

INSTALLATION MANUAL GPS PLOTTER GP-1810

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·Your Local Agent/Dealer

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GP-1810





SAFETY INSTRUCTIONS

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



DANGER

This notice indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

This notice indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

This notice indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, or property damage.

WARNING



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

Only qualified personnel should work inside the equipment.

Serious injury or death can result if the power is applied while the equipment is being installed.

Turn off the power at the ship's mains switchboard before beginning the installation. Post a warning sign near the switch board indicating that the switch should not be turned on while the equipment is being installed.

CAUTION



Ground the equipment to prevent electrical shock or mutual 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 equipment damage. The voltage rating appears on the label at the rear of the equipment.

1. Equipment Lists

Standard Supply

	Name	Type	Qty	Wt. (kg)	Remarks
1	Antenna Unit	GPA-016	1	0.1	
2	Display Unit	GP-1810	1	3.0	
3	Installation Materials	CP14-04700	1 set		See page 2.
		CP14-04710			
4	Spare Parts	SP20-00600	1 set		

Options

	Name	Type	Code No.	Remarks
1	Antenna Cable Set	CP20-01700	004-372-110	30m
2	Antenna Cable Set	CP20-01710	004-372-120	50m
3	Right Angle Antenna Base	No.13-QA330	000-803-239	For antenna unit
4	L-Type Antenna Base	No.13-QA310	000-803-240	
5	Handrail Antenna Base	No.13-RC5160	000-806-114	
6	Mast Mount Kit	CP20-01111	000-040-722	
7	Signal Cable	20S0093	000-117-603	5m, one end connector
		MJ-A7SPF0003-050 (20S0241)	000-136-730	for DGPS
		MJ-A6SPF0011-050 (03S9202)	000-132-244	5m, 6P-4P
		MJ-A6SPF0011-100 (03S9226)	000-132-336	10m, 6P-4P
		MJ-A6SPF0012-050 (64S4073)	000-134-424	Cross cable 5m
		MJ-A6SPF0012-100 (64S4071)	000-133-817	Cross cable 10m
8	RAM Card	00RAM256C-001	004-321-070	
		00RAM512C-002	004-322-230	
9	Flush Mount Kit S	OP14-35	004-369-810	
10	Flush Mount Kit F	OP14-36	004-369-820	
11	Echo Sounder Kit	OP14-37	004-369-830	

PACKING LIST

GP-1810-J/E-0

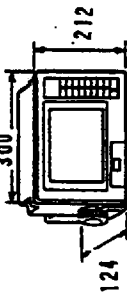
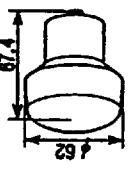
14BX-X-9851-1

2


工事材料


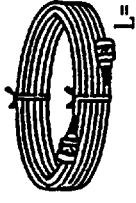
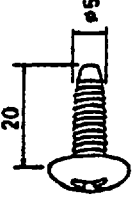
INSTALLATION MATERIALS CP14-04710

NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
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指示器 DISPLAY UNIT		GP-1810-J/E	1
空中線部 ANTENNA UNIT		GPA-016	1
		000-040-537	

予備品 SPARE PARTS SP20-00600

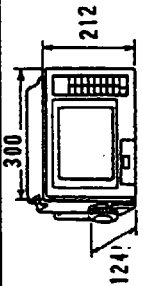
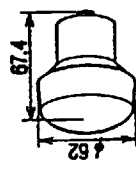
管入りヒューズ FUSE		FGD0-A 5A AC125V	3
		000-549-064	

電源ケーブル POWER CABLE		03S9148	1
		000-129-613	
アンテナケーブル組品 ANTENNA CABLE ASSY.		TNC-PS-3D-15 (20S0216)	1
		000-133-670	
トラスタッピングネジ TAPPING SCREW		5x20 SUS304	5
		000-802-081	

C4378-Z01-B

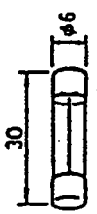
PACKING LIST

GP-1810-J/E-1


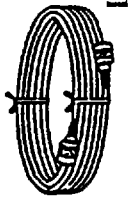

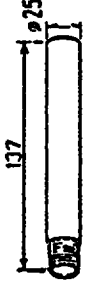

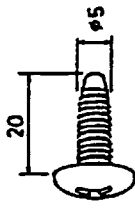
NAME	OUTLINE	DESCRIPTION/CODE No.	Q'TY
指示器 DISPLAY UNIT		GP-1810-J/E	1
空中線部 ANTENNA UNIT		GPA-016 000-040-537	1

予備品

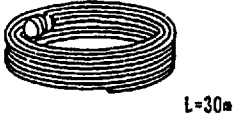
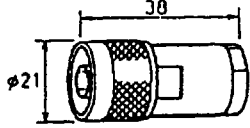
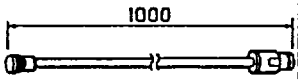
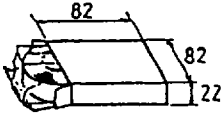
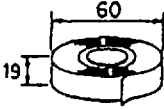
SPARE PARTS SP20-00600

管入りヒューズ FUSE		FGBO-A 5A AC125V 000-549-064	3
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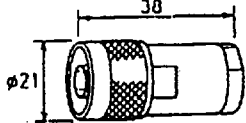
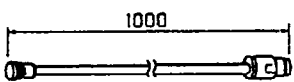
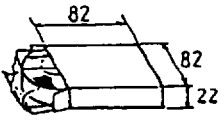
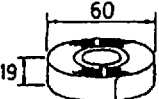
工事材料 INSTALLATION MATERIALS CP14-04700

電源ケーブル POWER CABLE		03S9148 000-129-613	1
アンテナケーブル組品 ANTENNA CABLE ASSY.		TNC-PS-3D-15 (20S0216) 000-133-670	1
パーカークランプ HOSE CLAMP		6348 SUS304 000-805-906	2
パイプ PIPE		20-007-3011-2 100-183-262	1
取付補助金具 INSTALLING SPACER		20-007-3012-1 100-183-271	1
トラスタッピングネジ TAPPING SCREW		5x20 SUS304 000-802-081	5

CODE NO. 004-372-110
 TYPE. CP20-01700

工事材料表 INSTALLATION MATERIALS		アンテナケーブルセット ANTENNA CABLE SET			Option
番号 No.	名称 NAME	略図 OUTLINE	型名 / 規格 DESCRIPTIONS	数量 Q'TY	用途 / 備考 REMARKS
1	アンテナケーブル組品 ANTENNA CABLE ASSY.		8D-FB-CV *30M* CODE NO. 000-111-547	1	
2	同軸コネクタ COAX. CONNECTOR		N-P-8DFB CODE NO. 000-111-549	1	
3	変換ケーブル組品 COAX. COUPLING CABLE ASSY.		NJ-TP-3DXV-1 (3D-XV *1M*) CODE NO. 000-123-809	2	
4	絶縁テープ SELF-BONDING TAPE		U-TAPE 0.5X19X5M CODE NO. 000-800-985	1	
5	ビニールテープ NO.360 VINYL TAPE		0.2X19X10000 20/BLK IASON/ETHLON CODE NO. 000-835-215	1	
			CODE NO.		
			CODE NO.		
			CODE NO.		
			CODE NO.		
			CODE NO.		
GP-50MARK-2, GP-50MARK-3, GP-70MARK-2 GP-1800/1800F, GP-1810/1810F, GP-1800MARK-2 GP-8000, GP-8000MARK-2, GP-8000MARK-2SH					
					図番 (1/1) DWG. NO. C0014-M19-C

CODE NO.	004-372-120
TYPE	CP20-01710

工事材料表 INSTALLATION MATERIALS		アンテナケーブルセット ANTENNA CABLE SET			Option
番号 No.	名称 NAME	略図 OUTLINE	型名 / 規格 DESCRIPTIONS	数量 Q'TY	用途 / 備考 REMARKS
1	アンテナケーブル組品 ANTENNA CABLE ASSY.		8D-FB-CV *50M* CODE NO. 000-117-599	1	
2	同軸コネクタ COAX. CONNECTOR		N-P-8DFB CODE NO. 000-111-549	1	
3	変換ケーブル組品 COAX. COUPLING CABLE ASSY.		NJ-TP-3DXV-1 (3D-XV *1M*) CODE NO. 000-123-809	2	
4	絶縁テープ SELF-BONDING TAPE		U-TAPE 0.5X19X5M CODE NO. 000-800-985	1	
5	ビニールテープ NO.360 VINYL TAPE		0.2X19X10000 20/BLK IAON/ETHLON CODE NO. 000-835-215	1	
			CODE NO.		
			CODE NO.		
			CODE NO.		
			CODE NO.		
			CODE NO.		

GP-50MARK-2, GP-50MARK-3, GP-70MARK-2
 GP-1800/1800F, GP-1810/1810F, GP-1800MARK-2
 GP-8000, GP-8000MARK-2, GP-8000MARK-2SH

図番 (1/1)
 DWG. NO. C0014-M20-C

2. Display Unit

1. Mounting Considerations

The display unit can be mounted on a tabletop, on the overhead, or in a panel. Install the unit where the LCD can be easily viewed and the keyboard can be easily operated. Be sure to leave sufficient space on the sides and the rear of the unit for maintenance purposes. Leave sufficient slack in cables so the unit can be dismantled from the hanger with the connectors connected.

In addition to the aforementioned points, observe the following precautions.

