Tron 40VDR Capsule

FB-40 and FBH-40 Float free brackets

User manual

JOTRON

Performance for Life

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Abbreviatons	
BIT	Short form of Binary Digit. The smallest element of data in a binary-coded value
BPS	Bits Per Second
COSPAS	COsmicheskaya Sistyema Poiska Avariynich Sudov
EPIRB	Emergency Position Indicating Radio Beacon
FRM	Final Record Medium
GPS	Global Positioning System
HRU	Hydrostatic Release Unit
IBRD	International 406MHz Beacon Registration Database
IEC	International Electrotechnical Commission
IMO	International Maritime Organization
ITU	International Telecommunication Union
LED	Light Emitting Diode
LUT	Local User Terminal (Ground station)
MCC	Mission Control Centre
MHz	Megahertz
NOAA	National Oceanic and Atmospheric Administration (USA)
RCC	Rescue Coordination Centre
SARSAT	Search and Rescue Satellite Aided Tracking System
SBM	Shore Based Maintenance
UIN	Unique Identifier Number
USCG	Unite States Coast Guard
VDR	Voyage Data Recorder

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3 General

Jotron manufactures safety products designed for the search and rescue of human lives and property. For this product to be effective according to the design parameters, it is imperative that it is handled, maintained, serviced, and stowed in compliance with this manual.

All information contained within this manual has been verified and is to Jotron's knowledge correct. Jotron reserves the right to make changes to any product(s), module(s) described herein to improve design, function or reliability, without further notice.

Jotron is not liable and cannot be held responsible for any injury or damages caused directly or indirectly by an error or omission of information, incorrect or misuse, breach of procedures or failure of any specific component or part of this product.

Jotron documentation can be downloaded from jotron.com.

4 Standards

Jotron declares that this this product is compliant with IMO and SOLAS regulations and both MED and RoHS directives.

A copy of the declaration of conformity can be downloaded from jotron.com.

The Tron 40VDR has been verified, tested and meets the following product standards:

IEC 61097-2 Ed. 3.0	Global maritime distress and safety systems (GMDSS) Part 2: Cospas-Sarsat EPIRB – Satellite emergency position indicating radio beacon operating on 406 MHz – Operational and performance requirements, methods of testing and required test results.
IEC 60945 Ed. 4.0 including IEC 608945 Corrigendum 1	Corrigendum 1 – Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required results.
IEC 61996-1 Ed. 2.0	Maritime navigation and radiocommunication equipment and systems – shipborne voyage data recorder (VDR) – Part 1: Performance requirements, methods of testing and required test results.
IEC 63000:2016	Technical documentation for the assessment of electrical and electronic products with respect to the restrictions of hazardous substances
ISO 14001	Environmental management systems
ISO 9001	Quality management principles

In accordance with SOLAS regulations, the following controls must be followed:

IV/15.9.2 of SOLAS 1974, in accordance with MSC/Circ. 1039 guidelines	SOLAS regulation for Shore Based Maintenance (SBM) of Satellite EPIRBs within 5 years if: Passenger ships (> 12 passengers) and cargo ships (> 300GT) engaged in International voyages, shall perform SBM as follows: Latest by the date of the EPIRB label with this text, or the battery Label, whichever is first. And when this EPIRB becomes due for SBM in accordance with national requirements.
IV/15.9.2 of SOLAS 1974 as amended to in accordance with MSC/Circ.1039 guidelines	SOLAS regulation for shore-based maintenance of satellite EPIRBs within 5 years, or by the date of battery expiry, whichever is first. As it applies to maintenance (servicing and tested) for vessel that requires GMDSS compliant equipment.
SOLAS Chapter IV reg. 15.9.2 and IMO MSC. Circ. 1039	Regarding battery change. This must be completed at a Jotron SBM authorized location and it must also be approved by the VDR manufacturer. The interval is dependent on the flag-state administration. If neither international nor national regulations apply to the EPIRB then the battery may be changed by an authorized Jotron partner/distributor.
IMO - MSC/Circ.1040 & rev.1 as required by SOLAS IV/15.9	Regarding yearly testing of 406 MHz on satellite EPIRBs. Rev.1 requires that annual testing be performed by an authorized radio-surveyor or an authorized person who is trained and certified by Jotron.

IMO MSC.1/Circ.1222	Regarding an additional yearly testing requirement for the Tron 40VDR float free capsule.
IMO COMSAR/Circ. 32 (latest revision)	Correct installation and storage of this product.

5 Product description

The Tron 40VDR is an Emergency Position Indicating Radio Beacon (EPIRB). The purpose of the Tron 40VDR is to send a primary alarm to the search and rescue authorities. The EPIRB sends a distress signal, when activated transmitting the ID of the ship.

The Tron 40VDR is buoyant and activates automatically when immersed in water.

