



DEFENCE & FUEL

Military Pumping Systems - Practical Solutions

PROVEN TECHNOLOGY

DESMI

DEFENCE & FUEL

DESMI designs and builds liquid handling solutions used by military forces and navies around the globe.

DESMI is an integrated pump system supplier offering an extensive pump range, including first-class commercial and military off-the-shelf products.

We supply tailormade pumping and ballast water management solutions combined with equipment from other world class suppliers and deliver a complete range of pumping solutions on board any navy or coast guard vessel.



*Three Iver Huitfeldt Class frigates
with DESMI pumps on board*

DEFENCE - NAVY SHIPS

DESMI has a long history of providing pumping solutions for military applications, not least within the naval sector. The demand for equipment reliability under adverse conditions has made our solutions the choice of many navies.

Our range includes more than 100 pump types, and we do not compromise when it comes to product applications. We have products in our portfolio that fulfil most client expectations.

- We understand the technical requirements and applications of navies
- We choose materials that suit the specific applications
- Our pumps are available in fully shock rated design
- We supply pumps for fully submerged use in action damaged compartments
- Our field engineers evaluate pump and system requirements on site



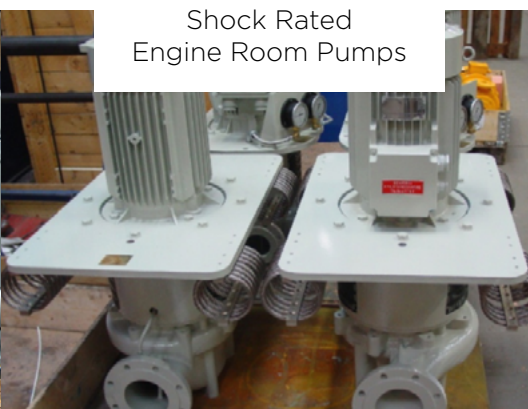
With their Excellent Quality and Durability,
our Products adapt well to the Additional
Requirements in Naval Applications



The DESMI design team adapts our standard range to Military Off-The-Shelf (MOTS) equipment, meeting the clients' shock requirements. We 3-D model the equipment according to contract requirements – and our project management includes the provision of test certification and integrated logistics support documentation.



