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Tron 40GPS

your safety – our concern

OPERATORS MANUAL

EC Declaration of Conformity, available at www.jotron.com

The equipment complies with the following Directives:
MED 96/98/EC
EMC 89/336/EEC

Harmonized Standards applied in order to verify compliance with the Directive(s):
ETSI 300 066:1996
EN 60945:1997

The information in this book has been carefully checked and is believed to be accurate. However, no responsibility is assumed for inaccuracies.

CAUTION!

This equipment contains CMOS integrated circuits. Observe handling precautions to avoid static discharges which may damage these devices.

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IMPORTANT!

Jotron Electronics a.s. is a prime manufacturer of safety equipment designed for rescue of human lives and their property. For safety equipment to be effective in line with the design parameters it is important that they are handled, stowed and maintained in compliance with the manufacturers instructions. Jotron Electronics a.s. can not be held responsible for any damage caused due to incorrect use of the equipment or breach of laid down procedures or for failure of any specific component or other parts of the equipment.

The chapter covering battery replacement (5.1) is added for information only. Jotron Electronics a.s. does not take any responsibility for improper disassembling/assemblin of the beacon. We strongly recommend all service to be done by authorized Jotron agents. In addition to normal service, Jotron agents have the necessary equipment and education to test the operational functions of the beacon.

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REVISION HISTORY

CHANGES	RECORD NO.	CHAPTER	VERSION
NEW MANUAL	EM3829	–	A
NEW TEXT	EM3903	5	B
NEW TEXT	EM3944	1.6, 3.1, 4.1, 5, 5.1, 5.2, 5.7, 6.1, FIG. 5	B

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GLOSSARY

C O S P A S

COsmicheskaya Sistyema Poiska Avariynich Sudov
(Space System for the Search of Vessels in Distress)

S A R S A T

Search and Rescue Satellite-Aided Tracking System

EPIRB	Emergency Position Indicating Radio Beacon
LUT	Local User Terminal (Ground Station)
MCC	Mission Control Center
RCC	Rescue Coordination Center
km	kilometer
MHz	Mega-Hertz (10^6 Hertz)
GPS	Global Position System

BATTERY SAFETY DATA SHEET

(Form: EEC directive 91/155)

(2) SAFETY ADVICE

S2 Keep out of reach from children.
S8 Keep container dry.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S43 In case of fire, use D type extinguishers. Never use water.
S45 In case of accident or if you feel unwell, seek medical advice immedately (show the label where possible).

(3) FIRST AID MEASURES

In case of contact of cell contents with eyes, flush immediately with water for 15 min. With skin, wash with plenty of water and take off contaminated clothes. If inhalation, remove from exposure, give oxygen, seek medical advice.

(4) FIRE-FIGHTING MEASURES

Extinguishing media

Suitable: Type D fire extinguishers
Not to be used: Water - CO^2 - Halon, dry chemical or foam extingiushers

Special exposure hazards

Generation of chlorine, sulfur dioxide, disulfur dichloride during thermal decomposition.

Special protective equipment

Use protective working boots, rubber apron and safety glasses with side shields.

INSTRUCTIONS FOR KEEPING THE RADIO LOG AND THE RADIO OPERATORS OBLIGATION ACCORDING TO NATIONAL AND INTERNATIONAL REGULATION.

1. The radio log shall be kept in accordance with requirements in the Radio Regulations, SOLAS Convention, national regulations regarding radio installations and the STCW Convention (STCW 95 including the STCW Code) including relevant regulation regarding watchkeeping on board passenger- and cargo ships.

2. Unauthorized transmissions and incidents of harmful interference should, if possible, be identified, recorded in the radio log and brought to the attention of the Administration in compliance with the Radio Regulations, together with an appropriate extract from the radio log. (STCW Code B-VIII/2 No.32)

TEST OF RADIO EQUIPMENT AND RESERVE SOURCE OF ENERGY

Weekly:

GMDSS handheld VHF transceivers to be tested without using the mandatory required emergency batteries.

Monthly:

Float-free and manual EPIRBs to be checked using the means provided for testing on the equipment. Check data for periodical maintenance requirement for float-free EPIRB. Search and rescue radar transponders (SART) to be checked against 9 GHz radar.

Float-free EPIRBs are required to go through a periodical maintenance every 24 months. (Only for NOR/NIS flag vessels).

False alerts transmitted by EPIRB

False alerts are a serious problem for the rescue service. Nearly 90% of EPIRB initiated distress alerts turn out to be false alarms.

If for any reason, your EPIRB should cause a false alarm, it is most important that you contact the nearest search and rescue authority and tell them it was a false alarm. They can then stand down any rescue service (coast radio station or appropriate CES or RCC). Use any means at your disposal to make contact. Switch off the distress alarm by de-activating your EPIRB, as soon as possible.