There are two float-free mounting brackets available for use with the Tron 40VDR, either the FB-40 or the FBH-40, which including heating. Both brackets are specially designed with an internal safety switch (water detectors), that prevent the EPIRB from inadvertently being activated by moisture or water spray when placed in the bracket. The FB-40 float free bracket includes a hydrostatic release unit (HRU) and a docking module.

The Tron 40VDR includes of the following components:

- Cospas-Sarsat emergency EPIRB
- VDR storage module
- FB-40 float free bracket or FBH-40 float free bracket (heating)

5.1 Product images

Figure 1 Tron 40VDR w/storage module

Figure 2 FB-40 float free bracket

5.2 EPIRB control functions

*floating or immersed in water

Control position		EPIRB condition		EPIRB mounted in/out (bracket)		Transmitter status	
On	Ready	Wet*	Dry	Out	In	On	Off
X		X		X		X	
X		X			X	X	
X			X	X		X	
X			X		X	X	
	X	X		X		X	
	X	X			X		X
	X		X	X			X
	X		X		X		X

Table 1 EPIRB control functions

NOTE

A distress signal will not be sent until after the first 50 seconds.

5.3 Cospas-Sarsat system description

Cospas is an acronym for the Russian words Cosmicheskaya Sistyema Poiska Avariynich Sudov, which means “Space System for the Search of Vessels in Distress”. The Cospas-Sarsat system was introduced in 1982 as a worldwide search and rescue system with the help of satellites covering the earth’s surface. Between 1982 and 2018 alone this system has aided in rescuing at least 48,738 individuals in 14,531 search and rescue situations. Currently, the system consists of 5 functional satellites in a polar orbit constellation, these satellites cover the entire earth’s surface and receive distress signals from the 406 MHz transmitter within the Tron 40VDR, 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 40VDR but will give an early warning to the rescue forces, minimizing the time from an emergency occurs till the rescue forces are at the site.

Each EPIRB in the system is programmed with its own unique code, therefore, it is vital that the ships data supplied to the dealer upon purchase or when the Tron 40VDR was obtained is correct. It is also important that the EPIRB is registered in the database for each country. This database is normally located in the same country where the ship is registered.

5.3.1 Signal detection

When a Tron 40VDR is activated (manually or automatically) it transmits an analogue signal on the 121.5 MHz frequency and digital signal on the 406.037 MHz frequency. After the Tron 40VDR is activated, the next passing satellite will detect the transmitted signal and relay it to an antenna at a local user terminal (LUT) ground station.

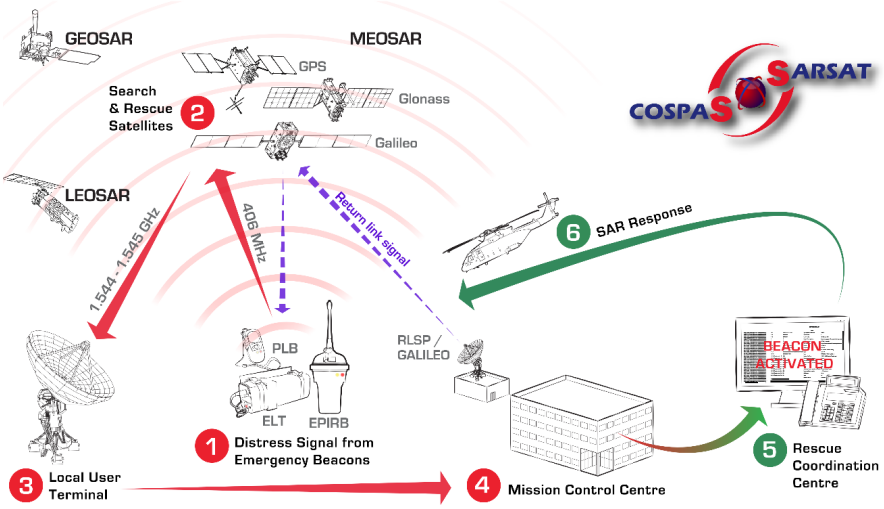


Figure 3 Illustration - signal detection

5.3.1.1 Advantages of an included GPS

This product has been designed to operate with the Cospas-Sarsat system. With the inclusion of a GPS, this EPIRB enhances lifesaving capabilities. The GPS position is updated every 6-16 minutes.

Below, is a comparison between the Tron 40VDR and an EPIRB without a GPS.

