

LifeTag System

Installation & Commissioning Guide

Document reference: 87064-3

Date: July 2006

Raymarine

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Important Information



WARNINGS: LIFETAG SYSTEM

- 1. The Raymarine LifeTag System is an auxiliary safety system, intended ONLY to provide additional protection to the vessel's crew. DO NOT rely solely on this system for crew safety; DO ensure that all safety instructions and procedures are obeyed in accordance with local requirements.**
- 2. Failure to operate the LifeTag System in accordance with its operating instructions may result in unreliable or reduced system performance.**
- 3. 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 manufacturers' recommendations for such devices.**

CAUTION: 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 batteries 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 unreliable or reduced system performance.

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

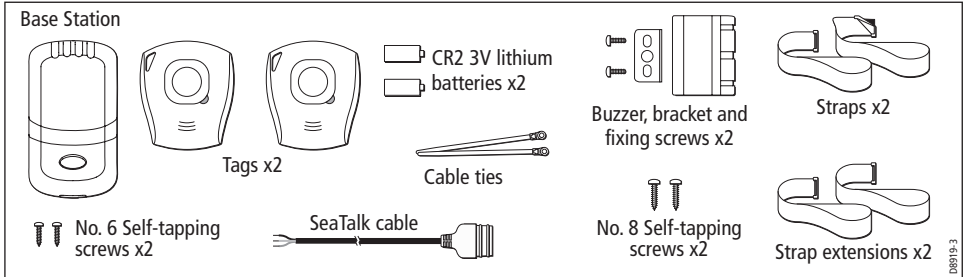


Figure 1 - Parts supplied

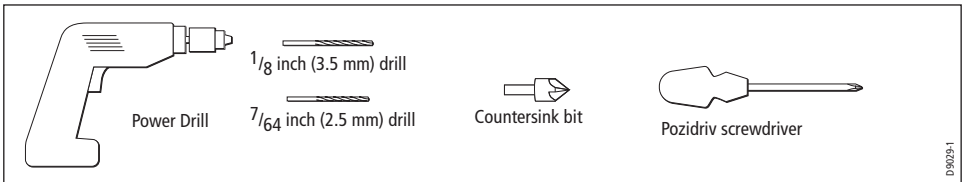


Figure 2 - Tools required

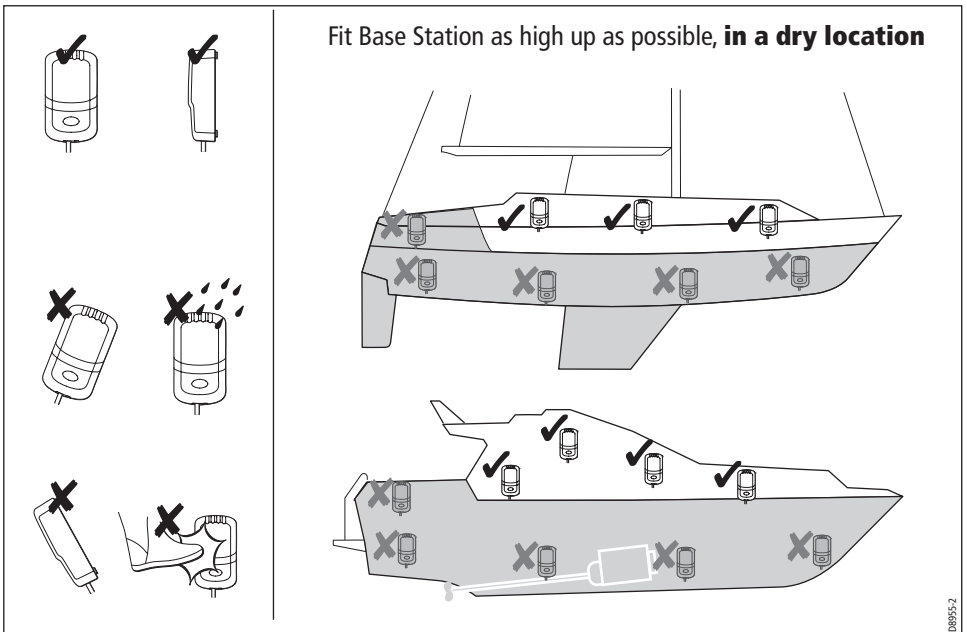


Figure 3 - Locating Base Station

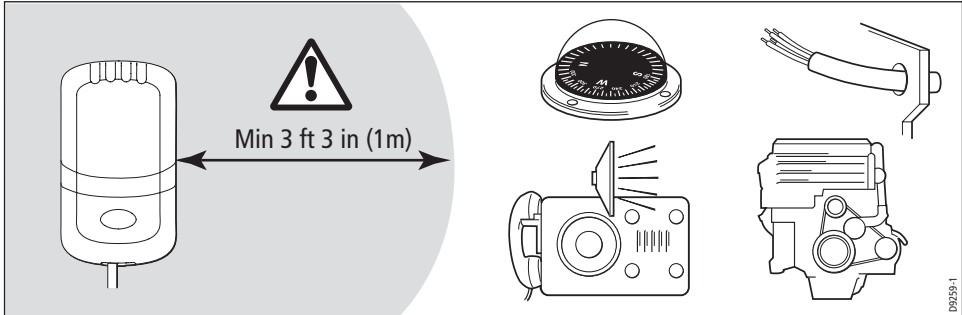


Figure 4 - Base Station separations

EMC Installation Guidelines

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) regulations, but correct installation is required to ensure that performance is not compromised.

