



PORTASCANNER™

PORTASCANNER™ TECHNICAL SPECIFICATIONS



COLTRACO
Ultrasonics | since 1987

+44 207 629 8475

info@coltraco.co.uk

www.coltraco.com

Coltraco Limited, 46 Mount Street, Mayfair,
London, W1K 2SA, United Kingdom

OUR MISSION: THE SAFESHIP™ & THE SAFESITE™

We welcome you into our mission to create accurate, reliable and easy to use instrumentation, which enhance our customers' safety management.

The issue is not just about compliance with the regulations; it is about the safe ship offshore and the safe site onshore.

This helps our customers to ensure lower risk, higher protection and business continuity.

Safety for safety's sake.



CONTENTS

- 03** INTRODUCTION
- 05** FUNCTION
- 06** ADVANTAGES
- 07** OPERATION
- 09** HOW PORTASCANNER™ WORKS
- 10** TECHNICAL SPECIFICATIONS
- 11** KIT CONTENTS: READY-TO-GO PACKAGE
- 12** APPLICATIONS
- 13** WHY BUY PORTASCANNER™ FROM COLTRACO?
- 14** AFTER SALES

INTRODUCING THE PORTASCANNER™ II WATERTIGHT

TYPE: Portable ultrasonic water-/weather-/gas-tight integrity tester

FUNCTION: To verify the integrity of sealed compartments; its main application is testing watertight/weather-tight doors, hatch-covers and multiple cable transits

PART NUMBER: 509004-0311

NSN: 6625-99-257-8336

IMPA: 652778



THREE CORE BENEFITS

1. World-Class Accuracy

The most mathematically accurate unit of its type locating a leak site via visual and audible readings and identifying its extent with a definitive numerical result. Can test seals to weathertight standard, totally watertight and leaks as small as 0.06mm.

2. Quick & Easy to use

It is a simple solution with few limitations and is easy to learn how to operate. Testing can be completed far more quickly, by just one person, in comparison to labour and time intensive hose testing.

3. Enhances Safety

Tests can be conducted more frequently and can contribute to safety management and preventa-tive maintenance procedures onboard. Protecting the valuable cargo, the vessel's structural integrity and thus also the crew.

FEATURES

- **IDEAL FOR** inspecting hatch covers, watertight doors, multiple cable transits, scuttles, bulkheads and any watertight compartment
- **PORTABLE** and very lightweight, allowing equipment to be transported, carried and operated with ease
- **ULTRASONIC GENERATOR** has a range of 100m and is fitted with magnets to be positioned on the hatch-combing inside.
- **THE SUPERIOR ALTERNATIVE** to high pressure hose or chalk testing with greater accuracy, quicker and saves costs long-term
- **EFFECTIVE TRAINING** with us thanks to our DVD & Online Training Videos, helpful for non-native English speakers too
- **APPROVED** - full Classification Society Approval with RINA
- **MOST ACCURATE METHOD** - accurate to +/- 0.06mm with a tolerance of 0.02mm
- **RESULTS:** 0-5 means "watertight" > 100 means "weathertight" - anything above needs to be checked.





FUNCTION

TYPICAL EXAMPLE IN 7 STEPS:

1. Connect the Rod and Headphones to the Receiver and place the Generator into the compartment to be tested.
2. Fix the Generator by the magnet to any metallic surface not far from the seal being inspected.
3. Switch the Generator 'On' and all the readings will dramatically increase.
4. Leaving the cover of the seal being tested open and check around the seal to ensure a strong signal is being received at all points.
5. The compartment is then closed and the inspection of the seal begins.
6. If there is a leak or area of weak seal compression readings will increase.
7. By moving the Sensor to where the signal is strongest, the operator can identify the exact location and extent of any leak site and steps can be taken to fix this issue.