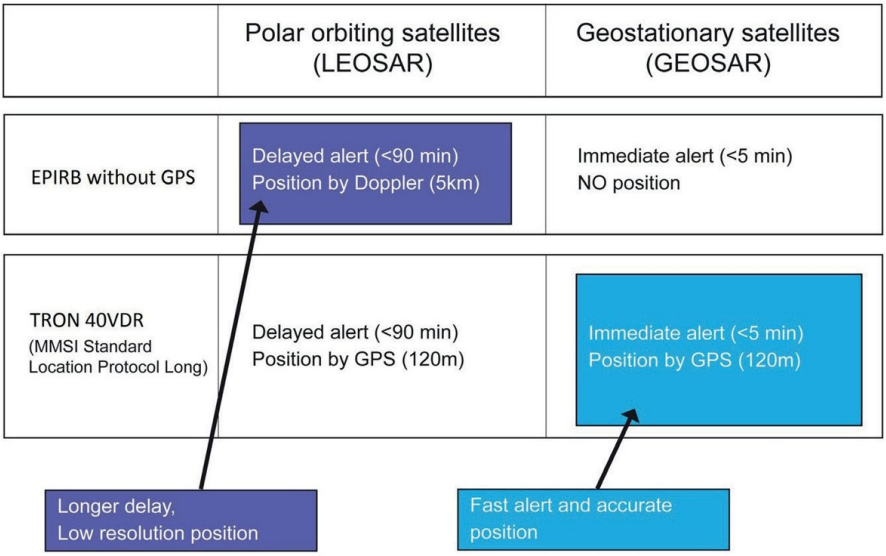


Table 2 Satellites - LEOSAR & GEOSAR

5.3.2 EPIRB registration

Normally the Mission Control Centre (MCC) will contact the vessel, or the contact person registered in the shipping register and/or EPIRB register (ship owner, family member etc.) before alerting the Rescue Coordination Centre (RCC). This is to determine if the alarm from the EPIRB is a false alarm and a rescue operation can be avoided. Hence, it is important that the data in the shipping register and/or EPIRB register is correct.

Register the beacon with the national authority associated with the country code in the hexadecimal identification (15 Hex ID) of the beacon. Register online with the Cospas-Sarsat IBRD, if the country does not provide a

registration facility and the country has allowed direct registration: www.406registration.com

If the country operates a national beacon registry, obtain a point of contact at www.cospas-sarsat.org (review C/S S.007 Cospas-Sarsat Handbook of Beacon Regulations).

Suggested EPIRB registration links:

USA: http://www.beaconregistration.noaa.gov and UK: http://www.mcga.gov.uk (search EPIRB registration)

USA registration card:

Suggested registration link: http://www.beaconregistration.noaa.gov

It can also be registration via mail or fax. Downloadable forms are available from their website.

The Emergency Contact information and telephone number must be accurate as it is what will be used to validate an alert. The United States Coast Guard (USCG) will only launch an immediate rescue if the beacon registration and approximate location details can be confirmed. Delays will occur whilst further alerts from the same source are received and verified.

Registration address:

NOAA/SARSAT Beacon Registration

NSOF, E/SP053

1315 East West Hwy

Silver Spring, MD 20910

5.3.3 False alerts transmitted by EPIRB

If for any reason an inadvertent activation or false alarm occur, you must report it to the nearest search and rescue authorities. The following information must be reported:

- 15-digit unique identifier number (UIN) on the beacon label.
- Date and time of activation (including time zone).
- Cause and duration of the activation.
- Location of the beacon at the time of activation.

To report a false alarm in the United States, contact the US Coast Guard at 1-855-406-USCG (8724)

To report a false alarm outside of the US, contact the national authority where the beacon is registered.

6 Functional description

6.1 Tron 40VDR components

An overview of the components.

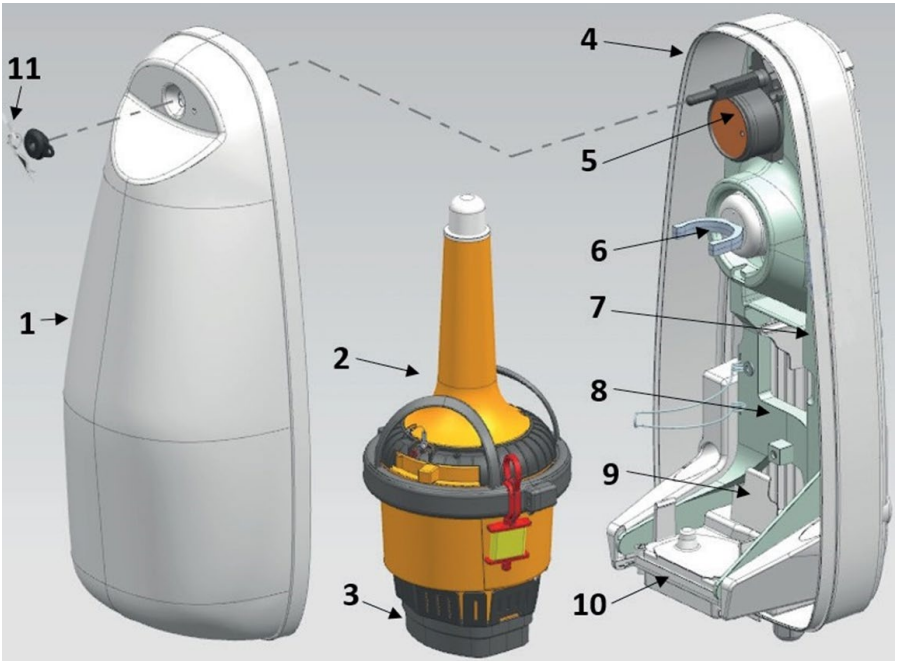


Figure 4 Illustration - Tron 40VDR components

Item no.	Item
1	Front cover
2	Tron 40VDR float free EPIRB capsule
3	Final recording medium (FRM) storage module

4	Float free bracket
5	Hydrostatic release unit (HRU)
6	Stability clip
7	Grounding screw
8	Catapult
9	Grounding plate
10	Docking module
11	Cotter pin

Table 3 Tron 40VDR components

6.2 Main module

The main board includes all electronic circuitry and the main switch.