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 the 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 product is supplied from a separate battery from that used for engine start. Power supply voltages below the minimum specified for a product, and starter motor transients, can cause the product to reset. This will not damage the product, 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.

Suppression Ferrites

If a supplied cable is fitted with a suppression ferrite, the ferrite must not be removed, unless it is necessary to facilitate installation. Any ferrite thus removed must be replaced in the original position immediately installation is complete.

If additional suppression ferrites are required, use only ferrites supplied by Raymarine.

Connections to Other Equipment

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

Connecting Base Station

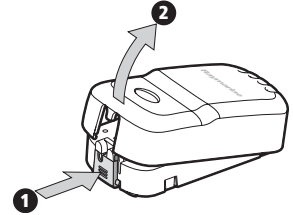
The LifeTag system Base Station has to be connected to a 12 V dc power source and to the Alarm Buzzer:

- 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 full installation.

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

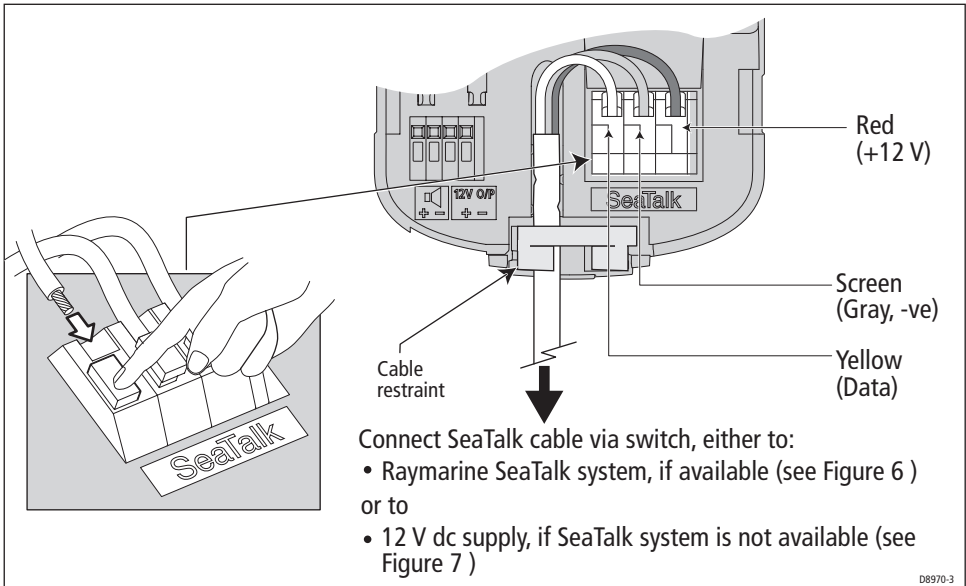


Important

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 data connections for the Base Station. If SeaTalk is available use this to connect the Base Station to SeaTalk, as in *Figure 6*. If SeaTalk is not available, use the SeaTalk cable to connect the Base Station to a 12 V dc power source, as in *Figure 7*.



