

POLAR JET[®]

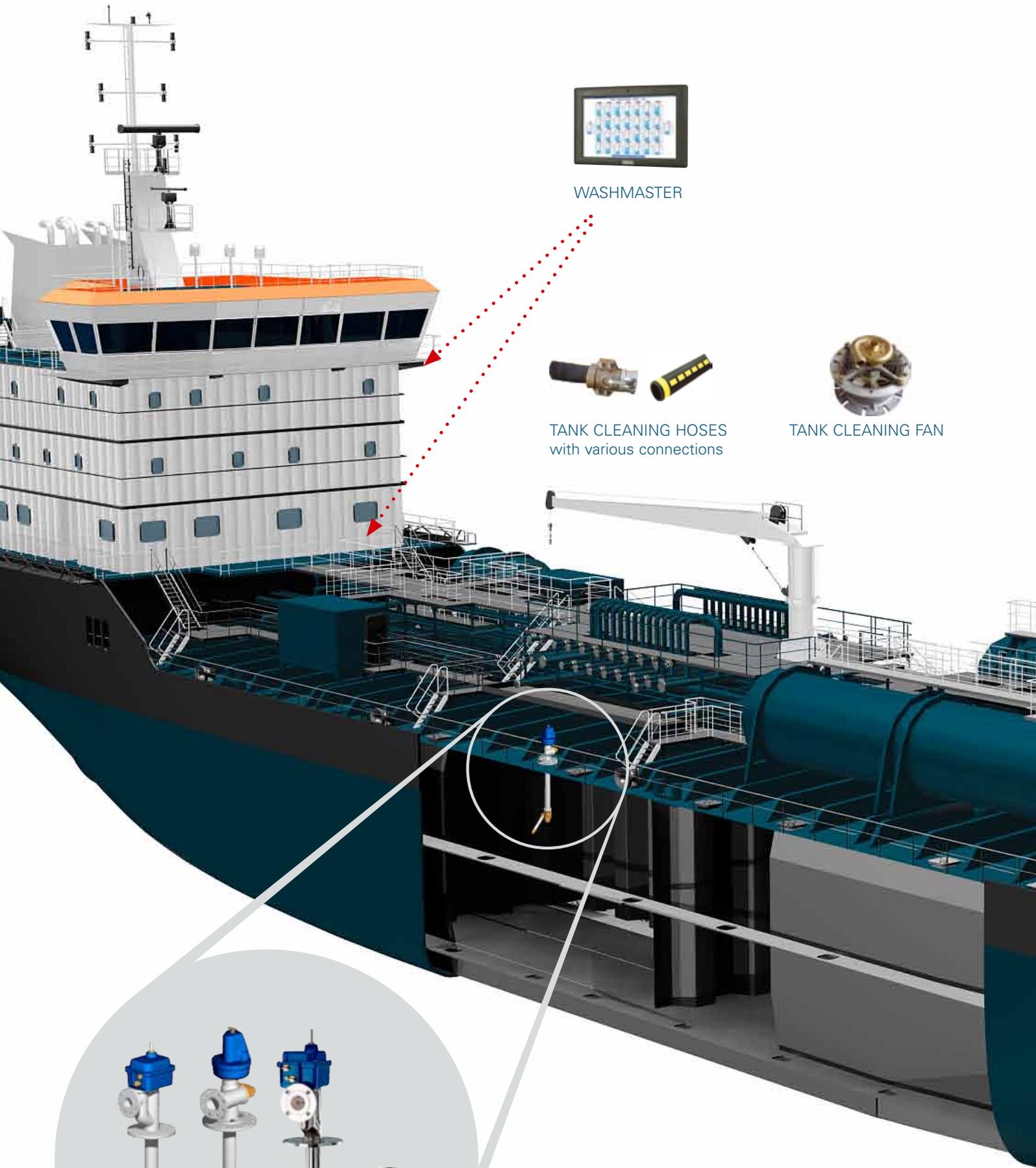
Tank cleaning machines

Polar Jet[®] machines have been developed for long service life with a minimum of maintenance.

With the new Polar Jet Eco you save time, reduce slop and save money.



