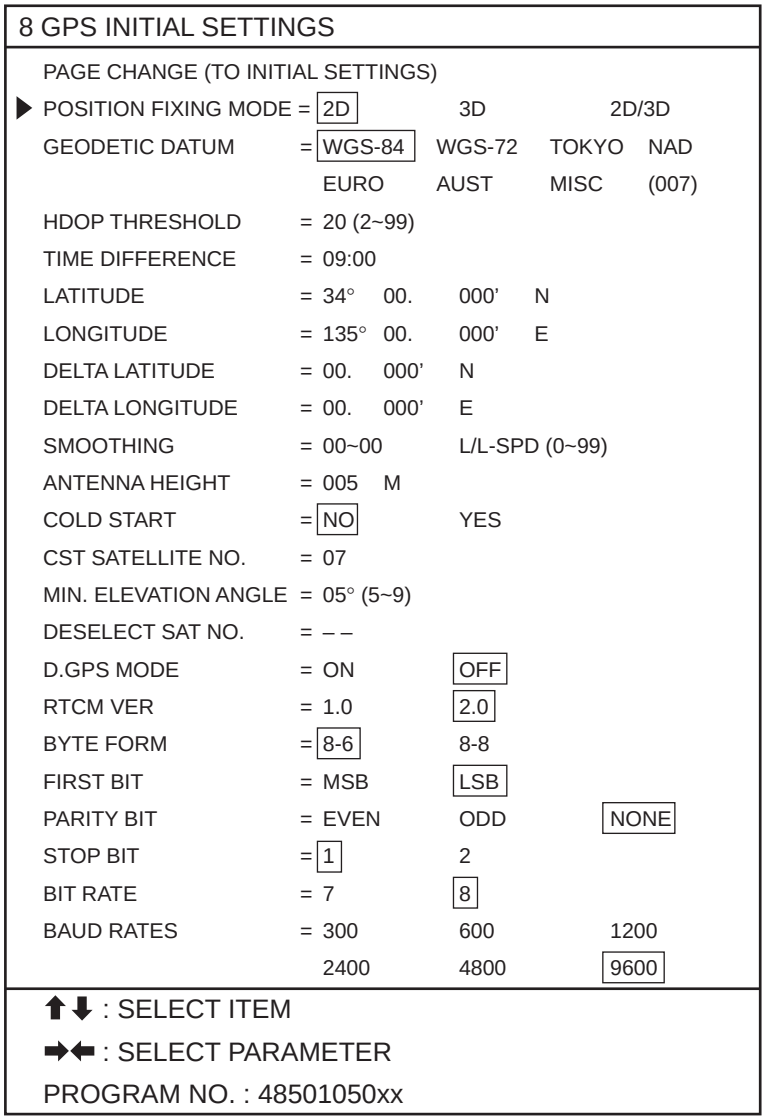

Figure 9 GPS INITIAL SETTINGS menu

2. Press [↓] to select ANTENNA HEIGHT.
3. Enter antenna height above the waterline.

If there is no DPGS beacon receiver installed, press [ENT] followed by [MENU] to finish.

Differential DGPS

When a DGPS beacon receiver is connected to the GP-3300 turn on the differential GPS mode and enter specifications of the DGPS beacon receiver.

4. Select ON from the D.GPS MODE field.
5. Set RTCM VER, BYTE FORM, FIRST BIT, PARITY BIT, STOP BIT, BIT RATE and BAUD RATES according to specifications of DGPS beacon receiver.

JUMPER WIRE, DIP SWITCH SETTINGS ON GDC BOARD

The GDC Board has jumper blocks and DIP switches which tailor the specifications of the equipment. Table 4 shows the specifications available by the jumper blocks and DIP switches.

The data to be output by the #1 and #2 pins of the DATA OUT connector can be selected by the jumper block JP6 on the GDC Board. The default setting outputs external navigator position data. Input and output data formats cannot be selected independently.

The external event switch can be selected by J5 on the GDC board. The default setting outputs data from DATA IN/ OUT connector.

Table 1 Specifications of jumpers and DIP SW on GDC board

Jumper Block/DIP SW	Setting	Specification
J5	Do	Outputs same data of DATA IN/ OUT connector.
	Ev	Inputs contact closure signal from external event switch.
J6	IN	GP-3300: #1 and #2 pins of OUT connector output position data from internal GPS receiver. GD-3300: #1 and #2 pins of OUT connector output event data in CIF format.
	OUT	#1 and #2 pins of OUT connector output external navigator position data.
DIP SW1	#1	Clears all memories. (Switch normally off.) Turn on after change of program, or when keyboard locks.
	#4	OFF: GP-3300 specification ON: GD-3300 specification
	#3	OFF: Displays chart on video pilot display. ON: Disables display of chart on video pilot display.
	#2	OFF: Factory setting

To set the jumper block JP6;

1. Turn off the display unit.
2. Remove the display unit from the hanger and lay it front side down on a table.
3. Unfasten 13 screws fixing the cover. See the arrows in the figure below for the location of the screws.

