

MECTRON ENGINEERING

**A Total Pump Packager
and Solutions Provider**



*Marine & Offshore
Oil & Gas*



ISO 9001
BUREAU VERITAS
Certification





The Perfect Partner to Your Pumping Needs.

ALLWEILER 

Imo
Pump

HOUTTUIN 

hidrotal

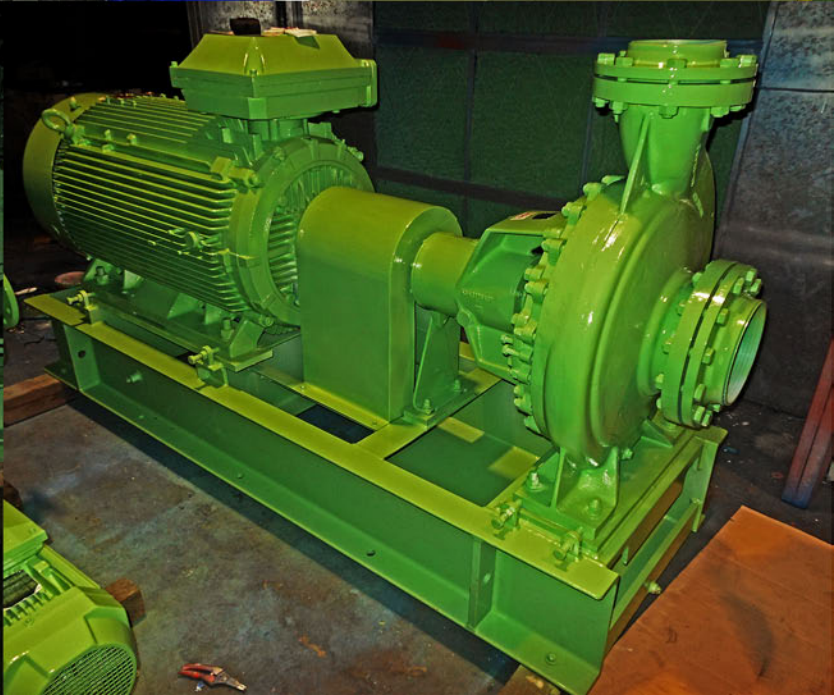
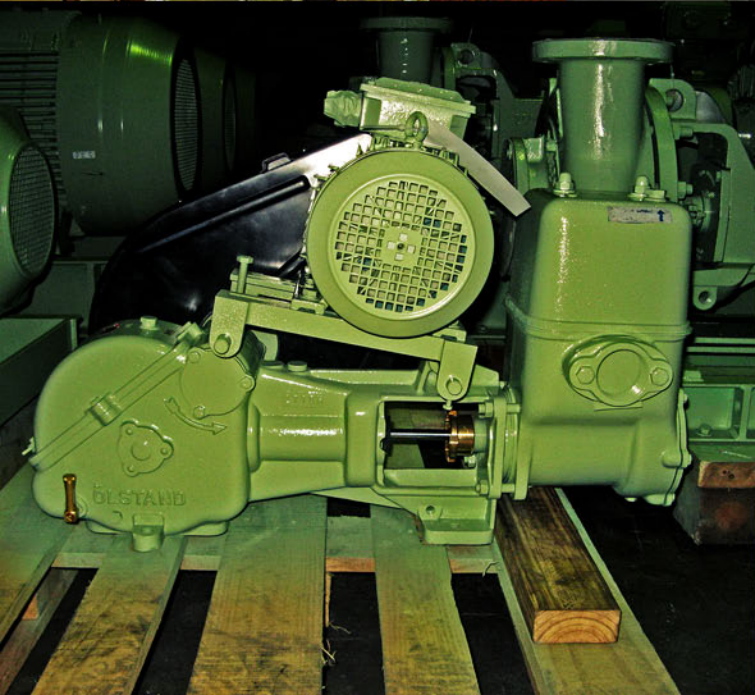
MISSION
2500 SUPREME

