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SONIHULL
 Ultrasonic Antifouling Protection

SONIHULL AT A GLANCE

Sonihull Antifoul Protection Overview



LED	Colour	Normal status	Fault status	Comments
Power on	Red	ON	Flashing	Flashing is normally due to incorrectly seated transducers
Output 1	Green	ON	OFF	OFF when not connected or in fault
Output 2	Green	ON	OFF	OFF when not connected or in fault
Status OK	Green	ON	OFF	Fault indication, check power and transducers
Status output	2 core connector providing +5vDC output in Normal condition, and 0V in fault condition.			



SONIHULL

Ultrasonic Antifouling Systems for the marine industry worldwide. Having grown considerably over recent years, NRG Marine now caters for applications within a wide range of environments, including commercial, military, working and pleasure vessels.

ANTIFOULING SOLUTIONS Protection for;

- Hulls - GRP, Composite, Aluminium, Steel, Carbon/Kevlar.
- Raw water circulation - Sea chests, valves, filters, heat exchangers, manifolds, circulation pipework, A/C, fire pumps.
- Drive trains and Stearage - Shafts and Propellers, IPS drives, Stern drives, Water Jets, Rudders and trim tabs, Arneson drives.

Also for Diesel bug supression, keeping stored water fresher.



5 duos installed for hull and sea chest protection



Install on Sunseeker Manhattan 64



65M Heesen with 4 Duos for protection of sea chests, manifolds & heat exchangers



Excellent results after a 12 month trial in Palma Mallorca



Results after 12 month trial in Dubai

HOW DOES IT WORK?

Sonihull systems produce multiple bursts of ultrasonic energy in a range of targeted ultrasonic pulse frequencies.

This produces a pattern of alternating positive and negative pressure, whereby the microscopic bubbles that are created during negative pressure are imploded when positive pressure is applied.

This implosion has a cleansing effect that destroys algae, the first trophic level of the food chain, making the surface less attractive to other marine life that feed on the algae. This microscopic movement of water also prevents barnacle and mussel larvae from embedding.



Icon 62 hull and inlet protection

THE BENEFITS

SONIHULL WILL save you money \$\$-££-€€

- A clean hull and drive train will reduce fuel bills by 20-30%.
- Reduced vibration and improved performance.
- Reduce maintenance costs and expensive liftouts.
- Suppress diesel bug and keep stored water fresher.

ENVIRONMENTALLY FRIENDLY

REDUCE YOUR CARBON PADDLE PRINT

With new environmental regulations set to substantially reduce the effect of traditional antifoul paints, NRG Marine sees Sonihull Ultrasonic Antifouling Systems as a credible addition to traditional antifouling methods. Looking to the years ahead, Sonihull will play a significant part in the future of marine antifouling.

TECHNICAL SPECIFICATION

- Power Supply Approvals: UL and CE
- Voltage: 100-240v AC 50/60Hz 12-24v DC
- Power: Sonihull Mono: 3.6 Watts
Sonihull Duo: 7.2 Watts
- Ultrasonic Generator
- Pulse Frequency: 19.5 kHz - 55 kHz
- Control Box Rating: IP65
- Transducer Rating: IP68
- Transducer Cable Length: 6.5 metres
- Weight: 4 Kg
- Dimensions: 175mm x 130mm x 75mm
- Warranty: 2 years

COMPONENTS INCLUDED

Sonihull Duo

- Sonihull ultrasonic pulse generator control unit with two transducer outputs
- Ultrasonic transducer complete with 6.5 metres of cable x2
- Mains cable with 3 pin UK standard fused plug
- Marine Grade epoxy glue,
- Vaseline

Items required but not supplied with the Sonihull kit.

- 4 x screws for mounting control box.
(some people prefer to use strong velcro to secure)

SIMPLE INSTALLATION

- Transducers are simply bonded to the inside of the hull's outer skin.
- For vessels up to 30ft. transducers should be installed in the rear 3rd of the yacht.
- For vessels up to 50ft. transducers should be installed 1/3 and 2/3 along the length of the yacht hull.
- For larger vessels, the Sonihull is a modular solution, please contact your dealer to discuss your requirements.

Mounting of Control Box

Find a suitable dry location above the waterline, with suitable access to either mains or battery power. Remove the lid to expose mounting holes for the control box.

