



QControl

We Measure Quality

**European Preferred
Service Provider**



APRIS

Acoustic Pulse Reflectometry
Heatexchanger Tube Inspection System
Fast || Reliable || Intuitive

Acoustic Pulse Reflectometry Inspection System



- **Unparalleled Accuracy:** APRIS leverages advanced imaging techniques to deliver precise and detailed inspection results, leaving no room for errors or oversights.
- **Time and Cost Efficiency:** Our streamlined inspection process saves valuable time and resources by minimizing downtime and eliminating the need for expensive equipment disassembly.
- **Enhanced Safety:** With APRIS, we can identify potential defects or anomalies in heat exchangers, ensuring a secure working environment and preventing unexpected failures.
- **Extensive Coverage:** Our comprehensive inspections encompass a wide range of heat exchanger types, including shell and tube, finned tube, and more.

Boiler tube failures continue to be the major cause of breakdowns in marine vessels. Statistically these are responsible for an overall availability loss of 6% of the units.

— Offshore Magazine

\$1.5bn

An unexpected shutdown of the FPSO incurs a loss of maximum

— Tradewind News

Heat-exchanger tube failures accounted for 31% of the unplanned downtime in oil & gas industries. This resulted in over \$1.2 billion of unplanned production interruptions globally.

— Oil & Gas Journal

Up to
50%

of industrial energy output is wasted. Preventive maintenance helps to reduce that wastage in a safe and efficient way.

— Inside Oil & Gas

The most important quality inspection function is prevention, whose most important goal is to make it before nonconformity.

— The Journal of Power Engineering

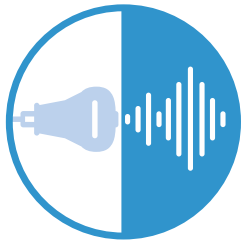
A delay of just
20 minutes

can result in tens of thousands of dollars of lost revenue depending on the size of the operation and power prices.

— Powermag

The Technology

How APRIS Works



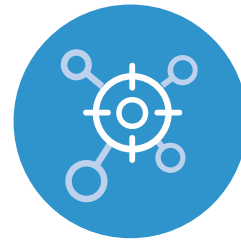
STEP 1

Probe injects an acoustic pulse down the tube.



STEP 2

Returned echoes generated by defects are recorded and analysed.



STEP 3

A set of proprietary, patented algorithms identifies and reports the exact location, type and size of inner diameter tube defects.

Applications

The APRIS NDT technology finds applications in various industries, including:

- **Oil and Gas:** Guarantee the integrity of heat exchangers in refineries, petrochemical plants, and offshore installations, thereby minimizing the risk of leaks and optimizing operational efficiency.
- **Power Generation:** Detect and evaluate potential defects in heat exchangers used in power plants, ensuring uninterrupted power production and preventing costly shutdowns.
- **HVAC and Refrigeration:** Maintain optimal performance and energy efficiency in commercial and industrial cooling systems by identifying and resolving issues in heat exchangers.
- **Manufacturing:** Enhance quality control processes by inspecting heat exchangers used in the production of automotive, aerospace, and other manufactured goods.
- **Food and Beverage:** Safeguard hygiene and prevent contamination by conducting thorough inspections of heat exchangers in food processing and beverage production facilities.

APRIS Unique Key Features

Key attributes that set Talcyon's APRIS apart from conventional tube inspection tools and methods in the current market today.



ANY TUBE SIZE UP TO 4" IN DIAMETER, REGARDLESS OF SHAPE OR MATERIAL

- U-bends, twisted and spiral wound tubes
- Ferrous & Non Ferrous, graphite and plastics



ULTRA-FAST, NON-INVASIVE INSPECTION

- Less than 10 seconds per tube
- No need for inventory of consumable probes or standards



LESS EXPERTISE REQUIRED

- Testing is easily performed by any operator with minimal training
- Artificial Intelligence based data interpretation & report generation

How to minimise in-service tube failures using APRIS?