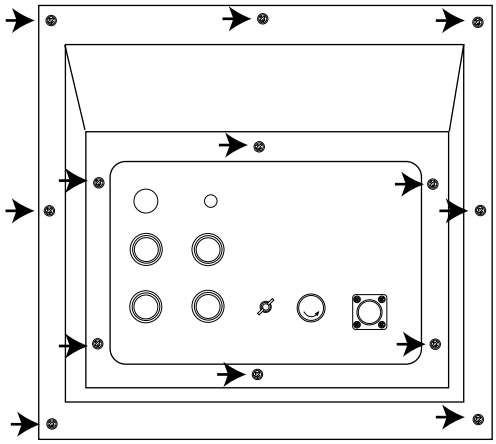

Figure 10 Display unit, rear view

4. Set the jumper block J5/ J6 as appropriate.

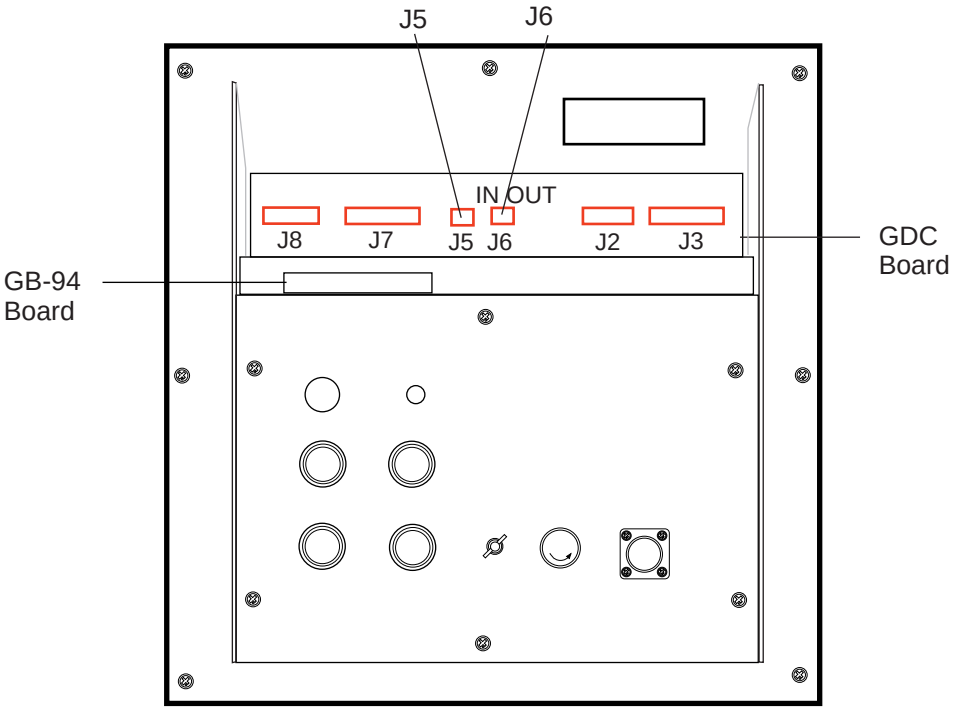

Figure 11 Display unit, rear view, cover removed

4. Reattach the cover.

Note: *When no external navigator is connected to the GP-3300, JP6 must be set for “IN" to output position data.*

I/O DATA DESCRIPTION

Table 2 GP-3300 I/O data description

Connector		Menu Selection	I/O	Specifications	Remarks
J3	DATA IN/OUT	CIF	Input	CIF11, 2*, 3*, 4*, 57, 58, 5:	Current loop
			Output	CIF11, 28, 38, 48, 53, 54, 5:, 68	Current loop
		NMEA-0183	Input	VTG, MTW, DBT, GLL, RMA, RMC, RMB, WPL, BWR, BWC, ZDA, TLL, GGA	Current loop
			Output	GLL, VTG, RMC, WPL, GTD, BWR, RMB, GGA	Current loop
		NMEA-0182/ 0180C	Input	L/L	Current loop
			Output	L/L, Cross track error, Waypoint bearing	Current loop
J4	DATA OUT	#1, #2	Output	Data output/input thru J3 according to setting of J6	Current loop
		#3, #4	I/O	Data output/external event output according to setting of J5	Current loop, contact signal
J5	AP IN/OUT	NMEA-0183	Input	AGFPA	Current loop
			Output	AAM, BOD, VTG, XTE, APB	Current loop
		NMEA-0180S	Input	None	Current loop
			Output	Cross track error	Current loop
J6	DGPS		Input	RTCM SC-104 data	RS-422
			Output	Same data as output thru J3	RS-422

Table 3 GD-3300 I/O data description

Connector		Menu Selection	I/O	Specifications	Remarks
J3	DATA IN/OUT	CIF	Input	CIF 11, 2*, 3*, 4*, 57, 58, 5:	Current loop
			Output	CIF 5:, 38, 53, 54	Current loop
		NMEA-0183	Input	VTG, MTW, DBT, GLL, RMA, RMC, RMB, WPL, BWR, BWC, ZDA, TLL,GGA	Current loop
			Output	WPL, GTD,BWR	Current loop
		NMEA-0182/ 0180C	Input	L/L	Current loop
			Output	L/L, Cross track error, Waypoint bearing	Current loop
J4	DATA OUT	#1, #2	Output	Data output/input thru J3 according to setting of J6	Current loop
		#3, #4	I/O	Data output/external event output according to setting of J5	Current loop, contact signal
J5	AP IN/OUT	NMEA-0183	Input	AGFPA	Current loop
			Output	AAM, BOD, VTG, XTE, APB	Current loop
		NMEA-0180S	Input	None	Current loop
			Output	Cross track error	Current loop

PACKING LIST

14CD-X-9853 -0 1/1

GD-3300-J/E

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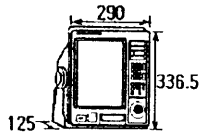
指示器 DISPLAY UNIT		GD-3300-J 000-040-497 **	1
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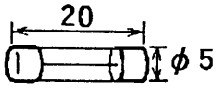
ﾋｭｰｽﾞ FUSE		FGMB 5A AC125V 000-112-785	3
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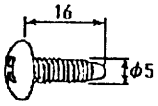
+ﾄﾗｽﾀｯﾋﾟﾝﾈｼﾞ +TAPPING SCREW		5X16 SUS304 1種 000-805-494	4
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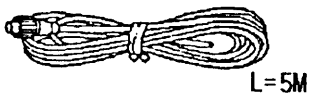
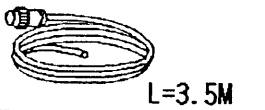
信号ｹｰﾌﾞﾙ SIGNAL CABLE		MJ-A6SPF0003-050 000-117-603	1
電源ｹｰﾌﾞﾙ POWER CABLE		P14-7-3.5(2P) 004-391-180	1

注記) ｺｰﾄﾞ末尾に[**]の付いたﾕﾆｯﾄは代表の型式/ｺｰﾄﾞを表示しています。
DOUBLE ASTERISK DENOTES COMMONLY USED EQUIPMENT.