If your beacon is activated in a non-distress situation or a distress situation which has been resolved and you no longer require assistance, contact the nearest search and rescue authorities via the most expeditious means available with the following information:

Beacon ID number (15 character UIN):
Position (At time of activation):
Date of Activation:
Time of Activation (Time zone):
Duration of Activation:
Beacon marke and model:
Vessel Name/lD:
Circumstances/cause (if known):
The United States search and rescue authority is the U.S. Coast Guard.
The primary points of contact are:
Pacific Ocean Area
USCG Pacific Area Command Centre
Tel: (510)-437-3701

Atlantic Ocean / Gulf of Mexico Area
USCG Atlantic Area Command Centre
Tel: (757)~398-6231

From Any Location
USCG Headquarters Command Centre
Tel: (800)-323-7233

TEST AND MAINTENANCE RECORD

DATE	N/T/B	SIGN	INSP

N=NEW EPIRB INSTALLED,T=TEST, B=NEW BATTERY

1. INTRODUCTION

1.1 GENERAL

The Tron 40GPS is an emergency equipment consisting of:
- Tron 40GPS COSPAS/SARSAT emergency EPIRB
- One of the following brackets:

FB4 - Automatic float free bracket.
FBH4 - Automatic float free bracket v/heating.
MB4 - Manual bracket.

The JOTRON Tron 40GPS EPIRB is developed to meet the regulations and rules for use on vessels and life rafts in the maritime service. Tron 40GPS meets the following specifications for 406 MHz EPIRBs for use in search and rescue operations at sea:

ETS 300 066
MPT 1259
C/S T.001
IMO A662
IMO A695 (17){1}
IMO A810 (19)
DIR 96/98 EEC

The Tron 40GPS is buoyant, and is designed to automatically release and activate in case of an emergency where the EPIRB and its bracket is submerged into the sea. The Tron 40GPS can also be operated as a manual EPIRB, by manually releasing it from its bracket and then activate it.

Three different brackets are currently available for the Tron 40GPS. MB4 is the manual bracket and FB4 and FBH4 is the automatic bracket. The manual bracket comes without the hydrostatic release mechanism and is used to store the beacon inside the wheelhouse or other protected places. The automatic bracket is mounted in a free space outside where the beacon can be released automatically.

The purpose of the Tron 40GPS is to give a primary alarm to the search and rescue authorities. The EPIRB gives an immediate alarm when activated, transmitting the ID of the ship in distress. Care must be taken not to activate the EPIRB unless in an emergency situation, in such cases the user will be held responsible. For periodic testing a test function is implemented. During the test cycle the EPIRB does a selftest on the transmitters and on the battery status. No emergency signal is transmitted during the selftest.

The battery of the EPIRB will last for at least 48 hours from activation of the EPIRB.

1.2 SYSTEM DESCRIPTION

The COSPAS/SARSAT system was introduced in 1982 as a world wide search and rescue system with the help of satellites covering the earth's surface. Since the introduction of the system more than 5500 persons have been rescued by the COSPAS/SARSAT system (June 1995). Currently the system consists of 6 different satellites in a polar orbit constellation, these satellites cover the entire earth's surface and receive the emergency signal from the 406 MHz transmitter within the Tron 40GPS, more polar orbiting satellites will be available in the future, giving a faster location and rescue time.

In addition several geostationary satellites are equipped with a 406 MHz transponder, these satellites are not able to locate the Tron 40GPS but will give an early warning to the rescue forces, minimising the time from an emergency occurs till the rescue forces are at the site.

Each emergency EPIRB in the system is programmed with its own unique code, therefore it is vital that the ships data that is given to the dealer you obtained your Tron 40GPS, is correct. It is also important that your EPIRB is registered in the database for each country. This database is normally located in the same country that the ship is registered.

1.3 SIGNAL DETECTION [FIG. 1]

When the Tron 40GPS is activated (manually or automatically) it transmits on the frequencies 121.5 MHz and 406.025 MHz. An analogue signal is emitted on 121.5 MHz and a digital signal is transmitted on 406.025 MHz. After the Tron 40GPS is activated, the next passing satellite will detect the transmitted signal and relay it to an antenna at a ground station, called a LUT.

For the 121.5 MHz signal the satellite must be within line of sight of both the Tron 40GPS and a ground station. The ground station or LUT has a 2500 km satellite reception radius centred at the LUT. In areas without LUT coverage (mostly less populated areas in the southern hemisphere), signals from the 121.5 MHz transmitter will not be detected by the satellites, only by passing aircraft's. This is not the case with the 406 MHz transmitter, because the satellites have a memory unit which stores the signals for relay to the next available LUT giving it a truly global coverage.

Once the signal is received by the LUT, it is processed for location and sent to a Mission Control Centre (MCC). The MCC sorts the alert data according to geographic search and rescue regions and distributes the information to the appropriate Rescue Co-ordination Centre (RCC), or if outside the national search and rescue area, to the appropriate MCC that covers the area where the distress signal was detected. The RCC in turn takes the necessary action to initiate search and rescue activities.

1.4 DISTRESS LOCATION DETERMINATION

The location of the distress signal is determined by taking measurements of the doppler shift of the EPIRB frequency when the satellite first approach and then pass the EPIRB. The actual frequency is heard at the time of closest approach (TCA). Knowing the position of the satellite and using the received doppler signal information, it is possible to determine the location of the Tron 40GPS from the satellite at the TCA. At the LUT, actually two positions are calculated. One is the actual position (A) and the other is the mirror image (B) position. A second satellite pass confirms the correct location (A). With the 406 system the real solution can be determined on the first pass with a reliability of nearly 90% and down to an accuracy of less than 5 km (3.1 miles).

