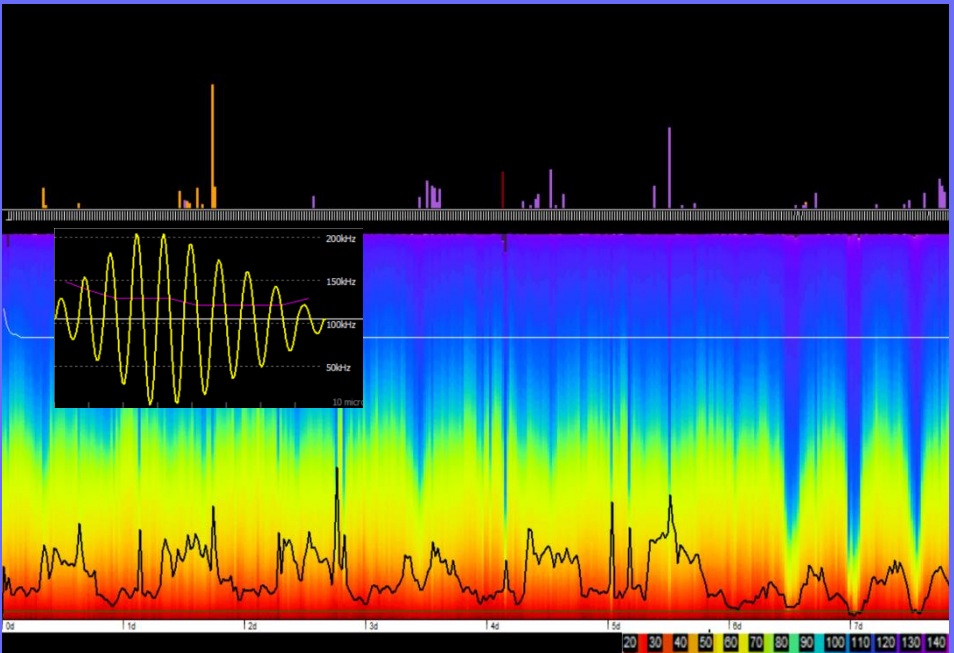




**Chelonia Limited**  
Cetacean Monitoring Systems

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# DeepF-POD User Guide



# 1 Introduction

This User Guide describes how to set up, deploy and retrieve data from your DeepF-POD.

*This User Guide must be read with the F-POD User Guide* as the Deep version is the same as the standard version except for the housing and safety advice for deep water deployments.

F-PODs are fully automated, static, passive acoustic monitoring systems that detect porpoises, dolphins and other toothed whales by recognising the trains of echo-location clicks they make to detect their prey, orientate and interact.

The F-POD click data are stored on an SD card in the POD.

After deployment, the data are downloaded from the SD card onto a PC and are then analysed using the FPOD PC app. The software automatically identifies the presence of cetaceans by detecting the trains of ultrasonic echo-location clicks they produce.

## Help and support

We offer full email support and will be pleased to help with queries on any aspect of F-POD use.

Your F-POD purchase also entitles you to free future software upgrades.

We offer a range of additional services, including data analysis and interpretation.

You can find more information and the latest software and documentation on our web site at [www.chelonia.co.uk](http://www.chelonia.co.uk).

Keep up-to-date with important changes by joining the POD User Group, at [www.chelonia.co.uk/cug\\_join.htm](http://www.chelonia.co.uk/cug_join.htm).

You can also contact us in the following ways:

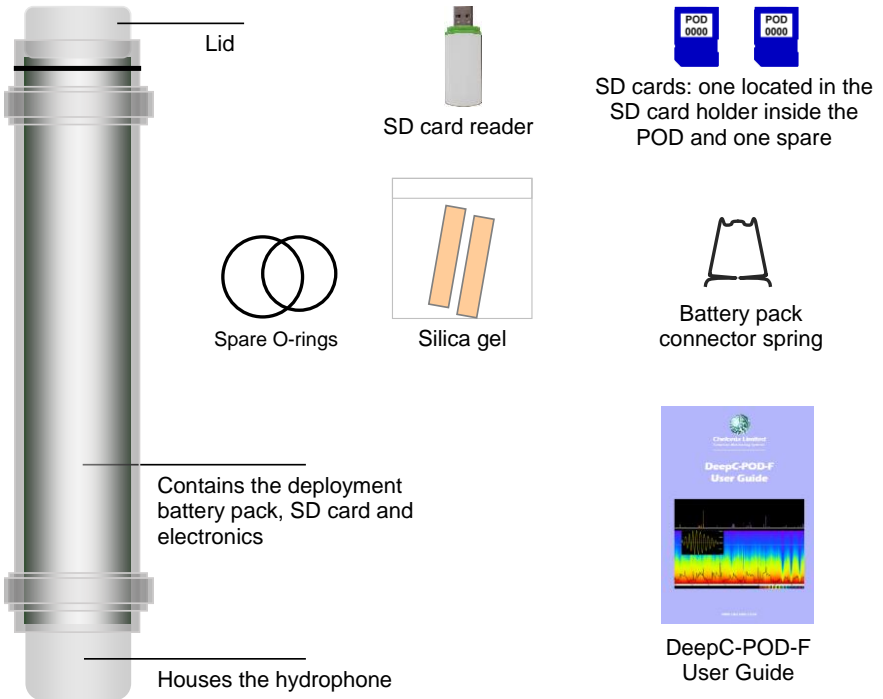
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Email: [team@chelonia.co.uk](mailto:team@chelonia.co.uk)

## 2 Checking parts

Once you have unpacked your DeepF-POD, check to make sure that you have all the correct parts:



The DeepF-POD consists of an aluminium casing with hydrophone housing at one end and a removable lid at the other end.

DeepF-PODs are very robust, but be careful not to drop the DeepF-POD or subject it to hard knocks, as this might interrupt the power supply.

PODs are identified by a unique number that is shown on labels on the housing and SD cards.

Unlike the standard F-POD, the DeepF-POD is not buoyant.

### Spare O-rings

O-rings are used to seal the lid and keep it waterproof when it is closed. Use these spares to replace the existing O-rings if they become damaged.

## Buoyancy

Unlike the standard F-POD, the DeepF-POD is not buoyant. The POD (including batteries) weighs approximately 8.6 kg in air and has a negative buoyancy of approximately 3 kg in the sea.

## Angle sensing

The DeepF-POD contains an angle sensor which records the angle-from-vertical each minute. The angle can be viewed in FPOD.exe when you have copied your data files after deployment, enabling you to ensure that the POD was correctly deployed.

The angle sensor can also be set to determine when the POD logs data.

The DeepF-POD is normally supplied with the angle sensor set to be on at all angles, which means that the POD logs temperature, attitude and data all the time it is running.

If you change the angle settings be sure to test, on dry land, that it is doing what you expect. You can generate distinctive noise records by tapping the hydrophone housing lightly with a finger in a distinctive time pattern.

## Location

The sea bed at depth is generally much quieter than in shallow water. The surface is a source of ultrasound from rain and breaking waves that is absorbed as it propagates downwards.

In deep water, any position between close to the bottom and 10 metres down from the surface is good. The DeepF-POD's housing has been used successfully down to 2000 metres.

Deep diving cetaceans can be heard by a shallow water POD set to point downwards. Please contact us for more information.

## Directionality

All PODs show lower sensitivity directly along the long axis of the housing, especially in the battery pack direction.

### 3 Setting up DeepF-PODs for deployment



It is strongly recommended that before you deploy your PODs, you practice setup, starting, closing, opening and downloading data, as described in this section and sections 6 and 7, so that you are confident about the operating procedures.

#### Opening the DeepF-POD for the first time

1. Use a screwdriver or bar through the hole in the lid to remove it by rotating it anti-clockwise (as seen looking at the lid end).
2. Fold the protective sleeve back over the retaining ring.



#### Closing the DeepF-POD

The lid is supplied with two O-rings. The O-rings have been lightly lubricated using a PTFE dry-lube oil to ensure that the lid tightens smoothly.

**Tip:** If you want to lubricate the O-rings before deployment, using a dry-lube lubricant minimises stickiness that might attract dust and grit.

