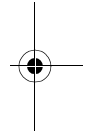
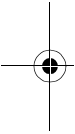


LifeTag System

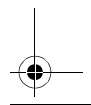
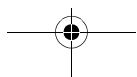
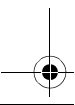
Installation & Commissioning Guide

Document reference: 87064-1
Date: April 2006

Draft copy 06/04/06



Raymarine



Important Information



WARNING:LifeTag System

The Raymarine LifeTag system is only an aid to crew safety, and must not be relied upon as the vessel's main crew safety system. It is the responsibility of the Captain and all crew members to ensure that all safety instructions and procedures are in place and obeyed in accordance with local requirements. Failure to operate this system in accordance with the operating instructions may result in unreliable or reduced system performance.



WARNING:Lithium Batteries

The LifeTag System Tags use non-rechargeable lithium batteries. Do not attempt to recharge these batteries. Do not incinerate these batteries. Ensure that these batteries are replaced with a battery of the same type and check local regulations when disposing of spent batteries. Incorrectly fitting batteries or using the wrong battery types may result in un-reliable or reduced system performance.

General Care & Safety

The operation of some medical electronic devices, such as hearing aids and pacemakers, may be affected if a LifeTag or LifeTag Base Station is used next to them. Observe the makers recommendations for such devices.

RF Energy

The LifeTag and LifeTag Base Station are low-power radio transceivers. When on, they intermittently transmit RF energy (radio waves). The LifeTag and LifeTag Base Station are designed to comply with the limits for RF energy exposure for the general population set by national authorities and international health agencies, for example BS EN 50371:2002.

Intended Use

The LifeTag and LifeTag Base Station are intended as an aid to safety on leisure vessels and small workboats.



Waste Electrical and Electronic (WEEE) Directive

The WEEE Directive requires the recycling of waste electrical and electronic equipment.

Whilst the WEEE Directive does not apply to some of Raymarine's products, we support its policy and ask you to be aware of how to dispose of this product.

The crossed out wheeled bin symbol, illustrated above, and found on our products signifies that this product should not be disposed of in general waste or landfill.

Please contact your local dealer, national distributor or Raymarine Technical Services for information on product disposal.