- Keep the display unit out of direct sunlight or at least shaded to maintain display tone and because of heat that can build up inside the cabinet.
- The ambient temperature and humidity change should be moderate and stable.
- Locate the unit away from exhaust pipes and vents.
- The mounting location should be well ventilated.
- Mount the unit where shock and vibration are minimal.
- The fuse holder in the power cable is waterproof to specification IEC529 IPX-2. Locate the power cable away from water splash.

2. Mounting

Mount the unit by referring to the drawing on page D-2.

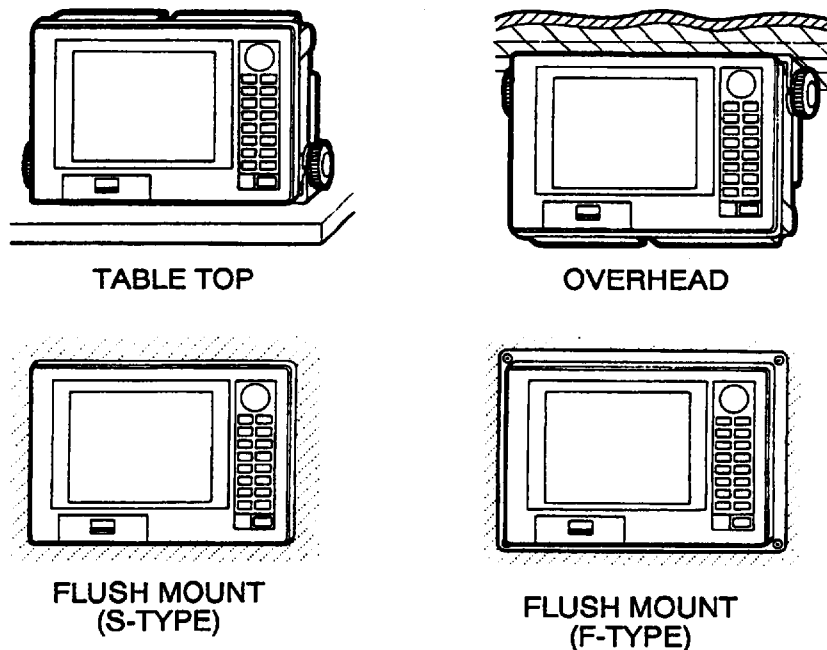


Figure 1 Display unit mounting methods

3. Antenna Unit

1. Mounting

Mount the antenna unit by referring to the drawing 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, 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 obstruct reception of the GPS satellite signal if it freezes.

2. Examples of Mounting Location

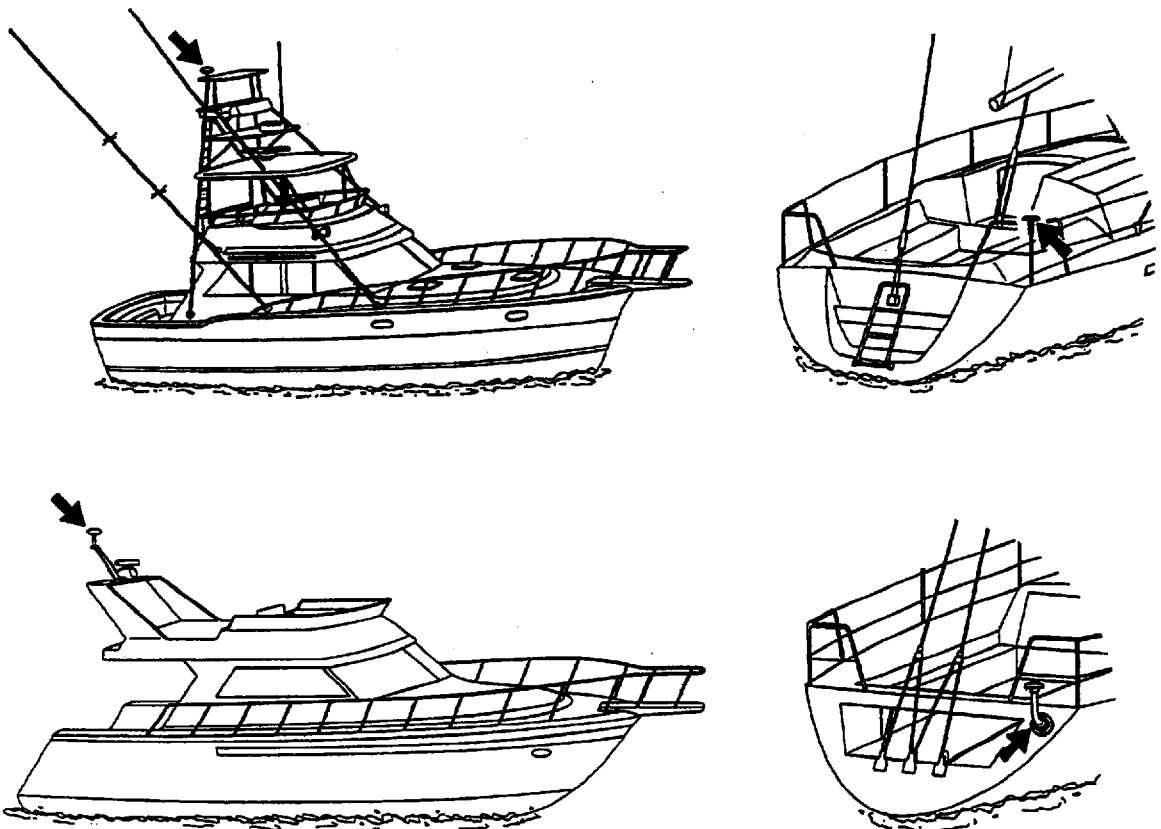


Figure 2 Antenna unit mounting locations

3. Fabrication of Optional Antenna Cables

The standard cable is 15 m long and comes with connectors. 30 m and 50 m long cables are optionally available.

Name	Type	Code No.
30 m Antenna Cable Set	CP20-01700	004-372-110
50 m Antenna Cable Set	CP20-01710	004-372-120

Each set contains extension cable, two connector conversion cables, coaxial connector, vulcanizing tape and vinyl tape.

◆ Fabrication of cable

- 1) Shorten the antenna cable as necessary.
- 2) Fabricate the end of the cable and attach the coaxial connector as shown on the next page.

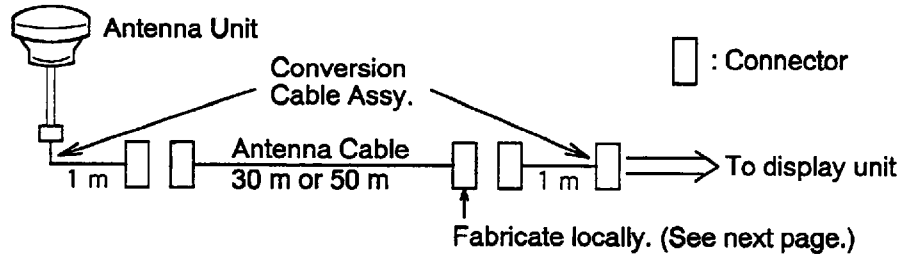


Figure 3 Installation of optional cable

◆ Waterproofing the connector

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

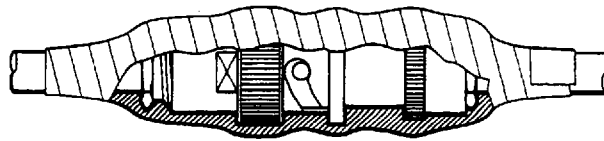
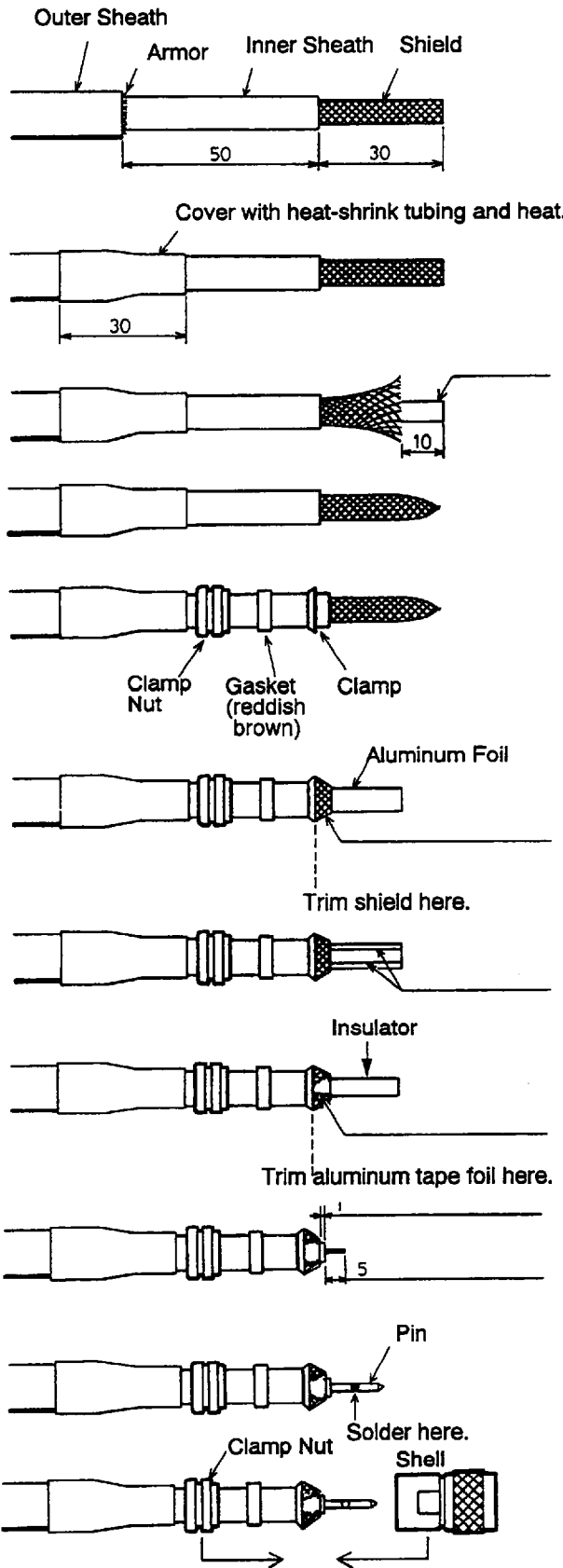


Figure 4 How to waterproof the antenna connector

How to attach the N-P-8DFB connector (dimensions in millimeters)



Remove outer sheath and armor by the dimensions shown left. Expose inner sheath and shield by the dimensions shown left.