MOTS - Military
Off-the-Shelf Pumps



Shock Rated
Engine Room Pumps



Helicopter Refueling
Systems

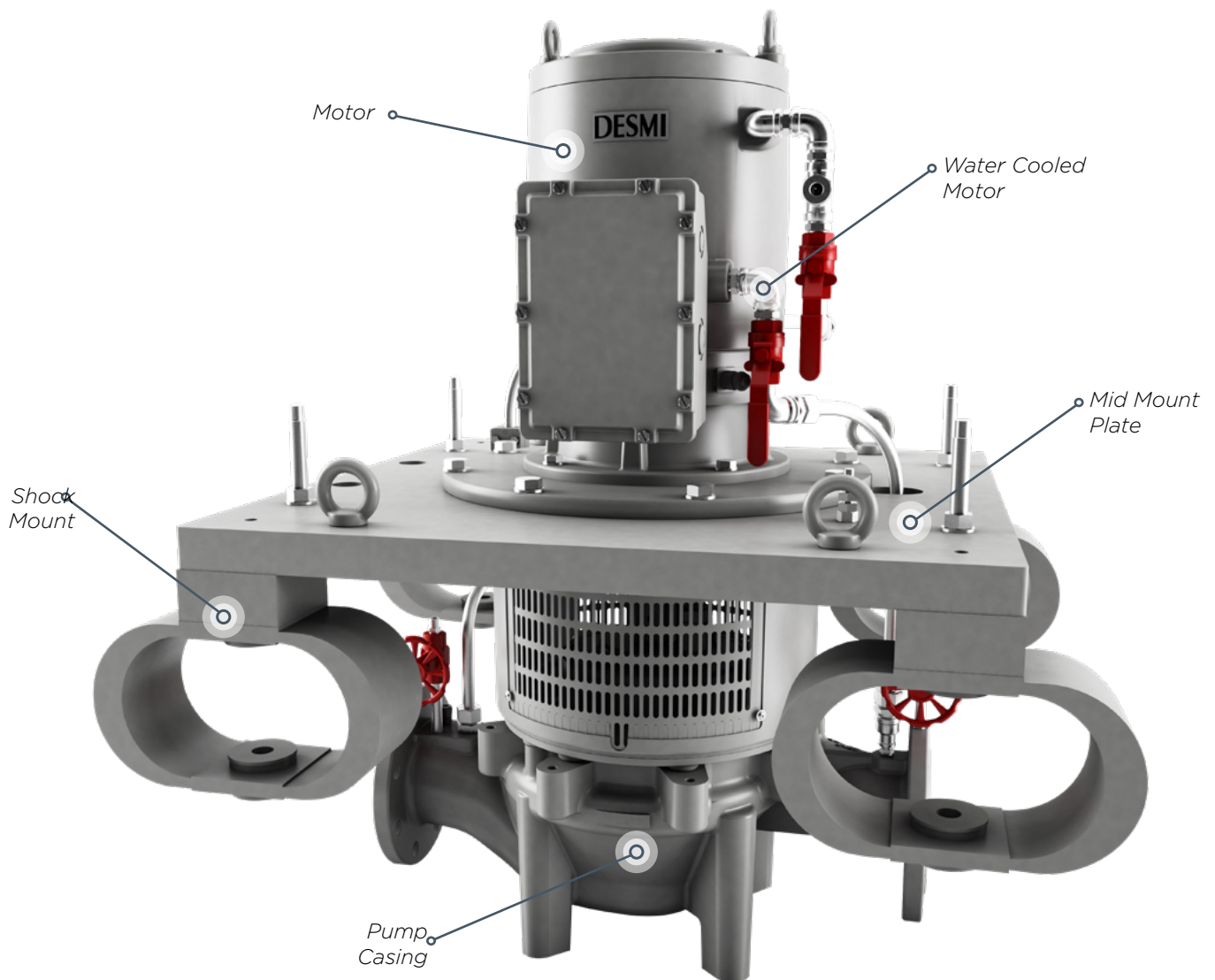
SHOCK RATED PUMPS

DESMI has a clear understanding of naval technical requirements and applications when it comes to pumps and systems.

We select the correct materials and design for each individual application - for example bilge, fire, ballast,

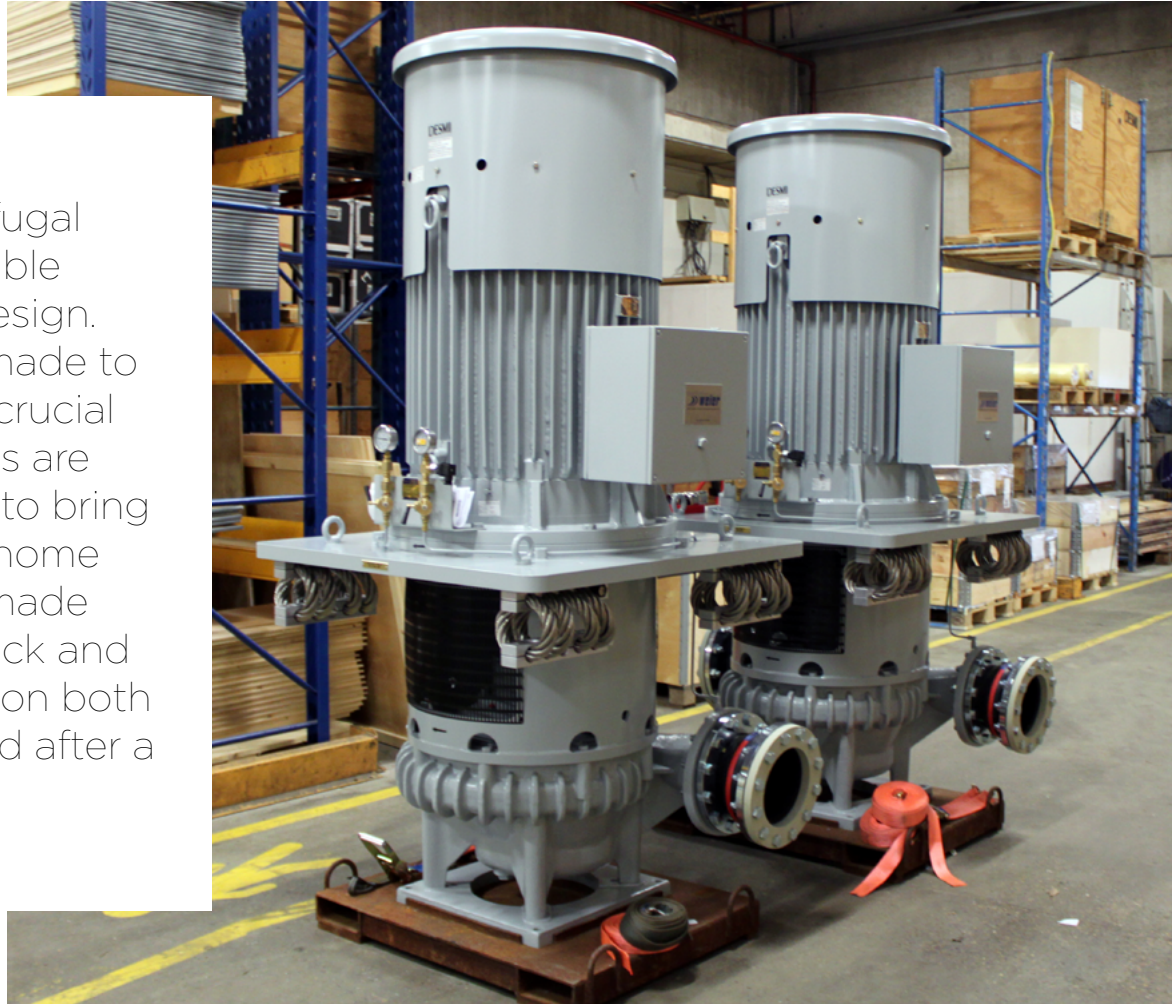
general service, cooling, fuel and lube oil transfer, to name just a few.