LifeTag Installation & Commissioning Guide

Getting Started

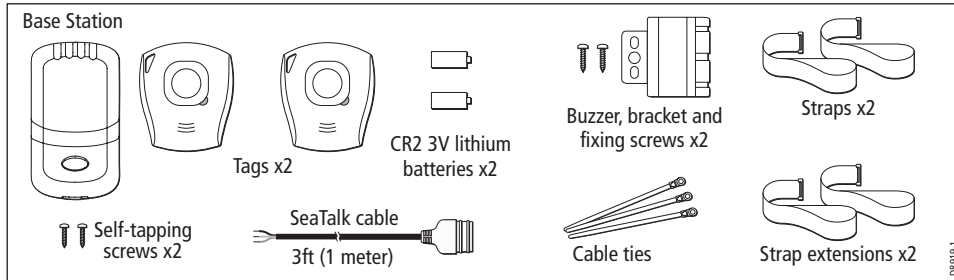


Figure 1 - Parts supplied

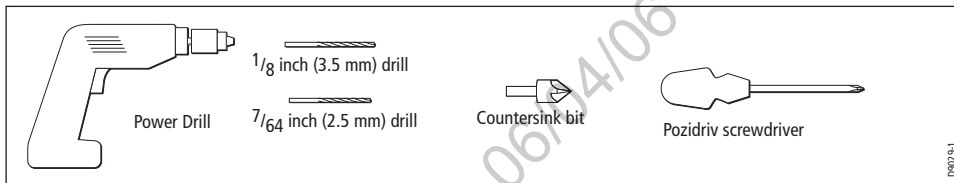


Figure 2 - Tools required

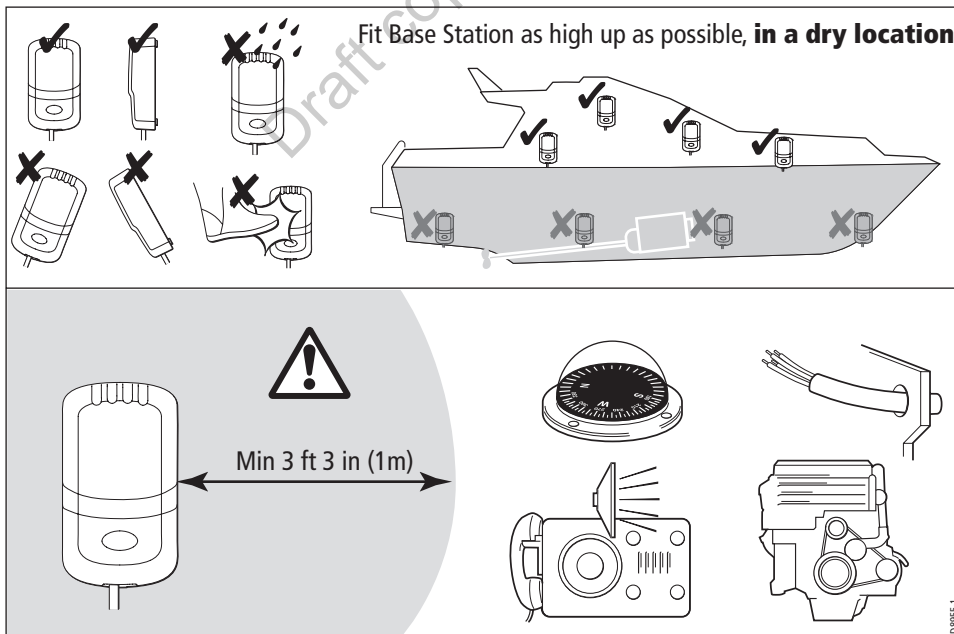


Figure 3 - Locating Base Station

EMC Installation Guidelines

All Raymarine equipment and accessories are designed to the best industry standards for use in the recreational marine environment.

Their design and manufacture conforms to the appropriate Electromagnetic Compatibility (EMC) standards, but correct installation is required to ensure that performance is not compromised. Although every effort has been taken to ensure that they will perform under all conditions, it is important to understand what factors could affect the operation of the product.

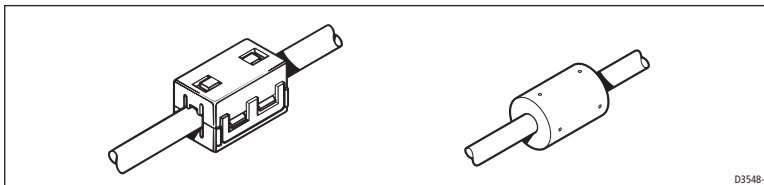
The guidelines given here describe the conditions for optimum EMC performance, but it is recognized that it may not be possible to meet all of these conditions in all situations. To ensure the best possible conditions for EMC performance within the constraints imposed by any location, always ensure the maximum separation possible between different items of electrical equipment.

For optimum EMC performance, it is recommended that wherever possible:

- Raymarine equipment and cables connected to it are:
 - At least 3 ft (1 m) from any equipment transmitting or cables carrying radio signals e.g. VHF radios, cables and antennas. In the case of SSB radios, the distance should be increased to 7 ft (2 m).
 - More than 7 ft (2 m) from the path of a radar beam. A radar beam can normally be assumed to spread 20 degrees above and below the radiating element.
- The equipment is supplied from a separate battery from that used for engine start. Voltage drops below 10 V in the power supply to our products, and starter motor transients, can cause the equipment to reset. This will not damage the equipment, but may cause the loss of some information and may change the operating mode.
- Raymarine specified cables are used. Cutting and rejoining these cables can compromise EMC performance and must be avoided unless doing so is detailed in the installation manual.
- If a suppression ferrite is attached to a cable, this ferrite should not be removed. If the ferrite needs to be removed during installation it must be reassembled in the same position.

Suppression Ferrites

The following illustration shows typical cable suppression ferrites used with Raymarine equipment. Always use the ferrites supplied by Raymarine.



Connections to Other Equipment

If your Raymarine equipment is to be connected to other equipment using a cable not supplied by Raymarine, a suppression ferrite **MUST** always be attached to the cable near the Raymarine unit.

EMC Conformance

Always check the installation before going to sea to make sure that it is not affected by radio transmissions, engine starting etc.

Connecting Base Station

The LifeTag system Base Station has to be connected to a 12 V dc power source and to the Alarm Buzzer:

- Temporary connections are required to enable an initial site survey to be carried out.
- Permanent connections are required when the system is fully installed.

An ancillary switched output is also available from the Base Station. This provides a 12 V output when an alarm occurs.

The connection procedures are described here once for you to refer to as necessary, whether you are making temporary connections for the site survey or making the permanent connections for normal operation.

To connect your Base Station, ensure the power supply for the Base Station is switched off, then remove the Base Station cover.

Important

After you have made any connections to the Base Station, gently pull the wires, to ensure that the connections are secure.

Connect SeaTalk cable

The SeaTalk cable provides power in and alarm signal out connections for the Base Station. If SeaTalk is available use this to connect the Base Station to SeaTalk, as shown in *Figure 5*. If SeaTalk is not available, use the SeaTalk cable to connect the Base Station to a 12 V dc power source.

