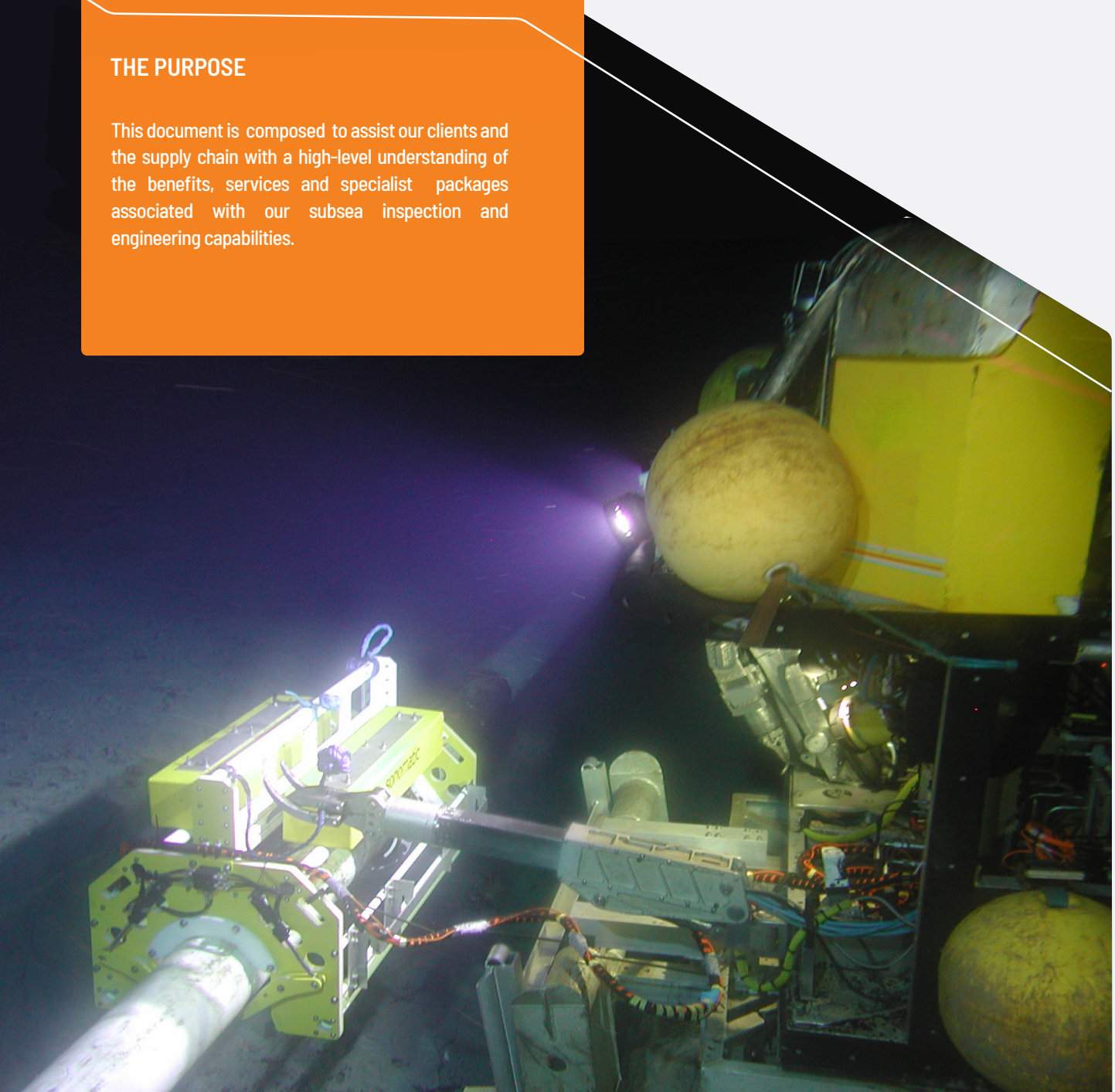
CAPABILITY STATEMENT

SONOMATIC SUBSEA

THE PURPOSE

This document is composed to assist our clients and the supply chain with a high-level understanding of the benefits, services and specialist packages associated with our subsea inspection and engineering capabilities.



WHO WE ARE

CWL GROUP

The CWL Group is an international consortium of companies that delivers a comprehensive range of asset integrity, inspection, maintenance and specialist access services across a wide range of industries and sectors.

