COLTRACO
Ultrasonics | since 1987



PORTASCANNER® WATERTIGHT PLUS

Ultrasonic Watertight Integrity Indicator designed for watertight structures and hatch covers

Made in the UK.

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WWW.COLTRACO.COM/PORTASCANNER-WATERTIGHT-PLUS

INTRODUCING THE PORTASCANNER® WATERTIGHT PLUS

Introducing the **Portascanner® WATERTIGHT PLUS** - the world-leading, fully ABS Type-Approved and RINA-Accepted Portascanner® Watertight.



What is it? It's a watertight integrity tester designed to inspect hatch covers, watertight doors, and MCTs.

What is it for? To test the integrity of sealed compartments such as watertight/weathertight doors, hatch covers, and multiple cable transit areas, on ships, warships, marine structures, and offshore oil & gas platforms, with three intelligent operational modes and the ability to detect leaksites as small as 0.06mm.

The **Portascanner® WATERTIGHT PLUS** offers functionality and display, all packaged into a smart, ergonomic, and rugged enclosure.

What are the main features? The implementation of three testing modes, including Open-Hatch mode specific for hatch covers, gives the user greater control when testing a wide variety of hatches and watertight structures.

- **Type** – Ultrasonic Watertight Integrity Indicator
- **Part Number** – 509004-WTPLUS
- **IMPA P/N** – 652778
- **NSN** – 6625-99-257-8336

APPLICATIONS

The adaptable **Portasonic® WATERTIGHT PLUS** is in many industries such as:


Shipping/Marine


Defence/Naval

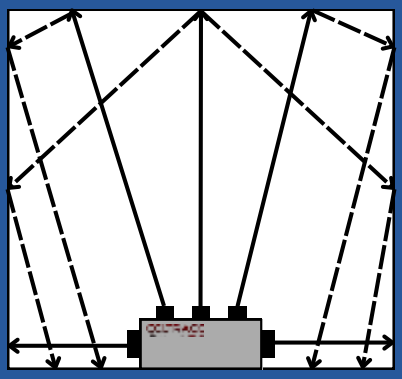

Oil & Gas


Hatch-covers


Watertight/ Weathertight Doors


Multiple Cable TRANSIT AREAS

NEW ADVANCED GENERATOR



- **Direct output**: Allows high detection in target area with high efficiency
- **Magnetic mount for hatch coaming** (no need to place the generator on cargo floor)
- **High sensitivity detection**: The directed sound waves are reflected inside the cargo hold, giving you an overall coverage to detect leaks as small as 0.06 +/- 0.02mm.
- **Lightweight Portable unit**: weighs only 400g
- **Up to 10 hours Battery life,** 10% of what bulky designs require



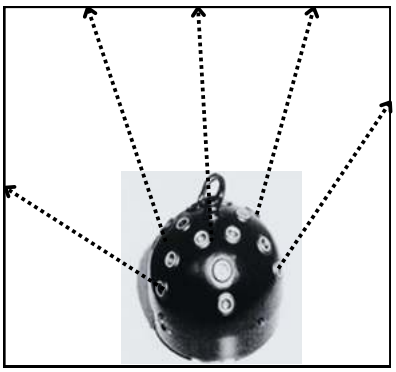


The Portascanner® Watertight PLUS generator fills the entire cargo hold with ultrasound. The receiver detects the smallest of ultrasonic signals so that leaks **as tiny as 0.06mm** can be located. The specific power output of the generator is chosen to fill the space and works in tandem with the receiver without being overpowered to saturate the receiver. This ensures that Open Hatch Values remain a meaningfully quantitative measurement through which to assess watertightness /weathertightness effectively. “Overpowered” receivers cut off the reading at an arbitrary maximum which would make the Open Hatch Values meaningless.

It is important to avoid a maximum reading for the OHV because a maximum reading could, actually, be anything above the maximum and is therefore useless in comparing to the closed hatch value, when the measurement is taken.