Blackmer

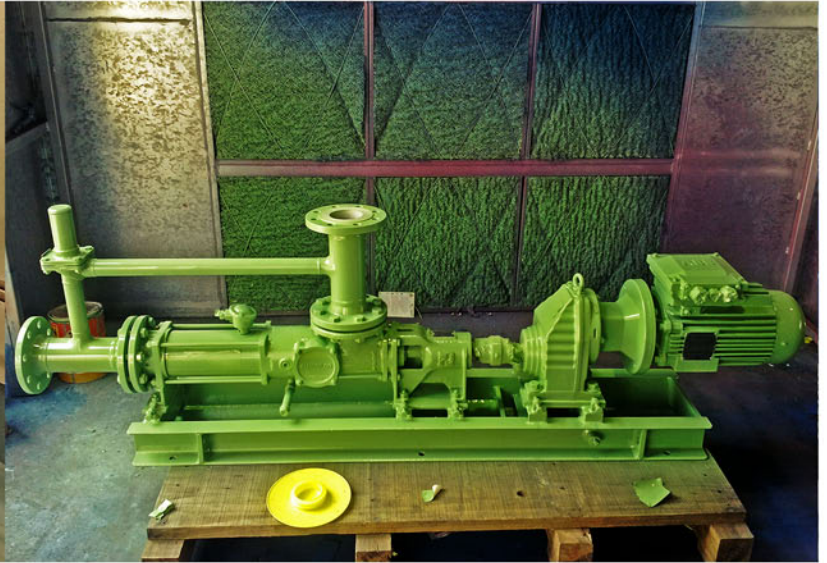
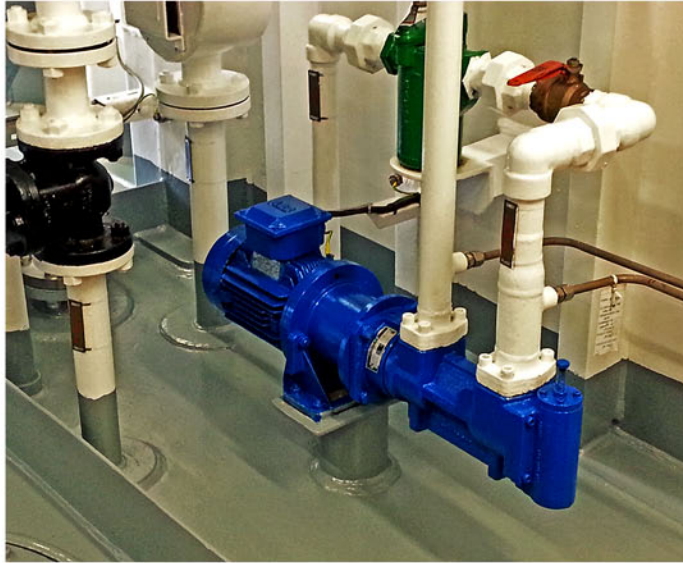


Dedicated to provide the best solutions to all pumping needs, we affiliate with leaders in pump design, foundry technology and metallurgical expertise to unsurpassed product development for the vertical market. Mectron boasts a full range of pumps and systems, making us a one stop centre to all your pumping needs.





MARINE SERVICE PUMPS MADE FOR INSTALLATION IN OFFSHORE RIGS. Be it limitation in footprint area, low headroom, extreme climates, in Arctic region, harsh environment in Norwegian territorial waters or compliance to stringent regulations such as ABS, DNV, NR-13, NORSOK, GOST, ROK, NIPH, SOLAS, IMO, we have it all - from vertical in-line, horizontal foot mount, tank mount, submersible to even customized installation.



Optimized pump selection coupled with engineering study which includes frictional losses calculation and water hammer analysis for solutions that work and last - we ensure pump operation at high efficiency, low NPSHr and low speed, with noise and vibration within the regulation limits, complemented by CE conformity marking for quality assurance.

PRELOAD PUMP *and for*

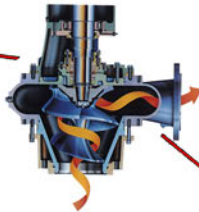
Removable Motor Cover with hermetically sealed cable entry



Cast Iron with Thermostatic Coating suitable for sea water application OR
Option: Duplex Stainless Steel

Patented Hidrostal Screw Centrifugal Impeller

- High Efficiency
- Large Free Passage
- Non-clog Characteristics
- Up to 50% Energy Savings



Submersible Motor with dry windings for high efficiency, high insulation rating and temperature sensors included.

Mechanical Seals in Tandem Arrangement against leakage.

Inspection Hole for ease of impeller check.



NON CLOGGING for **SHALLOW WATER OPERATION**

HIGH CAPACITY for **Fast Preloading**

Available with Hose Reel Deployment

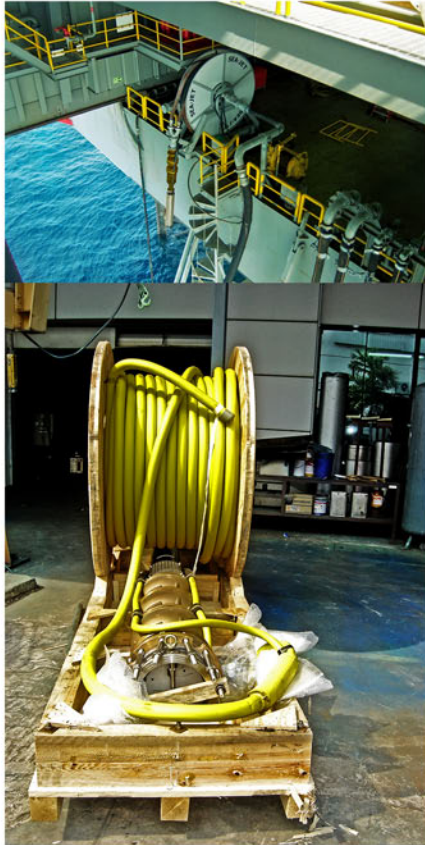


Option Available for:

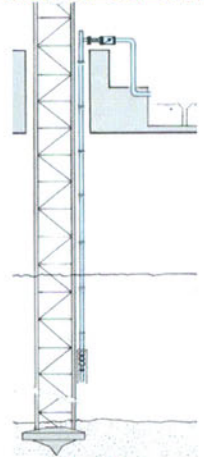
1. **Bearing Temperature Monitoring**
2. **Float Switch** for motor side seal leakage monitoring
3. **Moisture Probe** for pump side seal leakage monitoring