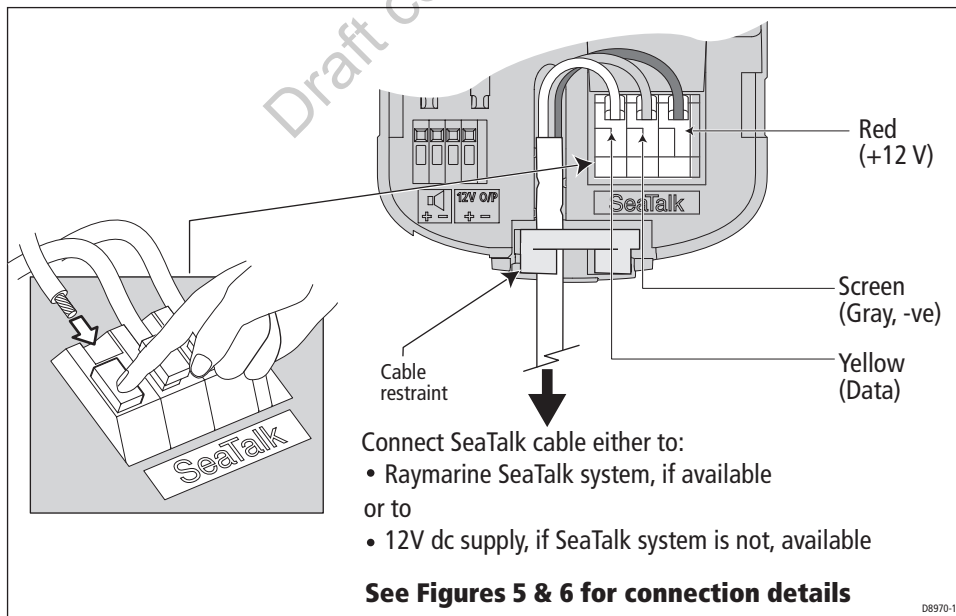


Figure 4 - SeaTalk cable connections to Base Station

Connecting Base Station to SeaTalk

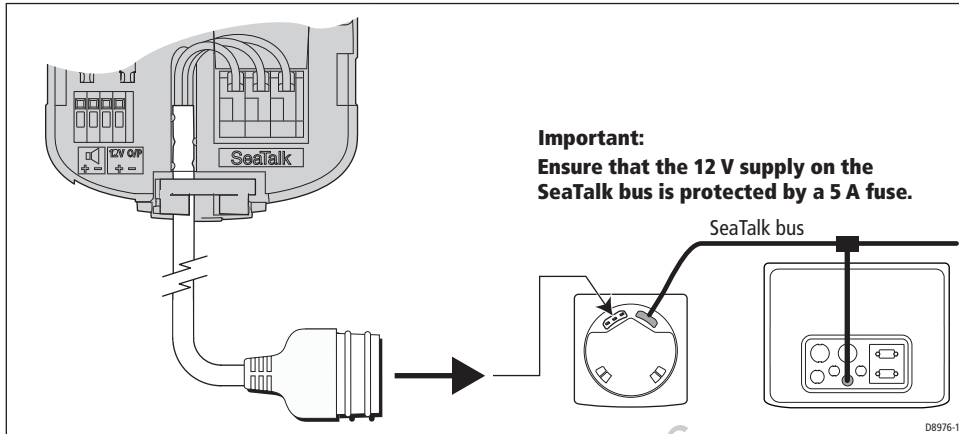


Figure 5 - Base Station connection to SeaTalk

Compatibility with other Seataalk Products

If the LifeTag Base Station is connected to a Seataalk system which includes a SeaTalk chartplotter and GPS, and a LifeTag alarm occurs, a MOB marker will be displayed on the chartplotter at the location of the MOB event. In addition, the chartplotter and compatible Seataalk instruments (such as ST60+ Graphic and ST290 Graphic instruments) will display a MOB 999 Waypoint Name, and range / bearing or latitude/longitude to the MOB location, plus elapsed time since the MOB event.

This occurs only with compatible products on SeaTalk systems. It does NOT occur on other products connected via NMEA0183.