1.5 ADDED VALUE IN TRON 40GPS

The Tron 40GPS has been designed to operate with the COSPAS-SARSAT system and will enhance further the lifesaving capabilities of conventional beacons. The integrated 12 channel GPS module accept continuous positional information from the standard GPS system using 27 satellites providing an accuracy of approximately 100m. Upon activation of the Tron 40GPS in an emergency situation the positional information is incorporated into the distress message transmitted to LUT. The main advantage with integrated GPS in Tron 40GPS is the rapid response and positional accuracy providing vital information during a rescue operation practically eliminating valuable time spent searching for the distressed. Whenever a distress message transmitted by Tron 40GPS is detected by a polar orbit satellite (LEOSAR) the delayed alert remains the same as for non-GPS integrated EPIRBS (max. 90 min.), but the position accuracy is improved considerably from a radius of 5 km. to amazing 100m. Whenever a distress message transmitted by Tron 40GPS is detected by geostationary satellite (GEOSTAR) the alert is immediate (max. 5 min.), still providing the accurate position of 100m. Please note that the positional accuracy delay is depending on the actual protocol used and programmed into the EPIRB and the location of the emergency. The information is based on the capacity of the LEOSAR/GEOSAR COSPAS-SARSAT system.

1.6 EPIRB REGISTRATION

Normally the MCC will contact the vessel or the contact person registered in a shipping register and/or an EPIRB register (Ships owner, family member etc.) before alerting the RCC. This is to determine if the alarm from the EPIRB for some reason is a false alarm, and an expensive rescue operation can be avoided. Because of this it is important that the ships data is correct in the shipping register or in the EPIRB database.

Tron 40GPS purchased in some countries will have a registration form attached to it, it is important that this registration form is completed by the owner and returned to the place the EPIRB was purchased or to the address specified on the registration form.

Other countries use the already available shipping register to obtain the necessary information for a vessel in distress, in these countries the ship is already registered and no registration form is necessary, however it is vital that the coding of the Tron 40GPS is kept up to date with datas on the ship (nationality, call sign, etc.), to minimise the time from an alarm to the start of the search and rescue operation. Reprogramming the Tron 40GPS can be done at authorised JOTRON agents in more than 180 different places throughout the world.

If you are a resident of the United States, you must register this beacon with the National Oceanic and Atmospheric Administration (NOAA) using the registration card included with the unit. Fill out the form and send it to:
SARSAT Beacon Registry, NOAA-SARSAT, E/SP3, FB4, Room 3320,
5200 Auth Road, Suitland, MD 20746-4304
Vessel owners shall advise NOAA in writing upon change of vessel or EPIRB ownership. Transfer of EPIRB to another vessel, or any other change in registration information, NOAA will provide registrants with proof of registration and change of registration postcards.

2. TECHNICAL SPECIFICATIONS

2.1 GENERAL

Item:	**Description:**
Battery:	Lithium, 4 years service life.
Housing:	Polycarbonate w/ 10% glassfibre
Dimensions:	Height: 379 mm Max diameter: 180 mm Weight app:. 2.0 kg
Materials:	Polycarbonate.
Compass safe distance:	1.5 m
Temperature range:	-20°C to + 55°C
Operating life:	Minimum 48 hours at -20°C

2.2 COSPAS/SARSAT TRANSMITTER

Item:	**Description:**	
Frequency:	406.025 MHz ± 2 ppm	
Output power:	5W ± 2 dB	
Protocols:	Tron 40S: Maritime, Serialised, Radio Callsign	
Protocols:	Tron 40GPS: Standard Location, User Location	
Modulation:	Phase modulation 1.1 ± 0.1 rad	
Data encoding:	Bi Phase L	
Stability:	Short term	$\leq 10^{-9}$
	Medium term	$\leq 10^{-9}$
	Residual noise	$\leq 3x10^{-9}$
	Bitrate:	400 b/s
	Antenna:	Built in, omnidirectonal.

2.3 HOMING TRANSMITTER

Frequency:	121.500 MHz
Output power:	Up to 100 mW, depending on model.
Modulation:	A9,AM sweep tone from max. 1600 Hz downto min. 300 Hz. Sweep range 700 Hz. Sweep rate 2.5 Hz.
Stability:	10 ppm over temperature range.
Antenna:	Built in, omnidirectional.

2.4 BRACKETS

Materials:	Luran S
Dimensions:	length: 422 mm Width: 209 mm Depth w/Beacon intalled: 200 mm Weight: app 1.6 kg
Release mechanism:	Hydrostatic release unit Hammar H20 with Jotron special bolt

2.5 ADDED VALUE IN TRON 40GPS

GPS receiver:	12 channels, GPS module. Freq. 1575.42MHz. Time to first fix (TTFT) <3 min. at start-up, positioning every 25 min. gives TTFT between 30 –60Sec. GPS patch antenna.

3. OPERATING INSTRUCTIONS

The Tron 40GPS is designed to be operated either manually or automatically. The EPIRB is always armed, that is the EPIRB will automatically start to transmit when the EPIRB is out of the bracket and deployed into water. In the lower part of the EPIRB there is an automatic safety switch. This switch prevents the seawater-contacts from operating the EPIRB (caused by ice, sea-spray etc.) as long as the EPIRB is placed in its bracket.

