

JUE-87

INMARSAT-C MOBILE EARTH STATION (EGC Receiver)

INSTRUCTION MANUAL



ABOUT YOUR SAFETY



CAUTIONS AGAINST HIGH VOLTAGE

Radio and radar devices are operated by high voltages of anywhere from a few hundred volts up to many hundreds of thousands of volts. Although there is no danger with normal use, it is very dangerous if contact is made with the internal parts of these devices. (Only specialists should attempt any maintenance, checking or adjusting.)

There is a very high risk of death by even a few thousand volts, in some cases you can be fatally electrocuted by just a few hundred volts. To circumvent accidents, you should avoid contact with the internal parts of these devices at all costs. If contact is inevitable as in the case of emergency, you must switch off the devices and ground a terminal in order to discharge the capacitors. After making certain that all the electricity is discharged, only then can you insert your hand into the device. Wearing cotton gloves and putting your free hand in your pocket, in order not to use both hands simultaneously, are also very good methods of shock prevention.

Quite often, an injury occurs by secondary factors, therefore it is necessary to choose a sturdy and level working surface. If someone is electrocuted it is necessary to thoroughly disinfect the affected area and seek medical attention as soon as possible.

CAUTIONS CONCERNING TREATMENT OF ELECTROCUTION VICTIMS

When you find an electrocution victim, you must first switch off the machinery and ground all circuits. If you are unable to cut off the machinery, move the victim away from it using a non-conductive material such as dry boards or clothing.

When someone is electrocuted, and the electrical current reaches the breathing synapses of the central nervous system inside the brain, breathing stops. If the victim's condition is stable, he or she can be administered artificial respiration. An electrocution victim becomes very pale, and their pulse can be very weak or even stop, consequently losing consciousness and becoming stiff. Administration of first aid is critical in this situation.

☆Note points for first aid

Unless there is impending danger leave the victim where he or she is, then begin artificial respiration. Once you begin artificial respiration, you must continue without losing rhythm.

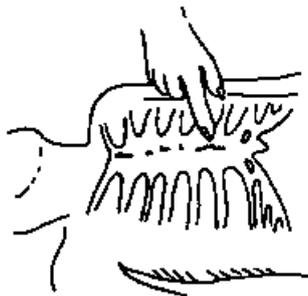
- (1) Make contacts with the victim cautiously, there is a risk that you may get electrocuted.
- (2) Switch off the machinery and then move the victim away slowly if you must.
- (3) Inform someone immediately (a hospital or doctor, dial emergency numbers, etc.).
- (4) Lay the victim on his or her back and loosen any constructive clothing (a tie, or belt).
- (5)
 - (a) Check the victim's pulse.
 - (b) Check for a heartbeat by pressing your ear against the victim's chest.
 - (c) Check if the victim is breathing by putting the back of your hand or face near the victim's face.
 - (d) Check the pupils of the eyes.
- (6) Open the victim's mouth and remove any artificial dentifrice, food, or chewing gum. Leave the mouth opened and flatten the tongue with a towel or by putting something into the mouth to prevent the victim's tongue from obstructing the throat (If he or she is clenching their teeth and it is difficult to open the mouth, use a spoon or the like to pry open the mouth).
- (7) Continually wipe the mouth to prevent the accumulation of saliva.

**☆ If the victim has no pulse and is not breathing
(Heart massage in combination with artificial respiration.)**

If the victim has no pulse, his or her pupils are dilated, and if you cannot detect a heartbeat, the heart may have stopped, beginning artificial respiration is critical.

- (1) Put both hands on the diaphragm, with hands on top of each other keeping both arms straight (If your elbows are bent, you cannot push with as much power). Press the diaphragm with your body weight until the chest sinks about 2 cm (about 50 times per minute).
- (2) If administering first aid when alone:
Perform the heart massage about 15 times then blow in twice. Repeat this routine.
If administering first aid with two people:
One person performs the heart massage 15 times, and the other person blows air in twice. Repeat this routine (Heart massage and “mouth to mouth” resuscitation used together).
- (3) Constantly check the pupils and the pulse, if the pupils become normal and the pulse steadies, keep them in a laying position and give them something warm to drink, be sure that they rest (do not give them any alcohol). In any case you have to entrust major decision making to a doctor. Having understanding people around is essential to the victim’s recovery from the mental shock of electrocution.

①



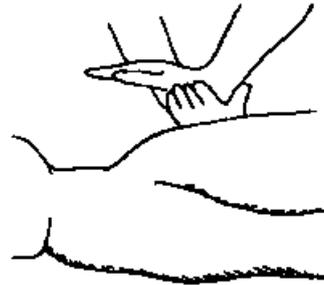
②



③



④



Heart massage in combination with artificial respiration.

PREFACE

Thank you for purchase of the JRC Inmarsat-C, Mobile Earth Station, JUE-87.

- Please read this manual carefully and carry out proper operation.
- Please keep this manual importantly to refer to when it is necessary.
Please use it when questions and troubles are caused in operation, by any chance.

ATTENTIONS BEFORE INSTALLATION

- JRC cannot accept responsibility for any loss due to incorrect operation, malfunction, and other causes except product guarantee condition and liability by law.
- There is possibility that some functions of the terminal may not operate correctly depend on the hardware and software version of equipment connected to the terminal. Please confirm your equipment version before contact with the dealer or agent you purchased, or JRC branches.
- Your communication data are transmitted via Inmarsat system and other global communications system, so unusually some errors may occur in communication theory same as the landlines. You are recommended to backup for your important data.
- Usually, digital scrambling of Inmarsat system protects your communication data privacy. However you are recommended to understand that your communication data might be intercepted by special technology and unauthorized access in the communication theory.
- Specifications of JUE-87 and its accessories may change without notice for improvement.

BEFORE INSTALLATION

About safety symbols

This manual and the terminal are indicated the following safety symbols for your correct operation to prevent your and somebody's injury or damage to the product and assets. The symbols and descriptions are as follows.

You should understand well them before reading this manual and operating the terminal.



DANGER

This symbol denotes high risk of causing death or serious injury.



WARNING

This symbol denotes that improper handling poses a risk of causing death or serious injury.



CAUTION

This symbol denotes that improper handling poses a risk of causing injury or damage to the product and/or assets.

Examples of symbols



The \triangle symbol indicates denotes DANGER, WARNING or CAUTION.
The inside illustration of the \triangle symbol denotes meaning of the DANGER, WARNING or CAUTION more concretely. (This example warns of possible electrical shock.)



The \circ symbol denotes prohibited action.
The inside illustration of the \circ symbol denotes the specific prohibited action more concretely. (This example indicated disassembly is prohibited.)

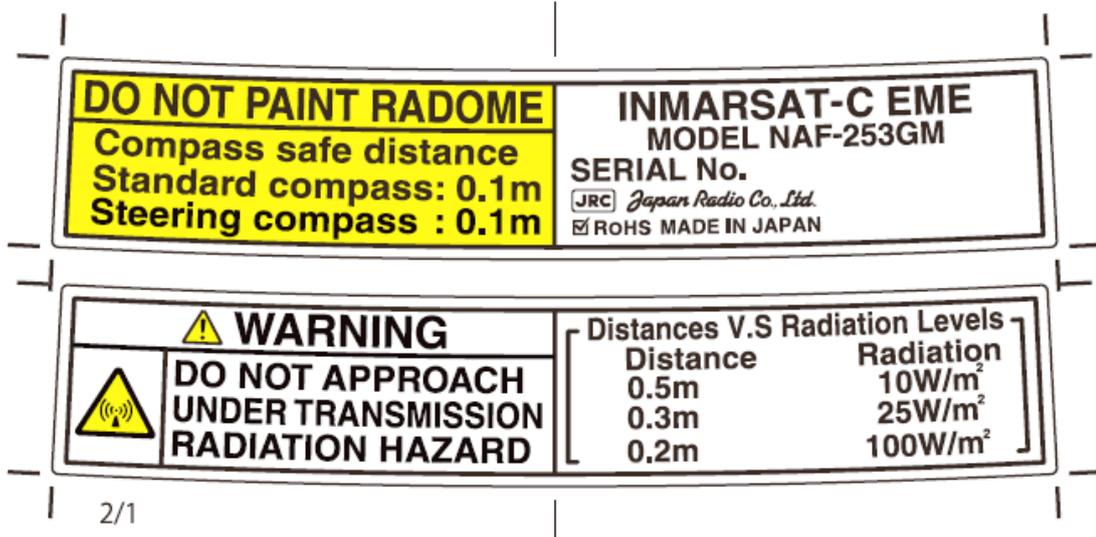


The \bullet symbol obligatory operation or instruction.
The inside illustration of the \bullet symbol denotes obligatory operation or instruction more concretely. (This example indicates unplugging is the obligatory instruction.)

ABOUT WARNING LABELS

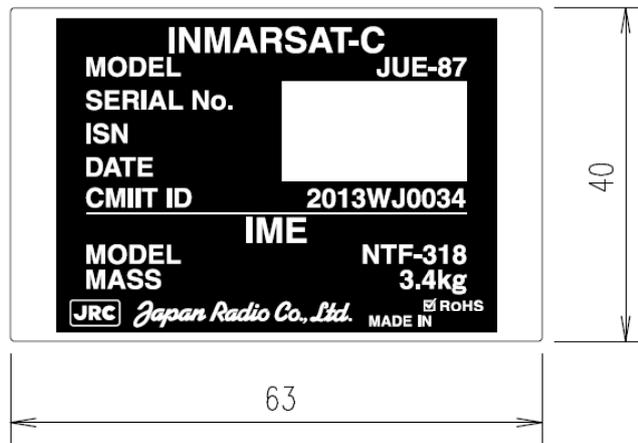
Below mentioned warning labels are put on JUE-87. Do not take off, destroy, or modify these labels.

Labels put on EME



Labels put on IME

<Type1>



<Type2>



CAUTIONS TO BE USED DURING OPERATION

DANGER



Do not touch any internal parts with your hands or tools to avoid danger of electronic shock.



Immediately after printing, the printing head is still very hot, don't touch it until it is cool down.

WARNING



Do not bring JUE-87 (EME) close to the fire, or put it in the fire. It causes the explosion, generation of heat.



Do not approach the JUE-87 (EME) while transmitting, It transmits microwave and strong microwave might be cause injury.



If a foreign substances, such as metal fragment, water, liquid and etc., are get into your JUE-87, turn off the power and contact with the agent you purchased or JRC branches. Continuous operation may cause fire, electrical shock or malfunction.



Ask maintenance and the adjustment of JUE-87 internal equipment to our sales department or nearest branch office.



Do not turn on the terminal under the primary power except the specific voltage (mentioned below).The primary power except the specific voltage may cause fire, electrical shock or malfunction.

DC+24V (+19.2 V to +31.2 V) (When standard PSU, NBD-904 is used)



Do not adjust the internal circuit or exchange the parts because the internal circuit is adjusted strictly. When an abnormal operation is found, please contact with our sales department or nearest branch office.



Do not check or repair the internal equipment of JUE-87 by yourself.

Any electrical work by any person other than our specialized maintenance persons may cause fire or abnormal operation of this equipment or electrical shock. This equipment meets the technical standard of the Ministry of Internal affairs and Communications (MIC).



Do not take apart, and do not remodel the equipment. It may cause a fire, the electric shock, and the breakdown.



Ask our agency or office to dispose JUE-87 (EME). Illegal disposal may heat-up, firing, which is affected by the impact or submerged of water.

CAUTIONS TO BE USED DURING OPERATION

CAUTION



Before operating JUE-87, read the operation manual carefully.
Inappropriate procedure may cause incorrect operation or malfunction.



When a failure has been detected, check it according to the Trouble shooting described in this book. If abnormalities are still accepted, restart the terminal. Nevertheless abnormalities are still accepted, stop operation and contact the dealer or agent from which you purchased the device or one of our branches, marketing offices, and representative offices.

< EME >



Do not give mechanical shock and force, because all units of EME are precision instrument.
Unwanted shock and force may cause malfunction.



Do not paint radome. Painting of radome may cause decrease of the communication quality.

< IME >



Do not use the IME to other purpose.
It may cause a problem that unable to be transmitted in the emergency.

NOTE

This model does not transmit, however, warning labels are the same as JUE-87 original model.

ACRONYMS AND ABBREVIATIONS

A

- AC** **Alternating Current**
- ACK** **Acknowledgement**
- AFC** **Automatic Frequency Control**
- AGC** **Automatic Gain Control**
- ALM** **Alarm**
- AMVER** **Automated Mutual-assistance Vessel Rescue system**
A vessel position-reporting system operated by the United States Coast Guard for any merchant vessel of 1000grt or more on a voyage lasting longer than 24 hours, to and from anywhere on the world.
- ANSI** **American National Standard Institute**
- Answerback:**
An identifier given to an Inmarsat MES and used in message transmissions. The format must be four letters (A-Z; no numbers) finishing with an x.
- ANT** **Antenna**
- AOR** **Atlantic Ocean Region**
- AOR-E** **Atlantic Ocean Region (East).**
- AOR-W** **Atlantic Ocean Region (West).**
- ARQ** **Automatic Request Repeat**
The error correction process used in store-and-forward messaging by which a receiver checks for errors in received data packets and requests the sending end to re-transmit any packets which were received containing an error.
- ASCII** **American Standard Code for Information Interchange**
A standard alphanumeric character set based on 7-bit codes.
- AUSREP:**
A vessel position-reporting system similar to AMVER, but operated by the Australian Authorities.

B

- Backup:**
A copy of a program or document that you can use if the original is destroyed. To back up is to make a copy.
- BB** **Bulletin Board**
Operational information of LES, which send from satellite to each ship.
- BBER** **Bulletin Board Error Rate**
Used as a measure of the quality of reception by the MES of the Bulletin Board of a TDM Channel.
- BCD** **Binary Coded Decimal**
- BER** **Bit Error Rate**
Bit: The basic unit of digital communications; may be either 1 or 0.
- BPS** **bit per second**
A unit of measurement for speed of data transfer or throughput.
- BPSK** **Binary Phase Shift Keying**

BS..... **Backspace**

Bulletin Board (in a TDM channel):

A data packet transmitted in each frame of a TDM channel, which contains information about the status of the Inmarsat B/M, mini-M and C network configurations, and the current frame number, used by the MES as a timing reference.

BUZ..... **Buzzer**

Byte:

One byte comprises eight bits and may represent either one alphanumeric character or numeric information.

C

Channel number:

The number representing the frequency of an Inmarsat communications channel.

Character:

One element of an alphanumeric character set. One character is equivalent to one byte or eight bits.

Class 1 Inmarsat C MES:

A Class 1 MES is capable of ship-to-shore and shore-to-ship message transfer and distress alerting, but is not capable of receiving EGC messages.

Class 2 Inmarsat C MES:

A Class 2 MES is capable of two modes of operation (selected by the operator):

- As Class 1, and also capable of receiving EGC messages when not engaged in Inmarsat C traffic.
- Ready for EGC message reception exclusively (and not available in that mode for Inmarsat C message transfer).

Class 3 Inmarsat C MES:

A Class 3 MES has two independent receivers, one for receiving two-way Inmarsat C messages, the other for receiving EGC messages.

Closed network:

A private network, with access limited to registered users. The Inmarsat C system allows two types of closed networks: data reporting networks, identified by a Data Reporting Network Identification (DNID) code, and EGC Fleet NET networks, identified by an EGC Network Identification (ENID) code.

Closed user Group:

A private network available only to a group of registered users. Access from the public network being barred to non-registered users.

CNID..... **Closed Network Identification**

COMM..... **Communication**

Command:

The generic name for anything you tell a computer program to do.

Commissioning:

The process by which an MES is registered for use via the Inmarsat network.

CPU..... **Central Processing Unit**

CR..... **Carriage Return**

One of a code for line feeding.

CSDN..... **Circuit Switched Data Network**

CUG..... **Closed User Group**
Private network used by the registered user only. Unregistered user cannot be accessed from public network.

D

Data reporting:

A short data packet transmitted in burst mode on the MES signaling channel as a result of a polling telecommand or at the initiative of the MES (operator).

Data services:

This is how a terminal may send and receive electronic messages such as e-mail.

dB..... **Decibels**

DB..... **Distress Button**

DC..... **Direct Current**

DCE..... **Data Circuit Terminating Equipment**

A component part of an Inmarsat C MES. An MES contains a DCE receiver and a DCE transmitter, which are used for communication between the MES and an Inmarsat C LES.

DEC..... **Decoder Circuit**

DEL..... **Delete**

DEM..... **Demodulator Circuit**

Distress alert:

In the Inmarsat-C system, a packet transmitted to an LES or an NCS on a signaling channel by maritime MES in distress. A distress alert provides information on a ship's identity, position, course, speed and the nature of distress. A distress alert has the highest priority in the Inmarsat-C system.

Distress priority message:

In the Inmarsat-C system, a store and forward message carried on a messaging channel having Distress Priority. Used for distress communications between maritime MESs and RCCs.

DMG..... **Distress Message Generator**

DNID..... **Data Network Identification code**

See data report (unreserved), data report (reserved) and data report (pre-assigned).

Downloading:

The process by which an Inmarsat C MES receives information from a service provider. For data reporting purposes, an operational center downloads a DNID code and Member Number to the MES. In the EGC Fleet NET™ service, an information provider downloads an EGC Network Identification (ENID) code to an MES.

DR..... **Data Reporting**

DS..... **Data Source**

DTE..... **Data Terminal Equipment**

A component part of an Inmarsat C MES, used primarily for storage and interfacing external devices (such as a keyboard or monitor). For other Inmarsat systems, this can be a computer connected to the MES for use for data communications.

E

EDR..... **Enhanced Data Reporting**

EEPROM..... **Electrically Erasable and Programmable ROM**

Read only Memory that is able to delete and rewrite electrically.

EGC..... **Enhanced Group Call**
The system for broadcasting messages via Inmarsat C mobile satellite communications system that supports two services: SafetyNET and FleetNET.

EIA **Electronic Industries Association**

EIRP..... **Equivalent Isotropically Radiated Power**
Effective Isotropically Radiated Power, a measure of transmitted power.

E-mail..... **Electronic mail**
A global message-handling system whereby subscribers to commercial e-mail services can exchange electronic messages and data files between computers. E-mail services are provided by some service providers and private organizations. Access to e-mail services may be via PSTN, PSDN networks or the Internet.

EME **Externally Mounted Equipment**

ENID **EGC network identification**

EOF **End Of File**

EPADR..... **Enhanced Pre-assigned Data Reporting**

EXT..... **External**

E/W..... **East/West**

F

FleetNET:

A commercial service for the broadcasting and automatic reception of fleet management and general public information by means of direct printing through Inmarsat's EGC system.

Footprint (of a satellite):

The area on the Earth's surface (sea or land) covered by the satellite and where an antenna can obtain line-of-sight communications. In the Inmarsat systems, this area is also known as the ocean region or coverage area.

FRLP..... **Forward ID Return ID Link Pair**

FTU **Frequency Translation Unit**

G

GMDSS..... **Global Maritime Distress and Safety Service**
GMDSS: Global Maritime Distress and Safety System with the basic concept that SAR authorities ashore, in addition to shipping in the vicinity of a casualty, must be rapidly alerted of the distress event so that they can assist with coordinated SAR operation with minimum delay (or a similar definition).

GPS..... **Global Positioning System**
System that provides the geographic location of a vessel. This service uses American military satellites, which have been made available for civilian use.

Ground segment:

The network of LESs which provide a link between the space segment and the terrestrial telecommunication networks.

H

HPA **High Power Amplifier**

HYB..... **Hybrid**

I

- IA5** **International Alphabet number 5**
A standard alpha- numeric character set, also known as ASCII, based on 7-bit codes.
Supports both upper and lower case characters.
- ID** **Identity**
- IF** **Intermediate Frequency**
- IFU** **Intermediate Frequency Unit**
- IHO** **International Hydrographic Organization**
- IME** **Internally Mounted Equipment**
- IMN** **INMARSAT Mobile Number**
The number assigned by the national routing organization to an Inmarsat MES as its identity number. An Inmarsat C maritime IMN has the format 4XXXXXXXX.
- IMO** **International Maritime Organization**
- INFO** **Information**
- INMARSAT** **International Maritime Satellite Organization**
The operator of global mobile satellite communications, part of the Inmarsat Ventures Ltd group of companies.
- Inmarsat C:**
A digital system based on a low-cost MES with low power consumption. This system provides global two-way store-and-forward messaging, distress alerting, EGC Safety NET™ and Fleet NET™, data reporting and polling.
- I/O** **Input/Output**
- IOR** **Indian Ocean Region**
- ISDN** **Integrated Services Digital Network**
- ISO** **International Organization for Standardization**
- ITA** **International Telegraph Alphabet**
- ITA2** **International Telegraph Alphabet 2**
A standard alphanumeric character set, generally used for sending messages on the international telex networks. The character set is based on 5-bit codes, also known as telex format, or 5-bit packed.
- ITU** **International Telecommunication Union**

J

- JASREP:**
A vessel position-reporting system similar to AMVER, but operated by the Japanese authorities.

K

- Kbytes:**
1024 bytes or 128 characters.

L

- LCD** **Liquid Crystal Display**
- LED** **Light Emitting Diode**
- LES** **Land Earth Station**
Land Earth Station. A fixed land station in the Inmarsat satellite communications system acting as a gateway between the space segment and the terrestrial communication networks.

LES TDM channel:

A TDM channel used by an LES to transmit system information and data addressed to an MES.

LMSS..... **Land Mobile Satellite Service**

Log in:

The action performed on an Inmarsat C MES to inform the NCS in an ocean region that the MES is available for communications.

Log out:

The action performed on an Inmarsat C MES to inform the NCS in an ocean region that the MES is not available for communication.

LNA..... **Low Noise Amplifier**

LSB..... **Least Significant Bit**

LT **Local Time**

M

Member number:

The number downloaded with a DNID to an MES, when the MES is registered to a data-reporting network.

MES..... **Mobile Earth Station**

Mobile Earth Station. A mobile user terminal in the maritime mobile-satellite service located aboard a ship.

Message channel:

A channel assigned by the NCS for an MES to send a message through an LES to its required destination.

METAREA:

A geographical sea area established for the purpose of coordinating the broadcast of marine meteorological information.

MHS **Message Handling System**

MID..... **Mobile Identification Digit**

3-digit number which identify the country of registration of the mobile terminal (or similar definition)

MMSI..... **Maritime Mobile Service Identity**

A nine-digit format assigned by the maritime authority to identify a vessel. The first three digits are the code of the country where the vessel is registered as defined by the ITU.

MMSS **Maritime Mobile Satellite Service**

MOD..... **Modulator**

Modem **MODulator/DEMODulator**

A device used to transmit digital data, by converting (modulating) a digital signal into an analogue form and re-converting (demodulating) the analogue signal into digital form at the receiving end.

MSB..... **Most Significant Bit**

MSI..... **Maritime Safety Information**

Navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships (as defined in Regulation IV/2 of the 1974 SOLAS Convention, as amended).

N

NAVAREA **Navigational Area**
A geographical sea area established for the purpose of coordinating the broadcast of navigational warnings.

NAVTEX **MF Navigational Broadcast Service**
The system for The broadcast and automatic reception of Maritime Safety information by means of narrow-band direct-printing telegraphy.

NCS **Network Coordination Station**
A fixed land station in the Inmarsat satellite communications system which controls channel assignments and provides network management functions in each satellite ocean region. NCSs also transmit EGC messages on the NCS common channel.

NCS Common Signaling Channel:

Also known as the NCS Common Channel. A TDM channel used by the NCS to transmit system information and message announcements to MESSs.

NMEA **National Marine Electronics Association**

N/S **North/South**

O

OCC **INMARSAT Operations Control Centre**

Ocean region:

The coverage area of an Inmarsat satellite within which an MES may send and receive messages.

OSC **Oscillator**

P

Packet:

An envelope or block of data sent over a network; each packet contains addressing information as well as the data being sent.

PC **Personal Computer**

PEP **Packet Error Probability**

PER **Packet Error Rate**

PIN **Personal Identification Number**

Polling:

The facility whereby an operational center sends an instruction (a polling command) to selected MESSs to perform a defined task, such as returning a pre-assigned data report or performing a SCADA operation.

POR **Pacific Ocean Region**

Presentation code:

A code included in a transmission (ship-to-shore or shore-to-ship), indicating to the recipient the presentation or formatting of the data contained in the message.

