ERMATECH GROUP

PRODUCT CATALOGUE

FROM SAVING THE OCEANS.
TO SAFEGUARDING THE PLANET.

www.ermatechgroup.com

ERMA TECH GROUP

From saving the oceans, to safeguarding the planet.

The ERMA TECH GROUP is a global leader in sustainable technology, offering advanced solutions for the protection of the environment.

We strive to lead the maritime industry towards a future where shipping operations play their part in protecting our oceans and safeguarding the planet through effective, innovative technologies.

We offer world-class, future-proof solutions that are engineered to minimize environmental impact, enhance operational efficiency, and ensure global regulatory compliance. All delivered to our customers through our trusted global network.

The ERMA TECH GROUP Product Range

From saving the oceans, to safeguarding the planet.

Decarbonisation

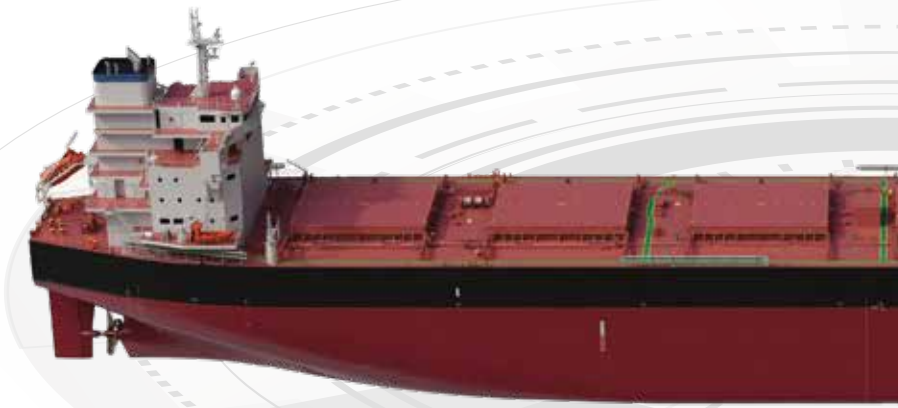
FLEXSERIES
Energy Saving Devices for Hull and Propeller

CARBON FIT
Carbon Capture & Storage

ARMADA
Passive Air Lubrication System
**Strategic Partnership*

NaviPULSE
Variable Frequency Drives

POLCOR
Cathodic Protection



ERMA FIRST FIT BWTS
BWTS Full Flow EC

ERMA FIRST FLOW
BWTS Filterless Side Stream EC

EcoOne
BWTS Chemical Injection

oneTANK
BWTS Intank

ALIOS
Fresh Water Treatment

Water and Wastewater

AMIO
Coriollis Flow Meters

METIS
Intelligent Analytics

BLUE CONNECT
Alternative Maritime Power

DBPI®
Ultrasonic Antifouling

HAZDASH
IHM Platform

HAZDASH

Cleansewage-BIO
MBBR STP

Cleansewage-MBR
Advanced Membrane STP

POSEIDON FIT
Bilge Water Separator

OWS-COM
Bilge Water Separator

TRITON EC & FIT
Electrochemical &
Physicochemical STPs

01

Energy Saving Devices

ERMA FIRST FLEXSERIES

IMPOVING EEXI. REDUCING EMISSIONS.
STAYING COMPLIANT.

FLEXCAP

ERMA FIRST FLEXCAP is a second generation propeller cap which helps to reduce the formation of the hub vortex, which can reduce the propeller's efficiency and cause cavitation and noise. The fins cancel out the vortices generated at the root of each blade, reducing the torque demanded for the same RPM and can occasionally generate additional thrust.

- Diameter: **Approximately 23%-25% of the propeller diameter**
- Weight: **Roughly 3% of the propeller weight (no need for shaft alignment recalculation)**
- Material: **ERMA FIRST FLEXCAP is made from NiAlBronze, the same material as the propeller, ensuring durability and longevity**

**The dimensions and weight may vary based on specific design but are not expected to increase significantly*

FLEXRING

The ring guides the flow towards the propeller in a way that it increases the speed at the areas of obstructed flow and improves propulsive efficiency. Additionally, there is some thrust that develops on the duct and with proper alignment of the fins (optional) a pre swirl effect is created, increasing further the efficiency of the propeller.

- **Easy to assemble parts & quick installation**
- **Case-specific adjustments**

FLEXFINS

A set of fins properly placed and aligned, guide the flow around the hull in a way that it is more evenly distributed, reducing resistance, and assisting in directing better flow to the propeller.

- **Minimal intervention to the hull**
- **Same day installation**

ERMA FIRST ESDs BENEFITS

Next-Generation ESDs

Unique 3-part package solution

Considerable fuel savings available

Ship-specific design to secure maximum efficiency gains

In-house CFD calculations, based on operator's input

Future-proof for all energy-saving interventions, including wind-assistance propulsion

CII / EEXI improvement, securing compliance for up to 4 years

RightShip Zero Harm Innovation Partners

02

Alternative
Maritime Power

ERMA FIRST BLUE CONNECT

THE ULTIMATE ALTERNATIVE
MARITIME POWER SOLUTION

DESCRIPTION

ERMA FIRST BLUE CONNECT is the Shore Power solution designed and offered by ERMA FIRST. Shore Power is the connection of vessels to a port's electrical grid to power onboard services, systems and equipment. This enables ships' diesel generators to be switched off with a resultant reduction in noise and emissions, such as particulate matter, nitrogen oxides, sulphur oxides, carbon oxides and volatile organic compounds. Vessels with power demands higher than 1MVA must establish High Voltage Connections (6,6kV or 11kV) with the mainland's power grid, implementing suitable equipment according to international regulations and ports requirements.

ERMA FIRST BLUE CONNECT is available for: Ro-Ro/Ro-Pax, PCTC, Ferries, Containers, Cruise and Tankers.

ACHIEVES REGULATORY COMPLIANCE, IMPROVES CII INDEX, REDUCES GHG INTENSITY.