DWG NO.
C4392-Z01- A

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

PACKING LIST GP-3300-J/E-1

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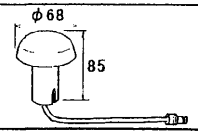
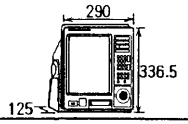
空中線部 ANTENNA UNIT		GPA-017S 000-040-537	1
指示器 DISPLAY UNIT		GP-3300-J 000-040-495**	1
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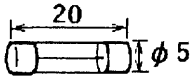
ﾋｭｰｽﾞ FUSE		FGMB 5A AC125V 000-112-785	3
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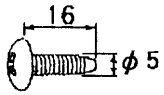
+ﾄﾗｽﾀｯﾋﾟﾝﾈｼﾞ +TAPPING SCREW		5X16 SUS304 1種 000-805-494	4
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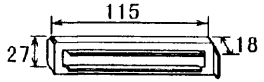
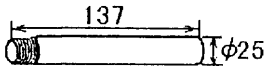
取付補助金具 INSTALLING SPACER		20-007-3012-1 100-183-271	1
ﾊﾟｲﾌﾟ PIPE		20-007-3011-2 100-183-262	1
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その他工材 OTHER INSTALLATION MATERIALS			

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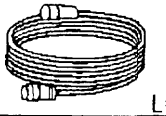
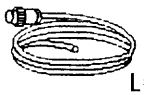
ｹｰﾌﾞﾙ組品 CABLE ASSY.		TBP-3D2V *15M* 000-134-444	1
ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-A6SPF0003-050 000-117-603	1
電源ｹｰﾌﾞﾙ POWER CABLE		P14-7-3.5(2P) 004-391-180	1

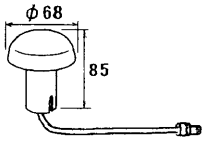
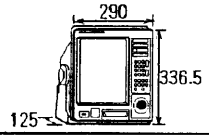
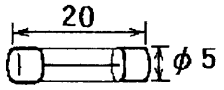
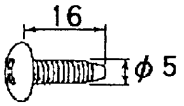
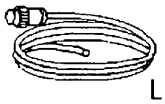
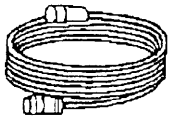
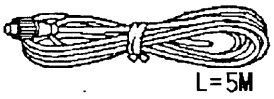
注記) ｺｰﾄﾞ末尾に[**]の付いたﾕﾆｯﾄは代表の型式/ｺｰﾄﾞを表示しています。
DOUBLE ASTERISK DENOTES COMMONLY USED EQUIPMENT.

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

PACKING LIST

14CD-X-9852 -1 1/1

GP-3300-E-0

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
ユニット UNIT			
空中線部 ANTENNA UNIT		GPA-017S 000-040-537	1
指示器 DISPLAY UNIT		GP-3300-E 000-040-496	1
予備品 SPARE PARTS		**SP14-02300**	
ﾋｭｰｽﾞ FUSE		FGMB 5A AC125V 000-112-785	3
付属品 ACCESSORIES		**FP14-02200**	
+ﾄﾗｽﾀｯﾋﾟﾝﾈｼﾞ +TAPPING SCREW		5X16 SUS304 1種 000-805-494	4
その他工材 OTHER INSTALLATION MATERIALS			
電源ｹｰﾌﾞﾙ POWER CABLE		P14-7-3.5(2P) 004-391-180	1
ｹｰﾌﾞﾙ組品 CABLE ASSY.		TBP-3D2V *15M* 000-134-444	1
ｹｰﾌﾞﾙ組品MJ CABLE ASSY.		MJ-A6SPF0003-050 000-117-603	1

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

FURUNO

CODE NO.	004-373-090	14BN-X-9404 -0
TYPE	CP14-04401	1/1

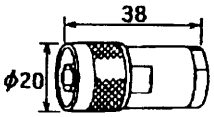
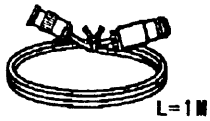
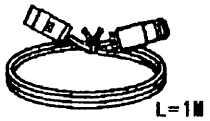
工事材料表

INSTALLATION MATERIALS

GP-3100/3050
GP-188/3100MARK-2
GP-3300

GPS ﾌﾟﾛｯﾀｰ
ｶﾗｰGPSﾌﾟﾛｯﾀｰ

GPS PLOTTER
COLOR GPS PLOTTER

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	ｺﾈｸﾀ CONNECTOR		N-P-8DFB CODE NO. 000-111-549	1	
2	ｱﾝﾃﾅｹｰﾌﾞﾙ組品 ANTENNA CABLE ASSY.		NJBP-3DXV-1 CODE NO. 000-117-602	1	
3	変換ｹｰﾌﾞﾙ組品 CONVERT CABLE ASSY.		NJ-TP-3DXV-1 CODE NO. 000-123-809	1	

DWG NO.
C4358-M01- A

FURUNO ELECTRIC CO., LTD

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

FURUNO

CODE NO.		14BN-X-9405 -0
TYPE		1/1

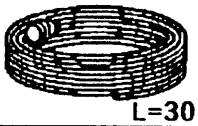
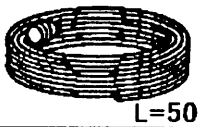
工事材料表

