Automatic Identification System

JHS-182

Instruction Manual

JRC *Japan Radio Co., Ltd.*

Automatic Identification System
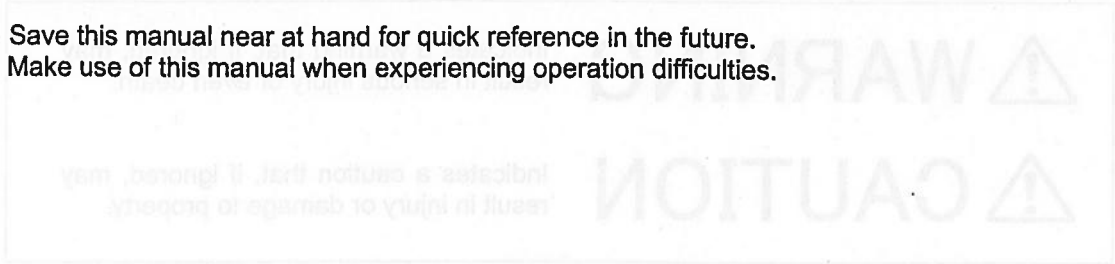
JHS-182

Instruction Manual

Preface

Thank you for purchasing JHS-182 Automatic Identification System.

JHS-182 is the Class A shipborne equipment of the universal Automatic Identification System.

- Be sure to read this manual for full comprehension before using the equipment.

- Save this manual near at hand for quick reference in the future.
  Make use of this manual when experiencing operation difficulties.

Concerning the symbols

This manual uses the following symbols to explain correct operation and to prevent injury or damage to property.
The symbols and descriptions are as follows. Understand them before proceeding with this manual.

⚠ WARNING — Indicates a warning that, if ignored, may result in serious injury or even death.

⚠ CAUTION — Indicates a caution that, if ignored, may result in injury or damage to property.

Examples of symbols

The △ symbol indicates caution (including DANGER and WARNING).
The illustration inside the △ symbol specifies the content of the caution more accurately. (This example warns of possible electrical shock.)

The ⊘ symbol indicates that performing an action is prohibited.
The illustration inside the ⊘ symbol specifies the contents of the prohibited operation. (In this example disassembly is prohibited.)

The ● symbol indicates operations that must be performed.
The illustration inside the ● symbol specifies obligatory instructions. (In this example unplugging is the obligatory instruction.)

Concerning warning labels

A warning label is pasted to the top cover of this product.
Do not remove, damage or modify the label.

⚠ WARNING

Do not disassemble or customize this unit. Doing so may cause fire, electrical shock or malfunction.

Do not use a voltage other than specified. Doing so may cause fire, electrical shock or malfunction.

Do not touch any parts where this warning label is pasted. Doing so may cause electrical shock.

⚠ CAUTION

🚫 Do not use this equipment for anything other than specified.
Doing so may cause malfunction or damage to persons.

🚫 Do not turn the trimmer resistors or the trimmer capacitors on the PCB unit, except when and if they need to be adjusted.
Doing so may cause malfunction or damage to persons. They are preset at the factory.

🚫 Do not install this equipment in a place other than specified or in one with excessive humidity, steam, dust or soot. Doing so may cause fire, electric shock, malfunction or damage to persons.

🚫 Do not get this equipment wet or spill any liquids on or near this equipment.
Doing so may cause electrical shock or malfunction.

🚫 Do not place this equipment anywhere vibration or impact is likely to occur.
Doing so may cause a fall or damage to property and persons.

NTE-182 AIS Transponder
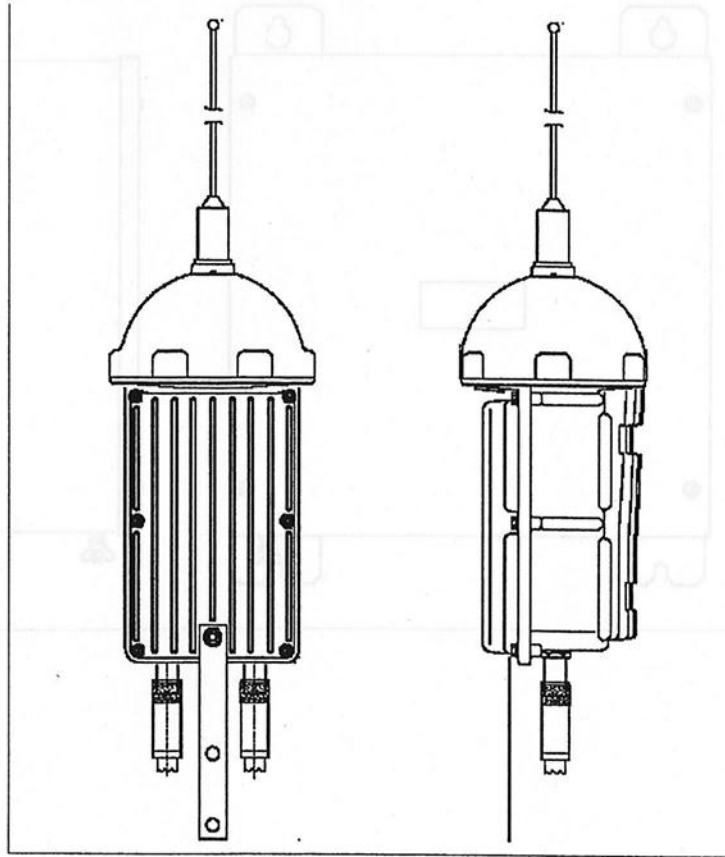
NCM-779 AIS Controller