Any of these pump applications can be supplied fully shock rated and for fully submerged operation in compartments that are vulnerable to 'action' damage.



Made to Withstand Shock and Remain in Operation both Before, Under, and After a Shock Impact

All DESMI centrifugal pumps are available in shock rated design. The pumps are made to survive, and it is crucial that these pumps are working in order to bring the sailors back home safely. They are made to withstand shock and remain in operation both before, under, and after a shock impact.



Shock Rated Engine Room Pump



High Performance - Easy Fire Protection
All Working just by Pushing 'Start'

DIESEL-DRIVEN EMERGENCY FIRE PUMPS

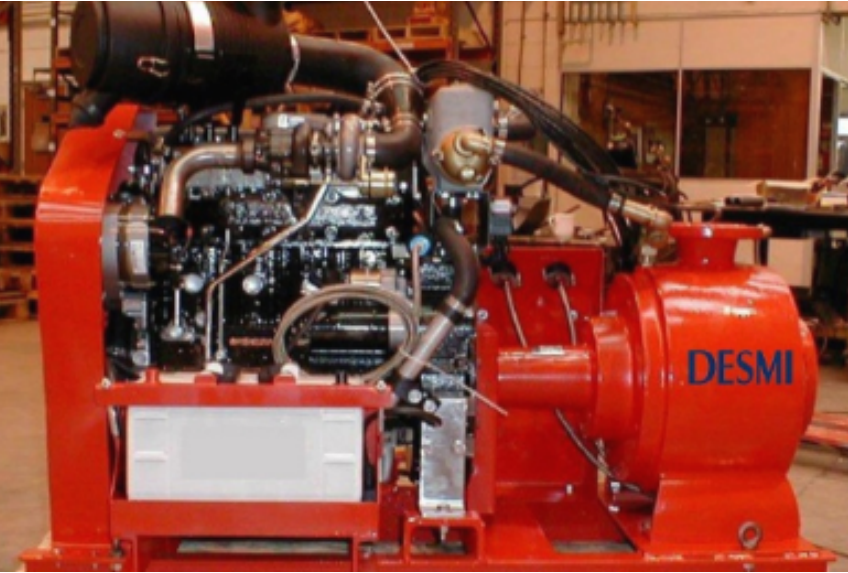
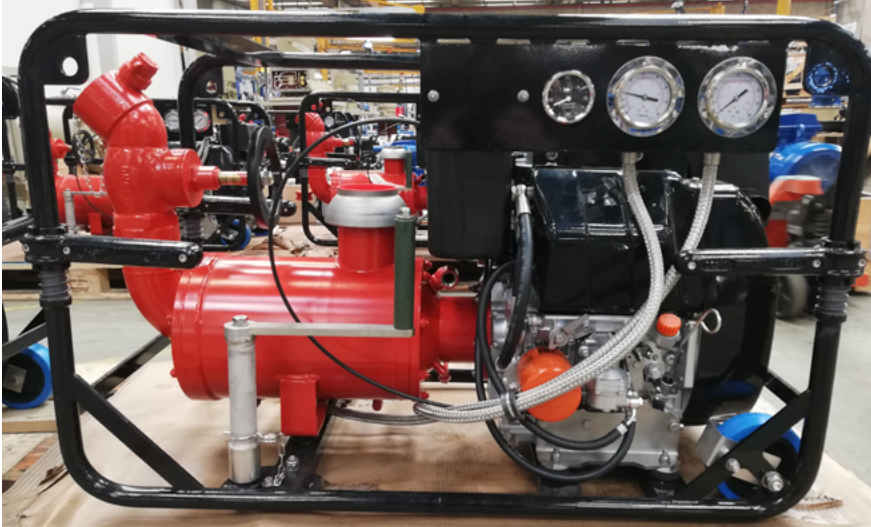
DESMI fire fighting pumps cover the range from commercial standard electrically driven fire pumps to fully shock approved diesel-driven emergency fire pumps for high-end navy fire applications.