Protocol:

A defined set of communications standards, which lay down the parameters to which all users must abide. Protocols in general use are X.25 and X.400.

PROM **Programmable Read Only Memory**

PSA **Point of service activation**

PSDN **Packet Switched Data Network**

PSPDN **Packet Switched Public Data Network**

PSTN **Public Switched Telephone Network**
 PSU **Power Supply Unit**
 PVT **Performance Verification Test**

R

RAM **Random Access Memory**
 RCC **Rescue Coordination Center**
 RDB **Remote Distress Button**
 REC **Receiving level**
 ROM **Read Only Memory**
 RX **Receive/Receiver**

S

SafetyNET

The international service for the broadcasting and automatic reception of MSI through Inmarsat EGC system. SafetyNET receiving capability is part of the mandatory equipment which is required to be carried by certain ships under the provisions of chapter IV of SOLAS Convention 1974, as amended.

SAR **Search and Rescue**

Satellite coastal warning area

A unique and precisely defined sea area within a NAVAREA/METAREA or Sub-Area established by a coastal state for the purpose of coordinating the broadcast of coastal maritime safety information through the SafetyNET service.

SDM **System Definition Manual**

SFU **Store and Forward Unit**

Signaling channel (MES - LES):

A random access TDMA channel, used by an MES to transmit signaling information and data to an LES.

Signaling channels (MES - NCS):

A random access TDMA channel, used by an MES to transmit signaling information and data to an NCS.

SLCA **Slot Logical Channel Assignment**

SOLAS **International Convention for the Safety Of Life At Sea**

Space segment:

Consists of the communications satellites operated by Inmarsat.

Special access code:

A destination address code used in a ship-to-shore or shore-to-ship message to access a special service provided by a service provider. The two-digit codes are examples of special access codes.

SYNC **Synchronization**

SYNTH **Synthesizer**

T

TDM **Time Division Multiplex**

The process by which multiple signals can share the same communication channel, each using a different time slot.

TDMA **Time Division Multiple Access**

The process by which MESs communicate with an LES or NCS.

TDM channel:

The Inmarsat system uses different TDM channels, each transmitted on an unique frequency. The TDM channels are used for system control and message transfer to MESS. See LES TDM Channel and NCS Common Channel.

Time slot:

Basic unit into which one time frame of a TDM channel is divided.

TX **Transmit/Transmitter**

U

User defined area

A temporary geographic area, either circular or rectangular, to which maritime safety information is addressed.

UTC **Coordinated Universal Time**

Universal Coordinated Time. A term, which for practical purpose has the same meaning as Greenwich Mean Time (GMT).

V

VCXO **Voltage Control Crystal Oscillator**

W

WMO **World Meteorological Organization**

Others

5-bit packed (also known as telex format or ITA2):

A format based on 5-bit codes used for sending alphanumeric characters to and from telex terminals.

7-bit ASCII:

A format based on 7-bit codes used for sending the alphanumeric characters of the ASCII character set.

8-bit data:

A format based on 8-bit codes used for encoding information such as text, national character sets and numerical information.

NOTE

This “ACRONYMS AND ABBREVIATIONS” is the same as JUE-87 original model.

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CHAPTER 1. GENERAL

This manual covers the installation, operation, and maintenance of the MES (Mobile Earth Station) JUE-87 for Inmarsat-C satellite communications.

1

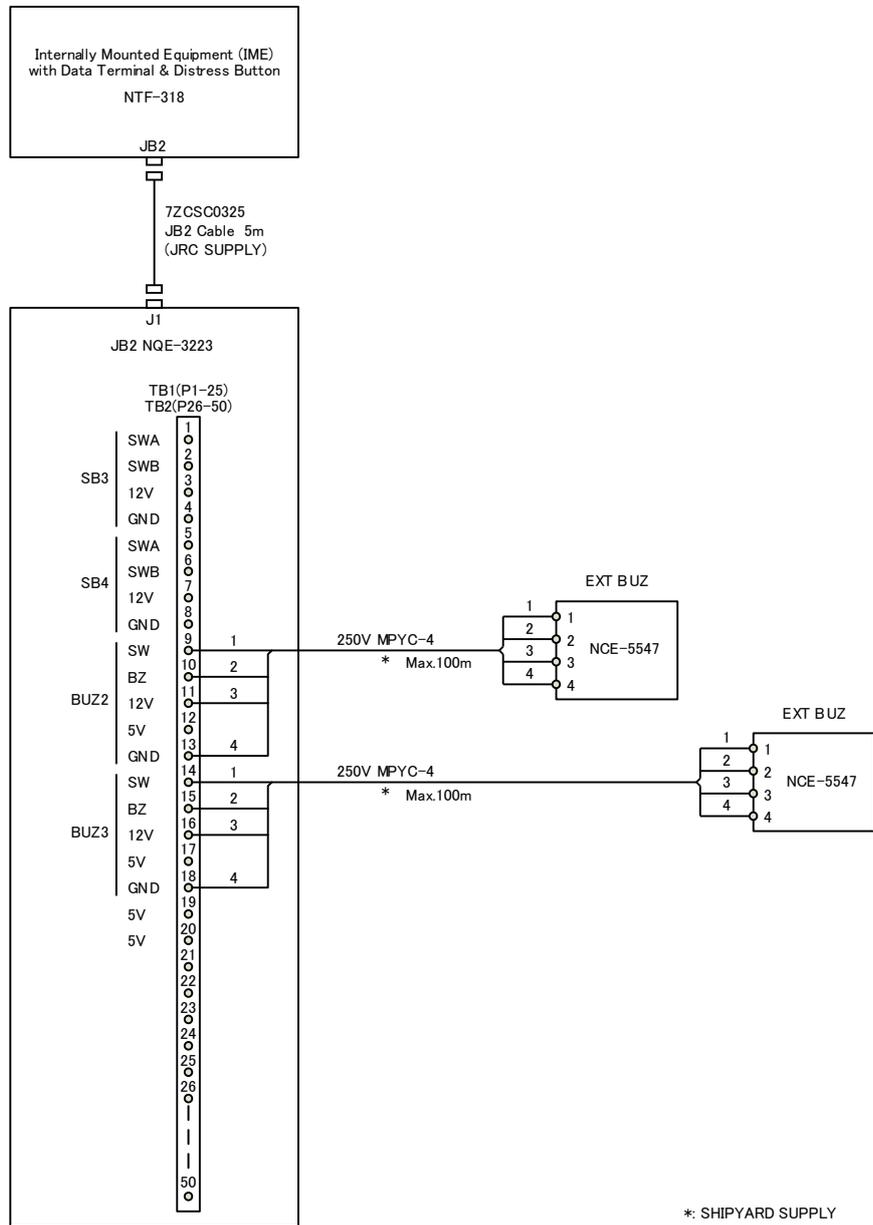


Fig 2.1.1c Wiring Diagram Inmarsat-C JUE-87 Mobile Earth Station (JB2)

2.1.2 Components List

Table 2.1.2 Components List

	No.	Name of component	Type	Q'ty
JUE-87	1	EME (Externally Mounted Equipment)	NAF-253GM	1
	2	IME (Internally Mounted Equipment)	NTF-318	1
	3	Keyboard	NDF-369	1
	4	Printer	NKG-900/NKG-800	1
	5	EXT PSU (Externally Power Supply Unit)	NBD-904	1
	6	Coaxial cable (Between IME coaxial cable and EME)	CFQ-5922A	1
	7	JB1 Board	CQD-2245A	1
	8	Spare parts	7ZXSC8702/7ZXSC8701	1
	9	JUE-87 Instruction Manual	7ZPSC0444	1
	10	JUE-87 Installation Manual	7ZPSC0446	1
	11	JUE-87 Operation Guide	7ZPSC0448	1

2.1.3 Supplied Parts by JRC

Table 2.1.3a Supplied parts by JRC for EME Installation

No.	Name	Type	Q'ty	Remarks	Application
1	Fixing Band	MPBP31867	1	Single unit by two	
2	Painting Protection Material	MPXP33556	1		
3	“SUMI” Tape (Self Bandaging Tape)	BRXP05369	1		
4	Packing List	MTZ304557	1		

Table 2.1.3b Supplied parts by JRC for IME Installation

No.	Name	Type	Q'ty	Remarks	Application
1	JB1 Board	CQD-2245A	1	Junction PCB	On Console
2	JB1	NQE-3222	1	Including JB1 Board, IME Coaxial Cable and JB1 Cable	On Stand
3	Tapping Screw	BRTG10227	4		
4	Knob Bolt	MPTG30053A	2		
5	Rubber Spacer	MTT315177	2		
6	Packing List	MANQE5191C	1		
7	Earth Cable	7ZCSC0240	1		

Table 2.1.3c Others

No.	Name	Type	Q'ty	Remarks	Application
1	Cover	MTV305087	8	For IME corner	Including spare
2	Ferrite Core		3	For Power Supply Cable LAN Cable	
3	IME Label		1	For Spare label on console	
4	Note for IME Label		1		
5	Register Sheet		1		
6	Envelope for Airmail		1		

Table 2.1.3d Supplied Cables by JRC for IME Installation

No.	Name	Type	Q'ty	Remarks	Application
1	EXT PSU Cable (IME to EXT PSU)	7ZCSC0320	1		
2	Printer Signal Cable (Printer to IME)	7ZCSC0322	1		
3	Printer Power Cable (Printer to IME)	7ZCSC0321	1		
4	JB1 Cable (JB1 to IME)	7ZCSC0314	1	0.4m	On stand
5	JB1 Cable (JB1 to IME)	7ZCSC0324	1	2.0m (Option)	On wall
6	JB2 Cable (JB2 to IME)	7ZCSC0325	1	5m (Option)	
7	DTE Signal Cable (DTE to IME)	7ZCSC0203A	1	Option	
8	DTE Power Cable (DTE to Ext PUS)	7ZCJD0419	1	Option	

2.1.4 Parts for Installation (Prepared by Shipyard)

Table 2.1.4 Required cables

No.	Part	Description	Q'ty	Remarks	Application
1	PVC tape	Vinyl tape	1	L = 15m	For protecting cable
2	Copper plate	JIS H 3100	1	W = 30mm, t = 0.2mm	For grounding EME
3	Pole		1		For mounting EME

2.1.5 Required Tools

Table 2.1.5 Required Tools

No.	Tool	Description
1	Open-ended spanner	Nominal 13 (for M8)
2	Plus screwdriver	

2.1.6 Consumable Supplies and Spare Parts List

Table 2.1.6a Consumable Supplies List

No.	Name	Type	Remarks	Application
1	Roll paper Recording paper (1PLY)	5ZPAL00002	Size:214mmW 98mm ϕ	
		5ZPCM00020	Size:214mmW 100mm ϕ	
2	Print head unit	5ZYWZ00001	For Printer(NKG-800)	
3	Ink ribbon	7ZZJD0105	For Printer(NKG-900) Color: Black	
		5ZZCM00003	For Printer(NKG-800) Color: Black	

Table 2.1.6b Spare Parts List for NKG-900 (H-7ZXSC8702)

No.	Name	Type	Q'ty	Remarks	Application
1	Fuse (DC32 10A)	5ZFCK00015	6	For IME	
2	Fuse (DC32 15A)	5ZFEX00001	6	For Ext PSU	

Table 2.1.6c Spare Parts List for NKG-800 (H-7ZXSC8701)

No.	Name	Type	Q'ty	Remarks	Application
1	Fuse (DC32 10A)	5ZFCK00015	6	For IME	
2	Fuse (DC32 15A)	5ZFEX00001	6	For Ext PSU	
3	Fuse (125V 20A)	5ZFCA00127	3	For Printer	

2.2 JUE-87

2.2.1 EME (Externally Mounted Equipment: NAF-253GM)

EME is connected to IME with a coaxial cable. The cable can be extended to maximum 100 m.



2

Fig 2.2.1 EME

2.2.2 IME (Internally Mounted Equipment: NTF-318)

IME consists of Interface Unit, Power Supply Unit, Process Circuit, Color LCD Unit, I/F Circuit and USB I/F Circuit.

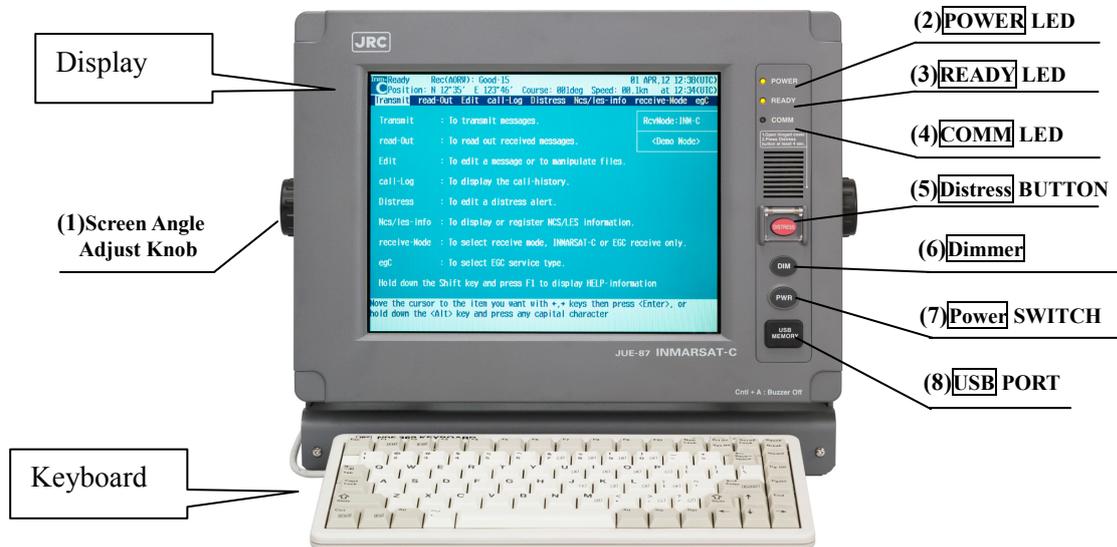


Fig 2.2.2a IME

Table 2.2.2a The LED Indicates the MES Status (Refer to Fig 2.2.2a)

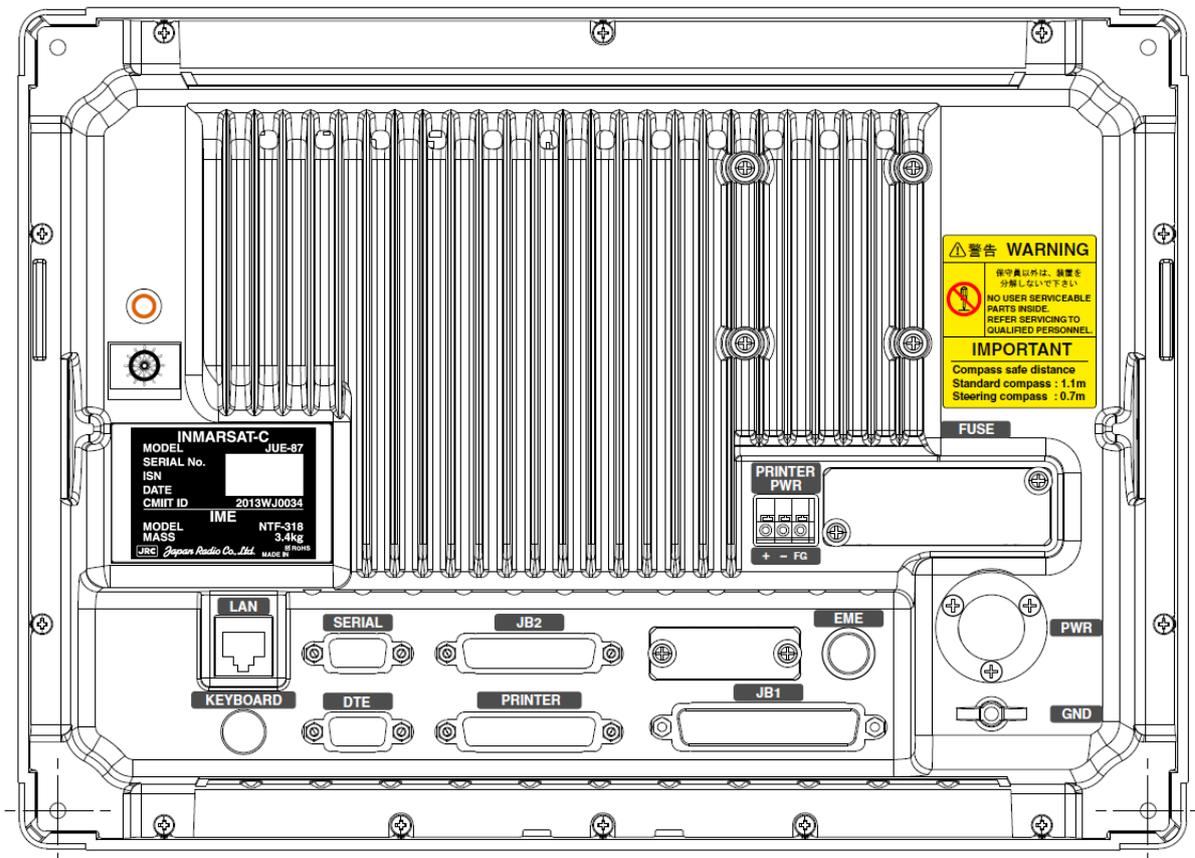
Name	ON	OFF
(2) POWER LED	MES power on	MES power off
(3) READY LED	MES receives NCS TDM carrier correctly and login is completed.	MES does not receive NCS TDM carrier correctly. Or, it does not log-in, although MES has been receiving NCS TDM career correctly.
(4) COMM LED	MES is communicating.	MES is idle.

NOTE

Since this model is only for EGC reception, it cannot log in. For this reason, **READY** lamp does not light. Similarly, **COMM** lamp does not light, either.

Table 2.2.2b The Switch and the Button Function (Refer to Fig 2.2.2a)

Name	Function	Remarks
(1) Screen Angle Adjust Knob	Used to adjust the screen angle (up to 25degrees) to clearly.	
(5) Distress Button	Used to send Distress Alert. (It cannot be used in this model.)	
(6) Dimmer Button	Used to adjust the screen and each LED (POWER/READY/COMM) dimmer.	
(7) POWER Switch	Used to turn on MES power	
(8) USB Port	Connect an USB flash memory.	



2

Fig 2.2.2b Back View of IME

Table 2.2.2c Connectors and the Cable (Refer to Fig 2.2.2b)

Name	Connected from/to
LAN Port	PC or HUB for RMS
KEYBOARD Port	KEYBOARD
SERIAL Port	(Not USED)
DTE Port	DTE
JB2 Port	JB2
PRINTER Port	PRINTER
JB1 Port	JB1
EME Port	EME
PWR Port	External Power Supply
GND Port	GND
PRINTER PWR Port	PRINTER

2.2.3 Printer (NKG-900/NKG-800)

The printer (NKG-900/NKG-800) is connected Internally Mounted Equipment (IME) to take a hard copy of transmitted, received and edited messages.

<NKG-900>

NOTE

- Keep [ON LINE] status at all time. Received message is not printed out in [OFF Line] status.
 - When status is off line: received message is not printed.
 - Use a roll-paper (JRC code :5ZPAL00002/5ZPCM00020 for one-sheet copy and 5ZPCK00001 for two-sheet copy) and ink ribbon (7ZZJD0105)
 - While a power supply is on, it isn't possible to turn paper feed knob manually.
- Do not use except above mentioned products, for keep normal operation.



Fig 2.2.3a Printer(NKG-900)

- (1) **POWER** switch
Used to turn on/off line voltage to ROP.
- (2) **Off Line** switch
Used to alternate ROP status on line and off line.
- (3) **Eject** switch
Reverses the paper back out to eject it.
- (4) **LF/FF** switch (Line feeder)
Feeds the paper one line if pressing a moment or feeds the paper one page if holding down a few seconds.
- (5) **Tear Off** switch
Inserts line feeds to cut the paper at the end of the printed line.

<NKG-800>

NOTE

- Keep [ON LINE] status at all time. Received message is not printed out in [OFF Line] status.
 - When status is off line: received message is not printed.
 - Use a roll-paper (JRC code :5ZPAL00002/5ZPCM00020 for one-sheet copy and 5ZPCK00001 for two-sheet copy) and ink ribbon (5ZZCM00003)
- Do not use except above mentioned products, for keep normal operation.

2

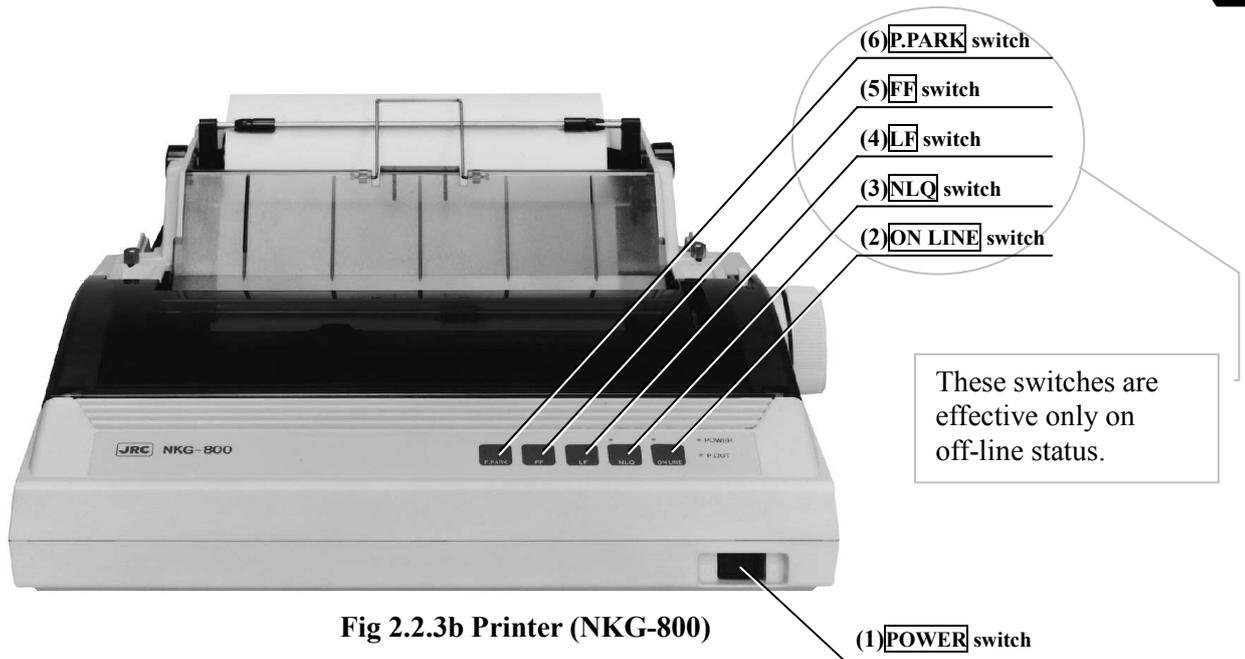


Fig 2.2.3b Printer (NKG-800)

- (1) **POWER** switch
Used to turn on/off line voltage to ROP.
- (2) **ON LINE** switch
Used to alternate ROP status on line and off line.
- (3) **NLQ** switch
Used to alternate the character mode normal quality and high quality.
- (4) **LF** switch (Line feeder)
Used to do a linefeed. If a button is pushed once, width of linefeed is 1/6 inches. When keep pressing, linefeed is repeated continuously.
- (5) **FF** switch
Used to do a page feed.
- (6) **P.PARK** switch
Used to eject roll paper or cut sheet.

2.2.4 EXT PSU (External Power supply Unit: NBD-904)

The EXT PSU (NBD-904) supplies DC+24V for IME-EME and Printer from Ship's power source (from 100 to 240V AC) and/or +24V DC.

When both AC and DC power source are connected to the EXT PSU and the power interruption of AC power source is occurred: EXT PSU switches over from AC power source to the DC power source automatically (Power failure detecting function).

The input of the AC power supply of EXT PSU is AC wide range 100- 240V.



Fig 2.2.4 EXT PSU

2.2.5 JB1 (Junction Box 1: NQE-3222)



Fig 2.2.5 JB1

2.2.6 Coaxial Cable (CFQ-5922A)

Connecting EME and Antenna Cable.