NBD-577A Power Supply Unit

JRC NBD-577B POWER SUPPLY

AC INPUT:200-240V OR 100-120V
DC INPUT:24V
SET TO 200-240V AC
OUTPUT:24V DC 5.5A MAX

NQD-4382 Junction Box

CONTENTS

1. GENERAL

1.1 Outlines

Automatic Identification System (AIS) is a maritime navigation and radio communication system. This system intends to enhance the safety of life at sea, the safety and 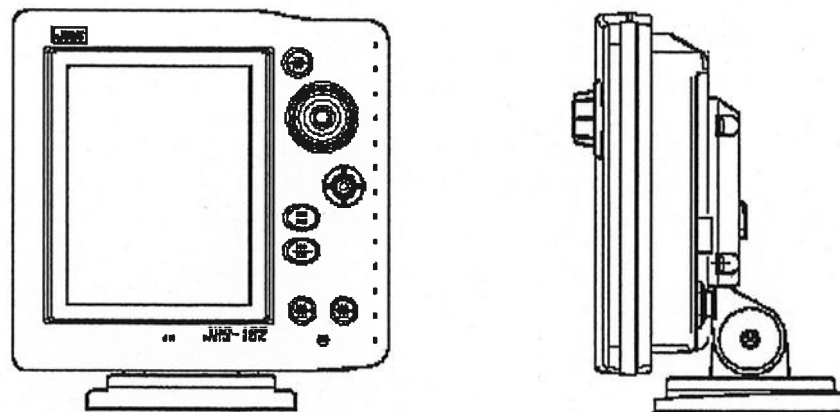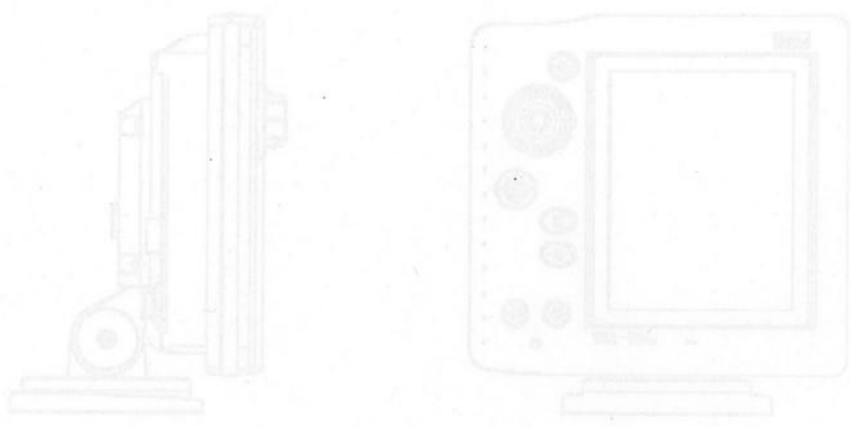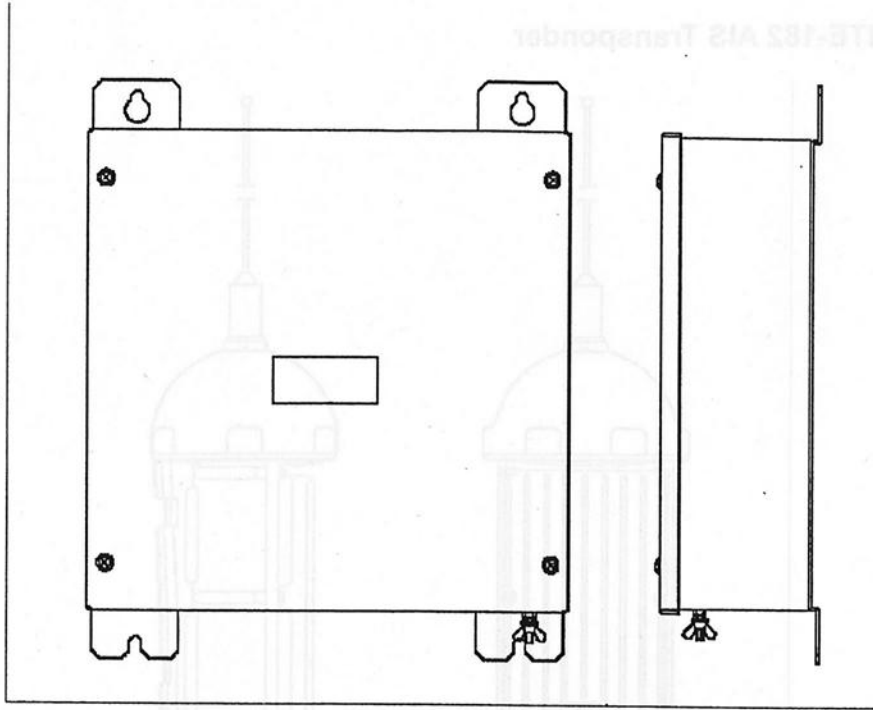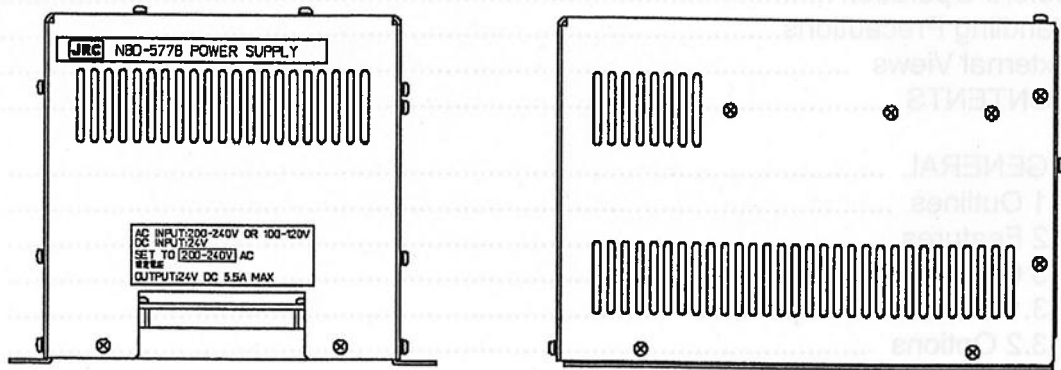efficiency of navigation and the protection of the marine environment by communicating navigational information automatically on VHF channels between ship and ship, ship and shore.

JHS-182 meets the requirements of the SOLAS Conventions for the Class A shipborne equipment of the universal AIS. JHS-182 mainly consists of AIS Transponder and AIS Controller. The combined antenna and transponder design allows installation at any convenient location on any vessels. The small and simple design controller allows easy installation and operation. JHS-182 employs the latest technologies such as digital signal processing, circuit integration technology, and these technologies ensure high performance and high reliability.

1.2 Features

● Fully Comply with International Regulations

JHS-182 is designed to meet the requirements of the SOLAS Conventions for the Class A shipborne equipment of the universal AIS and fully complies with international regulations: IMO MSC74(69) Annex 3, ITU-R M.1371, IEC61993-2, IEC60945 etc.

● Combined Antenna and Transponder for Ease of Installation

JHS-182 employs the combined antenna and transponder design. This design allows installation at any convenient location on any vessels. For the connection between abode deck component and below deck component, only one cable is needed.

● Increased Probability of Vessel Detection

JHS-182 is equipped with a guard zone alert function. When preset guard zone range and other vessel enters into the zone, JHS-182 indicates and sounds the alert. This function enhances probability of vessel detection.

● Recognition of Own-group Vessels

JHS-182 is equipped with a recognition of own-group vessels function. When preset own-group vessels' identification in advance, the display indicates the own-group vessel sign. This sign allows easy recognition of own-group vessels.

● Self-diagnosis Function

JHS-182 is equipped with a built-in automatic self-diagnosis function. This function allows easy maintenance and high system reliability.

● System Integration Availability

JHS-182 is equipped with various interfaces. These interfaces allow system integration and future expansions.