Cover armor with heat-shrink tube.

Remove insulator and core by 10 mm.

Twist shield end.

Slip clamp nut, gasket and clamp or cable as shown left.

Fold back shield over clamp and trim.

Cut aluminum foil at four places, 90° from one another.

Fold back aluminum foil onto shield and trim.

Expose the insulator by 1 mm.

Expose the core by 5 mm.

Slip the pin onto the conductor. Solder them together through the hole on the pin.

Insert the pin into the shell. Screw the clamp nut into the shell. (Tighten by turning the clamp nut. Do not tighten by turning the shell.)

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

4. Wiring

Figure 6 shows where to connect cables at the rear of the display unit.

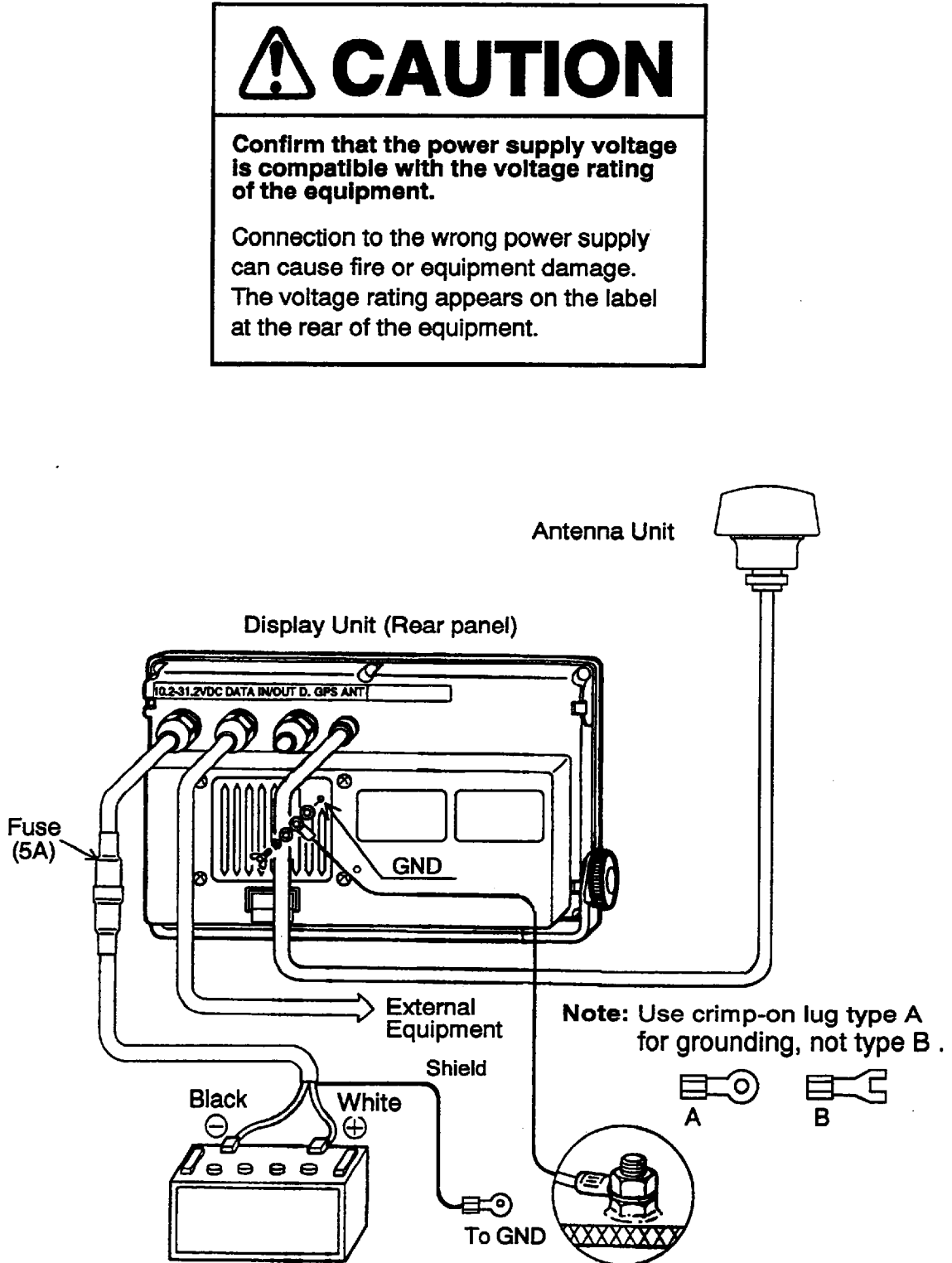
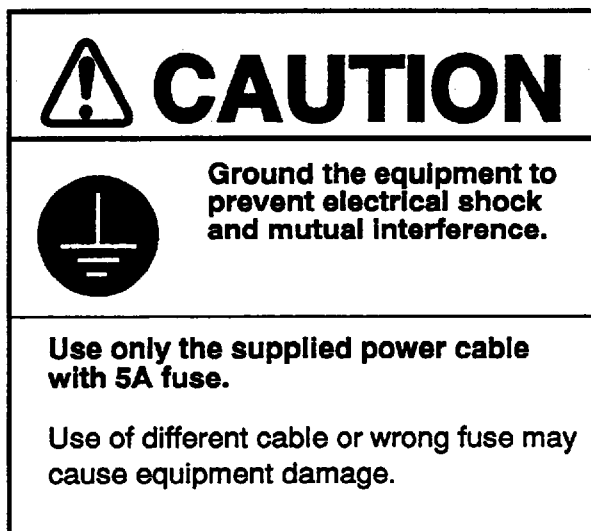


Figure 6 Connections at rear of display unit

1. Power Cable

The display unit operates on 10.2 to 31.2 VDC (measured at **POWER** jack on display unit). Connect the plug on the power cable to the **POWER** jack at the rear of the display unit. Connect the other end to the power supply; white wire to the plus (+) terminal, black wire to the minus (-) terminal, and shield wire to bolt fastened to ship's superstructure.



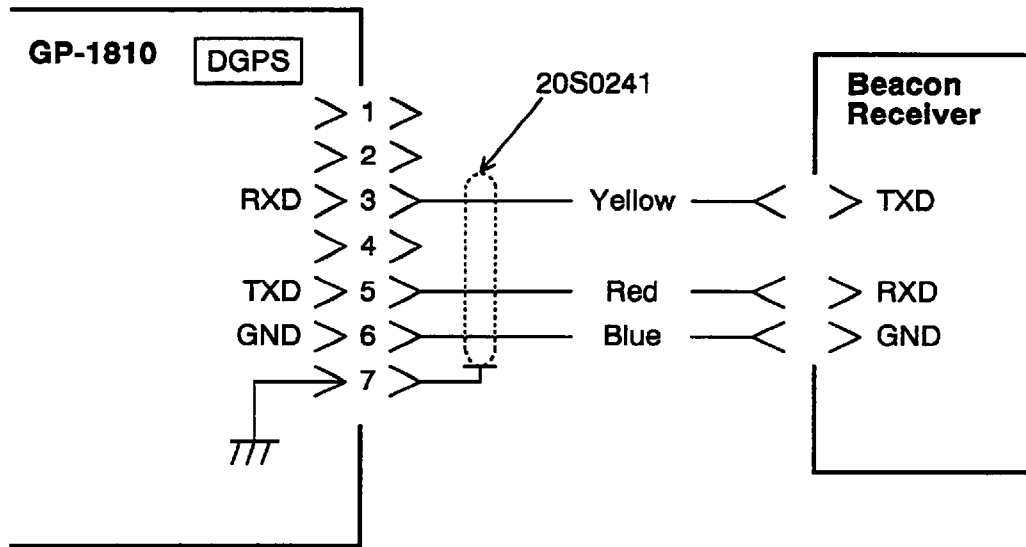
2. External Equipment

The DATA IN/OUT port connects external equipment such as autopilot, radar, or navigation equipment. An interconnection cable is optionally available. See the table on page 1.

3. DGPS Beacon Receiver

The DGPS port connects a DGPS beacon receiver, which picks up a beacon signal (RS-232C or RS-422 level) for correction of GPS position fix.