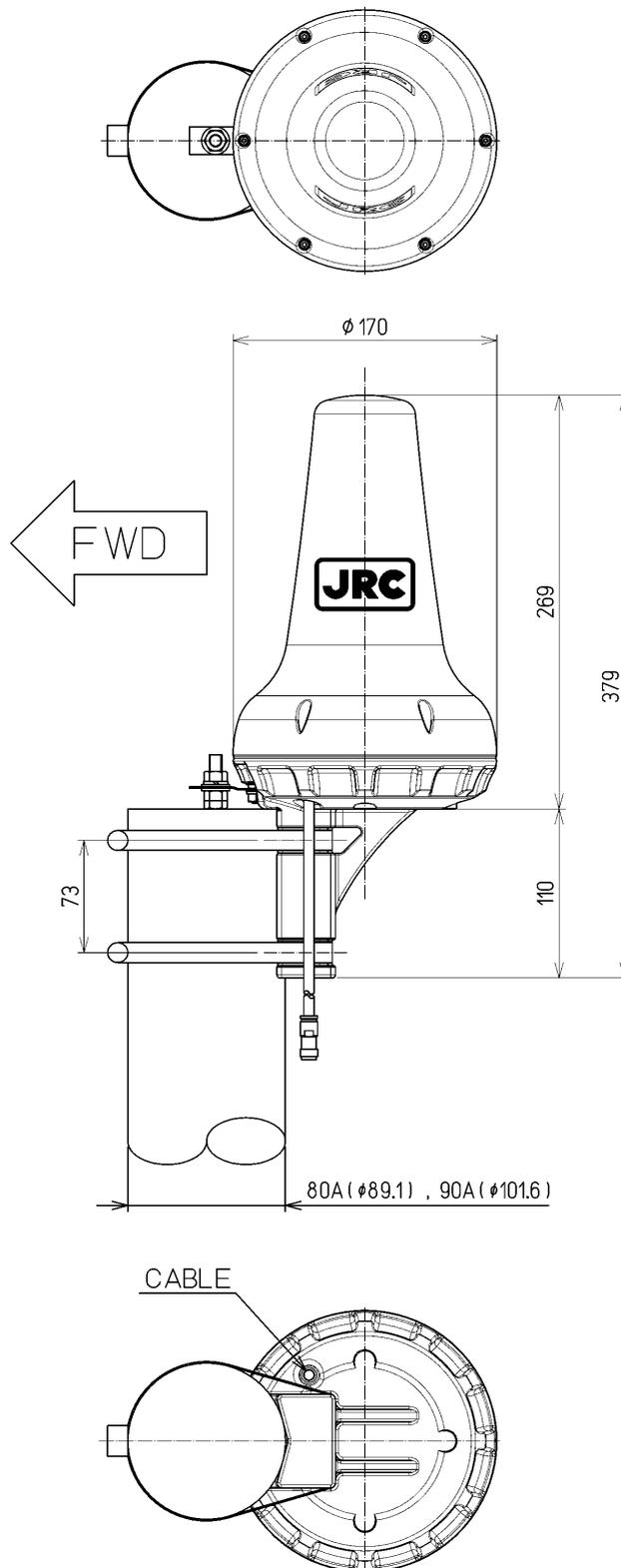


Fig 2.2.6 Coaxial Cable

2

2.3 Dimensional Drawing

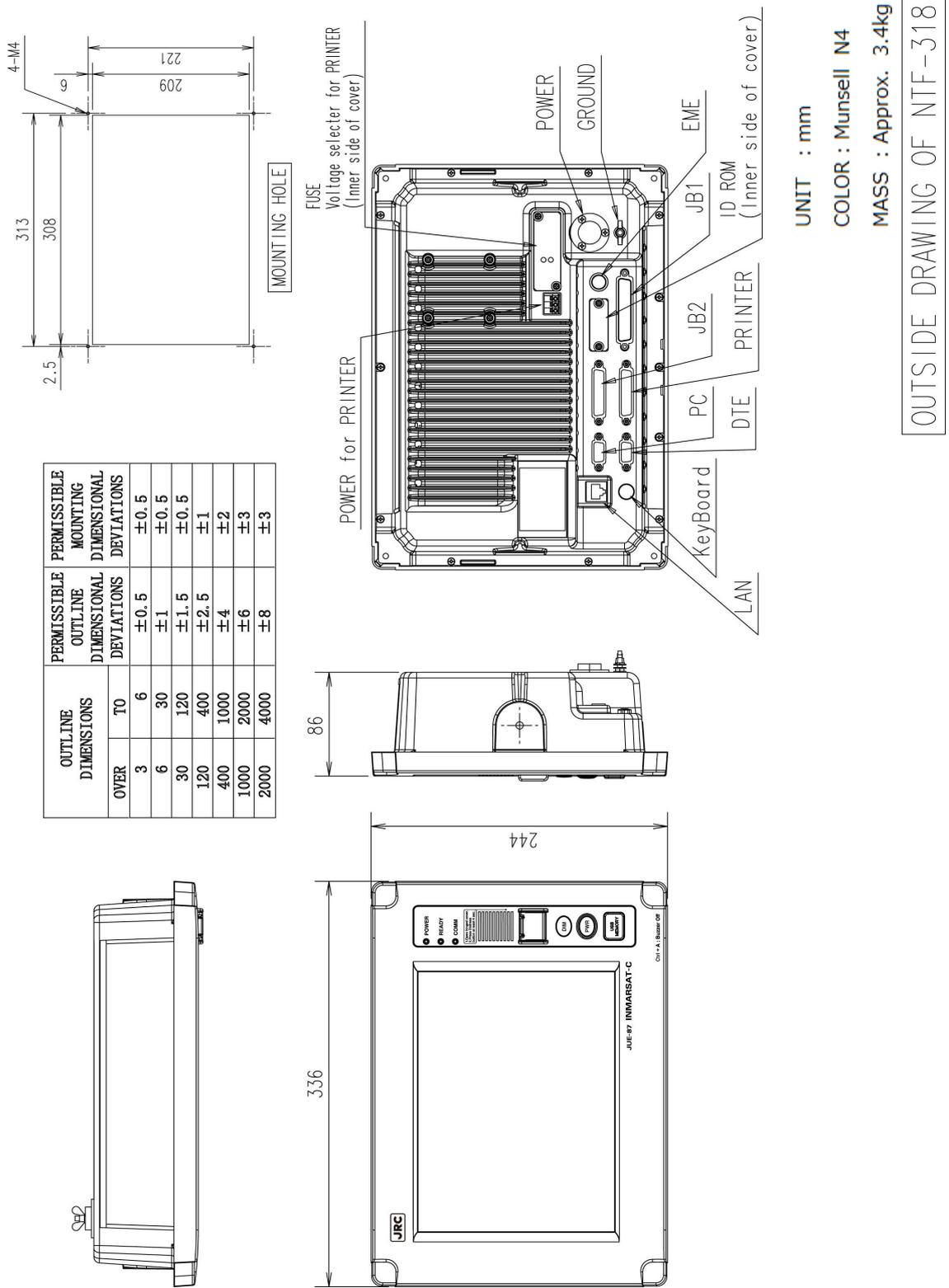
2.3.1 EME (NAF-253GM)



Unit: mm
Mass: Approx. 2.4 kg
Color: N9

Fig 2.3.1 EME

2.3.2 IME (NTF-318)



OUTSIDE DRAWING OF NTF-318



Fig 2.3.2 IME

2.3.3 DTE Keyboard (NDF-369)

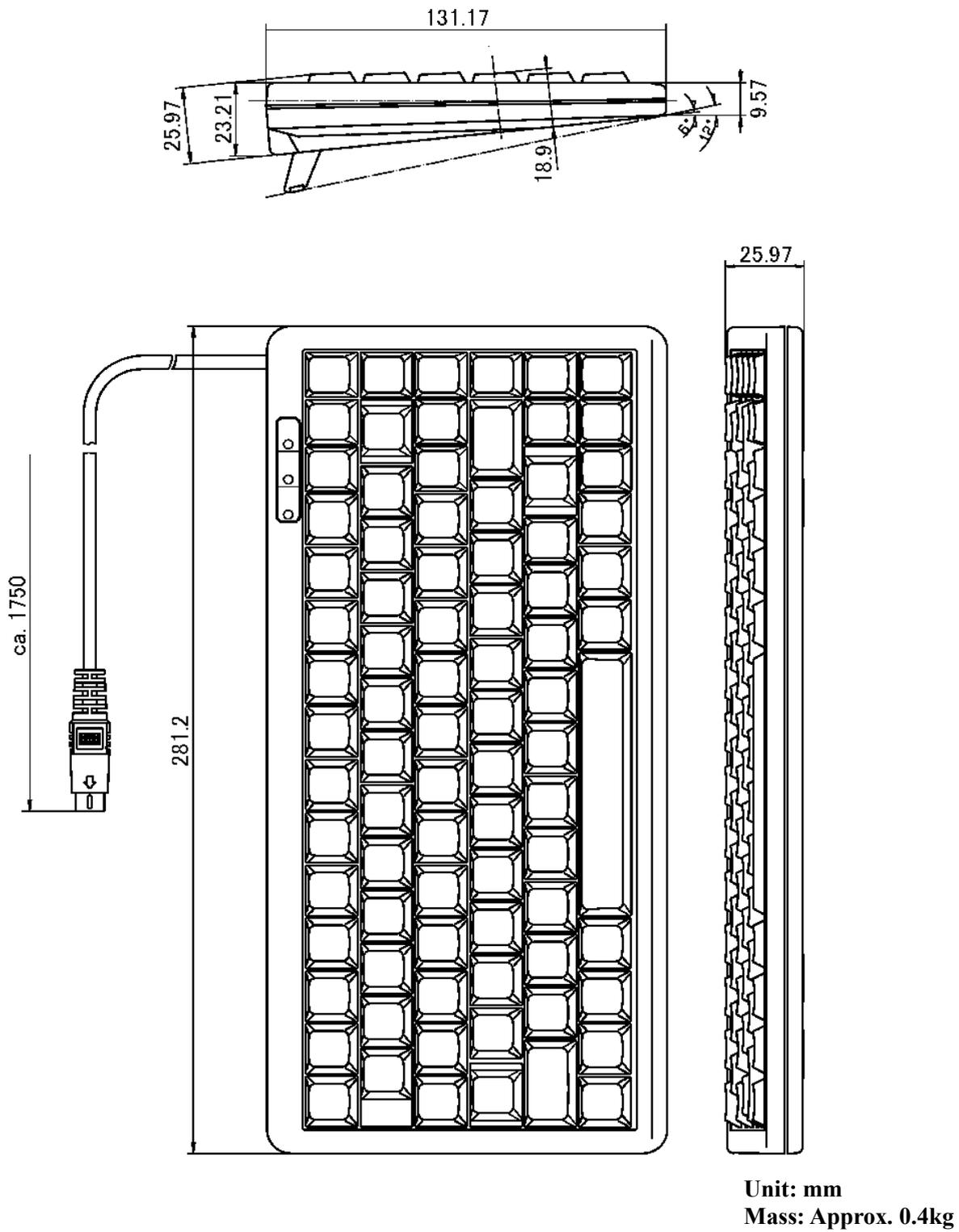
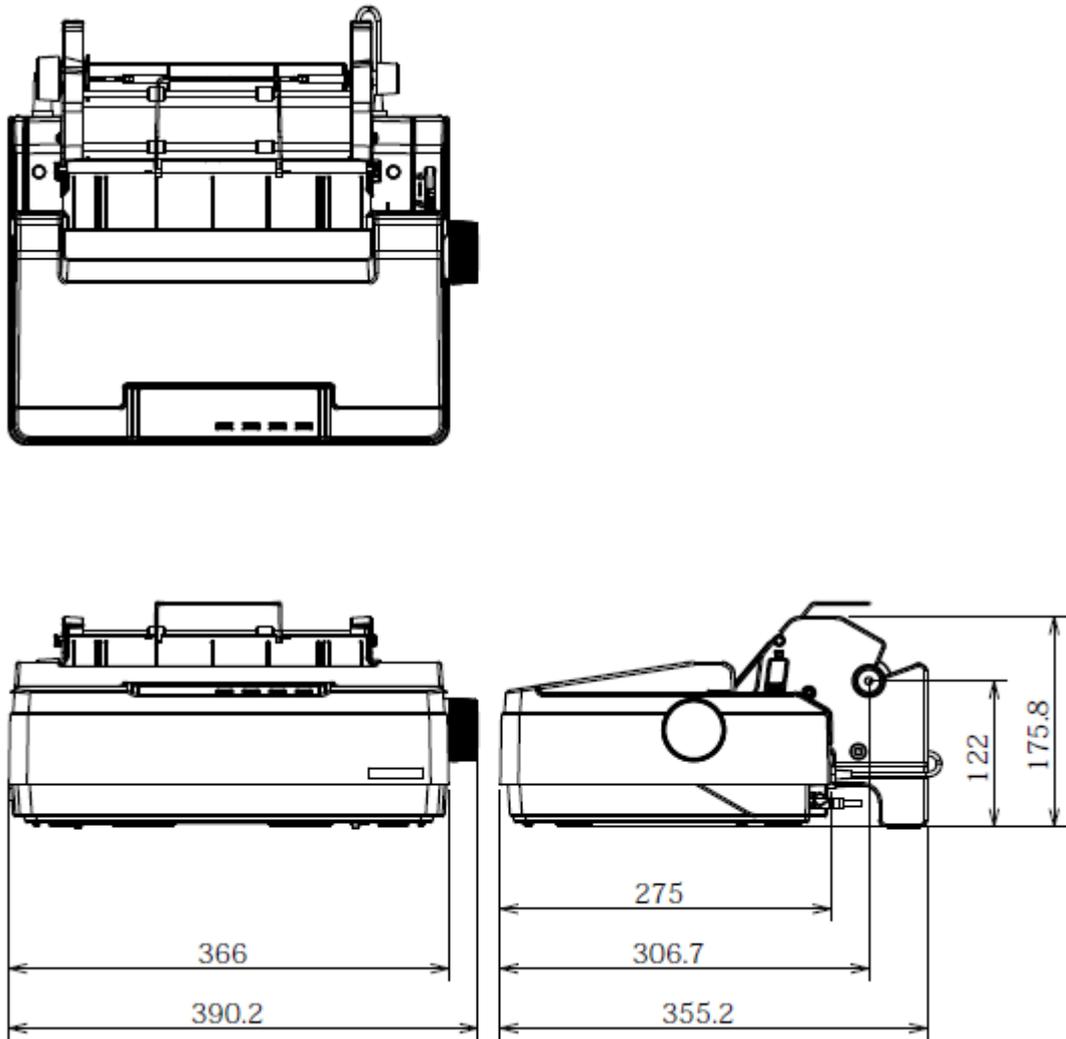


Fig 2.3.3 DTE Keyboard

2.3.4 Printer (NKG-900/NKG-800)

2



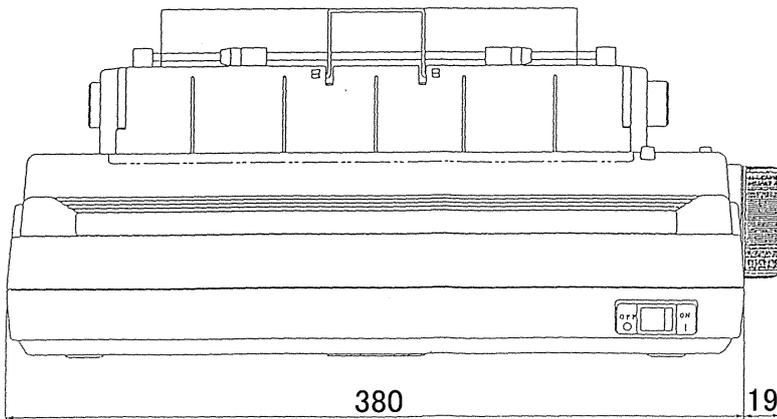
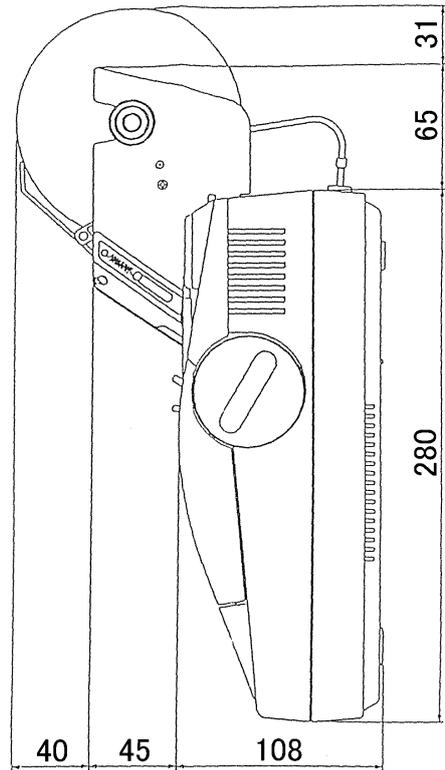
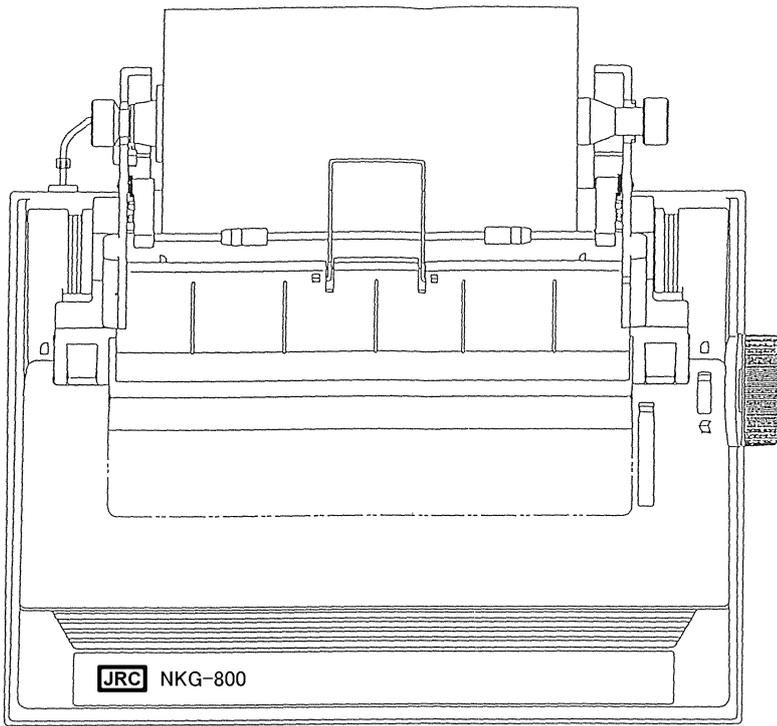
Fixing

Attach the hook and loop fastener to the bottom of the printer and the desk, and then fix them.

Unit: mm

Mass: Approx.4.8kg

Fig 2.3.4a Printer (NKG-900)



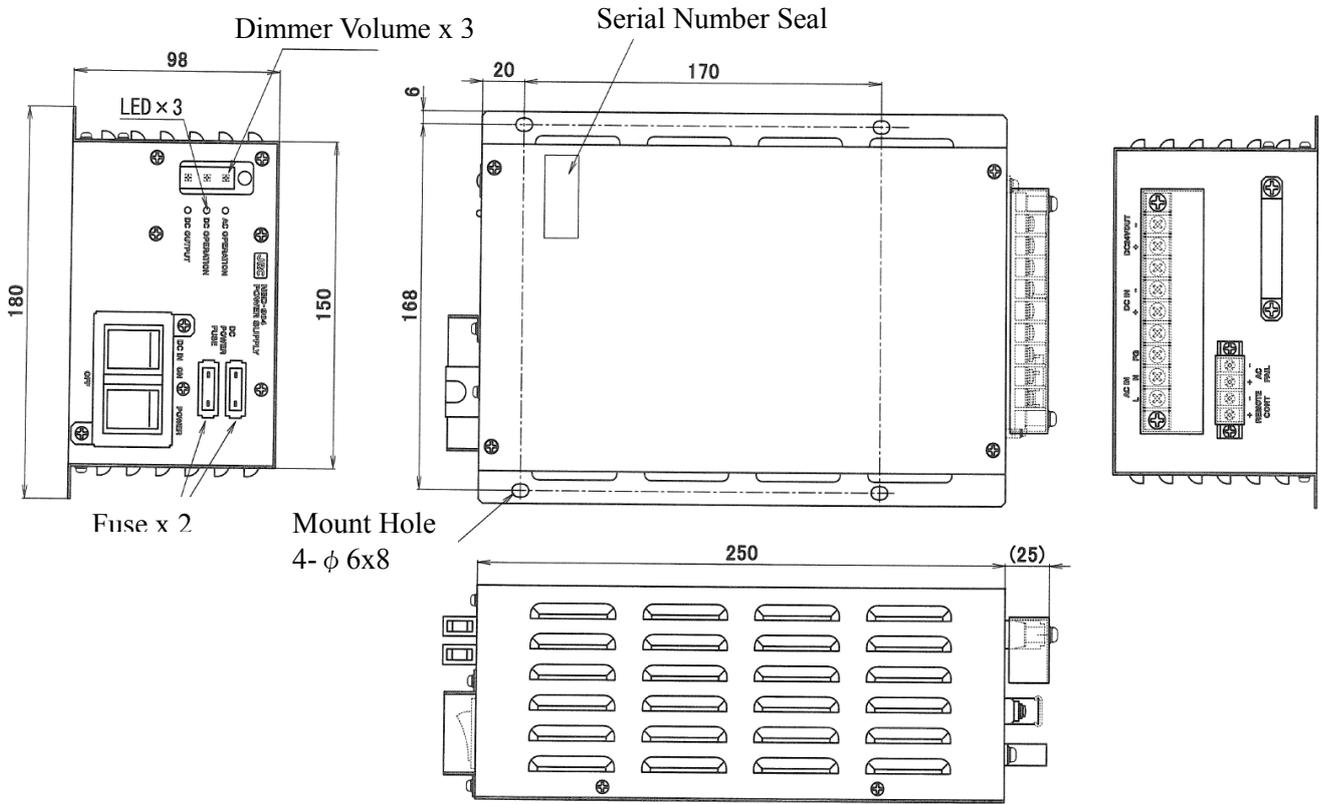
Fixing

Attach the hook and loop fastener to the bottom of the printer and the desk, and then fix them.

Unit: mm
Mass: Approx.3.7kg

Fig 2.3.4b Printer (NKG-800)

2.3.5 EXT PSU (NBD-904)



Refer to Table 5.1.3 Principal Specification of EXT PSU for detailed specifications.