1 MINIMIZE DOWNTIME

- Inspect 2,000 tubes per equipment during a 10-hour shift
- Use less resources and consumables for inspection

2 EFFECTIVE DECISION-MAKING

- Precise and reliable results based on 100% inspection
- Corrective actions in terms of plugging, re-tubing and design process change

3 PREVENTIVE MAINTENANCE

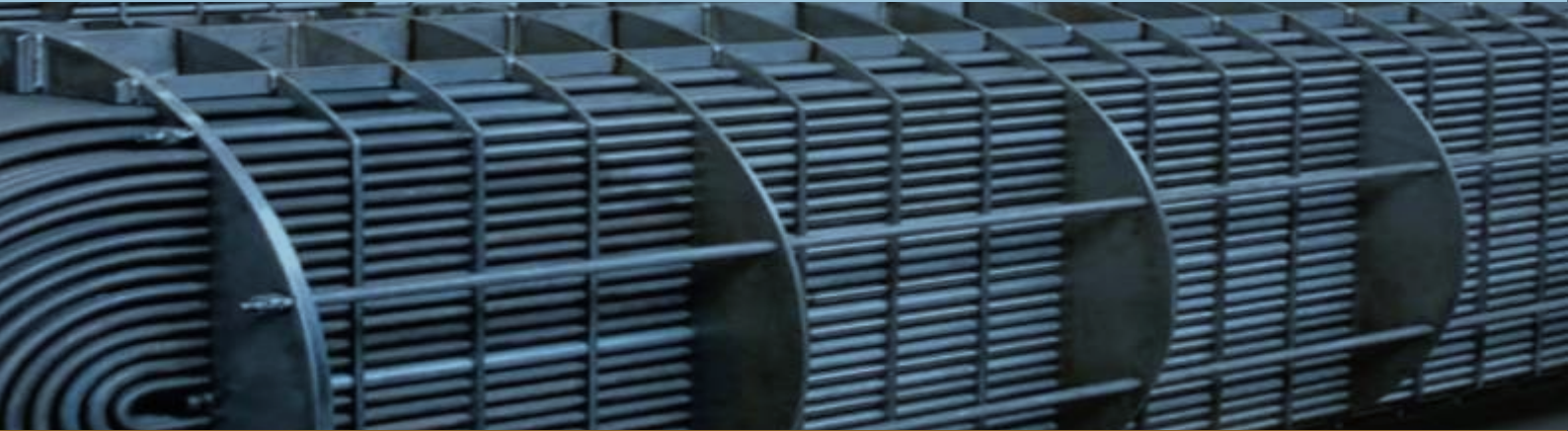
- Mitigate risks associated with production output
- Conserve the lifespan of equipment

Your Trusted Partner for Heat Exchanger Inspections

Tube Testing

The impact of human factors is more prominent with the increased complexity and sophistication of today's NDT techniques. Root cause analysis of some of the tube failures identified the need for reliable technicians and technologies.

Technologies for inspecting heat exchanger tubes are rapidly changing and continually evolving. Variance in test results depends on both the instrument and operator expertise. APRIS delivers notable advantages in tube inspection for the marine sector by minimizing downtime and enhancing operator-level productivity.



Experience Advanced Heat Exchanger Inspections with APRIS NDT Technology!
Ensure Efficiency, Safety, and Reliability for Your Heat Exchangers

Are you seeking to address concerns regarding the performance and integrity of your heat exchangers? Look no further! QCONTROL specializes in delivering cutting-edge non-destructive testing (NDT) services using the state-of-the-art APRIS technology.

The new APRIS technology is a quick, certified and accurate tube inspection method. Our team of certified and experienced engineers is available to perform the inspection services Europe wide within a minimum time requirement. The outcome report with the repair advice is available within 24 hours.

Do not compromise on the performance and reliability of your heat exchangers! Contact us today to schedule an APRIS inspection and benefit from our team of experts, advanced technology, and competitive pricing.

About QControl

Established in 2011 and based in Athens, Greece, QCONTROL provides complete solutions in Measuring & Quality Control Equipment and Services for the Industry, Oil & Gas and Maritime sectors. We aim is to completely support all measuring applications of our customers' manufacturing processes (Design – Production – Quality Control – Maintenance). Additionally, we ensure & strengthen our partner's investment through constantly offered calibration, training, equipment upgrades and supportive services. Our product offering includes instruments and services for the following applications:

- ▮ Non-Destructive Testing
- ▮ Material Analysis & Testing
- ▮ Dimensional Measurements
- ▮ Laboratory Equipment
- ▮ Weighing Systems
- ▮ Reverse Engineering
- ▮ HVAC & HSE
- ▮ Predictive Maintenance



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