1.3   Components

1.3.1   Standard Components

No.	Name	Type	Quantity	Remarks
1	AIS Transponder	NTE-182	1	
2	AIS Controller	NCM-779	1	
3	Control Cable	7ZCJD0214	1	L=10m
4	Connection Box	NQE-3182	1	
5	Spare Parts	7ZXJD0049	1	Fuses
6	Instruction Manual	7ZPJD0226	1	

1.3.2   Options

No.	Options	Type	Quantity	Remarks
1	Power Supply Unit	NBD-577B	1	
2	Junction Box	NQE-4182	1	
3	Flash Mount Kit	MPBP	1	

1.4   Configuration

- **System Block Diagram**
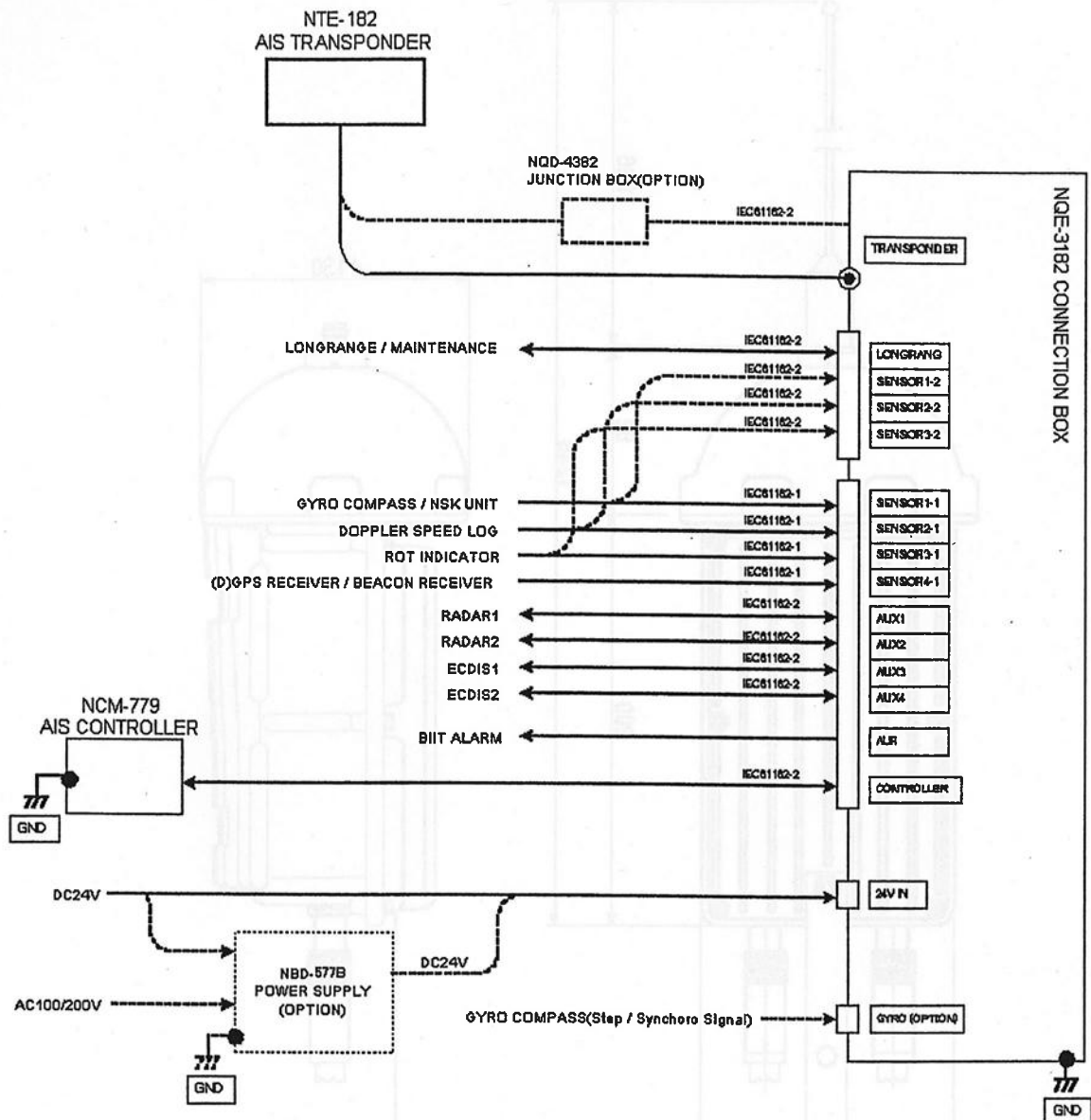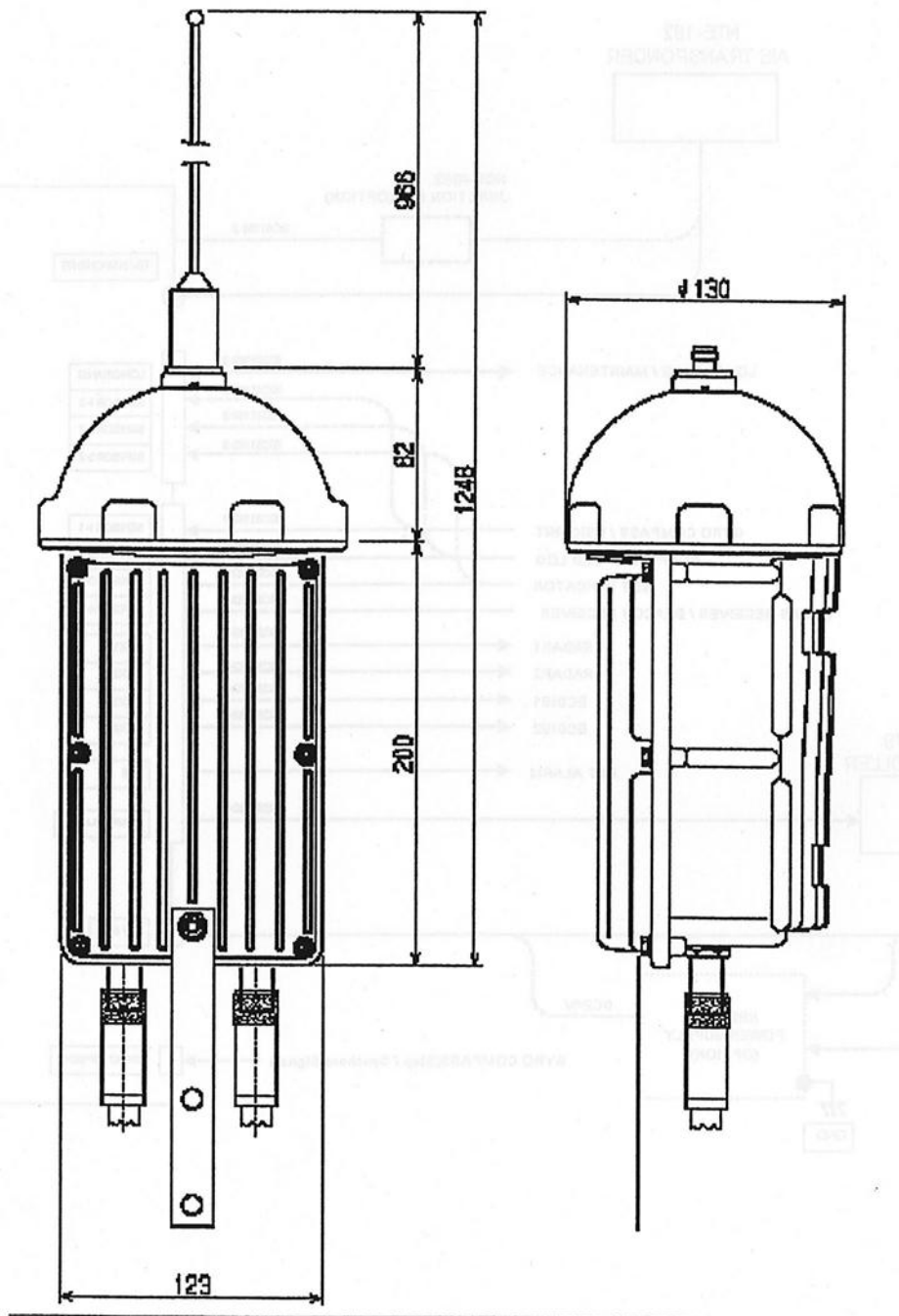
Unit: mm
Mass: approx. 2.5 kg