SeaTalk not available

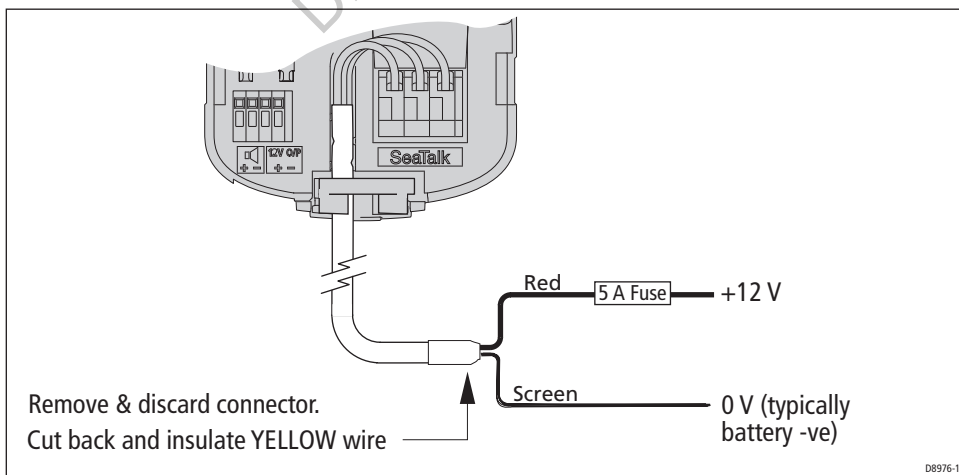


Figure 6 - SeaTalk power connections when SeaTalk is not available

Connect Alarm buzzer

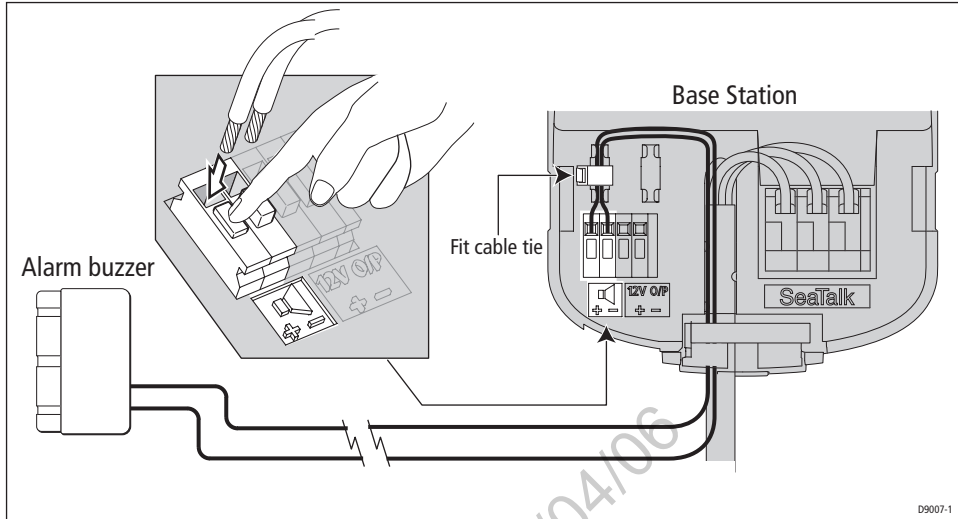


Figure 7 - Alarm buzzer connections

Connect switched 12 V output (optional)

The switched 12 V output can be used to automatically trigger appropriate emergency systems, when a MOB event occurs.

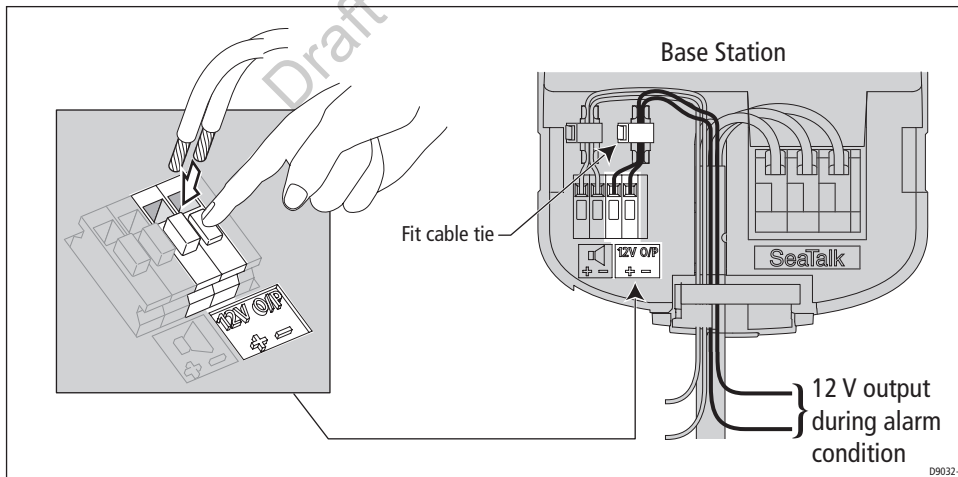


Figure 8 - Optional 12 V output connection

Ensure satisfactory LifeTag coverage

The nominal LifeTag Base Station-to-Tag range is 30 feet (9 meters), so on boats where this separation is unlikely to be exceeded, the LifeTag system should operate satisfactorily with just one Base Station, provided it is positioned for optimum performance, as detailed in *Figure 3*.

However, system performance can be affected by obstructions (superstructure, decking, bulkheads etc) so to ensure satisfactory operation, it is strongly recommended you carry out a site survey to ensure satisfactory system operation, before permanently installing the LifeTag Base Station.

Site survey

To carry out a site survey:

1. Referring to *Figure 3*, place the Base Station at the location you intend installing it and temporarily connect it either to Seotalk as described in *Figure 5* or to a separate 12 V dc supply via a 5 A fuse, as described in *Figure 6*.
2. Temporarily connect the alarm buzzer to the Base Station, as described in *Figure 7*.
3. Switch on the 12 V supply to the Base Station.
4. Take one of the Tags supplied with the Base Station and ensure that the LED briefly flashes GREEN once every 10 seconds to indicate the Tag is active. If the Tag is not active, press and release the Tag push button to activate the Tag.
5. Take the Tag to every part of the vessel to which crew members have access, (i.e. every cabin, compartment and all extremes of the deck), to check if an alarm is initiated.
6. Take the appropriate action as detailed for either *No alarm* or *Alarm initiated*, below.

No alarm

If no alarms are initiated during the site survey, the LifeTag system is operating satisfactorily with the Base Station at its current location. Switch off the power, then permanently install the Base Station at that location, as detailed under *Fitting procedures*, below.

