WHALESHIELD

Future Oceans

High Power Acoustic Pinger to Minimise Whale Collisions

WHAT IS A WHALESHIELD?

A "WhaleShield" is a high-powered acoustic Pinger that can be easily fitted to yachts to prevent collisions with whales.

HOW DO THEY WORK?

A WhaleShield emits a low-frequency signal known to be audible to whales.

WHY DO THEY WORK?

Scientific research and anecdotal industry evidence confirm that whales do not approach low-frequency Pingers; they avoid them.

By generating a powerful low-frequency signal, the WhaleShield will be detected by whales well before the yacht approaches.

Sound travels at 1500 metres per second in sea water – much faster than a yacht sailing at 25 knots, or 13.5 metres per second.

At 1000 metres from a WhaleShield, a whale has approximately 75 seconds to move to avoid impact with the yacht.

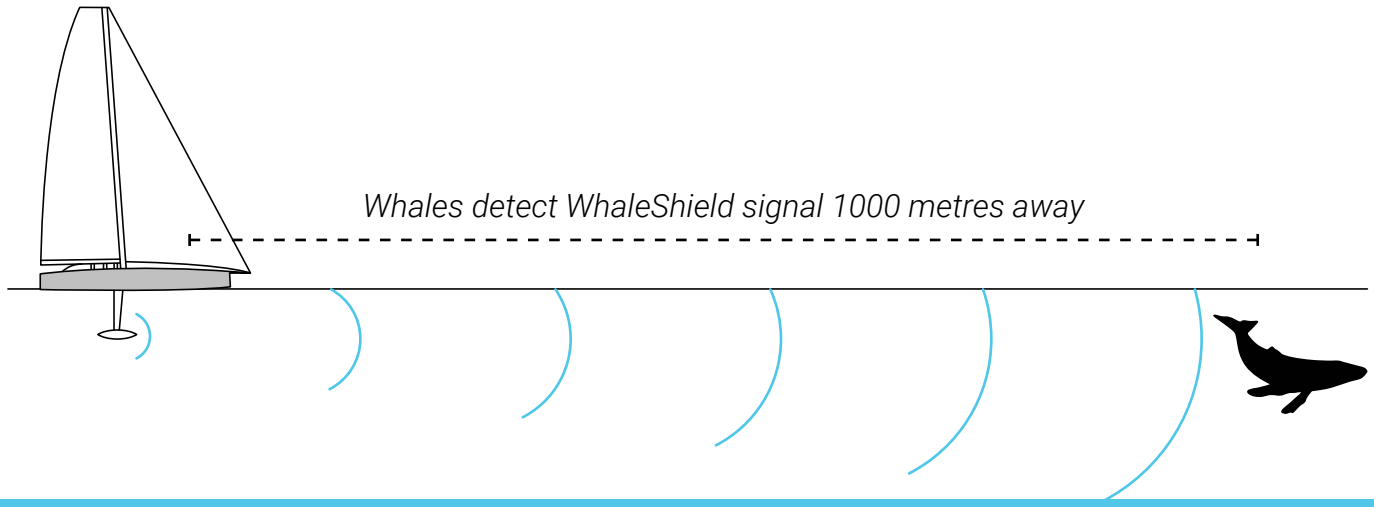
WHY USE A WHALESHIELD?

A WhaleShield can reduce the probability of collisions with whales.

A collision with a whale can cause significant damage to yachts hull, keel arm and keel bulbs and yachts can sink as a result of a whale strike.

The probability of whale collisions is increasing as whale populations are increasing. Some whale species populations are growing by ten percent per year.

As whale populations continue to recover, the increase in collisions will also increase.



- ULTRA LIGHT WEIGHT
- EASY TO INSTALL
- OPERATES on 12v or 24v
- ZERO DRAG
- LONG RANGE EFFECTIVENESS
- LOW COST

www.whaleshield.com.au

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HISTORY OF WHALE PINGER USE

For over forty years, scientists have been exploring the use of sound as a means of reducing whale interactions with ships and commercial fishing gear.