DNV
Recognised as an ESD for its positive impact on CII

BV
Approval in Principle (AiP)

PRODUCT RANGE

Models	Voltage Configuration	Type of connection to vessel's MSBConfiguration	Maximum Power Supplu Pn (MVA)
75HV6F	High	Fixed system: Permanent connection to vessel's MSB	7.5
15LV6F	Low		1.5
25LV6F			2.5
40LV6F			4.0
50LV6F			5.0
75LV6F			7.5
75HV6P	High	Portable system: Plug-in type of connection vessel side	7.5
15LV6P	Low		1.5
25LV6P			2.5
40LV6P			4.0
50LV6P			5.0
75LV6P			7.5

* Product range depicted above is designed specifically for Containers

BLUE CONNECT BENEFITS

- Advanced engineering
- Turnkey approach
- FuelEU and CARB compliant - Zero air emissions at berth
- Reducing OPEX and maintenance costs
- Improving port's microclimate and seafarers' working conditions
- Low-emissions port compliance
- Access to ERMA FIRST's global service network

03

Passive Air
Lubrication Systems

armada TECHNOLOGIES

ARMADA PALS

A LOW POWER SUSTAINABLE SOLUTION

Armada Technologies is a Strategic Partner of the ERMA TECH GROUP

DESCRIPTION

PASSIVE AIR LUBRICATION SYSTEM (PALS)

Armada Technologies is transforming the shipping industry with PALS, our patented air lubrication system. Unlike traditional methods, PALS uses the ship's forward motion to create a precise air-water mixture without the need for energy-intensive compressors. It's the future of efficient, eco-friendly shipping.

WHY CHOOSE PALS?

1. Optimized Efficiency at Any Speed or Sea State

- Unmatched versatility. PALS excels under various operating conditions, from slow steaming and deep draft, to higher speed and shallow draft vessels.
- Superior Adaptability: PALS operates across a wide range of weather and sea states. Delivering savings for more of your operations, for more of the time.

2. Smarter Bubble Control for Maximum Coverage

- Innovative Design: PALS uses a venturi system and the vessel's natural motion for an optimal bubble spread, lubricating the entire hull surface effortlessly.
- Machine Learning Integration: Tailors bubble production to match your ship's unique operational needs, guaranteeing efficiency under all conditions.

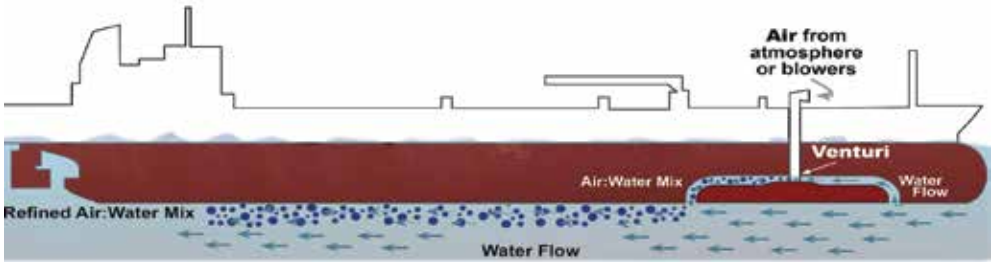
3. Sustainable and Cost-Effective

- Minimal Energy Consumption: Small pumps and blowers activate only when conditions demand, cutting down on energy usage and operational costs.
- Compact and Quiet: Eliminates the need for large, noisy compressors, saving space , reducing on board vibrations and lowering under water noise emissions.

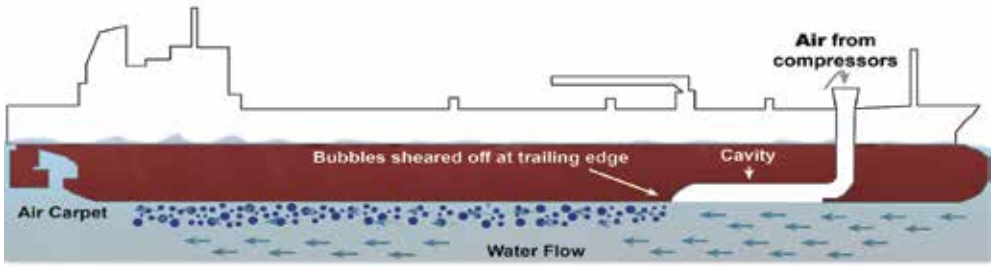
OVERCOMING TRADITIONAL LIMITATIONS

With PALS, you can eliminate:

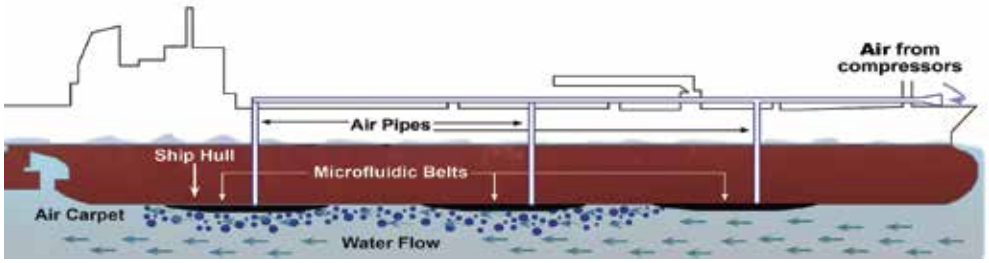
- High energy consumption from air compressors
- Ineffectiveness in rough seas or at lower speeds
- Systems requiring frequent maintenance and prone to failures
- The risk of excessive drag from inactive equipment
- Overinflated claims about fuel savings