Unit: mm
Mass: Approx. 2.6kg

Fig 2.3.5 EXT PSU

2.3.6 JB1 (NQE-3222)

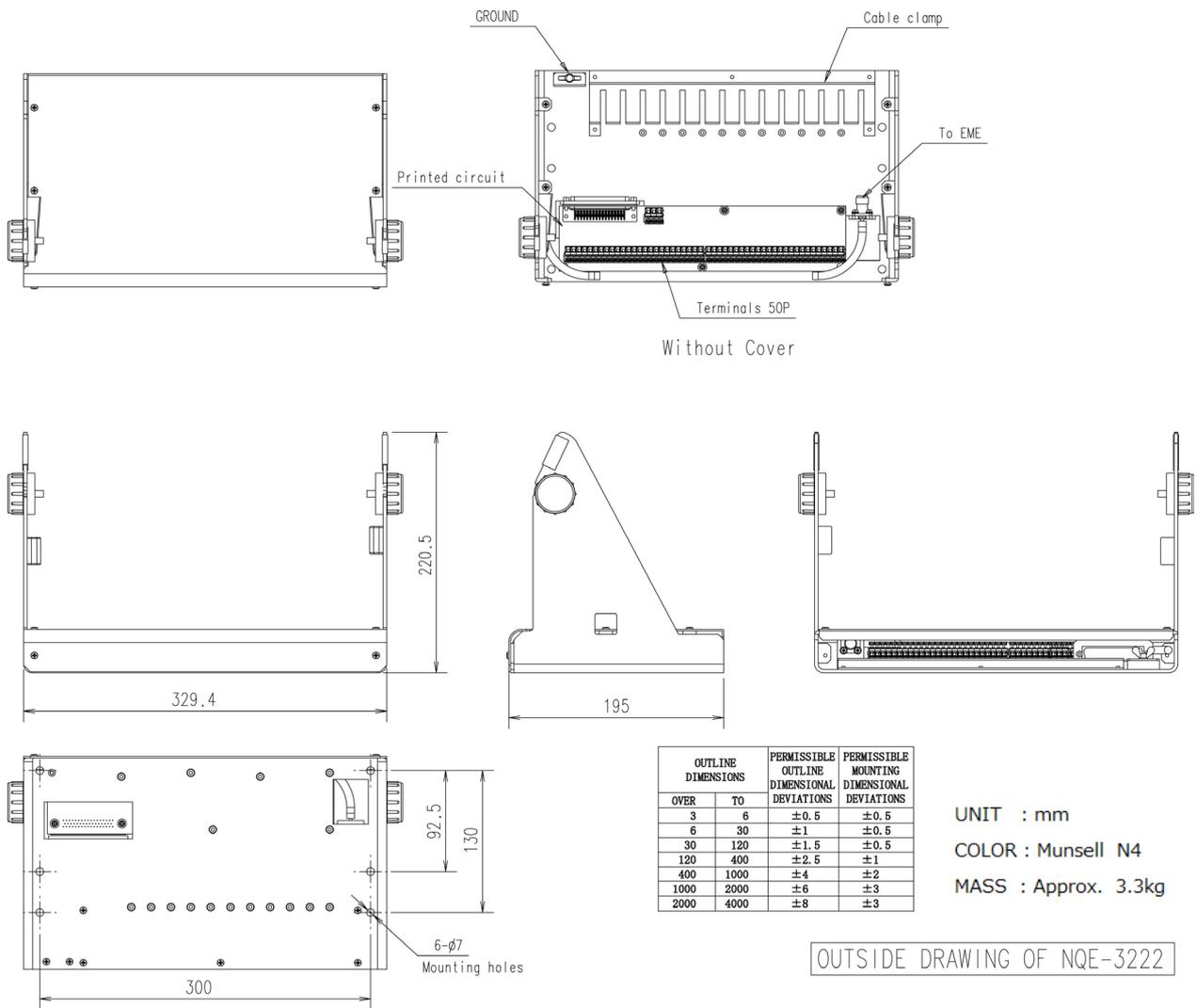
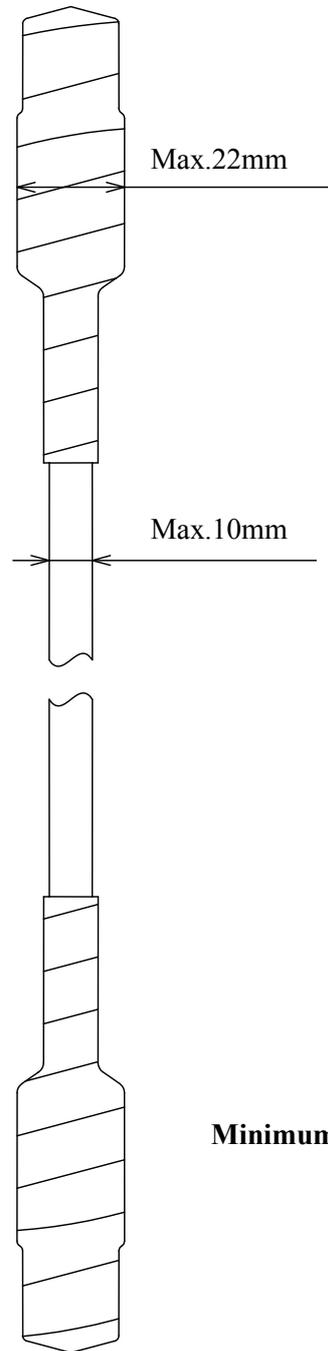


Fig 2.3.6 JB1

2.3.7 Coaxial Cable (CFQ-5922A)

Connecting EME and Antenna Cable.



2

Type	Length
Standard: CFQ-5922A3	30m(± 10cm)
Option: CFQ-5922A4	40m(± 10cm)
Option: CFQ-5922A5	50m(± 10cm)

Fig 2.3.7 Coaxial Cable

CHAPTER 3. OPERATION

3.1 Power ON - Initial setting - Power OFF

NOTE

Before turning on all power switches of JUE-87, confirm that all the signal cables and power cables are connected correctly.

3.1.1 Power ON

When the power switch of IME is turned on, JUE-87 synchronizes with NCS TDM carrier(*).

Step	Operation/Response (Example)	Screen (Example)
1	<ul style="list-style-type: none"> • Turn on the DC switch and AC switch on the EXT PSU. • Turn on the IME and the POWER LED of the IME is illuminated. • The software version is displayed and operation check. 	<pre>NOW LOADING... SELF DIAGNOSING... Software version :1.00 ROM check :OK RAM check :OK Keyboard check :OK</pre>
2	<ul style="list-style-type: none"> • The IME system software starts up in about 30 seconds, then Main menu screen is displayed. 	
3	<ul style="list-style-type: none"> • Confirming that EME and IME (DTE unit) are compatible with model. (To close this window, press F10 key.) If EME and IME (DTE unit) are not compatible with model, please inform JRC. 	<pre>---Model & Country mode Compatibility--- EME and DTE are compatible with model & country mode. Country mode: Standard F10:Previous</pre>
4	<ul style="list-style-type: none"> • Turn on the printer. • The status is changed “Log-out” or “Egc-only” to “Tune” in the first line on the main menu, then JUE-87 is started selecting NCS common channel. 	
5	<ul style="list-style-type: none"> • After few minutes, the status is changed Tune to “Log-out” or “Egc-only” in the first line on the main menu. 	
6	<ul style="list-style-type: none"> • Set up each parameter following “3.1.3 Initial setting”. 	

* NCS TDM carrier: The signal outputted from NCS as COMMON channel.



3.1.2 Main Menu display (explanation of screens and commands)

- | | | | |
|-----|---------------------|------------|--|
| (1) | Tune Rec (POR): | Good-15 | 15 APR,14 19:01(UTC) |
| | Position: N 50° 00' | E 123° 00' | Course: 123deg Speed: 10.0kt at 19:00(UTC) |
- | | | | | | | | | |
|-----|-----------------|----------|------|----------|----------|--------------|--------------|-----|
| (2) | Transmit | read-Out | Edit | call-Log | Distress | Ncs/les-info | receive-Mode | egC |
|-----|-----------------|----------|------|----------|----------|--------------|--------------|-----|
- | | | |
|-----|--------------|---|
| (3) | Transmit | : To transmit message. |
| | read-Out | : To read out received message. |
| | Edit | : To edit a message or to manipulate files. |
| | call-Log | : To display the call-history. |
| | Distress | : To initiate a distress alert. |
| | Ncs/les-info | : To display or register NCS/LES information. |
| | receive-Mode | : To select receive mode, INMARSAT-C or EGC receive only. |
| | egC | : To select EGC service type. |
- | | |
|-----|--|
| (4) | Move the cursor to the item you want with ← , → keys then press <ENTER>, or hold down the <Alt> key and press any capital character. |
|-----|--|

Fig 3.1.2a Main Menu Screen

<Explanation of screens>

The Main menu screen is the starting screen to select the main function and is divided into the following areas:

- (1) MES status area (Upper two lines) : Gives the MES status, current date, time, and MES position. (as set under DOS or Setup command)
- (2) Main menu area : Gives a list of function you use routinely. Available items on this model are [Nes/les-info] to initial setting, [egC] to EGC reception, and [read-Out] to read out received message, only.
- (3) Window area : Gives further instruction and/or submenu. Available items on this model are [Nes/les-info] to initial setting, [egC] to EGC reception, and [read-Out] to read out received message, only.
- (4) Instruction area (Lower two lines) : Gives instruction at the state where you were.

<Explanation of commands>

JUE-87 has two kinds of way to operate the DTE, one is selecting command by cursor, and the other one is pressing the buttons directory. Direct commands make quicker and easy operation when you get used to the operation of DTE.

- (1) Commands selecting by cursor

You can select the function below in the Main menu by moving the cursor to the item you want and pressing **Enter** key. Available items on this model are [Nes/les-info] to initial setting, [egC] to EGC reception, and [read-Out] to read out received message, only.

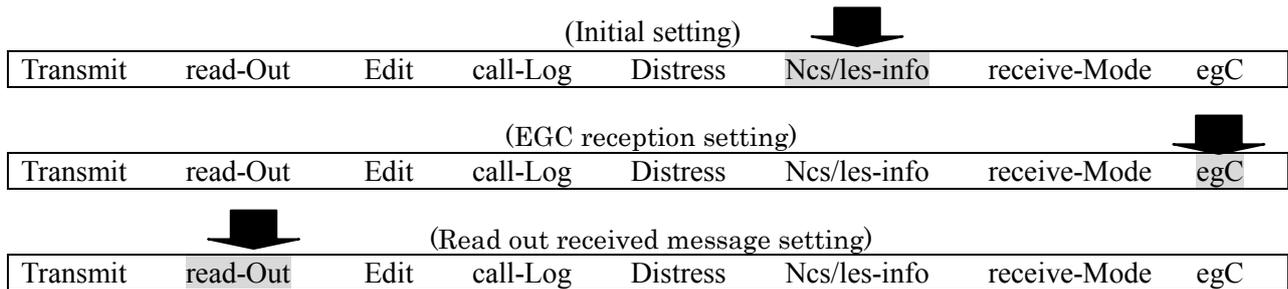


Fig 3.1.2b Selecting command in main menu area by cursor

(2) Direct commands

This model has two types of commands; using **Alt** key and **Ctrl** key.

- Only this command is available by pressing a key with holding down **Alt** key: because no communications are executed, except EGC reception:

Alt + **C** **egC**
Alt + **O** **read-Out**

- The following commands are available by pressing a key with holding down **Ctrl** key:

Ctrl + **A** **Alarm off**
 To stop sounding the alarm buzzer of the IME.

Ctrl + **L** **MES position display ON/OFF**
 To alternate MES position display ON and OFF

Ctrl + **F** **MES communication status display ON/OFF**
 To alternate MES communication status display ON and OFF.

Ctrl + **Z** **Printer status display ON/OFF**
 To alternate MES printer status display ON and OFF.
 Msg print on.....Automatic printout function ON
 Msg print off.....Automatic printout function OFF.
 DTEPrinter is routed to DTE.
 NONENo printer connection.

(3) Screen control commands

You can control screen on the DTE by pressing one of the following keys while holding down **Ctrl** key:

Ctrl + **↑** **To light up the display backlight and LED to 15 stages**
Ctrl + **↓** **To darken the display backlight and LED to 15 stages**



3.1.3 Initial Setting

After turn on the JUE-87 MES, set the following parameters;

- (1) Selecting Preferred Ocean Region
- (2) Setting Date & Time

(1) Selecting Preferred Ocean Region (Ncs/Les info)

When your ship navigates in more than one ocean region, confirm “All ocean region” is selected in “Preferred Ocean Region” window. (factory default is “All ocean region”)

When a particular ocean region is selected, the MES will scan the NCS common channel only in the ocean region selected.

NOTE

- 1) The Selecting Preferred Ocean Region command is available, when the first line of the screen is displayed “Log-out” or “EGC only”.
- 2) In case of “All ocean region” setup, if MES does not receive NCS common channel more than 30minutes, MES automatically scans all ocean region and tunes new NCS common channel. (The information is displayed on IME screen to user.)

Step	Operation/Response (Example)	Screen (Example)	Remarks
1	• Move the cursor to “Ncs/les-info” with using the arrow keys and press Enter key.	• The “Ncs/les information” window is displayed.	
2	• Move the cursor to “Preferred ocean region” and press Enter key.	• The “Preferred ocean region” window is displayed.	
3	• Confirm the cursor is at “All ocean region” and press Enter key.	• Status display is changed to “Scan”.	• When you want to change a parameter, move the cursor to the item you want and press Enter key. • You cannot set up when the status in the first line on the main menu is “Tune”.
4	• To return to Main menu screen, press F10 key twice of press Esc key once.	• Windows are disappeared.	

(2) Setting date and time

When the Date & time (displayed in the bottom line on the right side of the first screen) is wrong, correct the Date & time as follows.

When the JUE-87 is synchronized with the NCS common channel, the time is reset at 00:00 (UTC) everyday by Inmarsat frame channel.

Step	Operation/Response (Example)	Screen (Example)	Remarks
1	• Hold down Alt key and press U key.	• The “Set up” window is displayed.	
2	• Confirm that Data & Time window has been selected, then press Enter key.	• The “Date & time” window is displayed.	
3	• Move the cursor to the item you want to correct and press Enter key.		• You can select the display mode, Coordinated Universal Time (UTC), or local time (LT) with “display timE” .
4	• To return to Main menu and correct Date & time in IME, press F10 (“Previous”) key twice or Esc key.	• The correct Date & time is displayed at the first line.	



3.1.4 Power OFF

Turn OFF the power switch of IME, then JUE-87 is terminated.

3.2 EGC Message Reception

3.2.1 EGC Messages

Two types of EGC message are offered and broadcasted to the all ships on the selected ocean region, and ships on specified area:

1) Safety NET™

This is the service, sending the information approved by IMO of each country (including RCC) to meet the GMDSS, for the ship's safety voyage.

This service has following contents:

- Emergency, Distress message or Alert for the voyage
- Search-and rescue message
- Chart correction message

2) Inmarsat System message

This is the service, sending the system-related message from Inmarsat.

Codes(area information) for identifying whether the message should be received or not, is attached to the entire EGC messages. By referring to this code, message-receivable ships are categorized into below groups.

1) When area is specified

- The ships on the specified Navarea/Metarea(refer to Navarea/Metarea ocean region chart)
- The ships inner the circle figure specified the latitude and longitude
- The ships inner the oblong figure specified the latitude and longitude

2) All of the ships in the ocean region

Moreover, the number called "Message Reference No." is attached to EGC message. The "Message reference No." of correctly received message is registered into the device, and already received same message is not received and printed out.

3.2.2 Settings for EGC Reception

The JUE-87 can restrict to EGC message reception with Navarea/Metarea, Fixed area, reception type, Satellite Coastal areas and Coastal Warning type. Choose “egC” on main menu to setup this function.

Also JUE-87 has the function that printing EGC message automatically when received it. See “3.2.2.6”, when you want to set up this function.

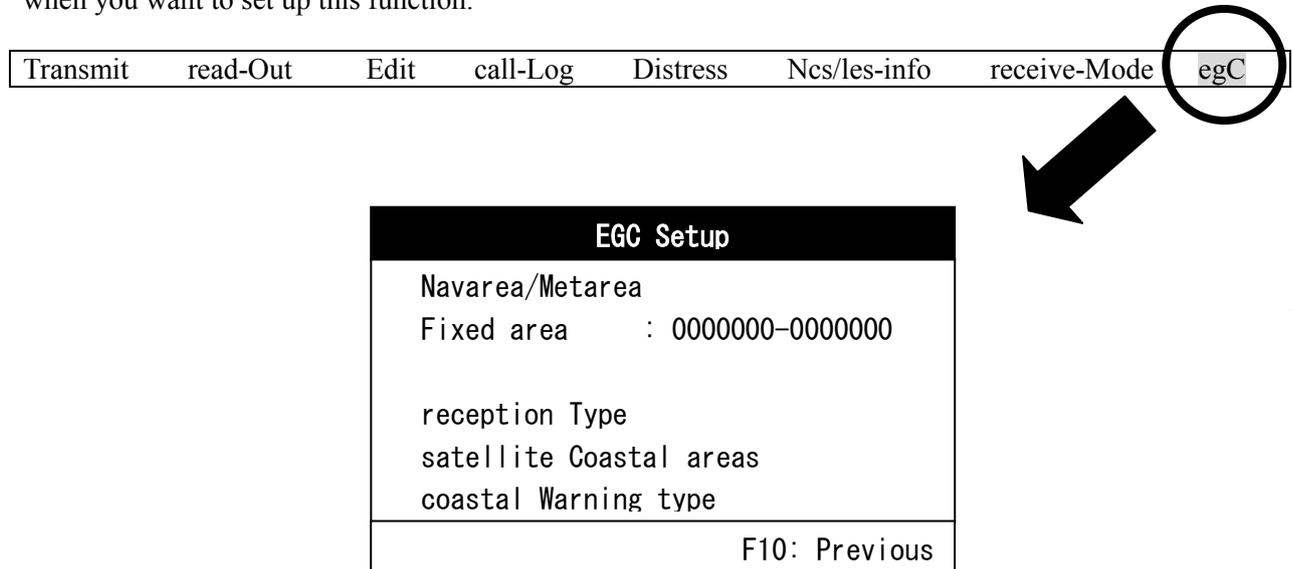


Fig 3.2.2 Opening “EGC” Window from main menu

3.2.2.1 Setting of Navarea/Metarea

Only receives the messages to Navarea/Metarea, which have been set up.

NOTE

Basically, information of Navarea/Metarea in the ocean region being logged in now is sent.

Step	Operation	IME Response	Remarks
1	• Move the cursor to “ egC ” and press Enter key.	• The “ EGC ” window is displayed.	
2	• When you want to change the “ Navarea/Metarea ”, press Enter key.	• The “ Navarea/Metarea ” window is displayed.	
3	• When you want to restrict the “ Navarea/Metarea ”, move the cursor to the restrict “ Navarea/Metarea ” number and Enter key.	• The cursor is moved to “ Enable ” or “ Disable ”.	
4	• Move the cursor to “ Enable ” or “ Disable ” and press Enter key.	• The cursor is moved to next item.	
5	• Press F10 (“ Previous ”) key.	• The “ EGC ” window is displayed.	
6	• To return to Main menu, press F10 (“ Previous ”) key twice.	• Main menu screen is displayed.	• When you want to change the another item, move the cursor and press Enter key.

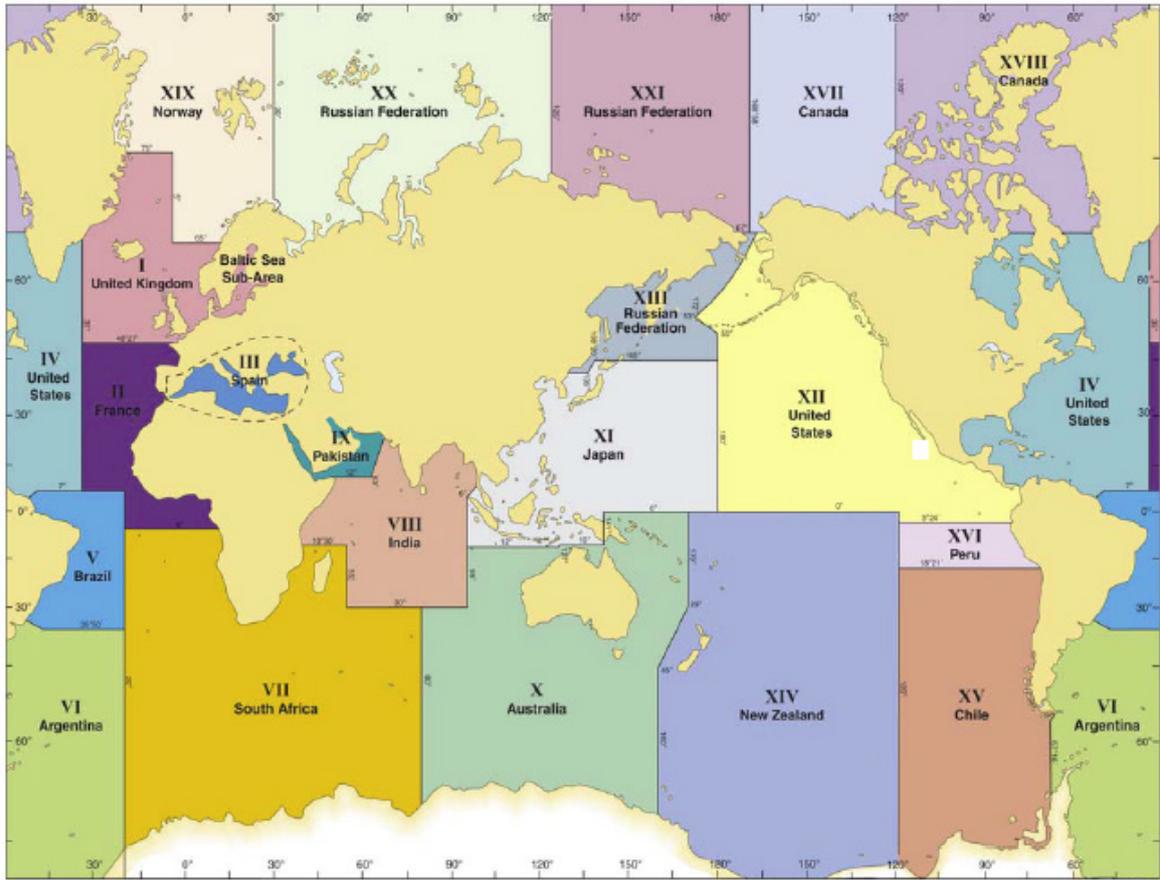


Fig 3.2.2.1a Navarea/Metarea ocean region chart

Navarea/Metarea	
Area 1 : Enable	Area 12 : Enable
Area 2 : Enable	Area 13 : Enable
Area 3 : Enable	Area 14 : Enable
Area 3 : Enable	Area 15 : Enable
Area 4 : Enable	Area 16 : Enable
Area 5 : Enable	Area 17 : Enable
Area 6 : Enable	Area 18 : Enable
Area 7 : Enable	Area 19 : Enable
Area 8 : Enable	Area 20 : Enable
Area 9 : Enable	Area 21 : Enable
Area 10 : Enable	
Area 11 : Enable	
F10: Previous	

Fig.3.2.2.1b “Navarea/Metarea” Window

3.2.2.2 Setting of Fixed Area

Step	Operation	IME Response	Remarks
1	• Move the cursor to “ egC ” and press Enter key.	• The “ EGC ” window is displayed.	
2	• When you want to change the fixed area, move the cursor to the “ Fixed area ” and press Enter key.	• The cursor is moved to the “ Fixed area ” area.	
3	• Press the new “ Fixed area ” and Enter key.	• The new fixed area is displayed and the cursor is moved next to fixed area.	
4	• To return to Main menu, press F10 (“ Previous ”) key twice.	• Main menu screen is displayed.	• When you want to change the other item, move the cursor and press Enter key.

EGC Setup
Navarea/Metarea Fixed area : 1000000-1234567
reception Type satellite Coastal areas coastal Warning type
F10: Previous

Fig 3.2.2.2 “EGC” Window selecting “Fixed area”

3.2.2.3 Setting of Reception Type

You can restrict below mentioned services at this menu.

- Chart correction service (“charT correction service”)
- Chart correction service for fixed area (“Chart correction service for fixed areas”)
- Download group ID (“Download group identity”)
- General call (“General call”)
- Group call (“group call”) (Note 1)

EGC reception type	
charT correction service	: Enable
Chart correction service for fixed areas	: Enable
Download group identity (ENID)	: Enable
General call (All ships)	: Enable
group call (Fleet NET)	: Enable
F10: Previous	



Fig 3.2.2.3 “EGC reception type” Window

Step	Operation	IME Response	Remarks
1	• Move the cursor to “egC” and press Enter key.	• The “EGC” window is displayed.	
2	• Move the cursor to “reception type” and press Enter key.	• The “EGC reception type” window is displayed.	
3	• When you want to restrict the service message, move the cursor to restrict item and press Enter key.	• The cursor is moved to “Enable” or “Disable”.	
4	• Move the cursor to “Enable” or “Disable” and press Enter key.	• The cursor is moved to next item.	
5	• Press F10 (“Previous”) key.	• The “EGC” window is displayed.	• When you want to restrict the other service message, return to step 3.
6	• To return to Main menu, press F10 (“Previous”) or press Esc key.	• Main menu screen is displayed.	• When you want to change the other item, move the cursor and press Enter key.

Note 1) When the “group call (Fleet NET)” is selected and the “Enable” is also selected, the list of ENIDs downloaded into MES’s memory is displayed.

3.2.2.4 Setting of Satellite Coastal Areas

The JUE-87 can restrict the Satellite Coastal Area message of the A through Z areas. Choose the area you want to receive or restrict from these areas.