INSTALLATION MATERIALS

GP-3100/3050
GP-188/3100MARK-2
GP-3300

GPSﾌﾟﾛｯﾀｰ
ｶﾗｰGPSﾌﾟﾛｯﾀｰ

GPS PLOTTER
COLOR GPS PLOTTER

番号 NO.	名称 NAME	略図 OUTLINE	型名／規格 DESCRIPTIONS	数量 Q'TY	用途／備考 REMARKS
1	ｱﾝﾃﾅｹｰﾌﾞﾙ組品 ANTENNA CABLE ASSY.	 L=30M	8D-FB-CV *30M* CODE NO. 000-111-547	1	選択 TO BE SELECTED
2	ｱﾝﾃﾅｹｰﾌﾞﾙ組品 ANTENNA CABLE ASSY.	 L=50M	8D-FB-CV *50M* CODE NO. 000-117-599	1	選択 TO BE SELECTED

DWG NO.
C4358-M02- A

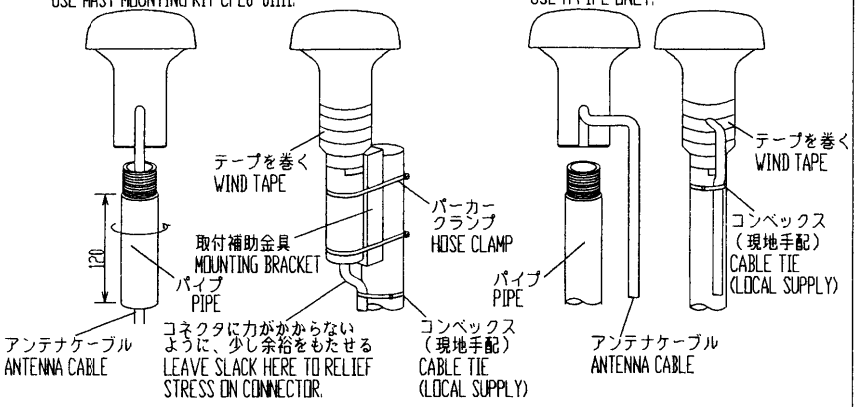
FURUNO ELECTRIC CO., LTD

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

FURUNO

A) マストへの取付け　MAST MOUNTING

a.)マスト取付金具CP20-01111(工事材料)でマストに固定する。
USE MAST MOUNTING KIT CP20-01111.

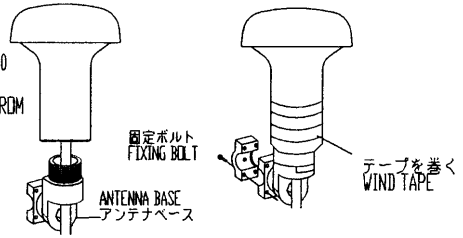


b.)パイプのみを使うとき
USE A PIPE ONLY.

B) スタンションやパルピットにつけるとき　HANDRAIL MOUNTING

レール用アンテナベース No.13-RC5160 (取付可能レール直径：ø19~ø32)
(コード番号：000-806-114)

USE HANDRAIL MOUNTING BASE No.13-RC5160
(CODE No.000-806-114, OPTION).
THE DIAMETER OF THE HANDRAIL MAY BE FROM
ø19mm TO ø32mm.

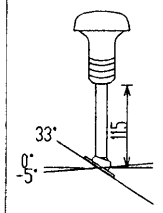
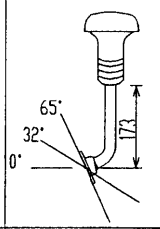
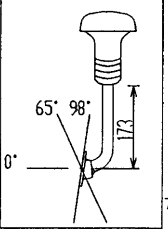


注記 1) パイプやアンテナベースはアンテナユニットにねじ込んだ後に固定する。
2) アンテナを固定するときはパイプ(アンテナベース)をアンテナにねじ込むこと。
アンテナ側をねじるとコネクタ部やケーブルに無理がかかり、故障の原因となる。

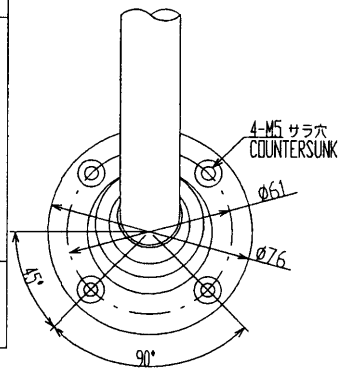
NOTE 1. FASTEN PIPE(ANTENNA BASE) TO ANTENNA UNIT FIRST THEN FIX THEM TO MAST OR HANDRAIL.
2. WHEN FIXING ANTENNA, TURN PIPE OR ANTENNA BASE; NOT THE ANTENNA.
TURNING THE ANTENNA MAY TWIST THE CABLE AND PLACE STRESS ON CONNECTOR.

C) 取付ける場所が傾斜しているとき　ANTENNA BASE MOUNTING

オプションのアンテナベースを使う。
USE OPTIONAL ANTENNA BASE.

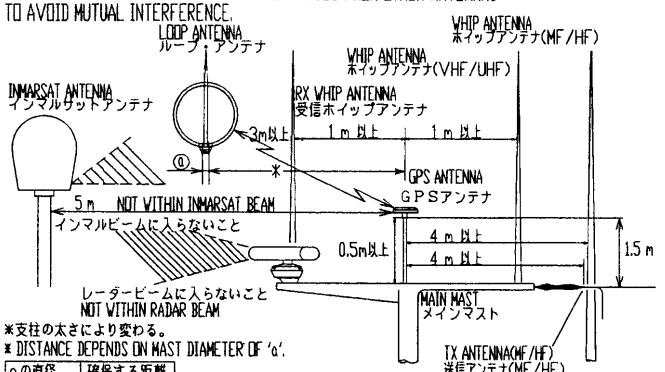
傾斜 INCLINATION	-5° - 33°	32° - 65°	65° - 98°
装備方法 MOUNTING METHOD			
アンテナベース型式 ANT. BASE TYPE コード番号 CODE No.	直型アンテナベース RIGHT ANGLE ANTENNA BASE No.13-QA330 000-803-239	L型アンテナベース L-TYPE ANTENNA BASE No.13-QA310 000-803-240	

アンテナベース基部
MOUNTING DIMENSIONS OF ANTENNA BASE.