DB970-3

Figure 5 - SeaTalk cable connections to Base Station

Connecting Base Station when SeaTalk available

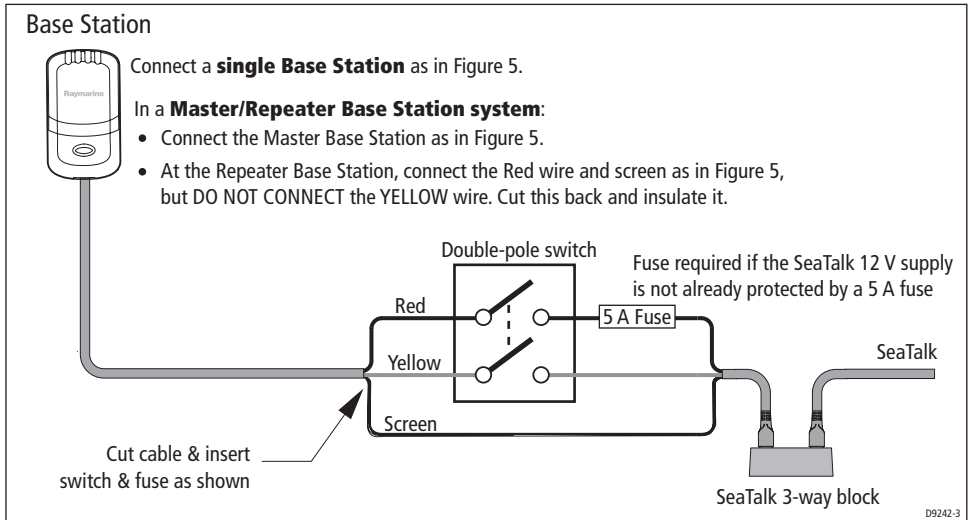


Figure 6 - Base Station connection to SeaTalk

Compatibility with other Seataalk Products

If the LifeTag Base Station is connected to a SeaTalk 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 the ST60+ Graphic and ST290 Graphic instruments) will display a dedicated MOB alarm page.

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

Connecting Base Station when SeaTalk not available

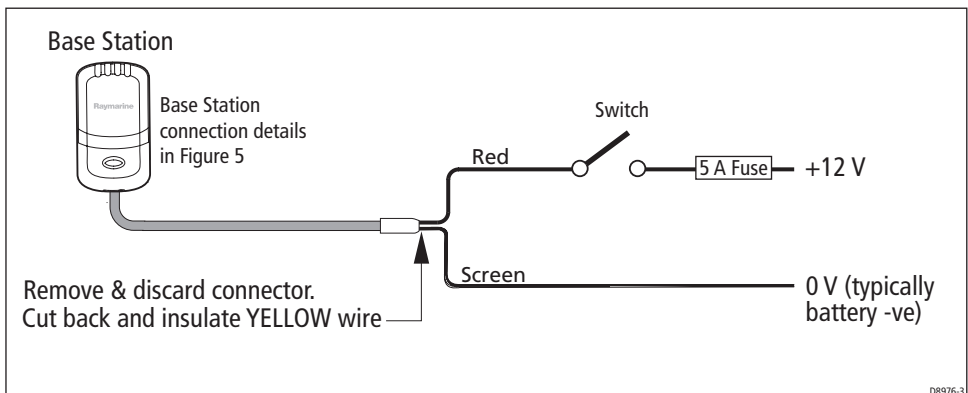


Figure 7 - Base Station power connections when SeaTalk is not available

Connect Alarm buzzer

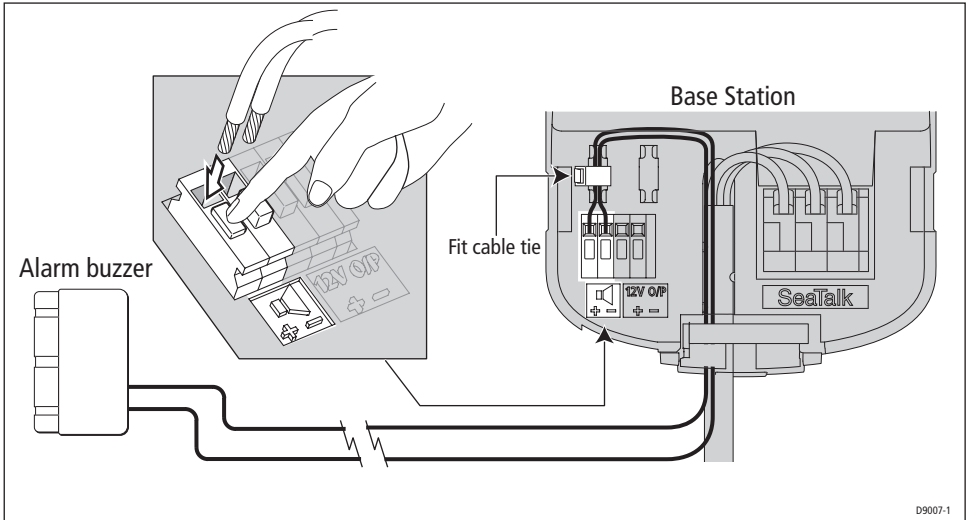


Figure 8 - Alarm buzzer connections

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.