Satellite coastal areas	
A: Enable	N: Enable
B: Enable	O: Enable
C: Enable	P: Enable
D: Enable	Q: Enable
E: Enable	R: Enable
F: Enable	S: Enable
G: Enable	T: Enable
H: Enable	U: Enable
I: Enable	V: Enable
J: Enable	W: Enable
K: Enable	X: Enable
L: Enable	Y: Enable
M: Enable	Z: Enable
F10: Previous	

Fig 3.2.2.4 “Satellite coastal areas” Window

Step	Operation	IME Response	Remarks
1	• Move the cursor to “egC” and press Enter key.	• The “EGC” window is displayed.	
2	• Move the cursor to “satellite Coastal area” and press Enter key.	• The “Satellite coastal areas” window is displayed.	• The JUE-87 can select the “A” through “Z” areas to the “Enable” or the “Disable”.
3	• When you want to change the setting, move the cursor.	• The cursor is moved to “Enable” or “Disable”.	
4	• Select the “Enable” or “Disable” and press Enter key.	• The cursor is moved to next area.	
5	• Press F10 (“Previous”) key.	• The “EGC” window is displayed.	• When you want to change the other area setting, return to step 3.
6	• To return to Main menu, press F10 (“Previous”) or press Esc key.	• Main menu screen is displayed.	• When you want to change the other item, move the cursor and press Enter key.

3.2.2.5 Setting of Coastal Warning Type

The JUE-87 can restrict the Coastal Warnings mentioned below.

- other Electronic navaid messages
- Ice reports
- Loran messages
- Meteorological forecasts
- Pilot and VTS service messages
- GNSS messages
- no message on Hand
- AIS service messages

NOTE

The following items are mandatory.
JUE-87 cannot restrict.

- Navigational warnings
- meteorological Warnings
- search and Rescue (SAR) information and piracy attack warnings
- Other navigational warnings



Coastal warning type	
other Electronic navaid messages	: Enable
Ice report	: Enable
Loran messages	: Enable
Meteorological forecasts	: Enable
Pilot and VTS service messages	: Enable
GNSS messages	: Enable
no message on Hand	: Enable
AIS service messages	: Enable
Navigational warnings	: Enable
meteorological Warnings	: Enable
search and Rescue (SAR) information and piracy attack warnings	: Enable
Other navigational warnings	: Enable
F10: Previous	

Fig 3.2.2.5 “Coastal warning type” Window

Step	Operation	IME Response	Remarks
1	• Move the cursor to “ egC ” and press Enter key.	• The “ EGC ” window is displayed.	
2	• Move the cursor to “ coastal Warning type ” and press Enter key.	• The “ Coastal warning type ” window is displayed.	
3	• When you want to restrict the Coastal warning, move the cursor to restrict item and press Enter key.	• The cursor is moved to “ Enable ” or “ Disable ”.	
4	• Move the cursor to “ Enable ” or “ Disable ” and press Enter key.	• The cursor is moved to next item.	
5	• Press F10 (“ Previous ”) key.	• The “ EGC ” window is displayed.	• When you want to restrict the other Coastal warning, return to step 3.
6	• To return to Main menu, press F10 (“ Previous ”) or press Esc key.	• Main menu screen is displayed.	• When you want to change the other item, move the cursor and press Enter key.

3.2.2.6 Setting for Message Print Out Function

When the JUE-87 is received the EGC or Inmarsat-C message, the received message is printed out automatically that is the message print out function.

When this function is turned off or on according to the following procedure.

Step	Operation	IME Response
1	<ul style="list-style-type: none">Hold down Alt key and press u key.	“Set up” window is displayed.
2	<ul style="list-style-type: none">Move the cursor to “Peripheral Function” and press Enter key.	“Peripheral function” window is displayed.
3	<ul style="list-style-type: none">Move the cursor to “automatic Message print out” and press Enter key.	The cursor is moved to “oN” , “oFf” .
4	<ul style="list-style-type: none">Select “oN” or “oFf” and press Enter key.<ul style="list-style-type: none">➤ oN: The function is turned on.➤ oFf: The function is turned off.	The cursor is moved to next step.
5	<ul style="list-style-type: none">Press F10 (“Previous”) key.	“Setup” window is displayed.
6	<ul style="list-style-type: none">To return to Main menu, press Enter key.	Main menu is displayed.

NOTE

EGC SafetyNET messages with Urgency and Distress priority are printed out automatically if the print function is set off. Please acknowledge it to be no defective operation of the printer.

3.3 Handling Received Messages (Read-out, Printing, Saving, and Deleting)

The received EGC messages are printed out immediately when the MES receives them, in the case of the automatic message print out function (see 3.2.2.6) is turned on. They are erased from older ones when stored calls exceed more than its maximum capacity, 100 calls, or 40K bytes. If the numbers of calls exceed 100, the call logs are deleted from older ones. When you need to **read out**, **print out**, **saving**, or **deleting** the messages, follow the below procedures.

REFERENCE

JUE-87 has function that EGC message is read out from JRC MFD via LAN.
Please refer to the MFD's documentation about the MFD corresponding to this function and the operation method.

(1) To read out, print out, and save the message

Step	Operation	IME/DTE Response	Remarks
1	• Move the cursor to “read Out” and press Enter key.	• “Read-out” window is displayed. It shows 3 types of message list.	“Inm-C” : “Inm-C message list” “Egc” : “Egc message list” “All” : “reception message list” (Received all messages) * “Inm-C” and “All” cannot be used in this model.
2	• Select the type of message list you want to see.	• The message list you have chosen is displayed. Each message list displays received messages in chronological order. (The newest message is displayed at the top of list.)	
3	• Move the cursor to the message you want to read and press Enter key.	• The message you want to see is displayed. • Press F10 (“Previous”) key to return to main menu when you do not need to print out .	• Lower 2 lines show the description of the received message. • Under line shows the characters received in error.
4	• To print out the message, press F5 (“Print out”).	• The message is printed out.	• Press F10 (“Previous”) key to return to main menu when you do not need to save it .
5	• To save the message, press F6 (“save as”) key.	• The “File name” is displayed.	• Blank space cannot be used for file name.
6	• Enter the file name and press Enter key. • Press F10 (“Previous”) key to return main menu.	• “Now saving data. Please wait” is displayed.	• Using received day for file name, is convenient for you.

(2) To delete the message



Step	Operation	IME Response	Remarks
1	<ul style="list-style-type: none"> Move the cursor to “read Out” and press Enter key. 	<ul style="list-style-type: none"> “Read-out” window is displayed. It shows three types of message list. 	<ul style="list-style-type: none"> “Inm-C”: “Inm-C message list” “Egc”: “Egc message list” “All”: “Reception message list” (Received all messages)
2	<ul style="list-style-type: none"> Select the type of message list you want to see. 	<ul style="list-style-type: none"> The message list you have chosen is displayed. Each message list displays received messages in chronological order. (The newest message is displayed at the top of list.) 	
3	<ul style="list-style-type: none"> Press F1 key to go to Delete mode. 	<ul style="list-style-type: none"> “Delete mode” screen is displayed. 	
4	<ul style="list-style-type: none"> Move the cursor to the message you want to delete, and press Space bar (You can select a number of messages in same time). 	<ul style="list-style-type: none"> Asterisk marks (*) are displayed on the head of the lines you want to delete. To delete the all message, press F2 (select all) key. 	<ul style="list-style-type: none"> If you want to cancel the deleting, press Space bar once more to cancel it. Then, Asterisk marks (*) are cleared and deletion is cancelled.
5	<ul style="list-style-type: none"> To delete the selected messages, press F7 (“Delete”) key. 	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center;">Warning</p> <p style="text-align: center;">Do you really want to delete selected messages?</p> <p style="text-align: center;">OK Cancel</p> </div>	
6	<ul style="list-style-type: none"> Select OK. 	<ul style="list-style-type: none"> The messages are deleted. “Message list “ in read-out mode is re-displayed when deletion is completed. 	

EGC message list					
No.	Date	Time	Priority	Size	Service
1.	14-04-01	05:03	*Distress	200	*General call
2.	14-04-01	04:59	*Urgent	200	*General call
3.	14-04-01	04:52	*Routine	200	*General call
4.	14-04-01	04:52	Safety	200	*General call

↑ ↓ contd. (total : Residual : Kbytes)

F1: Delete F5: Print out F10:Previous

Fig 3.3a Example of "EGC Message list Window"

Time	Priority
05:03	*Distress
04:59	*Urgent
04:52	*Routine
04:52	Safety

← Asterisk mark (*) between "Time" and "Priority" means UNREAD.
No asterisk mark means READ.

EGC Message list (Delete)					
No.	Date	Time	Priority	Size	Service
1.	05-01-01	01:12	Routine	1000	Group call
2.	04-12-02	01:10	Safety	1001	Urgency message, NAV warning
3.	04-11-30	01:33	Urgent	1002	INMARSAT system message
4.	04-10-22	01:41	Distress	1003	Coastal warning
5.*	04-09-20	01:55	Routine	1004	Shore-ship distress alert
6.	04-05-30	01:22	Safety	1005	
7.*	03-12-24	01:08	Distress	1006	Urgency message, MET/NAV warning
8.	03-05-03	01:07	Routine	1007	Group call
	01-06	01:09	Distress	1000	Download group identity
	02-02-01	01:04	Distress	1000	Coastal warning

↑ ↓ contd. (total : Residual : Kbytes)

ct F2:Select all F7:Delete F10:Previous

Asterisk marks (*) are displayed when you select the messages by pressing "Space".

Fig 3.3b Example of "EGC Message list (Delete) Window"

CHAPTER 4. MAINTENANCE

4.1 Maintenance

Keep the equipment in a good state according to the following maintenance.

4.1.1 Daily Maintenance

4.1.1.1 Mechanical Maintenance

1) Cleaning

Keep the equipment as clean as possible. In particular, wipe the ventilation opening with a dry cloth.

2) Tightening of screws

Check screws in all parts of the equipment and tighten any loosen one.

4.1.1.2 Electrical Maintenance

Daily maintenance of electrical may be unnecessary. Refer to Next chapter, [Troubleshooting Flowchart], Fig.4.2.1.

4.2 Troubleshooting



CAUTION

When a failure has been detected, check it according to the Trouble shooting described in this book. If abnormalities are still accepted, restart the terminal. Nevertheless abnormalities are still accepted, stop operation and contact the dealer or agent from which you purchased the device or one of our branches, marketing offices, and representative offices.

4.2.1 Troubleshooting Flowchart

Check all items in the following section to secure normal communication at all times. When any unusual phenomenon occurs in the equipment, send appropriate information to JRC service network to get advice or to request for repair with the results of these items.

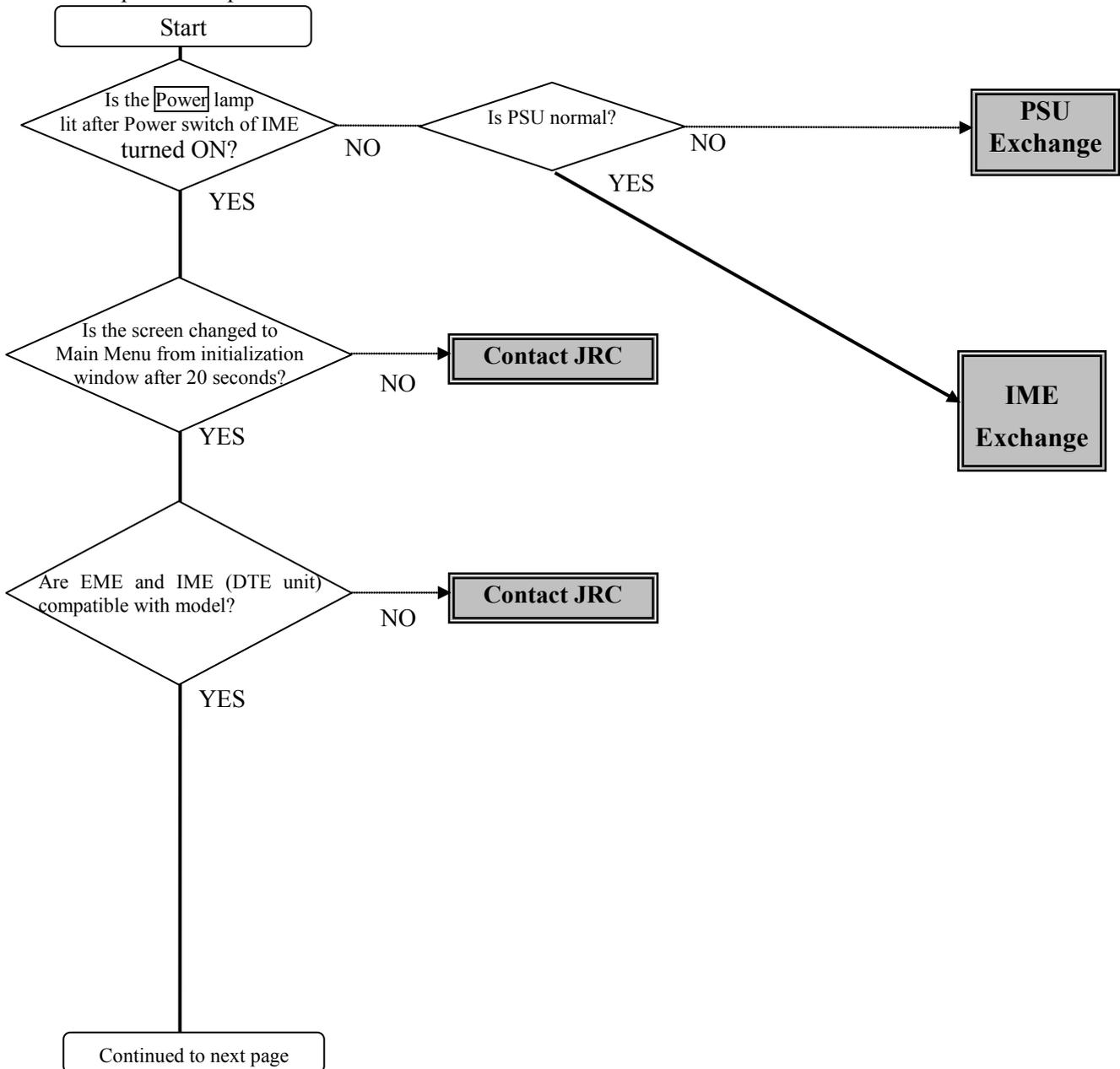


Fig 4.2.1a Troubleshooting Flowchart (1/2)

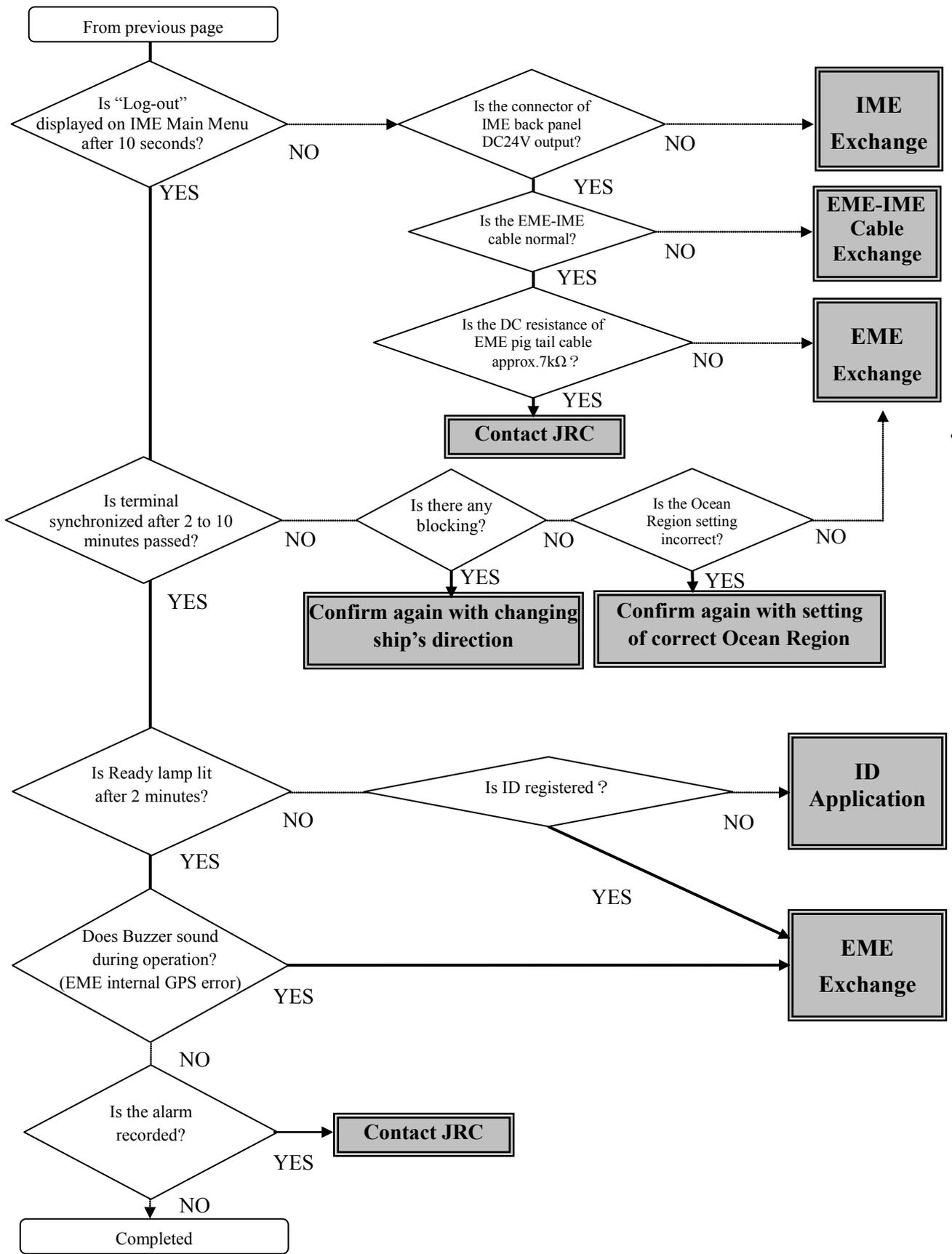


Fig 4.2.1b Troubleshooting Flowchart (2/2)

4.2.2 Alarm Check

The JUE-87 provides the following function, which is useful for maintenance and for prompt detection of faults on the equipment.

Various operation states and alarm states are displayed on the first line of the screen of IME and alarm history is displayed as the following procedure.

4.2.3 Alarm History

The JUE-87 has a self-monitoring function named alarm history, which is displayed as the following procedure:

Step	Operation	IME/DTE Response	Remarks
1	<ul style="list-style-type: none"> Hold down Alt key and press A key on Main menu. 	<ul style="list-style-type: none"> “Diagnostics” window is displayed. 	
2	<ul style="list-style-type: none"> Move the cursor to the item “Alarm history” then press Enter key. 	<ul style="list-style-type: none"> “Alarm history” window is displayed. 	
3	<ul style="list-style-type: none"> To return to Main menu, press F10 key twice or ESC key. 	<ul style="list-style-type: none"> Main menu is displayed 	

Example of Alarm History

Alarm history

```

JUE-87 ①:IMN:410032123②:SER:068577③:HW:01/4④:ACSE:01.00/2.0⑤:MDM:11.00⑥:IME:01.00/1.3⑦:DTE:01.00⑧:G:6⑨:03/26 01:10:49⑩:N35 41 E139 34⑪:READY /1⑫:CH:244/3124/2748⑬:TX:⑭:MD1:83017700007D9D00⑮:ST:000000/D080⑯:ACS:1000/1000/0000⑰:EIC:6363/0000/0000⑱:SET:132/2/1/100⑲:MD2:0123456789ABCDEF;

01.03/11 02:02:04 N35 41 E139 34 COMMRX/0
CH:000/ / TX: MD1:00000000000000000000 ST:000000/9800
ACS:1000/1000/0000 EIC:6400/0000/0000 SET:132/2/1/100

02.03/10 15:57:48 N35 41 E139 34 COMMRX/0
                    
```

↓ contd.

F5:Print out F6:Save as F7:Clear F10:Previous

Basic information

Current status information

Past status information (10 cases maximum)

Fig 4.2.3 “Alarm history” window

Table 4.2.3 Contents of Alarm history

No.	Display format (In case of Fig.4.2.3)	Content	
①	IMN:4XXXXXXXX (IMN:410032123)	MES Number	
②	SER:XXXXXX (SER:068577)	Serial Number	
③	HW:XX/Y (HW:01/4)	EME Board Version (XX)	
		IME Board Version (Y)	
④	ACSE:XX.XX/Y.Y (ACSE:01.00/2.0)	ACSE Main Version (XX.XX)	
		ACSE SAFE Mode Version (Y.Y)	
⑤	MDM:XX.XX (MDM:11.00)	MODEM Version	
⑥	IME:XX.XX/Y.Y (IME:01.00/1.3)	IME Main Version (XX.XX)	
		IME SAFE Mode Version (Y.Y)	
⑦	DTE:XX.XX (DTE:01.00)	DTE Version	
⑧	G:X (G:6)	GPS Equipment	
⑨	MM/DD hh:mm:ss (03/26 01:10:49)	Date	Month (MM)
			Day (DD)
			Hour (hh)
			Minute (mm)
			Second (ss)
⑩	NXX XX EYYY YY (N35 41 E139 34)	Position	Latitude (N)
			Degree (XX XX)
			Longitude (E)
			Degree (YYY YY)
⑪	XXXXXX/Y (READY /1)	MES Status(XXXXXX)	
		TDM Channel type (Y)	
⑫	GH:XXX/YYYY/ZZZZ (GH:244/3124/2748)	TDM Channel ID (XXX)	
		Receiving channel (YYYY)	
		Transmitting channel (ZZZZ)	
⑬	TX:XX (TX:)	EIRP shows the strength of transmitting signal power.	