ARMADA Technologies Passive Air Lubrication System



Cavity-based Air Lubrication Systems



Fluidic Air Lubrication Systems

04

Carbon Capture
& Storage

ERMA FIRST CARBON FIT

ACHIEVING CARBON NEUTRAL SAILING

DESCRIPTION

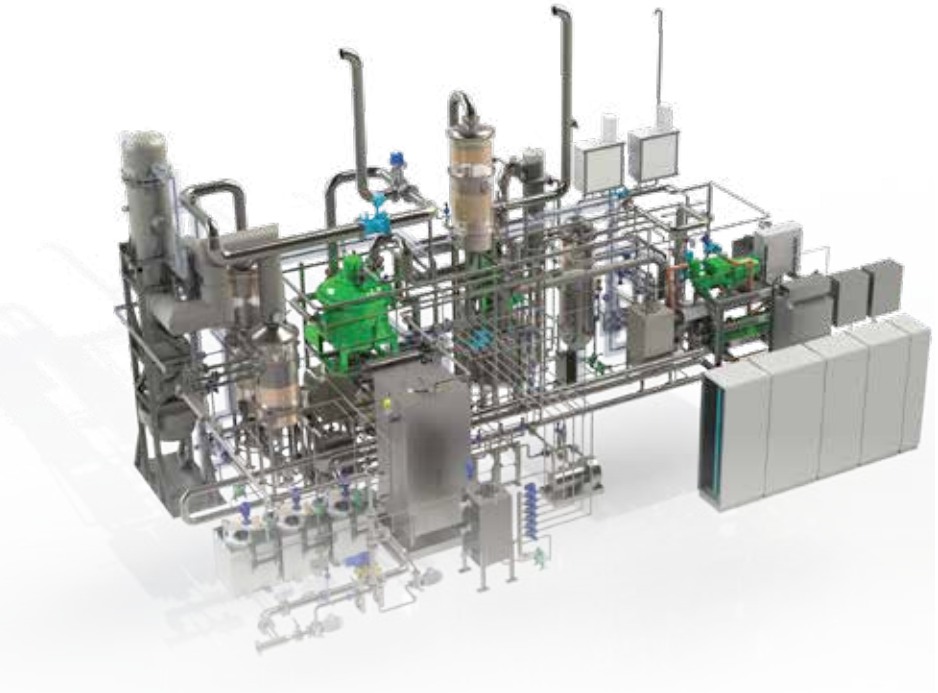
With increasing environmental regulations and growing awareness around climate change, the maritime industry's move towards carbon-neutral operations is imperative. ERMA FIRST is at the forefront of this revolution, offering a proprietary Carbon Capture & Storage (CCS) system (CARBON FIT) designed to meet the industry's rigorous emission reduction targets.

CARBON FIT AMINE ABSORPTION SYSTEM

This system relies on the proven amine absorption technology. The amine solvent absorbs CO2 from the flue gas in a specially designed absorber. The solvent is then regenerated through the application of heat, releasing the CO2, which is subsequently liquefied and stored under cryogenic conditions onboard. The regenerated amine solvent is then reused, creating a cyclical, efficient process for capturing and storing CO_2.

CARBON FIT STRONG ALKALI SYSTEM

This system utilizes potassium hydroxide as an inorganic alkali agent to capture CO2. The flue gas reacts with the calcium hydroxide solution in a specially designed reactor, creating a calcium carbonate slurry as a byproduct. This byproduct is then dehydrated and stored onboard until it can be disposed of at authorized facilities.

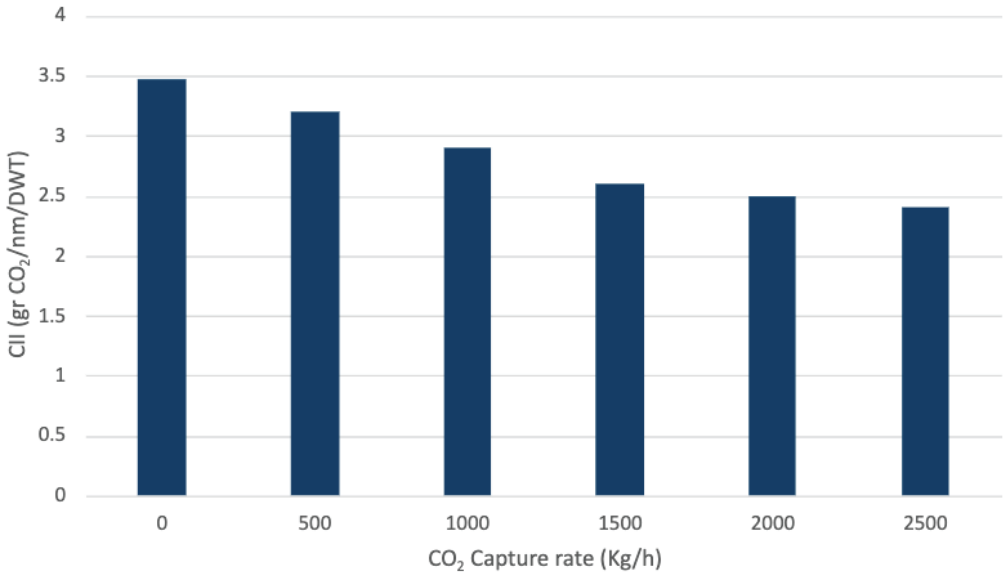


LR & DNV
Approval in Principle (AiP)

WHY ERMA FIRST CARBON FIT?

By choosing ERMA FIRST CARBON FIT, you're investing in advanced, effective technology that helps you meet and exceed the IMO's stringent emission reduction targets. It's not just about compliance; it's about contributing to a greener, more sustainable future for the maritime industry.

CII of the CCS cases vs baseline.



CARBON FIT BENEFITS

- Extremely low footprint
- Performance of absorption and stripping unaffected by ship inclination
- Modular installation. Components are loose and can be installed at vessel available spaces.
- Purity of produced CO2 up to food grade (>99.9% CO_2).
- Flexible offering including or not CO_2 liquefaction plant.
- Exhaust gas economizer as a standard to reduce steam consumption to an absolute minimum.
- Easy integration with vessels with installed EGCS burning HFO and able to operate on vessels which use ULSF.
- Standard models offering from 165 kgCO2 eq/ hr up to 2,500kgCO2 eq/hr.
- Use of non-proprietary amine solution allows easy sourcing at competitive pricing.

NaviPULSE

VARIABLE FREQUENCY DRIVES (VFD)

DESCRIPTION

NaviPULSE VFD UPGRADE is a high-efficiency solution designed to significantly reduce operational costs and energy consumption—by up to 75%—across a wide range of shipboard applications, including engine fans, cooling systems, winches, hatches, cranes, and BWTS. This compact and flexible system lowers fuel usage and emissions, extends motor life, and minimizes maintenance needs. Delivered as a turnkey package, it includes project management, class-approved engineering, global installation and commissioning, and fast spare parts access through ERMA TECH GROUP's international network. Available in both enclosed air-conditioned units for warm climates and loose configurations with EMC-compliant cabling, NaviPULSE offers customizable options to fit vessel-specific requirements, ensuring fast installation, high performance, and long-term value.