Connection for RS-232C level Beacon Receiver



Connection for RS-422 level Beacon Receiver

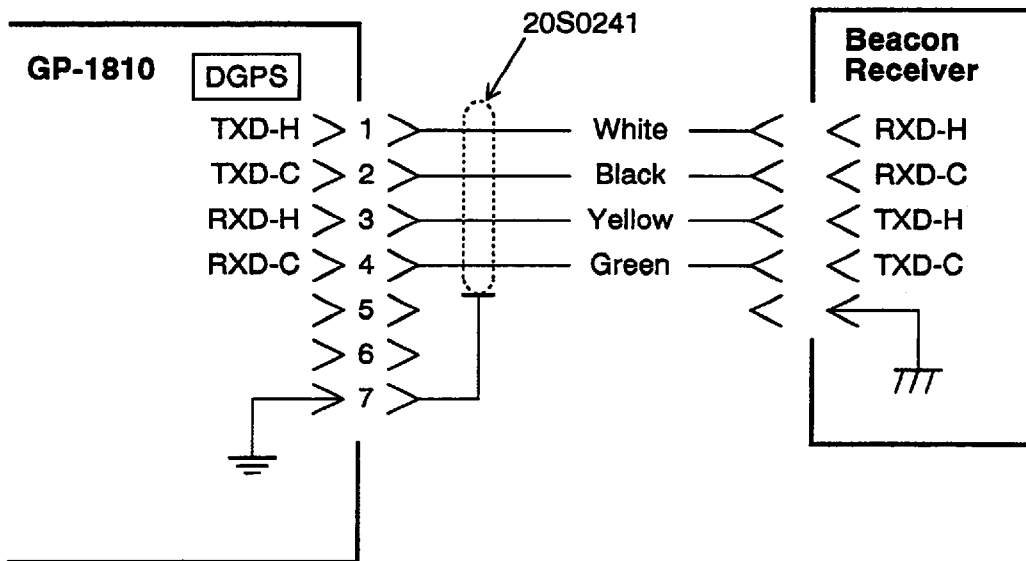


Figure 7 Connection with DGPS beacon receiver

5. Initial Setting

1. Procedure

- 1) Press the **POWER** key.
- 2) Press the **MENU** key. The MAIN menu appears.
- 3) Press **9** to select the SYSTEM SETUP menu.
- 4) Set the items, using the arrow keys and numeral keys, according to the user's requirements. Items marked by arrows in Figure 8 must be set after installation. The figure below factory settings

SYSTEM SETUP 1/2		▲▼ : Next, Previous Page	
Memory Apportion	Trk=	1000pt/8000pt	
Unit of Distance	nm	km	sm
Unit of Depth	m	ft	Fa ㄷ ㄱ PB
Unit of Temp	°C	°F	
Navaid	Int GPS	Ext GPS	LC DC All
Scale/Range	Scale	Range	
Rec Resolution	2		
Posn Display	Lat/Long	LOP	
LOP Display	LA	LC	No
LA Chain	00-01	△+000.0 μs	△+000.0 μs
LC Chain	00:11-26	△+000.0 μs	△+000.0 μs
Smoothing Factor	00 (0-15)		
Speed Average Time	01 minute		
Bearing Ref.	True Brg	Mag Brg	
Mag. Variation	Auto (07°W)	Man (00°E)	
Output Data Fmt	NMEA-180	NMEA-183V1.5	NMEA-183V2.0
External Device	Autopilot	AP + RADAR	Navaid
▲▼◀▶ : Select		ENT: End	MENU: Escape

SYSTEM SETUP 2/2		▲▼ : Next, Previous Page	
Time Difference	+00:00		
GPS Posn Smooth	00 (00-99)		
GPS Speed Smooth	05 (00-99)		
Antenna Height	+005m		
DOP Threshold	20 (2-99)		
Fix Mode	2D	2/3D	
Geodetic Datum	Tokyo	WGS-84	WGS-72 Other (_ _)
Position Offset	00.000'N	00.000'E	
Disabled Satellite	Rstr	Disable (_)	
DGPS Mode	On	Off	
RTCM Version	1.0	2.0	
Byte Format	8-6	8-8	
First Bit	MSB	LSB	
Parity Bit	Even	Odd	None
Stop Bit	1	2	
Bit Rate	7	8	
Baud Rate	9600(300◀▶9600)		
Clear Memory	No	PLT	GPS All
Position	38° 00.000' N	123° 00.000' W	
D.GPS Level	RS-422	RS-232	
▲▼◀▶ : Select		ENT: End	MENU: Escape

Figure 8 System Setup menu

2. Entering Antenna Height

- 1) Select the ANT HEIGHT item using the arrow keys.
- 2) Enter the height (3 digits) of the GPS antenna above sea level using the numeral keys.
- 3) Press the **ENT** key.

3. Entering Time Difference/Geodetic Datum

- 1) To use local time instead of UTC time, enter time difference between local time and UTC time; + for eastern longitude, – for western longitude.
- 2) Enter geodetic datum referring to nautical chart for your operating area.

4. Setting for External Navigation Equipment

The following settings are required when external navigation equipment; autopilot, remote display, etc., is connected to the DATA IN/OUT jack.

- 1) “Navaid” selection
Normally INT GPS position is selected. If the internal GPS receiver becomes defective, select EXT GPS, LC (Loran C) or DC (Decca navigator) position as applicable. The selected navigation equipment is indicated at the upper right corner on the display.
- 2) “Output data format” and “External device” selection
Set a communication format and external device according to the navigation equipment connected.

NMEA 0180 simple data format

Cross track error is output.

NMEA 0183 version 1.5 or 2.0 data format

Output Data

	Sentence
For Autopilot	AAM, APA (version 1.5), GLL, VTG, XTE, APB (version 2.0), BOD, BWC
For AP + RADAR	AAM, APA (ver. 1.5), APB (ver. 2.0), BOD, BWC, VTG, XTE, BWR, GLL, RMC, ZDA, RMB, GGA, GTD
For Navaid	GLL, RMC, VTG, BWR, ZDA, RMB, GGA, GTD, XTE

Input Data

	Sentence
For autopilot	AGFPA, GGA, GLL, BWC, RMA, VTG, ZDA, MTW, WPL, TTL, DBT (ver. 1.5), DPT (ver. 2.0)
For AP + RADAR	BWR, GGA, GLL, MTW, RMA, RMB, RMC, WPL, TLL, VTG, ZDA, DBT (ver. 1.5), DPT (ver. 2.0)
For Navaid	GGA, GLL, MTW, RMA, RMB, RMC, VTG, BWR, WPL, TLL, ZDA, DBT (ver. 1.5), DPT (ver. 2.0)

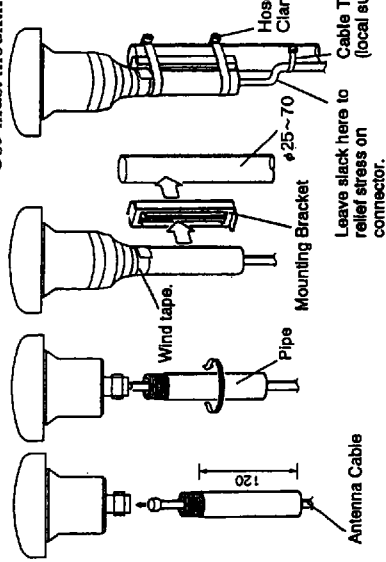
5. Setting for DGPS Beacon Receiver

The following settings are required when a DGPS beacon receiver is connected to the DGPS jack. Before setting up, refer to the DGPS beacon receiver specifications.

- 1) Press the **MENU** key. The MAIN menu appears.
- 2) Press **9** to select the SYSTEM SETUP menu.
- 3) Set the DGPS MODE to the ON position using arrow keys and set the following items according to the specifications of the beacon receiver.
 1. DGPS Mode
 2. RTCM Version
 3. Byte Format
 4. First Bit
 5. Parity Bit
 6. Stop Bit
 7. Bit Rate
 8. Baud Rate
 9. DGPS Level

A) Mast mounting

Use mast mounting kit CP20-01111.

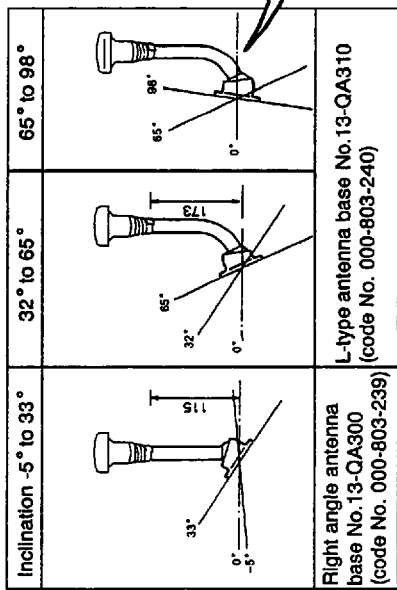


NOTES

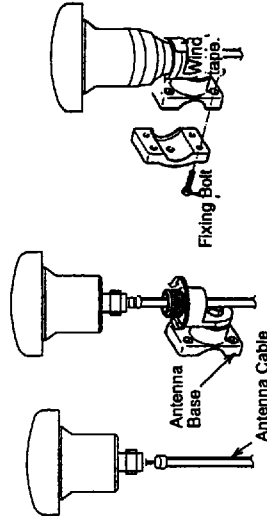
- 1) Fasten pipe to antenna first then fix them to mast.
- 2) When fixing antenna to pipe, turn pipe, not the antenna. Turning the antenna may twist the cable and place stress on connector.