6.3 Antenna

The antenna in the Tron 40VDR is omnidirectional and includes a LED flash at the top.

6.4 Battery module

The battery module supplies the EPIRB with power to keep the EPIRB transmitters active for 168 hours when activated, and for test sequences. The battery module is integrated within the product.

Two water detectors are mounted in the battery module. These two metal contacts are located on the back of the battery housing.

Do not touch the metal contacts as this can be detected as water and activate the EPIRB.

6.5 FB-40 float free bracket

The FB-40 float free bracket is a covered bracket with a hydrostatic release unit (HRU). The HRU releases the Tron 40VDR if the bracket is submerged to a depth of 2-4 meters when a ship is sinking.

7 Installation

The Tron 40VDR must be installed and stored as described in this manual.

Do not install the EPIRB near strong magnetic fields, otherwise the EPIRB may be activated.

7.1 Brackets

Brackets should be mounted in a well protect area from environmental conditions such direct water spray, chemicals, oil, exhaust and vibrations.

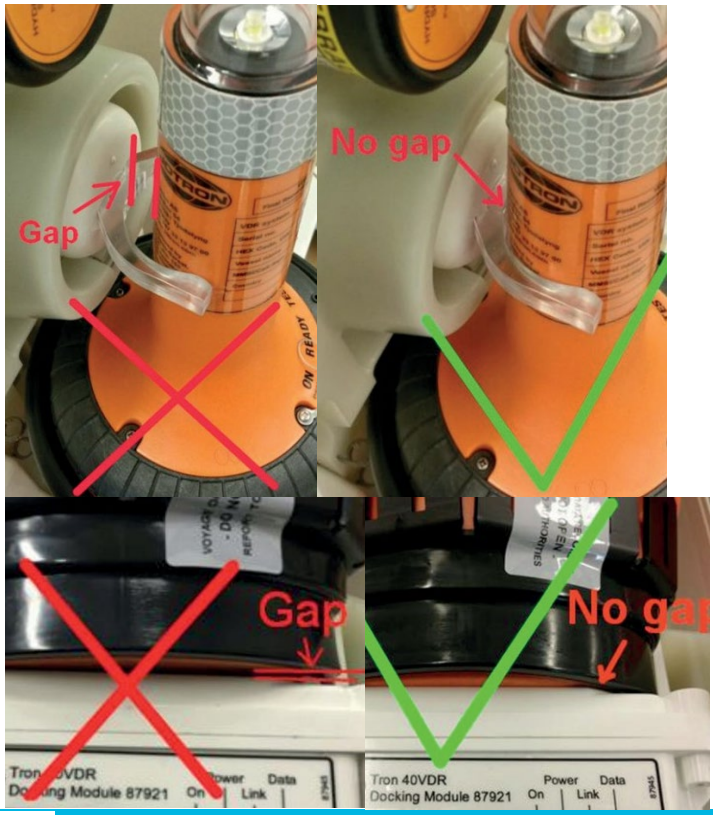
7.1.1 Mounting the FB-40 float-free bracket

Refer to the Tron 40VDR FF Capsule Installation manual for steps regarding how to complete the mounting of the FB-40 float-free bracket.

7.1.2 Mounting the EPIRB in the FB-40 float-free bracket

To mount the Tron 40VDR in the FB-40, do the following:

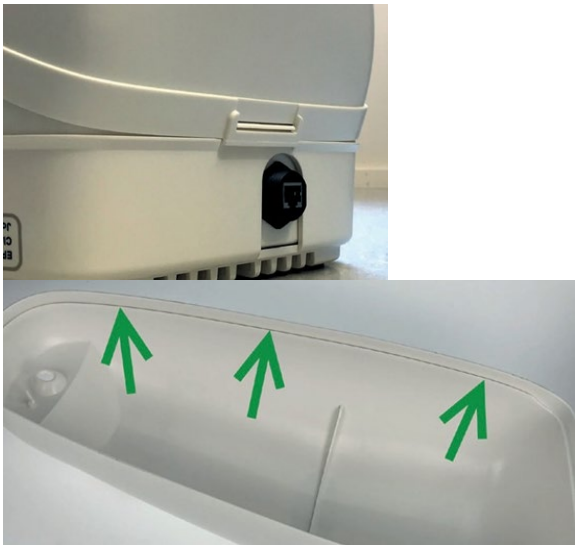
1. Verify the bracket is properly mounted.
2. Verify the bracket is not damaged.
3. Place the EPIRB on the docking module and gently press it into the stability clip, verify no gapping.