AUAV · GEO OCEANS · ROTOTECH · SONOMATIC · SONOMATIC RAIS · VERTECH GROUP

PRESSURE DYNAMICS · UNITED FLUID POWER · aps · ABSEIL ACCESS · REMO · FOTOTERRA SONOMATIC

FTI-INTL

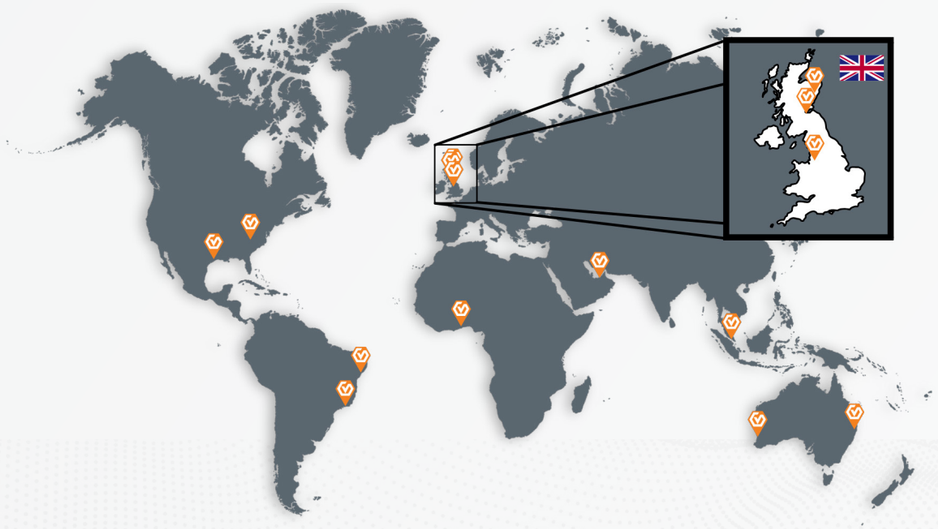
SONOMATIC

Sonomatic is a subsidiary of the CWL group specialising in the design, development and application of Non-Destructive Testing (NDT) inspections. Since the company's formation in the 1980s, we have combined these NDT processes with integrity engineering capabilities to provide fully integrated inspection packages that directly meet the needs of the client.

Bringing innovative bespoke inspection solutions to the market through in-house development of equipment, software and robotics, Sonomatic resides as the global leader for ROV-deployed subsea inspection and Non-Intrusive Inspection (NII) technologies.

Our team is committed to providing accurate, proactive inspection and engineering solutions that enable clients to manage the integrity of newly constructed assets and make informed decisions crucial to the safe continued operation of maturing ones.

GLOBAL FOOTPRINT



WHAT WE DO

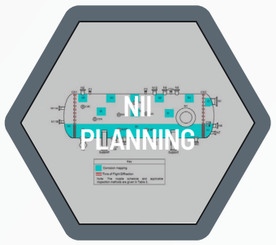
Sonomatic provide integrity engineering and NDT services at every stage of a project's life cycle. NDT subject matter experts assess each scope of work individually to ensure that the inspection solution(s) will meet the desired deliverables. If a unique solution is required, our R&D department can design and manufacture inspection technologies and scanners that will exactly meet our client goals. Our integrity service offerings provide industry leading inspection and engineering evaluations of the inspection data to enable recommendations for repeatable inspection programmes.

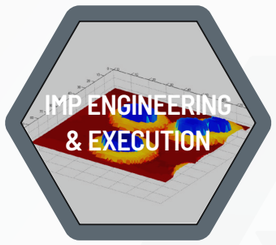
SUBSEA

ONSHORE/ TOPSIDE

RESEARCH & DEVELOPMENT

INTEGRITY SERVICES





SUBSEA

Our primary inspection philosophy is that design and execution may require one or more solution depending on the expected defect mechanism, distribution, severity, location and what information is necessary to make an assessment of the condition of the asset.

Our portfolio of NDT technologies can provide qualitative (screening/discovery) and quantitative (sizing) information to meet those inspection deliverables. These can be applied on piggable pipelines in lieu of in-line inspection (ILI) and/or for ILI verification and on unpiggable pipelines and structural components. It is common practice to use a strategic approach to maximise productivity on a subsea campaign by using the discovery technologies to prove the absence of damage, and where any features of interest are located and require critical sizing, then these can be assessed using quantitative methods.

Sonomatic support the development of inspection technologies, specialising in the design and manufacture of a large range of custom-built ROV-deployed and diver deployed scanners that can be mounted via magnetization or hydraulic clamping to the component.