POLARMARINE
Member of Kockumation Group



WASHMASTER



TANK CLEANING HOSES
with various connections



TANK CLEANING FAN



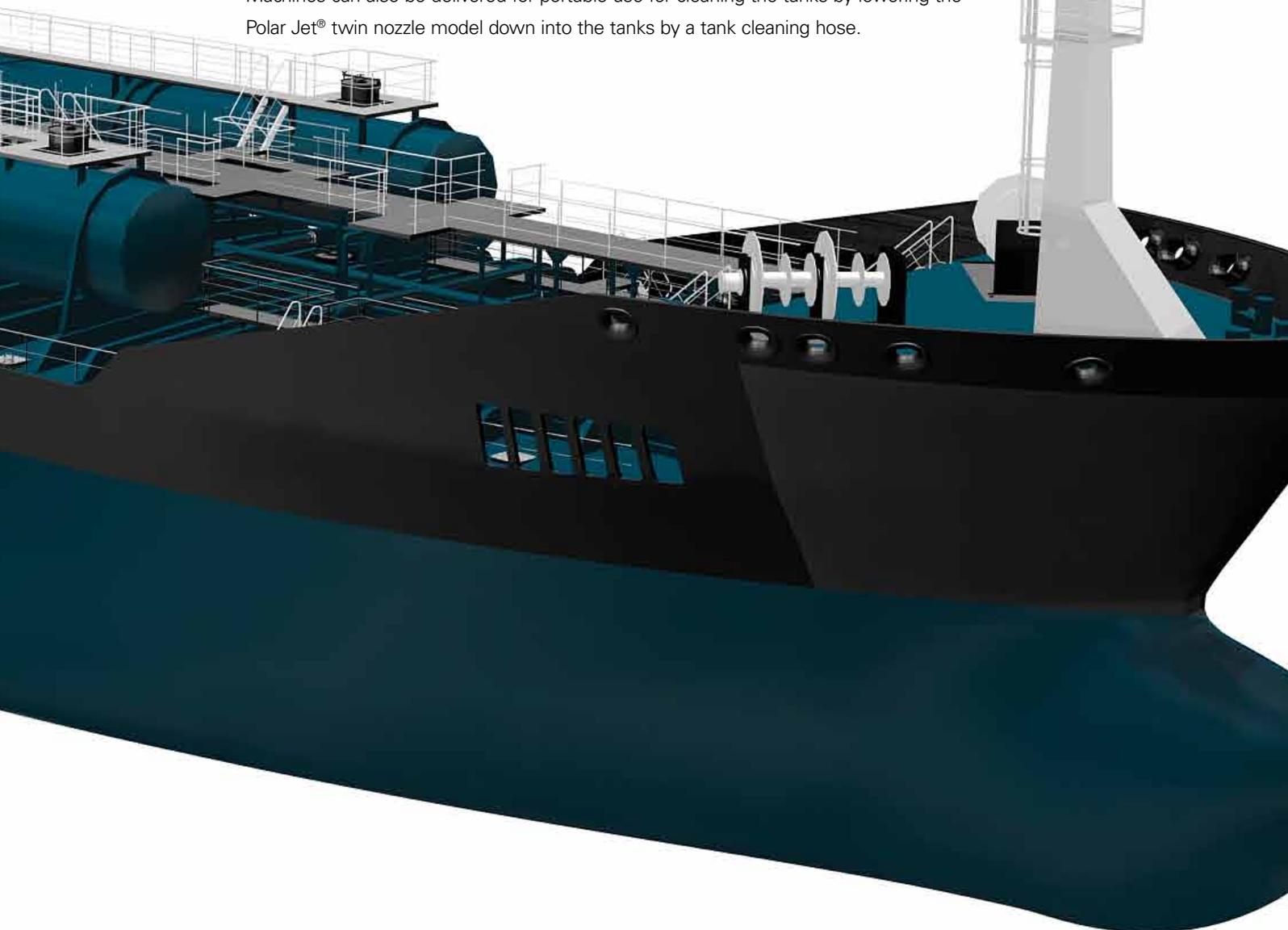
Polar Jet®

We use the latest technologies in order to develop products that are robust, few moving parts and with low life-cycle costs. You can rely on the tank cleaning machines performance for years and years, with a minimum of maintenance requirements.