There is a misconception that ultrasound travels in only one direction, it actually reflects off surfaces, giving you full coverage of the cargo hold. **Having 5 transducers is as powerful as heavy and bulky older style generators, which are still used on most basic models in the market.**

COLTRACO’S HISTORY OF GENERATORS



Coltraco’s **Portascanner® WATERTIGHT** was the first to use ultrasound to detect leak sites. Numerous technological evolutions resulted in the first-class **Portascanner® WATERTIGHT PLUS** of today, which continues to be used onboard Naval vessels such as the Royal Navy and Indian Navy since its inception.

First manufactured in 1993 and winner of the Safety at Sea Award in 1994 when we produced the world’s first omni-directional “hedgehog design” Supplementary Bulk Generator

Over 30 years later, we upgraded our “hedgehog designs” which were inefficient because...

- Ultrasound is **randomly transmitted** resulting in inefficient hatch cover testing
- **Poor battery life/heavy batteries**
- **Not magnetically mountable** – cargo floor generator placement time wasted

All these **make testing more physically intensive/inefficient**

ENSURE INTEGRITY WITH THE PORTASCANNER® WATERTIGHT PLUS

Flexible
Optimised flexible sensor wand for testing in tight, challenging areas such as MCTs

Accessible
Suitable for use by any operator, with training and free lifetime technical support provided

Flexible
Variable gain multi directional 5-transducer generator for optimised testing and greater accommodation for working on different-sized structures



Accurate
Accurate versatile instrument capable of detecting holes as small as 0.06 mm

User-friendly
User-friendly display with three intelligent operational display modes: Linear, Decibel (dB), and Open-Hatch mode

Versatile
Versatile range of power settings catering to small, medium, and large cargo holds

Time-saving
Time-saving feature whereby the generator can be placed on the hatch coaming

Did you know...

Chalk Test & Hose Tests are outdated methods of testing, with significant shortfalls in accuracy and reliability. Chalk Testing simply confirms contact between the seal and compression bar rather than weathertightness, so it is easy to overlook small leaks / damage which may affect the overall weathertightness of a hatch. Chalk/Hose Testing cannot test MCT's. Hose Testing requires volumes of water to be sprayed to check for leaks, which can potentially harm water sensitive cargoes like grains, urea, and steel, posing a threat to the vessel and its cargoes it aims to protect.



– NorthStandard, 2024 deduce Chalk and Hose Tests are "an undesirable method to measure weathertightness."

ENHANCED INTERFACE AND INTELLIGENT OPERATIONAL MODES



LINEAR MODE



DECIBEL (dB) MODE



OHV% MODE



The **Portascanner® WATERTIGHT PLUS** provides three intelligent operational modes, offering users greater control when testing a wide range of hatches and watertight structures.

With the implementation of these testing modes, users can now switch between **Linear**, **Decibel (dB)**, and an **Open-Hatch** mode (specific for hatch covers) that displays the percentage of leaks, thanks to a new user-friendly interface upgrade.

Revolutionise your watertight and weathertightness assessments with our powerful, portable **Portascanner® WATERTIGHT PLUS** - the ultimate tool for pinpointing leaks and ensuring safety and watertight integrity.



WHAT'S IN THE KIT

- Portascanner® WATERTIGHT PLUS Handheld Receiver Unit
- Portascanner® WATERTIGHT PLUS Flexible Receiver Wand with Aluminium Rod Extensions
- 1.8m BNC Coaxial Cable (longer cable available)
- Portascanner®5-transducer Ultrasonic Generator
- Headphones
- User Manual
- Calibration Certificate
- Robust Carrying Case