Alarm initiated

If an alarm is initiated at any time during the site survey

1. Bring the Tag back into range of the Base Station, to automatically cancel the alarm. If the alarm does not cancel automatically, hold down the Tag button for 5 seconds then release it, to manually cancel the alarm..
2. Reposition the Base Station, then carry out another site survey.

If on-board alarms still occur, you need to install a second Base Station, so that the system comprises a Master Base Station (the original Base Station), and a Repeater Base Station (the second one).

Referring to *Figure 9*:

1. Position the two Base Stations to give optimum coverage (for example, one forward and one aft).
2. Temporarily connect each Base Station to a 12 V supply (as in *Figure 5* or *Figure 6*).
3. Temporarily connect the Master Base Station to the alarm buzzer (see *Figure 7*).

Important:

When connecting any part of the system, refer to Figures 4, 5, 6, 7 and 8 (above) to ensure you connect correctly.

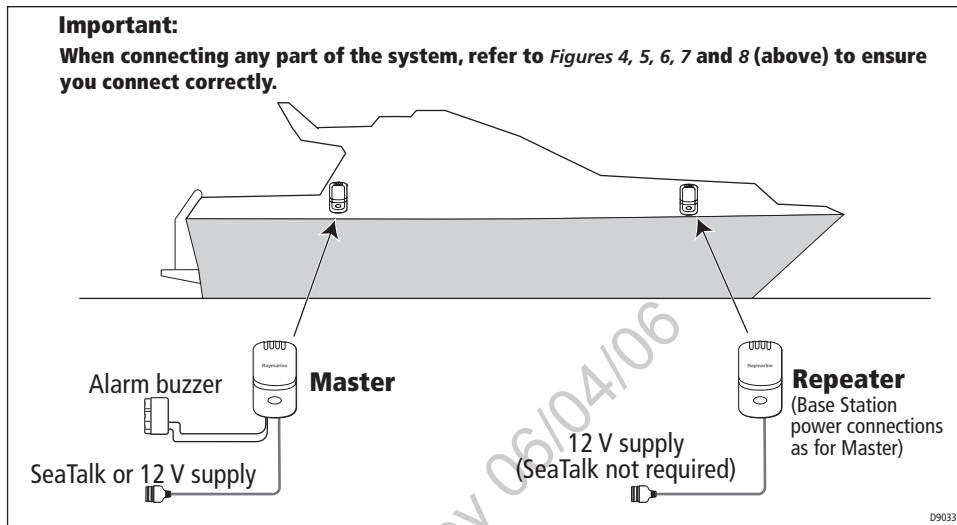


Figure 9 - Using two Base Stations

4. With both Base Stations powered up, carry out a site survey as described above. If on-board alarms still occur, please contact Customer Support at www.Raymarine.com for advice and assistance.

If no alarms are initiated, switch off the power, then permanently install each Base Station at the location used for the survey, as detailed under *Fitting procedures*.

Fitting procedures

When you are satisfied that your LifeTag system will give satisfactory coverage aboard your boat:

- Fit and connect the Base Station and Alarm buzzer, as described in *Figure 10*, *Figure 11* and *Figure 12*, respectively. *Figure 12* shows a summary of system connections.
- Fit one of the non-rechargeable, lithium CR2 3V batteries into each Tag as detailed in *Figure 13*.

Base Station

Before you permanently install the lifeTag Base Station, carry out a site survey (as detailed on *page 6*) to ensure you are fitting it in a position that gives satisfactory coverage.