NaviPULSE VFD

With NaviPULSE VFD UPGRADE, vessels can now achieve significant savings in operation costs and power consumption of any kind of pumps.

- Energy saving up to 75%
- Less fuel consumption, lower emissions
- Reduced maintenance costs and improved motor life

APPLICATIONS

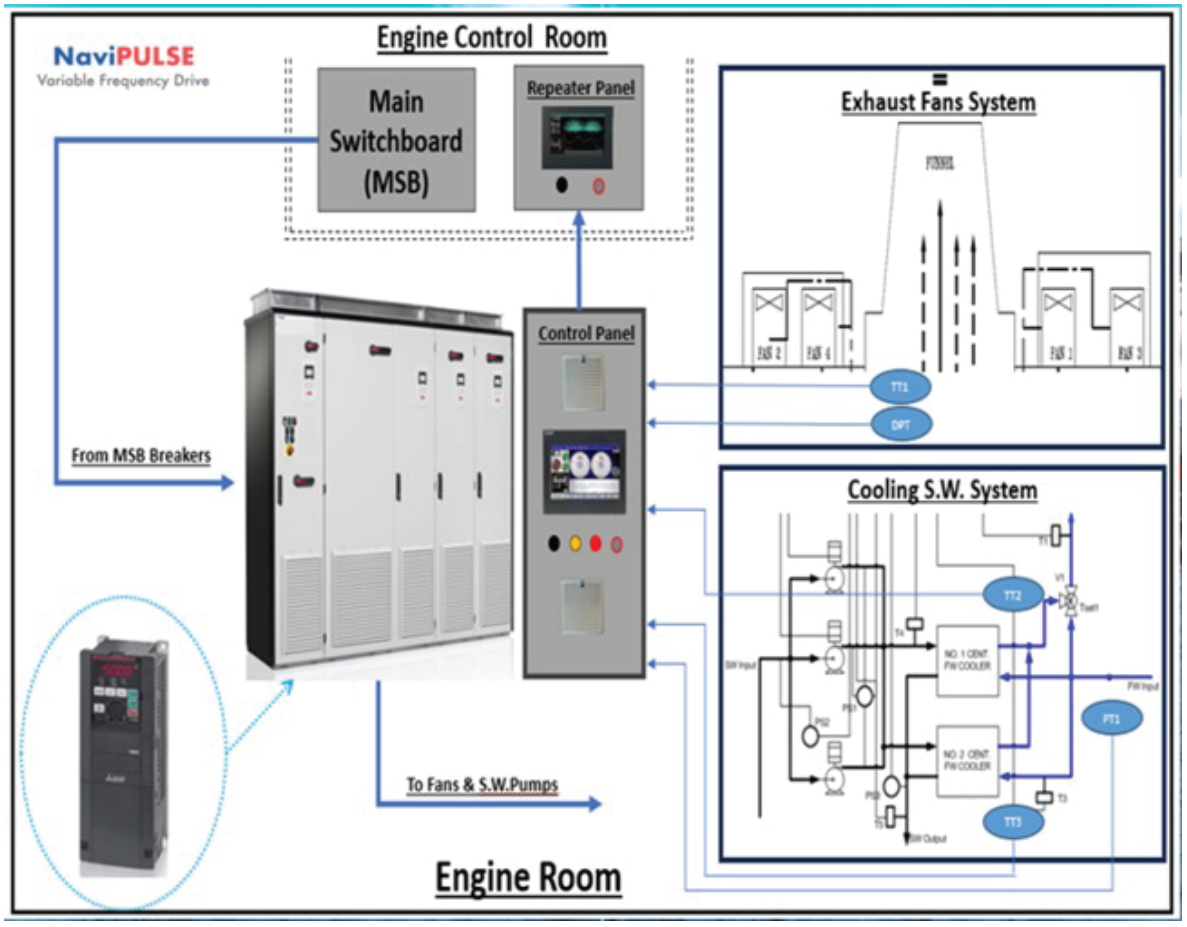
Engine Fans, Cooling Systems, Winches, Hatches, Cranes, BWTS

Complete turnkey solution, including:

- Project management
- Class approval engineering work
- Installation material procurement
- Worldwide or afloat installation or installation supervision
- Worldwide commissioning
- Worldwide spare parts availability at ERMA TECH GROUP's spare part hubs
- Extended warranty options

NaviPULSE BENEFITS

- Enclosed air-conditioned configuration suitable for vessels operating in warm climates, where saving is higher (longer cooling water pump & fans operating hours).
- Loose supply configuration with special selected connecting cables ensuring compliance with EMC rules.
  - ✓ Competitive offering
- Selection from wide variety of configurations, off the shelf products from the standard model's portfolio.
- Custom made configuration based on the large in-house engineering, automation and production capacity.
  - ✓ Smaller footprint
  - ✓ No cooling
  - ✓ Bypass option
  - ✓ Fast installation



06

Ultrasonic Antifouling

DYNAMIC BIOFILM PROTECTION INTELLIGENT®

DESCRIPTION

Dynamic Biofilm Protection Intelligent® is the next generation of the multiple award winning Dynamic Biofilm Protection®.

DBPI® prevents marine growth, biofouling and biocorrosion on all liquid carrying surfaces even more efficiently and at the same follows the current and future demands of the shipping industry.

By using artificial intelligence, each individual transducer is able to monitor its own efficacy in its area of operation, ensuring that the system can respond to constantly changing conditions in the most efficient way.

- Save cost from propeller cleaning
- Reduce fuel consumption
- Helps to improve the CII index
- Increases operational efficiency

APPLICATIONS

Propeller / Pod Drives, Seawater Cooling Systems, Freshwater Generators, Bow Thruster/Stern Thruster

07

Cathodic Protection,
Antifouling, IHM Platform

MARINE EQUIPMENT AND SERVICES

CATHODIC PROTECTION AND ANTIFOULING

- POLCOR Aluminum & Zinc Anodes
- Antifouling / MGPS Anodes
- Type Approval by LR
- Stock points in major ports
- Tailor-made designs
- Highest environmental standards

CADMIUM-FREE ANODE SERIES

HAZDASH IHM Preperation and Maintenance Cloud-based Platform

PRINCIPALS REPRESENTATIONS Sales, Spares, Services and Technical Support

08

Performance monitoring

FLOW & TORQUE METERS, DATA ACQUISITION

DESCRIPTION

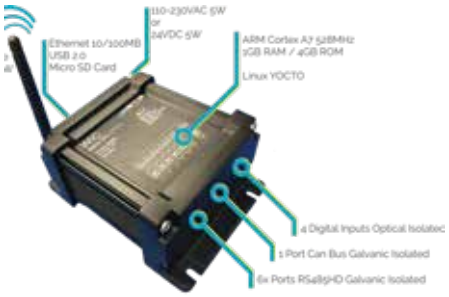
One-stop solution for data measuring and acquisition for performance monitoring.

