

# Users Manual

## Ping Mk IV Mobile Dive Phone



Models DUF, DUR and DTU

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## 1 Introduction

Thank you for choosing Ping Mk IV Mobile Dive Phone. This users manual will help you to get started using your new phone. Please read the instructions carefully, especially the chapters about operation, care and maintenance, before using the phone.

## 2 Packing list

Please check that the package contains the following items:

1 pc. Dive phone,  
1 pc. Battery charger,  
1 pc. Users manual (this),  
1 pc. Velcro fastener for the earphone (only DUF and DUR models),  
2 pcs. Screws for the microphone housing (only DUF model),  
1 pc. Hex key,  
1 pc. Reflector (only DTU model),  
1 pc. Headset (only DTU model).

### 2.1 Spare parts

Spare parts can be ordered from Ping Marine Electronics, see address below.

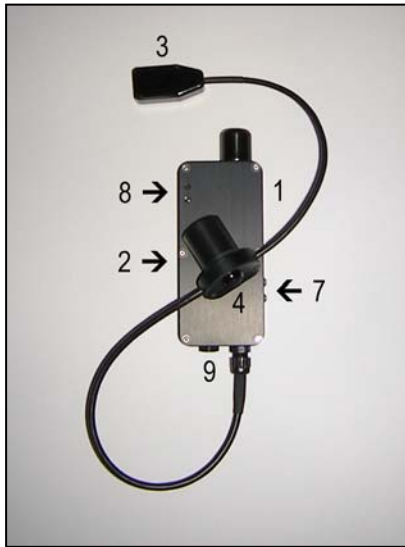


Figure 1: Divers Unit (DUF model).

1. Transceiver unit,
3. Earphone (bone conduction),
5. Connection box,
7. Water sensor contacts,
9. Charge plug.

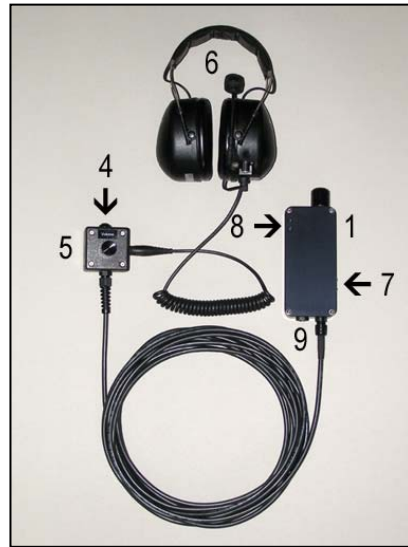


Figure 2: Dive Tenders Unit (DTU model).

2. Microphone housing,
4. Send switch button,
6. Headset,
8. LED indicators,



Figure 3: Attaching the transceiver unit to the head harness.

### 3 Operation

#### 3.1 Mounting the phone on a full face mask (DUF model)

- Remove the cover plate from the front of the mask.
- Install the microphone housing in the cover plates place, and secure it with the two screws supplied with the phone, using the hex key. Make sure that the pressure equalizer is clear of the microphone housing.
- Attach the transceiver unit to the upper right strap of the head harness. This can be done with the harness attached to the mask. Start by opening the buckle on the back of the transceiver unit, by pressing lightly on the sides of the buckles lock. Now place the strap in the buckle (see Figure 3), and close it again. Verify that the buckle is locked.
- Fasten the holder for the earphone (Velcro fastener) between the upper and lower left straps of the head harness (see Figure 5).
- Attach the earphone to the Velcro fastener opposite to the divers ear (or another preferred location).



Figure 4, 5: Phone mounted on a full face mask.

#### 3.2 Mounting the phone on a mask (DUR model)

- Fasten the transceiver unit on to the head strap of the mask.
- Fasten the holder for the earphone (Velcro fastener) on to the strap of the mask. In case you have a regulator with a side air exhaust, it is recommended to mount the earphone on the opposite side of the head, to minimize distraction from bubble noise.
- Attach the earphone to the Velcro fastener near to the diver's ear.