3.1 MANUAL OPERATION [FIG. 2]

Warning

USE ONLY DURING SITUATIONS

OF GRAVE AND IMMINENT DANGER

For operation of the beacon in the bracket please follow instructions 1 to 6.
To manually remove the beacon from the bracket, pull out the locking pin on the clamp and open the retaining rod that holds the beacon.
Tie the beacon lanyard to you or to the survival craft and then follow instructions 1 to 6, or put beacon in the water to activate it. It is not recommended to operate the beacon inside a liferaft or under a cover or canopy. Do NOT tie the lanyard to the ship in distress, as this will prevent the unit to functioning if the ship sinks.

1. Break the seal and pull the locking pin holding the main activator switch.
2. Push slider to move switch to ON/EMERGENCY position.
3. The switch is spring loaded and will automatically go to the ON/EMERGENCY position.
4. The LED indicator, located at the top of the EPIRB, will start flashing indicating that the EPIRB is operating. In addition the strobe light will start to operate. The LED indicator will turn off after a few seconds.
5. If possible keep the EPIRB in an open area, away from any metal objects (ship construction etc.) that may limit the satellite coverage.
6. Transmission can be stopped by turning the switch to READY position.

3.2 AUTOMATIC OPERATION (FB4/FBH4) [FIG. 3]

1. The Tron 40GPS will automatically release from the bracket, float to the surface and start to transmit, when the EPIRB in its bracket is deployed into water at a depth of app. 2-4 meters (6 - 13 feet).

2. Alternatively the EPIRB can be manually released from the bracket and put into the water.
3. Transmission will continue until the EPIRB is lifted out of the water, and dried off. The transmission can also be stopped by placing the EPIRB in the bracket.

3.3 TESTING THE TRON 40GPS [FIG. 4]

To perform the self test, the EPIRB has to be removed from the bracket.

1. Press the spring-loaded switch on top of the EPIRB to the TEST position. Keep hands and other objects away from the upper part of the EPIRB (away from the antenna).
2. A successful test will consist of a series of blinks on the LED test-indicator, followed by a continuous light and a strobe flash after app. 15 seconds.

3. If the EPIRB fail to end up with a continuous light, this indicates a fault in the EPIRB.
4. Release the switch and put the EPIRB back into the bracket. What the self test actually does is first to wait app. 15 seconds to allow the reference oscillator inside the EPIRB to warm up. Then a short burst is transmitted by the 121.5 MHz transmitter, while the output level of the transmitter is checked. Finally, a test signal is transmitted by the 406 transmitter. During this test signal the battery voltage, output power and frequency is checked.

While testing the 406 MHz transmitter a test message is transmitted, this test message is coded with a special synchronisation code and will not be detected by the COSPAS/SARSAT satellites. The purpose of this test message is to control the actual coding of the EPIRB. This can be done with the JOTRON test unit TronDEC/UniDeck or an other EPIRB checker.

4. TECHNICAL DESCRIPTION EPIRB TRON 40GPS

4.1 FEATURES

- **Watertight:**
  Tron 40GPS is watertight to a depth of minimum 10 meter.
- **Buoyant:**
  Tron 40GPS is buoyant .
- **Rugged design:**
  The Tron 40GPS will withstand a drop from 30 meters into the water.
  It is resistant to seawater, oil and sunlight.
- **Handling:**
  The Tron 40GPS is made for easy operation, with a brief operating instruction printed on the unit.
  It comes standard with a 20 meter rope that can be attached to the liferaft.
- **Indicators:**
  The Tron 40GPS is equipped with a LED and a built in strobe light to show operation of the EPIRB.
  The strobe light and LED will normally flash with a frequency of 20 per minute to show that the EPIRB is activated.

4.2 STORAGE

The EPIRB is normally stored in its bracket. The bracket contains means to prevent accidental activation of the EPIRB. The bracket should be mounted
in a place that is easily available for periodic testing, and a place which is easily accessible in case an emergency situation occur.

5. MAINTENANCE OF JOTRON EPIRBS

Every Month:

Perform EPIRB self-test. (See chapter 3.3.). What the self test actually does is to send out a short test signal on 121,5 and 406,025 Mhz, testing the output of the transmitter. While transmitting the test signal, the battery voltage, output power and phase lock is tested. During the test of the 406Mhz transmitter a test message is transmitted, this test message is coded with a special synchronisation code and will not be recognized as real alert by the COSPAS/SARSAT satellites.

Carry out visual inspection for defects on both the EPIRB and Bracket. The EPIRB should be easily removed and replaced in the Bracket. Make sure that the EPIRB and Bracket is not painted or otherwise covered with chemicals, oil, etc. Check the expiry date of the EPIRB Battery and the Hydrostatic Release Mechanism. Check the presence of a firmly attached lanyard in good condition and that it is neatly stowed and is not tied to the vessel or the mounting bracket.