B) Antenna base mounting

Use optional antenna base No.13-QA300 or No.13-QA310.



C) Handrail mounting

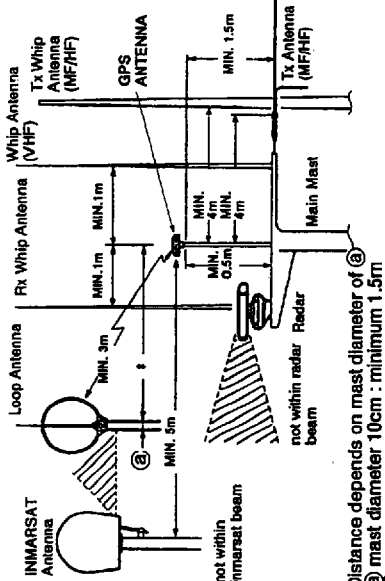


NOTES

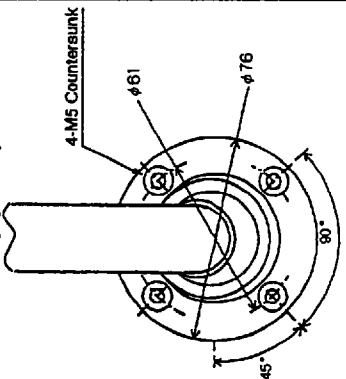
- 1) Fasten antenna base to antenna first then fix them to handrail.
- 2) When fixing antenna to antenna base, turn antenna base, not the antenna. Turning the antenna may twist the cable and place stress on connector.

Mounting location

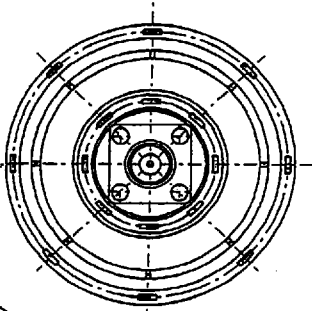
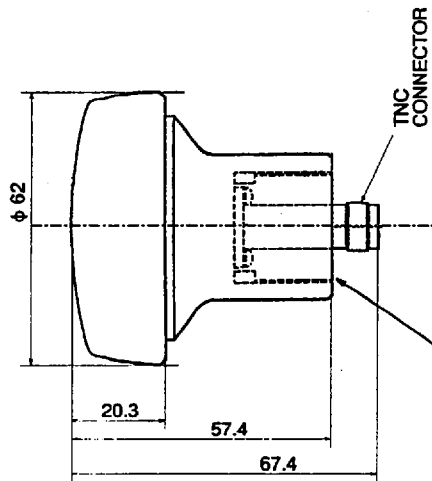
The figure below shows the recommended separation distances from other antennas to avoid mutual interference.



Mounting dimensions of antenna base (option)



Use handrail mounting base No.13-RC5160 (Code No. 000-861-114, option). The diameter of the handrail may be from φ 19mm to φ 32mm.



Thread Type	Threads per 25.4 mm (1 inch)	Pitch	Thread Length	Pitch Diameter
1 X 14UNS1B	14	1.8143 mm	15.17 mm	24.17 mm

ITEM NO.	DESCRIPTION	TYPE	NAME
GP-50MK2	GP-50MK2	TYPE	GPA016
PS-8000M2	PS-8000M2	名称	変圧機部
GP-16000F	GP-16000F		
GP-8000M2	GP-8000M2		
GP-5100M2	GP-5100M2		
GP-80	GP-80	APPLICABLE TO:	ANTENNA UNIT
		MODEL	
		SCALE	0.1kg
		MASS	
		BLOCK NO.	
		NAME	ANTENNA UNIT
		DATE	
		DRAWING NO.	F2374-G04-D

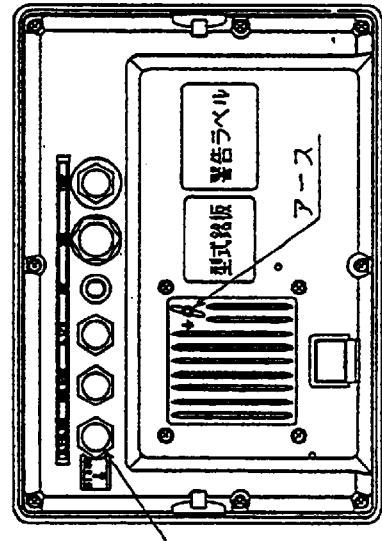
4

3

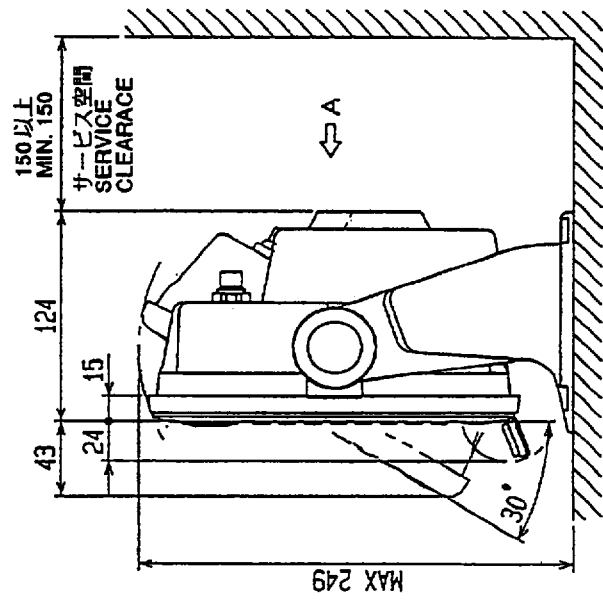
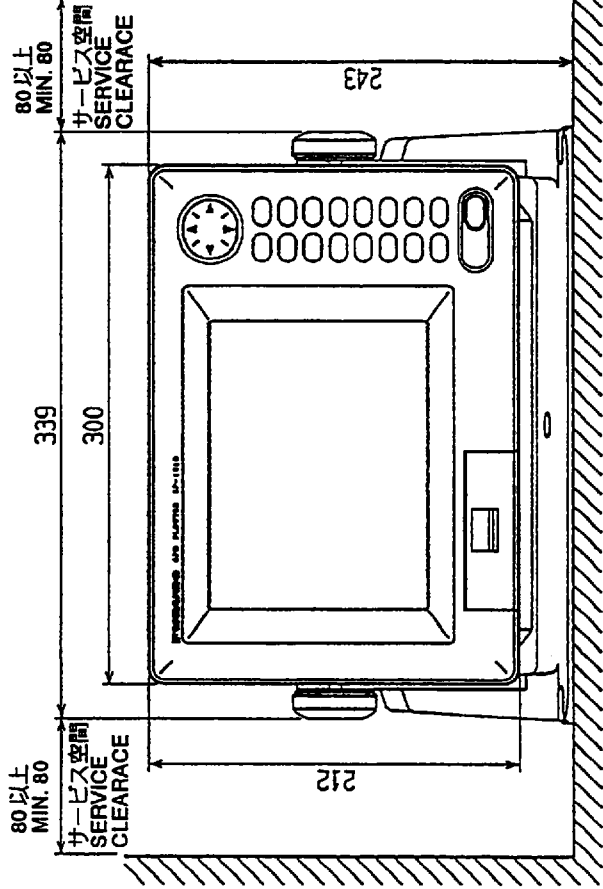
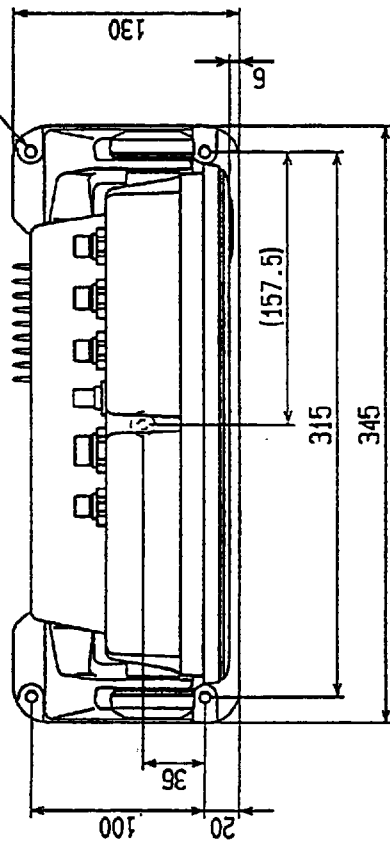
2