### 3.3 Assembly of the dive tenders unit (DTU model)

- Insert the headsets plug in the socket on the connection box.
- Adjust the headset on your head for best comfort. Place the boom with the microphone a couple of cm from your mouth.
- Attach the connection box to your belt, or another preferred location, using the clip on the back of the box.
- Adjust the sound level with the dial on the front of the box.

### 3.4 Function check before dive

Before every dive, it is recommended that a function check is conducted in pairs between the phones that will be used for the dive.

- Activate the phones by touching the water sensors contacts with a (wet) finger. The water sensors contacts are the two metal studs on the transceiver units right side. The phone will stay active for three minutes and will then deactivate itself, after which the procedure has to be repeated to activate the phone again.
- When the phone is active, the upper LED indicator flash with a green light, and a faint noise can be heard in the earphone/headset.
- Try speaking in one phones microphone, with the Send button depressed. The speech should be heard clearly in the other phones earphone/headset. When the receiver/transmitter is active the lower LED indicator will also light up blue. Note that, if the divers unit is mounted on a full face mask, it is necessary to put on the mask first, otherwise the microphone may not be close enough to the mouth, and the speech will be perceived as faint by the receiver.
- The range in air is unfortunately very limited. The transceiver units of the phones have to be located close to one another (within 0.5 meter), for function check to succeed.

If the function check is not successful, consult chapter 8 for troubleshooting.

### 3.5 Reception

The phone is activated automatically when the transceiver unit is submerged in water, and will immediately go to receive state. In this state it is possible, without further action, to listen to any other phone that currently transmitting and is within range.

### 3.6 Transmission

The transmitter is activated by pressing the send button on the microphone housing (DUF model) or connection box (DTU model), and speaking into the microphone. When the button is released, the phone will revert to receive state.

### 3.6.1 Voice Operated Transmission (VOX)

The transmitter can be either push-to-talk (PTT) or voice operated (VOX). VOX is enabled/disabled by a quick press & release of the send button. The phone will answer with an alert sound in the earphone/headset, to confirm that VOX has been enabled/disabled. The lower LED will also flash blue, as long as VOX is enabled. VOX is a convenient feature. It eliminates the need to push the send button while talking. However, in a noisy environment it can cause unintended transmissions, and should therefore be used with some caution, in particular when there are several divers communicating simultaneously.

### 3.7 Actions after dive

Rinse the phone in fresh water and allow it to dry.

The microphone housing (DUF model) is equipped with a water proof membrane. The membrane will withstand a maximum water pressure of 0.4 Bar. It enables the microphone housing to be rinsed or submerged in water, without flooding the microphone, as long as the depth does not exceed four meters. However, the membrane is sensitive to mechanical damage, and should not be punctured.

Please observe that the connection box (DTU model) and headset should not be rinsed or submerged in water. They are not waterproof. If you suspect that water has anyway leaked into the connection box, open the lid, and allow the box to dry completely. The lid shall then be closed again. The box will normally not be damaged by occasional flooding, although this should be avoided.

## 4 Care and maintenance

### 4.1 Safety considerations

Do not expose the phone to fire or heat. Heat may cause the batteries the phone is equipped with to explode or vent gas. The phone shall not be left under direct sun light or inside a car during a warm day, if it can be expected that the temperature will exceed the maximum allowable storage temperature (50 °C or 122 F).

When the phone has reached its end of life time, it may be returned to Ping Marine Electronics, free of charge, in accordance with the EU directives on waste electrical and electronic equipment and batteries (2012/19/EU and 2006/66/EC).

### 4.2 Charging the battery

When the battery is beginning to deplete the upper LED indicator will start to flash with a red light. The phone can still be used as receiver for a while, but the transmitter is now disabled and the battery should be charged before further use.

