



ERMA FIRST Powered by EPE
The Essential Ballast Solution



Ballast Water Treatment Systems

ERMA FIRST BWTS

The Ultimate Sediment Control

ERMA FIRST BWTS *FIT*

Excellence of Simplicity – *NEW SYSTEM*



ERMA FIRST ESK ENGINEERING S.A.

OPERATION

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

BALLASTING

FULL FLOW ELECTROLYSIS

During ballasting, the water goes through the filter, where organisms and sediment (with a diameter larger than 40 microns for ERMA FIRST FIT and 20 microns for ERMA FIRST) are separated and further discharged overboard.

The filtered water is then entering the Electrolytic Cell. From the chlorides of the water, free chlorine is produced through the electrolysis process at very low concentration (around 4-6 mg/L for ERMA FIRST FIT and 10 mg/L for ERMA FIRST). 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 further intervene if necessary. The main stages of the system (filtration and disinfection) are bypassed.

A chlorine sensor samples the residual chlorine at the discharge line. If this is greater than 0.1 mg/L, then it drives a dosing pump for the dosage of a neutralizing agent (Sodium Bisulfite). The successful neutralization of the free chlorine is confirmed by a second chlorine sensor, installed at the far end point of the ballast discharge line.



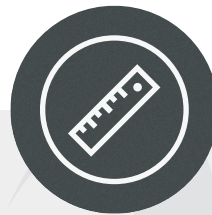
FULLY CERTIFIED

IMO approved & USCG
AMS accepted, suitable
for all water types



EFFECTIVE DISINFECTION

continuous R&D on
electrochemistry for
innovative applications



SMALL FOOTPRING

developed to exceed all
the special installation
requirements



SMART SAVINGS

competitive CapEx &
low OpEx for a system
fit for your pocket

TECHNOLOGY

The success of ERMA FIRST BWTS lies in its simplicity and the proven technology followed.

ERMA FIRST incorporates the most reliable and efficient filtration followed by a state of the art disinfection stage. Filtration takes place in either 40 microns automatic backwashing filters (ERMA FIRST FIT) or in-house engineered 20 microns hydro cyclones (ERMA FIRST). The disinfection stage takes place in our own-design, highly customized electrodes, providing the appropriate amount of disinfectant agent by using minimum power and ensuring compliance. A special coating is applied on the electrodes, which are designed to minimize the production of harmful byproducts and have an extended life time of minimum 5000-6000hrs.

SYSTEMS

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

ERMA FIRST BWTS FIT

EXCELLENCE OF SIMPLICITY



SEPARATION

40 microns self-cleaning automatic screen filter
(two options available)



DISINFECTION

Advanced Technology Electrolysis Cells

ERMA FIRST BWTS

THE ULTIMATE SEDIMENT CONTROL



SEPARATION

200 microns mesh self-cleaning pre-filter
20 microns Hydrocyclones



DISINFECTION

Advanced Technology Electrolysis Cells

ERMA FIRST BWTS FIT is an advanced modular system that was developed to exceed all the special installation requirements either for New Building vessels or any retrofit projects. Covering an extensive capacity range of 50-3000m³/hr and having completed successfully the required tests on the way to USCG approval, ERMA FIRST FIT is an ideal solution for all types of ships.

ERMA FIRST BWTS is the industry's standard system based on the most efficient filtration device, the multi hydrocyclones. The system uses an advanced filtration and cyclonic separation stage for the removal of large organisms and sediment in combination with an electrolytic cell for the production of free chlorine and the elimination of the remaining viable organisms.

Simple and Flexible

Suitable for all Pump Capacities

Suitable for all Available Spaces

Low Pressure Drop (0,5 bar)

Suitable for Fresh Water (0,9 PSU Salinity) & Low Temp. Waters (3°C)

Low Power Consumption in Various Waters (1,8 kW/100m³ at 30 PSU)



Simple and Flexible

Zero Maintenance

Extreme Sediment Removal

Low Pressure Drop of Hydrocyclones

Stable Flow Capacity at all Water Sediment Load Conditions

Very Low Associated Fuel and Operating Costs



CERTIFICATION

ERMA FIRST BWTS holds IMO Final Approval, Type Approval and USCG AMS Acceptance



IMO Final
Approval



USCG AMS
Acceptance



LR Class Type
Approval



Certification
ISO 9001



Certification
ISO 14001

NETWORK

ERMA FIRST serves ships internationally through an expanding agents network and service stations



OSLO OFFICE

+47 900 37 405
oslo@ermafirst.com



PIRAEUS OFFICE

+30 210 40 93 000
piraeus@ermafirst.com



SHANGHAI OFFICE

+86 131 20 975 096
shanghai@ermafirst.com

SALES NETWORK

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Brazil
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For further information
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www.ermafirst.com