取付場所　MOUNTING LOCATION

他の機器のアンテナから下の図の距離以上離す。
THIS FIGURE SHOWS THE SEPARATION DESTANCES FROM OTHER ANTENNAS
TO AVOID MUTUAL INTERFERENCE.

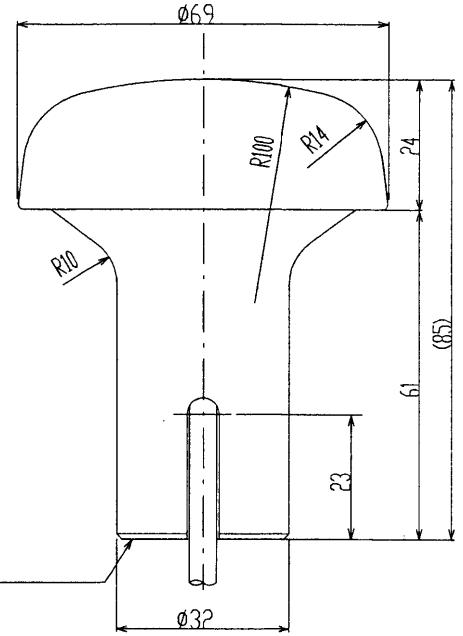


※支柱の太さにより変わる。
* DISTANCE DEPENDS ON MAST DIAMETER OF 'a'.

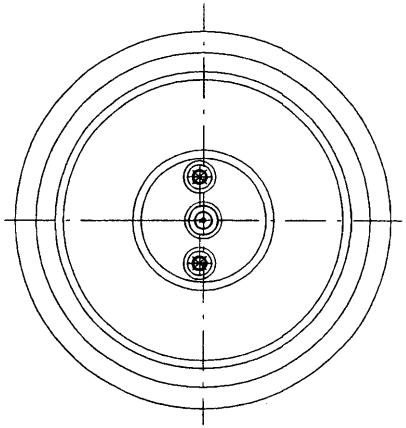
a の直径 DIA. OF 'a'	確保する距離 DISTANCE (MIN.)
10 cm	1.5 m
30 cm	3 m

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

表 1 TABLE 1



1-14UNS1B
ねじ山数(25.4mmにつき)：14
ピッチ： 1.8143 mm
オネジ有効長さ： 24.17 mm
オネジ有効径：19 mm以上
THREAD PER 25.4mm (1 INCH): 14
PITCH: 1.8143 mm
THREAD LENGTH: 15.17 mm
PITCH DIAMETER: 24.17 mm



注記
指定外の寸法公差は表1による。

NOTE
TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

型式 TYPE	ケーブル長(m) CABLE LENGTH	プラグ PLAG	質量 MASS
GPA-017	10	TNC-P-3	585±30g
GPA-017S	0.2	TNC-J-3	125±30g

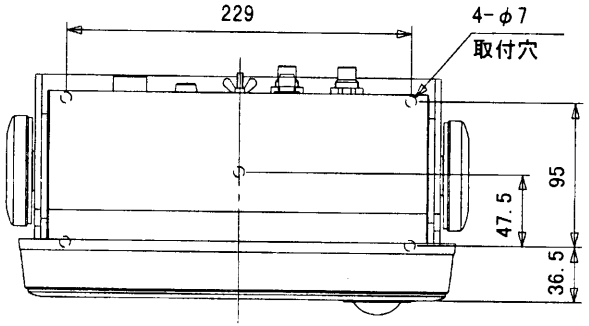
表 2 TABLE 2

DRAWN June 7 '02 T.YAMASAKI		TITLE	GPA-017/017S
CHECKED June 10 '02 Y.K.		名称	空中線部
APPROVED June 10 '02 Y.K.			外寸図
SCALE MASS TABLE 2 表2参照		NAME	ANTENNA UNIT
DWG.No. C4384-G04- G			OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