Unit: mm
Mass: approx. 1.1 kg

Unit: mm
Mass: approx. 2.4 kg

POWER SUPPLY
MODEL   NBD-577B
JRC Japan Radio Co.,Ltd.
MADE IN JAPAN

⚠ 警告 WARNING

JRC NBD-577B POWER SUPPLY

AC INPUT:200-240V OR 100-120V
DC INPUT:24V
SET TO 200-240V AC
OUTPUT:24V DC 5.5A MAX
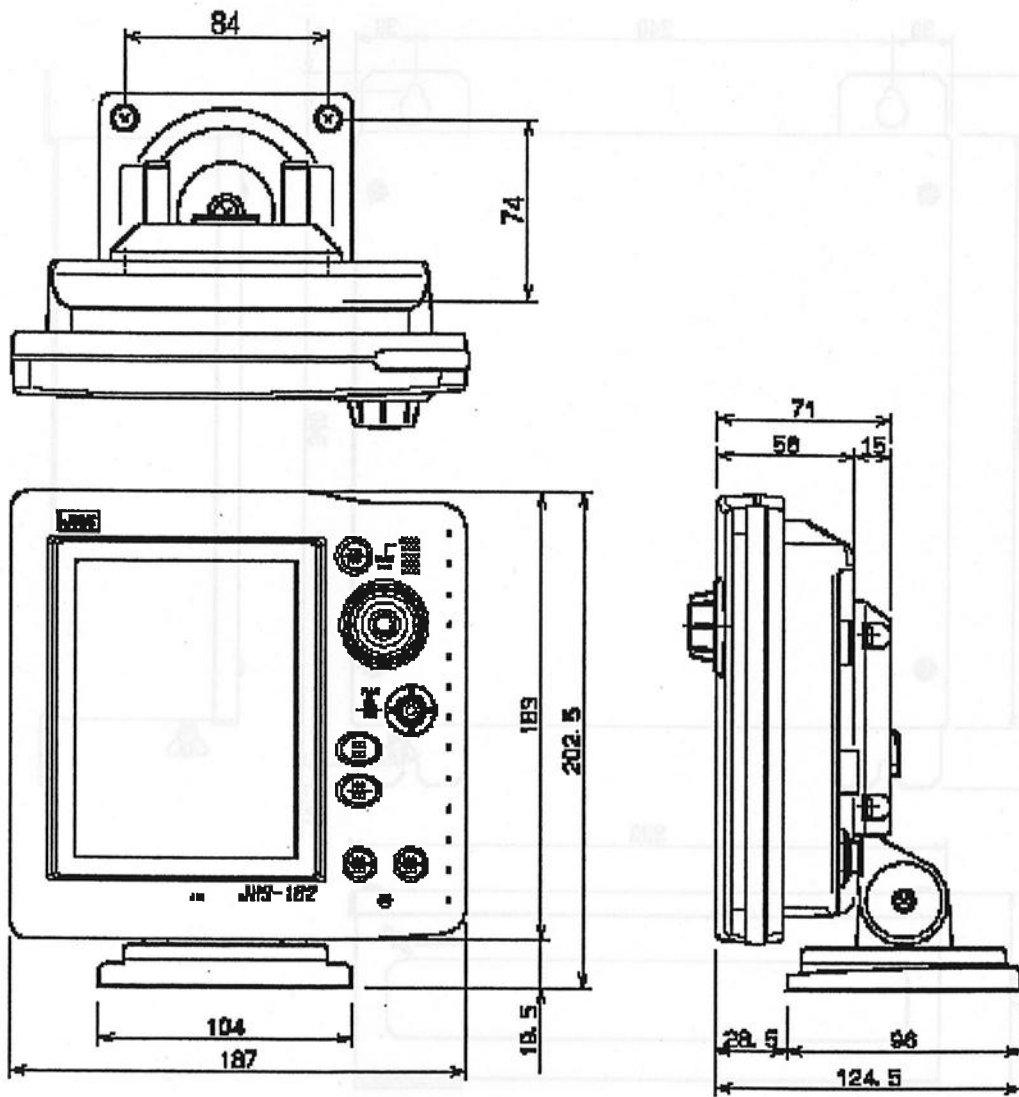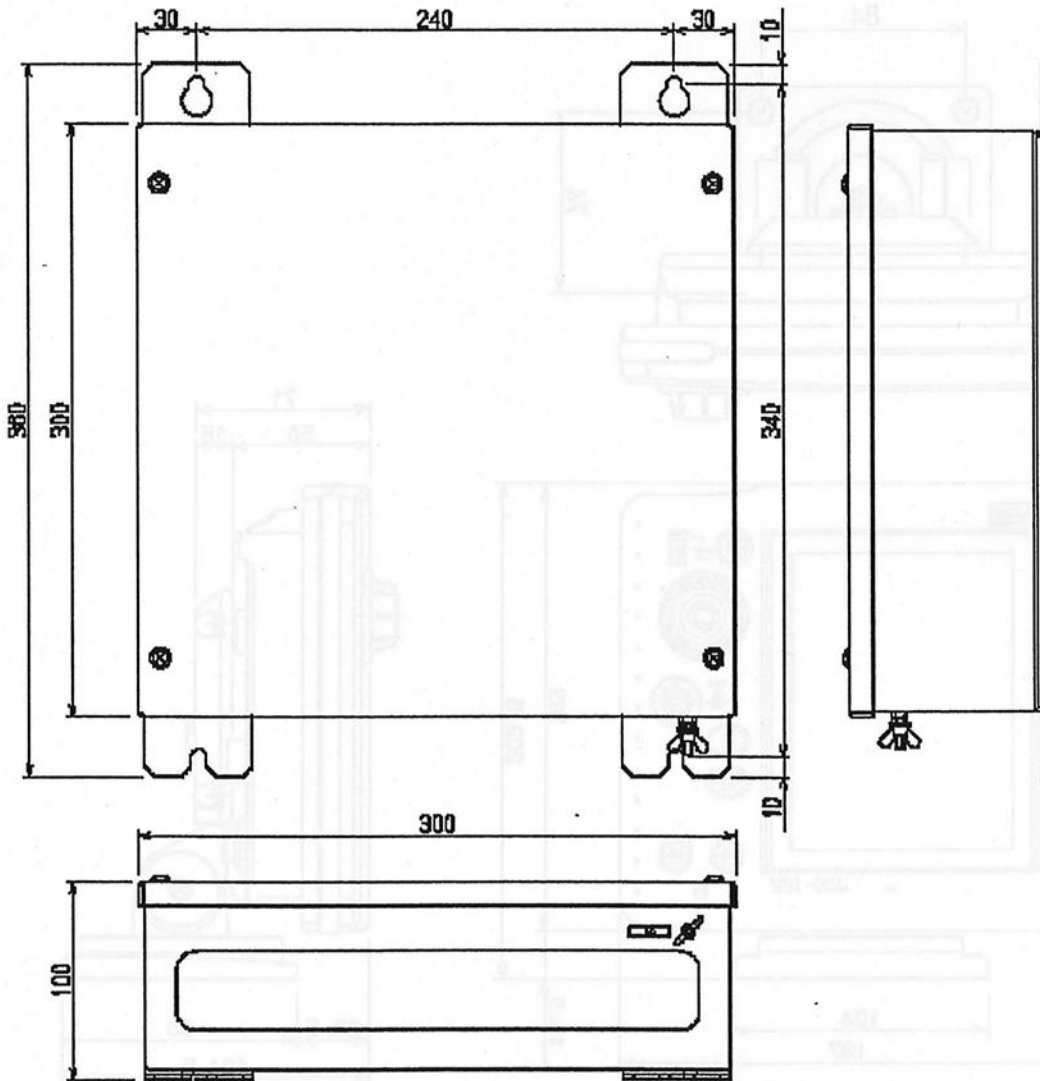
Unit: mm
Mass: approx. 3.8 kg
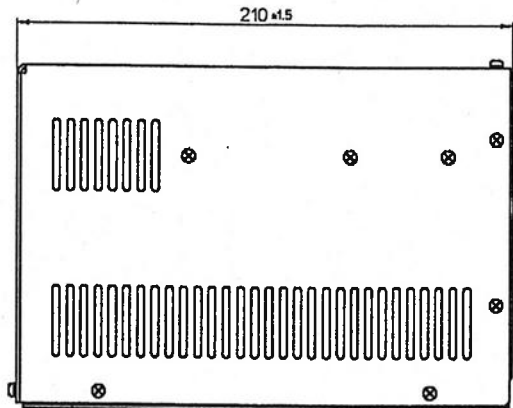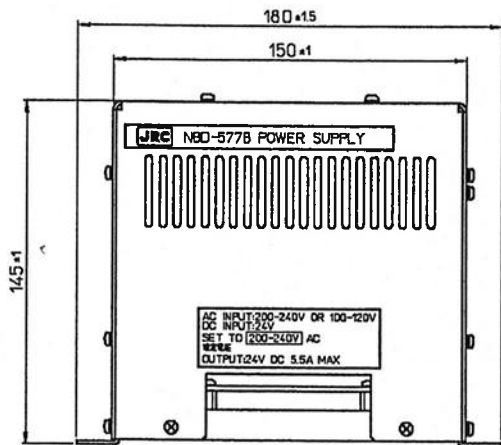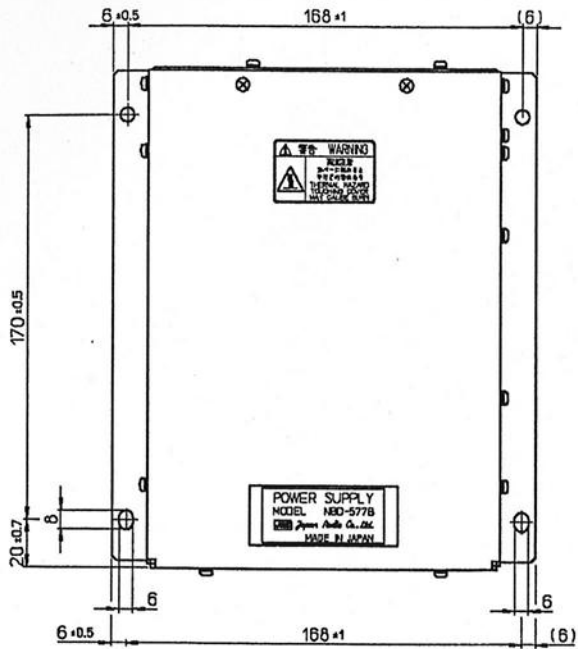
Unit: mm
Mass: approx. 3.8 kg