The diesel engine provides power to both the fire pump and a hydraulic pump. The hydraulic pump runs a hydraulic motor and a water feed pump, which lifts the water into the fire pump.

Diesel-Driven Emergency Fire Pumps

Portable Emergency Diesel - Driven Fire Pump - SP-D3-2

First-class pump solution with a capacity of 40 m³/h at 7 bar. Low magnetic signature and designed especially for a life at sea. Weight is 65 kg.



Shock Rated Diesel-driven Emergency Fire Pump - DES100

These pump units are designed to withstand the rough life at sea and to be ready for action at all times. Even after the ship has been exposed to shock. Capacity is 100 m³/h at 7 bar.



*Diesel Hydraulically Driven
Emergency Fire Pump*



*Customised Emergency
Fire System*



HELICOPTER REFUELING

The DESMI refueling systems are intended for use in both the military and commercial sectors. DESMI is the preferred supplier of systems for both fixed and rotary wing aircrafts. Each system is specifically designed for pumping, filtering, and dispensing fuel for military and naval use and will at all times deliver dry clean fuel at the end of the nozzle.

The ship-based helicopter refueling system is used for pressure and gravity fueling of aircrafts on board naval vessels, and the system is also fitted with a facility to defuel the aircrafts. The refueling system comprises a 'pump and filtration module', a 'dispenser module', and an electrical and mechanical control system which can be interfaced to the ship's control system.

Pump and Filtration Module

The pump and filtration module consists of filter water separators and DESMI ROTAN® positive displacement fuel pumps.

The twin pump refueling system has built-in redundancy for maximum reliability. The service and transfer pumps and filter water separator duties are fully interchangeable by use of valves.

All DESMI aviation fuel systems will be adapted to specific customer needs to ensure that the best possible option is selected for the job.