Mounting of Transducer

- Use sandpaper to prepare the surface for the mounting of the transducer.
- The surface needs to be flat and smooth to ensure the best transmission quality.
- Use a hard epoxy resin to bond the mounting ring to the hull – ensuring there is no glue residue on the inside of the ring.
- Ensure surface to surface contact, with no air trapped between the transducer and hull.
- Allow epoxy to dry before screwing in the transducer.
- Add a smear of Vaseline (1mm) to the surface of the transducer before screwing into the mounting ring.
- Run the cables back to the control box and attach
- Power on – simple as that!

- ✓ Hull Protection
- ✓ Stern / IPS Drives
- ✓ Fully monitored
- ✓ Sea chests & heat exchangers
- ✓ Integratable with yacht management systems
- ✓ No noisy clicking to keep you awake. Sonihull, the quietest ultrasonic system of all

INSTALLATION TIPS

To get the best performance from the system there are 3 main considerations, if you follow these simple rules you will get the maximum benefit from the system.

1. Location location location.

The transducer needs to be mounted on an obstruction free area below the water line and on the inside of the external skin. To enable the transducer to create resonance it must be away from any bulk heads, bracing and ribs etc, ideally in the centre of a panel and not closer than 300mm from any obstruction. Compare this to the skin of a drum, to make the best noise you would hit in the middle, not at the edges, transducers need the same consideration.

2. Installing the transducer mounting ring.

The Transducer needs complete face to face transmission, and that means flat-flat-flat, not curved, bowed or rough- only flat will work, also ensure that there are no drips of glue inside the ring. A little pimple of glue splash can hold the transducer off the surface by just 1mm. That air gap is enough to stop any signal transmission. If there are any concerns that the surface is not flat, follow the manual for using the aluminium disk as a problem solver.

3. Applying the Vaseline.

The transducer needs to have a smear of vaseline on the face to ensure correct transmission, - just a smear, the thickness guidance would be like putting butter on bread, so that good contact can be made. Do not put too much that the signal is insulated, as the transducer face will not get close to the surface. As good practice when you first screw in the transducer, nip it up firmly by hand, (not mega tight by the hand of Goliath's big brother). Then remove the transducer and observe the swirl marks of the vaseline on the face of the transducer, and look for the wetting on the hull inside the ring. This will give you a clear indication to the quality of the surface contact.



Patrol boat by Kvichak, with Sonihull protection on the hull and twin Rolls Royce water Jets



Sonihull protection for Kevlar/Carbon hull and Arneson drives capable of speeds of 62knots



Sonihull protection for sea water intakes and pipe work



Off Shore wind farm service vessel



Damen tug with hull and sea chest protection

SEA CHEST AND RAW WATER PIPE PROTECTION

Proven around the world on commercial, military and private vessels as a most valuable addition to the protection of inlets and pipework.

Protection against growth and scaling, maximising flow for intakes, filters, pipework, valves and heat exchangers.

With no expensive anodes to replace, no corrosion and completely safe for use on both steel and aluminium vessels. NRG Sonihull systems have proven themselves as the most credible Antifouling alternative to suppressed current/cathodic protection systems.

This protection has not only been demonstrated in boats, but also in fixed installations, such as pumping stations, fire pumps, oil rigs, bunkering, desalination and more.



V16 MTU engine, with sonihull sea chest protection

PIPE ADAPTOR

Sea chest and raw water pipe work protection

Fouling in pipe work can be a major problem. It doesn't take long before fouling can start to restrict the flow of water, which can lead to engines and generators being destroyed as a result of over heating and water pumps wearing out due to the sharp increase in pressure. Sonihull has been successfully proven around the world on commercial, military and private vessels as a most valuable addition for the protection of inlets and pipe work.

The PA (Pipe Adaptor) for the Sonihull transducer simply bonds to the side of the pipe, allowing the ultrasonic pulses to be transmitted directly into the pipe wall, suppressing the build up of bio film and inhibiting barnacle larvae and other critter's from embedding. Maintenance free, with no expensive anodes to replace, and completely safe on steel and aluminium vessels. The sonihull and the PA mounts have proven themselves as the most credible alternative to impressed current / cathodic protection systems.