2. INSTALLATION DIAGRAM

Notes:

Leave installation of this equipment to our service center or agents.
Installation by an unauthorized person may results in malfunction.

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Installation by an unauthorized person may result in malfunction.
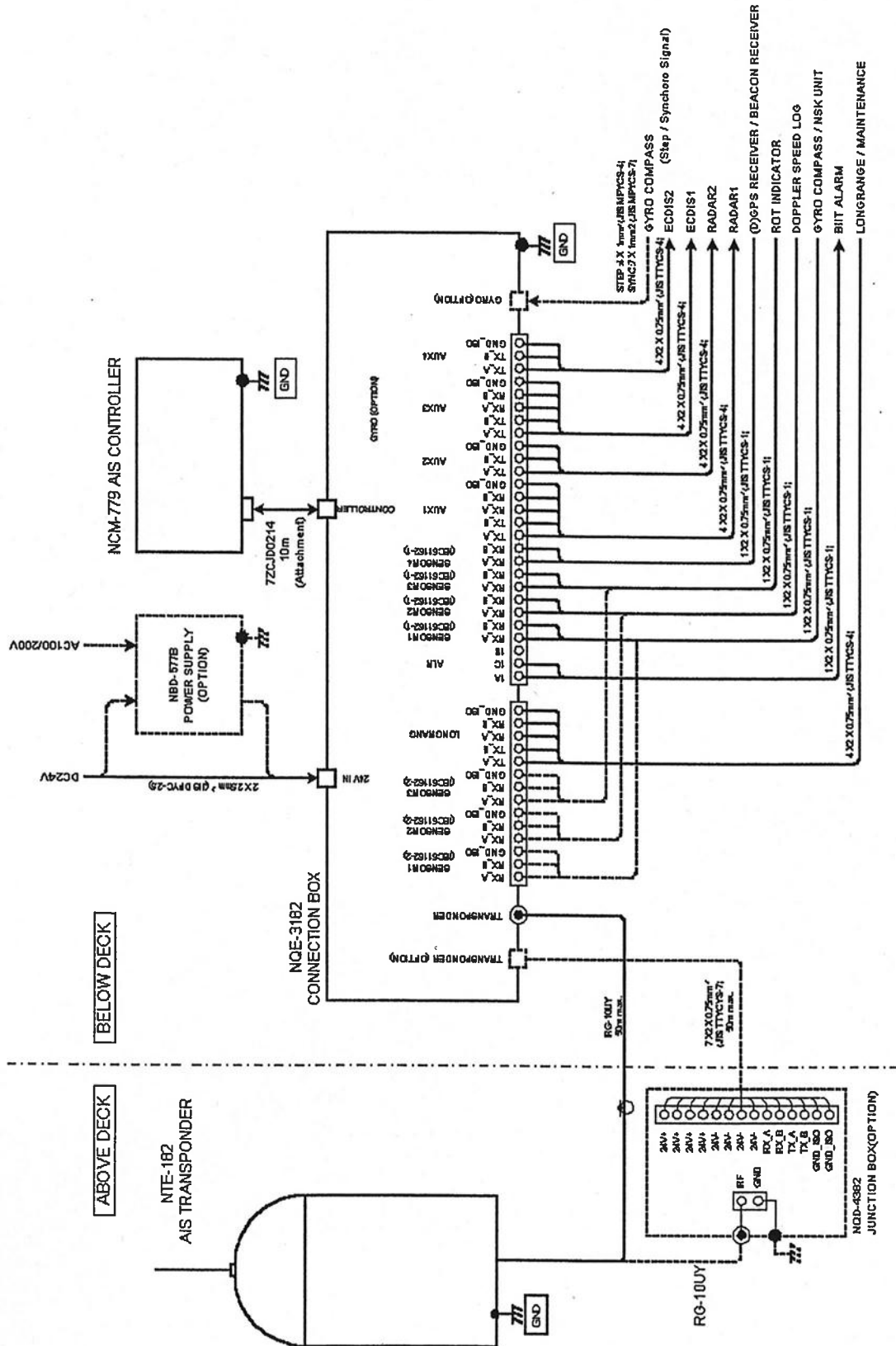
3. PART NAMES AND FUNCTIONS
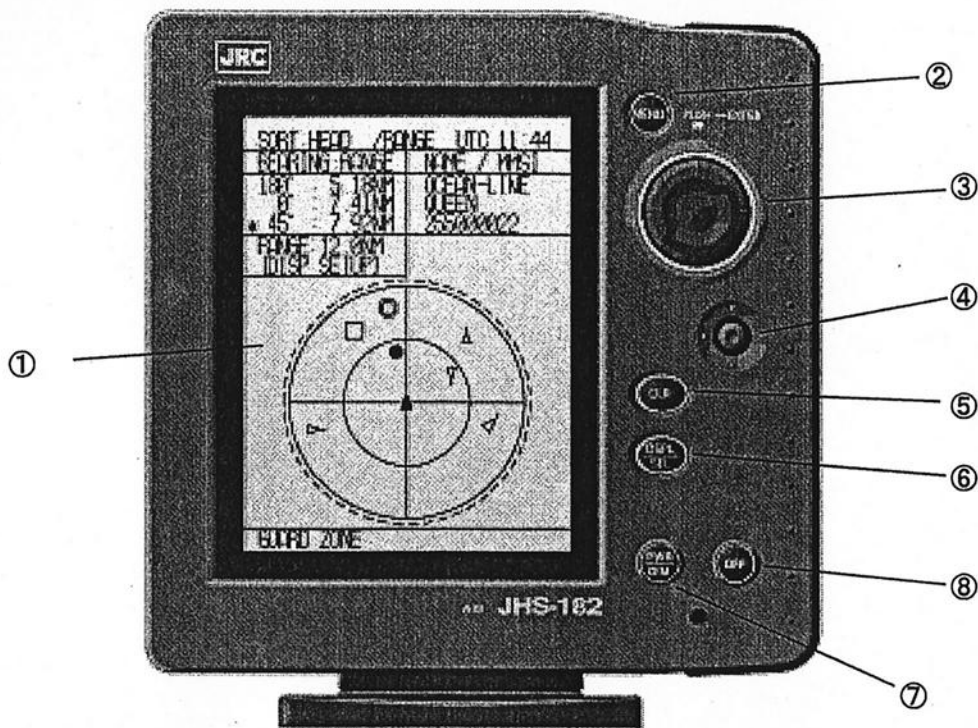
① **LCD Panel**

For further information, refer to "4. Display".

② **Menu key**

Displays the Main-menu.

③ **Jog Dial**

Move the cursor upward, downward, to the left or to the right.

④ **Stick**

Move the cursor (Keyboard display, etc.).

⑤ **CLR key**

Clears input errors.

Off the alarm sound when beeping alarm sound.

⑥ **DSPL – Select key**

Change the screen.

⑦ **Power/Dimmer key**

Turn the power ON.

Adjusts the back light brightness of the LCD and key in four stages.

(Each time [PWR/DIM] is pressed, the display dims one stage at a time.)

⑧ **Power OFF key**

Pressing [PWR/DIM] and [OFF] at the same time turn the power OFF.

① **LCD Panel**
For further information, refer to "4. Display".

② **Menu key**
Displays the Main-menu.

③ **Jog Dial**
Move the cursor upward, downward, to the left or to the right.

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⑧ **Power OFF key**
Pressing [PWR/DIM] and [OFF] at the same time turn the power OFF.

4. DISPLAYS

Display Title

Current time

MAIN MENU	UTC 11:43
BEARING : RANGE	NAME / MMSI
270° : 0.18NM	HAGAMARU
35° : 0.29NM	JRCMARU
* 22° : 0.92NM	ABCDEFG—MARU

Minimum other ships list   (three)

Other ships list,
Other ship's detail information
or
Menu for operation

Status display line for alarm
and message reception

4. DISPLAYS

Display Title

Current time

MAIN MENU	UTC 11:43
BEARING : RANGE	NAME / MMSI
279° : 0.15NM	HAGAMARU
39° : 0.29NM	JROMARU
22° : 0.52NM	ABCDEFG-MARU

Minimum other ships list (three)

Other ships list,
Other ship's detail information
or
Menu for operation

Status display line for alarm
and message reception

5. OPERATION

5.1 BASIC OPERATION

5.1.1 KEYBOARD DISPLAY AND INPUT METHOD

```
┌──────────────────────────────┐
│ MAIN MENU        UTC 11:43   │
│ BEARING : RANGE │ NAME / MMSI │
│  270° : 0.18NM  │ HAGAMARU    │
│   35° : 0.29NM  │ JRCMARU     │
│ * 22° : 0.92NM  │ ABCDEFG—MARU│
│                              │
│                              │
│                              │
│                              │
│                    ⤹         │
│                    O         │
│                    人        │
│ ABCDEFGHIJKLMNOP             │
│ QRSTUVWXYZ. 0123 │ Text  Setting │
│ 456789↓[\]_"#$%&'│ Screen     │
│ ()?@+—*/^,;:<=>! │           │
└──────────────────────────────┘
```

When input operation begins, the cursor comes on "A" in the keyboard Area at left-low of the screen.

Bring the cursor "!" in the keyboard area, and rotate the Jog Dial to right then the cursor jumps to the top-row of the Text Setting Screen.