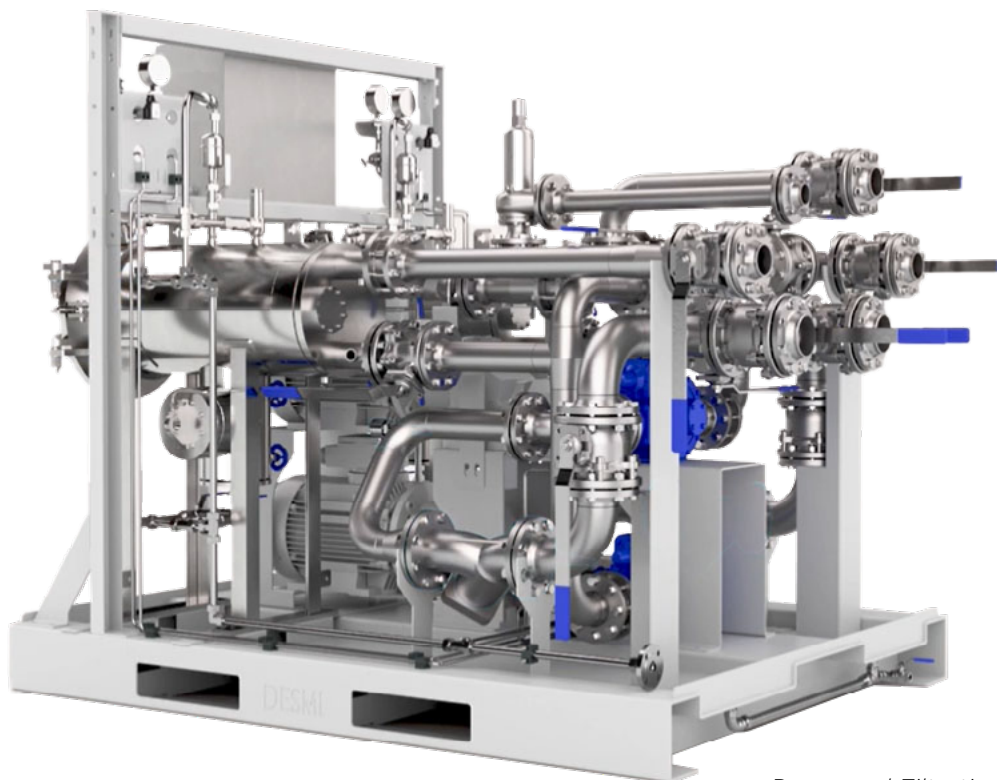
Dispenser Module

The dispenser module consists of a mechanical meter, defueling pump, hose, hose reel, pressure refueling nozzle, gravity refueling nozzle, and an optional filter water absorber.

A Helicopter In-Flight Refueling (HIFR) unit can be connected to the pressure refueling nozzle hose or a deck-mounted connection on the flight deck.



Dispenser Module



Pump and Filtration Module

BALLAST WATER MANAGEMENT SYSTEMS

DESMI manufactures Ballast Water Management Systems with shock noise vibration according to naval standard.

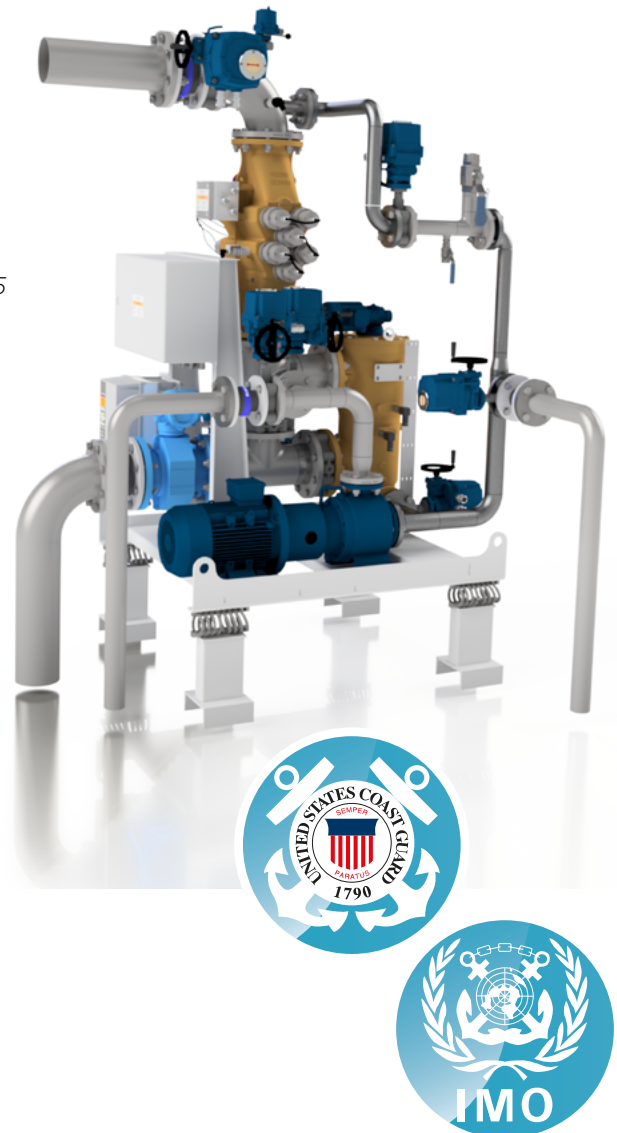
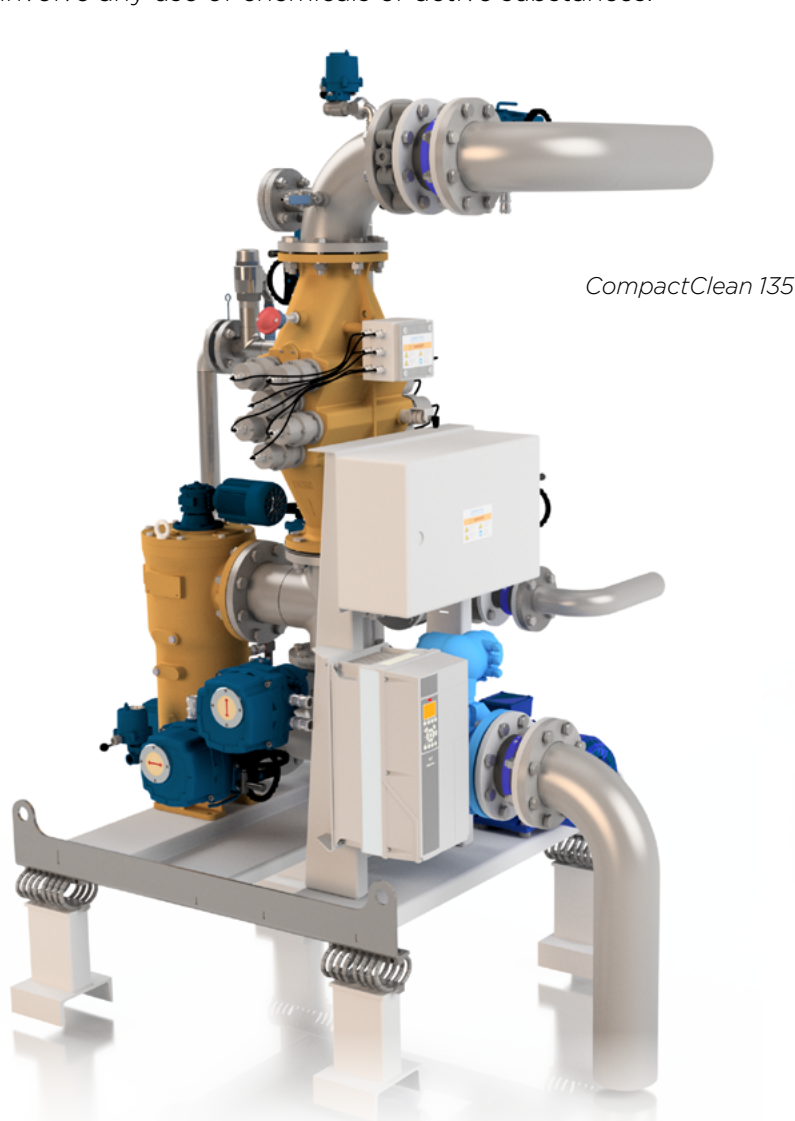
The name of the system is CompactClean, and it is the most compact BWMS on the market which combines very low space with large flow rates.