An integrated data acquisition suite combining mass flow meters, torque sensors, and advanced logging systems, designed to ensure compliance with IMO's DCS emissions monitoring regulations and enable performance-based environmental monitoring.

ERMA TECH GROUP's emissions data package delivers real-time, high-accuracy insights through a seamless combination of flow, torque, and propulsion analytics - empowering shipowners to meet CII and EEXI compliance with confidence.

AMIO Flow Meters

DATUM Torque Meters



METIS Ship Connect Data Acqusition

AMIO BENEFITS

The zero-calibration, high-accuracy Coriolis flow meter for seamless fuel monitoring, compliance reporting, and optimized voyage planning, built for ships that demand reliability without complexity.

- High-quality product at competitive pricing.
- Extended guarantee.
- Complete fuel consumption solution package, including:
  - Mass Flow Meters at consumption and return lines.
  - Integration & monitoring of the AMIO Flow Meters readings.
  - Automatic fuel consumption reports download per consumer.
  - Integration of AMIO Flow Meters with vessel's data monitoring system.
- Customized fuel monitoring solution based on in-house engineering, automation and production capacity.
- Calibration plan subscription which allows uninterrupted and compliant operation.

APPLICATIONS

Main engine consumption, AUX engines consumption, Bunkering operations, M/E performance monitoring, Boiler

METIS Space

Gain a comprehensive, real-time overview of your vessel's operations with high-frequency, reliable data. Monitor voyage status, performance metrics, and critical KPIs to drive informed decision-making. Optimize fleet performance, reduce emissions, and boost operational efficiency by prioritizing what matters most — all through actionable insights that support a smarter, more sustainable way of shipping.

Emissions
- DCS / MRV
- CII Analysis
- EU ETS
- FuelEU

Operations
- Operation Analysis
- Voyage Planning
- Charterparty Compliance
- Route Optimisation

Performance
- Hull Fouling Analysis
- Predictive Hull Cleaning Recommendation
- Speed & Consumption at any draught and weather
- Propeller Running Margin

Machinery
- Main Engine Performance
- Diesel Generator Performance
- Boiler Operation Analysis
- AMS Alarm Monitoring
- Scrubber Monitoring

09

Ballast Water
Treatment Systems

ERMA FIRST FIT BWTS

THE INDUSTRY LEADER

OPERATION

ERMA FIRST FIT BWTS is a full flow electrolytic system that operates only during ballasting.

BALLASTING

FULL FLOW ELECTROLYSIS

During ballasting the water passes through a filter to remove organisms and sediment larger than 40 microns.

The filtered water enters the Electrolytic Cell. From the chlorides of the water, free chlorine is produced through the electrolysis process at a very low concentration (around 4-6 mg/L). The treated water then enters the ballast tanks.

DE-BALLASTING

CONSIDERABLE GAINS

During de-ballasting, the system will only monitor the residual oxidants and will only intervene if necessary. The main stages of the system (filtration and disinfection) are bypassed.

A Total Residual Oxidants (TRO) sensor tests the residual chlorine at the discharge line. If it is greater than 0.1 mg/L, a dosing pump will deliver the correct dosage of neutralizing agent (Sodium Bisulfite). Successful neutralization of free chlorine is confirmed by a second TRO sensor installed at the end of the ballast discharge line.

SYSTEM

ERMA FIRST FIT BWTS is an autonomous and reliable solution for all types and sizes of vessels.

ERMA FIRST FIT BWTS is an advanced modular system that was developed to exceed all the special installation requirements for either newbuild vessels or any retrofit projects. The major components of the system include a high-end backwash filter and an electrolytic cell with outstanding performance. Covering an extensive capacity range of 50-3740 m3/hr and certified for operation in the most challenging conditions by the IMO, USCG and classification societies, ERMA FIRST FIT BWTS is an ideal solution for all types and sizes of ships.

SEPARATION

40 microns self-cleaning automatic screen filter

(three options available)

DISINFECTION

Advanced quality Electrolysis Cells

ERMA FIRST FIT BWTS BENEFITS

Simple and flexible

Suitable for all spaces and pump capacities

Zero holding time

Ballasting fresh water

Expanded operational flexibility

METIS remote data monitoring (optional)

