



In-Water Hull Cleaning & Filtration System

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GRD Franmarine have received the following prestigious awards in 2014 for their research & development of an in-water hull cleaning and filtration system "The Envirocart:

Golden Gecko Award for Environmental Excellence;
WA Innovator of the Year – Growth Sector;
Department of Fisheries - Excellence in Marine Biosecurity Award –
Innovation Category;
Lloyd's List Asia Awards – Environmental Award;
The Australian Innovation Challenge – Environment, Agriculture and
Food Category; and
Australian Shipping and Maritime Industry Award – Environmental
Transport Award.

The Envirocart developed and patented by GRD Franmarine is a revolutionary new fully enclosed capture and containment in-water hull cleaning technology. The Envirocart enables soft Silicon based antifouling paints and coatings containing pesticides such as Copper Oxide to be cleaned in situ using a contactless cleaning method. This fully containerised system is now capable of being deployed to remote locations or directly onto a Dive Support Vessel and is rated to offshore specifications. This is the only known method of in-water hull cleaning that complies with the Department of Agriculture Fisheries and Forestry (DAFF) and Department of Fisheries WA (DoF) Guidelines.

The primary underwater cleaning tool is a hydraulically powered hull cleaning unit fitted with rotating discs. The discs can be fitted with conventional brushes for glass or epoxy based coatings or a revolutionary new patented blade system which can remove marine biofouling without damaging the antifouling paint (silicone and copper oxide). Additionally there are a patented range of fully enclosed hand cleaning tools for difficult to access niche areas such as anodes and sea chests, providing an innovative total solution that enables in-water cleaning to be conducted in a manner that causes no biological risk to the environment.

In full containment mode or when AIS are present, material is pumped through a multi stage filtration unit on the surface. Solids greater than 50 micron are separated through a 1st stage separator and deposited into a disposal bin. Filtrate is then pumped through a series of high flow, back-flushable filters that remove particulate material greater than 5 micron. After the 1st and 2nd stage filtration the filtrate is then disinfected by passing through an automated UV reactor where the treated water is then released back into the ocean.

This advancement in hull cleaning technology will allow vessels to be cleaned in areas where dry docking is not possible or viable along with being a preventive measure to reduce Biofouling in the environment.

The in-water hull cleaning system certainly has earned its place as being an innovative leader in improving efficiencies and reducing environmental impact.

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