1

5-φ6 差挿用穴
FIXING HOLES



矢視 A
VIEW A



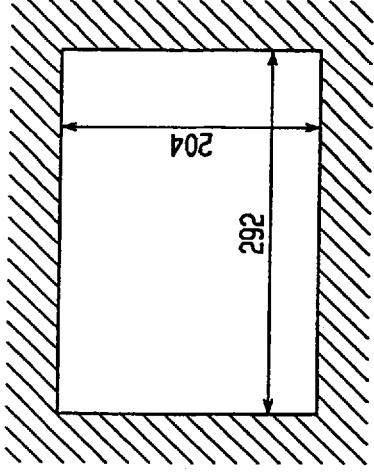
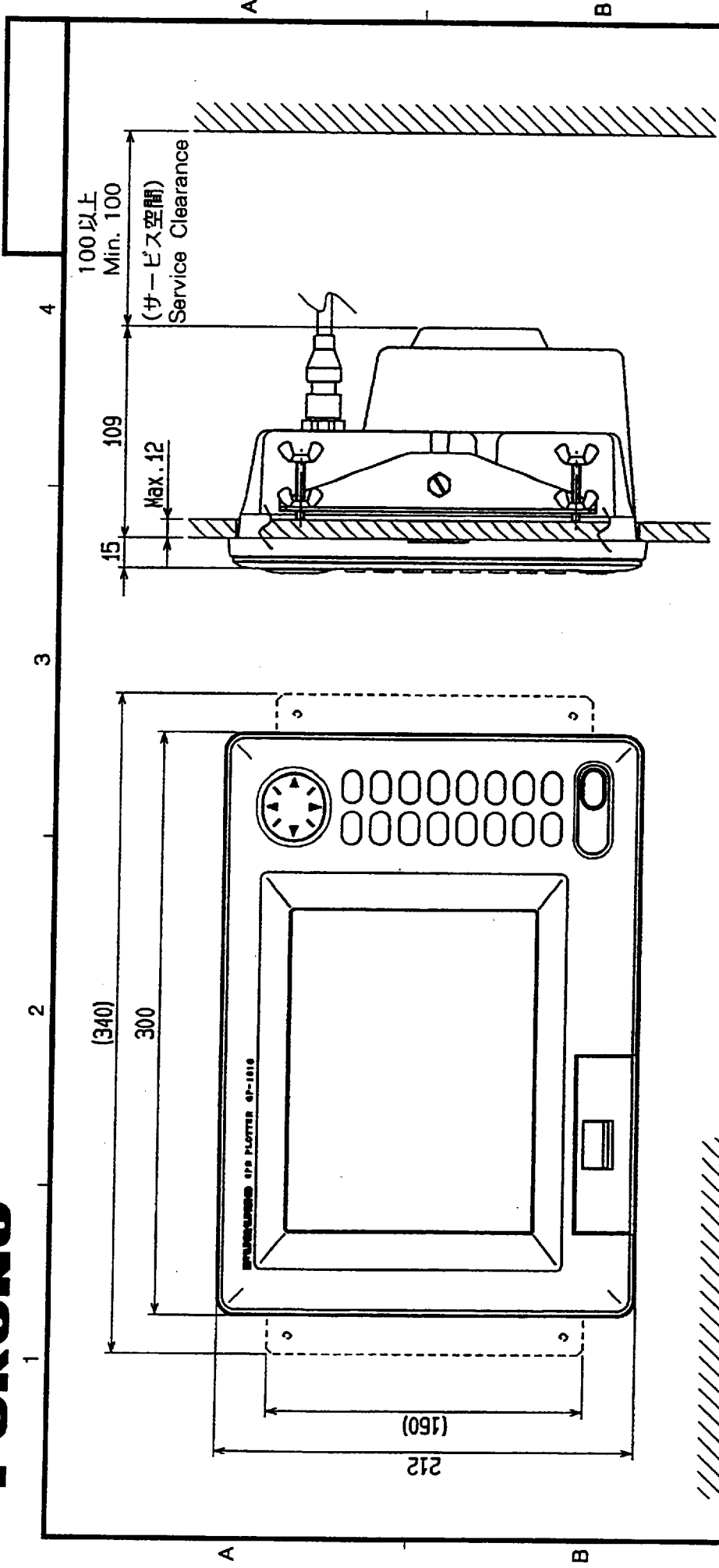
A

B

C

DRAWN Feb. 7, '96 MIYOSHII	TYPE GP-1810/F
CHECKED Feb. 7 '96 TAKAHASHI	名称 GPSプロッタ/GPSプロッタ魚探
APPROVED A/R 8/96 K OKAMOTO	外寸図
SCALE 1/3	NAME GPS PLOTTER/SOUNDER
DMG NO. C4377-602-A	BLOCK NO.
	APPLICABLE TO: (MODEL) GP-1810/F
	OUTLINE DRAWING

FURUNO

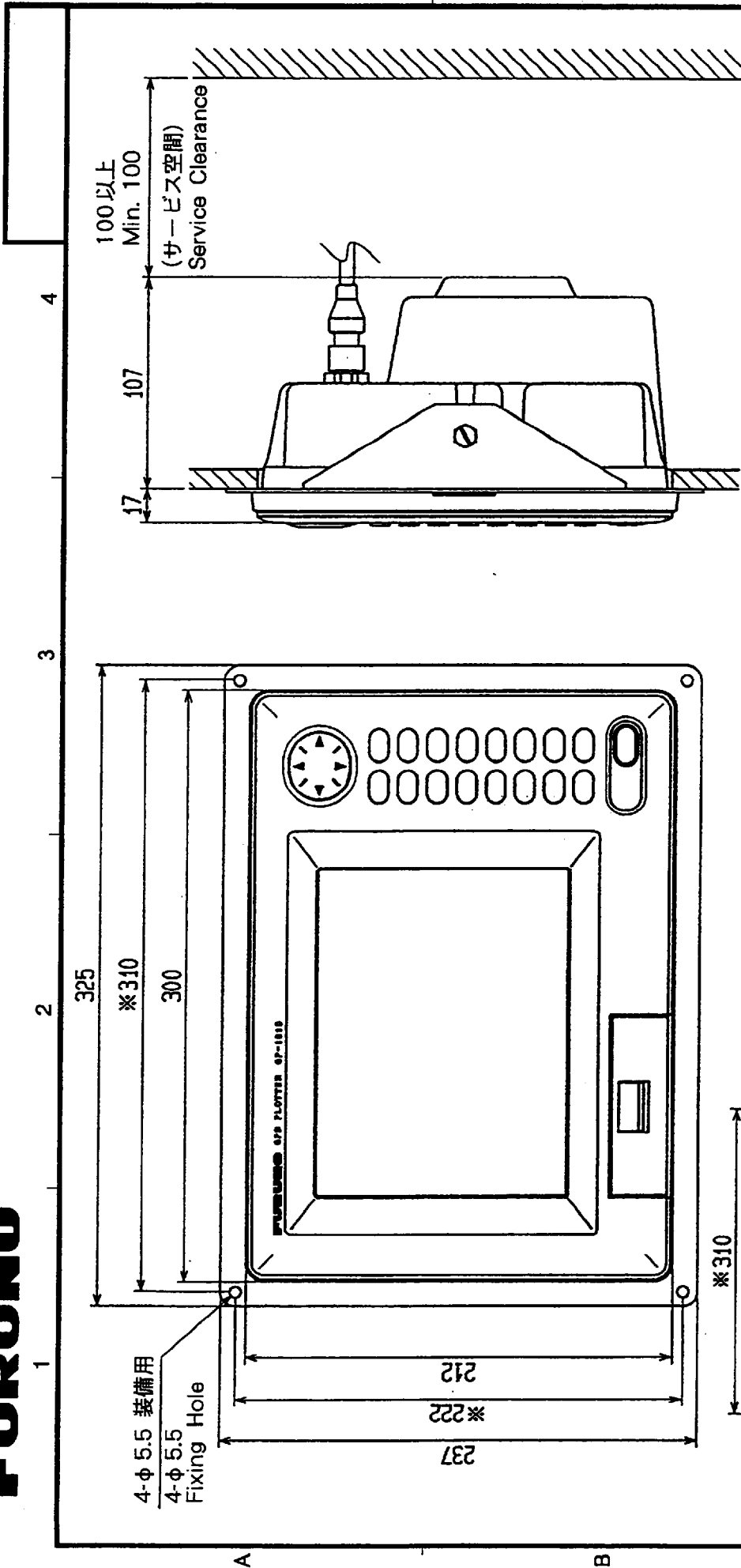


取付穴寸法図 (参考図)
 (尺度 1/6)
 Cutting Dimension (Reference)
 Scale 1/6

表 1 TABLE 1

取付寸法	公差	TOL
L ≤ 50	± 0.1mm	
50 < L ≤ 100	± 0.2mm	
100 < L ≤ 500	± 0.3mm	

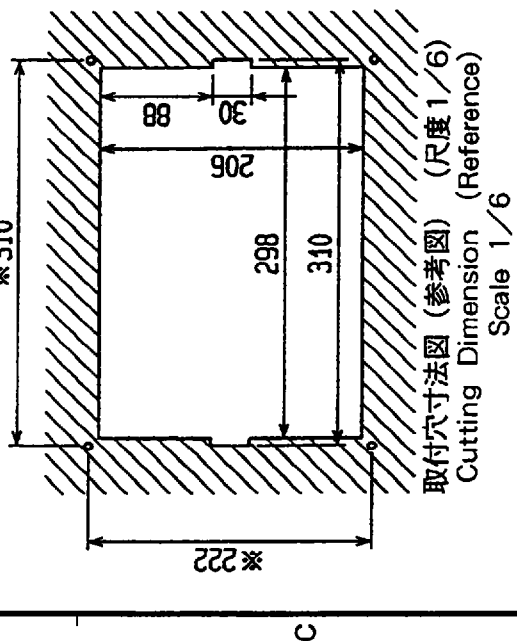
DRAWN JUN. 16 '97 T. YAMASAKI	TYPE GP-1810/F
CHECKED JUN. 16, 1997 K. MASUNAGA	名称 GPSプロッター (フラッシュマウントS)
APPROVED JUN. 16 '97 H. YAMAGUCHI	外寸図
SCALE 1/3	NAME GPS PLOTTER (FLUSH MOUNT S)
MASS 3 kg	BLOCK NO.
DWG NO. C4378-G01-B	14-054-1210-G0
	OUTLINE DRAWING