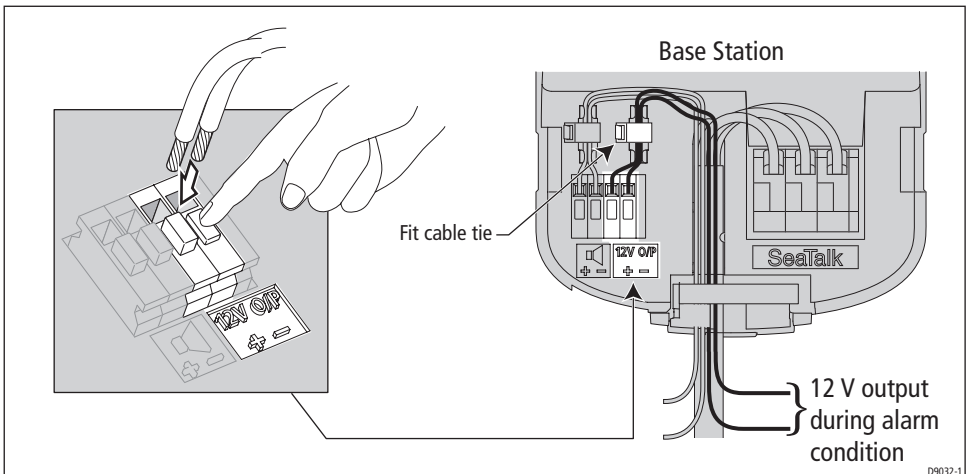


Figure 9 - Optional 12 V output connection

Fit tag battery

Before you can use the Tags, you must fit a battery in each, as in *Figure 10*.



Do NOT use a sharp object to open a Tag



Do NOT open a Tag in wet or dirty conditions

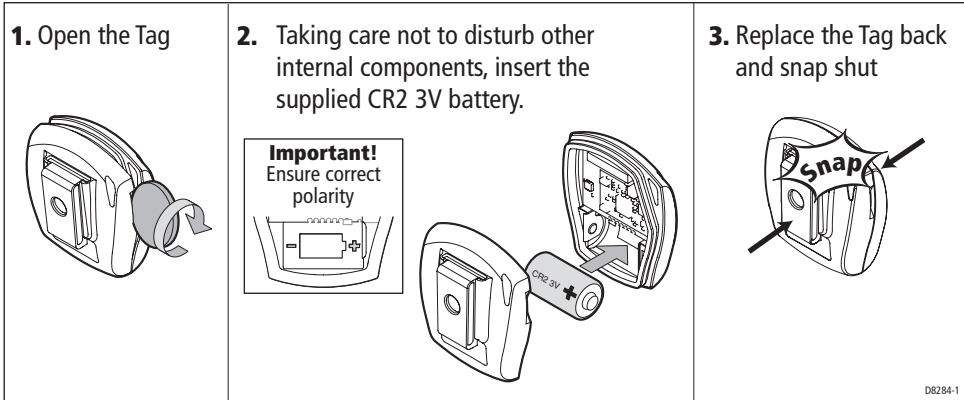


Figure 10 - Fitting Tag battery

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 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* and *Figure 4*, place the Base Station at the location you intend installing it and temporarily connect it either to SeaTalk as described in *Figure 6* or to a separate 12 V dc supply via a 5 A fuse, as described in *Figure 7*.
2. Temporarily connect the alarm buzzer to the Base Station, as described in *Figure 8*.
3. Switch on the 12 V supply to the Base Station.
4. Take one of the Tags registered 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.
If any alarms occur, the system is NOT operating satisfactorily.
6. Take the appropriate action as detailed below, for either *System operating satisfactorily* or *System not operating satisfactorily*, below.

System operating satisfactorily

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.

System not operating satisfactorily

If an alarm is initiated:

1. Hold down the Tag button for 5 seconds, to silence the alarm.
2. Release the Tag button, wait for 15 seconds then press it again for a further 5 seconds, to cancel the alarm.

If alarms occurred during the site survey, reposition the Base Station, then carry out another site survey.

If alarms continue to occur, you need to install a system with Master and Repeater Base Stations (see *Setting up a Master/Repeater Base Unit system*). For such a system, you need to set up a second Base Station as a Repeater. The original Base Station is the Master.

Setting up a Master/Repeater Base Unit system

Setting a Base Station as a Repeater

To set a Base Station to operate as a Repeater:

1. Obtain a second LifeTag system. Temporarily place the Tags supplied with the second system, to one side
2. Place the Base Station from the second system and the original Base Station, so they are near to one another, with access to a common 12 V dc supply.
3. Remove the cover from the second Base Station as shown on *page 3*, then locate the internal reset button and the LED indicator (see *Figure 11*).

