

SPECIALIST PACKAGE

FAIRLEAD & MOORING CHAIN INSPECTION

THE PURPOSE

This document is composed to assist our clients and the supply chain with a high-level understanding of the benefits and services associated with our innovative inspection solutions for critical mooring systems.



SONOMATIC



INNOVATIVE INSPECTION SOLUTIONS FOR CRITICAL MOORING SYSTEMS

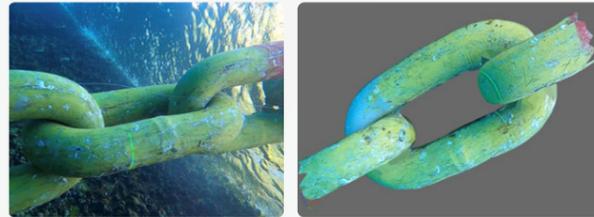
Sonomatic is a global leader in advanced non-destructive testing (NDT) and integrity management solutions, delivering cutting-edge inspection technologies for the offshore industry. Our Fairlead and Mooring Chain Inspection services provide comprehensive, high-accuracy assessments, ensuring the safety, reliability, and longevity of mooring systems used in Floating Production Storage and Offloading (FPSO) units, CALM buoys, and other moored offshore assets.

OUR CAPABILITIES

1. Advanced Subsea Inspection Technologies

Our inspection methodology leverages state-of-the-art robotic crawlers and remotely operated vehicles (ROVs) equipped with Video Laser Scan (VLS™) technology. This innovative approach integrates photogrammetry and laser triangulation, providing:

- ✔ High-accuracy 3D mapping of mooring chain links.
- ✔ Precise corrosion pit measurements for integrity assessments.
- ✔ Comprehensive link dimension analysis, including diameter, length, and grip zone condition.
- ✔ Reduced operational risk by eliminating the need for diver intervention.



2. Custom-Engineered Robotic Crawlers

Sonomatic deploys purpose-built robotic crawlers featuring:

- ✔ Magnetic adhesion for vertical and inverted locomotion inside fairleads.
- ✔ High-pressure cavitation water jet cleaning (10 gpm @ 4000 psi) for effective marine growth removal.
- ✔ Integrated HD cameras and laser profiling systems for superior visual and dimensional inspections.
- ✔ Compact design for access to confined spaces such as fairleads and caissons.



3. Remote and Asset-Integrated Deployment

Our approach minimises the need for support vessels by enabling asset-deployed ROVs and robotic crawlers. This reduces operational costs by eliminating vessel and dive team expenses, carbon emissions through the use of efficient, remotely controlled systems as well as HSE risks by reducing human exposure to hazardous offshore conditions.

CASE STUDY

MOORING CHAIN FAIRLEAD INSPECTION

Location: Offshore Asia

Scope: Cleaning and VLS™ inspection of mooring chain links inside the fairlead of a deepwater production platform.

Project Highlights:

- ✔ Successful deployment of a custom multimission crawler for simultaneous cleaning and inspection.
- ✔ High-precision 3D photogrammetry and metrology for accurate condition assessment.
- ✔ Use of a specially designed deployment frame to access challenging fairlead setups.
- ✔ Delivered on time, meeting all technical specifications and quality standards.

Key Benefits of Sonomatic's Inspection Services:

- ✔ **Enhanced Data Accuracy:** Advanced photogrammetry and laser scanning ensure precise measurement and defect detection.
- ✔ **Operational Efficiency:** Rapid inspection turnaround with minimal disruption to asset operations.
- ✔ **Cost Savings:** Reduces reliance on costly offshore vessel support and manual interventions.
- ✔ **Increased Safety:** Fully remote operations eliminate diver-related risks.
- ✔ **Regulatory Compliance:** Meets industry standards and client specifications for mooring system integrity management.

Before Cleaning:



After Cleaning:



Before Cleaning:



After Cleaning:



Why Choose Sonomatic?

With decades of experience in offshore NDT and a commitment to technological innovation, Sonomatic is the trusted partner for mooring chain and fairlead inspections. Our solutions provide actionable insights that enhance asset integrity, reduce maintenance costs, and extend the service life of critical offshore infrastructure. For more information on our Fairlead & Mooring Chain Inspection services, contact Sonomatic today.

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