Polar Jet® programmable single nozzle tank cleaning units are flange mounted in the tank top or deck. The movement of nozzle is fully controlled by a turbine driven control unit, via a turning and lifting rod in the cleaning unit.

A complement to single nozzle machines is the Polar Jet® twin nozzle machine, a unit with asymmetrically opposed nozzles driven by an integrated turbine and gearing. The specially designed turbine gives a safe and reliable starting and stable speed control. The operation only requires opening and closing of the control valve.

The Polar Jet® non programmable twin nozzle models can be installed in deck on a stand pipe or submerged in the tanks as an effective complement to deck mounted machines. Machines can also be delivered for portable use for cleaning the tanks by lowering the Polar Jet® twin nozzle model down into the tanks by a tank cleaning hose.



Crude Oil Carriers

POLAR JET® PJ 120

The Polar Jet® PJ 120 is a deck mounted, fully programmable, single nozzle Tank Cleaning machine equipped with pitch, speed and angle limit controls. Movement of the nozzle can be set to work between any angles from 0 to 180 degrees.

Nozzle movement is controlled by the integrated turbine driven control unit providing a controlled rotation in the horizontal plane, combined with a slow, controlled vertical movement. This gives a helical wash pattern from the nozzles.

The Turbine driven automatic nozzle pitch for the PJ 120 is 3 degrees which can be manually adjusted for heavy spot cleaning programs. Adjustable guide vanes located in front of the turbine control speed, which should be between 1 and 2.5 RPM.



Bulk and OBO Carriers

POLAR JET® PJ 30 and PJ 120

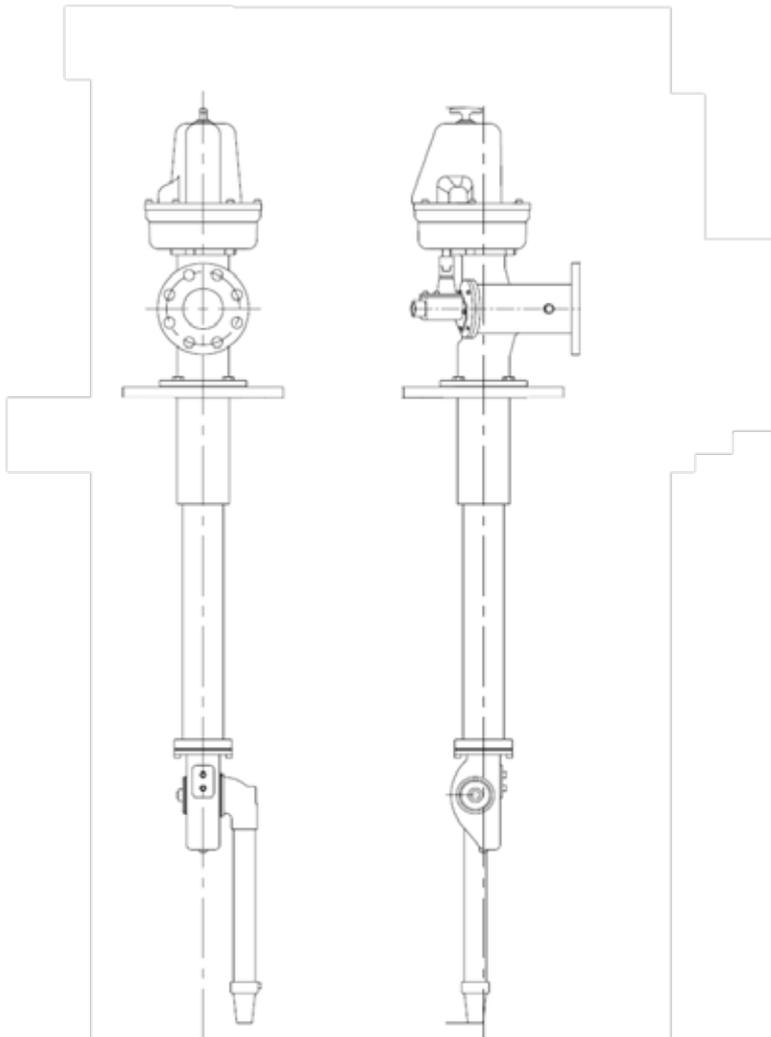
Polar Jet® Swing and retractable models makes portable hold cleaning equipment unnecessary.