RAW WATER TOWER PUMP JACK UPS



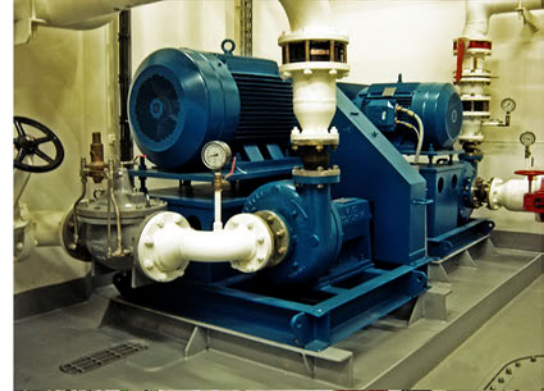
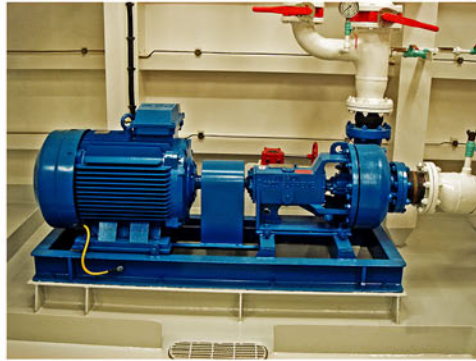
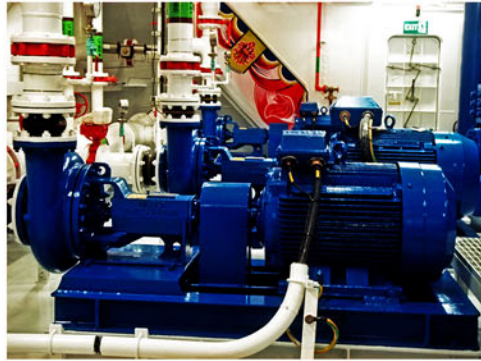
Multi-stage deep well submersible pumps in zinc-less bronze, nickel aluminium bronze or duplex material for offshore sea water installation, complete with ABS/DNV certification.



Orifices are included for multiple operation drafts and preloading. Submersible cable comes with proprietary vulcanized joint for highest degree of watertight integrity.

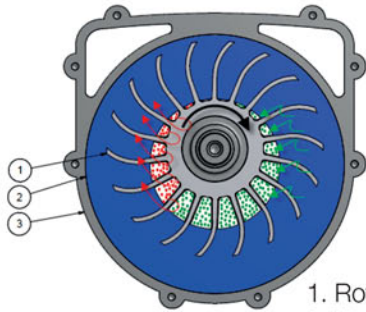
Integration of impressed current or electro chlorination anti-fouling system for biological growth prevention is available as option.

**PROVEN DELIVERIES OF LOW PRESSURE MUD
PROCESS PUMPS** suitable for even oil based drilling mud.
Pumps are made of strong concentric casing with replaceable
wear pad and highly abrasive resistant tungsten carbide
mechanical seal with gland and replaceable shaft sleeve.



Featuring the pioneer make in such application, we incorporate
wide semi-open impeller with back vanes effective in
preventing solids from entering the stuffing box, reducing box
pressure and maximizing seal life. A semi-open impeller has
lower wear rates and structural reinforcement against blade
collapse or deformation.

COMPACT MUD VACUUM UNIT FOR CLEANING OF SPILLAGE ON MAIN DECK, DRILL FLOOR AND LOWER DECK AREA. Units for safe zone and ex installations available with integrated PLC control for automatic switching to discharge once tank is full. Our units feature self cleansing system (SCS) for minimal maintenance. System comes complete with ABS/DNV certification with option for NORSOK standard compliance.