ADVANTAGES

- **ACCURATE:** can identify leaks as small as $0.06 \text{ mm} \pm 0.02 \text{ mm}$
- **SIMPLE:** highly intuitive operation, enabling regular testing
- **NO TRAINING COSTS:** free-of-charge online, telephone and email training support-through-life
- **COST EFFECTIVE:** the most mathematically accurate watertight integrity test indicator with dual decibel & mathematical display
- **EFFICIENT:** seals, hatch-covers, watertight/weathertight doors and MCTs can be tested efficiently and reliably, thus saving time and costs
- **LIGHTWEIGHT & PORTABLE:** it can be carried around/into compartments with ease
- **TESTING PRE- or POST- LOADING:** does not affect cargo & one can test with contents in situ
- **THREE READING TYPES:** 2 readings on LCD display with Bar Graph & Numerical as well as Audible via headphones, for ease of operation and reporting
- **MAGNETIC BASE:** allows generator to be fitted on hatch-combing just inside the hold, saving significant time and effort no longer needing to climb down into holds
- **UNIQUE TONE OF AUDIO INDICATION:** allows the user to distinguish whether it is the ultrasound signal or background noise being received
- **GREEN TECHNOLOGY:** a clean method of testing that does not violate any environmental codes, unlike hose testing
- **NO IATA TRANSPORTATION RESTRICTIONS:** uses safe, clean & environmental ultrasonic technology and does not use liquid batteries
- **ARCTIC USE:** hose-testing is impossible to conduct in severe arctic conditions



OPERATION

The Portascanner™ Watertight has two main components – a generator and receiver. The ultrasound generator emits a specific frequency of ultrasound (40,000 Hz). It is magnetic so can be attached onto a wide range of surfaces within sealed areas. The receiver then picks up the signal and converts it into a result indicating W/T integrity.

RECEIVER

- The receiver is tuned to detect a specific frequency of ultrasound.
- The receiver comes with a sensor rod which allows a user to scan the entirety of a seal at close range.
- The receiver has both a visual and audio output.
- The visual output is shown on the LCD screen of the receiving unit. It is read mathematically and in decibels.
- There is a numerical representation, which can be changed into a decibel (dB) reading, allowing seals to be tested to certification society standards.
- There is also a bar graph representation of the strength of the ultrasonic signal which is being detected.
- The audio signal is delivered via headphones which plug into the receiver unit (standard 3.5 mm jack).
- The receiver uses a process called heterodyning to change the ultrasound signal received into an audio signal which the user can hear.

GENERATOR

- The generator is placed on one side of a sealed compartment and turned on.
- The user stands on the other side of the compartment and uses the sensor rod to scan the seal.
- The receiver displays the strength of detected signal on the screen and the user can also hear it through the headphones.
- Leak sites will be apparent from an increased signal strength (see Figure 1).
- This will be shown by an increase in the readings on the screen display and in the volume of the audio signal.