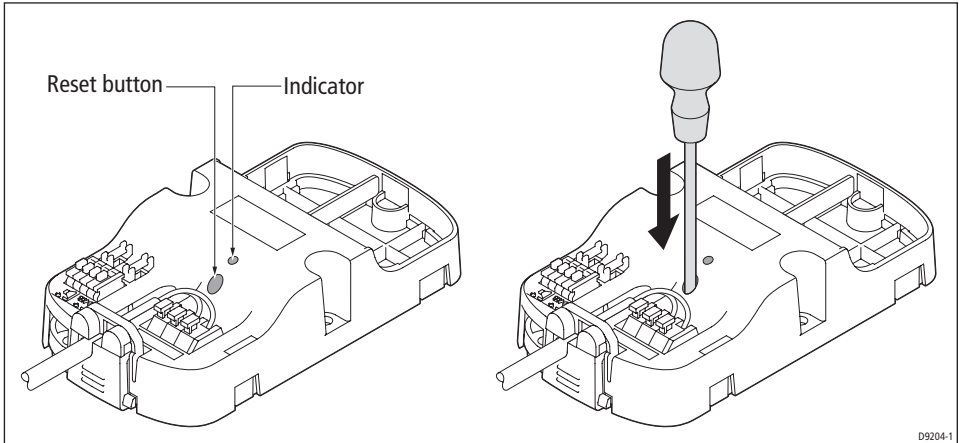


Figure 11 - Setting a Base Unit as a Repeater

4. Ensure that the 12 V dc supply is switched off, then connect both Base Stations, via a switch and 5 A fuse, to the supply as in *Figure 12*. Do NOT connect the yellow wire to the Repeater.

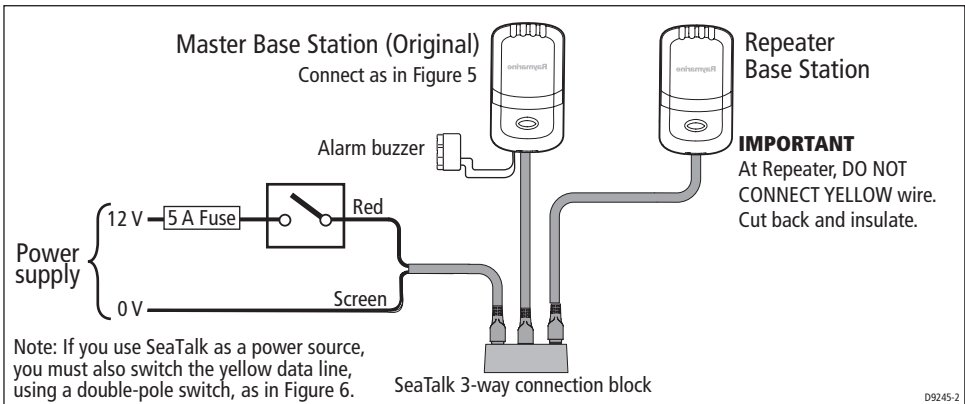


Figure 12 - Power connections when setting Master/Repeater Base Stations

5. Using a suitable implement, hold down the reset button on the second Base Unit, then switch on the power to the Base Units.
6. After approximately 5 seconds release the reset button at the second Base Unit and after a further 15 seconds, check that the LED indicator on this Base Station is flashing. If it is flashing, you have successfully set the second Base Station as a Repeater, with the original Base Station as the Master.
7. Immediately switch off power to the Repeater Base Station.

- Notes:**
- (1) If the indicator in the Repeater Base Station is not flashing, the procedure has not been successful, so you need to repeat steps 4 to 6.
 - (2) The indicator on the Master Base Station should be lit constantly, all the time power is applied.

Installing a Master/Repeater system

To install a Master/Repeater Base Station system, refer to *Figure 13* and:

1. Position the Master and Repeater Base Stations to give optimum coverage on the boat (for example, one forward and one aft).