The operation of the system is based purely on mechanical treatment, and therefore, it does not involve any use of chemicals or active substances.

This eliminates risks of hazards to crew, vessel, and the environment.

CompactClean has no salinity or temperature limitations.

The CompactClean BWMS is type approved in accordance with USCG and the IMO BWMS system code (also referred to as the revised G8) and can be classed from various classification societies.





The Most Compact and Effective Ballast Water Management System on the Market!

- ✓ IMO & USCG Approved
- ✓ Low holding time
- ✓ Chemical Free Treatment
- ✓ Shock mounted to withstand shock events
- ✓ Down to UV-transmission of just 42%
- Also in US territory!
- ✓ No salinity or temperature limitations
- ✓ Automatic flow control and lamp dimming
- ✓ Very low footprint
- ✓ Multipurpose Backflush/Recirculation/
Stripping pump included
- ✓ No water cooling or compressed
air system required
- ✓ Fully automated operation
- ✓ Automatic generation of PDF reports
to authorities
- ✓ Easy to maintain and Worldwide Service
Network available
- ✓ Computer Based Training and Service app
available for download
- ✓ Short delivery time
- ✓ Shock noise vibration according to naval
standard
- ✓ According to naval standard

OPTISAVE™

ENERGY SAVING SYSTEM

The main challenge with regard to warships is EMC noise coming from the frequency converter as well as from the electric motors when using converters. This noise is unwanted at increased alert status as it must be as difficult as possible to detect the position of the vessel.

The DESMI OptiSave™ includes the possibility of instant by-pass of all systems including stop of frequency converters without any interference with

the vessel's operation. The vessel can instantly change from routine to a higher alert status.

The OptiSave™ control and monitoring system includes the facility of monitoring the pump's revolutions and gives an alert when the calculated pump maintenance is required. The maintenance intervals are normally prolonged due to reduced pump rpm, and thus, saving spare parts and work compared to conventional pump operation.

The many benefits of DESMI OptiSave™ are:

- ✓ Energy saving up to 80%
- ✓ Short return on investment
- ✓ Prolonged lifetime of pumps due to less wear and tear
- ✓ Minimum changes in existing electrical installations
- ✓ Proven technology
- ✓ Proven savings
- ✓ Reduced OPEX
- ✓ Worldwide service support



Optimizing Pump & Fan Speed to Current Conditions

What can OptiSave™ do for you?