In the 1980s Canadian researcher, Jon Lien discovered that the use of a 3 kHz Pinger ("Beeper") reduced interactions with Humpback whales and commercial cod fishing gear.

"Effects of adding sounds to cod traps on the probability of collisions with Humpback whales".

Lien et al. Oceans Science Centre and Department of Psychology, Memorial University of Newfoundland. 1992.

In 2003 senior marine researchers in the USA undertook a large scale Pinger experiment using 10 kHz Pingers in California.

"For a net with 40 Pingers, the models predict approximately a 12-fold decrease in an entanglement of short-beaked common dolphins, a 4-fold decrease for other cetaceans, and a 3-fold decrease for pinnipeds (seals and sea lions). No other variables were found that could explain the effect. The Pinger experiment ended when regulations were enacted to make Pingers mandatory in this fishery".

"Field experiments show that acoustic Pingers reduce marine mammal bycatch in the Californian Drift Gill Net Fishery". Barlow and Cameron.

South West Fisheries Science Center, National Marine Fisheries Service. La Jolla California. Marine Mammal Science 19(2):265 – 283 April 2003.

In a large-scale scientific experiment in the USA, researchers found that acoustic Pingers eliminated beaked whale bycatch entirely.

"Results from a 17-year fishery observer program show that the bycatch of beaked whales was eliminated after the introduction of acoustic Pingers and that bycatch of other cetacean species was reduced considerably".

Caretta, J.V., J Barlow and L. Enriquez, 2008. Marine Mammal Science 24 (4) 856-961.

In 2011 Future Oceans successfully commercialized the world's first low-frequency Whale Pinger.

The Whale Pinger was introduced to Australia, South Africa, Alaska, California and South American countries, where interactions with Humpback whales were a serious challenge in commercial fisheries.

Senior scientists at Fairbanks University tested the whale Pinger with Alaskan commercial fishermen and reported that whales **"clearly moved around nets with whale Pingers".**

(Professor Kate Wynn, Fairbanks University).

WHALE PINGER USE

In Australia since 2011 the New South Wales and Queensland State Governments have installed whale Pingers on shark control nets and baited shark "drum lines" with great success:

https://www.daf.qld.gov.au/business-priorities/fisheries/shark-control-program

"All shark nets and some drumlines are fitted with acoustic alarms to warn whales and dolphins".

Whale Pingers have been used successfully by scientists, Governments and commercial fisheries since 2011.

NOAA USA federal government. Pingers eliminate beaked whale bycatch in California drift gill net fishery. (Barlow and Cameron).

https://swfsc.noaa.gov/uploadedFiles/Divisions/PRD/Programs/Coastal_Marine_Mammal/Barlow_Cameron_MMS19.pdf

Fairbanks University Alaska. Professor Kate Wynn Whale Pinger.

http://www.alaskafishradio.com/pingers-could-help-keep-whales-away/

New England Aquarium Consortium for Wildlife Bycatch: Whale Pingers in Queensland Australia.

https://www.bycatch.org/articles/acoustic-investigation-bycatch-mitigation-pingers

Future Oceans website, commercial fishermen testimonials.

https://www.futureoceans.com/pingers/

Effects of adding sounds to cod traps. Lien et al 1992.

https://link.springer.com/chapter/10.1007/978-1-4615-3406-8_43

"a sound generator emitting a 3.5kHz pulse can lower the probability of collisions with fishing pots".