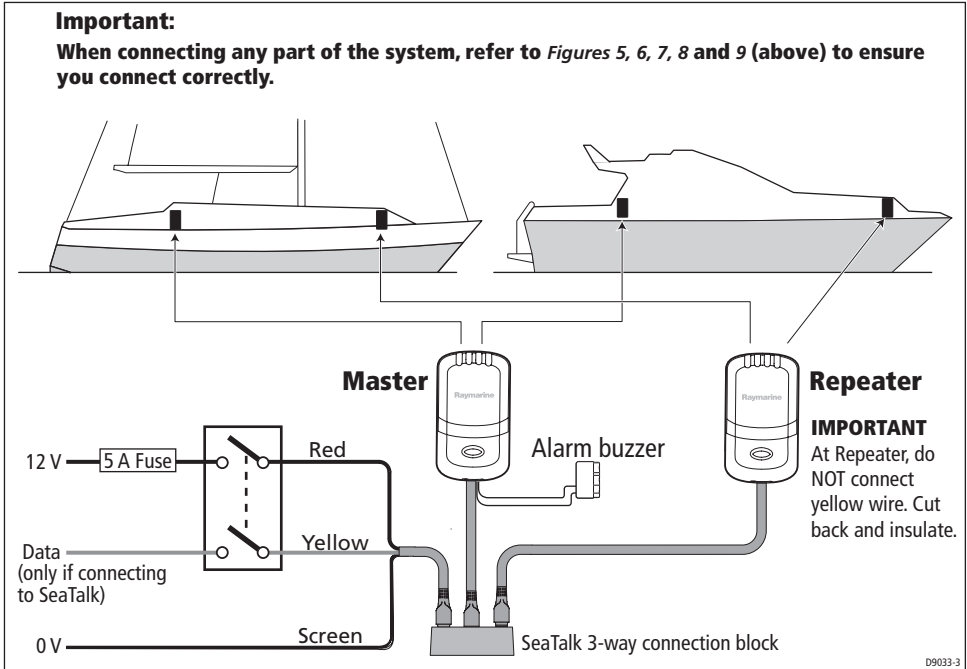


Figure 13 - Using Master and Repeater Base Stations

2. Temporarily connect the Master Base Station to the alarm buzzer (see *Figure 8*).
3. Temporarily connect both Base Stations, via a common switch, to a 12 V supply (as in *Figure 6* or *Figure 7*).
4. With both Base Stations powered up, carry out a site survey as described above.
5. If on-board alarms occur, check the indicator on the Repeater, and if it is not flashing, try moving the Master and Repeater Base Stations closer together, to improve communication between them.

If the Repeater indicator is flashing but 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 locations used for the survey, as detailed under *Fitting procedures* procedure on *Page 10*.

Using Tags from the second system

If you want to use the Tags supplied with the second system, you must first de-register them as described on *Page 14*, then register them with the extended system, as described on *Page 13*.

Fitting procedures

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

- Fit the Base Station and Alarm buzzer, as described in *Figure 14* and *Figure 15* respectively, then connect up your system. A summary of system connections is given in *Figure 16*.
- Fit one of the non-rechargeable, lithium CR2 3V batteries into each Tag as detailed in *Figure 10*.

Base Station

Before you permanently install a Base Station, carry out a site survey (as detailed on *Page 6*) to ensure you are fitting it to give satisfactory coverage.