FULLY CERTIFIED

IMO
Type Approval

USCG
Type Approval

China
Type Approval

Korean
Type Approval

09

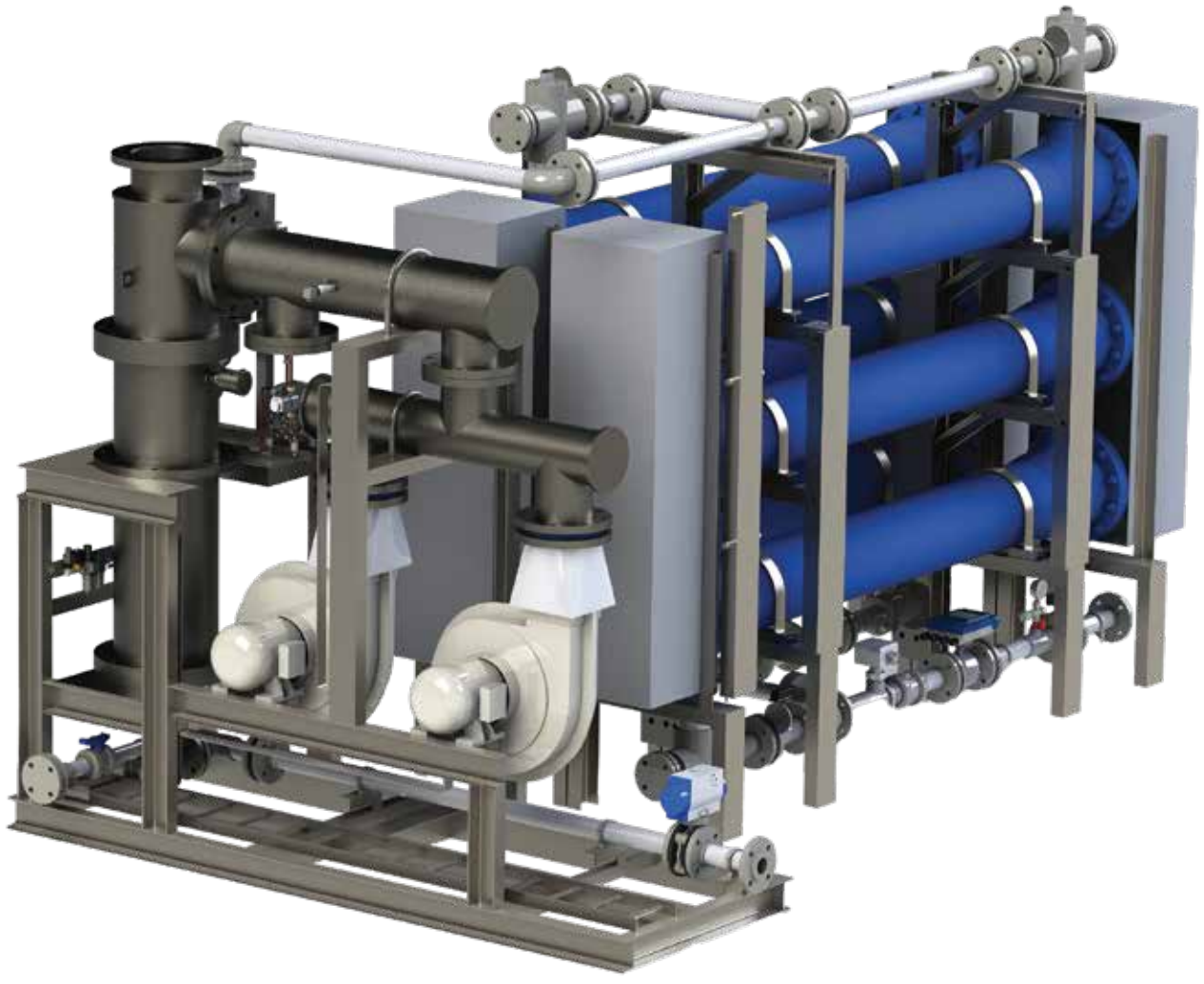
Ballast Water
Treatment Systems

ERMA FIRST FLOW BWTS

PIONEERING FILTERLESS SOLUTION FOR NEW BUILDINGS

DESCRIPTION

The ERMA FIRST FLOW Ballast Water Treatment System (BWTS) offers an advanced, automated solution for treating ballast water in marine vessels. This system is designed to be highly efficient and flexible, capable of being installed as a single unit. The system features filterless EC, side-stream treatment technology that is particularly suitable for large-capacity vessels and requires less installation space. Installation is streamlined with pre-assembled, skid-mounted components including electrolysis cells (EC), transformers/rectifiers (TR), and degassing units.



ERMA FIRST FLOW BENEFITS

Space Efficiency: Occupies less space due to its side-stream configuration, making it ideal for large ships.

Reduced Operational Costs: Minimizes energy consumption and operational expenses with only 0.4% of total ballasting capacity required.

Safety and Compliance: Components are installed in non-hazardous areas, making it suitable for tankers and complying with marine safety standards.

Ease of Installation and Maintenance: Offers easier installation and maintenance with skid-mounted components and marine-approved flexible couplings.

Automation and Control: Fully automated with a comprehensive sensor set for monitoring the treatment process, including flow, pressure, temperature, and salinity sensors.

PRODUCT RANGE

MODEL	TRC (m3/h)	Sidestream Flow Rate (m3/h)
FLOW 500	500	
FLOW 1500	1500	10
FLOW 2000	2000	15
FLOW 2500	2500	15
FLOW 3000	3000	15
FLOW 4000	4000	20
FLOW 5000	5000	20
FLOW 6000	6000	30
FLOW 7000	7000	30

09

Ballast Water
Treatment Systems

ERMA FIRST oneTANK BWTS

SMALLEST FOOTPRINT. LOWEST COST.

DESCRIPTION

ERMA FIRST oneTANK BWTS is a simple, low-cost ballast water treatment system that was developed to provide the simplest possible solution to treat one or a few ballast water tanks. Tanker vessel aftpeak tanks, superyachts, ATBs, Jack up platforms and workboats with space and power limitations are ideal applications.

oneTANK BWTS BENEFITS

One-size fits all, units on stock

Smallest BWTS globally

Lowest cost BWTS globally (CapEx and OpEx)

Standard spare part packages available

Maximum flexibility (installation)

Ideal solution for tanker APTs and smaller vessels

TREATMENT

Ballasting procedure is conducted without any system integration. Disinfection takes place by injecting liquid chlorine into the ballast tanks through a simple circulation loop and mixing nozzles. Once treatment is completed within holding time required, excess chlorine is neutralized and ballast water is ready to be discharged overboard.

INSTALLATION - OPERATION

ERMA FIRST oneTANK BWTS has minimized footprint, weight and installation materials, leading into a timely retrofitting on board without any specialized workmanship requirement. This makes for quick and easy retrofitting for newbuilding or existing vessels.

Maintenance is simplified as no filter, complex UV lamps, electrolytic reactors or transformer rectifiers are incorporated.

USCG & BWMS
Code Approved

09

Ballast Water
Treatment Systems

Ecochlor BWTS

ANY VESSEL, ANY ROUTE, ANY PORT

DESCRIPTION

The EcoOne® BWTS is available in filterless mode or hybrid options, as well as in the EcoOne® Container Unit. This affords you even more choices when it comes to choosing the ballast water management system that is best suited for your vessel.

All our BWMS come with the same BWMS reliability, high level of efficacy and superior global service. One major benefit of choosing Ecochlor is the simple operation for your crew!

Other benefits include:

- NO TRO sensors
- NO electrodes
- NO complex power requirements

Additionally, with our system you will be using a low power and carbon footprint solution that helps you reduce your environmental impact and lower emissions.