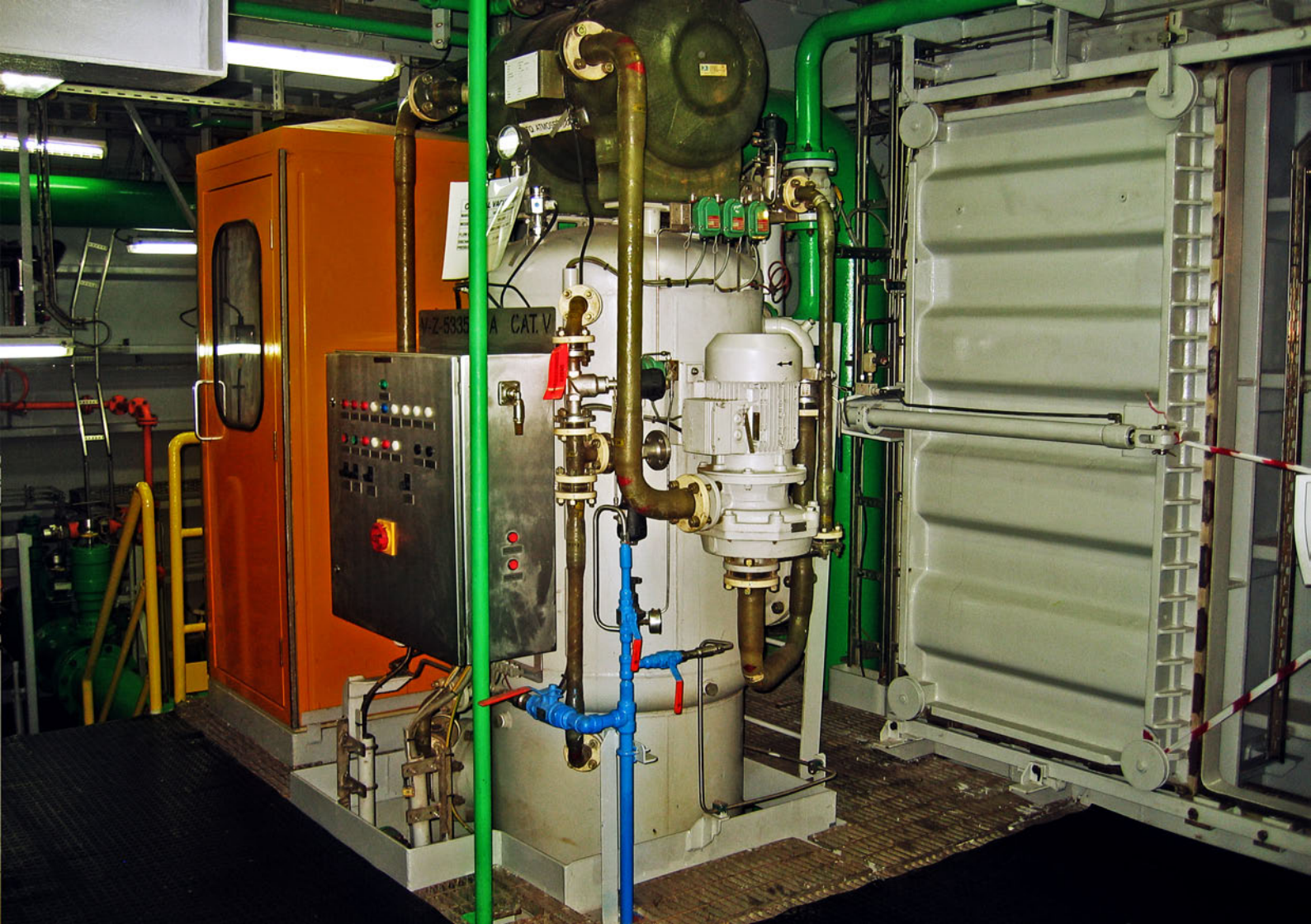
1. Rotor
2. Water ring
3. Pump cover

Fig.4: Operation principle



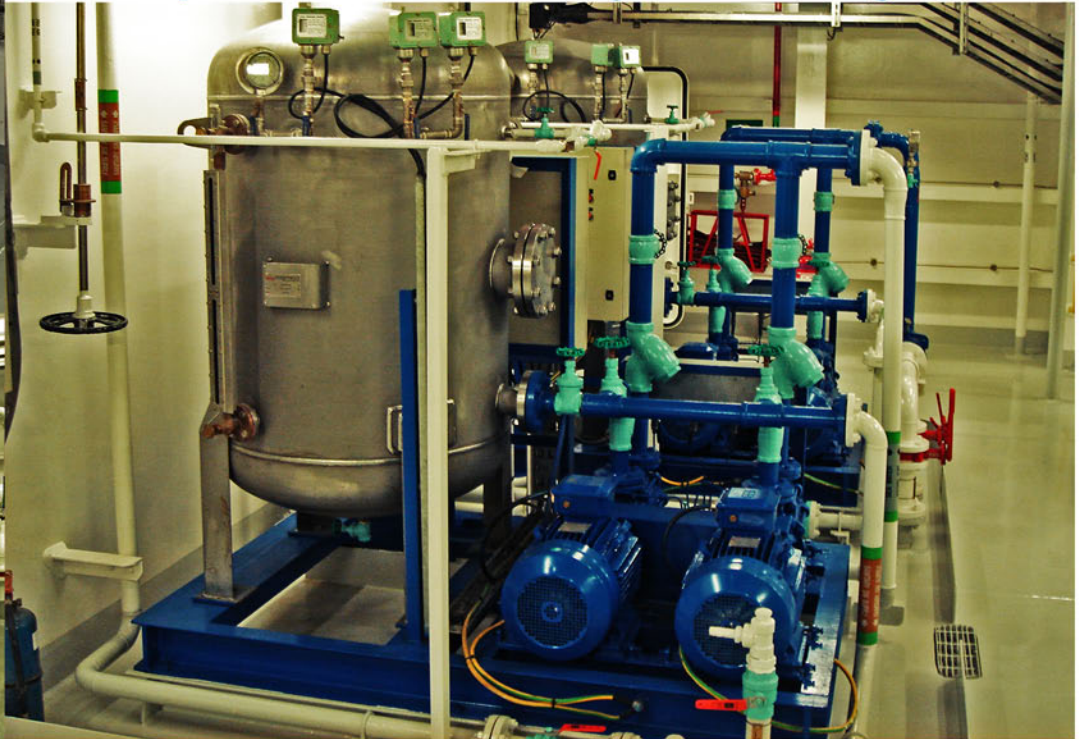
COMPACT CENTRAL VACUUM UNIT FOR COMPLICATED GROUP EVACUATION NEEDS. System made up of air ejectors or liquid ring pumps for every pre-evacuation and re-evacuation needs. All systems are fully customized to actual site piping system and type of liquid such as sea water, brine, drilling mud and even liquids containing hazardous gas. Units for safe zone and ex installations are both available with option for pneumatic drive.