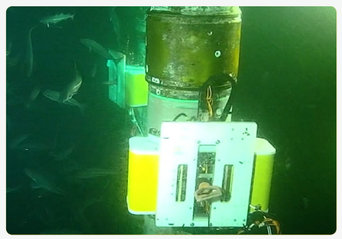
INSPECTION TOOLS

MAG-ROVER

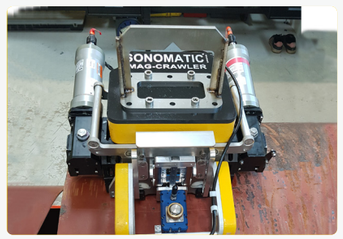
MAG-ST

MINI-MAG

MAG-NAUTILUS



MAG-CRAWLER



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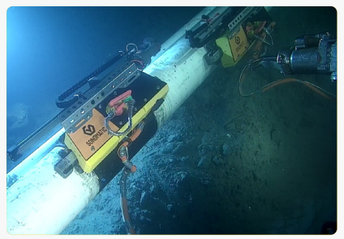
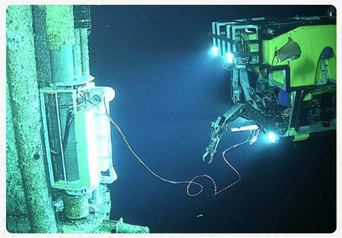
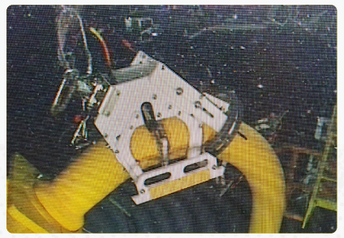


ROV-IT



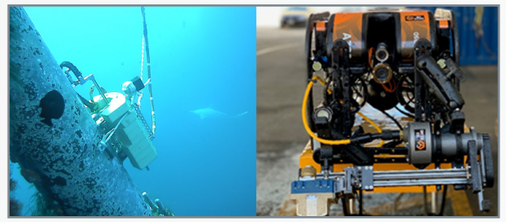
NAUTILUS

BEND SCANNER



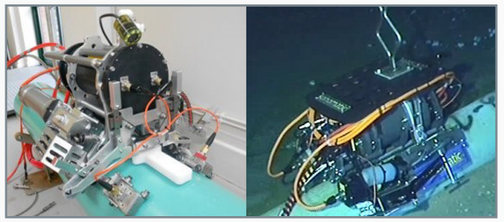
CASE STUDIES

KEY SONOMATIC SUCCESS STORIES



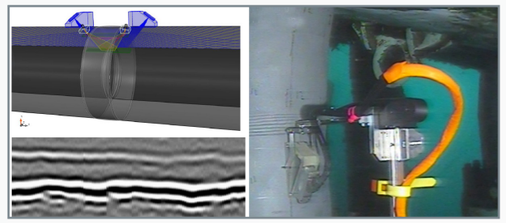
ASSET DEPLOYED ADVANCED NDT

Sonomatic was contracted to deploy ACFM and Ultrasonic Corrosion Mapping on critical risers. A detailed feasibility study identified Sonomatic's Mag-Nautilus deployed by Geo-Oceans' vLBV suitable for the work. A multi-disciplined ROV and Advanced NDT team were mobilized to the facility for the work. All deployment was successfully carried out directly from the facility deck. ACFM and ultrasonic corrosion mapping was completed with no requirement for a DP vessel or divers, providing a safer approach with significant cost savings versus previous approaches.



EXTERNAL SCREENING OF SUBSEA PIPELINES

A client operated numerous subsea pipelines that were not designed for in-line inspection and required an assessment of their condition. The inspection to assess their condition had to be performed using externally applied tools with rapid scanning capability. Sonomatic designed and developed a bespoke magnetic wheeled, steerable scanner that is deployable by an ROV for the inspection which was able to deploy EMAT and Multiskip. From the top of the pipe, the techniques were able to inspect the full circumference of the pipe in one pass. An average of 320 metres was scanned per day with over ten kilometres of pipe scanned.



ROV & DIVER DEPLOYED PHASED ARRAY ULTRASONIC TESTING & TOFD TESTING

Sonomatic was engaged for a critical inspection of spider buoy welds to enable life extension. The requirement was an inspection of dissimilar heavy wall duplex and super duplex girth welds with material thickness up to 57 mm thick with a high POD for small flaws. The inspection included TOFD, ACFM and use of advanced PAUT data capture, with the capacity for plain wave imaging, total focusing method and full matrix capture. Blind validations were successfully carried out and all welds were successfully scanned. This successful inspection justified the life extension of the I-Tubes.

CHALLENGING ACCESS

A client required inspection on various conductors located within concrete cells at the base of the structure with limited access. This required an advanced ultrasonic tool to be deployed by an opening that was 625 mm in deep waters. Access was simulated to assess that a MAG-Nautilus tool could be deployed via an LBV ROV through the small opening available. In total 624 connectors were inspected and all equipment successfully retrieved.