⑭

MD1:UUVVVVWWWWXXXXYY
(MD1:83017700007D9D00)

<p>Receiver AGC setting value (UU) shows the gain control value to adjust level of current receiving signal.</p> <p>Normal value : from 80(hex) to E0 (Hex)</p> <p>Lower value shows that receiving signal is stronger and receiver circuit performance is better.</p>															
<p>Receiving C/N0 (VVVV) shows 10 times C/No dBHz. This value depends on both received signal from satellite and receiver circuit performances. Bigger C/No is better. (ex. 0177 (Hex) means 37.5dBHz.)</p> <p>Normal value : from 15E(Hex) to 1AE(Hex) Normal C/No (dBHz) from 35.0dBHz (15E)to 43.0dBHz(1AE).</p> <table><thead><tr><th>VVVV /</th><th>C/No (dBHz) /</th><th>Condition</th></tr></thead><tbody><tr><td>0190 /</td><td>40.0 /</td><td>Good</td></tr><tr><td>017C /</td><td>38.0 /</td><td>Good</td></tr><tr><td>0168 /</td><td>36.0 /</td><td>Good</td></tr><tr><td>0154 /</td><td>34.0 /</td><td>Fair</td></tr></tbody></table> <p>Rec “Good” shows bigger C/No than 35.0dBHz. Rec “Fair” shows C/No from 34.5 to 33.0 dBHz. Rec “Poor” shows lower C/No than 33.0 dBHz.</p> <p><NOTE> If receiving C/No shows lower than 34.5dBHz, check coverage of satellite and ocean region, and select best ocean region for present location. Refer to Appendix C.</p>	VVVV /	C/No (dBHz) /	Condition	0190 /	40.0 /	Good	017C /	38.0 /	Good	0168 /	36.0 /	Good	0154 /	34.0 /	Fair
VVVV /	C/No (dBHz) /	Condition													
0190 /	40.0 /	Good													
017C /	38.0 /	Good													
0168 /	36.0 /	Good													
0154 /	34.0 /	Fair													
<p>IQ balance (WWWW) is always 0000.</p>															
<p>Master OSC Setting value (XXXX: 7D9D (Hex)) shows control value of Master OSC.</p> <p>Normal value : from 3000(Hex) to D000(Hex) Center value is 8000 (Hex).</p> <p>Nearer value to 8000(Hex) is better.</p>															
<p>Modem ATC Wave Detect Power (YY) shows the strength of interferences to Inmarsat-C. (Ex. 00 (Hex)) Normal value: from 00 to 30 (Hex).</p> <p><NOTE> If this value is bigger than 80 (Hex), Inmarsat-C can not receive normally by too strong interferences.</p>															

⑮	ST : XXXXXX/YYYY (ST : 000000/D080)	Alarm(XXXXXX)	0x000000	No alarm (If there are any alarm, Add the following each status value)	
			+ 0x800000	EME ROM data alarm	
			+ 0x400000	EME RAM data alarm <Note> If user stops power supply without “Log-out”, this bit becomes “high”.	
			+ 0x200000	EEPROM data alarm	
			+ 0x100000	EEPROM FATAL alarm	
			+ 0x080000	External UART data alarm	
			+ 0x040000	EME-IME connection alarm	
			+ 0x020000	EME Internal GPS alarm	
			+ 0x010000	External GPS alarm	
			+ 0x008000	TX DURATION alarm	
			+ 0x004000	EME PLL1 UNLOCK alarm <Note> If this bit becomes “high”, transceiver board of EME might have some troubles of PLL ICs.	
			+ 0x002000	EME PLL2 UNLOCK alarm <Note> If this bit becomes “high”, transceiver board of EME might have some troubles of PLL ICs.	
			+ 0x001000	EME MODEM Software alarm	
			+ 0x000800	EME MODEM Hardware alarm	
			+ 0x000400	DISTRESS button1 alarm	
			+ 0x000200	DISTRESS button2 alarm	
			+ 0x000100	DISTRESS button3 alarm	
			+ 0x000080	Reserved	
			+ 0x000040	SECURITY ALERT button1 alarm	
			+ 0x000020	SECURITY ALERT button2 alarm	
			+ 0x000010	SECURITY ALERT button3 alarm	
			+ 0x000008	SECURITY ALERT button4 alarm	
			Status/YYYY)	0x0000	Default menu (Add the following each status value)
				+ 0x8000	READY
		+ 0x4000		SYNC	
		+ 0x2000		CARRIER	
		+ 0x1000		LOG IN	
		+ 0x0800		EGC Mode	
		+ 0x0400		Reserved	
		+ 0x0200		Reserved	
		+ 0x0100		Preheat	
		+ 0x0080		DISTRESS button1 detection	
+ 0x0040	DISTRESS button2 detection				
+ 0x0020	DISTRESS button3 detection				
+ 0x0010	Reserved				
+ 0x0008	SECURITY ALERT button1 detection				
+ 0x0004	SECURITY ALERT button2 detection				
+ 0x0002	SECURITY ALERT button3 detection				
+ 0x0001	SECURITY ALERT button4 detection				

⑩	AGS:XXXX/YYYY/ZZZZ (ACS:1000/1000/0000)	Signaling Channel Control Step (XXXX)	
		Message Channel Control Step (YYYY)	
		Process Control Step (ZZZZ)	
⑪	EIC:XXXX/YYYY/ZZZZ (EIC:6363/0000/0000)	EME-IME connection success rate (XXXX)	Top 2 digit: EME->IME Last 2 digit: IME->EME
		EME-IME connection error counter (YYYY)	Top 2 digit: EME->IME Last 2 digit: IME->EME
		EME-IME connection error factor (ZZZZ)	Top 2 digit: EME->IME Last 2 digit: IME->EME
⑫	SET:WWW/X/Y/ZZZ (SET:132/2/4/100)	LES setting (WWW)	
		Preferred Ocean Region (X)	
		GPS setting (Y)	
		Data port type (ZZZ)	1st digit:DTE port main 2nd digit:DTE port #1 3rd digit:DTE port #2
⑬	MD2:SSTUUVVWWXXYYZZ (MD2:0123456789ABCDEF) (Note)	TX I Amplitude(SS)	
		TX I DC Offset(TT)	
		TX Q DC Offset(UU)	
		TX VCONT(VV)	
		EIRP Moni(WW)	
		PA BIAS1(XX)	
		PA BIAS2(YY)	
PA BIAS3(ZZ)			

(Note)

“MD2” values are fixed for each terminal. They show transmitter hardware set value in factory.

If MD2 values is all zeros or all “F”, JUE-87 can not transmit normally.

In that case, contact the JRC service agent and let us know about Alarm history of your JUE-87.

4.2.4 Countermeasure

If the equipment does not operate in normal even after the following procedure is performed, consult JRC service agent. Take care not to touch any parts on PC board.

Abnormal operation of IME/DTE

In case of the heavy fluctuation of the voltage or frequency of the power source, or thunderbolt and etc., IME may not operate normally. In this case, press **Del** key under holding **Ctrl** and **Alt** keys. If above method does not work or if the keyboard is ineffective, turn off **AC POWER** and **DC POWER** on the EXT PSU (NBD-904) after turning off the IME **POWER** switch.

TX ALARM

If TX ALARM is displayed on the IME screen, reset TX ALARM to set **POWER** switch to OFF and set to ON again. If TX ALARM is displayed again in spite of the resetting TX ALARM, turn off the **POWER** switch of IME and contact JRC service network.

4.2.5 After service

4.2.5.1 When Ordering Repair

In the case of during the term of a guarantee

When it breaks down in the state of the normal operation according to explanation and a handling description in the operation manual, the dealer or our company will perform repair without any charge according to the provisions in the specific action.

However, in the following case, gratis service cannot be received even if it is during the term of a guarantee.

- When the construction report is not sent to JRC after apparatus attachment.
- Failure produced by inevitability, such as misuse, negligence, or a natural disaster, a fire, etc.

In the case of passed over the term of a guarantee

When a function can be recovered by repair, any repair is performed with charge by demand of a user. Please inform us of the following items when ordering the repair:

- Product name, model name, date of manufacture, manufacture number
- State of the abnormality (as in detail as possible)
- Office name or organization name, address, telephone number

Recommendation of overhaul

The performances of the set may deteriorate due to the aging of parts, and so on through the rate varies depending on the conditions of use. So, it is recommendable to contact the dealer from which you purchased the device or one of our marketing offices for overhaul apart from daily services.

Disposal of JUE-87

When disposing JUE-87 process it in accordance with the rules of the pertinent local government.

For details, contact to the purchasing dealer from which you purchased, our service office or a pertinent local government.

Please contact the dealer from which you purchased the device or our marketing offices that is nearest to you for any question as to the after-sales service.

For any question: Refer to the list of office at the end of the volume.

4.3 Pop-up Window

JUE-87 has the following pop-up windows. The information window is displayed when the JUE-87 have some trouble or some warning.

- (1) WARNING Window
- (2) CAUTION Window
- (3) ERROR Window
- (4) MES Information Window
- (5) Model & Country mode Compatibility Window

When the window is displayed, follow the instruction in the window. When the pop-up window is closed, press **F10** (“Previous”) key.

The pop-up window shows in Item 4.3.1 to 4.3.4 for example.

4.3.1 WARNING Window

The examples of the messages of WARNING window are listed in Table 4.3.1.

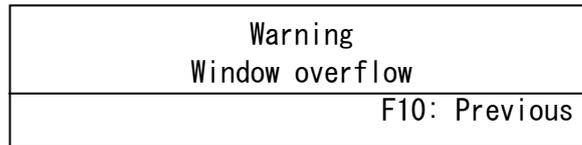


Fig 4.3.1 WARNING Window

Table 4.3.1 Message list of WARNING window

Warning Message	Cause	Countermeasure
Are you sure you want to delete the file ? [Yes] [No]		Select [No] when you want to keep the file.
Cannot display binary text.		Press F10 key when you carry on the job. The data cannot display as characters .
Do you want to overwrite it? [Yes] [No]		Select [No] when you want to keep old file, and save the new data as new file name.
Formatting will erase ALL data on the USB drive. To format the USB drive, choose Yes. [Yes] [No]		
Now EGC high priority message is receiving.		When the alarm buzzer is stopped, hold down the ctrl key and press A key. When the window is closed, press F10 (“Previous”) key.
Print out Call log	The Call logging data of 90 or more calls are stored then the oldest call logging data is cleared. Therefore, print out the call logging data.	Print out the call logging.
Transmitter over loaded. It may be permanent damaged.		Contact the purchasing dealer, JRC agent or one of the JRC branches.
Window overflow	Windows of the DTE are opened maximum numbers.	Press F10 key to close the window one by one, or press ESC key.

4.3.2 CAUTION Window

The examples of the message of CAUTION window are listed in Table 4.3.2.

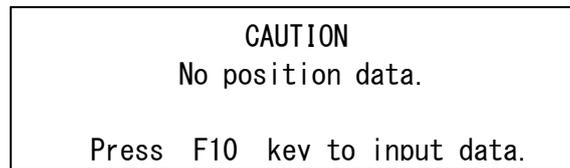


Fig 4.3.2 CAUTION window

Table 4.3.2 Message list of CAUTION window

Caution Message	Cause	Countermeasure
EGC message storage in DCE is full. Oldest message is overwritten by the latest incoming message.		Delete unnecessary messages.
No Position Data. Press F10 key to input data.		Press F10 and input position data.

4.3.3 ERROR Window

The examples of message of ERROR window are listed in Table 4.3.3.

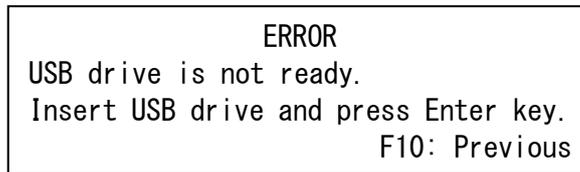


Fig 4.3.3 ERROR Window

Table 4.3.3 ERROR Message

ERROR Message	Cause	Countermeasure
Cannot create the new file.	The capacity of the USB drive is not enough.	Delete unnecessary file or use the other USB drive.
Confirm the file name.	The specified file name is wrong or it doesn't exist.	Enter correct file name.
DTE failed to initialize the flash memory.		Re-boot the DTE. If same message is displayed again, the DTE might have a failure.
DTE was unable to complete the format. Please remove the USB drive.		
Error on System Information Writing		It seems that the restoration of the file is difficult. Taking backup of important document is highly recommended.
File ERROR! Process aborted!		
File can't be open		
Press ENTER key to retry.		
Printer is not ready. Confirm the paper and on-line.	The message is not printed out.	Press Esc key to clear the window, then confirm the loading of roll paper and the setting of the printer by "Set up" command.
Same name already exists. Confirm the file name.	The file name is same at the other file.	Use the other file name.

ERROR Message	Cause	Countermeasure
The DTE main drive is unreadable. Press ENTER key to retry.	Can not access the DTE Flash ROM	Press ENTER key to re-read the Flash ROM. If the same window is displayed, the Flash ROM might be troubled.
The file is missing. Confirm the file name.	The file name is missing	Confirm the file name.
The USB drive is unreadable. Press Enter key to retry.		Press Enter key to re-read the USB drive. If the same window is displayed, the USB drive might be troubled or unformatted.
There is not enough room on the DTE main drive. Delete some files.	The capacity of the Flash ROM is not enough.	Delete unnecessary file.
USB drive is not ready. Insert USB drive and press Enter key.		Connect the USB drive and press Enter key
Unsuitable Density of Physical Error.		



4.3.4 MES INFORMATION Window

The examples of the messages of Information window are listed in Table 4.3.4.

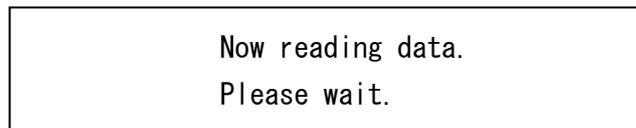


Fig 4.3.4 MES INFORMATION Window

Table 4.3.4 MES INFORMATION Message

INFORMATION message	Countermeasure
2nd LES ID Invalid	
Because of Demand Assigned LES	
Are you sure you want to rename the file?	
Can not create new file.	
Confirm the file name.	
Current file name:	
Delete file:	
DTE failed to detect the USB drive.	Confirm the USB drive connection.
DTE failed to stop the USB drive.	
EGC distress message received.	
EGC urgency message received.	
Format the USB drive complete.	
Formatting the USB drive.	
Initiate a manual scan of NCS common channel due to BBER increasing.	
Input column numbers:	
Input Max Column numbers:	
Input Merge File Name:	
Input Replace String:	
Input Save File Name	
Input Search String:	
It may be too many files on desk.	Delete unnecessary files.
Merge file:	
Modification of this field is not possible.	
NCS operates restoration mode. Select preferred LES.	Enter ID No.
NCS scan cancelled.	
NCS scan was completed. Current NCS is ().	
NCS was not found with NCS scan. Confirm the preferred ocean region.	Confirm the ocean region by "Preferred ocean region".
New file name:	

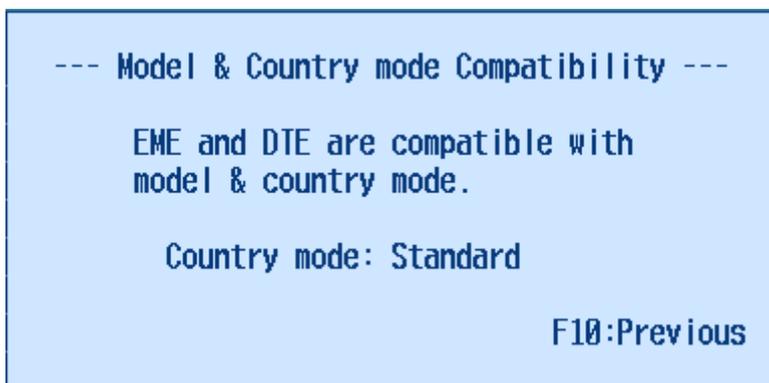
INFORMATION message	Countermeasure
Now printing. Please wait.	When the display doesn't disappear, the breakdown of the printer is thought. In this case, please OFF/ON it the power supply of the printer.
Now reading data. Please wait	Do not remove a diskette during data reading.
Really quit without saving? [Yes] [No]	Select [Yes] to save the data.
The attached USB drive has malfunctioned, and DTE does not recognize the attached USB drive.	Connect the USB drive again. If the same window is displayed, the USB drive might have a failure. Connect another USB drive.
The attached USB drive is not supported. DTE supports the USB drive only.	
The USB drive can now be safety removed from DTE.	
The USB drive is installed and ready to use.	
The USB drive was removed before the USB drive is stopped.	
There is a possibility of the USB IC failure. All USB functions are disabled.	Connect the USB drive again. If the same window is displayed, the USB IC in the DTE might have a failure.
To stop the USB drive, choose Yes. After the USB drive is stopped the USB drive can be safety removed. [Yes] [No]	
Tune to NCS (144) cancelled.	
Tune to NCS (144) failed.	Confirm whether there is a shield between the antenna and the satellite. Carry out NCS scanning again.



4.3.5 Model & Country mode Compatibility Window

(1) Display for Model Compatibility

The following message is displayed. To close this window, press F10 (“Previous”) key.



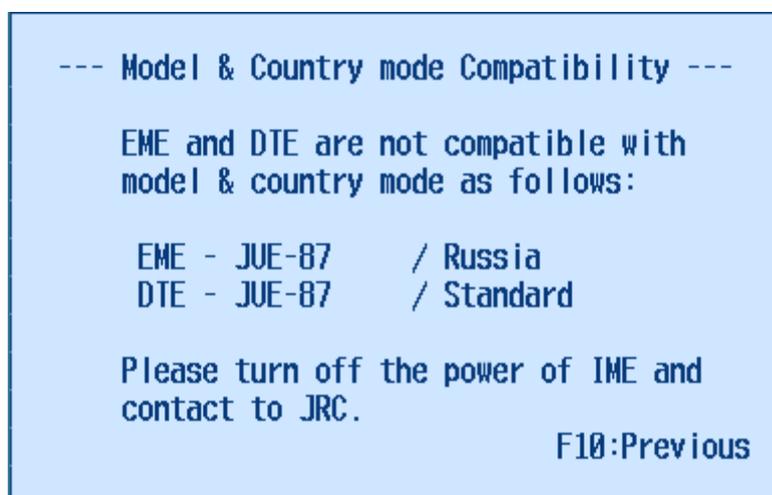
(2) Display for Model Incompatibility

- ① In case of EME and IME (DTE unit) are incompatible with country mode.

Example:

JUE-87 EME (Russian model) is connected to JUE-87 IME (DTE unit: Standard model).

The following message is displayed. To close this window, press F10 (“Previous”) key.



②In the case of EME and IME (DTE unit) are incompatible with model.

Example:

JUE-85EME (NAF-253GM) is connected to JUE-87 IME (DTE unit: Standard model).

The following message is displayed. To close this window, press F10 (“Previous”) key.

```
--- Model & Country mode Compatibility ---  
  
EME and DTE are not compatible with  
model & country mode as follows:  
  
EME - JUE-85or95 / Standard  
DTE - JUE-87    / Standard  
  
Please turn off the power of IME and  
contact to JRC.  
  
F10:Previous
```



Example:

JUE-95SA EME (NAF-253SA) is connected to JUE-87 IME (DTE unit: Standard model).

The following message is displayed. To close this window, press F10 (“Previous”) key.

```
--- Model & Country mode Compatibility ---  
  
EME and DTE are not compatible with  
model & country mode as follows:  
  
EME - Unknown    / Unknown  
DTE - JUE-87    / Standard  
  
Please turn off the power of IME and  
contact to JRC.  
  
F10:Previous
```

4.4 Help Function

Hold down the **Shift** key and press **F1** key to display HELP-information. Press **F10** key or **Esc** key to return the previous mode.

CHAPTER 5. Specification

5.1 JUE-87

5.1.1 EME (NAF-253GM) and IME (NTF-318)

Table 5.1.1 Principal Specification of JUE-87

Item		Specification
Class of Inmarsat-C MES		Class 2
Frequency Range		Transmission: 1626.5 to 1646.5MHz Reception :1537.0 to 1544.2MHz
Channel Spacing:		5KHz
G/T		-23.0 dB/K minimum
EIRP		Within 14 ±2 dBW (at 5 degrees elevation angle)
Modulation		TX: 1200 symbols/sec. RX: 1200 symbols/sec. BPSK (BPSK: Binary Phase Shift Keying)
Antenna		Type: Helical antenna Pattern: Hemisphere (non directional) Polarization: Right hand circular
Power Supply	Voltage	DC +24V (+19.2 V to +31.2 V) (When standard PSU, NBD-904 is used)
	Power Consumption	Transmission : 100 W Standby time : 15W (EME and IME) 160 W Max. (EME, IME, DTE and Printer)
Environmental Condition	Operative Temperature	-35°C to +55°C (EME operational) -15°C to +55°C (IME)
	Storage Temperature	-40°C to +70°C
	Relative Humidity	95% (+40°C)
	Ice	25 mm (EME)
	Precipitation	100 mm/hour (EME)
	Wind	100 knots
Vibration		Compatibility with IEC 60945
Coding		Interleaved, convolution code (R = 1/2, K = 7)
Data Rate	Transmission	600 bps
	Reception	600 bps
Max Transmission Message		8K bytes
Reception Message Storage		80K bytes (Inmarsat-C: 40K bytes, EGC: 40K bytes)
Interface	Internal GPS	JRC original
	External GPS	Input sentence: GGA, RMC, GLL, GNS, ZDA, DTM Baud rate: 4800 bps
	LAN	RJ-45 : 10 Base-T
	DTE	ITU-T V24/28, 9600 bps, D-sub 9PIN connector
	Printer	Centronics compatible parallel interface, Connector : D-sub 25PIN connector
International Protection		EME: IP 56-compliant IME: IP22-compliant (except for while connecting a USB device to USB drive)
Dimensions		EME: 170 mm (φ) × 379 mm (H) IME: 336 mm (W) × 86 mm (D) × 244 mm (H)
Mass		EME: Approx.2.4 kg IME: Approx.3.4 kg



5.1.2 Printer (NKG-900/NKG-800)

Table 5.1.2a Principal Specification of Printer (NKG-900)

Item	Specification
Character Coding	ASCII code
Line Interface	Parallel interface
Printer System	Impact dot
Maximum Printing Speed	200 characters/sec
Character Format	9 × 7 dot
Maximum Number of Character Per Line	80 characters/line
Roll Paper Size	Recording paper (1PLY) 214mmW 98mm φ 5ZPAL00002 Recording paper (1PLY) 214mmW 100mm φ 5ZPCM00020
Ink Ribbon	Type: 7Q1VP80S JRC Code: 7ZZJD0105 Color: Black
Power Supply	DC +24V (+19.2 to +31.2V)
Power Consumption	Approx. 35W (max)
Dimensions	390.2 mm (W) × 355.2 mm (D) × 175.8 mm (H)
Mass	Approx. 4.8kg

* NKG-900 can't exchange Print Head Unit. Therefore Print head unit isn't indicated on list.

Table 5.1.2b Principal Specification of Printer (NKG-800)

Item	Specification
Character Coding	ASCII code
Line Interface	Parallel interface
Printer System	Impact dot
Maximum Printing Speed	200 characters/sec
Character Format	9 × 7 dot
Maximum Number of Character Per Line	80 characters/line
Roll Paper Size	Recording paper (1PLY) 214mmW 98mm φ 5ZPAL00002 Recording paper (1PLY) 214mmW 100mm φ 5ZPCM00020
Print Head Unit	#SP-24090AI 5ZYWZ00001 (Option)
Ink Ribbon	Type: #SP-16051 JRC Code: 5ZZCM00003 Color: Black
Power Supply	DC +24V (+19.2 to +31.2V)
Power Consumption	Approx. 35W (max)
Dimensions	399.0 mm (W) × 376.0 mm (D) × 193.0 mm (H)
Mass	Approx. 3.7kg

5.1.3 EXT PSU (NBD-904)

Table 5.1.3 Principal Specification of EXT PSU

Item	Specification
Line voltage	AC: from +100V to +220V /DC: +24V
Line voltage range	AC:+89V to +266V/ DC:+19.2 to +31.2V
Line frequency range	47 Hz to 64Hz
Function	<ul style="list-style-type: none"> • DC power automatic backup at AC power failure. • DC input is only available when AC input is stopped. • DC output is only supplied through DC input (condition: over +18V and “REMOTE CONT” is short).
Control Signal	<ul style="list-style-type: none"> • REMOTE CONT +/- (Input): when open, DC input is not available, when short, DC input is available. • AC FAIL +/- (Output): when AC input is stopped, between + and – is open, when AC input is available, between + and – is short. (Output rating: DC 30V, 30mA)
Output	Floating type DC+24V, 8.5A (max, 5minutes) 6.5A (Continuous)
Switch	<ul style="list-style-type: none"> • DC INPUT: turn on/off DC input + line. • DC OUTPUT: turn on/off DC output +/- line.
LED	<ul style="list-style-type: none"> • AC operation is lighted up, when AC input available. • DC operation is lighted up, when DC output is supplied through DC input. • DC output is lighted up, when DC output is available.
Protection	Protection by No-Fuse breaker or Fuse (DC over current only) <ul style="list-style-type: none"> • Over voltage (Input) +35V DC , +280V AC (Automatic protected. => Protected is removed after turn off/on.) • Over current (Output) 13.0A (AC...automatic), 15.0A (DC...Fuse)
Others	Isolation against ground: > 1M ohm at DC 500V Temperature: Compatible with IEC 60945 Fuse: DC32V, 15A (DC+/- input)
Dimensions	168 mm(W) × 250 mm(D) × 98 mm(H)
Mass	Approx.2.6 kg



APPENDIX 1. INMARSAT SYSTEM COVERAGE AREAS

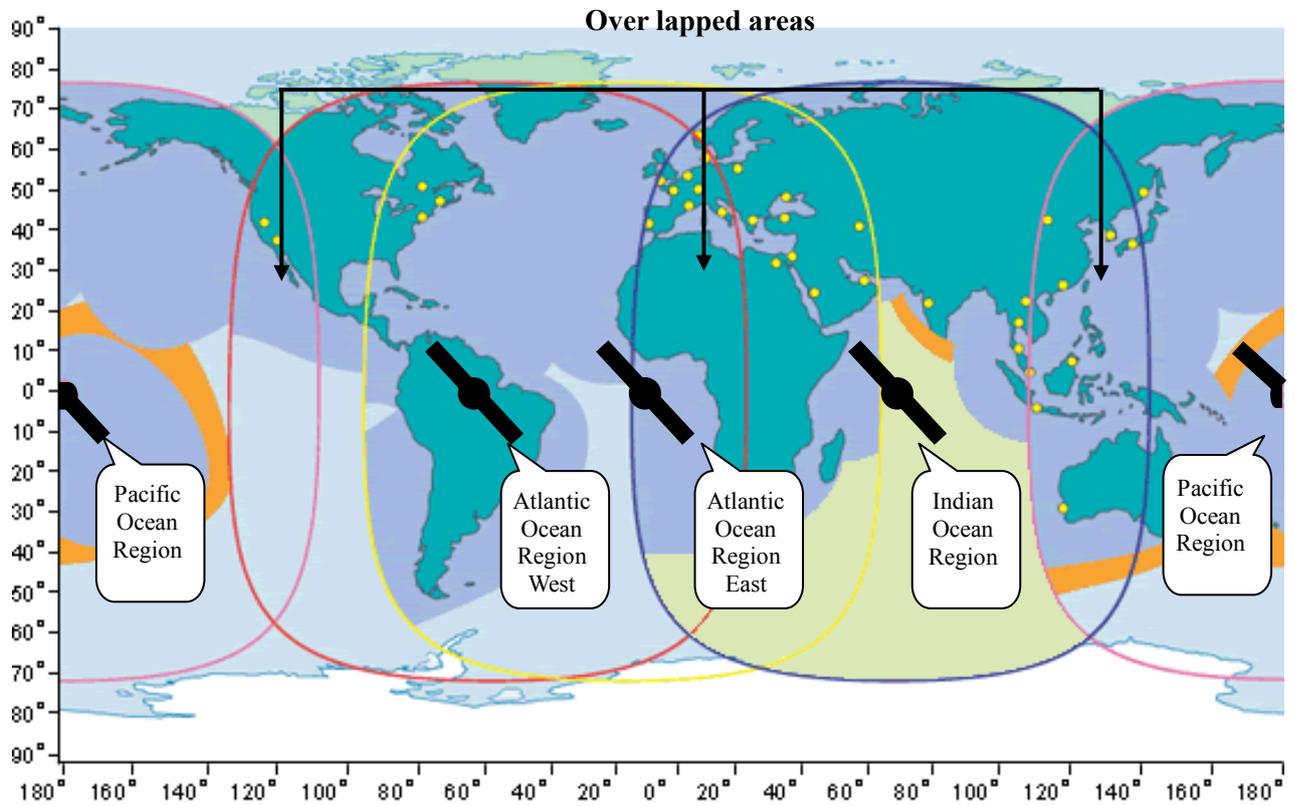


Fig A1.1 All Ocean Region



Fig A1.2 Atlantic Ocean Region West



Fig A1.3 Atlantic Ocean Region East

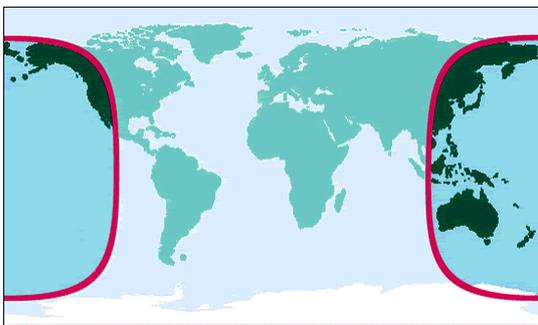


Fig A1.4 Pacific Ocean Region

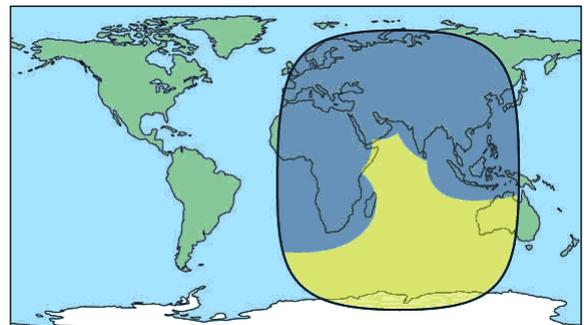


Fig A1.5 Indian Ocean Region

APPENDIX 2. NKG-900 PRINTER INSTALLATION GUIDE

Concerning details, please refer to the installation manual for each equipment.