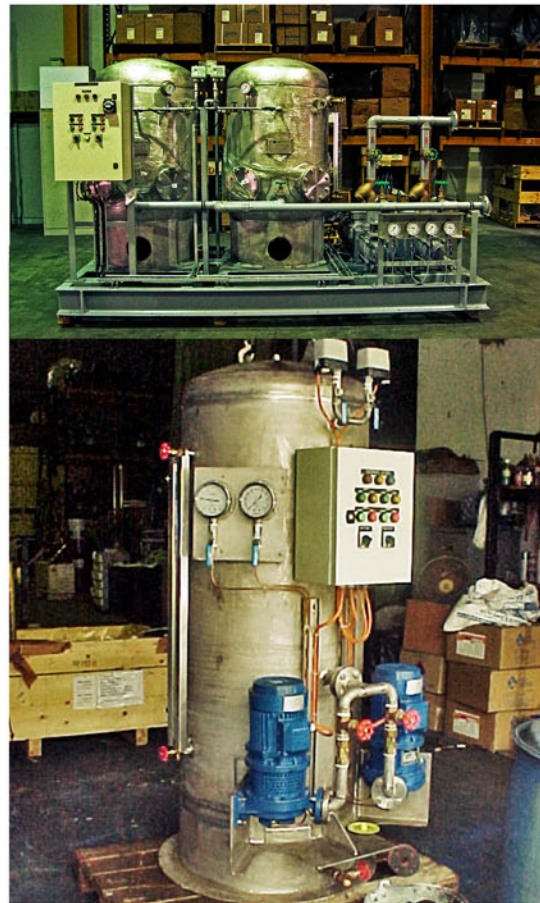
SEA *and* POTABLE WATER

Provide sufficient supply to meet demand and maintain system pressure at all times for potable and sanitary water usage.



HYDROPHORE SYSTEM

- SS 316L Tank construction to ASME section VIII Div.1 latest edition.
- U stamp and classification approval are available.
- Integrated automatic controls for duty/standby pump, with both pumps activated during peak demand.
- Tank capacity up to 3300 liters.
- Self priming pumps capable of negative suction lift.
- Integrated safety relief valve and self-closing level indicator.
- NIPH compliance available for potable water system.
- Man hole for tank inspection is included.





Low Maintenance

Spacer coupling to ease pump hydraulic disassembly works and two heavy duty permanently greased bearings for minimal maintenance.

Heat Transfer

Material suitability for mineral/synthetic heat transfer oil, glycol mixture and salt melts.

Fire Service

Fire pump performance to NFPA20 6.2.1 / 6.2.2.

Negative Suction

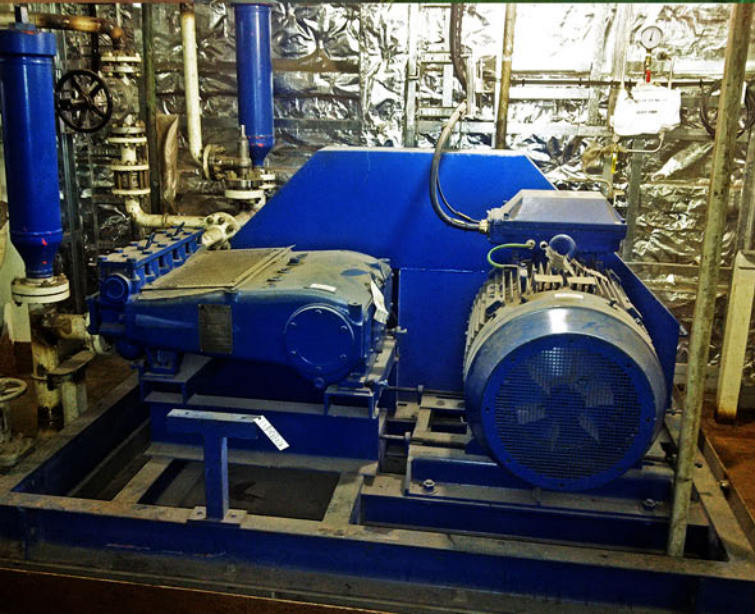
Various priming system ranging from ejector, vacuum pump and central vacuum unit are available for every system evacuation needs.

Drinking Water Application

Pump, priming system, piping system and tank in compliance to NIPH with FDA approved materials.

Temperature Extremes

Our products are capable of handling liquid temperature in the range of -100°C to 350°C.



FEATURES



Permissible Fuels in Global Tightening Limits on Sulphur Emissions

Capable of handling fuels with 0.1% sulphur content and viscosities as low as 1.0mm²/s for compliance to directive 2005/33/EC of the European Parliament and of the Council of July 6, 2005.