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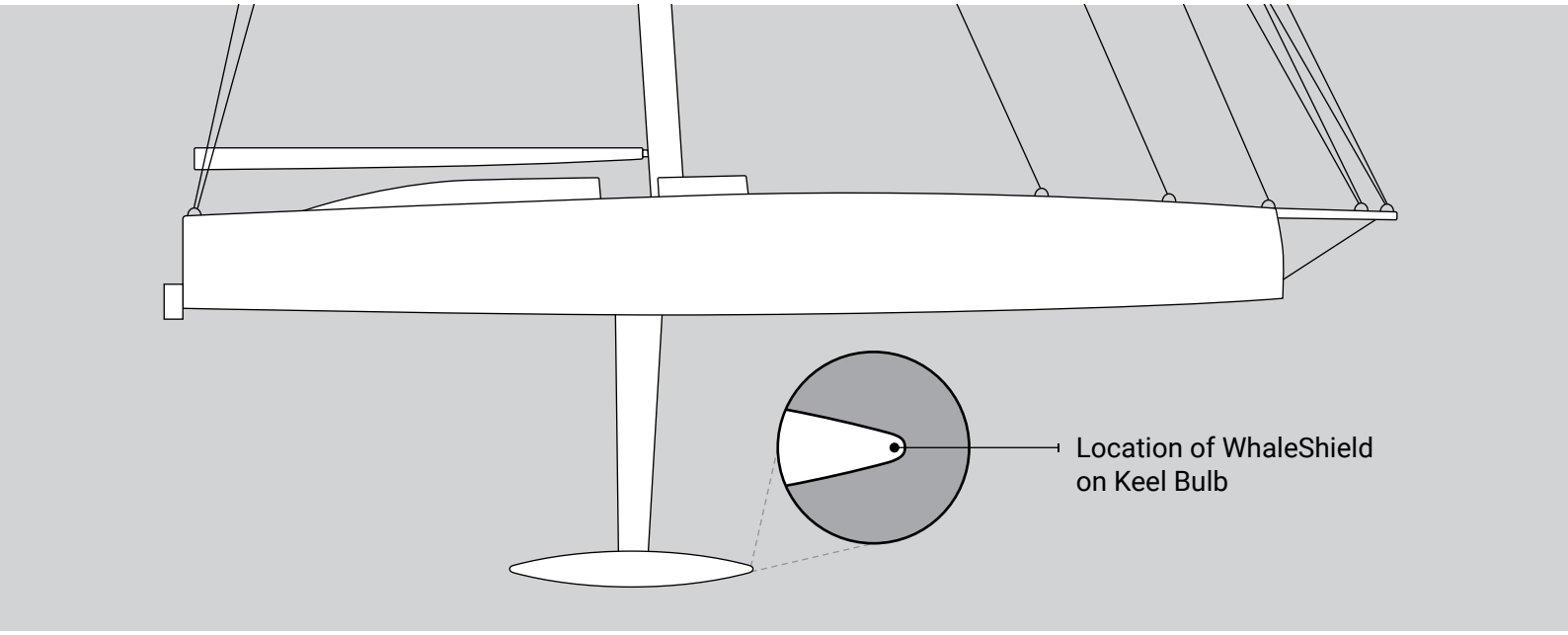
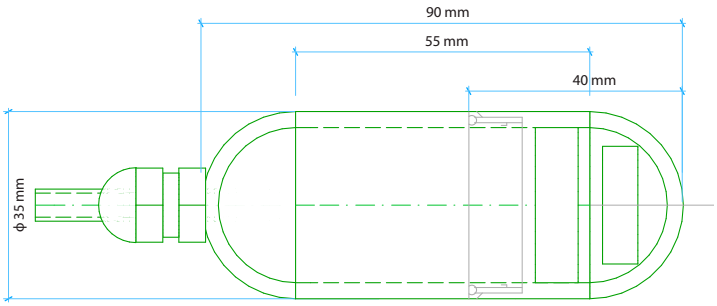


The WhaleShield with gland and cable supplied



SPECIFICATIONS

Signal Speed and Range

- Pinger emission travels in water at 1500 metres per second
- Effective audible range of Pinger 1000m +
- Warning period for a whale from approaching yacht travelling at 25 knots is 76 seconds

Operating Specifications

- High powered low frequency Acoustic Harassment Device
- Emission rate: 1 “Ping” per second
- Power requirement: 24v (0.025 amps) or 12v (0.05 amps)
- Weight: 80 grams (excludes cable)

Material

- Thermoplastic polymer

Cable

- Cable: 3.5mm 4 core marine grade
- Cable length supplied: 12 meters

Installing WhaleShield

The WhaleShield is provided as an “in house installation” product allowing customers to easily and quickly configure the system into existing onboard instrumentation and power.