Follow the instructions below to charge the battery:

- Unscrew the charge plug from the bottom of the transceiver unit, using a 6 mm hex key or a 15mm spanner (see Figure 6). The charge plug can also be removed by hand (without any tool).
- Connect the charger to the socket inside the transceiver unit (see Figure 7) and the charger to the mains.
- While charging the upper LED indicator shines with a steady red light. The phone is fully charged after 2 hours, and will then switch to maintenance charge. The upper LED indicator now shines with a steady green light.
- Check that the O-ring on the charge plug is free from any contamination. Be careful not to damage the O-ring. To prevent leakage, replace the O-ring with a new one at any sign of damage.
- Reinstall the charge plug. Be careful not to damage the threads. The charge plug shall be fastened with no more torque than necessary.

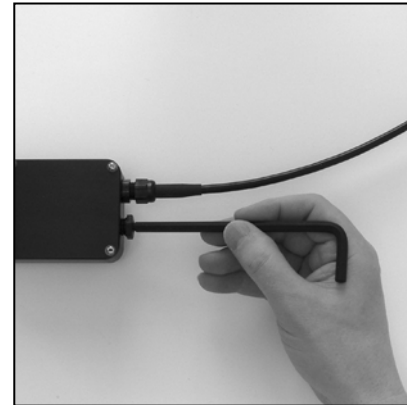


Figure 6: Removing the charge plug.



Figure 7: Connecting the charger.

Ping Marine Electronics' products only contain environmentally safe NiMH batteries. NiMH batteries lack notable memory effect and do not require to be fully discharged before recharging. The batteries have a typical life expectancy >500 cycles (IEC 61951-2). The cells are of a special type and cannot easily be replaced by the user. If you suspect that the batteries are getting old (show degraded performance), the phone has to be returned to Ping Marine Electronics for replacement of batteries.

### 4.3 Diving at low water/air temperatures

Water will freeze to ice below 0°C (32 F), which can be the cause of problems. If repeated dives are to be performed with the phone when the water or air temperature is below 0°C, be careful to wipe off any water that remains on the phone and mask directly after the dive, and store them in a dry place between dives, to prevent ice from forming.

The battery capacity will gradually decrease with temperatures below 0°C, with shorter operations time as a result. Take care always to charge the battery fully before diving at low temperatures.

### 4.4 Storage

When the phone is not in use, it should be stored in a dry place at a temperature not exceeding normal room temperature.

The NiMH batteries that are used in the phone have a self-discharge of 20% of full capacity after one month of storage at 20 °C (68 F). The rate of self-discharge is dependent upon the temperature at which the batteries are stored – the higher the temperature, the greater the rate of self-discharge. In case the phone has been stored

for more than 1 month, it is recommended to charge the batteries before the phone is used again.

## 5 Reflector

When diving in confined spaces, such as tanks, basins, along a quayside or shoreline, echoes from nearby walls may interfere with the reception. To protect the dive tenders phone from echoes, the reflector supplied with the phone can be used. The reflector shall be mounted with the two screws on the back of the transceiver unit (see Figure 8). The reflector shall not be used when diving in open water. When the reflector is not used, the screws shall be reinstalled on the transceiver unit, to prevent water from causing corrosion to the internal threads. The screws may also temporary be used as replacements for the microphone housings screws.

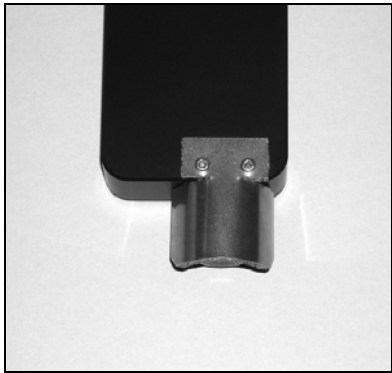


Figure 8: Reflector mounted on phone

## 6 Warranty

If this product should in any way be defect, Ping Marine Electronics will, free of charge, repair or replace it, during a period of 12 months from the date of purchase/delivery.