IMPORTANT

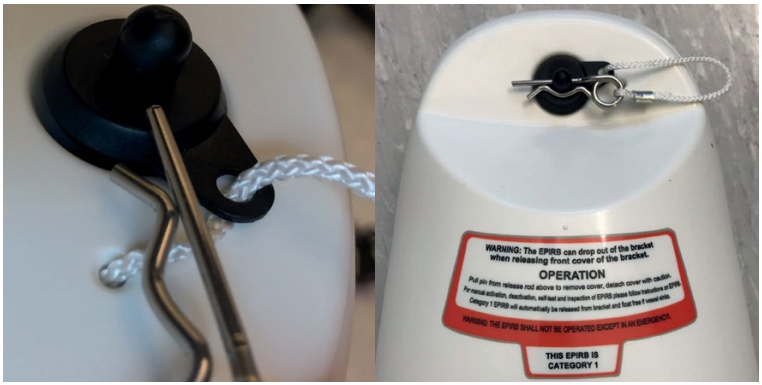
Gapping will occur if the bracket is not mounted correctly on a flat surface. If there is a gap between the docking module and the storage module then communication between the two will either be intermittent or non-existent.

4. Place the cover on the bracket bottom first, use the groove along the edge of the cover.



5. While fitting the black plug into place, gently press the cover.

6. Using the cotter pin, secure the cover.



NOTE

If the hole is not visible or it is not easy to push the cotter pin through, do not force the pin or press the cover, remove the cover, and try again.

7.2 Replacing the battery

The Tron 40VDR battery must be changed at a Jotron shore based maintenance (SBM) authorized workshop to be GMDSS compliant.

If your Tron 40VDR is not under any international or national regulations, the battery can be change by authorized Jotron representatives/partners/ dealers.

8 Operation instructions

Tron 40VDR is designed to be operated either manually or automatically. The EPIRB will automatically start to transmit when immersed into water. The Tron 40VDR has an internal safety switch which prevents inadvertent activation through moisture and water spray when located in the bracket. The EPIRB battery lasts for 168 hours from activation.

This EPIRB should only be used in an emergency. Should an EPIRB be used for any other reason, the user will be held responsible.

WARNING

Replace the battery after the EPIRB is operated for any purpose other than a test.

8.1 Manual operation

IMPORTANT

Keep the EPIRB in an open area and away from metal objects to ensure best performance (this includes ship construction).

CAUTION

Do not tie the lanyard to a ship during an emergency, this prevents the EPIRB from functioning if the ship sinks.

To manually operate the Tron 40VDR, do the following:

1. Remove the cotter pin from the bracket.

2. Remove the cover.

3. Remove the EPIRB from the bracket.

4. Pull the safety ring.

5. Push and move the main switch to the ON position.

NOTE

The LED indicator located at the top of the antenna will start to flash. This indicates that the EPIRB is transmitting.

6. Tie the EPIRB lanyard to yourself or the survival craft.

NOTE

To stop transmission, move the main switch to the ready position and secure the safety pin in place.

8.2 Automatic operation from the FB-40 float-free bracket

During automatic release the following will occur:

1. When the bracket reaches a water depth of 2-4 meters or 6-13 feet the EPIRB will automatically be released.
2. The EPIRB will then float to the surface and start transmitting.
3. Transmission is indicated by the flashing LED and will continue until the EPIRB is lifted out of the water and dried off.

NOTE

The transmission can also be stopped by placing the EPIRB back into the FB-40 bracket.

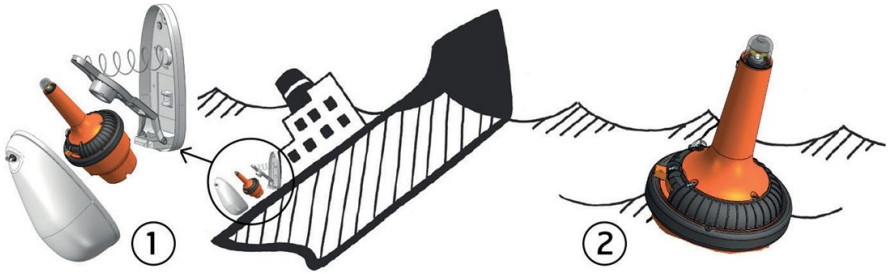


Figure 5 Illustration - automatic operation of a FB-40 float free bracket

8.3 Wrist strap

In an emergency the EPIRB can be carried using a Jotron wrist strap. Use the strap when it is necessary to have both arms free.

To use the wrist strap, do the following:

1. Pull the wrist strap out of the pocket.

2. Place your arm through the loop of the strap.

NOTE

It is not possible to put the wrist strap back into the pocket after use.

