

# SONIHULL

ULTRASONIC ANTI-FOULING SYSTEM



THE FUTURE OF ANTI-FOULING, NOW

# ANTI-FOULING PROTECTION INSIDE & OUT



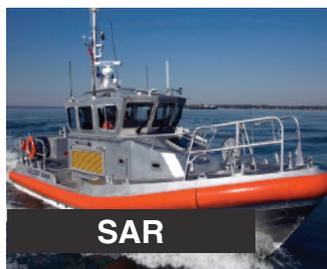
Sonihull is a complete range of fit-and-forget anti-fouling solutions for any solid surface that is exposed to raw seawater.

From hulls, propellers and waterjets, to sea chests, tanks, keel coolers, box coolers, pipework, intakes and valves.

Fit-and-forget anti-fouling solutions for any solid surface exposed to raw seawater

Unlike biocidal coatings and impressed-current systems, Sonihull is low cost, low maintenance with zero poisonous environmental legacy.

## Sectors Covered



## Items Protected

<b>INSIDE</b>	Sea chests, Tanks, <b>Keel coolers</b> , Box-coolers, <b>Pipework</b> , Intakes, <b>Valves</b>
<b>OUTSIDE</b>	<b>Hulls</b> , Structures, <b>Propellers</b> , Waterjets, <b>Bulbous bows</b> , Steering gear, <b>Thrusters</b>

## Headline Figures

**4-6 weeks**

The time it takes Sonihull to pay for itself in fuel savings alone, when protecting large vessels' propellers

**4,600 Tonnes**

The average projected reduction in CO<sub>2</sub> emissions per ship per year when propellers are kept clean

**90%**

Save up to 90% of Cap-Ex and MRO costs in box coolers. No costly ICAF anodes to replace, no through-hull fittings

# Background

Every year, marine bio-fouling is estimated to add US\$100 Billion to commercial shipping costs.

On the outside, the build-up of algae, weeds, barnacles and other unwanted marine life will increase hydrodynamic drag which will escalate fuel-burn and Greenhouse Gas emissions.

On the inside, marine organisms can clog cooling systems, transfer invasive species and cause premature equipment failure. Sonihull provides effective, fit-and-forget bio-fouling protection without the need to drydock, without expensive maintenance, without biocides and with zero poisonous environmental legacy.

In box cooler anti-fouling applications, Sonihull can reduce capital and MRO costs by 90% compared to Impressed Current systems. Sonihull can also keep propellers clean between drydocks without regular polishing, targeting up to 33% of total vessel efficiency. In large vessels, Sonihull can pay for itself within 6 weeks, in fuel savings alone.

Sonihull's proprietary ultrasound technology is borne out of the commercial marine industry's demand for cleaner, more cost-effective ways of protecting multiple surfaces.

From propellers, hulls and bulbous bows to thrusters, box coolers and RSW pipework, Sonihull systems can protect your vessel wherever you have unwanted marine bio-fouling.

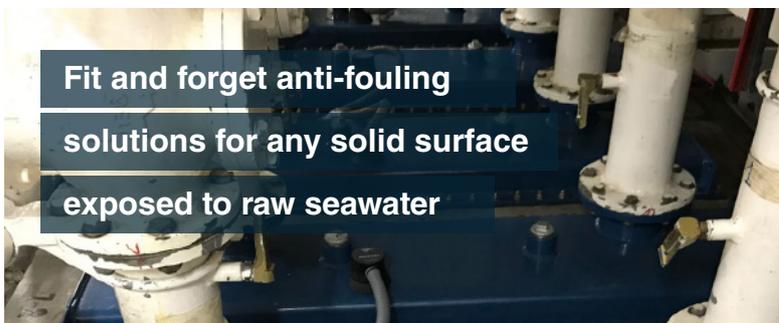
## How It Works

Sonihull systems produce multiple bursts of ultrasonic energy in a range of targeted pulse frequencies. These pulses are transmitted through the material that the transducer is attached to.

The ultrasound produces a pattern of increasing and decreasing pressure on the surface of the material. Microscopic bubbles are created during the negative cycle and are imploded during the positive cycle.

This microscopic agitation has a cleansing effect which destroys surface algae.

Disrupting this first link in the food chain keeps the surface clean and makes it a much less inviting habitat for larger organisms that feed on the algae. The microscopic movement of water also prevents barnacle and mussel larvae from embedding on the surface.