BENEFIT FROM WARRANTY AND SUPPORT

- Main Unit: 3 years
- Sensors: 1 year
- Lifetime customer support

CHOOSE FROM OUR WATERTIGHT RANGE







PRODUCT FEATURES	WATERTIGHT II	WATERTIGHT PLUS	WATERTIGHT PRO
Measurement Type	Linear, Decibels	Linear, Decibels, % Open Hatch Value	Linear, Decibels, % Open Hatch Value, Cross-sectional Leak Size, Volumetric Flow Rate of Water through a leak
Display	55 x 28mm backlit LCD	55 x 28mm backlit LCD	7" Capacitive Touchscreen, 1024 x 600
Generator Type	Wide range generator, 3 transducers, one power output only	Wide range generator, 5 transducers, variable power	Supplied with two generators: Precision generator with variable power (1 - 100%), Wide range generator, 3 transducers, one power output only
Accuracy	0.06mm	0.06mm	0.06mm
Classifications & Approvals	CE, ABS Type Approved, RINA Accepted	CE, ABS Type Approved, RINA Accepted	CE
Sensor Type	270mm Solid Sensor Wand with 270mm length aluminium extension rod on 1.8m coaxial cable	350mm Flexible Wand with 540mm length aluminium extension rods on 1.8m Coaxial Cable	350mm Flexible Wand with 540mm length aluminium extension rods on 1.8m Coaxial Cable
Battery Life - Generator	10 hours	10 hours	Precision generator: 6 hours, Wide Range generator: 10 hours
Battery Life - Receiver	10 hours	10 hours	6 hours
Special Features	Signal output via headphones	Signal output via headphones, Automatic % Open Hatch Value Calculation	Signal output via headphones, Automatic % Open Hatch Value Calculation, Record and export data through USB, Generator tripod for better positioning

ADVANTAGES VS. OTHER WATERTIGHT TESTING METHODS

PRECISE
Detect leaks as small as 0.06mm with readings in Linear, Decibel (dB) and Open-Hatch mode

GREEN Technology
A clean method of testing that does not violate any environmental codes, unlike hose testing

REDUCE RISK
Non-invasive & non-intrusive technology. Pinpoint the exact leak locations and their extent in order to perform corrective actions to reduce risk of water ingress

COMPLIANT
Readings provided in dB for regulation compliance or mathematical linear and percentage for ease of use

APPROVALS
Full ABS Type Approved & RINA Class Accepted

AWARD FINALIST
IHS Markit Safety Product of the Year nominated.

STAY COMPLIANT WITH REGULATIONS

DELIVER BETTER WATERTIGHT INTEGRITY ONBOARD

SOLAS Reg II-1/11.1
"Where a hose test is not practicable [sic] it may be replaced by [sic] an ultrasonic leak test or an equivalent test. In any case a thorough inspection of the watertight bulkheads shall be carried out."

IMO SOLAS Reg II-1/21.3
"The watertight doors and all mechanisms and indicators connected therewith[sic] shall be periodically inspected at sea at least once a week."

IMO SOLAS Reg II-1/13-1.1
"Where penetrations of watertight bulkheads and internal decks are necessary for access, piping, ventilation, electrical cables, etc., arrangements are to be made to maintain the watertight integrity."

IACS Rules - Requirements for Ultrasonic Watertight Integrity Service Providers
"2. Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment."

TECHNICAL DATA

Dimensions	**Receiver: 85x229x35 mm (L x H x W)** **Generator: 147x89x54 mm (L x H x W)**
Unit Weight	**Receiver: 400 g, Generator: 400 g**
Power Supply	**1x PP3 9V (Generator 3x PP3 9V)**
Battery Life	**10 hours Continuous Use**
Sensor	**Type: Flexible Sensor Wand** **Connectivity: 1 m BNC Coaxial Cable** **Frequency: 40 KHz (Generator: 40 KHz)**
Operating Temperature	**-20 ~ +70°C (-4 F +158 F)**
Enclosure IP Rating	**IP 65**
Display	**55x28mm blacklit LCD**
Smallest detectable leak	**0.06 ±0.02 mm hole size**
Operating Modes	**Linear/Decibel/OHV modes**
Clasifications & Approvals	**RINA, ABS Type Approval**
Registrations	**UKCA CE, ISO 9001, ISO 14001**

LINEAR MODE



DECIBEL (dB) MODE



OHV % MODE



Please, refer to the user manual detailed decriptions of these modes and how to use them.