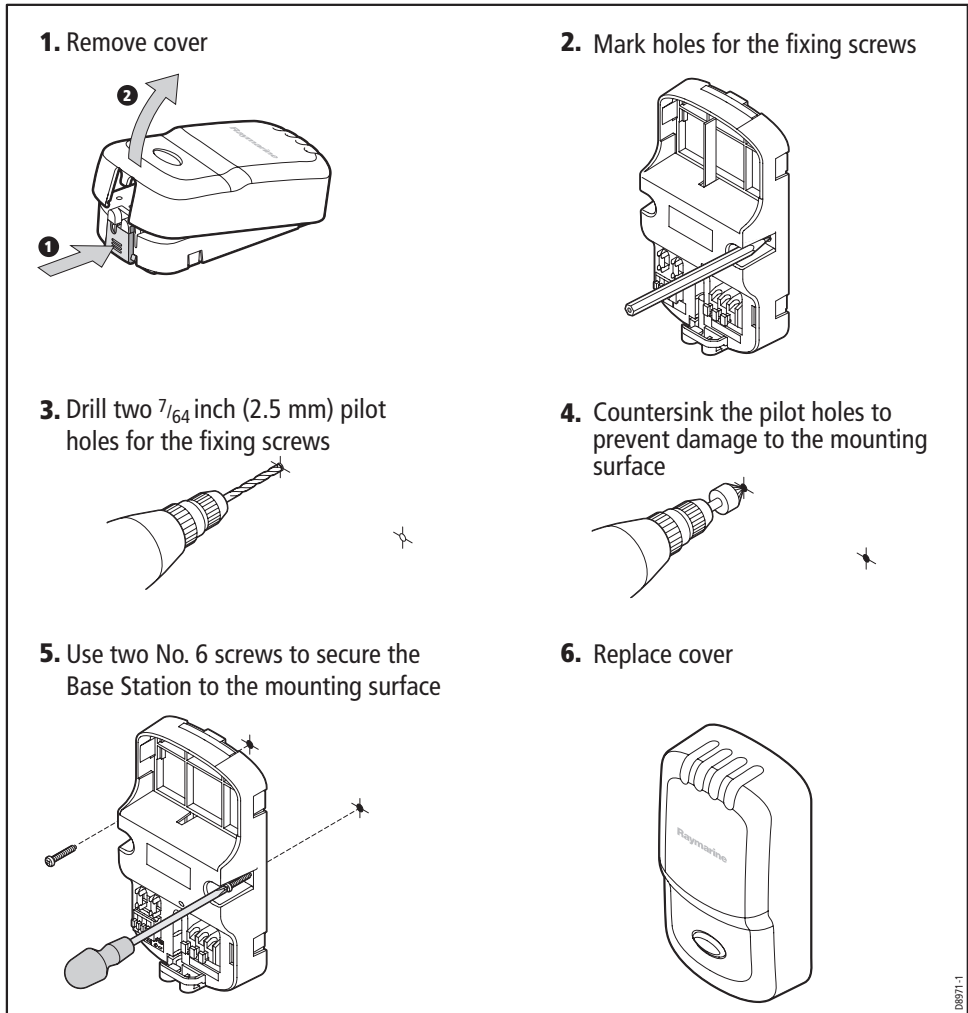


Figure 14 - Fitting Base Station

Fitting Alarm buzzer

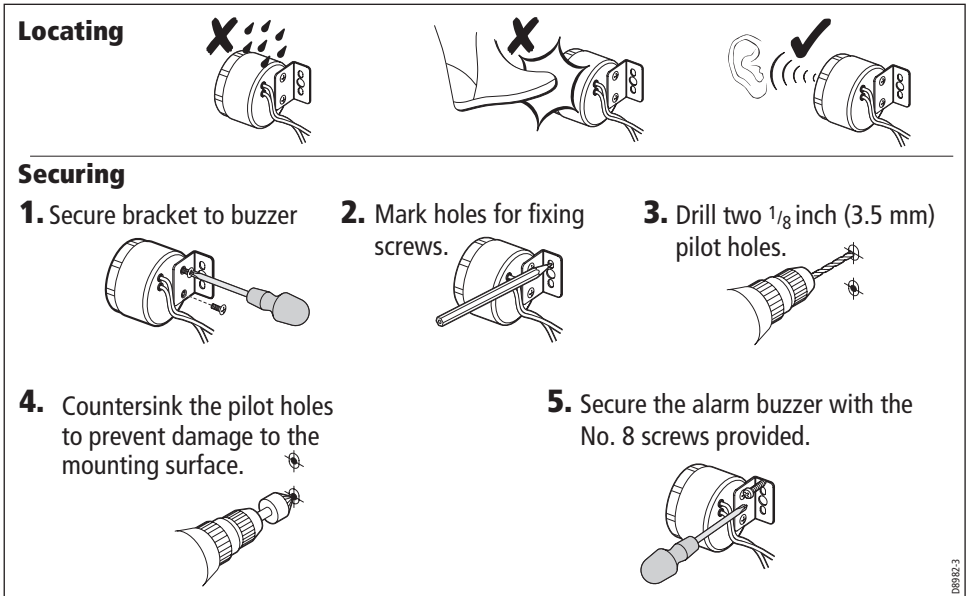


Figure 15 - Fitting buzzer

Connecting system

Important:

When connecting any part of the system, refer to the appropriate diagrams under Connecting Base Station (above) to ensure you connect correctly

When you have secured the Base Station and Alarm buzzer, connect the Base Station:

- Either to SeaTalk, or to a separate 12 V power supply.
- To the Alarm buzzer.

If you want to use the switched 12 V output from the Base Station, connect as described in *Figure 9*.

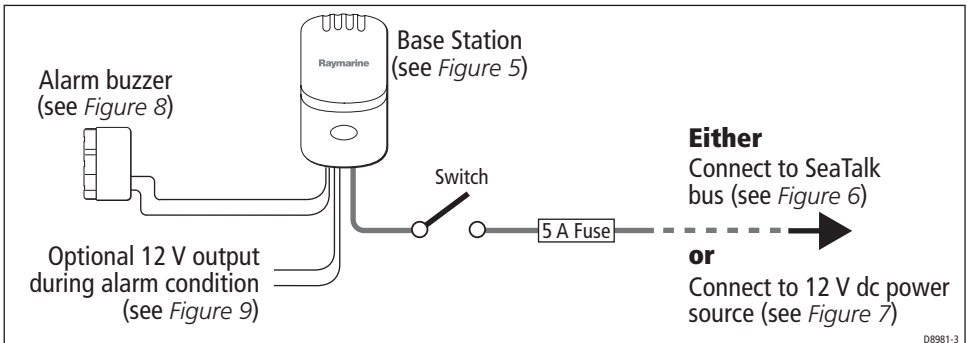


Figure 16 - Summary of system connections

Commissioning

Important

Before attempting to use any Tag, ensure the LED indicator on the Tag is flashing GREEN, to show the Tag is registered with your Base Station.

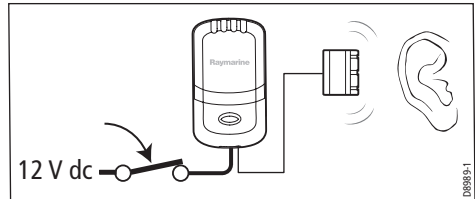
If a Tag indicator is NOT flashing GREEN, de-register the Tag as described on *Page 14*, then register the Tag with the Base Station, as described on *Page 13*.

Do NOT attempt to use any Tag that is not registered.