**Fit and forget anti-fouling solutions for any solid surface exposed to raw seawater**

Box Coolers ▲ ▼ Propellers



## KEY FEATURES



Effective bio-fouling without the poisonous environmental legacy of biocides or metal compounds



Inaudible to humans and marine life with no interference to sonar and electronic equipment



Can connect up to 80m away with no loss in performance. This makes Sonihull12 suitable for modular pre-fabricated constructions



Easy Installation - no drydocking, no through-hull fittings, no expensive impressed current anodes to replace



Up to 12 independent transducers ideal for large installations where multiple surfaces & equipment can be protected by one unit



Extended maintenance intervals mean less downtime and reduced running costs



Microbial Control - Sonihull also suppresses Diesel bug and keeps potable water fresher for longer



Fully Programmable & Integratable with RS232 / RS422 and Modbus communication interface for wired/wireless remote control with critical path fault monitoring

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## Products

TRANSDUCER



SONIHULL DUO



SONIHULL4



SONIHULL6



SONIHULL8



SONIHULL12



### PIPEWORK

Before



After



### BOX COOLER

Before



After



## Sonihull Accessories

**ALUMINIUM MOUNTING RING** – These marine-grade weldable aluminium mounting rings are ideal for aluminium hulls, jet drives, sea chests or other aluminium structures. The rings can be fitted as part of the standard build where Sonihull systems are offered as a buyer option.

**OFFSET ADAPTOR** – This bolt-on device allows ultrasonic transmission into surfaces that are hard to reach or acoustically isolated. The Offset Adaptor is ideal for smaller applications where fitting access may be an issue. This simple solution allows you to offset a transducer wherever you can get a bolt-down metal-to-metal contact on the inboard part of item being protected from bio-fouling.

**KEEL COOLER ADAPTOR** – These patented adaptors create a strong physical contact between a Sonihull transducer and the keel cooler's pipe fittings inside the hull. There's no need for any plumbing or cooling system drainage. A split collar (smooth or threaded) clamps snugly around the inlet and outlet pipes.

**PIPE ADAPTOR** – With our full range of standard-diameter pipe adaptors, Sonihull can be attached to almost any kind of pipework. Protecting box coolers, valves, inlets, sea chests or other raw water handling equipment from being clogged by unwanted marine growth.



# TECHNICAL SPECIFICATIONS

MODEL	Sonihull Duo	Sonihull4	Sonihull6	Sonihull8	Sonihull12	
APPROVALS	CE and UL	CE and UL	CE and UL	CE and UL	CE and UL	
VOLTAGE & AVERAGE POWER RATINGS	110/230V AC 50/60 Hz; 11W	110/230V AC 50/60 Hz; 26W*	110/230V AC 50/60 Hz; 40W*	110/230V AC 50/60 Hz; 40W*	110/230V AC 50/60 Hz; 100W* ① ②	
	13-30V DC; 10W	13-30V DC; 24W	13-30V DC; 35W	13-30V DC; 35W	13-30V DC; 85W ③	
DC CIRCUIT BREAKER	5A	10A	20A	20A	30A	
TRANSDUCERS	2	4	6	8	12	
CONTROL BOX RATING	IP65	IP65	IP54	IP54	IP54	
TRANSDUCER RATING	IP68	IP68	IP68	IP68	IP68	
TRANSDUCER CABLE	7.5m	7.5m	7.5m	8.5m	7.5m	
WEIGHTS	Control Box	2kg	3.5kg	7.9kg	10kg	
	Transducers	2.4kg	4.8kg	7.2kg	14.4kg	
	Total Boxed Weight	5.4kg	13kg	17kg	20.6kg	27kg
DIMENSIONS	Control Box	175 x 130 x 75mm	280 x 280 x 130mm	388 x 395 x 100mm	388 x 340 x 100mm	390 x 415 x 140mm
	Transducers & Mounting Rings	Ø 95mm x 75mm				
WARRANTY	2 Years					
EFFECTIVE BIO-FOULING PROTECTION FOR	Steel, Stainless Steel, Aluminium, GRP, FRP, Kevlar, Titanium, Rigid Plastics					

① AC Power Ratings are measured during operation at 230V AC

② Built-in AC Voltage Selector Switch – Models Marked \* must be switched to the correct position (either 110V or 230V depending on AC supply characteristics)  
The AC Voltage Selector Switch is located under the front cover of the control unit - CHECK AC VOLTAGE SELECTOR SWITCH POSITION, PRIOR TO INSTALLATION

③ Protection for Battery Instals – When powered from the DC power input, Sonihull system outputs will turn off when the voltage drops below 12 VDC

Humidity Preconditioning  
Maximum Operating Temp.  
Altitude Rating  
94/9/EC ATEX Certified

40°C at 96% RH  
40°C (104 °F)

Precautions must be taken for systems that are to be installed at an altitude of over 2000 m  
Transducers approved for use in Zone 0. Control boxes certified for use in Zones 1 and 2, if fitted in a separate cabinet



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## **SONIHULL**

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