Tighter Environment Laws

Magnetic Driven (Seal-less) pumps are available for zero leakage and prevention in contamination by hazardous media or ignition of flammable liquids.

API 676 Compliance

API 676 compliant three spindle screw, twin screw and progressive cavity pumps are available.



Shaft Transmission Through Bulkheads or Deck Penetration

Gastight bulkhead seal for power transmission between hazardous compartment and its auxiliary room, e.g., pump room and engine room.

Operation in Norwegian Territorial Waters

Surface preparation and coating for offshore harsh environment, with option for special coating to NORSOK M501 standard.



Alternative Drive Mechanism

Air operated double diaphragm pump, hand pump, air motor, hydraulic motor and diesel engine are some of the alternative drive options available for site constraints.

FIRE FIGHTING SYSTEMS

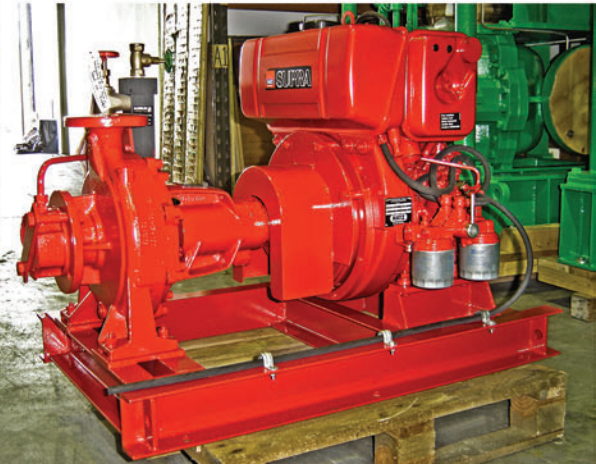
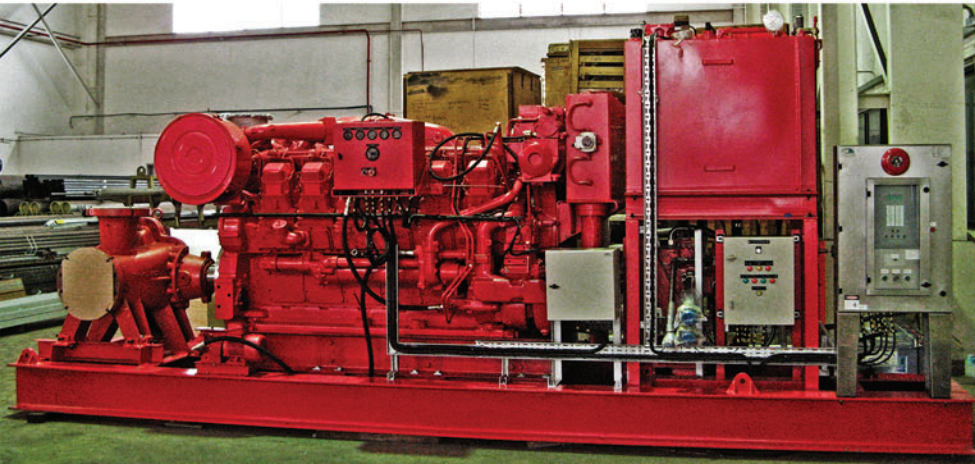
Single source supplier to various fire pump packages for marine/offshore application.

Fire pump system can be provided in the various arrangements:

- **Diesel Engine - Hydraulic Fire Pump System**
- **Direct Diesel Engine Driven Fire Pump System**
- **Diesel Engine / Electric Fire Pump System**
- **Direct Electric Fire Pump system**



Fire system and ancillaries are built and supplied according to NFPA20 regulation and able to meet various requirements of the marine classification societies.



Marine Gearboxes

Custom-made Gearboxes and Gearing Components:

- Up to 50,000kW
- Gears up to 4,700mm diameter
- Gearboxes up to approx. 200,000Kg
- Designed and manufactured for applications e.g. propulsion, generator, winch, cutter head, dredge pump, etc

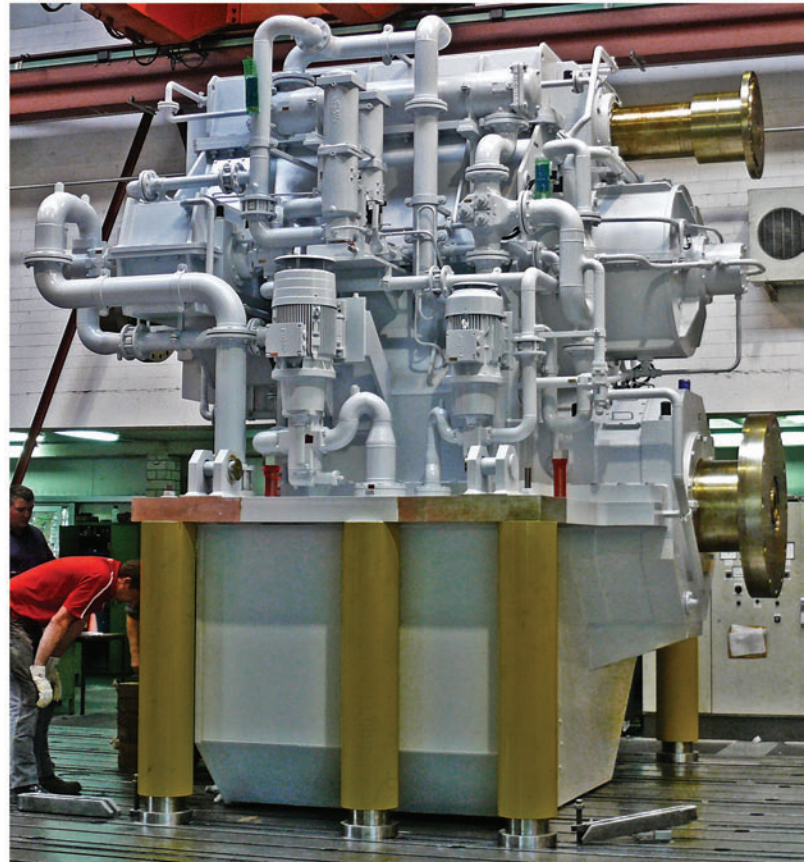
Member of the German Research Association for Drive Technology (FVA) with latest calculation methods for design of gear units / components.