Every 12th Month:

Perform extended annual test according to IMO's MSC/Circ.1040 (Annual testing of 406 MHz satellite EPIRBs) as required by SOLAS IV/15.9. This test can be carried out by one of Jotron's authorised representatives or any other service provider in possession of a Tron UNIDEC, Tron DEC or any other Cospas-Sarsat EPIRB tester/decoder. The test ensures that the EPIRB is within its specifications and complies with IMO and the COSPAS/SARSAT system. Documented proof of test or Test Certificate containing test results and EPIRB data issued by service provider must be kept on board for future inspections the next 12 months.

Every 2nd Year:

Hydrostatic Release Mechanism including Plastic Bolt on the Float Free Brackets must be replaced. (Check expiry date on label).

Every 4th Year:

The EPIRB Battery must be replaced every 4th year, unless otherwise instructed by the vessel flag state or local authorities. (Check expiry date on label).

NOR/NIS flag vessels are required to go through periodical maintenance every 24 months by replacing the complete EPIRB.

Tron 40GPS self test:

- Remove the beacon from the bracket.
- Press the springloaded main switch of the EPIRB to the TEST position. Keep hands and other objects away from the upper part of the EPIRB (away from the antenna).
- A successful test will consist of a series of blinks on the LED testindicator, followed by a continuous light and a strobe flash after app. 15 seconds.
- If the EPIRB fail to end up with a continuos light, this indicates a fault in the EPIRB.
- Release the switch and put the EPIRB back into the bracket.

Note: The EPIRB can not transmit while placed in the bracket. This feature is built in to prevent false alarms. (Except U.S version/model).
Please find further information in the Operators Manual.

5.1 REPLACING THE RELEASE MECHANISM [FIG. 5]

Hydrostatic unit.
The hydrostatic unit fitted on the float free bracket (FB4/FBH4) must be replaced every 2. year. Marking on the hydrostatic unit show the expiry dateThe hydrostatic comes complete with a new bolt and accessories.

1. Remove the EPIRB from its bracket by pulling out the locking pin on the clamp and open the retaining rod that holds the beacon.
2. Unscrew the plastic bolt [FIG 5] (1) by screwing it counter clockwise and remove the hydrostatic release mechanism [FIG 5] (2).
3. Check expiration date on the new hydrostatic release mechanism. The date should be approximately 2 years from the date of purchase.
4. Mount the new hydrostatic release mechanism. The unit is fixed to the bracket with a plastic bolt containing washer, rubber seal, washer, O-ring.
5. Secure the plastic bolt by hand force only!

5.2 REPLACING THE BATTERY UNIT [FIG. 6]

The battery unit consists of the complete lower half of the Tron 40GPS and is to be replaced every 4. year. The marking on the battery unit show the expiry date.
A new battery comes complete and is easily replaced by opening the equator ring between the top and bottom of the EPIRB.
The battery must be replaced if the EPIRB is activated for any purpose other than test.

Replacing the battery unit should be done by skilled technicians only - preferable by a JOTRON agent. Your closest JOTRON agent with TronSTAT facilities has been specially trained to perform the necessary operation and is also able to do an extended test of the EPIRB, ensuring that the EPIRB operates within the specifications.

1. Remove the EPIRB from its bracket (chapter5.1.1).
2. Remove the equator ring by pressing it out from the housing.
3. Separate the two halves of the EPIRB housing.
4. Unplug the 6 pin connector that comes from the lower EPIRB housing.
5. Control that the new battery unit is marked with p/n 97780 and has a new expiration date approximately 4 years from purchase.
6. Fit a new gasket on top of the battery unit and reconnect the 6 pin connector, be sure that the connector is fitted properly. A noticeable «click» should be heard when the connector is in place.
7. Orientate the two halves of the EPIRB the following way: An orientation tab is fitted on both halves of the EPIRB, These tabs must be placed carefully on top of each other.
8. Make sure that the gasket is properly in place, and replace the equator ring using a special tool to tighten it together.
9. Replace the U-shaped bolt and a new split pin to secure the bolt in the equator ring.
10. Follow the procedure in chapter 3.3 and test the EPIRB.
11. Replace EPIRB in its bracket.

5.3 BATTERY DISPOSAL

Dispose in accordance with applicable regulations which vary from country to country.

(In most countries, the thrashing of used batteries is forbidden and the end-users are invited to dispose them properly, eventually through non profit organizations, mandated by local governments or organized on a voluntary basis by professionals).
Lithium batteries should have their terminals insulated prior to disposal.

5.3.1 Incineration: Incineration should never be performed by battery users but eventually by trained professionals in authorized facilities with proper gas and fumes treatment.

5.3.2 Landfilling: Leachability regulations (mg/l)

Component	Leachability	EC limit	EPA	Other*
Iron	100			5
Nickel	100	500	2	0,5

* applicable to France

5.3.3 Recycling:
Send to authorized recycling facilities, eventually through licensed waste carrier.

6. ACCESSORIES

BRACKETS

Three different brackets are currently available for the Tron 40GPS. MB4 is the manual bracket. FB4 and FBH4 are the automatic brackets. The manual bracket comes without the hydrostatic release mechanism and is used to store the beacon inside the wheel-house or other protected places. The automatic brackets are mounted in a free space outside where the beacon can be released automatically.