Figure 1. Watertight Compartment

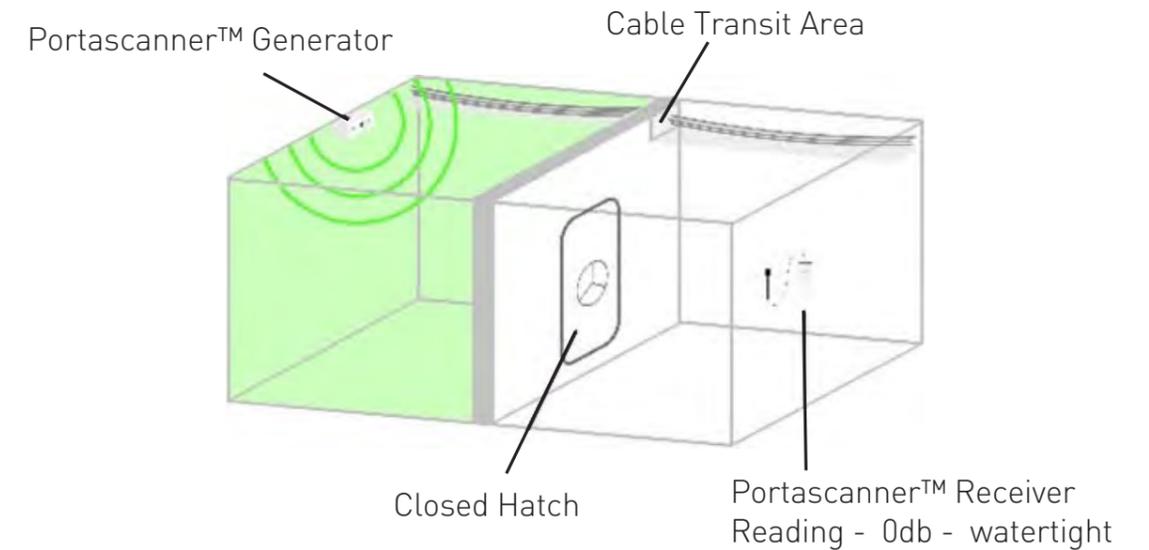
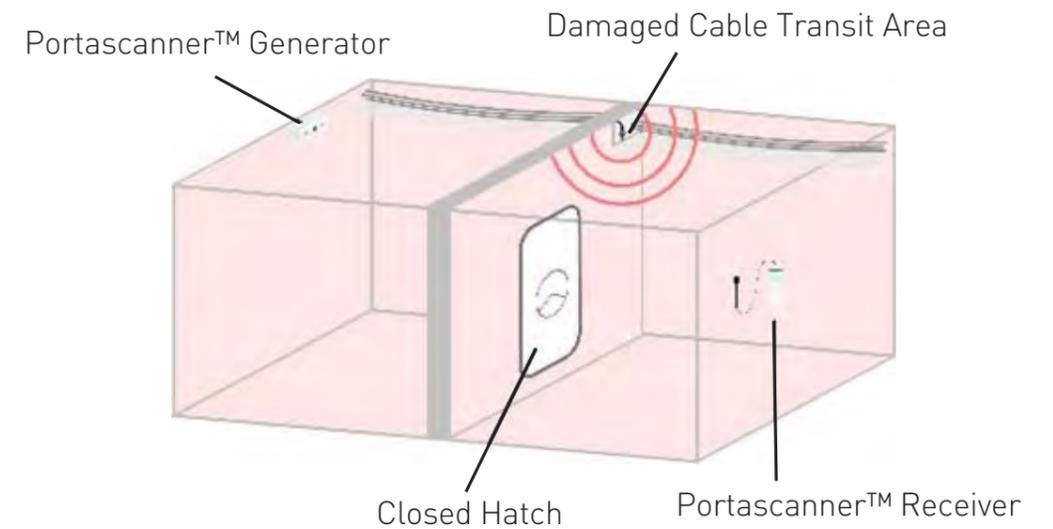


Figure 2. Non-compliant Compartment



RESULTS

The extent of the leak is indicated by the numerical readout. In terms of the numerical readout:

- "0 - 5" or "0 dB" indicates seal watertight integrity
- "6 - 100" or "1 dB - 26 dB" indicates weather-tightness only
- "101+" or "27 dB+" indicates weak seal compression
- High values indicate a full leak site

HOW PORTASCANNER™ WORKS

PORTASCANNER™ RECEIVER



PORTASCANNER™ GENERATOR



TECHNICAL SPECIFICATIONS

PORTASCANNER™ RECEIVER

Output	1 watt (maximum) audible signal (via calibrated headphones with visual 4 digit LCD display and graph)
Size	21.5cm x 8.5cm W x 3.5cm H
Weight	419 Grams
Powered By	1 x 9V PP3 batteries with low battery indication
Battery life	10 hours continuous use minimum
Enclosure	Aluminium IP65 Waterproof

The receiver uses ultrasonic technology to convert the 40KHz pulses sent by the generator into three easily comprehensible readings: audible, bar graph and numerical which enables the operator to understand if the seal is wholly watertight or to what extent a leak exists.

PORTASCANNER™ GENERATOR

Output	0.1 watt/100dB unidirectional
Mounting Arrangements	Permanent magnet
Size	15cm L x 9cm W x 5cm H
Weight	431 Grams
Powered by	2 x 9V PP3 batteries
Battery life	10 hours minimum
Enclosure	ABS material

The generator is an ultrasonic generator with three transducers. This will produce a strong signal in one direction i.e. directly from the transducer which fills the compartment being tested with ultrasound pulses e.g. providing sufficient coverage to fill the hold when the hatch-covers are closed. The generator is permanently fitted with a powerful magnet which allows it to be attached to the vessel's structure where required. A magnet cover is provided when the magnet is not in use.