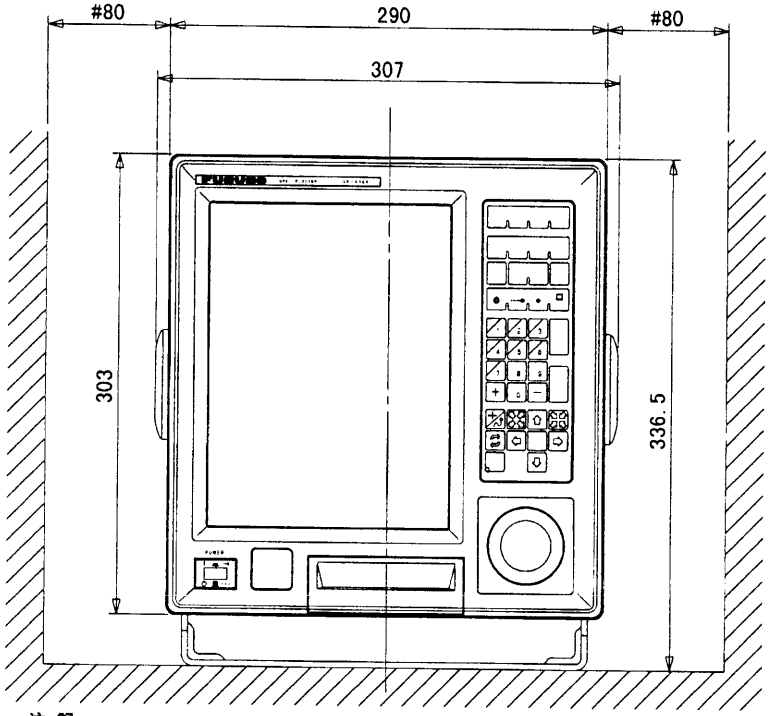
D-1

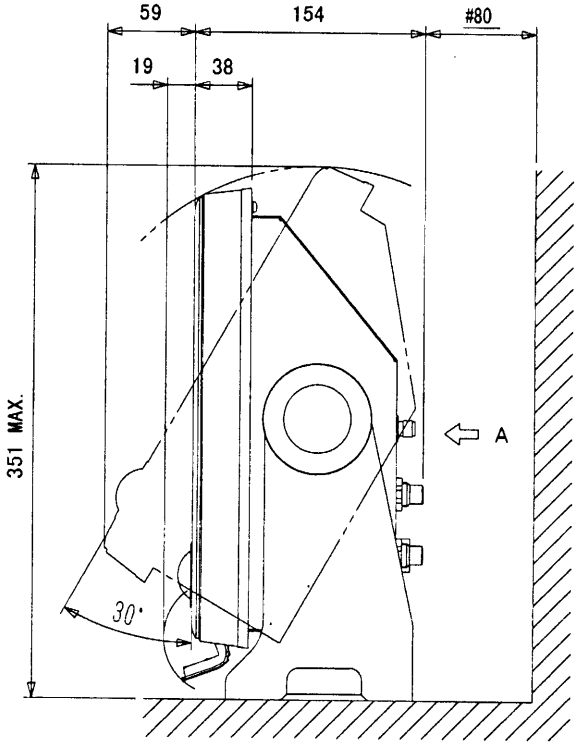
FURUNO

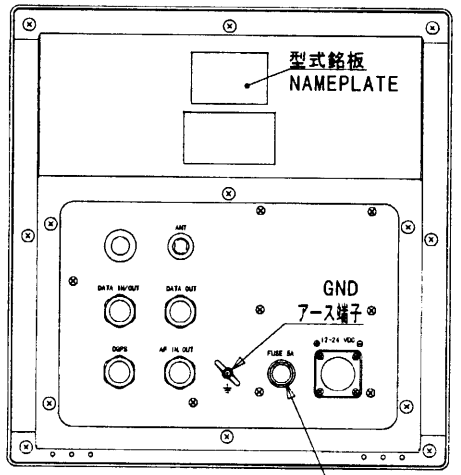


範 囲 DIMENSION	公差 TOL.
L≦50	±1mm
50<L≦100	±2mm
100<L≦500	±3mm

表1 TABLE 1







矢視 A
VIEW A

注 記

1）装備ケーブルはサービス時、指示部を前方に充分引き出せるよう余裕を持たせること。
2）取付用ネジは、トラスタッピングネジ呼び径6×20を使用のこと。
3）#：推奨する最小サービス空間寸法。
4）指定外の寸法公差は表1による。