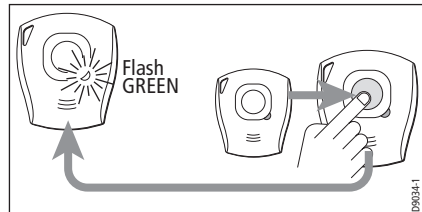
Commissioning procedure

When the LifeTag system has been installed and all Tags registered, carry out the following commissioning procedure:

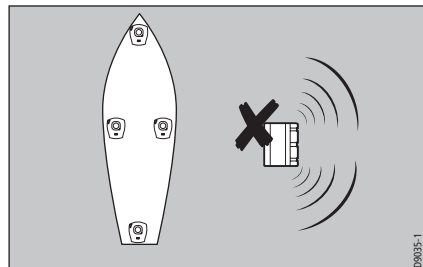
1. Switch on power to the Base Station and check that the Alarm 'chirps' as power is applied.



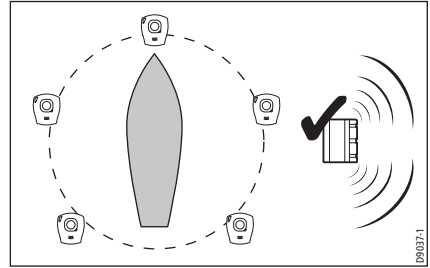
2. Check each Tag to ensure the LED indicator briefly flashes GREEN once every 10 seconds, to indicate that the Tag is ACTIVE. If a Tag is not active, press and release the push button to activate the Tag.



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 maximum distance from the Base Station at which an alarm is initiated. **This distance will be significantly reduced in real MOB situations, where the Tag is submerged.**
5. Cancel the alarm. To do this:
 - i. Hold down a Tag button for 5 seconds, to silence the alarm.
 - ii. Wait 15 seconds, then hold down the Tag button for a further 5 seconds.



Note: You can 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 that Base Station, so you do not have to carry out a registration procedure with these.

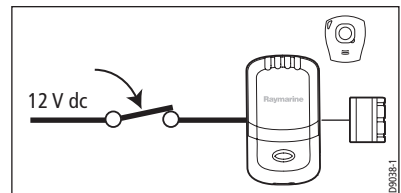
However, if you have obtained any Tags separately (e.g. if you have bought extra Tags), THEY WILL NOT WORK WITH YOUR BASE STATION until you have registered them with the Base Station.

Important

You must complete the Tag registration procedure within one minute of switching on power to the Base Station. After the Base Station has been switched on for 1 minute, the alarm 'chirps' to indicate the end of the Tag registration period.

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. Press and release the Tag button. Check that the RED indicator lights constantly.



- 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 and 3.*



- Wait for the alarm to 'chirp' 3 times, to indicate registration is complete. When the Tag is registered, the Tag indicator briefly flashes GREEN once every 10 seconds, to show the Tag is active (i.e. in normal operating mode).

In this condition, the Tag will initiate an alarm condition in the appropriate circumstances.

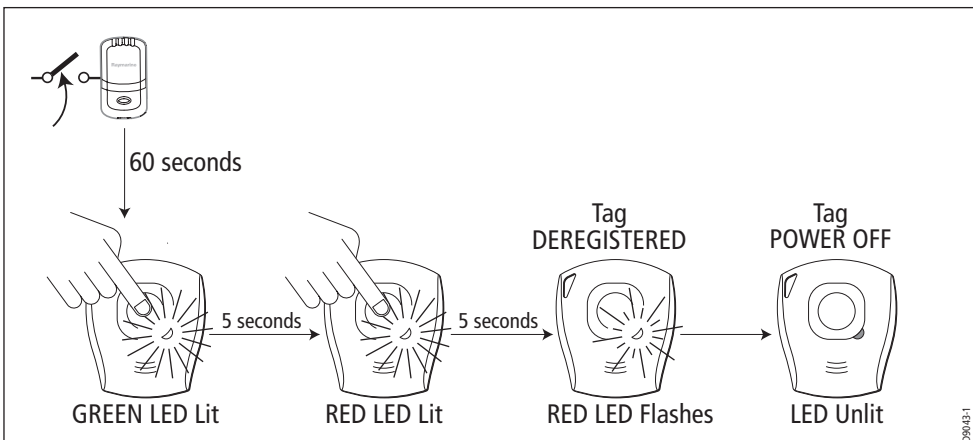


De-registering a Tag

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

- 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.
- Hold down the Tag button, and check that:
 - The GREEN indicator lights.
 - After 5 seconds, the RED indicator lights.
 - After a further 5 seconds, the RED indicator flashes. The Tag is now de-registered.
- Release the Tag button.

After a further few seconds, the Tag will automatically power down and the indicator will be unlit.



Note: *Before you can use a de-registered Tag, you must register it with the relevant Base Station.*

Specification

Parameter	Base Station	Tag
Power source	8 V to 16 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	
Maximum number of Repeater Base Stations per system	1	

FCC and Industry Canada Information

The LifeTag and LifeTag Base Station comply with US CFR47 part 15 Rules and with IC Standard RSS210. 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 or IC 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 IC:4069B-LTB (LifeTag Base Station)	IC:4069B-LTT (LifeTag)

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