Extensive know-how on material and heat treatment.

Highly qualified staff and top modern machinery from continuous heavy investment.

Worldwide service network with overhaul and maintenance program and possibility to redesign / gear ratio modification.

**Leading German Manufacturer
Since 1901**



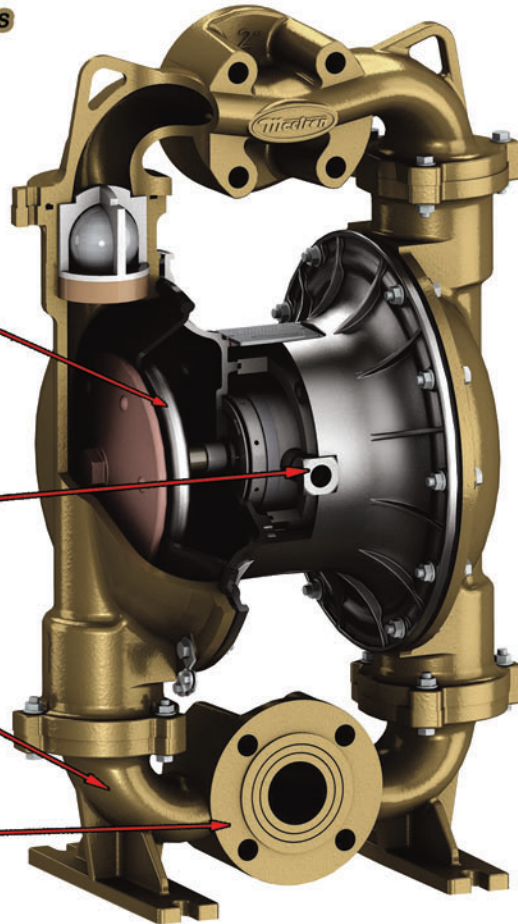
MECTRON DIAPHRAGM PUMP (MDP)
The Gold Series
AIR OPERATED DIAPHRAGM PUMPS



Hydraulic



EU Product
Made in Italy



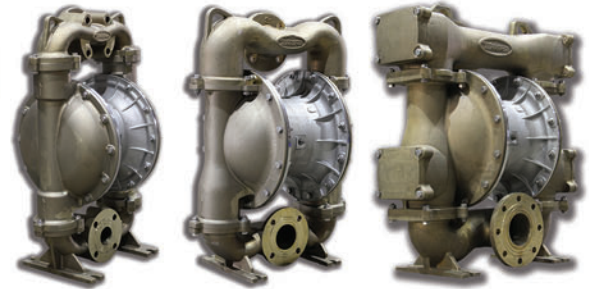
Leakage Monitoring Available

- SS316L Centre Block
- Built-in Muffler
- Lube-free Operation

**Solids Passageway from
7.5mm to 30mm**

ANSI Flanges

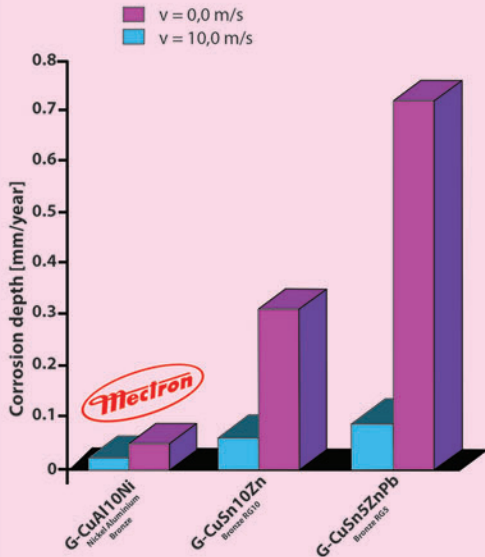
THE WORLD FIRST
NICKEL ALUMINIUM BRONZE
AOD PUMP



- **Available in 2", 3" & 4"**
- **Nickel Aluminium Bronze Material for Seawater / Oily Sludge Application**
- **Capacity from 20 to 320 USGPM**
- **Submersible Option Available**
- **ATEX Zone 1 / Zone 2 Certification**
- **Dry Run Capability**