EcoOne®

Filterless BWMS

- Single-step disinfection process (ClO2)
- Suitable for marine and brackish waters (>1 PSU)
- No operational restrictions on temperature or water turbidity
- Simplified, efficient system with no filtration required

EcoOne® BWTS ENERGY EFFICIENCY

Ecochlor BWMS Power Requirements	System With or Without Filter Operation	System Without Filter Operation Only
Power Requirements Maximum power requirements will only occur when the filter is in continuous cleaning mode for turbid water	With Filter: Ranges 7.5 to 60* kW Without Filter: Ranges 5 to 15 kW	Flow Rate: 500-3,000 m3/hour Range from 5kW to 7kW Flow Rate: 3,000-10,000 m3/hour Range from 10kW to 15kW

**Includes 2 BS1406 filters requiring two CP-2 electrical panels*

EcoOne® Filterless BWMS

10

Bilge Water Treatment

POSEIDON FIT

OVER 5000 INSTALLATIONS. AN UNRIVALLED GLOBAL NETWORK.

DESCRIPTION

POSEIDON FIT Bilge Oil Water Separator consists of two stages; the coalescer and the emulsion breaking unit. In first stage the oil separation is carried out inside the larger cylinder via a combined gravity separation and coalescence process. The second stage is used only when the oil detection monitor detects the effluent of the coalescer oil content is higher than 4/14ppm. The emulsion breaking unit then begins its operation.

Due to an effective hydrocarbon absorption material, the effluent of 5ppm or less is ensured, according to the new Environmental Class Notations. This way, the operation and maintenance cost is minimised and the life of the equipment is prolonged.

DECKMA HAMBURG

BRANNSTROM

5,000+

UNITS SOLD

POSEIDON FIT BENEFITS

- Pressure type that fits all new-building designs
- Plug and Play installation
- Minimum maintenance
- Self-cleaning through backwash
- Maximum utilisation of separated oil
- Fully automatic unattended operation

PRODUCT RANGE

Models	Dimensions
POSEIDON FIT 0,25 m³/h	830 x 400 x 918
POSEIDON FIT 0,50 m³/h	830 x 400 x 918
POSEIDON FIT 1,0 m³/h	1100 x 860 x 1260
POSEIDON FIT 2,0 m³/h	1450 x 860 x 1575
POSEIDON FIT 5,0 m³/h	1660 x 870 x 1541
POSEIDON FIT 7,5 m³/h	1660 x 870 x 1541
POSEIDON FIT 10,9 m³/h	1700 x 870 x 1945

10

Bilge Water Treatment

OWS-COM

TOTAL WATER MANAGEMENT

DESCRIPTION

More than 18,000 ships have already been equipped with RWO's oily water separators since RWO started its business in 1975. The OWS-COM system uses a combination of highly effective open porous coalescer with automatic backflushing, together with a second stage emulsion breaking oil and hydrocarbon polisher. The periodical backflushing keeps the coalescer surface clean and offers long lasting operation according to IMO MEPC.107(49). The OWS-COM is part of RWO's leading Total Water Management offer.

18,000+

UNITS SOLD

Reliably reaches

5 ppm limit

- > IMO type approved
- > MED certified by German Administration
- > Approved by USCG, ABS, DNV-GL, RMRS, RRR, CCS

OWS-COM BENEFITS

- Easy to install and maintain
- Suction type: preserves pump from attrition
- Most compact: suitable for newbuildings and retrofits
- Improved hydrodynamics for longer polisher lifetime
- Oil monitoring device continously checks effluent
- Most economical: second stage is bypassed whenever possible

PRODUCT RANGE

Type	Capacity m^3/h	Length mm	Width mm	Height mm	Power kW	Empty weight kg
0.1	0.1	715	650	1100	0.8	125
0.25	0.25	960	750	1005	2.6	180
0.5	0.5	970	750	1050	3.2	195
1.0	1.0	1170	800	1220	3.2	270
2.5	2.5	1510	1060	1485	3.7	457
5.0	5.0	1825	1385	1715	4.6	757
10.0	10.0	2155	1575	2000	5.7	1195

11

Waste Water Treatment

TRITON SERIES

MINIMIZING FOOTPRINT. MAXIMISING RESULTS.

DESCRIPTION

TRITON EC is a purely electrochemical wastewater treatment plant. It is a sewage treatment plant meeting the requirements of MEPC 227 (64) of the International Maritime Organization (IMO). TRITON EC is also available in modules, which makes the system ideal for retrofit projects where openings of doors and haches are limited. Our technical team can support any type of installation, finding the best technically and economically available solutions.

TRITON FIT is a physiochemical sewage treatment plant that fully complies with the requirements of IMO/MEPC.227(64). The accessibility from one side allows ship designers to plan space in the engine room on a whole new level. Both its very compact size and extended treatment capacities make TRITON FIT ideal for modern Superyachts that accommodate up to 30 people on board.

TRITON EC

TRITON FIT

TRITON BENEFITS

- Constantly high effluent quality
- On-Off operation
- Minimum operational costs & maintenance
- Skid mounted or loose supply
- Fully automatic operation
- Worldwide service points

PRODUCT RANGE

Models	Hydraulic loading (l/day)	Organic loading (kg/day)
TRITON EC – 15	1500	1,2
TRITON EC – 35	3500	2,8
TRITON EC – 50	5000	4,0
TRITON EC – 65	6500	5,2
TRITON EC – 100	10000	8,0
TRITON EC – 200	20000	16,0
TRITON EC – 300	30000	24,0
TRITON EC – 500	50000	40,0
TRITON EC – 600	60000	48,0
TRITON EC – 700	70000	56,0

Models	Hydraulic Loading [m3/day]	Skid Footprint L/W/H [mm]	Footprint with loose pumps L/W/H[mm]
TRITON FIT - 3.0	3.0	730 / 580 / 1039	580 / 515 / 1039
TRITON FIT - 6.0	6.0	855 / 690 / 1039	690 / 720 / 1039

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Waste Water Treatment

CLEANSEWAGE-BIO

SEWAGE TREATMENT WITH MINIMAL EFFORTS

DESCRIPTION

CleanSewage-BIO is a compact, type approved marine Sewage Treatment Plant (STP) for cargo vessels. With an incorporated Moving Bed Bioreactor (MBBR), the CS-BIO requires minimal processvolume, still meeting the IMO MEPC.227(64) discharge criteria.