注1) ※印寸法は取付穴位置寸法とする。
 注2) 取付けネジはタピンネジ呼び径5×20を使用。
 Note 1) ※: MOUNTING DIMENSIONS
 Note 2) USE TAPPING SCREWS φ 5x20 FOR FIXING THE UNIT

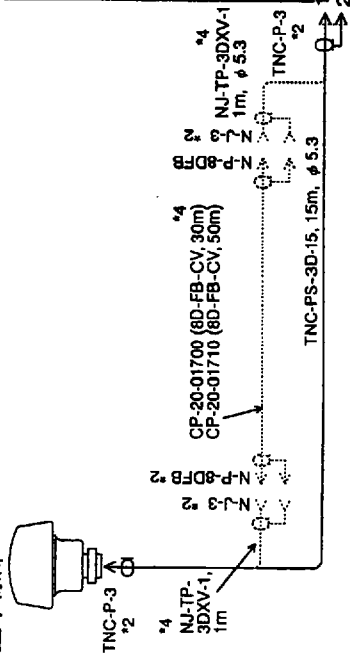
表 1 TABLE 1

単位	寸法	公差	公差
UNIT	DIMENSION	TOL.	TOL.
mm	LESS	±0.10	±0.10
mm	MORE	±0.10	±0.10

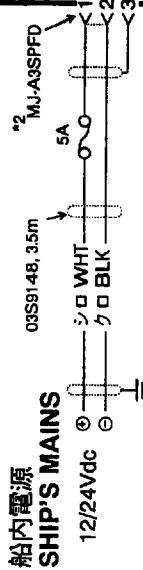


DRAWN JUN. 16 '97 T. YAMASAKI	TYPE GP-1810/F	名称 GPSプロッタ (フラッシュマウントF)
CHECKED JUN. 16 '97 K. Kusunoki	GP-1810F	外寸図
APPROVED JUN. 16 '97 H. Yamaguchi	GP-1810	GPS PLOTTER (FLUSH MOUNT F)
SCALE 1/3 MASS 3 kg	APPLICABLE TO: (MODEL)	NAME
DWG NO. C4378-G02-B	BLOCK NO.	OUTLINE DRAWING
	14-054-1220-GO	

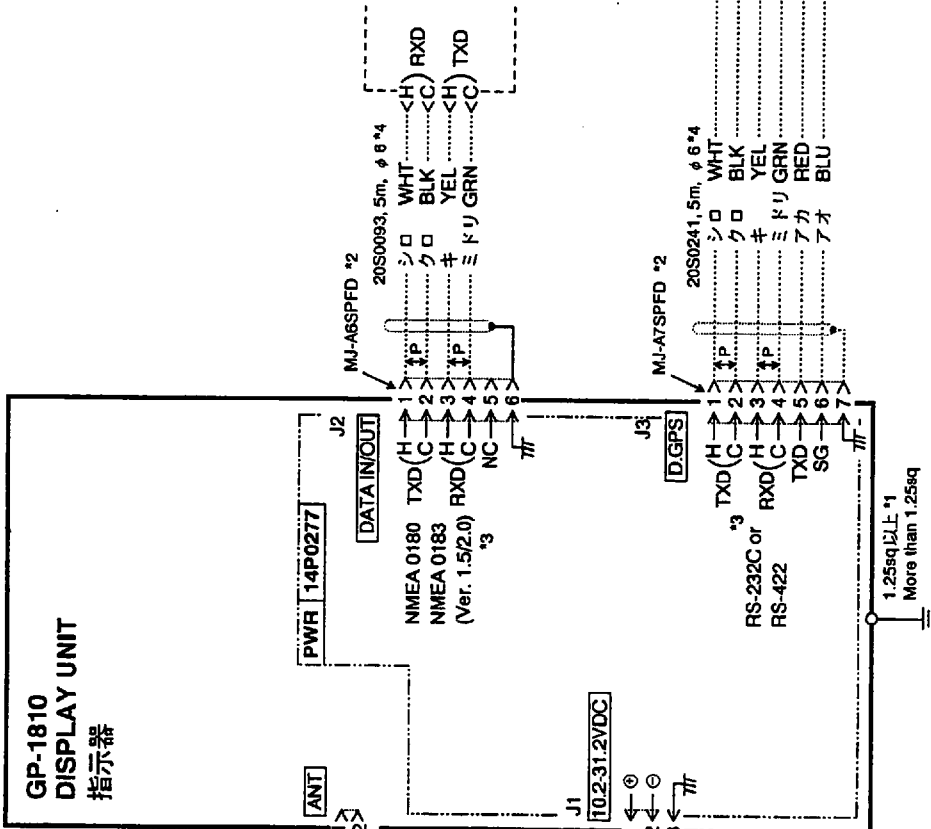
**GPA-016
ANTENNA UNIT
空中線部**



**船内電源
SHIP'S MAINS**



**GP-1810
DISPLAY UNIT
指示器**



- RADAR
- ECHOSOUNDER
- AUTOPILOT
- INTERFACE UNIT
- REMOTE DISPLAY
- TEMP. INDICATOR

- レーダー
- 魚群探知機
- オートパイロット
- インタフェース
- リモート表示器
- 水温計など

DGPS BEACON RECEIVER
(For RS-232C, connect #3 and 6.
For RS-422, connect #3 and 4.

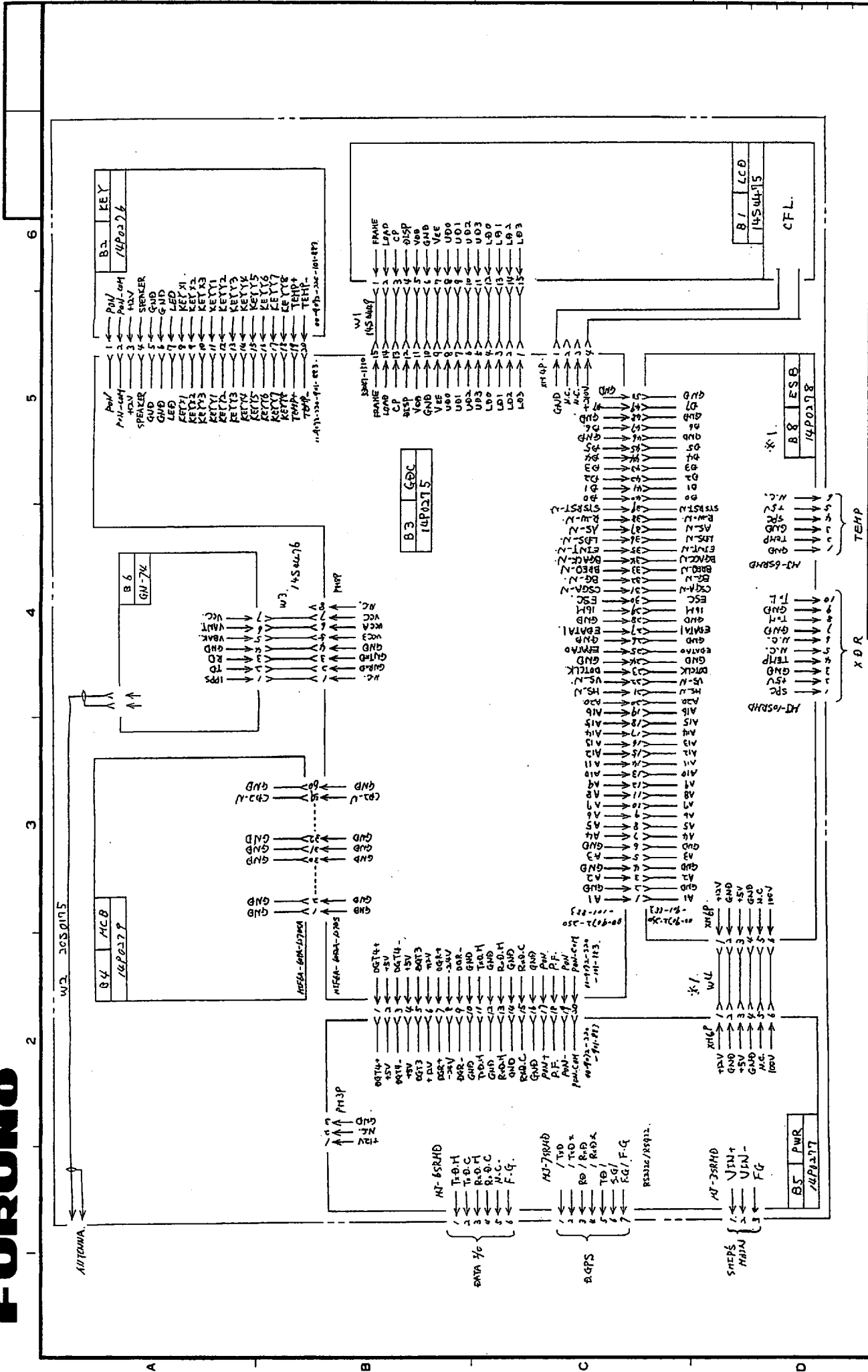
DGPS ビーコン受信機
(RS-232Cの時、#3, 6に接続
RS-422の時、#3, 4に接続