Contents

	Page
2.1 Cautions for use	A2-2
2.2 Outline and name of component	A2-3
2.2.1 Supplied accessories.....	A2-3
2.2.2 Components names	A2-3
2.3. Installation	A2-4
2.3.1 Fix tape attachment	A2-4
2.3.2 Change of Ink Ribbon Cartridge.....	A2-5
2.3.3 Roll paper loading.....	A2-6
2.3.4 Connection of paper end near sensor	A2-7
2.3.5 Connection with terminal.....	A2-7
2.4. Self-printing function	A2-8

A2.1 Cautions for Use

- Don't touch immediately after printing as the printing head is still very hot.
- To set the ribbon, pay attention not to twist the ribbon.
- To turn on the power again after once turned OFF, wait at least 2 seconds. If this is not respected, initialization may become wrong.
- Do not install in humid or dusty place or place exposed to direct sunshine.
- Don't print without ribbon cassette and paper.
- Set the printer on desk or table installed evenly and stably.
- When the printer is working, its mechanism is working with rather strong force, pay attention not to approach your accessories, necktie, etc. worn on you. Those may be caught.
- Don't put anything on the printer. If anything is dropped in the machine, at first turn OFF the power, then remove dropped thing carefully.
- Don't wet the printer. If water etc. is fallen, turn OFF immediately the power, and wipe off liquid. And wait until the printer becomes completely dry to turn ON again.

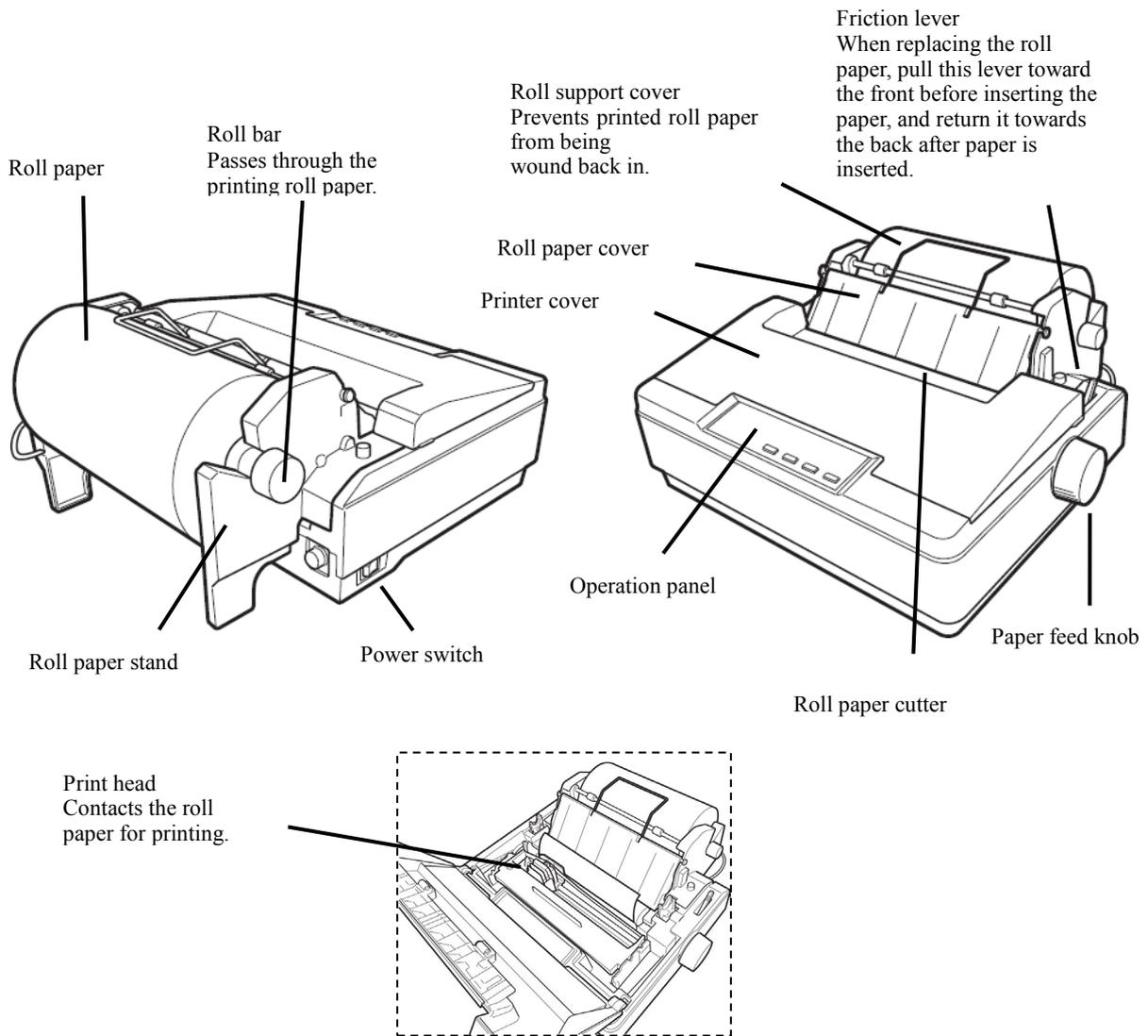
A2.2. Outline and Names of Components

A2.2.1 Supplied Accessories

The following items are included as part your purchase

- | | | |
|-----------------------------|------------------------|---------|
| 1) Printer | 6) Fix tape | 2 pairs |
| 2) Ribbon Cartridge (Black) | 7) Stand holding screw | 2 pcs. |
| 3) Printer Cover | | |
| 4) Roll Paper Stand Unit | | |
| 5) Fuse | | |

A2.2.2 Components Names

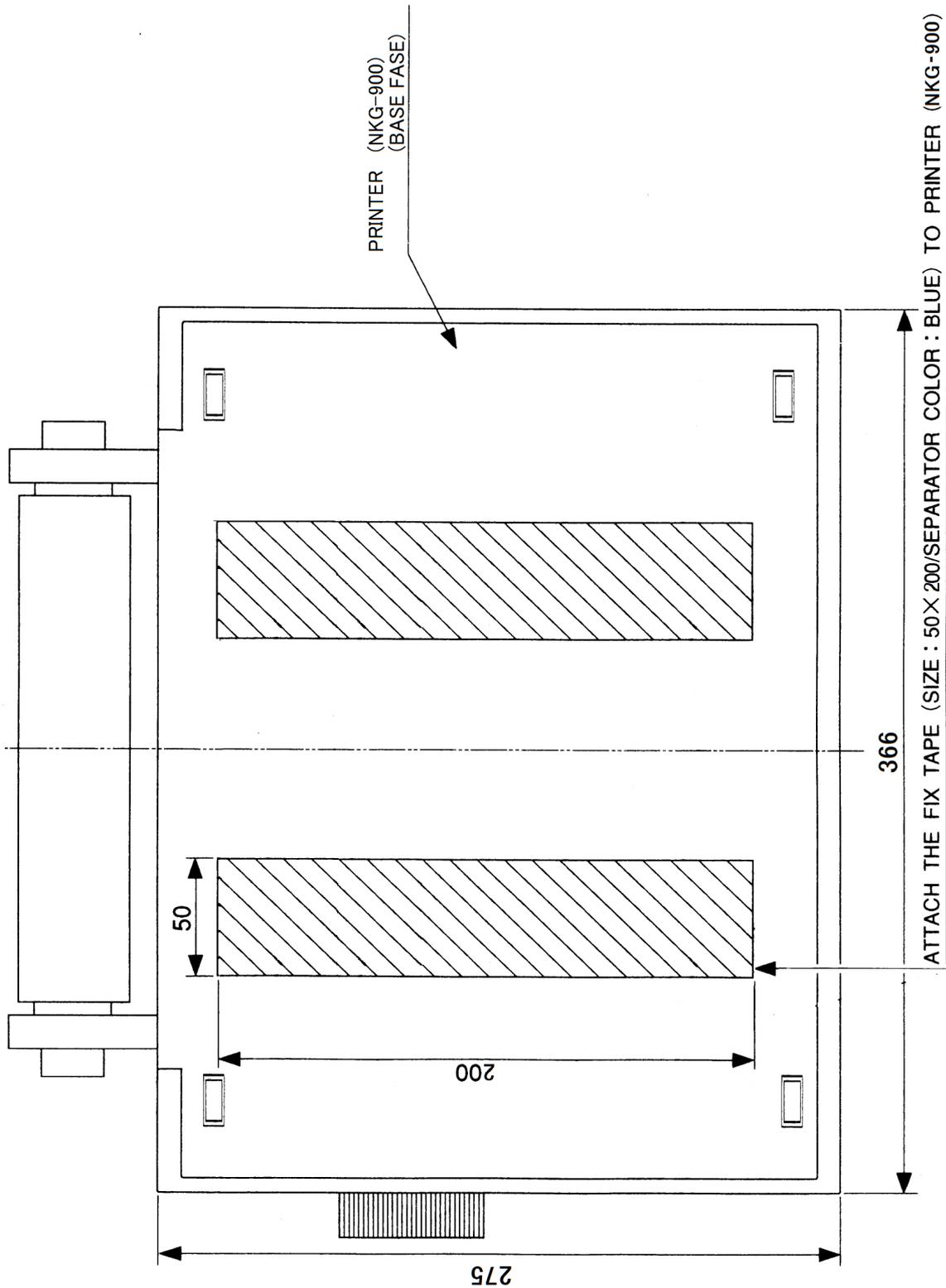


A2.3. Installation

A2.3.1 Fix Tape Attachment

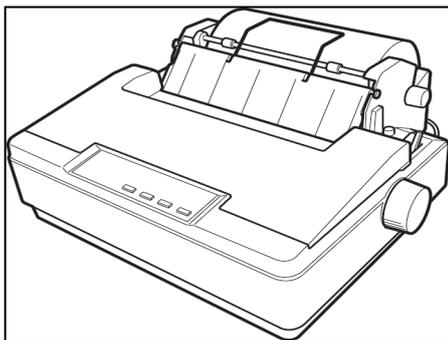
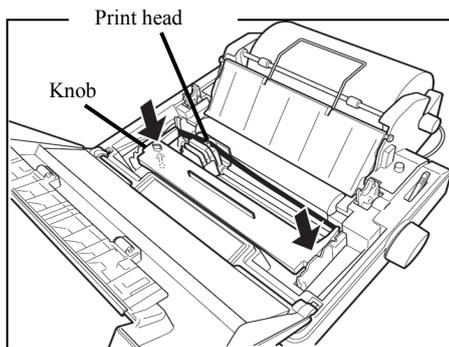
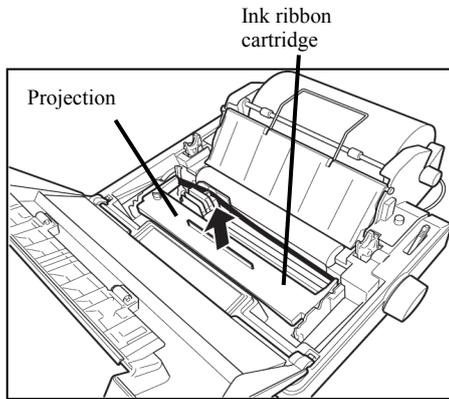
Attach fix tape to a base to fix NKG-900. Peel off a blue protection seat of fix tape, then attach fix tape according to the frame line.

After attaching fix tape to the printer side, peel off a yellow protection seat and install printer in mounting point.



A2.3.2 Change of Ink Ribbon Cartridge

- 1) Verify that the power switch remains turned OFF.
- 2) Open the printer cover.
- 3) Lift up the ink ribbon cartridge by holding the projection on the cartridge.
- 4) Using the knob on the new cartridge make the ribbontaut.



- 5) Manually move the print head to the left edge.
- 6) Attach the ribbon with such a pen so that it is between the ribbon mask and print head.
- 7) Push lightly from top both ends of the cartridge.
- 8) Turn again the cassette knob to give tension to the ribbon.
- 9) Close the printer cover.

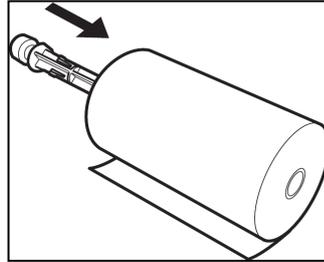
 **DANGER**



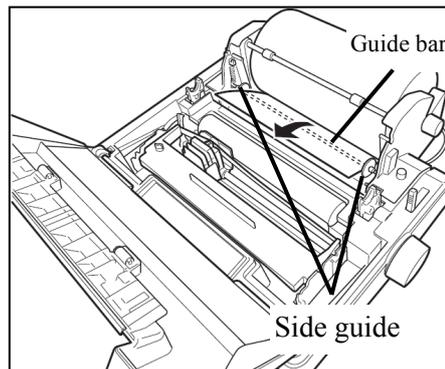
Immediately after printing, the printing head is still very hot, don't touch it until it is cool down.

A2.3.3 Roll Paper Loading

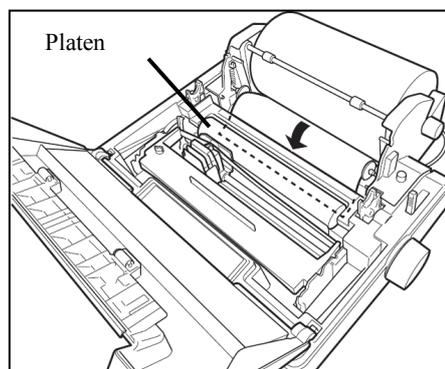
- 1) Verify that the power switch remains turned OFF.
- 2) Open the printer cover.
- 3) Remove the roll paper cover. At this step, pull the friction lever towards the front.
- 4) Pass the roll bar through the roll paper, and install the roll paper onto the roll paper stand in the right direction. When passing the roll bar through the roll paper, push the roll bar all the way in.



- 5) Pass the roll paper over the guide bar as shown in the figure. Adjust the side guides to the paper width.

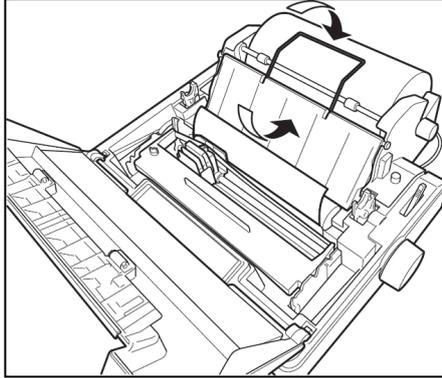


- 6) Insert the leading edge of the paper into the rear of the platen. Then turn the paper feed knob to feed the paper out and adjust the direction.



- 7) After adjusting the paper direction, return the friction lever to the back to fix the paper.

8) Restore the roll paper cover and the roll support cover, then close the printer cover.



A2.3.4 Connection of paper end near sensor

Connect a sensor cable of a roll paper stand to the sensor cable connector on the printer rear left side.

A2.3.5 Connection with Terminal

Prior to connect, verify that for both the terminal and printer their power switch is turned OFF.

- 1) Connect the printer cable to the parallel interface connector located on back of the printer, then, fix with locking lever.
- 2) Connect the other end of cable to the terminal.

APPENDIX 3. NKG-800 PRINTER INSTALLATION GUIDE

Concerning details, please refer to the installation manual for each equipment.

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3.3.2 Change of ribbon cassette-cartridge	A3-5
3.3.3 Printing pressure adjustment (Print paper thickness adjustment).....	A3-6
3.3.4 Roll paper loading.....	A3-7
3.3.5 Connection with terminal.....	A3-10
3.4. Self-printing function	A3-11

A3.1 Cautions for Use

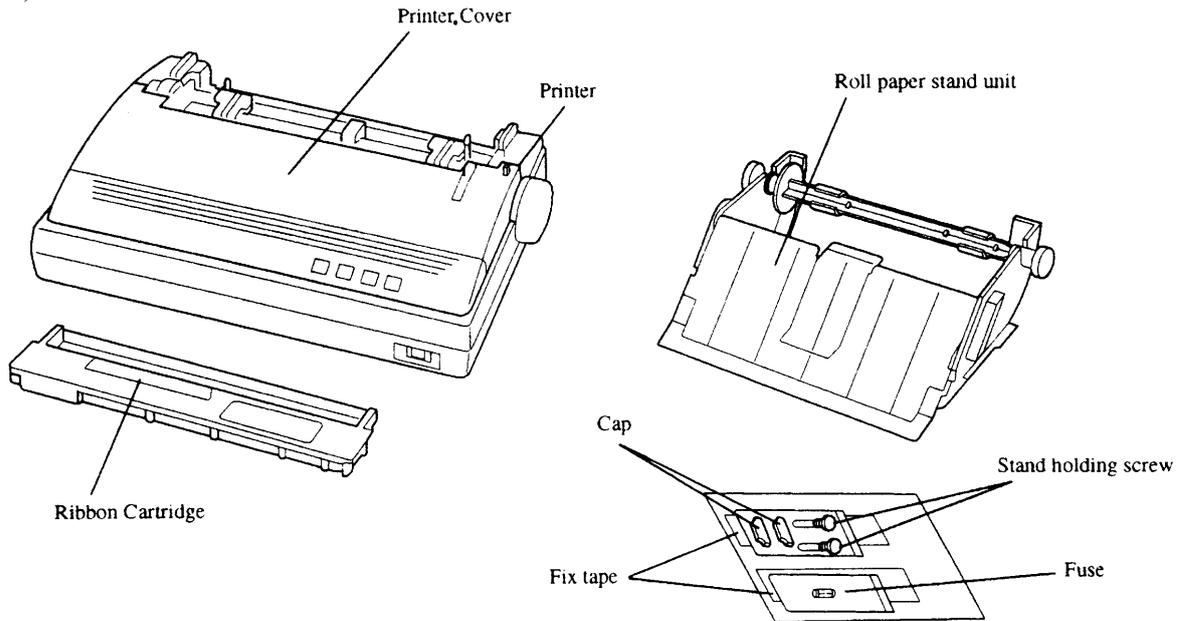
- Don't touch immediately after printing as the printing head is still very hot.
- To set the ribbon, pay attention not to twist the ribbon.
- To turn on the power again after once turned OFF, wait at least 2 seconds. If this is not respected, initialization may become wrong.
- Do not install in humid or dusty place or place exposed to direct sunshine.
- Don't print without ribbon cassette and paper.
- Set the printer on desk or table installed evenly and stably.
- When the printer is working, its mechanism is working with rather strong force, pay attention not to approach your accessories, necktie, etc. worn on you. Those may be caught.
- Don't put anything on the printer. If anything is dropped in the machine, at first turn OFF the power, then remove dropped thing carefully.
- Don't wet the printer. If water etc. is fallen, turn OFF immediately the power, and wipe off liquid. And wait until the printer becomes completely dry to turn ON again.