9 Maintenance

The Tron 40VDR requires the following maintenance:

Timing	Requirements
Every month	Both the EPIRB and the bracket should be inspected. The EPIRB should be self-tested in the bracket. Perform inspection and testing following with steps outlined in this manual. Every 4th month, perform an extended self-test (GPS test) instead of the self-test.
Every year	Test in accordance with MSC. 1040, the annual performance test.
Every 2 years	In addition to the regular yearly inspection and testing, the HRU should be replaced including the plastic bolt. Mark the new expiry date on the label.

Every 4-5 years	The battery must be replaced and changed at a Jotron SBM authorized location (to be GMDSS compliant). Test in accordance with MSC. 1039 SBM. The SMB is decided by the flag state administration.
Every 10 years	Jotron recommends that the EPIRB and FB-40 float free bracket are replaced at this time.

Table 4 Tron 40VDR maintenance requirements

9.1 Inspection

The lifetime of any equipment depends on how well you take care of it. Inspect both the Tron 40VDR and the FB-40 float free bracket for defects.

To inspect, do the following:

1. Ensure the bracket cover is not blocked (this hinders the release functionality of the EPIRB).
2. Ensure the EPIRB and bracket are clean (no paint, oil and other chemicals).
3. Verify the lanyard is attached (on the EPIRB and not the vessel)
4. Verify the expiry date of EPIRB battery.

5. Verify the expiry date of HRU (month/year)

9.1.1 Yearly additional requirements

Once a year the Tron 40VDR must meet these additional requirements.

To complete the additional requirements, do the following:

1. Remove and clean the old grease from both the docking module and the storage module.
2. Apply a thin layer of Jotron silicone grease evenly inside the areas marked with a green boarder.

NOTE

The function of the grease is to prevent ingress of water between the docking module and the storage module, this ensures good data transmission.

WARNING

If the layer of grease is too thick, it may have a negative effect on the VDR performance. Only use Jotron grease.

9.2 Testing

It is important to perform regular testing of equipment to ensure proper operation. This also ensures the EPIRB is in good working order and therefore ready for use in a potential emergency.

9.2.1 Self-test

The purpose of a self-test is to verify that the EPIRB functions as it should. During this test, a short test signal on 121,5MHz and 406,037MHz are sent to test the output of the transmitter and operation of the EPIRB. While transmitting the test signal, the battery voltage and status, output power and phase lock are tested. When testing the 406MHz transmitter a test message is transmitted, this test message is coded with a special synchronization code that will not be recognized as an actual alert by the Cospas-Sarsat satellites.

There are two types of tests:

1. Self-test
2. Extended self-test including GPS test

Testing should be completed within the first 5 mins of an hour as the satellite EPIRB emits a 121,5MHz signal during testing.

To perform a self-test, do the following:

1. Move the switch from the ready position to the test position and hold for 15 seconds.

IMPORTANT

Keep hands and/or other objects away from the antenna.

2. Release the switch.

NOTE

A single flash indicates a passed test. If this is not the result, refer to the error codes.

9.2.1.1 Error codes (flashes)

If the self-test detects an error in the EPIRB module, one or more of the following will occur:

Number of Flashes:	Error codes
2	Low power on 406MHz transmitter
3	Low battery voltage
4	Low power on 121.5MHz transmitter
5	PLL on 406MHz transmitter out of lock
6	PLL on 121.5MHz transmitter out of lock
7	EPIRB module not programmed or programming not complete

Table 5 Tron 40VDR self-test error codes (flashes)

9.2.2 Extended self-test (GPS test)

Upon completion of an extended self-test, a self-test will automatically occur. However, only when the extended test is successful. During an extended self-test, a GPS position is received. During the automatic self-test, the position is sent on 406.037 MHz. An EPIRB tester can be used to verify the GPS position during a self-test.

NOTE	Limit this test to a maximum of once a month as this testing reduces the lifetime of the EPIRB battery. The Tron 40VDR can only complete 60 GPS tests during the lifetime of 1 battery.

To perform an extended self-test including GPS, do the following:

1. Move switch to the test position twice within 3 seconds and release back to the ready position.

NOTE	The EPIRB will beep shortly every 3 second until the GPS position is acquired.

Keep hands and/or other objects away from the antenna.

2. A self-test will automatically take place after a successful GPS test and position transmission on 406.037 MHz. The GPS position may be received on an EPIRB tester for verification.

2 beeps and a single flash indicates as passed test. If this is not the result refer to the error code tables for either flashes or beeps.

9.2.2.1 Error codes (beeps)

If the GPS test detects an error, one of the following will occur:

Number of Beeps:	Error codes
5	Did not acquire GPS positioning
10	Number of GPS test above limit (>60)

Table 6 Tron 40VDR GPS test error codes (beeps)

10 Replacing the hydrostatic release unit (HRU)

A replacement HRU must be purchases separately and is supplied in a kit. The HRU kit includes a special bolt and fittings.

Only a Jotron approved hydrostatic release unit kit must be used, as it is type approved.