The POD has a lid with a 10 mm diameter hole for attaching a mooring line. Use a bar or screwdriver located in the hole to open and close the lid.

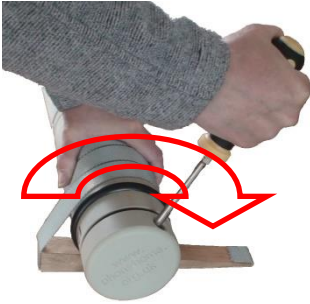
##### To close the POD:

1. Make sure there are two O-rings in place on the lid.



Check that the O-rings are clean. Check particularly that there are no hairs, grit or sand trapped beneath the O-rings as these could cause damaging leaks.

2. Align the lid and housing carefully and screw them fully together.



4. Fold the protective sleeve back over the lid.



5. Now carefully weigh the POD and note the value.



Weighing the DeepF-POD before deployment is essential as it will allow you to compare the weight after deployment to ensure that water has not leaked into the POD, pressurising the contents.

The DeepF-POD is now ready for deployment.

## 4 Retrieving DeepF-PODs

It is recommended that you take the following kit with you when you retrieve DeepF-PODs at sea:

- the weight of the DeepF-POD before deployment
- a blank microSD card
- a camera to record the condition of the mooring lines and POD
- a plastic scraper to remove any bio-fouling (usually minimal at depth)
- a heavy screwdriver and POD wrench to open and close the POD
- a towel
- a pair of tweezers to remove the silica gel
- an airtight container to put the silica gel in
- new batteries for redeployment
- a voltmeter to check battery condition, if you want to re-use batteries
- any tools for your attachment method

### Opening the DeepF-POD after deployment



**WARNING: BECAUSE THE DEEPF-POD CAN BE DEPLOYED AT GREAT DEPTH, ANY LEAKAGE OF SEAWATER INTO THE POD CAN CAUSE THE AIR INSIDE TO BECOME COMPRESSED. IF THIS HAPPENS, SIMPLY UNSCREWING THE LID MAY CAUSE AN EXPLOSIVE RELEASE OF AIR.**

It is therefore important that you follow the procedure below to firstly assess whether water has entered the POD and if so, how you should proceed.

#### **When you retrieve a DeepF-POD:**

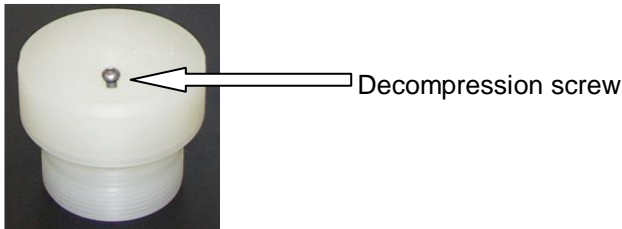
1. Use a plastic scraper to clean off any heavy fouling.
2. Scrub and wash the housing.
3. Dry the POD and lid, especially around the O-ring.
4. **BEFORE YOU OPEN THE POD**, carefully weigh it and compare the two values – before and after deployment.

If the weights are the same, you can safely open the lid.

If the POD is heavier, water has seeped in and the contents will now be under pressure:

- a. Dig out the **plug** over the decompression screw in the POD lid.

- b. **Carefully unscrew the decompression screw to release the compressed air. Cover the POD lid and screwdriver with a heavy cloth / towels to catch any spraying.**



- c. When you are sure that the POD is no longer pressurized and is safe to open, unscrew the lid.

## Stopping the POD

This is the same as for the standard F-POD.

## Mooring lines

Inspect the mooring lines after every deployment for signs of wear – mainly abrasion against rough surfaces.

## Silicone rubber sheath and electrolytic corrosion

Check that this the sheath is intact and there is no sign of corrosion underneath it.

A particular issue is: if the DeepF-POD is fastened to any metal structure and an electrical pathway is established between the aluminium housing of the POD and any steel structure then the POD housing may be come a 'sacrificial anode' and suffer very rapid electrolytic corrosion.

The silicone sheath provides very good protection against this but should be checked carefully.







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## Cetacean Monitoring Systems

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