A3.2. Outline and Names of Components

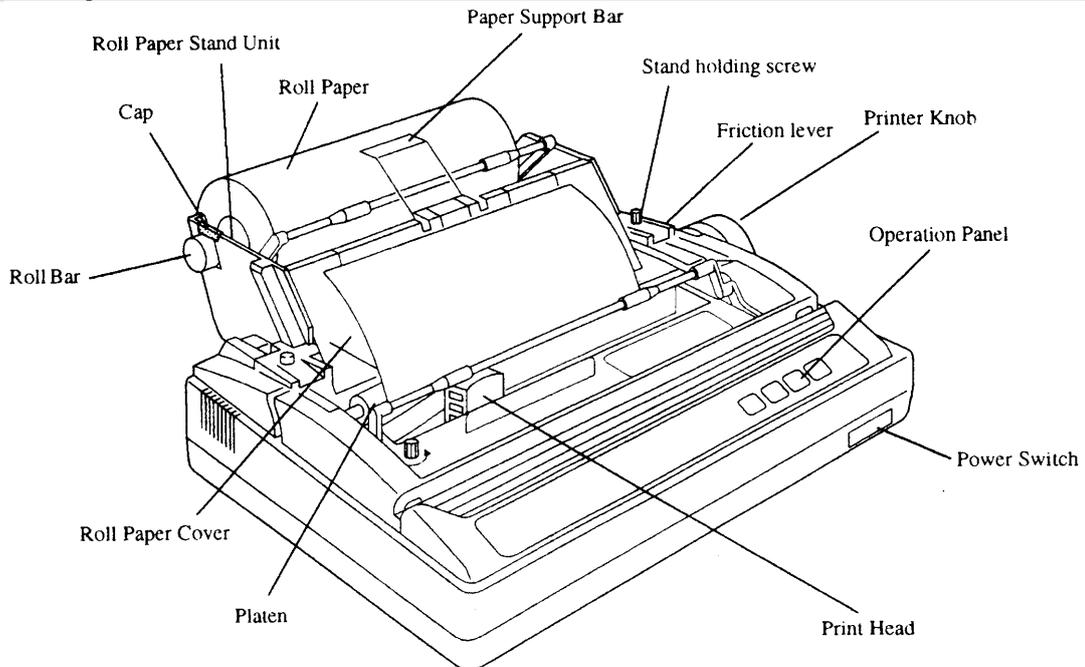
A3.2.1 Supplied Accessories

The following items are included as part your purchase

- | | | |
|-----------------------------|------------------------|---------|
| 1) Printer | 6) Fix tape | 2 pairs |
| 2) Ribbon Cartridge (Black) | 7) Cap | 2 pcs. |
| 3) Printer Cover | 8) Stand holding screw | 2 pcs. |
| 4) Roll Paper Stand Unit | | |
| 5) Fuse | | |

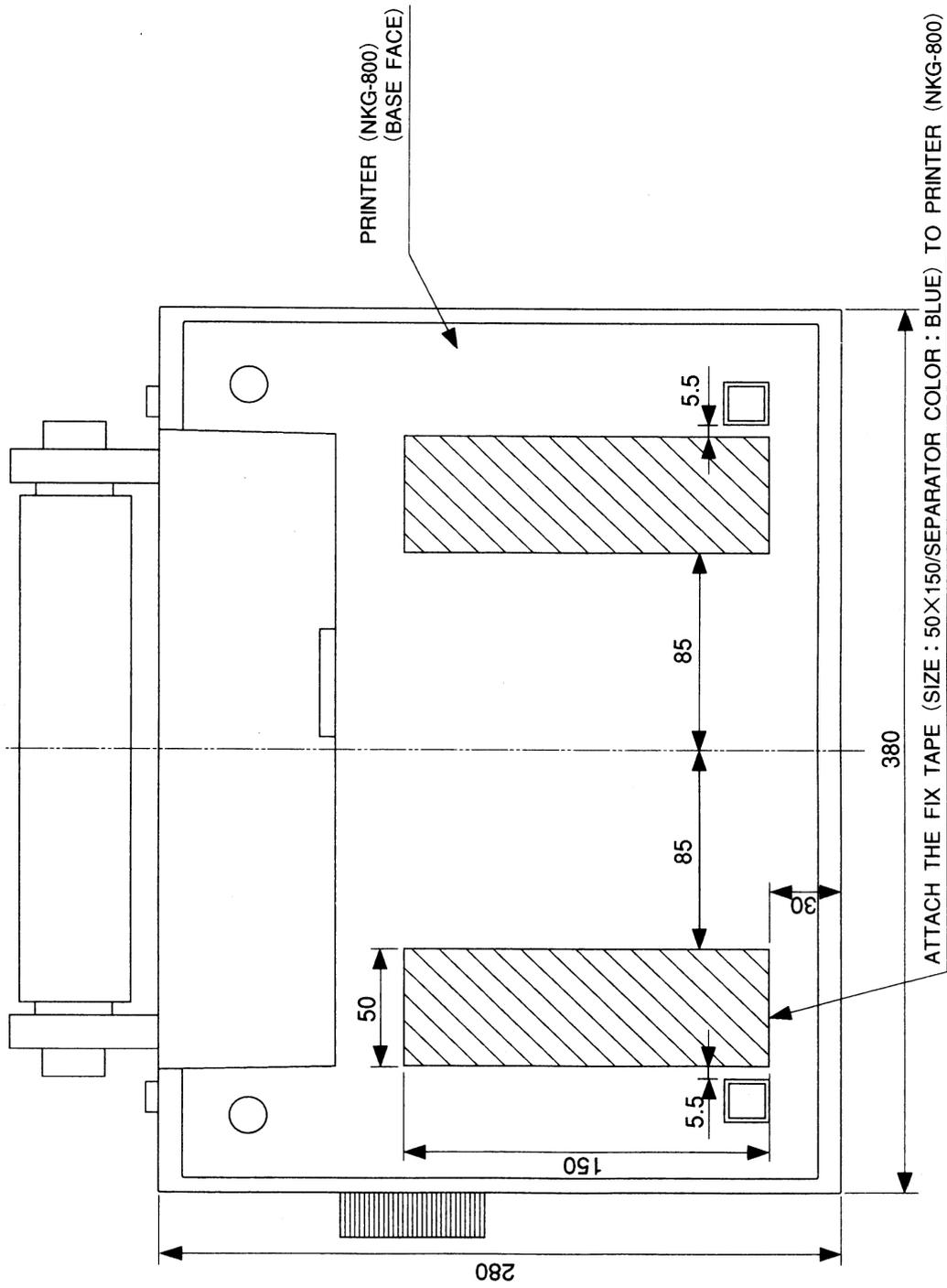


A3.2.2 Components Names



A3.3. Installation

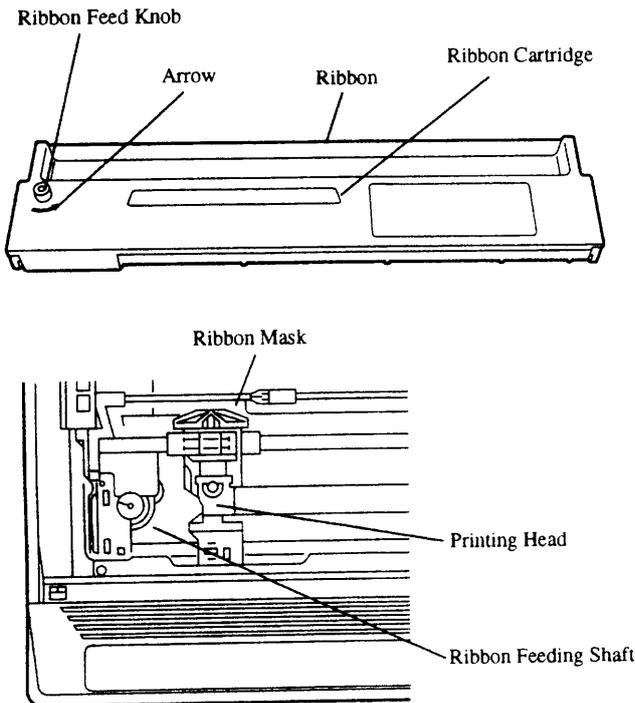
A3.3.1 Fix Tape Attachment



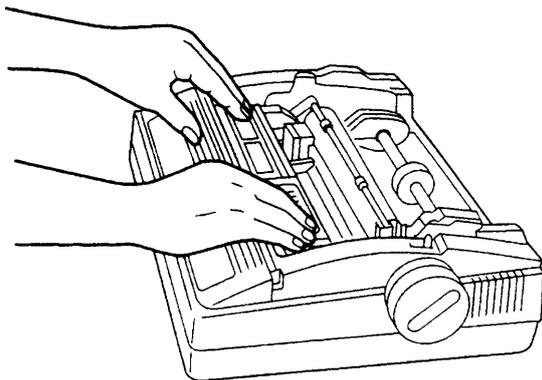
A3.3.2 Change of Ribbon Cassette-cartridge

Mounting method

- 1) Verify that the power switch remains turned OFF.
- 2) Turn the cassette knob in arrow mark direction to give tension to the ribbon.
- 3) In case of paper stand has been mounted, loosen stand-holding screw, and slide the paper stand backward.
- 4) Remove the printer cover.



- 5) Move by hand the printing head to its home position (left end).
- 6) Put the ribbon cassette so as the ribbon is placed between the ribbon mask and printing head. At that time, arrange so as the ribbon-feeding shaft enters in a hole located under the ribbon cassette knob.
- 7) Push lightly from top both ends of the ribbon cassette.
- 8) Turn again the cassette knob to give tension to the ribbon.
- 9) Verify that the ribbon is correctly placed in front of the printing head.

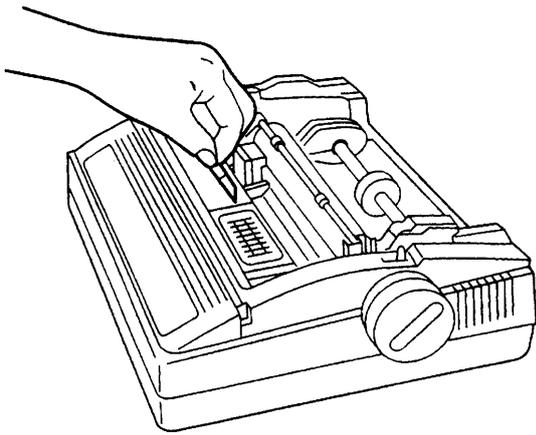


 **DANGER**



Immediately after printing, the printing head is still very hot, don't touch it until it is cool down.

Dismounting method

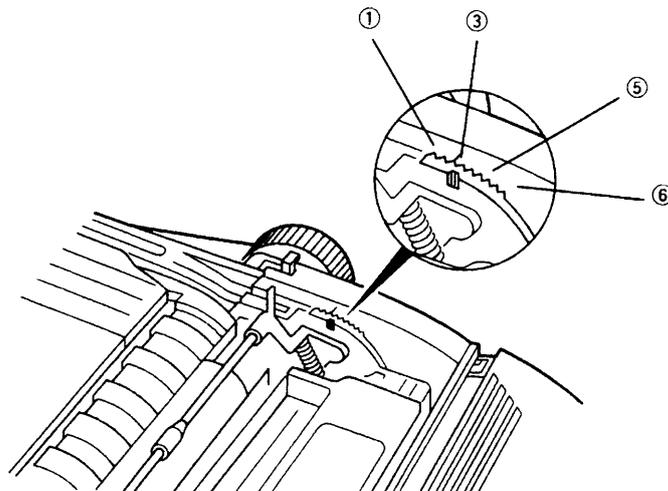


- 1) To change the ribbon, at first verify that the power to printer is turned OFF.
- 2) In case of paper stand has been mounted, loosen stand-holding screws, and slide the paper stand backward.
- 3) Remove the printer cover.
- 4) Seize the ribbon cassette knob, rise up vertically to remove.

A3.3.3 Printing Pressure Adjustment (Print Paper Thickness Adjustment)

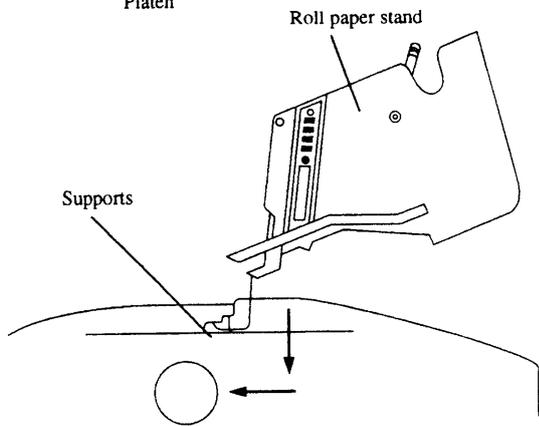
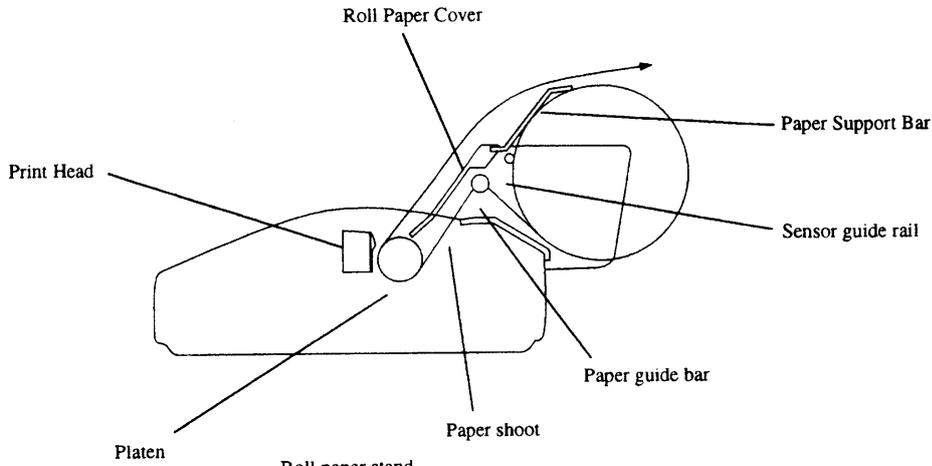
The printing pressure can be adjusted with the head adjustment lever located on right side in the printer.

For one ply plain paper the position ③ is most suited. When shipped, this lever is set to this position. In case of 3 ply duplicating paper, either ⑤ or ⑥ becomes suitable position.



A3.3.4 Roll Paper Loading

Paper holder mounting

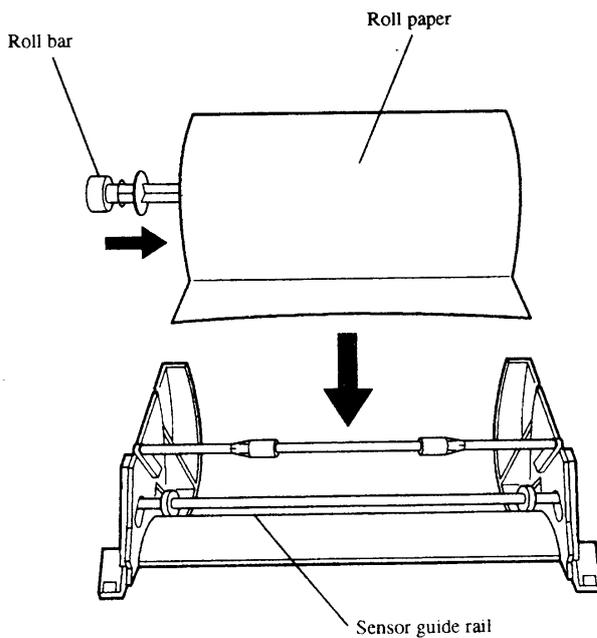


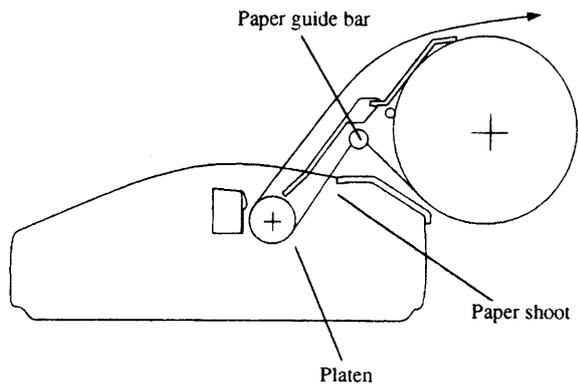
Paper holder mounting

- 1) Insert the roll paper stand into guides on right and left

Loading of roll paper

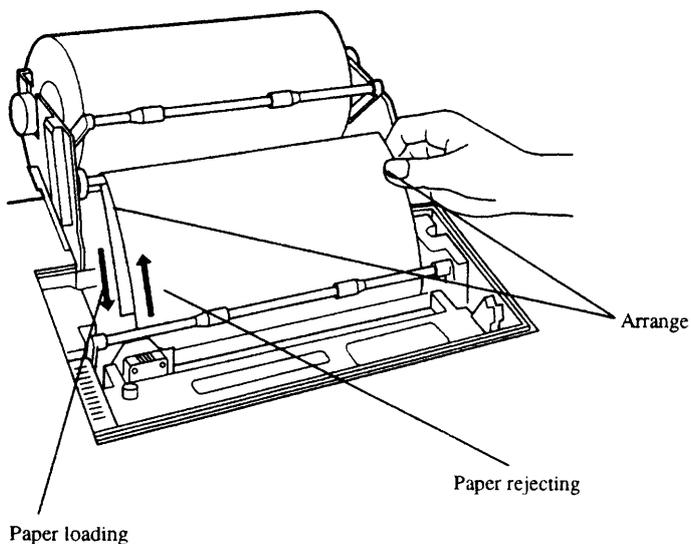
- 1) Cut off broken or folded end of roll paper.
- 2) Inset roll core to roll.
- 3) Pull toward you the sensor guide lever.
- 4) Mount the roll with roll core to roller holder. At that time, pay attention to direction of paper.
- 5) Mount caps above the roll bar.





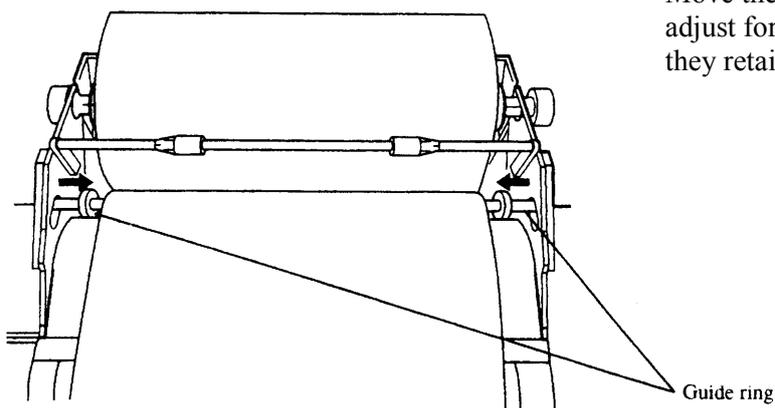
Roll paper setting

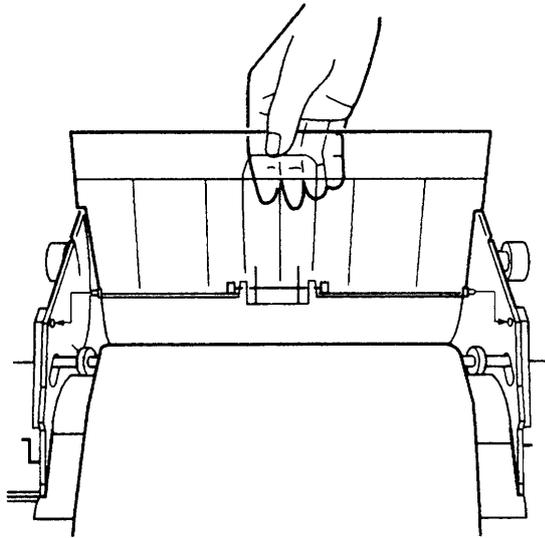
- 1) In case of paper stand has been mounted, loosen stand holding screws and slide the paper stand backward.
- 2) Remove the printer cover.
- 3) Push back the friction lever.
- 4) Pass the roll paper on paper guide bar, insert it in paper chute, pull it out from front of the platen.
- 5) Pull out the paper, adjust paper position for feeding and discharge side, so as paper enters straight.
- 6) When the position is fixed, pull the friction lever toward you.



Adjustment of guide ring

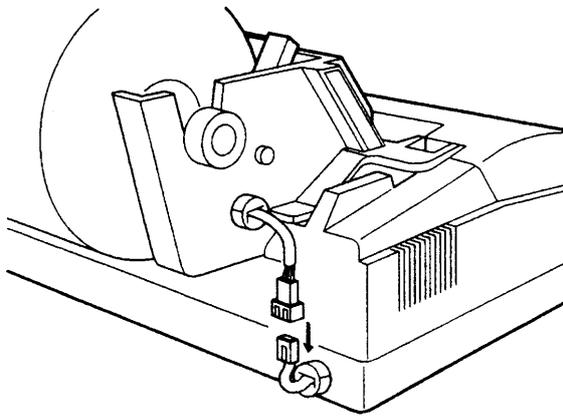
Move the right and left guide rings to adjust for paper width. Fix them so as they retain lightly the paper.





Mount of roll paper cover

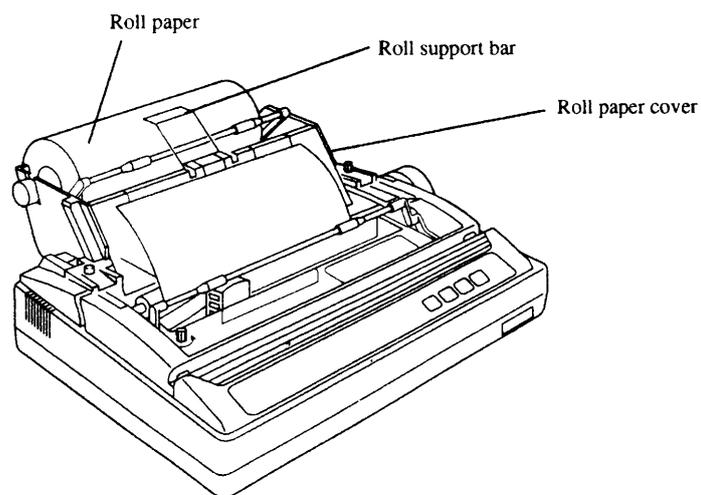
- 1) Mount the roll paper cover as shown in Fig.
- 2) Push up the paper support lever.



Connection of paper end near sensor

Connect the sensor cable on the back as shown in Fig.

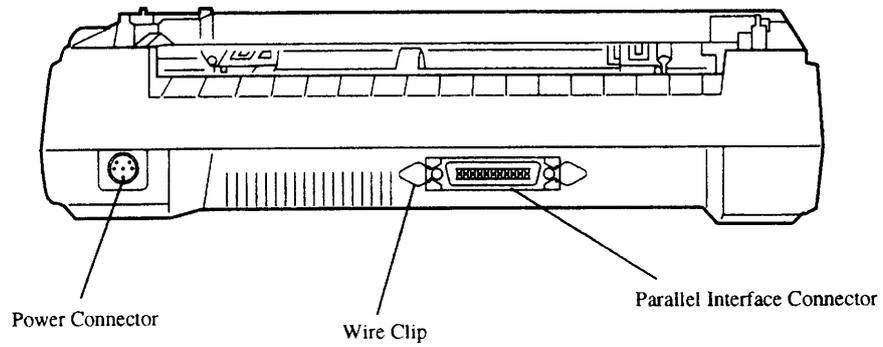
Upon accomplishment of the above, the state becomes as shown in Fig. below. Then mount the printer cover. Slide finally the paper stand forward and fix it by stand holding screws.



A3.3.5 Connection with Terminal

Prior to connect, verify that for both the terminal and printer their power switch is turned OFF.

- 1) Connect the printer cable to the parallel interface connector located on back of the printer, then, fix with locking lever.
- 2) Connect the other end of cable to the terminal.



A3.4. Self-printing Function

This printer is provided with self-printing function in order to check printing quality or printer's condition prior to use. However, with this self-printing function, the printer port is not checked.

Prior to perform self-printing, verify at first the paper is set.

NOTE

If printing is made directly on the platen without ribbon and paper, the platen or printing head may be damaged.

Test printing

Turn ON the power while pushing [LF] switch and continue to push [LF] switch until self-printing starts. After the initialization, 5 lines each of DRAFT and NLQ are printed alternatively. By turning OFF the power, self-printing stops.

[Sample]

S E L F T E S T Version. AMX4010

Draft font

! ' # \$ % & ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n
' # \$ % & ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o
\$ % & ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p
\$ % & ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q
% & ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r

Sans Serif font

& ' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r s
' () , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r s t
() , - . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r s t u
- . / - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r s t u v
/ - 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ^ _ a b c d e f g h i j k l m n o p q r s t u v w

* font

? 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I
? 8 9 : ; < = > ? @ A B C D E F G H I
~ ? @ A B C D E F G H I

APPENDIX 4. JRC Service Network

Please contact the dealer from which you purchased the device or our marketing offices that is nearest to you for any question as to the after-sales service.

JRC web site

JRC Tokyo	http://www.jrc.co.jp
JRC Seattle	http://www.jrcamerica.com
Alphatron	http://www.alphatronmarine.com

电器电子产品有害物质申明
日本无线株式会社

Declaration on hazardous substances
of Electrical and electronic Products
Japan Radio Company Limited

有害物质的名称及含量
(Names & Content of hazardous substances)

形式名(Type): JUE-87

名称(Name): INMARSAT-C Mobile Earth Station

部件名称 (Part name)	有害物质 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
室外装置 (Externally Mounted Equipment)	○	○	○	○	○	○
室内装置 (Internally Mounted Equipment)	○	○	○	○	○	○
外部设备(Peripherals) ·打印机(Printer) ·选择(Options) ·电线类(Cables) ·手册(Documentts)	○	○	○	○	○	○
本表格依据SJ/T 11364 的规定编制。 (This table is prepared in accordance with the provisions of SJ/T 11364.) ○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 标准规定的限量要求以下。 (Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the requirement in GB/T 26572.) ×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求。 (Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement)						

アスベストは使用しておりません
Not use the asbestos

For further information, contact:



Japan Radio Co., Ltd.

Since 1915

URL Head office : <http://www.jrc.co.jp/eng/>

Marine Service Department

1-7-32 Tatsumi, Koto-ku, Tokyo 135-0053, Japan

e-mail : tmsc@jrc.co.jp

One-call : +81-50-3786-9201

ISO 9001, ISO 14001 Certified