With the implementation of three testing modes, the user has much greater control when testing a large variety of hatches and watertight structures. A new special feature now allows the user to switch between Linear, Decibel (dB) and an Open-Hatch- mode displaying the percentage leak.

- User-friendly display, versatile instrument with the ability to detect holes as small as 0.06 mm.
- Three intelligent operational modes and additional power settings for increased gain when operating in large cargo holds.
- The 5-transducer variable gain transducer allows for more optimized testing and provides greater flexibility when working on structures of various sizes.
- Flexible sensor wand which allows testing in tight, difficult places such as MCTs.

OPTION 1: decibel (dB)	OPTION 2: Linear/ numerical	OPTION 3: OHV %
Up to 33 dB = watertight seal	0 - 5 = watertight seal	*WATERTIGHT*
33 dB - 57 dB = weathertight seal	6 - 100 = weathertight seal	*WEATHERTIGHT*
58+ dB = weak seal compression	101+ = weak seal compression	*LEAK*
high values = full leak site	For hatch cover: above 10% OHV = leak site. high values = full leak site	Percentage leak value also displayed.

OUR THROUGH-LIFE COMMITMENT TO YOU

We look after our customers throughout the lifetime of your equipment.

Every main unit is supplied with **3 years warranty** and **1 year warranty on its sensors and accessories.**

We are proud to offer free lifetime technical support and online training is available on request with a range of solutions designed to meet your calibration requirements:



Onshore Calibration
This can be done in our UK laboratory or in one of our 11 ODA Service Centres present globally
We also support 1-1 exchanges with a pre-calibrated unit to reduce processing time
We also offer a unit collection service for customers who are not used to sending equipment out of their respective countries.

Remote Calibration
This can be done remotely onboard the vessel by a competent crew member to reduce the hassle of offloading the instrument while the vessel is at sea

ABOUT COLTRACO ULTRASONICS

Coltraco is ISO 9001:2015 and ISO 14001 approved

"To see the sounds that others cannot hear"
"To measure the hitherto unmeasurable"

Our organisation comprises:

- Our **Company**
- Our **Laboratory**, co-located with the Centre for Advanced Instrumentation at Durham University
- Our **Research Organisations**, the Durham Institute of Research, Development & Invention (DIRDI)
- Our **Centre for Underwater Acoustic Analysis** (CUAA)

BY BEING SCIENCE-LED:

We identify and nurture brilliant minds, creating a unique research environment at Durham University, which is a globally outstanding centre of teaching and research excellence.

In our research at DIRDI, we undertake fundamental research into the physical laws of the universe, alongside applied research in Physics, Mathematics, Engineering and Computer Science in acoustics, electromagnetism and information engineering.

It is this research and manufacturing excellence, and our enduring commitment to the sustainment of our technologies in the field, that makes Coltraco Ultrasonics the partner of choice for customers and distributors in 120 countries.

We deliver genuine value for our customers through our scientific and institutional values, and the global quality of our commercial and technical services.

Engaged in Research, Design, Development, Manufacture, Integration & Sustainment of high-exporting advanced technology systems, products and services.
We monitor and measure an array of specialised environments to deliver the Safesite™ on land and the Safeship™ at sea.

Safeship™
Today our instruments are aboard 17% of the world's 60,000 ships, preventing ships' catastrophic failure, by monitoring watertight integrity on the one hand, and the safe contents of fire extinguishing gases such as CO2, on the other. These are the basic principles by which we became a Safeship™ company in the maritime sector.