SUBSEA TECHNIQUES

EMAT TECHNOLOGY

EMAT technology is performed from top-of-line and has the capacity to detect internal and external corrosion on subsea pipelines with NWT <15 mm with coating thickness up to 4 mm.

The technique does not require direct coupling as the input and received signals are generated by electromagnetic responses. This screening technique provides details of the lateral extent of corrosion with banding to indicate the through-wall severity level.

MEC™ – MAGNETIC EDDY CURRENT TECHNIQUE

MEC™ (Magnetic Eddy Current) is the next generation and a further development of the industry proven, fast corrosion screening SLOFEC™ technique.

MEC™ is a dynamic electromagnetic technique that operates on a high frequency Eddy Current field with a controlled direct current magnetic field and specially developed sensors to achieve a high sensitivity in the detection of pitting and corrosion defects in ferromagnetic and non-ferromagnetic materials, including through various types of coatings.

PULSED EDDY CURRENT (PEC)

PEC is a comparative technique whereby advanced processing of the eddy current signal decay and comparison with a reference signal, allows for the determination of the average wall thickness (AWT). This fast screening method allows for the assessment of the general condition of structural steel and is best suited for general corrosion type defects in subsea pipelines. A major benefit of PEC is its ability to inspect through challenging coatings and marine growth.

MULTISKIP

Multiskip is an ultrasonic rapid screening technique for corrosion and erosion detection on subsea pipelines ≥4" diameter. It uses two transducers mounted on wedges in a pitch-catch to send angled shear wave beams through the pipe wall by skipping multiple times off the ID and OD surfaces. The system is capable of high speed, high resolution data collection. For corrosion, loss of signal amplitude, reduction in signal arrival times and changes to signal shape are used to provide qualitative and quantitative information.

GUIDED WAVE TESTING (GWT)

GWT is primarily a screening method used only to establish if there are any corrosion issues that need further investigation. Long lengths of difficult to access pipe can be examined from a single location with minimal preparation and while the process is on-line. GWT systems use low frequency guided ultrasonic waves that propagate along the pipe wall and is designed for rapid screening of long lengths of pipe to detect external or internal corrosion.

TIME OF FLIGHT DIFFRACTION (TOFD)

TOFD is an industry norm for pipeline weld inspection. This ultrasonic technique is the best method for defect detection and accurately sizing & monitoring the through-wall height of weld defects.

PHASED ARRAY UT (PAUT)

PAUT is an advanced method of UT that uses a multi-element probe in pitch-catch or pulse-echo mode for applications including weld inspection, corrosion detection and corrosion monitoring. The three main advantages of PAUT systems over standard UT methods are speed, simplicity, and more comprehensive results.

ULTRASONIC TESTING (CORROSION MAPPING)

Ultrasonic corrosion mapping involves scanning the pipeline to determine the minimum remaining thickness for each position and can be achieved using conventional UT probe or a PAUT probe. The systems deployed produce comprehensive, high-quality data that can be displayed in different views to easily identify and/or verify any areas of concern. Sonomatic Inspection Management Software (SIMS) is used to generate 2D and 3D thickness map composites to improve efficiency in data management during the collection phase, and assists in semi-autonomous data analysis and reporting.

DYNAMIC RESPONSE SPECTROSCOPY (DRS)

DRS is a proprietary technology developed by Sonomatic using frequency-based ultrasonic wall thickness measurements. It is a corrosion mapping technique that applies a broad range of low ultrasonic frequencies (<1 MHz) to penetrate challenging coatings such as composite repairs, PE and Neoprene, and excites the natural frequencies of vibration of the underlying steel. The DRS probe raster scans over an area of interest and collects response signals. Advanced signal processing algorithms have been developed to extract the vibration frequencies and map the wall thickness profile.

COMPUTED TOMOGRAPHY – INSPECT™

InspeCT™ is Sonomatic's proprietary subsea computed tomography system designed to eliminate the requirement to remove protective pipeline coatings, specifically concrete weight coating, to evaluate common pipeline integrity challenges including corrosion under insulation/coating, internal pitting & corrosion, degradation of internal linings & corrosion-resistant alloys, and detection & sizing of internal build-up of deposits and scale.

ALTERNATING CURRENT FIELD MEASUREMENT (ACFM)

ACFM is an electromagnetic technique for detection and sizing of surface-breaking indications.