With this type of Polar Jet® hold cleaning models enable one man to clean the holds in a bulk carrier.

The great benefit is the enormous saving when comparing cleaning time done manually with our Polar Jet® system.

With the Polar Jet® system the cleaning time can be reduced to a few hours compared to days.

Calculated in a year this can increase the operational profit correspondingly and can result in an extra cargo per year!



Product / Chemical Carriers

POLAR JET® PJ 15 and PJ 30

The Polar Jet® PJ 15/30 is a fully programmable, single nozzle Tank Cleaning machine equipped with pitch and speed control. Capacity range: 5 to 90 m³/h.

Nozzle movement is fully controlled by the integrated turbine driven control unit, which controls both the vertical pitch and rotation speed.

Nozzle movement is, in principle, a controlled rotation in the horizontal plane, combined with a slow, controlled vertical movement.

This means that the nozzle performs helical patterns.

Polar Jet® PJ 15/30 comes with operator friendly controls to set both vertical Pitch and rotation Speed. There are six basic programs, provided by two speed settings and three pitch settings (1.5, 3 and 7 degrees).

Angle adjustment allows pre-setting of the Pitch at the start of either the upward or downward cycle for optimal cleaning of specific areas such as bottom only or side only cleaning requirements.



Polar Jet® Eco

POLAR JET® PJ 15 Eco & PJ 30 Eco

Polarmarine has in close cooperation with users developed a new generation of tank cleaning machines with the tank geometry in focus, Polar Jet® Eco.

The basic principle of the new and improved tank cleaning machine is that the cleaning media is spread as equal as possible inside the tank.

All tank cleaning machines in the market until now are designed for a fixed cleaning pattern without consideration to the design of the tank.

The images show conventional tank cleaning compared with Polar Jet® Eco:

Time saved = 25%

When tank cleaning with Polar Jet® Eco is done (100%), the conventional tank cleaning is only 75% finished.

25% less slop

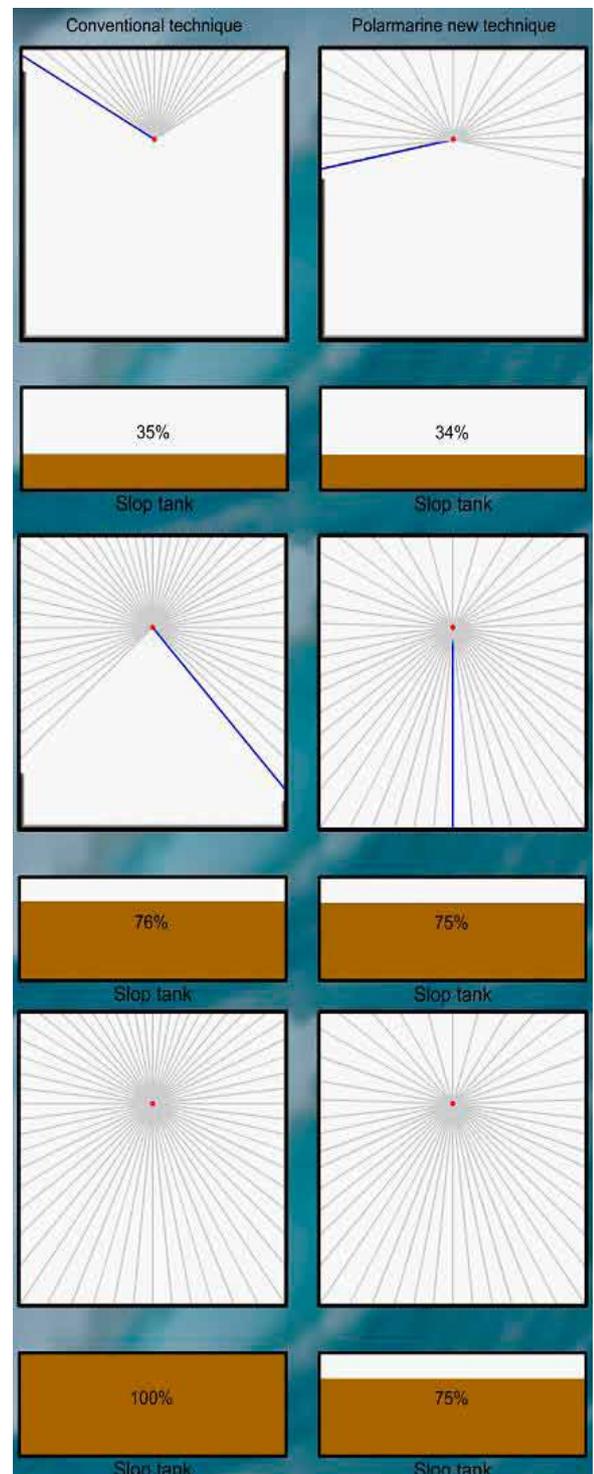
When tank cleaning is finished for both Polar Jet® Eco and conventional technique, it is 25% less slop with Polar Jet® Eco.