CS-BIO is designed for easy maintenance and operation. With the intuitive status control, operators can check at a glance, whether the system is running smoothly or intervention is necessary. The hygienic no-touch-cleaning system for sludge discharge makes maintenance nearly effortless.

The accessibility from one side allows ship designers to plan space in the engine room on a whole new level.

CS-BIO BENEFITS

- Integrated mechanical pre-treatment
- No harmful or flammable chemicals
- Up to 25% less space demand
- Suitable for black & grey water
- Compatible with all vacuum systems
- No-touch-system for hygienic sludge discharge

PRODUCT RANGE

CS-BIO Size	Organic Load kg/d BOD_5	Hydraulic Load m^3/d	Dimensions LxWxH mm	Weight	
				Net kg	Wet kg
02	1.38	2.16	2095x1250x1480	859	2923
03	2.07	3.24	2608x1346x1612	1149	4134
04	2.76	4.32	2559x1646x1618	1335	5293
05	4.15	6.48	2781x1656x2058	1627	7407
06	5.53	8.64	3365x1656x2058	1885	9278
07	6.91	10.80	3365x1986x2058	2121	11719

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Waste Water Treatment

CLEANSEWAGE-MBR

ADVANCED WASTEWATER TREATMENT
FOR PASSENGER SHIPS

DESCRIPTION

With the CleanSewage Membrane Bioreactor (CS-MBR) RWO has developed an advanced waste-water treatment (AWT) system fit for the requirements of sustainable passenger shipping as well as other highstandard applications. The CS-MBR is type approved according to the regulation IMO MEPC.227(64) including chapter 4.2 for nitrogen and phosphorus removal within special areas.

CS-MBR's treatment process is divided into three steps: Solids are removed in the mechanical pre-treatment, pollutants are degraded in the biological stage and in a last step, a membrane barrier ensures absolutely reliable separation of solids, including microplastics.

The submerged membrane system with extremely high mechanical strength and automated cleaning mechanism control make CS-MBR easy to operate and ensure long lifetime. The biological treatment process offers low OPEX due to low energy demand, low use of chemicals and thus a low production of solid byproducts/wastes.

CS-MBR BENEFITS

- Automated membrane cleaning
- User-friendly and intuitive operation
- Removed more than 99% of solids including microplastics
- Removal of bacteria and viruses - no chlorination needed
- Low excess sludge production
- Flocculants or chemichals are not necessary for disinfection

PRODUCT RANGE

Parameter	COD	BOD	TSS	TC	pH	TN	TP
Description	chemical oxygen demand	biological oxygen demand	total suspended solids	thermo-tolerant coliforms	-	total nitrogen	total phosphorous
Unit	mg/l	mg/l	mg/l	cfu/100 ml	-	mg/l	mg/l
Value	≤50	≤5	≤5	100	6.5-8.5	≤20	≤1

ALIOS

COMPLETE FRESH WATER SOLUTIONS

DESCRIPTION

The system is able to produce reliable fresh water from the desalination of sea or brackish water and can be configured (skid or loose mounted) with variable features in order to meet any customer requirements. ALIOS EVO is equipped with the CIP system as standard to facilitate maintenance. The produced water is constantly monitored with a TDS meter.

APPLICATIONS

- Small sailing and motor yachts
- Cargo and military vessels
- Large cruise liners
- Offshore applications

ADVANCED DRINKING WATER SYSTEM

EPE ALIOS Reverse Osmosis - Onboard potable water production
Pre- and post-treatment of water produced by evaporation, reverse osmosis and bunkered water

- 1-year ROI
- Direct control of drinking water onboard resulting to seafarers well being
- Less GHG, less waste
- More storage capacity, less storage of bottles and waste
- Water conservation
- Contribution to ESG

ALIOS BENEFITS

- Small volume and footprint
- Minimum operational costs & maintenance
- Robust materials
- Low energy consumption
- Easy and safe to use

SERVICES

We offer comprehensive support for onboard drinking water systems, including tailored Water Safety Plans, routine water analysis, and emergency or scheduled disinfection services. Our expert consulting and crew training ensure safe operation, regulatory compliance, and optimal system performance—contributing to crew well-being and enhanced ESG outcomes.

- Water safety plan
- Water analysis
- Emergency & maintenance disinfection
- Consulting services
- Training

PRODUCT RANGE

Models	Nominal Capacity (m^3/day)	Skid Footprint L/W/H(m)
ALIOS EVO 1.5	1.5	0.9/0.7/0.9
ALIOS EVO 3.5	3.5	1.3/0.7/0.9
ALIOS EVO 6	6	1.3/0.7/0.9
ALIOS EVO 7.5	7.5	1.3/0.7/0.9
ALIOS EVO 10	10	1.3/0.7/0.9
ALIOS EVO 20	20	1.65/0.85/0.98
ALIOS EVO 30	30	1.65/0.85/1.10
ALIOS EVO 80	80	2.9/0.91/1.49

Spare Parts Platfrom

INSTANT ACCESS TO THE SPARES YOU NEED, FAST, RELIABLE, SIMPLE.

DESCRIPTION

Designed with operational continuity in mind, our intuitive platform enables users to swiftly locate and identify the precise spare parts required, using serial numbers or defined technical criteria. With a focus on reliability and ease of use, the Spares Platform supports proactive maintenance and uninterrupted performance across your systems.

VISIT THE PLATFORM:
spares.ermafirst.com

FIND YOUR SPARES

SEND RFQ

RECEIVE AN OFFER IN 24HRS

ENGINEERING CAPABILITIES

- Project Management
- Plan Approval
- Project Specific Solutions
- In-house simulation and digital twin
- In-house CFD capabilities

DESIGN
WITHOUT CUTTING CORNERS

SERVICES

- 24/7 Technical Support, Hot-line, Remote Troubleshooting and Monitoring
- Global Service Network, Spare Part Stock Points
- Annual Maintenance, Health Check & Sensor Calibration Services
- Engineering Support Before, During and After Installation
- Training Centers in Greece, Philippines & e-Learning

NETWORK

ERMA TECH GROUP serves ships internationally through an expanding sales agents, service and spare parts network. For further information or enquiries please do not hesitate to contact us at **sales@ermatechgroup.com**

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