It works on all metals, does not require direct contact and works through various thicknesses of coatings. ACFM can accurately detect and size linear indications both length and depth. It is also easier to use on complex geometries such as nodes and nozzles.

INNOSPECTION

Since 1998, Innospection has delivered advanced Non-Destructive Testing (NDT) services and solutions to the worldwide process industries including the onshore and offshore Oil & Gas industry, refineries, petrochemical and power plants.

With the technical application development of the SLOFEC™ technique for fast corrosion screening through the protective coatings, the company expanded its service portfolio to include storage tank, pipes and pressure vessel inspection.

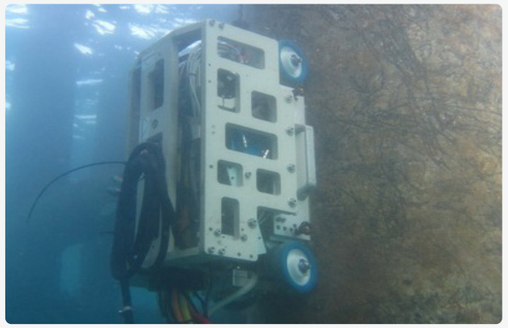
From 2008, Innospection further expanded its inspection service portfolio to the offshore and subsea infrastructures. Innovative solutions and equipment have been developed by an internal R&D team to solve niche inspection challenges for flexible and rigid risers, caissons, conductors, subsea structures and pipelines, mooring lines as well as complex areas like subsea welds and manifolds.

Sonomatic Limited purchased Innospection Group, including all assets and IP, along with the employment of all active personnel from the former Innospection Group.

The acquisition of Innospection's technology and equipment adds patented MEC™ (Magnetic Eddy Current) technology to Sonomatic's portfolio of unique inspection technology. Additionally, a further array of deployment tools including, MEC™ Floorscanners, MEC™ Pipescanners, MEC™ Splash Zone scanners and MEC™ subsea scanners. These significantly extend Sonomatic's selection of asset care solutions.

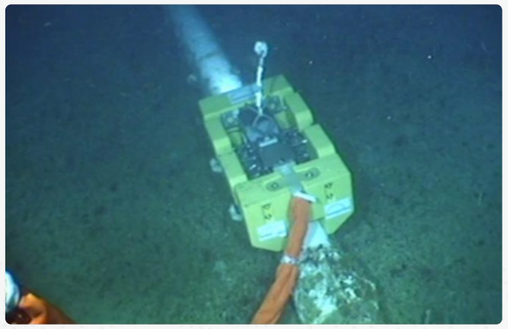
SUBSEA INSPECTION TOOLS

MEC™ - MPS200+ SCANNER



MEC™ -COMBI CRAWLER

MEC™ - COMBI PIPECRAWLER



MEC™ - HUG CRAWLER

CWL GROUP PARTNERS

GEO OCEANS

Geo Oceans is a specialist provider of ROV inspection services and has developed asset deployed ROV technology to provide clients with reliable, safe and cost-effective alternatives to traditional manned inspection, commercial diving or work-class ROV inspection services. Geo Oceans regularly use this cutting-edge technology to complete facility deployed subsea surveys, asset inspections and ocean mapping throughout the globe for many of the largest oil and gas operators. They are also experts in the planning and execution of offshore surveys, using autonomous survey vehicles (AUV).

Geo Oceans works closely with CWL group partner, Sonomatic, to implement advanced NDT inspection solutions. Being able to draw on their fourty years of industry experience is an invaluable resource, allowing us to create bespoke NDT tools for our ROV.

Geo Oceans also works closely with sister company Vertech to provide clients with industry-leading turnkey class inspection services on assets under Lloyds Register, Bureau Veritas, ABS and DNV GL classification society guidelines.

ROTOTECH

RotoTech is an innovative company specialising in the robotic Inspection, Repair and Maintenance (IRM) of risers, conductors and caissons in the splash zone. We work alongside Sonomatic, helping to enhance their advanced toolbox of solutions, providing customers with safer, more cost-effective, and environmentally sustainable alternatives to traditional methods.

Our flagship technology, the Roto Climber® Mk 1, is the lightest robotic solution available for IRM in the market. It offers a simple, vessel-free approach that requires minimal platform power and deck space, making it an ideal solution for offshore operators. The Roto Climber® Mk 1 is designed to ascertain the presence of defects in risers, conductors or caissons efficiently and cost-effectively. If no defects are detected, the asset can be scheduled for future inspection. However, if issues are identified, RotoTech's Roto Climber® Mk 2 can be deployed, equipped with advanced cleaning, inspection techniques, and a specialist wrapping system for strengthening in cases of severe corrosion.

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