To replace the release mechanism, do the following:

1. Remove the cotter pin from the bracket.

2. Remove the cover.

3. Remove the EPIRB from the bracket.

4. Press down and hold in place the spring-loaded catapult, then remove the HRU by sliding it out of the locking slot.

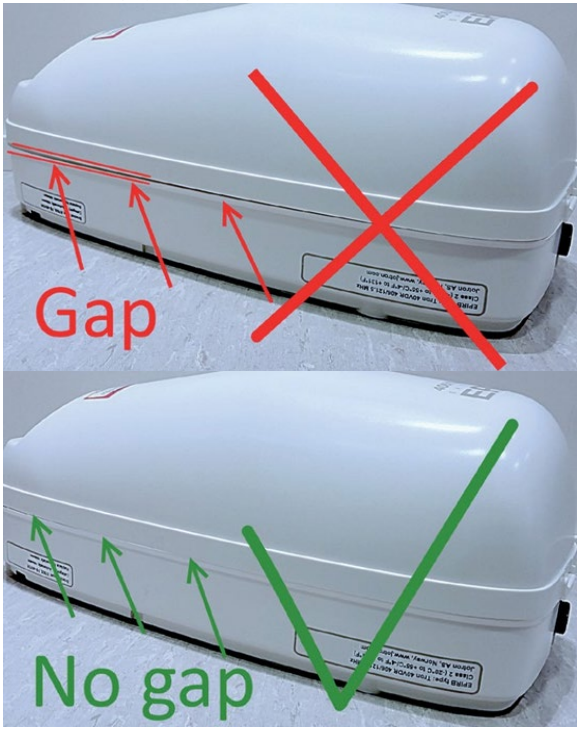
5. While holding the catapult down, slide the new HRU into the locking slot.

6. Place the EPIRB back in the bracket.

NOTE

Ensure that the top cover is locked into place at the bottom and that the top end is fixed at the hydrostatic release mechanism rod.

7. Verify no gaping between the bracket and cover.



8. Close and secure the top cover using the cotter pin.

11 Test and maintenance records

Below is an overview of all test and control details.

Date	B/N/T*	Signature	Inspector name

*B=New battery, N= New EPIRB installed, T=Test

12 Battery safety information

Type:	Primary lithium metal
Lithium metal content:	Below 1gram lithium pr battery cell
Approximate weight:	510grams
Chemical system:	Lithium-thionyl chloride
Designated for recharge:	No

For information regarding the physical and chemical properties, the potential health and safety measures and the environmental effects of the battery used with this product, refer to the manufacturer's safety information documentation.

The safety information is available for download at jotron.com - product. http://jotron.com/product/tron-40vdr/.

12.1 Handling and storage

This product should be stored in a cool and well-ventilated area. Elevated temperatures can result in a reduction of battery life. Locations that handle large quantities of lithium batteries must ensure the batteries are isolated from combustibles. A short circuit for a few seconds will not seriously affect the battery. A prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire. A battery that is disassembled or exposed to water, fire or high temperatures can explode or leak causing burns.

12.1.1 Transportation

The product described in this manual is subject to follow special packing instructions and/or transportation regulations. Information regarding these regulations (in accordance with ICAO/IATA, IMDG code and/or ADR/RID) is included in the product safety information (PSI) and/or in the test summary report (TSR) (in accordance with UN test 38.3.5) and available for download at jotron.com - product. http://jotron.com/product/tron-40vdr/.

13 Technical specifications

13.1 Product specification

Battery type:	Lithium-thionyl chloride
Battery capacity:	7.2V/18Ah
Housing material:	Glass reinforced polycarbonate
Unit dimensions (H/W/D):	400mm x 200mm x 200mm
Weight:	1900grams
Compass safe distance:	0,8meters
Temperature operating:	-20°C to + 55°C (-4°F to +131°F)
Temperature storage:	-30°C to + 65°C (-22°F to +149°F)
Operating life:	Minimum 168 hours at -20°C
Lanyard length:	>5 meters
Lanyard strength:	>25kg

13.2 COSPAS-SARSAT transmitter

Frequency:	406.037MHz ±2ppm
Output power:	5W
Protocols:	Location protocols (maritime, serialized)
Modulation:	Phase modulation 1.1rad ±0.1rad
Data encoding:	Bi Phase L
Stability:	Short term: ≤ $2x10e^{-9}$ Hz
	Medium term: ≤ $1x10e^{-9}$ Hz
	Residual noise: ≤ $3x10e^{-9}$ Hz
	Bit rate: 400bps
	Antenna: built-in omnidirectional

13.3 Navigation device

Type:	56 channel GPS receiver
Antenna:	Internal antenna

13.4 Homing transmitter

Frequency:	121.500MHz
Output power:	Up to 100mW
Modulation:	A9, AM sweep tone between 300Hz and 1600Hz
	Sweep range: 700Hz
	Sweep rate: 2.5Hz
Stability:	10ppm over temperature range
Antenna:	Omnidirectional