The WhaleShield operates from 6 volt to 28 volt power.

An installation guide is available on request and supplied with the WhaleShield.

WHAT IS INCLUDED?

- 1 X High Powered Acoustic WhaleShield
- 12 Metres 4 Core 3.5mm Electrical Cable
- 1 X LED Operational Indicator
- 1 X 4 Core Cable Connector

24 Month Warranty* *(*Conditions Apply)*.

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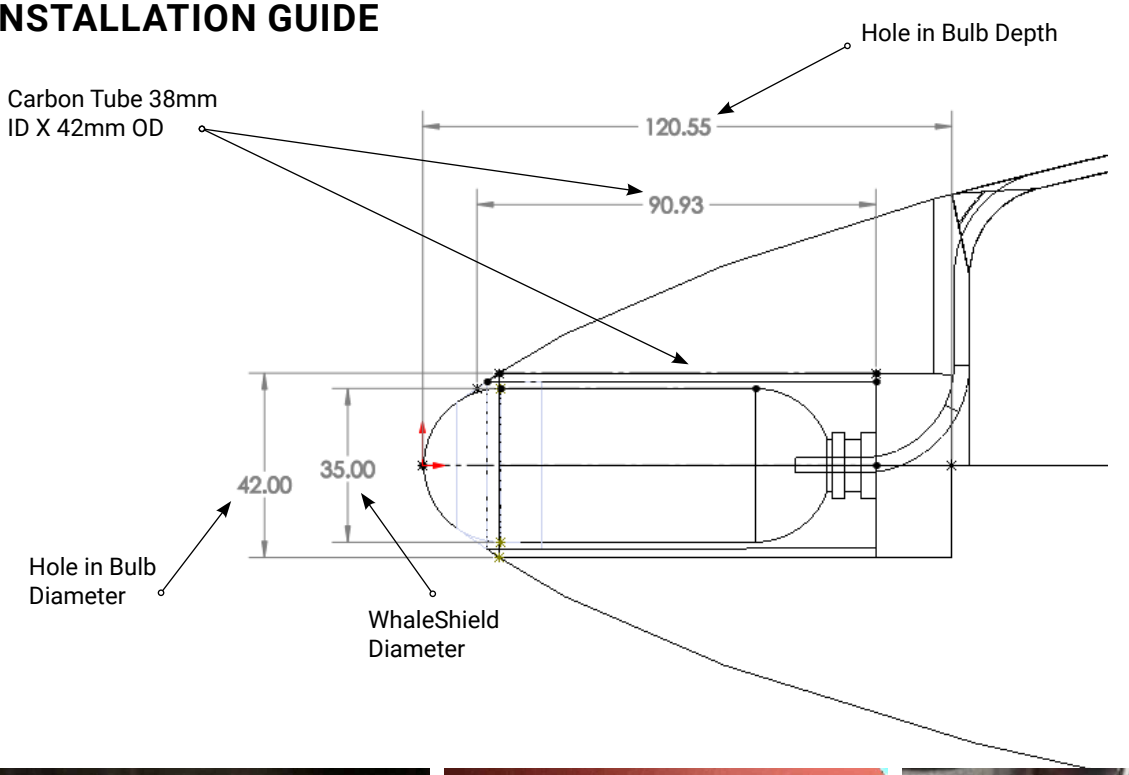
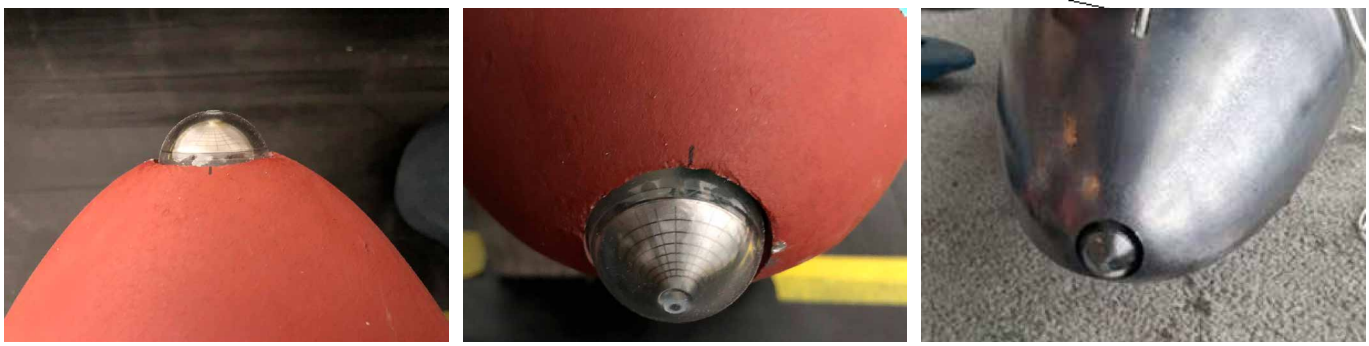
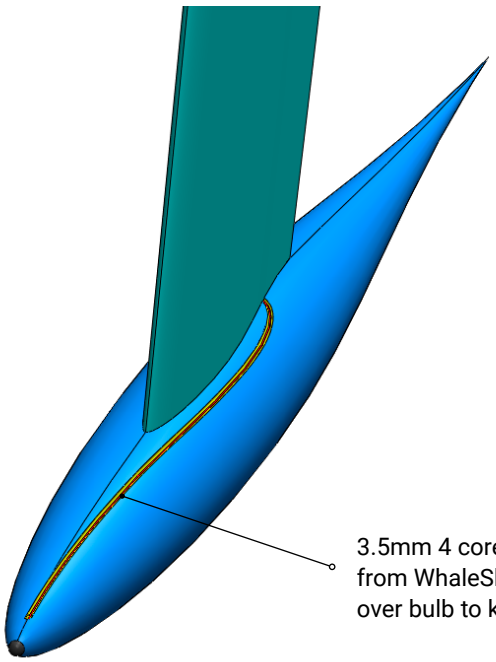
INSTALLATION GUIDE