Any diesel driven vessel is still only transforming some 30% of the fuel energy into mechanical energy, meaning that some 70% of the fuel is converted into heat, either to the motor parts or to the exhaust. When designing cooling water systems for engines, the heat energy to be removed from the engines is known, but the actual seawater temperature is unknown, which means that designers are forced to use 34°C / 92°F as seawater temperature. Therefore, the system is heavily over-dimensioned when sailing in e.g. Danish and North Atlantic waters.

By adding monitoring of seawater temperature, seawater cooling outlet temperature, and a frequency converter, it is possible to adjust the seawater cooling flow to the actual requirement. On top of this saving, the change to LED lights, OptiLED™, will increase your savings even more.

What we do:

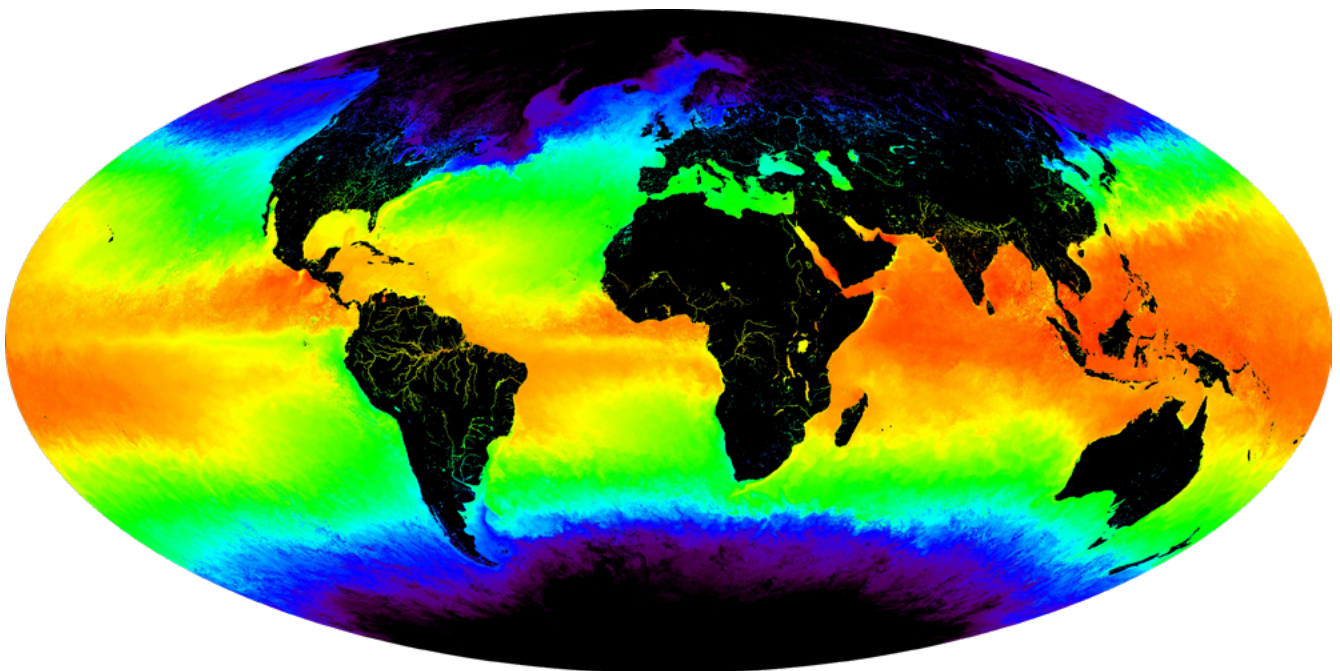
Operate Seawater Cooling Pumps according to the actual temperature - meaning the colder the seawater temperature, the lower the amount of fuel used.

For increasing the advantages also the Fresh Water Cooling Pumps are controlled.

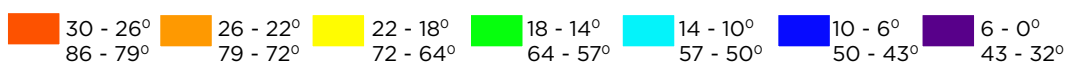
Engine Room Fan Control. The fans are controlled based on the actual conditions, i.e. pressure at engine room, and not a worst case scenario. All safety issues are taken into consideration.

Change to LED lights is a quick way to save energy. Normally, the existing light fixture can be used with new LED bulbs.

You can choose all saving parameters or only some of them, depending on the actual conditions.



Average Sea Surface Temperature °C / °F





Airfield Fuel Pipeline Pump

Diesel-driven fuel pump for bulk fuel installation
in remote areas.

120 m³/h at 6 bar in explosion-proof design.