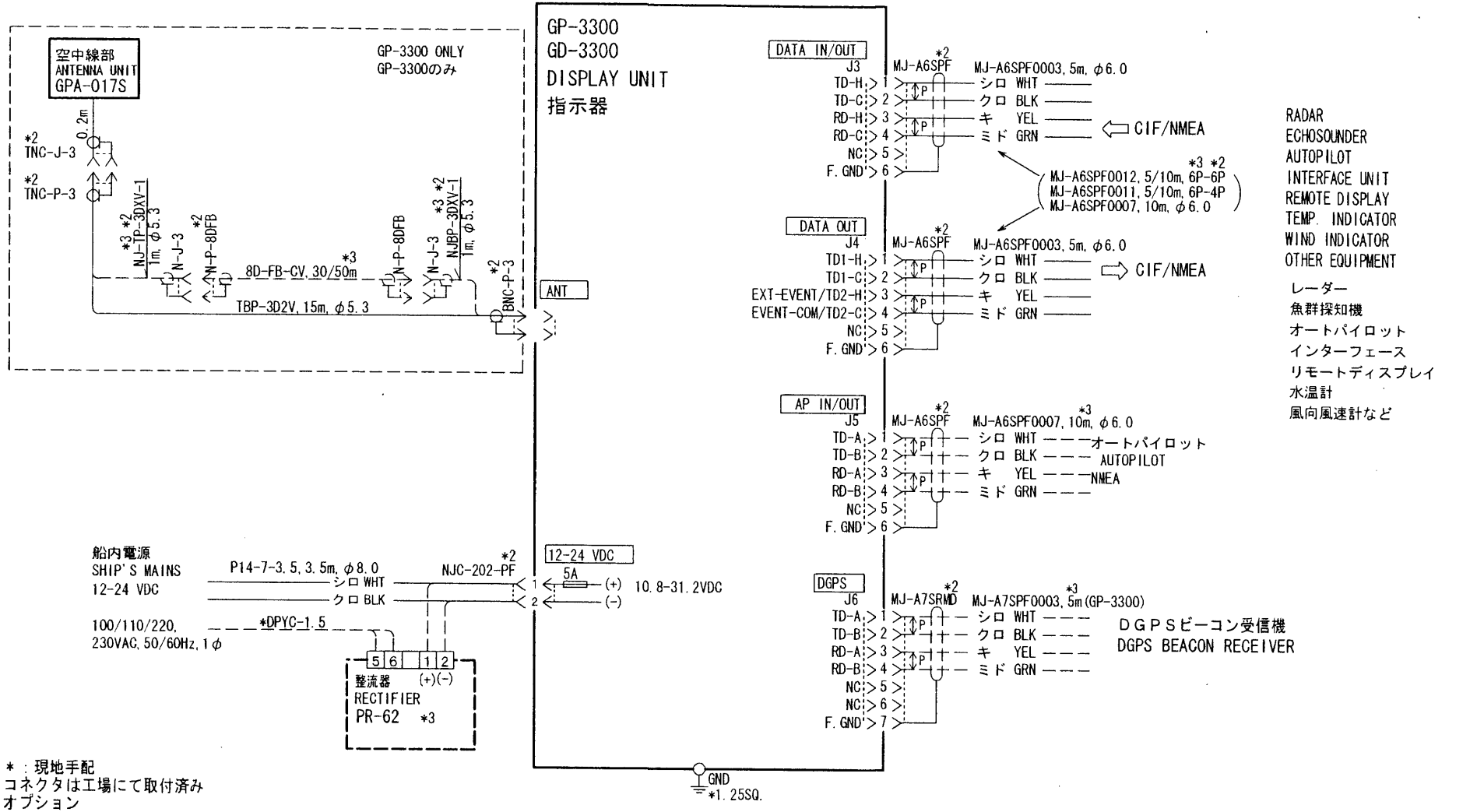
NOTE

1. KEEP ENOUGH CABLE LENGTH BEHIND DISPLAY.
2. USE φ6x20 TAPPING SCREWS FOR FIXING UNIT.
3. #: RECOMMENDED SERVICE CLEARANCE.
4. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

DRAWN Jun.15'98 T.Ishizuki		TITLE	GP/GD-3300
CHECKED Jun.15'98 K.Kusuoki		名称	指示部
APPROVED Jun.15'98 K.Kusuoki	GD-3300 GP-3300		外寸図
SCALE 1/5 MASS 5 kg		NAME	DISPLAY UNIT
DWG. No. C4393-G01- A	14-060-1000-G1		OUTLINE DRAWING

FURUNO ELECTRIC CO., LTD.

FURUNO



注記
1）＊：現地手配
2）コネクタは工場にて取付済み
3）オプション

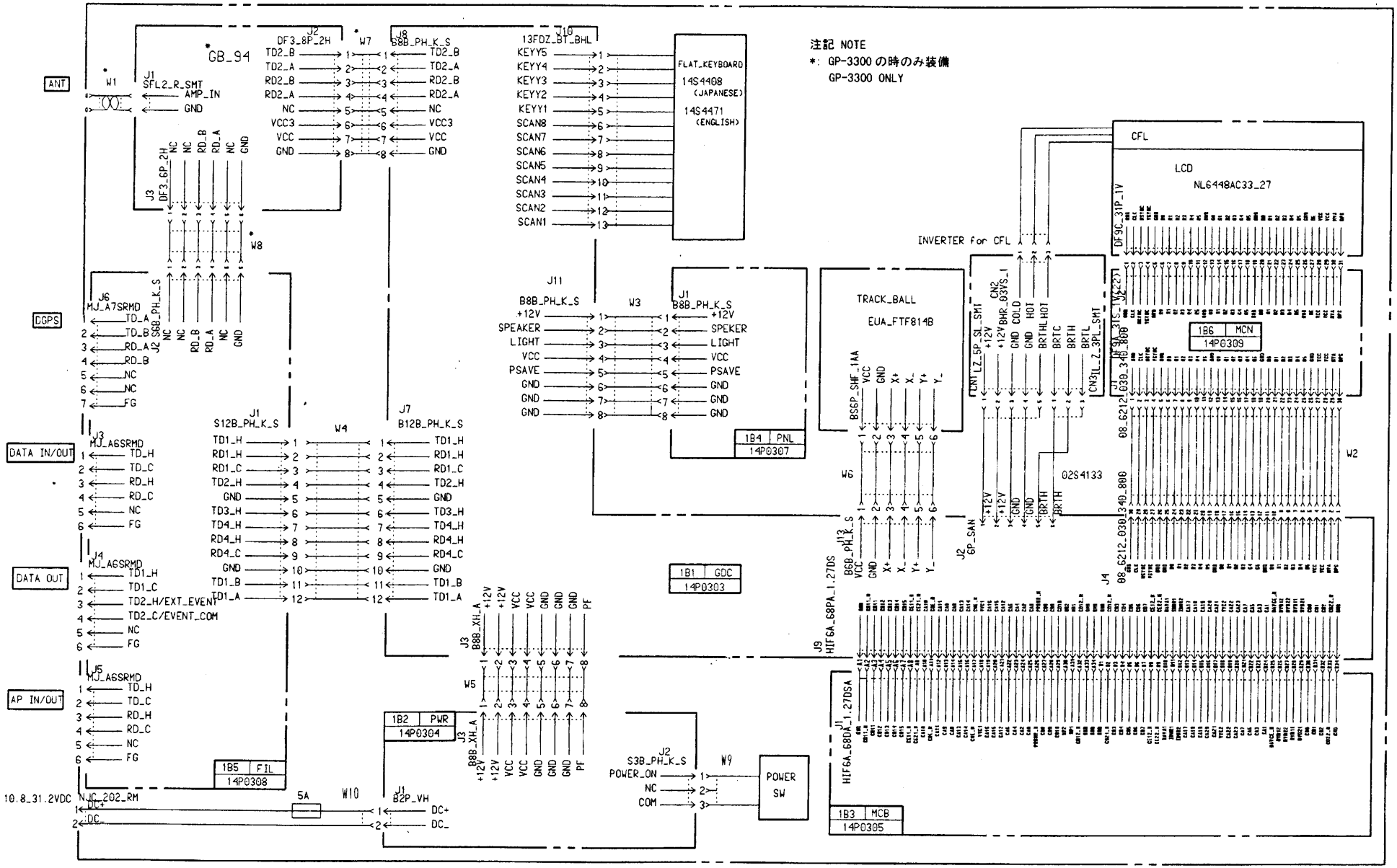
NOTE
1. *:LOCAL SUPPLY.
2. FITTED AT FACTORY.
3. OPTION