6.1 FLOAT FREE BRACKET FB4

WARNING:

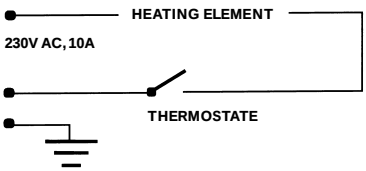
DO NOT INSTALL THE EPIRB NEAR STRONG
MAGNETIC FIELDS THAT COULD ACTIVATE THE BEACON.

When the Tron 40GPS is mounted in the float-free bracket, FB4, it will operate as an automatic float free unit. Since the release of the EPIRB will be automatic it is important to mount the bracket in a place where there are no obstacles that can endanger the automatic release of the EPIRB. The location where the bracket is mounted should be as high as possible on the vessel, and well protected from environmental conditions such as direct sea-spray, chemicals, oil, exhaust and vibrations. The location must also be easily accessible for testing and maintenance.

6.2 FLOAT FREE BRACKET FBH4

The float free bracket FBH4 must be connected to the fixed installation (230V AC, 10A) through the thermostate connection box according to the connection diagram below.

CONNECTION DIAGRAM



6.3 MANUAL BRACKET MB4

When the Tron 40GPS is mounted in the MB4 bracket, it will operate as a manual unit. This bracket is similar to the FB4 bracket but does not have the hydrostatic release mechanism. This bracket is typically used to store the EPIRB inside the wheel house or other protected areas of the ship. When the Tron 40GPS is mounted in the MB4 bracket, it must be manually removed before any operation can take place, therefore the bracket should be mounted in an easily accessible place where it can be reached in a hurry in case of an emergency.

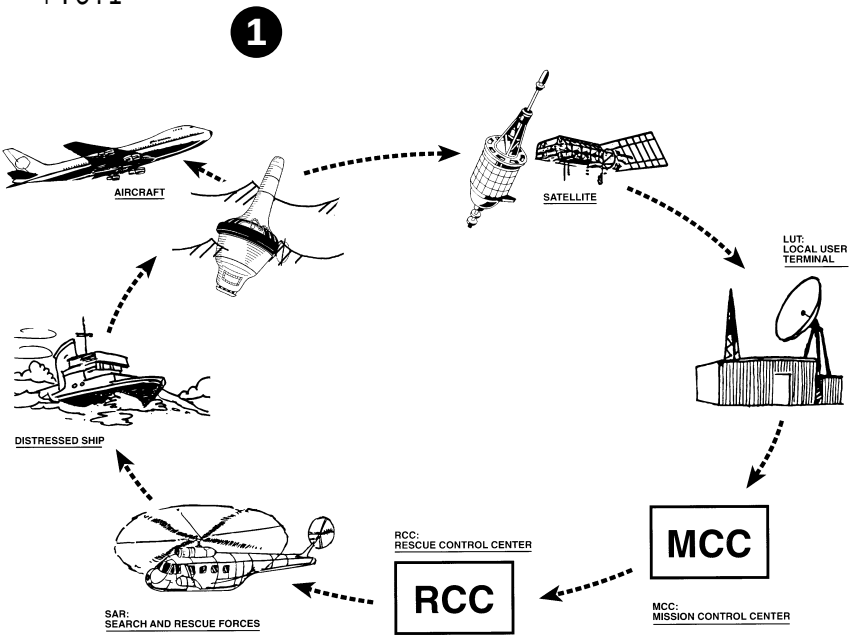
6.4 MOUNTING THE FB4/FBH4/MB4 BRACKETS [FIG. 7]

The bracket is mounted with 4x6mm bolts according to the drawing. Use the bolts supplied with the bracket.

The bracket could be mounted in either an upright or horizontal position, whichever is the best regarding maintenance and operation.

FIGURES

FIG.1



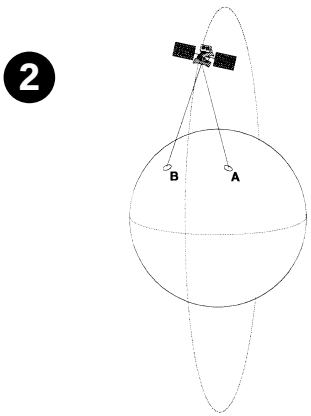


FIG. 2
MANUAL OPERATION [3.1]