The warranty is valid under condition that the product is handled properly for its intended use, in accordance with the users manual, and an original invoice or receipt, with type, serial number and date, can be presented.

Ping Marine Electronics warranty may not apply if:

- The purchase documents have been altered in any way, or made illegible.
- The model or product number on the product has been altered, erased or made illegible.
- Repairs or modifications have been made by an unauthorized workshop or person.

- Damage is caused by accidents including but not limited to lightning, fire, misuse or neglect.

If your product is not working correctly or is defective, please contact Ping Marine Electronics helpdesk, the address/phone of which can be found below.

## 7 Addresses

Ping Marine Electronics  
Värmdövägen 151  
139 90 Värmdö  
SWEDEN

Phone: +46 767 762821  
E-mail: [helpdesk@pingmarine.com](mailto:helpdesk@pingmarine.com)  
Website: <http://www.pingmarine.com>

## 8 Specifications

Principle of operation	Hydroacoustic
Range	1000 m
Maximum depth (IEC 60529, IP68)	60 m (200 ft)
Transmitter power (PEP)	2 W
Audio bandwidth	3.3 kHz
Receiver sensitivity (at 12 dB SNR)	-123 dBm
Battery time – operations (5/5/90 cycle)*	10 hours
– charging (max)	2 hours
Dimensions (transceiver WxHxD)	65x140x25 mm
Temperature range – operation/charge	0 – 45 °C (32 – 113 °F)
– storage	-20 – 50 °C (-4 – 122 °F)
Weight	0.55 kg (0.2 kg in water)

\* At 20 °C (32 °F) temperature.

## 9 Compliance

Ping Mk IV mobile is in conformity with the essential requirements of the following EU directives and applied harmonized standards.

EU directives	Applied standards
2004/108/EC	EN55022: 2006+A1
	EN55024: 1998+A1+A2
	EN61000 – 3-2:2006 +A1+A2
	EN61000-3-3: 1995+A1
2006/95/EC	EN60950
2012/19/EU	EN50419:2005
2011/65/EU	
2006/66/EC	

A copy of the EU Declaration of Conformity is available at [www.pingmarine.com](http://www.pingmarine.com).

## 10 Troubleshooting

The cause of a few simple problems may be found and corrected by following the troubleshooting chart below. For other problems, please contact Ping Marine Electronics for advice.

Symptom	Probable cause	Remedy
Noise is not perceived in the earphone after the unit is activated.	The noise is faint, and may be difficult to hear in a noisy environment.	Repeat the function test in a quiet environment.
	The phone has not been activated.	Activate the phones by touching the water sensors contacts with a (wet) finger, or submerge the transceiver unit in water, to activate it. The upper LED indicator shall flash with a green light when the phone is active.
The upper LED flash with a red light.	Discharged battery.	Charge the battery.
No speech can be heard in the receiving phone, during function test.	One or both of the phones are not active.	Activate both phones (see above). The upper LED shall flash with a green light, and a faint noise should be heard in the earphone/headset.
	The phones are too far apart.	Place the transceiver units of the phones within 0.5 meter of each other.
	Discharged/weak battery.	Charge the battery.
	Other cause.	Contact Ping Marine Electronics for advice.
The sound level of the diver units earphone is perceived as too low/high.	Incorrectly placed earphone.	Place the earphone closer/further away from the ear, to increase/decrease the sound level. Maximum sound level is obtained with the earphone opposite to the ear.
Water entry in the transceiver unit.	Damaged/incorrectly installed o-ring, or cable gland.	Empty the transceiver unit of all water (through the charge plug), and allow it to dry. Contact Ping Marine Electronics for service.
Water entry in the microphone housing.	Damaged membrane	If possible, empty the microphone housing of all water. Contact Ping Marine Electronics for service.



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