NICKEL ALUMINIUM BRONZE

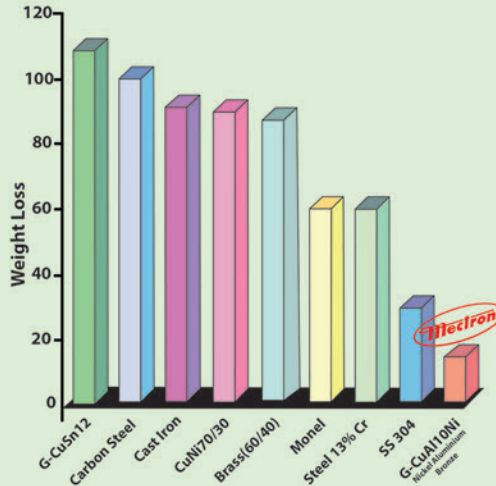
Corrosion of Cu-Alloys in Sea Water



Corrosion rates in sea water at 0 and 10m/s

The Ship Research Institute of Norway

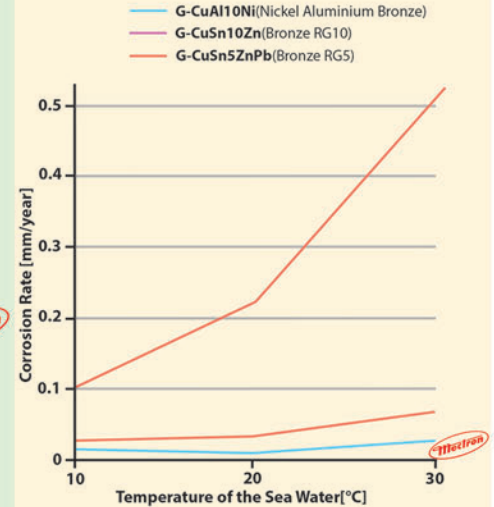
Resistance against Cavitation in Sea Water



The results are relative average values. The loss of carbon steel was defined as = 100. The smaller the numeric value, the lower the material loss and the higher the cavitation resistance.

Deutsches Kupferinstitut (German Copper Institute) and DECHEMA

Influence of the Temperature on Corrosion Resistance

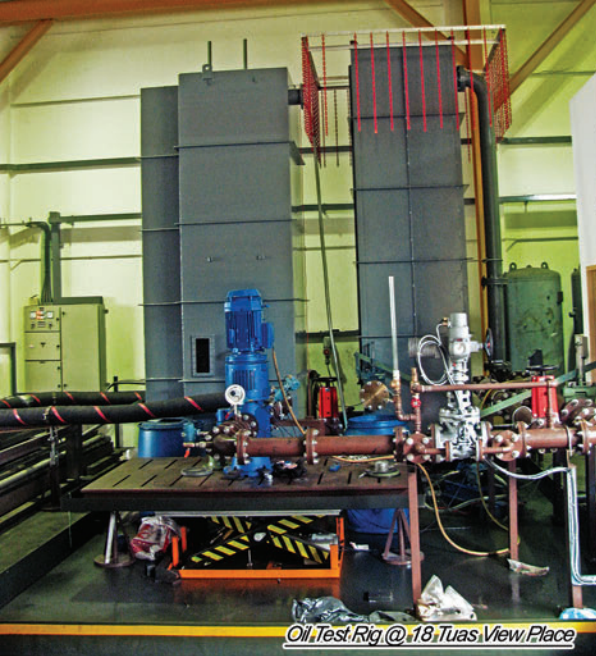


Corrosion resistance in sea water in dependence of the temperature

The Ship Research Institute of Norway

Nickel Aluminium Bronze is offered as a basic for offshore sea water application with no known case of failure to date, giving higher reliability and lower downtime for better control of operation cost which is vital for the current high offshore day rates.





Oil Test Rig @ 18 Tuas View Place



Water Test Rig @ 18 Tuas View Place

Our Test Facilities

All pumps weathered through comprehensive in-house testing and assessment made possible with our carefully formulated in-house testing facilities. Proud owner of two water test rigs and one oil test rig designed to meet the stringent requirements of ISO 9906, VDMA 24 284 and Hydraulic Institute, we are capable of even NPSH, noise, vibration and inclination test along with the conventional Q-H measurement.



Being a fast moving industry, marine and offshore demands the same from all market players. Mectron is staffed by **Highly Skilled Engineers and Technicians** available around the clock, seven days a week to respond to customer's enquiries to evaluate, troubleshoot problems with remedial actions and to provide reliable solutions with quantifiable business results.



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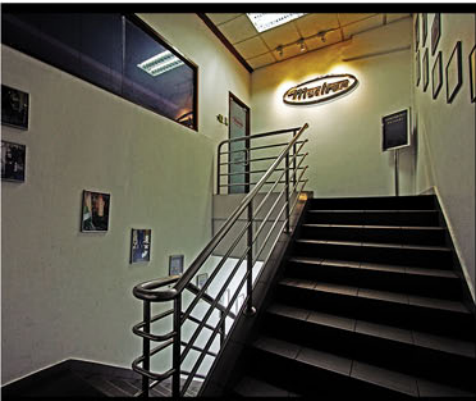
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