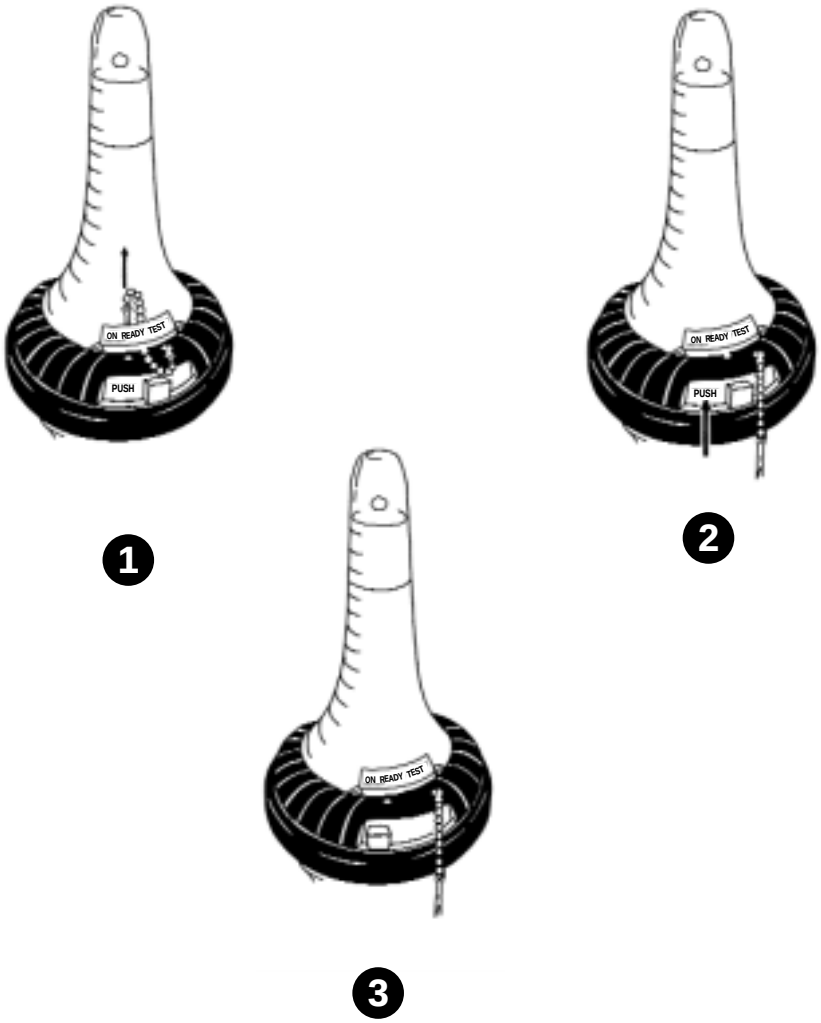


FIG. 3
AUTOMATIC OPERATION [3.2]

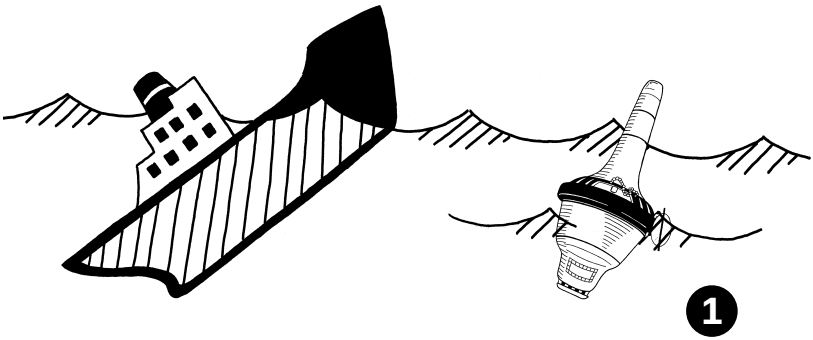


FIG. 4
SELFTEST [3.3]

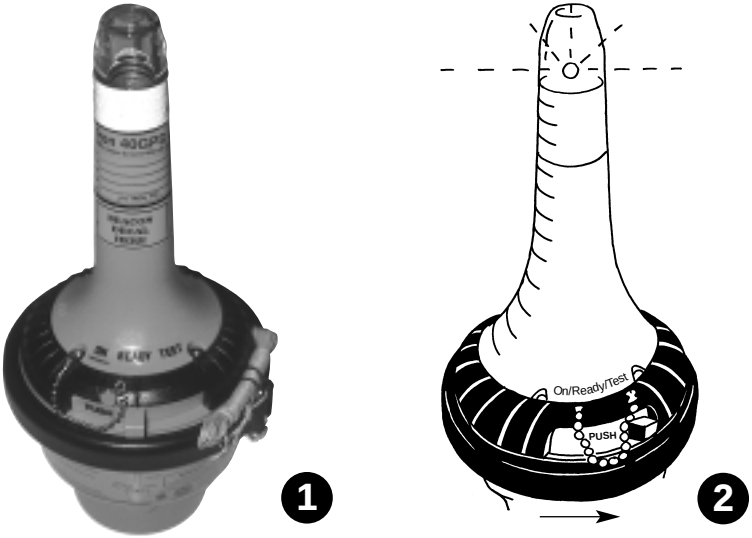


FIG. 5
MOUNTING OF HYDROSTATIC RELEASE MECHANISM [5.1]

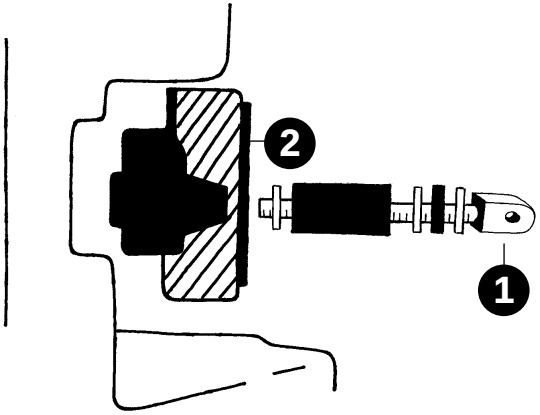


FIG. 6
REPLACING THE BATTERY UNIT [5.2]