Suitable for all rigid pipes

- ✓ Steel
- ✓ Aluminium
- ✓ Stainless steel
- ✓ Titanium
- ✓ Fibreglass
- ✓ Rigid plastic

Ordering information

Product code: PA-50 (2" pipes)	Sonihull adaptor for 50mm
Product code: PA-80 (3" pipes)	Sonihull adaptor for 80mm
Product code: PA-100 (4" pipes)	Sonihull adaptor for 100mm
Product code: PA-150 (6" pipes)	Sonihull adaptor for 150mm
Product code: PA-200 (8" pipes)	Sonihull adaptor for 200mm
Product code: PA-250 (10" pipes)	Sonihull adaptor for 200mm

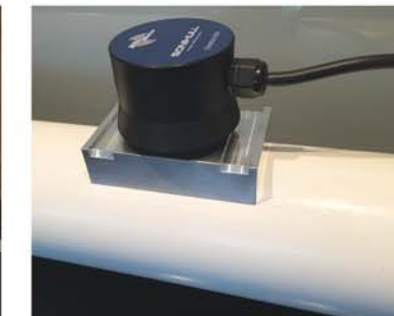
**Other sizes made to order.*

INSTALLATION GUIDE

- Find suitable location for pipe adaptor, ideally no closer than 250mm to a flange or bulkhead.
- Take into account accessibility, so the transducer can easily be installed and maintained.
- Prepare the pipe by sanding to remove any surface paint and to create a key for epoxy glue to bond with.
- Apply epoxy glue to the curved surface of the pipe adaptor, paying attention to the center of the curve, ensuring there are no air bubbles.
- Press the adaptor on to the pipe firmly so that the epoxy glue spreads evenly.
- Hold The pipe adaptor in place so the epoxy glue can dry without the adaptor moving. The locating grooves are ideal for holding in place with Zip-tie or jubilee clips.
- Apply 1-2mm of Vaseline across the face of the transducer.
- Holding the pipe adaptor so it can't move, screw in the transducer fully into the adaptor.
- The transducer should be tightened to ensure good contact, but not over tightened.



Pipe Adaptor installed on a Alamarin-jet water jet



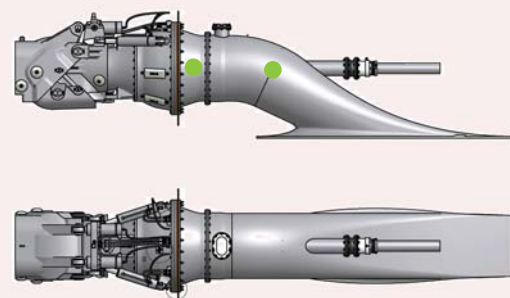
JETDRIVE

Following extensive tests with both Jet manufacturers and Military vessels, Sonihull has proven to be the most effective solution for protection from marine growth on Marine water jet drives.

Sonihull now can offer proven and effective solutions for water jets including

- Rolls Royce
- Hamilton's
- MJP - Marine Jet Power
- Alamarin-Jet

Maintaining performance, fuel efficiency, reduced cavitation, reduced maintenance bills.



● Recommended Sonihull transducer locations

1x Transducer located in the centre of the impeller housing.
1x Transducer located on the intake housing in line with the impeller shaft.

SONISHAFT

NEW FOR 2016

Protection for prop shafts and propellers.
The worlds first ultrasonic anti-fouling solution for prop shaft driven vessels.

Suffering from a fouled and barnacle encrusted propeller?
Fuel consumption and vibration up and performance down?

Introducing Sonishaft, the worlds only ultrasonic anti-foul system designed specifically for shaft driven vessels. The Sonishaft used in conjunction with the standard Sonihull transducer, clamps directly on to the prop-shaft transmitting the Sonihull industry leading ultrasonic anti-fouling pulse directly into the prop shaft, suppressing barnacle and bio-growth on the prop-shaft, propeller and anodes.



Sonishaft installed on a Jeanneau 64

Typically you would expect to see a reduction in growth by about 80% or more. Plus the additional benefits of maintaining performance, smoother ride and reduced wear and tear - All this while saving about 20% on your fuel bills!

- >20% saving on fuel consumption
- Good acceleration
- Maintain performance
- Reduced vibration
- Permanent installation
- Reduced wear and tear
- Very low maintenance
- Galvanically Isolated

Sonibush

To ensure the long term performance of the Sonishaft, it is recommended that the bushes are replaced annually or after 250 engine hours.

Sonibush re-order code SB03

The Sonishaft comes complete with a universal vibration absorbing stabilizing mount, adaptable to most vessels that is easily installed between the gearbox and the stern tube wet gland.

STERN DRIVE

Stern drives have always been problematic in terms of antifouling. Due to the many different metals they are composed of, their moving parts and soft bellows, conventional copper impregnated antifoul paints are not an option.

Sonihull coupled with the Stern Drive Adaptor offers great protection to this most important part of the boat that is prone to fouling. Results show an impressive average of 80% reduction in fouling.

This device enables a Sonihull transducer to be simply screwed in, so that ultrasonic signals can be directly injected into the stern drive. The NRG Stern Drive Adaptor mounts via the 16-18mm bolt found on the fixed end of the stern drive leg steering ram.

