

USCG Type Approved



Ballast Water Treatment Systems

## ERMA FIRST FIT BWTS

*EXCELLENCE OF SIMPLICITY*



ERMA FIRST ESK ENGINEERING SOLUTIONS S.A.

# OPERATION

ERMA FIRST FIT 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) are separated and further discharged overboard.

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 further intervene if necessary. The main stages of the system (filtration and disinfection) are bypassed.

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



#### **FULLY CERTIFIED**

IMO & USCG type approved, suitable for all water types



#### **EFFECTIVE DISINFECTION**

continuous R&D on electrochemistry for innovative applications



#### **SMALL FOOTPRINT**

developed to exceed all special installation requirements



#### **SMART SAVINGS**

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

# TECHNOLOGY

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

ERMA FIRST FIT BWTS incorporates the most reliable and efficient filtration followed by a state of the art disinfection stage. Mechanical separation refers to a 40 microns automatic backwashing filter. The disinfection stage takes place in our own-design, highly customized electrodes, providing the appropriate amount of disinfectant agent whilst consuming minimum power. 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 5000-6000 hrs.



# SYSTEM

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

## ERMA FIRST FIT BWTS

### EXCELLENCE OF SIMPLICITY

**ERMA FIRST FIT BWTS** is an advanced modular system that was developed to exceed all the special installation requirements either for newbuild vessels or any retrofit projects. The major components of the system are a high-end backwash filter and an electrolytic cell with outstanding performance. Covering an extensive capacity range of 50-3740 m<sup>3</sup>/hr and being 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

(two options available)



#### DISINFECTION

Advanced quality Electrolysis Cells

## BENEFITS

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

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 (-2°C)

Low Power Consumption in Various Waters (1,8 kW/100 m<sup>3</sup> at 30 PSU)



# CERTIFICATION

ERMA FIRST FIT BWTS is fully certified according to the IMO, the USCG and the Classes



IMO Final  
Approval



USCG Type  
Approval



LR Class Type  
Approval



Certification  
ISO 9001



Certification  
ISO 14001

# NETWORK

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

For any further information or inquiries please do not hesitate to contact us at [sales@ermafirst.com](mailto:sales@ermafirst.com).

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