heavy duty

ultrasonic anti fouling

in the best Dutch maritime engineering tradition

SHIPSONIC

Ultrasonic antifouling keeps your hull, pipework or box-coolers clean with zero impact on the environment.

The working of ultrasonic marine growth prevention is very simple: any object, immersed in sea water, that vibrates in the ultrasonic frequency range, and with enough sound pressure, will not be fouled. Larvae of fouling organisms do not settle on objects in ultrasonic vibration.

Shipsonic develops, tests and installs ultrasonic antifouling systems for commercial marine, offshore, fishery and industry. Our track record proves that our systems are highly effective.

- One time, simple installation
- Plug and play commissioning
- Dry installation; no dry docking needed
- Maintenance free
- Reduce fouling costs
- Less down time
- Environmentally friendly

Products

CONTROL UNITS

A system consists of a control unit with connections for 1, 2, 4, 6 or 8, 12, 16 or 20 transducers.

All systems can be delivered functioning on 240 VAC or 24 VDC. Or auto-switching combinations of these. The systems for 12, 16 or 20 transducers can function on 240 VAC or 400 VAC. Systems for 1 or 2 transducers are also available on 12 VDC. All together we have 21 different models.

Shipsonic or one of our agents will help you with the optimal configuration of your system. This configuration depends on the type and size of the object (sea-chest, box-cooler, bucket-strainer, hull, etc). We often place different transducer types on 1 object, to guarantee a wide spectrum of ultrasonic frequencies.

Thus, control units and transducers are sold separately, according to individual system design. Our Power Circuit Boards (PCB's) can also be supplied independently.

TRANSDUCERS

Shipsonic offers 3 different types of transducer.

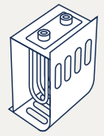
This transducer is exeptionally small given its power and response frequency. That makes this model especially apt for installation on box-coolers, where installation space is often confined.

The 100Watt, 28kHz is our most used model. Very apt for installation on piping.

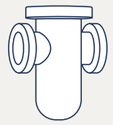
A heavy hitter, 120 Watt! Very good for application on thick walls of sea-chests and hulls.

Transducers are directly glued on the object, optimizing energy transfer. All models can also be used with an aluminium installation adaptor. The adaptor can be machined in the same curve as e.g. piping or a bucket strainer on which the transducer is to be installed.