25% reduction of tank cleaning water (FW/TFW)

Since the time used is saved by 25%, also the amount of Fresh Water is 25% less as well.

Other features are:

- o Easy to install (no need for dry docking)
- o Quick payback of the investment
- o Polar Jet® Eco is available as retrofit on all existing PJ 15 and PJ 30 installations.



Training

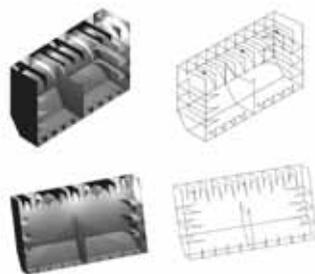
Onboard training of our product can be arranged at site / onboard or at the training facility in the Philippines.

On request we can also arrange training in Europe.



Desing & Engineering

Polarmarine provide in-house Shadow Diagrams using 3-Dimensional CAD for model Selection, Quantity, Positioning and Main Pipe Lengths to optimize cleaning coverage per unit.



Crude Oil Washing (COW)

Polarmarine can produce class approved COW manuals in accordance with the requirements of MARPOL Convention.

Service Network



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› HISTORY OF POLARMARINE HUGE EXPERIENCE OF TANK CLEANING

Polarmarine was established in 1978 and the people behind Polarmarine have been involved with the development and design of tank cleaning machines since 1967.

This involvement included supplying the first fixed-installed programmable single-nozzle tank cleaning machines. Since 1978, Polarmarine have designed, produced and delivered more than 50,000 tank cleaning machines to shipyards and ship owners all over the world. All our programmable models have been designed around the rack and pinion control system, which has proved to be so efficient and reliable that it has become the industry's main standard.

POLARMARINE have design, production and engineering bases in both Europe and Asia along with a worldwide network of Sales and Service representatives.

Our facilities in the Far East ensures our customers, a prompt, reliable, highly efficient and competitive range of services.

› SERVICE AND SUPPORT THE COVERAGE YOU DESERVE

The Kockumation Group has a world-wide network of fully owned subsidiary companies that spans the globe with branch offices in Switzerland, Great Britain, Russia and China to the Philippines. In addition to these, the Group also has a global network of local agents.



KOCKUMATION GROUP **FOR YOUR ONBOARD OPERATION**

Markets and designs high-quality niche products revolving around our core knowledge in software automation, acoustics and mechatronics.

The group focuses on meeting demanding needs in the world wide marine and industrial markets with a strong commitment to customer satisfaction.

KOCKUM SONICS www.kockumsonics.com

Has built up an outstanding knowledge base and is always keen on new innovations. The marine product line consists of ship automation, loading computer, level gauging, ship whistle system and on board boiler sonic cleaning method.

POLARMARINE www.polarmarine.se

Polarmarine has since the beginning developed tank cleaning machines for all type of vessels with the onboard operation in focus. Polarmarine can supply the ship owner a complete product range including full cleaning pattern but with a reduced time cycle and less stop.

TEXON www.texon.se

Provides turn-key LNG automation solution packages. Combustion control system, burner management as well as boiler gas control is core knowledge. Texon Automation has over 30 years experience in newbuilding and retrofit projects.

OUR STRENGTH IS YOUR BENEFIT!



KOCKUMATION GROUP



Kockum Sonics



POLARMARINE

Texon

www.kockumation.se

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