- 注記
- *1: 現地手配
 - *2: コネクタは工場にて取付済
 - *3: メニューにて選択
 - *4: オプション

Note

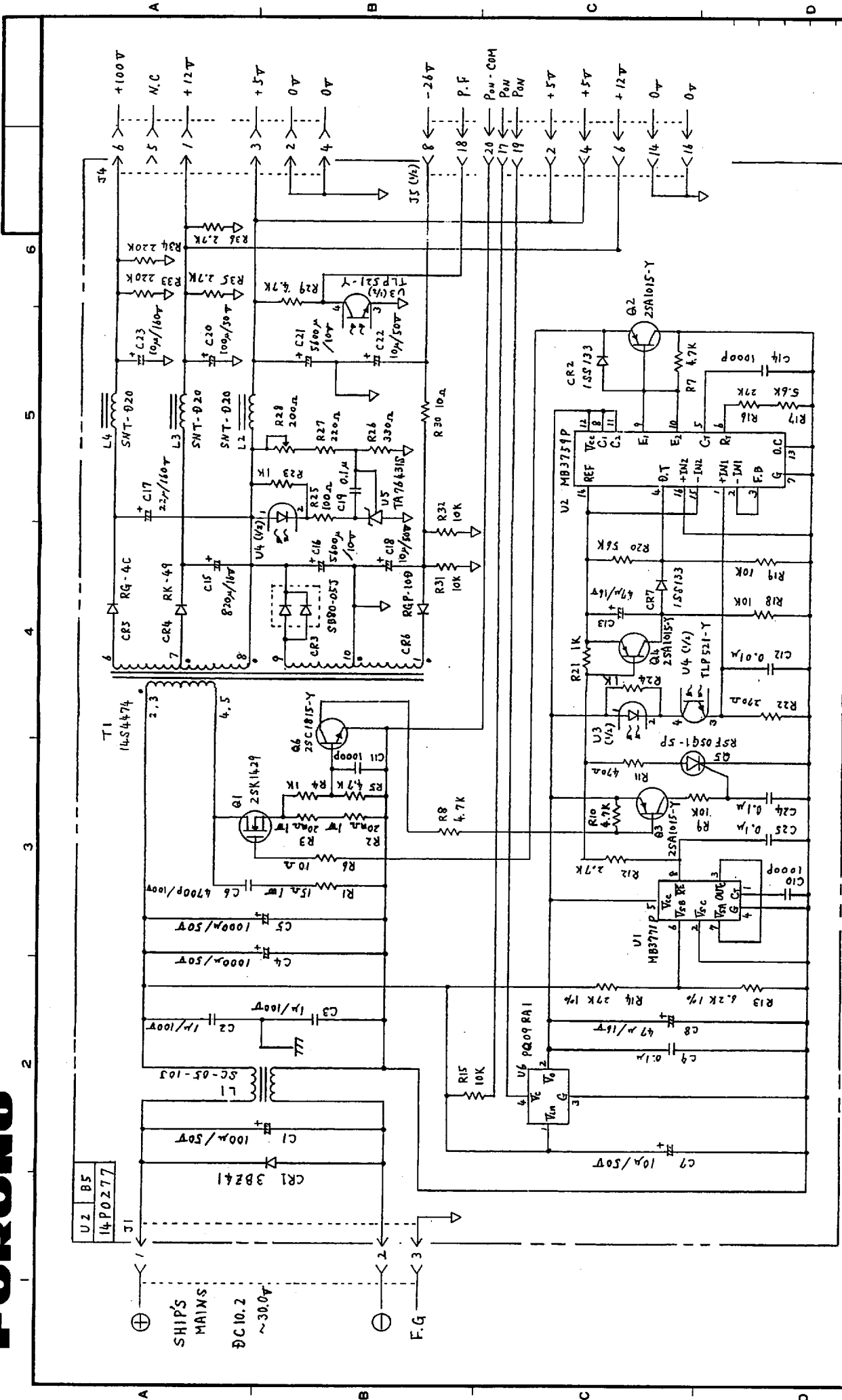
- *1: To be supplied locally.
- *2: Factory-wired
- *3: Selectable on MENU.
- *4: Optional supply

DRN	May 14 1997	TYPE	GP-1810
CHECKED	T. YAMASAKI	名称	GPSプロッタ
APPROVED	T. SHIBUO	NAME	相互接続図
SCALE	1/1000	BLOCK NO.	
APPLICABLE TO:	(MODEL)	GPS PLOTTER	
DWG NO.	C-4378-C01-B	INTERCONNECTION DIAGRAM	



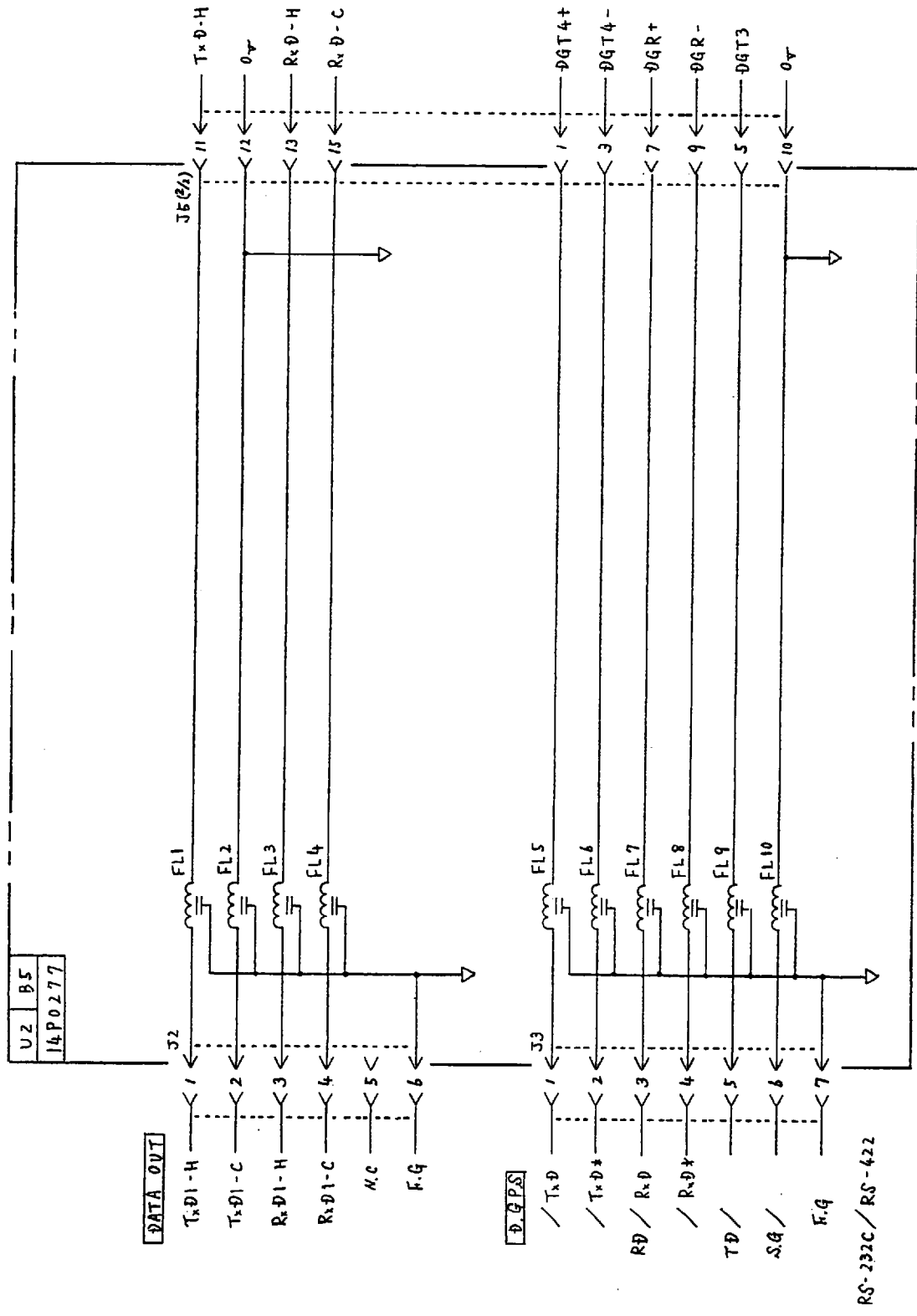
DRIVER	TYPE	GP-1810/F
CHKCD	名称	総合
APPROVED	回路図	GENERAL
SCALE	BLOCK NO.	
MODEL	NAME	
kg	(MODEL)	

* 1 : GP-1810Fのみ装備
Only for GP-1810F



TYPE	14P0277
名称	電源部1
DRAWN	Feb. 13 '74 T. YAMASAKI
CHECKED	Apr. 6 '74 TAKAHASHI
APPROVED	GP-1810F
SCALE	4:1 K OWA MOTO
SCALE	1/8 K OWA MOTO
APPLICABLE TO:	(MODEL)
DWG. NO.	14P0277
REV.	1
DATE	1974.02.13
FIG. NO.	1
BLOCK NO.	2B 5
FIG. NO.	2B 5
NAME	回路図
POWER BOARD(1)	

A
B
C
D



DRAWN Feb 13 '96 T. YAMASAKI				TYPE 14P0277
CHECKED MAR 6 '96 TAKAHASHI				名称 電源部 2
APPROVED MAR 6 '96 KOKAMOTO		GP-1810F GP-1810	2B 5 2B 5	回路図
SCALE x	MASS — kg	APPLICABLE TO; (MODEL)	BLOCK NO.	NAME POWER BOARD(2)
Dwg NO. C4378-K03- A		14-054-2002- 0		SCHEMATIC DIAGRAM