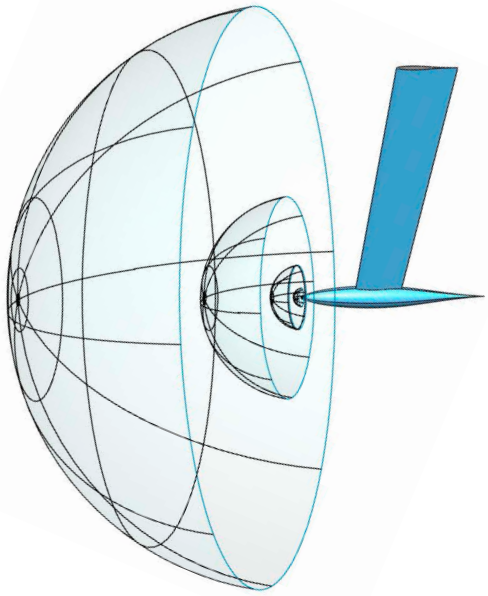




WhaleShield installed in keel bulb, prior to bonding in place.



WHALESHIELD SIGNAL GEOMETRY



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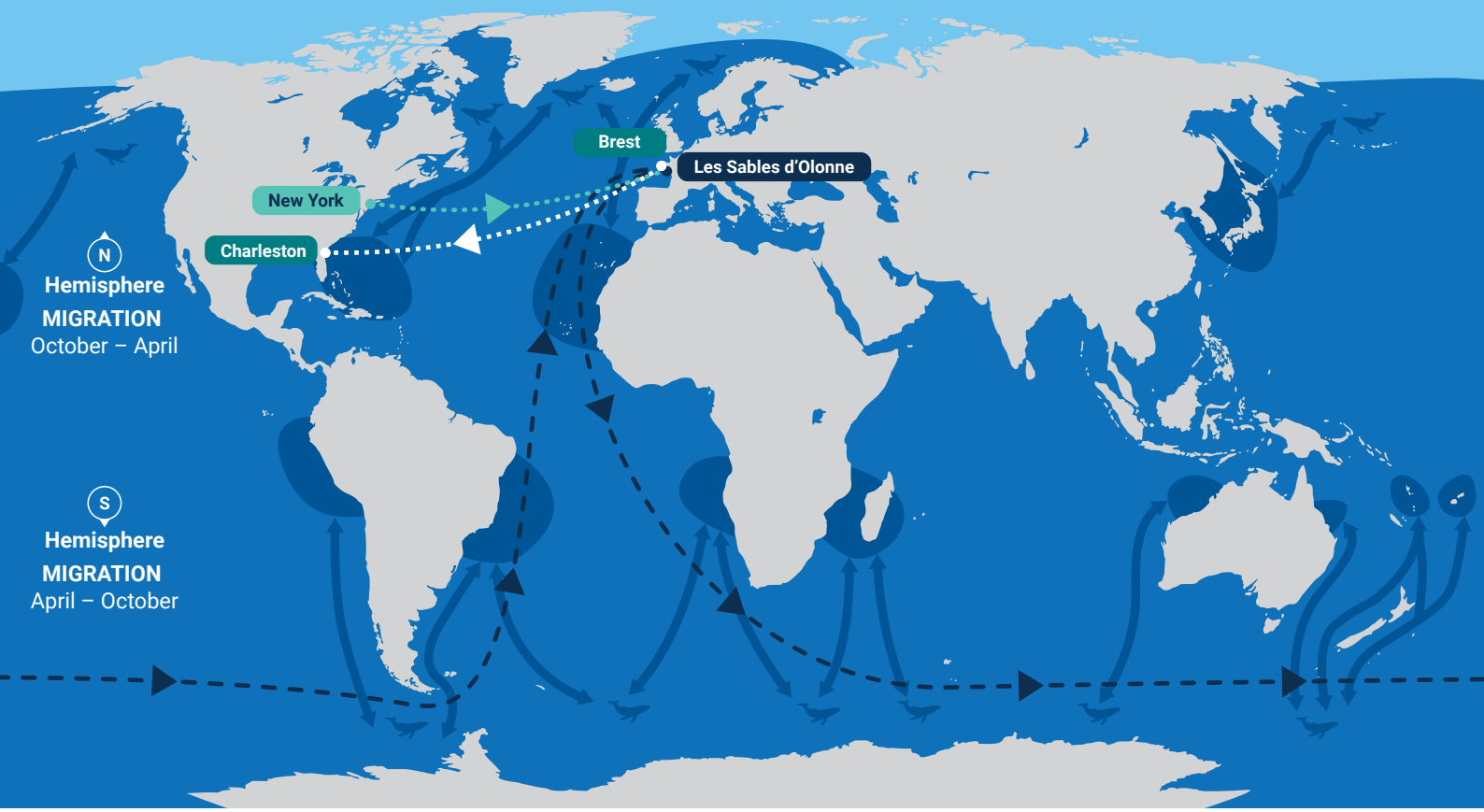
HUMPBACK CALVING & MIGRATION ZONES



RACE ROUTES

vendéeglobe Les Sables d'Olonne

NEW YORK VENDEE LES SABLES D'OLONNE

The TRANSAT CIC

Humpback | Calving Zones | Migration Routes

Other whale species found in the same waters – Sperm, Minke, Fin, Sei, Southern and Northern Right, Blue, Killer, False Killer, Melon Headed, Beaked and Pilot Whales

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