When the cursor is on the top-row of the Text Setting Window, if the Jog-Dial is rotated left, the cursor jumps to "!" in the Keyboard Area.

5.1.2 NUMERICAL INPUT

The method for entering numbers is mentioned below.

Input start ⟶ 🔄 **1**0.0NM ⟶ [ENT] O *Press for Confirm* ⟶ |Cursor moves to next right| ⟶ 🔄 1**2**.0NM ⟶ Press CLR ⟶

⟶ |Cursor moves to the left| **1**0.0NM ⟶ 🔄 **4**0.0NM ⟶ [ENT] O *Press for Confirm* ⟶ 🔄 4**2**.0NM ⟶ [ENT] O *Press for Confirm* ⟶

⟶ 🔄 42.**8**NM ⟶ [ENT] O 42.8NM (finished) *Press for Confirm*
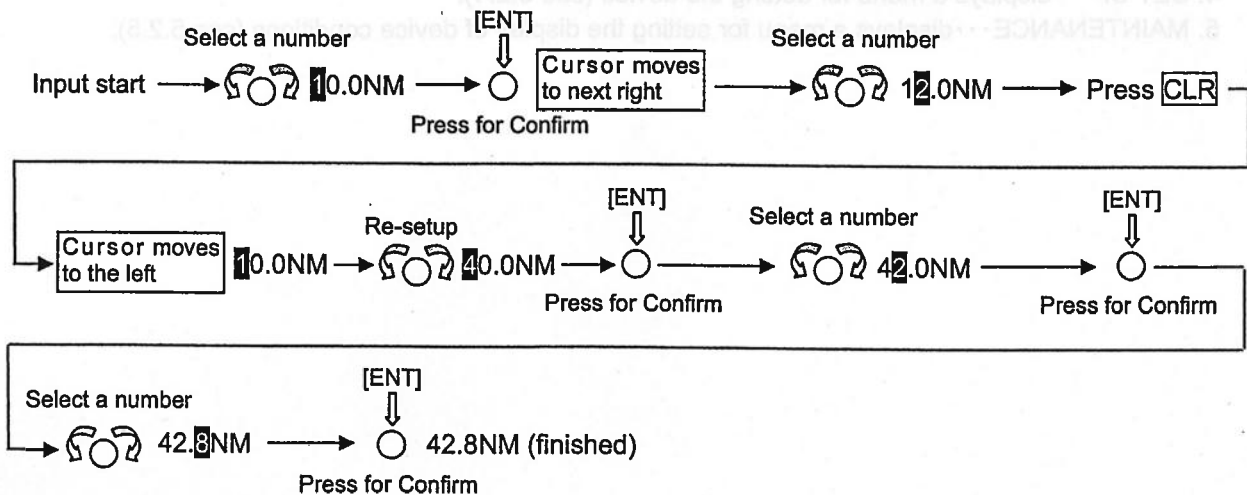
The numbers are always entered from left to right.
When CLR key is pushed, an input position (Cursor) moves to the left.

5.2 MAIN MENU

Main Menu displays menu items for making changes/confirmations of setting, and creating/confirming messages.

Main Menu is reachable from any screens by pressing MENU key.

```
MAIN MENU              UTC 11:44
BEARING : RANGE    NAME / MMSI
  270°  : 0.18NM   HAGAMARU
   35°  : 0.29NM   JRCMARU
 * 22°  : 0.92NM   ABCDEFG—MARU
1. VOYAGE STATIC DATA SETTING

2. MESSAGE

3. ALARM SETTING

4. SET UP

5. MAINTENANCE



```
                Main Menu

Rotate right/left the Jog Dial for moving the cursor over the menu.
When the Jog Dial is pressed, the selected menu is displayed.

The outlines of Menus are:
1. VOYAGE STATIC DATA SETTING···displays a menu for setting voyage information (see 5.2.1)
2. MESSAGE···displays a menu for sending/receiving messages (see 5.2.2).
3. ALARM SETTING···displays a menu for setting alarms (see 5.2.3).
4. SET UP···displays a menu for setting the device (see 5.2.4).
5. MAINTENANCE···displays a menu for setting the display of device conditions (see 5.2.5).

When 1. VOYAGE STATIC DATA SETTING is selected, a menu for setting voyage data appears

```
VOYAGE DATA SETTING    UTC 11:44
BEARING : RANGE   | NAME / MMSI
 270° : 0.18NM    | HAGAMARU
  35° : 0.29NM    | JRCMARU
* 22° : 0.92NM    | ABCDEFG—MARU
1.NAVIGATIONAL STATUS :
       RESTRICTED MANOEUVRABILITY
2.DESTINATION :
       YOKOHAMA_CYU-KAGAI
3.ETA         : 2004/12/31 23:31
4.DRAUGHT     : 25.5M OR MORE
5.CARGO/STATUS:
       CATEGORY A (DG/HP/MP)
6.WAYPOINTS
7.WAYPOINT TEXT:
       ABCDEFGHIJKLMNOPQRST
8.PERSONS ON BOARD :8191 OR MORE
9.HEIGHT OVER KEEL :204.7M

  [EXIT]          [ENT]
```

Voyage Data Setting Menu

When the Jog Dial is rotated left or right, the cursor moves upwards or downwards accordingly.
Then select an item from the menu.
Press the Jog Dial when the cursor is on your selection, then it is confirmed and a submenu appears.

When CLR key is pressed, you go back to the main menu.
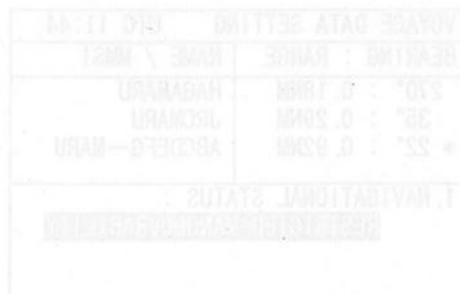
The outlines of menu items are:
1. NAVIGATIONAL STATUS···select navigational status. (see 5.2.1.1)
2. DESTINATION···input information of the destination. (see 5.2.1.2)
3. ETA···input ETA(expected time for arrival). (see 5.2.1.3)
4. DRAUGHT···input draught value.(see 5.2.1.4)
5. CARGO/STATUS···select cargo/status.(see 5.2.1.5)
6. WAYPOINTS···set waypoints (max 14 points)(see 5.2.1.6)
7. WAYPOINTS TEXT···input waypoints name.(see 5.2.1.7)
8. PERSONS ON-BOARD···input a number of persons on-board.(see 5.2.1.8)
9. HEIGHT OVER KEEL···input value of the height over keel(see 5.2.1.9)

5.2.1.1 NAVIGATIONAL STATUS

When **1.NAVIGATIONAL STATUS** is selected, navigation status is ready to be selected.

When the Jog Dial is pressed on **1.NAVIGATIONAL STATUS**, the cursor moves down to the next line.
On the line, as the Jog Dial is rotated the displayed item changes, therefore rotate the Jog Dial until the item that you want to select is displayed.
Once the item is displayed, confirm the cursor is on it and press the Jog Dial. Then the selection was made and you will go to the next step (2. DESTINATION).