KIT CONTENTS

READY-TO-GO PACKAGE



EXTENSION ROD

- 310mm L x 25 mm, Cable Length: 1m
- Supplied in 3 parts
- Alternative lengths can be supplied

HEADPHONES

- Type: Head-band electrodynamic headphones
- Frequency response: 20 – 18,000 Hz
- Impedance: 32 Ohms ± 5%
- Sensitivity: 105 dB SPL at 1kHz
- Adaptor plug: 3.5 mm to 6.3 mm type

APPLICATIONS

1. HATCH-COVERS 2. DOORS 3. MULTIPLE CABLE TRANSITS

Shipping and Marine Applications

- Bulk carriers
- General cargo vessels
- Container operators
- Reefers
- Ro-Ro vessels
- Supply vessels
- Tankers
- Shipbuilders and Shipyards during construction activities
- Class Hull Surveyors during survey of ships

Defence Applications

- Warships
- Military aircraft airtight seals
- Submarines
- Tank testing
- Auxiliary vessels
- Naval support vessels
- Armoured vehicle NBC/CW seals
- Citadel for Nuclear Biological Damage Control (NBCD)
- Safe to use onboard any vessel thanks to using ultrasonic technology

Offshore Oil & Gas Application

- Drill-ships
- Rigs
- Platforms
- And other vessels



WHY BUY PORTASCANNER™ FROM COLTRACO?

STORY OF COLTRACO

Since 1987 Coltraco Ultrasonics have been designing and manufacturing ultrasonic instrumentation for safety and servicing. In 2012 we partnered with a fellow well respected UK OEM of thickness gauges to design our current models.

OUR COMMITMENT TO SCIENCE

We are committed to designing and manufacturing the most mathematically accurate products and systems globally, supported by the highest standards of technical support and customer care.

OUR COMMITMENT TO SAFETY

We are dedicated to being a Safeship™ and Safesite™ company, encouraging safety for safety's sake. Our Portascanner™ is part of our range of 14 products and systems which are all designed to offer alternative methods to traditional means of testing, for example fire suppression systems, watertight integrity, flow testing and more.

QUALITY

Our Portascanner™ is carefully hand built and undergoes rigorous quality testing to ensure it meets the high standards expected by our customers, and to provide them with long-term reliability.

AFTER SALES OPTIONS

PERMASCANNER™ DYNAMIC

We are committed to developing continuous monitoring solutions especially for hatch-cover maintenance. This will enable the hatch-covers to be tested whilst on voyage at sea to see how the vessel is responding to the dynamic sea states.

OPTIONAL ACCESSORY: EXTENDED HI-LIFE GENERATOR

Additional standard generators can be used when testing large holds and the Extended Hi-Life Permascanner™ Generators can provide up to 10 days' continuous testing whilst at sea.

INTERACTIVE TRAINING PROGRAMME

We have developed a programme to educate users (particularly non-native English speakers) quickly and simply on how to use our equipment.



PORTACARE™

Opt in package provides through-life maintenance support, enabling customers to cap the cost of ownership and optimise operational availability.

For one annual fee, Coltraco will cover all repairs and calibration costs, and the customer is guaranteed priority assistance in spares and repairs.

In the event of component obsolescence, Coltraco guarantees to exchange the unit for a like-for-like model type at no additional charge.

The Portacare™ package does not cover customer-induced damage, but as a Portacare™ customer you have priority to repairs and spares with a 25% discount.

Upgrade to Portacare™ TMSS PREMIER which covers all repairs, calibration, and guarantees an advance exchanged unit is always ready-to-ship.

*Coltraco®, Coltraco North America®, Portamarine®, Portalevel®, Permalevel®, Portagauge®, Portasonic®, Portamonitor®, Portasteel™, Portascanner®, Permascanner® and others are trademarks or registered trademarks of Coltraco Limited, UK. DuPont™, FM-200®, FE-25™, FE-13™, and FE-241™ are trade-marks or registered trademarks of E.I. du Pont de Nemours and Company and its affiliates. Novec™ 1230 is a trademark owned by 3M.



WWW.COLTRACO.COM



Call: **+44 207 629 8475**



Email: **sales@coltraco.co.uk**

COLTRACO
Ultrasonics | since 1987