13.5 Brackets

13.5.1 FB-40 float-free bracket

Materials:	Glass reinforced ASA (acrylonitrile styrene acrylate)
Dimensions (H/W/D):	553mm x 215mm x 236mm
Weight:	2900grams
Release mechanism:	Jotron HRU
Temperature operating:	-30°C to + 65°C (-22°F to +149°F)
Temperature storage:	-30°C to + 65°C (-22°F to +149°F)

13.5.2 FBH-40 float-free bracket

Materials:	Glass reinforced ASA
Dimensions (H/W/D):	553mm x 215mm x 236mm
Weight:	3600grams
Release mechanism:	Jotron HRU
Heating cable power supply:	220-240V AC
Cable length to thermostat:	0,8m
Power consumption:	60W
Temperature operating:	-30°C to + 65°C (-22°F to +149°F)

Temperature storage: -30°C to + 65°C (-22°F to +149°F)

14 Optional accessories

For an overview of the available optional accessories for this product, refer to jotron.com.

15 Spare parts

For an overview of the available spare parts for this product, refer to jotron.com.

15.1 Counterfeit spare parts

Ensure that all spare parts being fitted to this product are only original spare parts manufactured or approved by Jotron.

Any use counterfeit parts will invalidate the product type-approval certificate.

16 Recycling and disposal

This product should not be disposed as normal waste and must be handled in accordance with the applicable federal, state and local waste disposal regulations in the country where the equipment is used.

17 Warranty

All Jotron products are warranted against factory defects in materials and/or workmanship during the warranty period.

Refer to the sales terms and conditions for specific warranty information regarding this product.

18 Service

All services such as testing, installation, programming, replacement, marking and battery exchange are provided by an authorized Jotron service agent.

Improper service or maintenance may destroy the functionality and/or performance of this product.

Jotron does not accept any responsibility for the dismantling or reassembling of any Jotron product that occurs externally from a Jotron authorized facility and/or is handled by someone other than an authorized, training and certified person.

18.1 Service agents

Refer to jotron.com for an overview of Jotron partners and distributors.

https://jotron.com/partners-and-distributors/

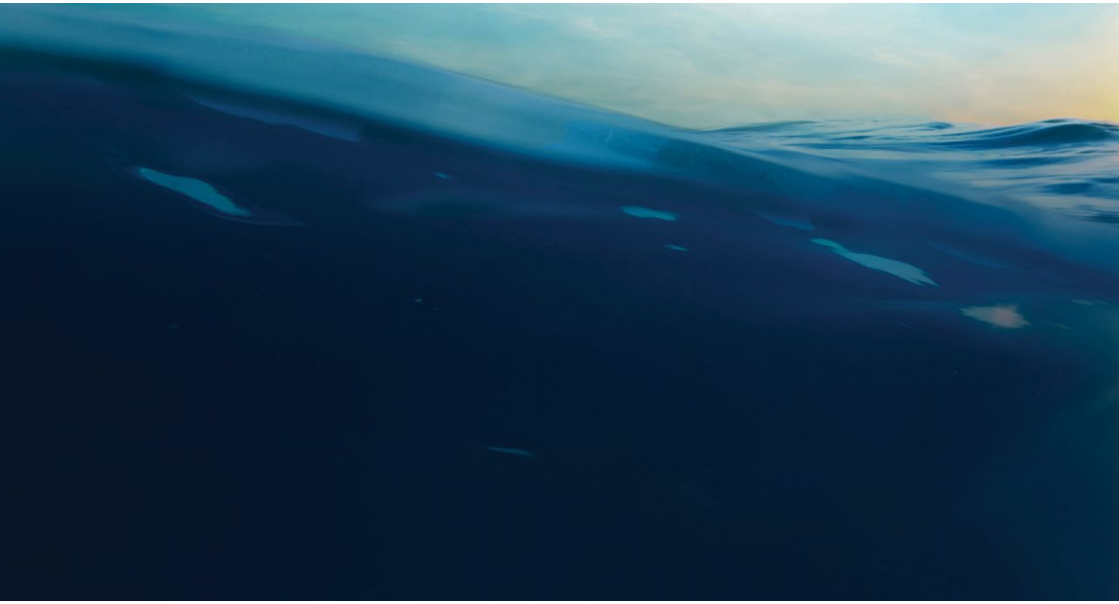
19 Document revision log

Document revision log			
Rev	Date	Reason for Issue	Author
A	07.05.2014	New Manual (Total 32 pages)	SEH
B	06.06.2014	Adjusted text (Ch 2.2 & 4.2)	SEH
C	29.10.2014	Added new spare part number	WB
D	22.12.2014	Front/back covers updated & added 1.2	WB
E		Not released	WB
F	22.10.2018	Updated mounting description of bracket cover, operations instructions. New layout and minor adjustments.	ØB
G	16.12.2021	Updated content, revised text structure in a new documentation design and layout in accordance with new company profile.	WB

20 Emergency instructions

This is an overview of how to operate a Tron 40VDR during an emergency.

Figure 6 Emergency instructions overview



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