SPECIAL PUMPING SOLUTIONS

For many years DESMI has supplied pumps and pumping solutions for the naval industries.

Such as:

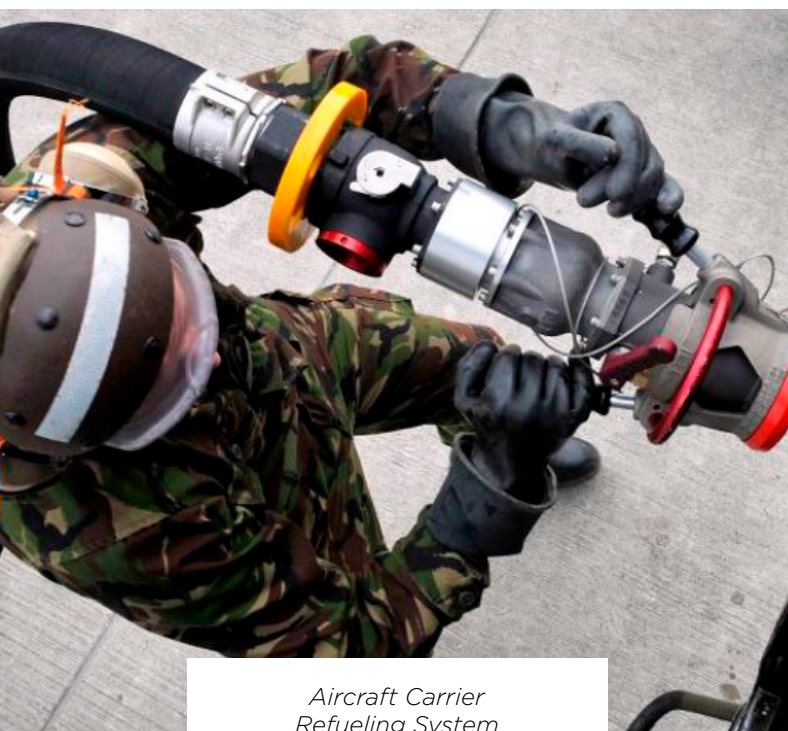
- Helicopter wash down booster pumps
- Airfield fuel pipeline pumps
- Diesel hydraulically driven fire pumps
- Hot fresh water modules
- Aircraft carrier refueling systems
- Heeling and anti-heeling systems
- Hydrophore sets
- and much more for navy ships around the world.

Our list of references include:

- Iver Huitfeldt Class, DK
- Queen Elizabeth Class, UK
- Mars Tankers
- Etc.



Customised or Tailormade
- DESMI Provides the
Solution needed for any
Naval Ship



*Aircraft Carrier
Refueling System*



*Helicopter in Flight
Refueling System*

DESMI DESERVE

After Sales & Service

We always strive to provide our customers with the very best service! That's why we have established DESMI DeServe - your guarantee for an excellent service 24/7/365.

Our Spare Parts Kits cover more pumps and have all the necessary parts when overhauling your pumps, but we also have individual spare parts that match your immediate need for maintenance.

Our DESMI 48 is for you, who needs a replacement pump immediately. The DESMI 48 makes sure you can have your pumps replaced and ready for shipping within 48 hours.

Our service on all pumps and solutions includes:

- Installation
- Commissioning
- On-site Service
- Repair / Maintenance

Don't hesitate to contact us right away if you need our assistance.

Our dedicated global DESMI Service Team delivering local service





DESMI Genuine Spare Parts Kits for Simple Overhaul and Service

DESMI provides spare parts kits for easy and simple maintenance and overhaul of your pumps. We offer a variety of spare parts kits for a number of DESMI pump series.

To determine which spare parts kit you need and to provide you with the best service, we need to have the following information:

- Pump type (e.g. NSL 150-265)
- Serial number (e.g. 323249 or 30192-1)

Spare Parts Kits include:

- Mechanical shaft seal
- Special tool
- Bearings
- O-rings
- Gaskets
- Washers & nuts
- Item list
- Etc.



The DESMI Service Team operates globally and around the clock. We can offer simple advice over the phone or full, on-site maintenance and service programmes.

The team is factory-trained and fully capable of meeting both your technical and practical demands.

We have customized programmes to meet specific client requirements and be your partner of choice.

DESMI Service Team supports a working culture based on an appropriate respect for health, safety and environmental issues.

In case of emergency breakdowns, we are always able to access our global parts database, sending spare parts or complete pumps 24/7/365.

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MARINE & OFFSHORE

INDUSTRY

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UTILITY