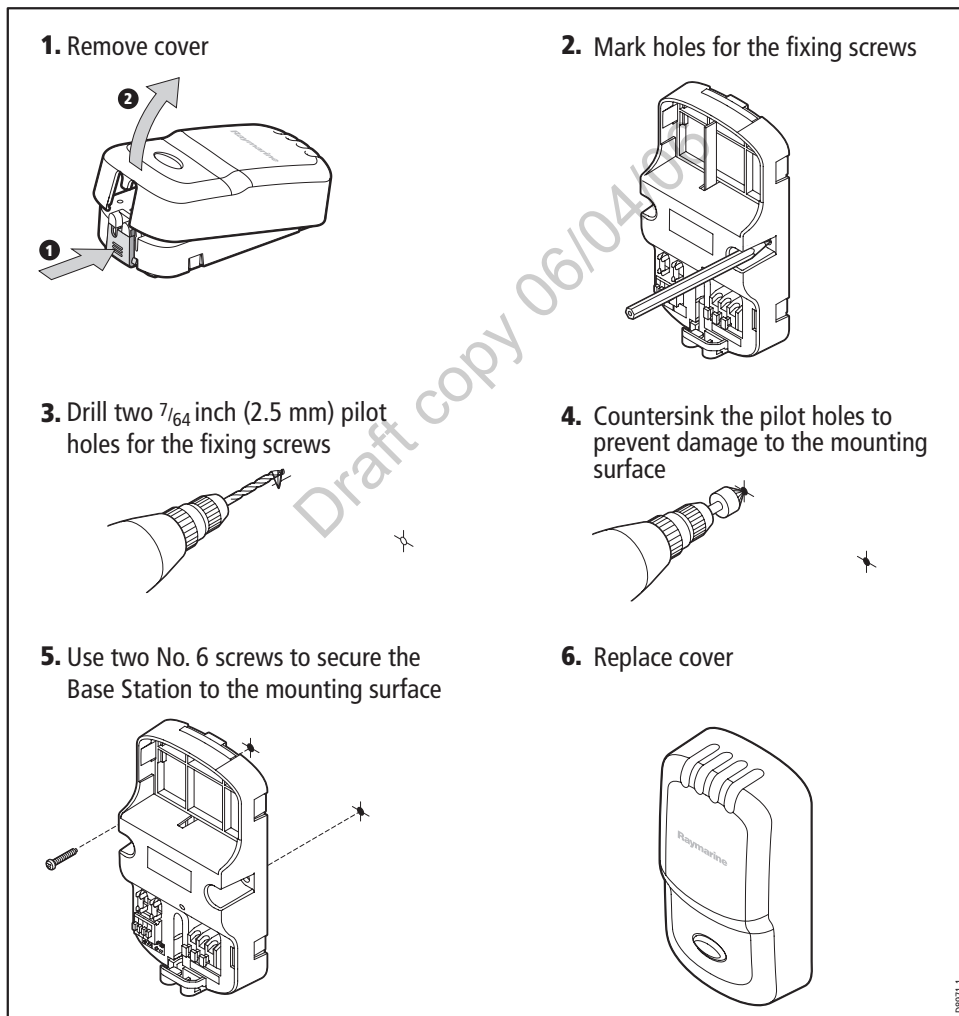


Figure 10 - Fitting Base Station

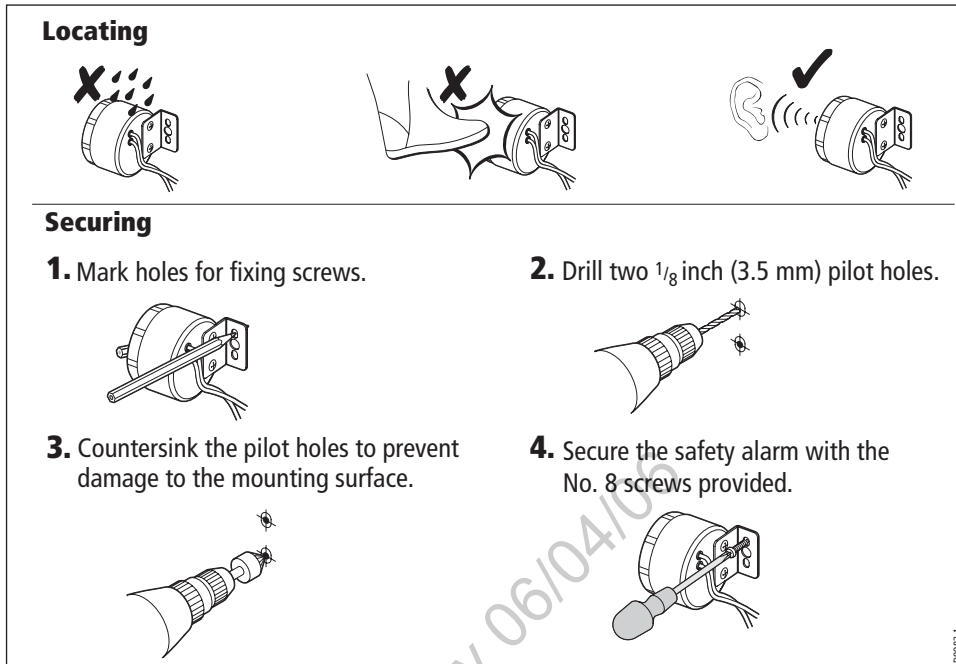


Figure 11 - Fitting buzzer

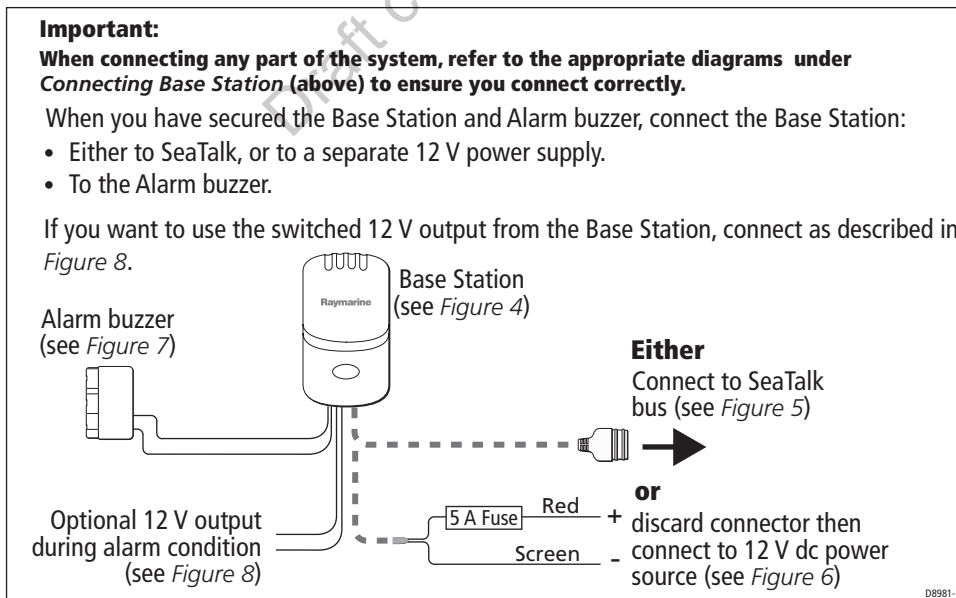


Figure 12 - Summary of system connections

Tags



Do NOT use a sharp object to open a Tag



Do NOT open a Tag in wet or dirty conditions

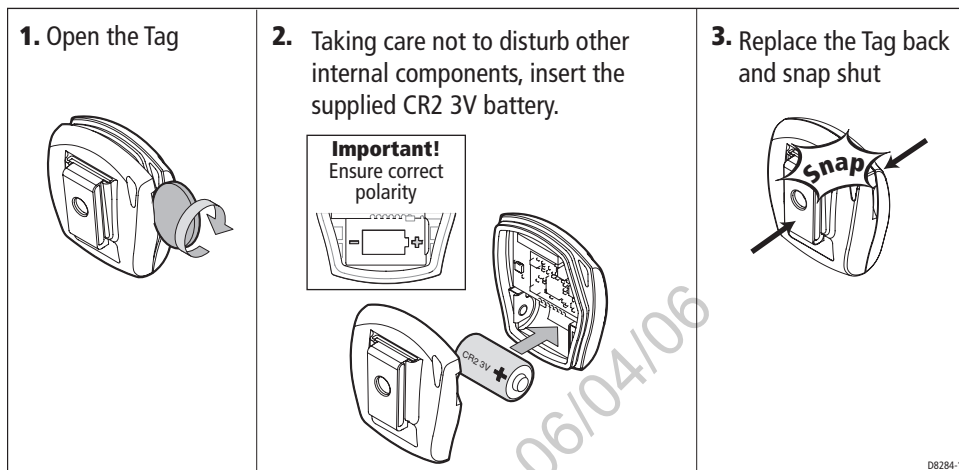


Figure 13 - Fitting Tag battery

Commissioning

Important

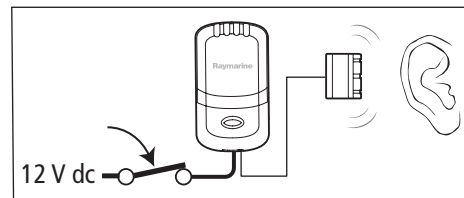
Before attempting to use any Tag, ensure it is registered with your Base Station. If the LED indicator on any Tag is flashing RED, the Tag has not been registered with your Base Station, so use the procedure on *page 12* to register the Tag.

Do NOT use any Tag that has not been registered.

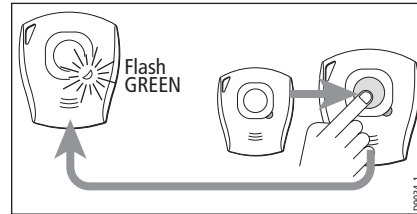
Procedure

A standard LifeTag system is supplied with two Tags. These are pre-registered with the Base Station, so if you are using only these two Tags, you can proceed with the commissioning procedure as follows:

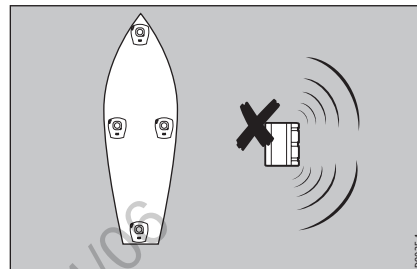
1. Switch on power to the Base Station and check that the Alarm 'chirps' as power is applied.



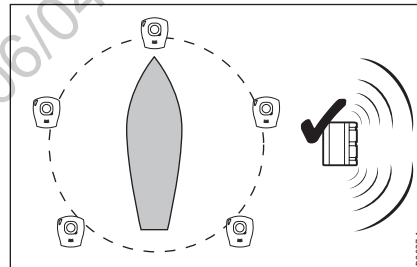
2. Check each Tag to ensure the LED indicator briefly flashes GREEN once every 10 seconds, to indicate that the Tag is ACTIVE. If a Tag is not active, press and release the push button to activate the Tag.



3. Take each Tag, one at a time, to every part of the vessel to which crew members have access, (i.e. every cabin, compartment and all extremes of the deck). Ensure that no alarms are initiated.



4. With the boat moored alongside, take each Tag away from the boat and note the distance from the Base Station at which an alarm is initiated. This should be approximately 30 feet (9 meters).



5. Bring the Tag back into range of the Base Station, to automatically cancel the alarm. If the alarm does not cancel automatically, hold down the Tag button for 5 seconds then release it, to manually cancel the alarm.