DRAWN July 19 '02 T. YAMASAKI		TITLE	GP/GD-3300
CHECKED July 19 '02 Y. KIMURA		名 称	カラービデオ／ＧＰＳプロッタ
APPROVED July 19, '02 Y. Kimura			相互結線図
SCALE	MASS kg	NAME	COLOR VIDEO/GPS PLOTTER
DWG No. C4393-C01- E			INTERCONNECTION DIAGRAM

S-1

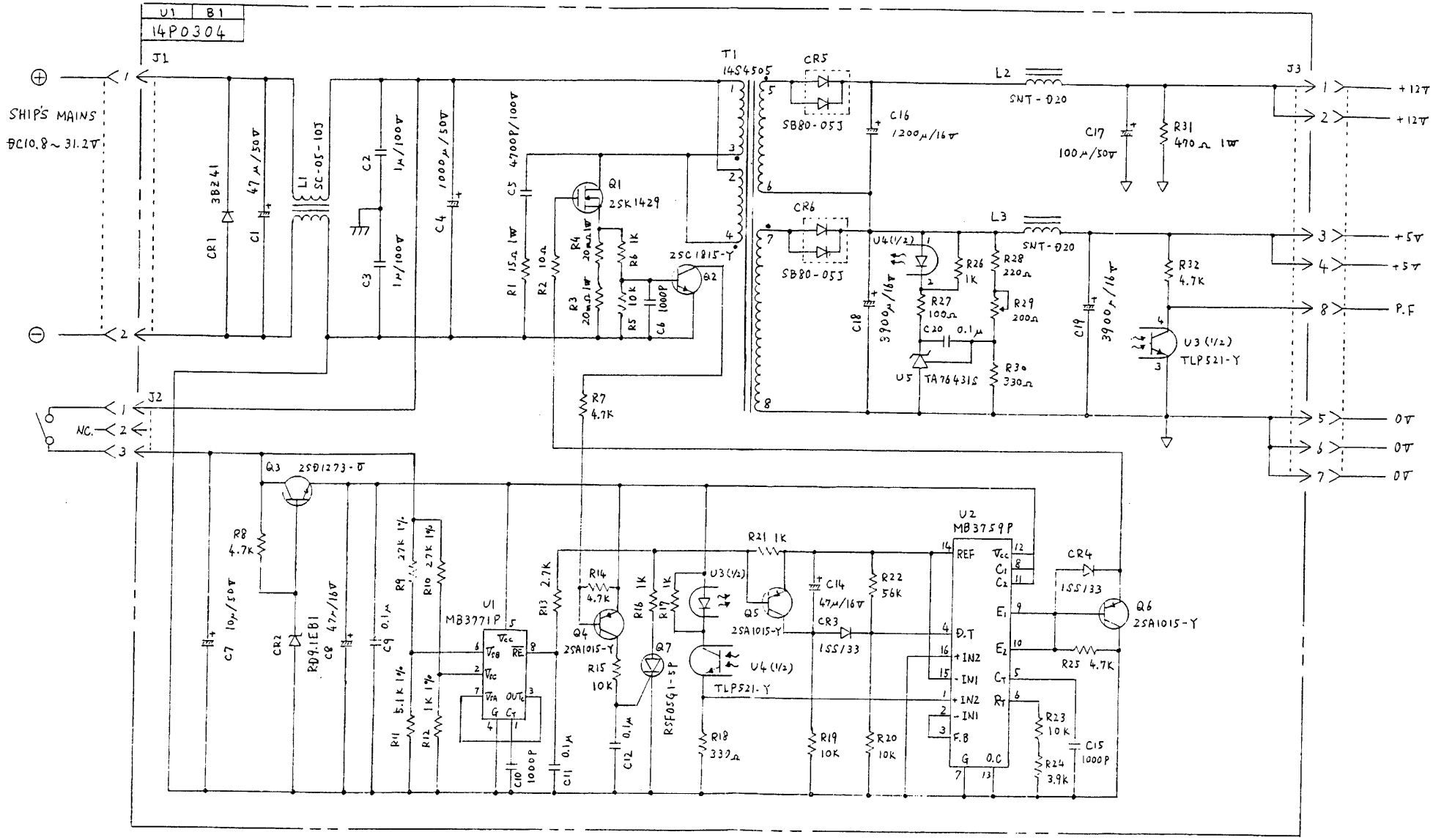
FURUNO ELECTRIC CO., LTD.

FURUNO



DRAWN Nov. 4 '98 T.YAMASAKI			TYPE GD/GP-3300
CHECKED Nov 5'98 K.Kusunoki			名称 指示部（総合）
APPROVED Nov 5 '98 K.Kusunoki			回路図
SCALE /	MASS kg	APPLICABLE TO; (MODEL) / BLOCK NO.	NAME DISPLAY UNIT
DWG NO. C4393-K01- C		14-060-0001- 1	SCHEMATIC DIAGRAM

FURUNO



DRAWN Jun. 8 '98 T.Yamazaki			TYPE 14P0304
CHECKED Jun 8 '98 K.Kusunoki			名称 電源部
APPROVED Jun 8 '98 K.Kusunoki	GD-3300 GP-3300	1B 1	回路図
SCALE / MASS kg	APPLICABLE TO; (MODEL)	BLOCK NO.	NAME PWR BOARD
DWG NO. C4393-K02- A	14-060-0003- 0		SCHEMATIC DIAGRAM

FURUNO ELECTRIC CO., LTD.

S-13