When CLR key is pressed, the input procedure is terminated and you go back to the Voyage Data Setting Menu.

```
┌─────────────────────────────────────┐
│ VOYAGE DATA SETTING      UTC 11:44   │
├──────────────────┬──────────────────┤
│ BEARING : RANGE  │  NAME / MMSI     │
│   270° : 0.18NM  │  HAGAMARU        │
│    35° : 0.29NM  │  JRCMARU         │
│  * 22° : 0.92NM  │  ABCDEFG—MARU    │
├──────────────────┴──────────────────┤
│ 1.NAVIGATIONAL STATUS :              │
│   RESTRICTED MANOEUVRABILITY         │
│                                      │
│                                      │
```

              Navigational Status

The Navigational Status will be selected from the list below:

        UNDER WAY USING ENGINE
        AT ANCHOR
        NOT UNDER COMMAND
        RESTRICTED MANOEUVRABILITY
        CONSTRAINED BY HER DRAUGHT
        MOORED
        AGROUND
        ENGAGED IN FISHING
        UNDER WAY SAILING
        RESERVED FOR HSC
        RESERVED FOR WIG
        NOT DEFINED

5.2.1.2 DESTINATIONS ENTRY

When 2.DESTINATION is selected, the name of the destination is ready to be entered. The name can be entered with the keyboard at left-bottom part of the screen.
See "5.1.1 KEYBOARD DISPLAY AND INPUT METHOD" for the entrance operation by the keyboard.

The function of the keyboard setting window is as below:

```
VOYAGE DATA SETTING      UTC 11:44
BEARING : RANGE  | NAME / MMSI
  270° : 0.18NM  | HAGAMARU
   35° : 0.29NM  | JRCMARU
 * 22° : 0.92NM  | ABCDEFG-MARU
1.NAVIGATIONAL STATUS :
    RESTRICTED MANOEUVRABILITY
2.DESTINATION :
    YOKOHAMA_CYU-KAGA▊

7.WAYPOINT TEXT:
    ABCDEFGHIJKLMNOPQRST

ABCDEFGH▊JKLMNOP  | [EXIT]
QRSTUVWXYZ. 0123  | [ENT]
456789↓[\]_ "#$%&'
()?@←*/^,:;<=>!   | [CLEAR]
```

- Up to 20 characters can be entered for naming destination.

- If [EXIT] at the right-bottom part of the screen is selected and confirmed, the contents you have already entered will be canceled and the cursor will return to 2.DESITINATION. Additionally, the keyboard display will also be closed.

- When [ENT] is selected, the contents you have already entered is applied (not canceled). And the keyboard display is closed and the cursor moves to the next item (3. ETA)

- If [CLEAR] is selected, the contents already input are canceled and the cursor will return to the top of the input area.

5.2.1.3 ESTIMATED TIME OF ARRIVAL(ETA) ENTRY

When 3. ETA is selected, ETA(Expected Time of Arrival) is ready to be entered.
Enter ETA in the order of Year-Month-Day.

See 5.1.2. Numerical Input for the methodology of the numerical input.
'/' will be inserted automatically between "Year and Month", and "Month and Day."

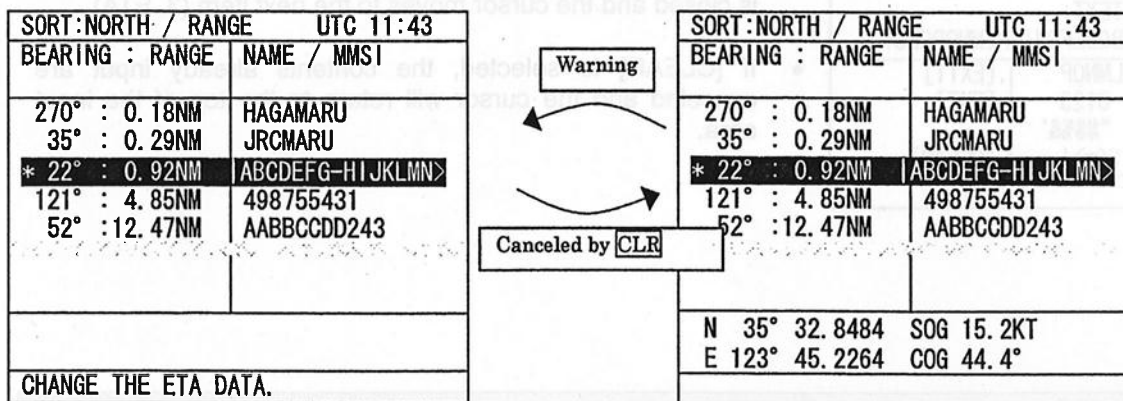| 3. ETA   : 2004/12/31 23:3▊ |

    ETA(Expected Time of Arrival)

a) ETA SETTING METHOD

Enter Expected Time of Arrival (date and UTC) with jog dial.
Enter ETA in the order of "Year-Month-Day-Hour-Minute."
After MINUTE is entered, the cursor moves to the next line (4.DRAUGHT).

b) ETA VALUE AND WARNINGS

Although a date which is prior to the actual date cannot be set in principle, it is acceptable on the condition of performing this setting when UTC data is not obtainable.
But if UTC is obtained after such setting and current value is older than UTC, a warning display below will appear and a buzzer will be rung.
The warning screen and buzzer can be canceled by CLR button. Then the input value returns to a default value.

SORT:NORTH / RANGE	UTC 11:43
BEARING : RANGE	NAME / MMSI
270° : 0.18NM	HAGAMARU
35° : 0.29NM	JRCMARU
* 22° : 0.92NM	ABCDEFG-HIJKLMN>
121° : 4.85NM	498755431
52° : 12.47NM	AABBCCDD243

CHANGE THE ETA DATA.

Warning

Canceled by CLR

SORT:NORTH / RANGE	UTC 11:43
BEARING : RANGE	NAME / MMSI
270° : 0.18NM	HAGAMARU
35° : 0.29NM	JRCMARU
* 22° : 0.92NM	ABCDEFG-HIJKLMN>
121° : 4.85NM	498755431
52° : 12.47NM	AABBCCDD243
N 35° 32.8484	SOG 15.2KT
E 123° 45.2264	COG 44.4°

Warnings on SORT:NORT/RANGE

5.2.1.4 DRAUGHT VALUE ENTRY

When `4. DRAUGHT` is selected from Voyage Data Setting Menu (5.2.1), you are ready to enter the draught value. Enter the value according to the procedure of 『5.1.2 Numerical Input.』 Up to 25.5 can be entered as the draught value.

| 4. DRAUGHT   : 25. ▊M |
        Draught Value Entry

After a confirmation by pressing the Jog Dial, the cursor moves down to the next item (5.CARGO/STATUS).

When `CLR` key is pressed, the numerical input procedure is terminated and the cursor returns to `4. DRAUGHT` .