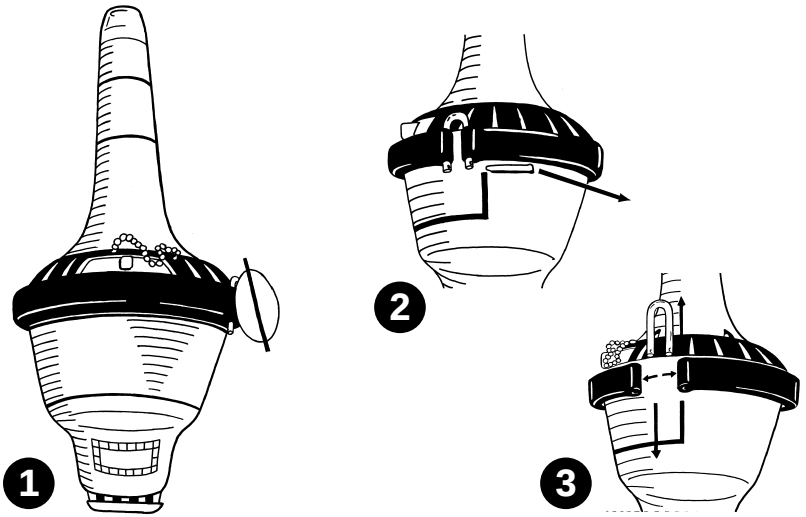
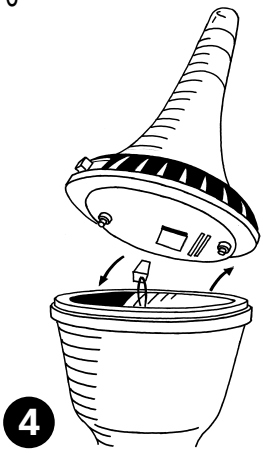


FIG. 6



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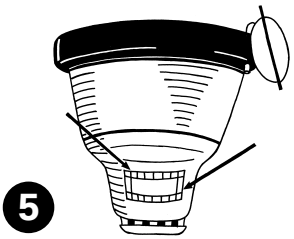

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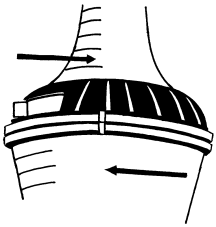

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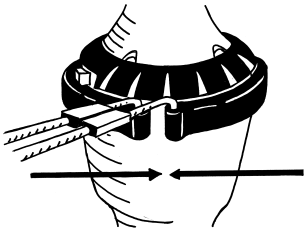

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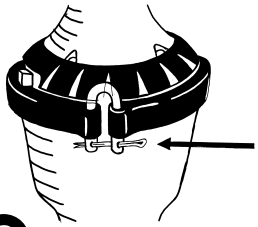

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FIG. 6

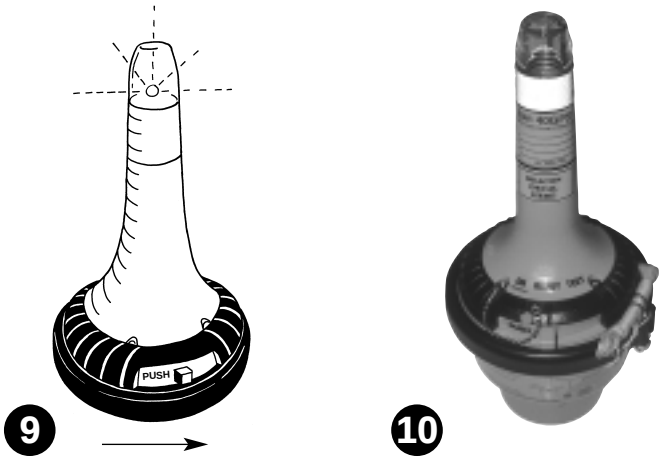
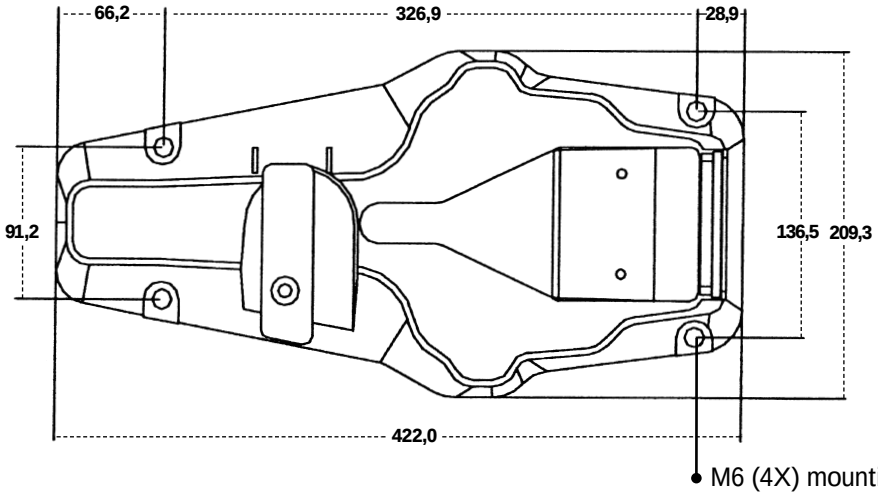


FIG. 7
MOUNTING OF BRACKETS (FB4, FBH4, MB4) [6.4]



NOTES:

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