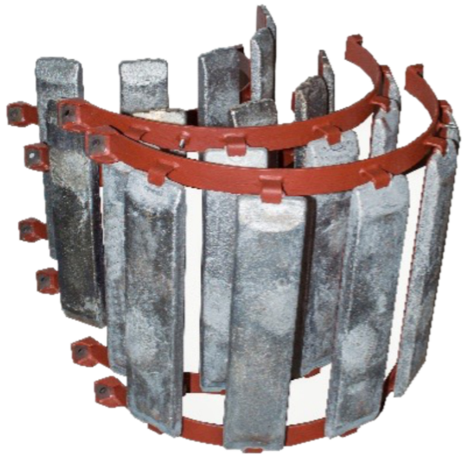
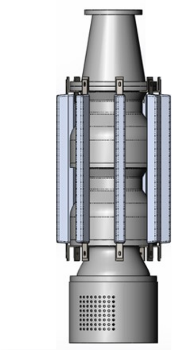


Pump Caisson – Corrosion Control

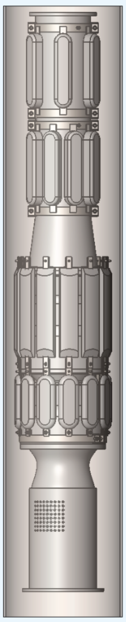
Sacrificial Anode bracelet assemblies

Pump Caisson Corrosion Control Systems by Corrpro Europe:

Corrosion within pump caissons, especially in offshore seawater and firewater applications, is a critical integrity concern. These components are often exposed to highly aggressive environments and high water velocity that result in internal corrosion rates as high as 8mm per year. Corrpro Europe offers robust, proven cathodic protection (CP) systems designed to extend the operational life of pump caissons. Utilising decades of engineering experience and custom manufacturing capabilities, Corrpro Europe's sacrificial anode segment and bracelet assemblies with integrated monitoring systems are tailored to meet the unique geometric and operational demands of each installation, ensuring effective corrosion mitigation and asset protection.



Corrpro Sacrificial Anode Bracelet Assembly



Corrpro Europe's sacrificial anode system is engineered to protect the entire submerged internal surface of a carbon steel pump caisson, including the riser pipe, pump bowls, and submersible motor. The system utilises aluminium or zinc alloy anodes and bracelets strategically installed along the rising main and pump assembly. These anodes deliver a protective current sufficient to maintain a potential of -0.8V or more negative relative to an Ag/AgCl reference electrode, thereby halting active corrosion processes.

Electrical continuity is ensured via flexible bonding straps and bolted connections using mild steel inserts. To assess system effectiveness, Ag/AgCl reference electrodes are mounted at strategic points between the anodes, with all sensors linked via a multi-core cable to a deck-level monitoring panel. Corrpro also offers a remote monitoring system for real-time data access and performance alerts.

Each sacrificial system is typically designed for a minimum service life of 5 years and to provide corrosion protection throughout this period to the carbon steel seawater / firewater lift pump caisson.

Pump Caisson – Corrosion Control

Monitoring System

A Cathodic Protection monitoring system is designed to provide a general indication of internal protection levels within the caisson. A number of Ag/AgCl seawater reference electrodes are fitted to the submerged pump assembly for measuring solution potentials within the caisson. The reference electrodes are located at mid points between anodes to provide a general indication of protection levels. The reference electrodes are connected via a single continuous multi-core cable to a monitoring panel located at deck level. The monitoring panel permits individual reference electrodes to be selected and for their respective measurements to be recorded. These electrodes will monitor the performance of the sacrificial anode Cathodic Protection system and provide advance warning when the anodes are approaching the end of their design life and require replacement. This system can also be monitored remotely if required.

Marine Growth Prevention System (Anfomatic®)

To complement corrosion protection, Corrpro Europe offers the Anfomatic® Marine Growth Prevention System (MGPS), which minimises biofouling in seawater systems. The Anfomatic® system applies direct current to copper anodes, releasing controlled copper ions that inhibit the growth of marine organisms such as barnacles and mussels. Simultaneously, aluminium anodes release a flocculent—aluminium hydroxide—that deposits protective films on ferrous components, reducing corrosion by modifying ferrous oxide formation. In systems with cupronickel pipework, iron anodes are used to enhance compatibility.

Anfomatic® is automatic, low-maintenance, and environmentally friendly. It ensures uninterrupted operation of critical systems by preventing marine organism settlement and growth at intake points. This system is particularly valuable in offshore environments where biofouling can severely reduce flow and damage equipment.

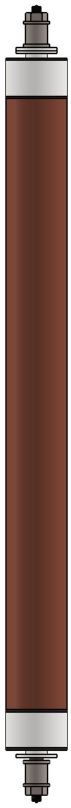
Key Features

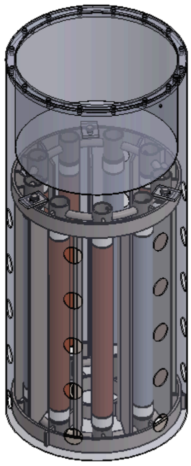
- Custom-designed sacrificial anode bracelet and motor segment assemblies using aluminium or zinc alloys
- Full internal protection for pump caisson components: riser pipe, pump bowls, and motor
- Integrated electrical continuity with bonding straps and bolted connections
- Multi-point reference electrode monitoring with optional remote data access
- Designed for minimum 5-year operational lifespan with optimised current distribution
- Optional Anfomatic® MGPS for biofouling prevention using copper/aluminium ion dispersal

Pump Caisson - Corrosion Control

Applications

- Offshore seawater and firewater pump caissons
- Oil & gas platforms with high internal corrosion and biofouling risk
- Caissons with complex geometries or limited access requiring bespoke anode configurations
- Installations needing long-term, low-maintenance CP and MGPS integration
- Projects with potable water production systems requiring continuous flow
- Retrofits and upgrades for existing CP and antifouling systems





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