Note: You can manually cancel an alarm from any active Tag within range of the Base Station.

Tag registration & de-registration

Registering a Tag

Tags supplied with a Base Station as part of a LifeTag system, are factory-registered with the Base Station so you do not have to carry out a registration procedure with these.

However, if you have obtained a Tag separate from your Base Station (e.g. if you have bought an extra Tag), IT WILL NOT WORK WITH YOUR BASE STATION until you have registered the Tag with the Base Station.

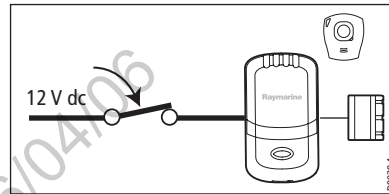
Important

You must complete the registration procedure within one minute of switching on power to the Base Station.

To register a Tag:

1. Bring the Tag you want to register, near to the Base Station, then switch on the power to the Base Station.
2. IMMEDIATELY press and release Tag button, to activate (switch on) the Tag. Check that the RED indicator is flashing.
3. Press and release the Tag button. Check that the RED indicator lights constantly.
4. Check that within the next 15 seconds, registration starts. This is indicated by alternate RED and GREEN LED flashes.

Note: If registration does not start, switch the Base Station off and on again, then repeat steps 2 to 4.



5. Wait for registration to complete. This is indicated by GREEN indicator flashing briefly once every 10 seconds. The Tag is now active (i.e. in normal operating mode) and will initiate an alarm condition in the appropriate circumstances.

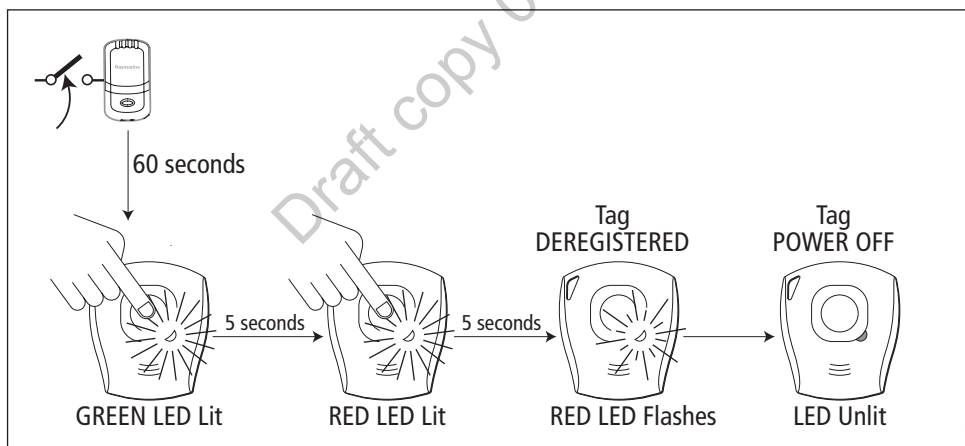


De-registering a Tag

If you want to de-register a Tag (for example, to use it with a different Base Station):

1. De-activate the Tag by switching off the associated Base Station then waiting for at least one minute.. When the Tag is inactive, the indicator should not show any indication.
2. Hold down the Tag button, and check that:
 - i. The GREEN indicator lights.
 - ii. After 5 seconds, the RED indicator lights.
 - iii. After a further 5 seconds, the RED indicator flashes

The Tag is now de-registered. After a further few seconds, the Tag will automatically power down and the indicator will be unlit.



Note: Before you can use the Tag again, you must register it with the relevant Base Station.

Specification

Parameter	Base Station	Tag
Power source	8 V to 12 V dc external supply	Non-rechargeable, CR2 3V lithium battery
Dimensions (overall)	2.6 in x 4.7 in x 1.4 in (66 mm x 118 mm x 36mm)	1.93 in x 2.24 in x 1 in (49 mm x 56.8 mm x 24.4 mm)
Ancillary switched output contact rating	200 mA at supply voltage	N/A
Transmitted power (nominal)	1 mW	1 mW
Temperature: Operating: Non-operating:		-15°C to +55°C -20°C to +70°C
Humidity	0% to 95% non-condensing	
Base Station to Tag range	Typically 30 ft (9 m)	
Maximum number of Tags per system	16	

FCC Information

The LifeTag and LifeTag Base Station comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference and (2) these devices must accept interference received, including interference that may cause undesired operation.

Changes or modifications to these devices not expressly approved in writing by Raymarine could violate compliance with FCC rules and void the user's authority to operate the equipment.

Declaration of Conformity

Raymarine UK Ltd. hereby declares that the LifeTag and LifeTag Base Station are in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC.

The original Declarations of Conformity may be viewed on the relevant product pages at www.raymarine.com.

Approvals

EU	R&TTE Directive 1995/5/EC		
USA	FCC Part 15	FCC ID: PJ5-LTB (LifeTag Base Station)	PJ5-LTT (LifeTag)
Industry Canada	RSP100	ID IC4069B-LTB (LifeTag Base Station)	IC4069B-LLT (LifeTag)

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