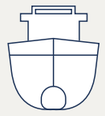
Shipsonic applications



BOX-COOLERS

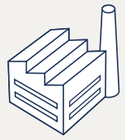


STRAINERS

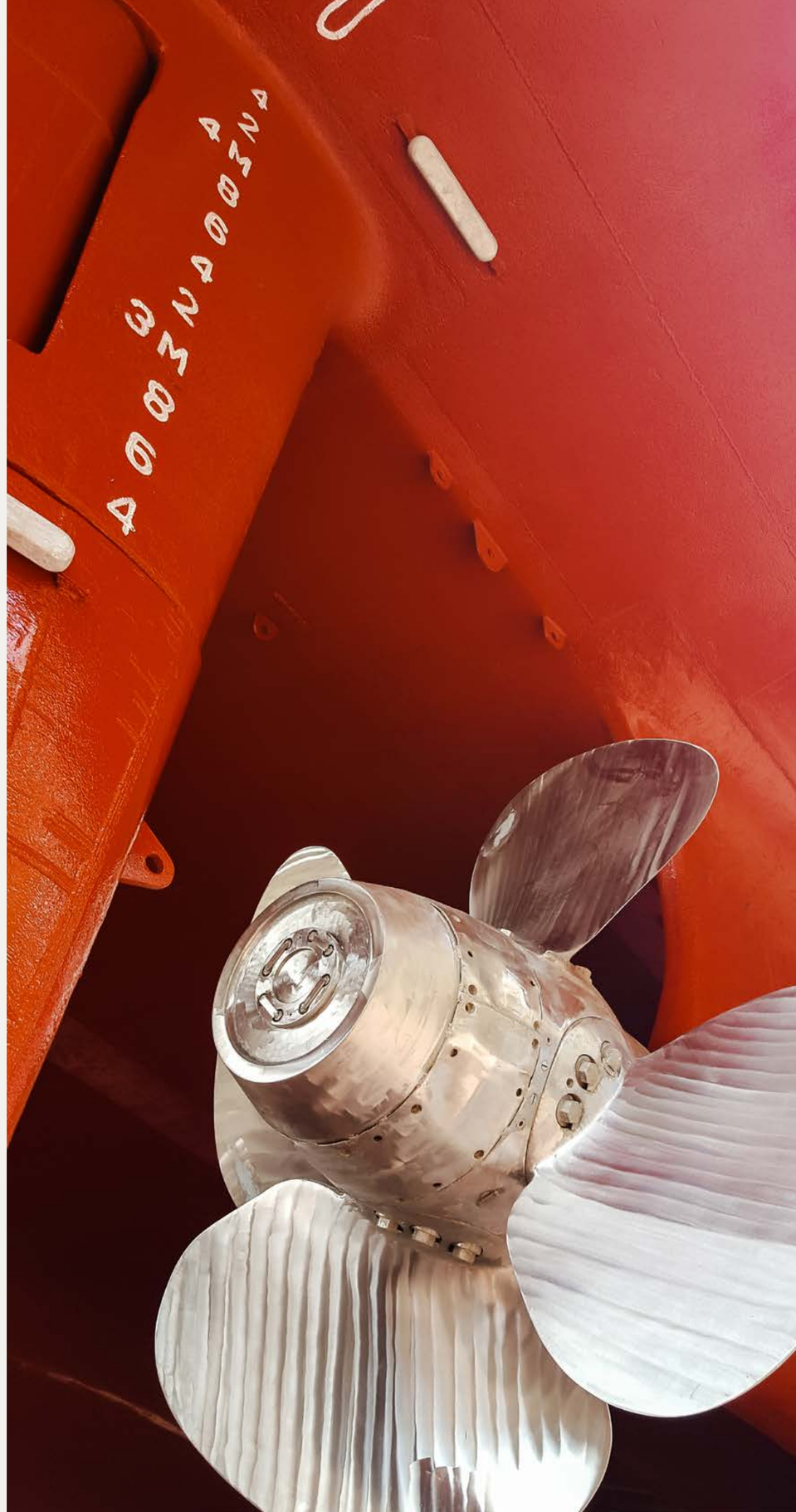


HULLS

SEA-CHEST/
INTAKE PIPE

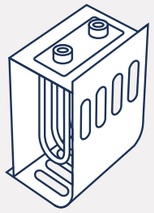


INDUSTRY



Projects

Shipsonic delivers tailor made solutions for your fouling problems. Installation of the system is straightforward, but system design; where to install which transducer type, is where we make the difference. Shipsonic always sends an engineer or helps you on-line in to optimize the design of your system.



BOX-COOLERS

VESSEL NAME
Saffier

INSTALLATION DATE
April 2018

VESSEL AREA
European waters

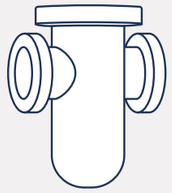
SYSTEM
HDS40-240

APPLICATION
Box-coolers

High temperature (HT) box-coolers normally need not be protected, the tube bundle of these coolers becomes so hot that there is hardly any fouling.

Low temperature (LT) or LT/HT box-coolers do need protection, especially against the blue mussel and barnacles.

For the ultrasonic system to function properly, you need to start with a clean box-cooler. Box-coolers already fouled by mussels, barnacles and the like will not be cleaned by the system. The system stops these organisms from settling. To avoid fouling, the system must be switched on permanently.



STRAINERS

VESSEL NAME
Precedence

INSTALLATION DATE
January 2015

VESSEL AREA
Singapore

SYSTEM
HDS20-240

APPLICATION
Strainers

Ships equipped with so-called dry plate-coolers need seawater clear of flotsam. Flotsam would obstruct the sea flow through their coolers. Hence the sea water passes through strainers. And these strainers are often blocked by marine fouling. Protecting these strainers against marine fouling is a very common ultrasonic application. Shipsonic normally installs 1 x 100 Watt and 1 x 120 Watt with curved adapters on the side of the strainer housing.

Transducer installed on side of strainer

With Shipsonic fouling protection

Sister vessel without Shipsonic fouling protection

HULLS

The photos show the hull to be completely clean, but the cooler pipes have some growth. This proves the effectiveness of the system; the cooler pipes are mounted on the hull with brackets, which isolates them from the ultrasonic waves traveling through the hull. These photos are taken after 2 seasons in the water.

The owner is very satisfied, without the Shipsonic system the hull would be equally fouled like the cooler pipes!

VESSEL NAME
Fangst

INSTALLATION DATE
September 2015

VESSEL AREA
North Sea/Barents Sea

SYSTEM
2 x HDS20-240

APPLICATION
Hull

SEA-CHEST/ INTAKE PIPE

The pilot boat Nisr plies in a fouling prone environment. Haul outs were needed to clean the engine cooling system from rapid and aggressive marine fouling. Resulting in higher maintenance costs and more downtime. 2 x 100 Watt transducers installed on the intake pipe chambers was sufficient to solve this issue!

VESSEL NAME
Nisr

INSTALLATION DATE
October 2017

VESSEL AREA
Persian Gulf

SYSTEM
1 x HDS20-100

APPLICATION
Sea water intake pipes

Blocked sea water intake pipe

Control unit installed

Transducer installed

INDUSTRY

Also on shore fouling can be a problem. The iconic Kraanspoor building in Amsterdam, built on a crane rails of a former shipyard, is designed to have zero energy consumption. Heating and cooling are done using the brackish water of the Amsterdam North Sea Canal. and the water intake pipes of this system are protected by Shipsonic against blockages caused by marine fouling! Other on shore applications involve combating bacterial growth in paper plants or agriculture.

PROJECT
Kraanspoor building

INSTALLATION DATE
April 2020

LOCATION
Amsterdam

SYSTEM
HDS20-240

APPLICATION
Industrial airconditioning intake pipe

Water intake pipe must be clean before installation

Water intake pipe before Shipsonic fouling protection was installed

Transducer installed

Research and Development

Shipsonic spends a lot of effort on Research and Development, specifically aimed at heavy duty, commercial applications. R&D has concentrated on:

- Robust and reliable control units. To make sure crew will not have to repair our systems at the high seas, we offer failsafe electronics, where all components stay within 75% of maximum allowed temperature. Our modular design ensures that individual components can be swapped without having to replace entire systems.
- High powered transducers with optimally designed housing and the correct frequency range. Our transducers are 80, 100 or 120 Watt.
- Acoustic analysis for system design. Shipsonic has developed a Digital Signal Processor coupled to either a magnetic ultasonic microphone or a ultrasonic hydrophone. We combine this with temporarily (removable) installed transducers which allows us to do in-situ analysis of ultrasonic sound pressure to optimize the design of your system.

For 2 years the passenger ship Polarlys has been a Shipsonic test vessel for hull protection of large vessels. Following excellent results, the vessel is now equipped with 28 transducers. The largest vessel in the world with complete ultrasonic hull protection!

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member koninklijke metaalunie

SHIPSONIC

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