

Headway has established more than **120** sales/after-sales service stations in **56** countries and regions around the world.



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**OceanGuard<sup>®</sup>**  
**BALLAST WATER MANAGEMENT SYSTEM**

**HEADWAY TECHNOLOGY GROUP CO., LTD.**



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# ABOUT US

Headway is a high-tech enterprise with the purpose of scientific and technological innovation, dedicated into providing low carbon solutions and technical service worldwide. Headway owns independent R&D center and production base in Qingdao, China.

Headway established independent R&D centers and manufacturing facilities. The BWMS manufacturing facility has an annual production capacity of 1,000 sets. With branches in Shanghai, Singapore, Japan and Greece, 15 agencies in Guangzhou, Dalian, Zhoushan, and more than 120 service/technical support stations in 56 countries and regions, Headway built a comprehensive global service network.

Headway's product portfolio includes 3 segments: Carbon Neutralization, Water Treatment and Smart Shipping, which are all developed under the long adherent R&D ideology of "Be Innovative, Stay Excelsior".

Headway is willing to continue the cooperation with global partners based on mutual trust and benefit, to embrace the future of green shipping and sustainable development, pioneer in decarbonization strategy, zero-emission shipping and marine environmental protection.



# OceanGuard®



## Deep Electrocatalysis BWMS



### Specification:

- Flow Rate: 65 -5,200 m<sup>3</sup>/h for a single unit.
- Temperature: No limit.
- Main-stream Salinity: No limit.
- Side-stream Salinity: Minimum 8 PSU.
- Target TRO: 9.5mg/L in main ballast pipe.
- Minimum Hold Time: 48 hours.
- Maximum Allowable Discharge Concentration: 0.1 mg/L.

Model	OG-B-01	OG-B-02	OG-B-03	OG-B-04	OG-B-05	OG-B-06	OG-B-07	OG-B-08	OG-B-09	OG-B-10	OG-B-11	OG-B-12	OG-B-13	OG-B-14
Flow Range (m <sup>3</sup> /h)	65	130	260	390	585	780	1,040	1,300	1,560	1,950	2,600	3,250	3,900	5,200



## FILTER

- Low-Backpressure and High-Backpressure filter solutions designed for deckhouse installation;
- Compact design brings flexible layout to vessels of different type and size;
- Larger filter area and extra pressure endurance\*. Filter elements can endure up to 5 bar instantaneous pressure or 1.5 bar constant pressure;
- Stable performance under extrem TSS and biological concentration;
- Duplex Stainless Steel casted body provides extra corrosion resistant.

## Filter Specification

Model	Volume (L)	Size (mm)			Flow Range (m³/h)
S-ZF0-W	60	550	395	765	10-75
S-ZF1-W	120	757	704	1,080	10-150
S-ZF2-W	130	757	704	1,080	10-260
S-ZF3-W	155	757	704	1,277	50-390
S-ZF4-W	650	1,145	890	1,577	50-650
S-ZF5-W	690	1,145	890	1,577	50-780
S-ZF6-W	750	1,145	890	1,730	50-1,040
S-ZF7-W	790	1,145	890	1,730	50-1,300
S-ZF8-W	1,062	1,350	1,300	1,862	100-1,560
S-ZF9-W	1,130	1,550	1,300	1,862	100-1,950
S-ZF10-W	1,670	1,541	1,372	1,744	100-2,600
S-ZF11-W	1,720	1,541	1,372	2,032	100-3,250
S-ZF12-W	1,760	1,541	1,372	2,032	100-3,900
S-ZF13-W	2,800	1,716	1,565	2,480	100-5,200



# EUT



## EUT UNIT

### Advanced Electro-catalysis Oxidation Process

- Adopting electron excitation to special semiconductive material, highly active Hydroxyl Radicals ( $\cdot\text{OH}$ ) will be produced from water molecules and neutralize micro-organisms by destroying cell membrane;
- No consumables and maintenance-free;
- Not affected by temperature nor turbidity;
- No need to increase power consumption under low-salinity nor high-turbidity.

Model	Consumption (kW)	Size (mm)		Flow Range (m <sup>3</sup> /h)
HMT-50E	0.8	381	445	1,530
HMT-100E	1.5	381	445	1,530
HMT-200E	3	381	527	1,530
HMT-300E	4.5	426	612	1,701
HMT-450E	6.8	456	737	1,821
HMT-600E	9	505	737	1,957
HMT-800E	13	505	874	1,957
HMT-1000E	17	605	847	2,123
HMT-1200E	21	605	922	2,123
HMT-1500E	25	663	914	2,208
HMT-2000E	34	663	1,322	2,208
HMT-2500E	42	695	1,487	2,212
HMT-3000E	52	695	1,487	2,222
HMT-4000E	69	695	1,487	2,222





## Remote Control

With cloud-based control function, OceanGuard® BWMS is capable of remote data-collection, operation and system diagnosis via Headway's Integrated Intelligent Shipping Platform.

CONTROL  
UNIT

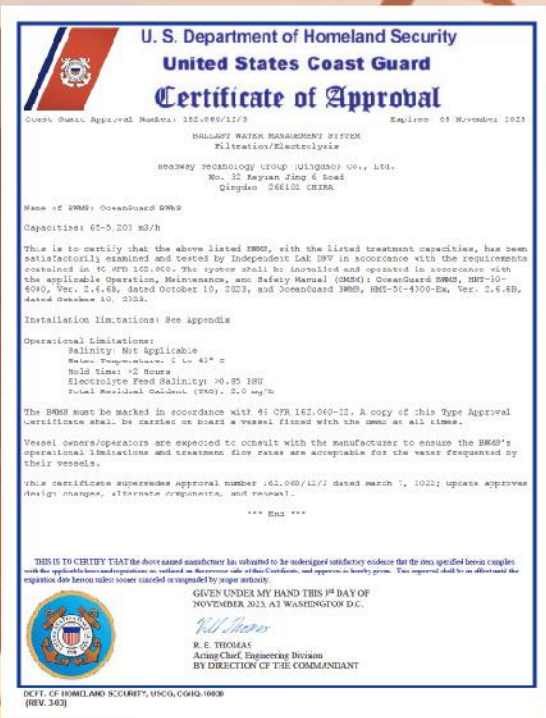
- Local and Remote Control;
- Compatible with vessel's control system;
- Apply Siemens HMI and PLC for real-time collect and process, with 24-month data storage;
- One-key operation and user friendly interface.



# TYPE APPROVALS



IMO BWMS Code (Revised G8)



U. S. Coast Guard Type Approval





# ADVANTAGES

## Small Footprint & Low Consumption

Consumption is approx. 17kW for the treatment of 1,000m<sup>3</sup> of ballast water

## One-Key Operation

"One Key" operation for Ballast, Deballast and self-cleaning of filter

## Effective Sterilization

Complete sterilization, 2-hour hold time approved by USCG and Revised G8 regulation

## Safe & Corrosion-Free

No harmful by-product such as H<sub>2</sub> or Cl<sub>2</sub> and no corrosion to the hull



# ONE-STOP SERVICE



## Retrofitting Process

WEEK  
1 - 3

- Onboard Inspection/3D Scanning
- Schedule Planning
- Quotation

WEEK  
4 - 10

- Contract Signing
- Component Purchase
- Plan Approval
- Production

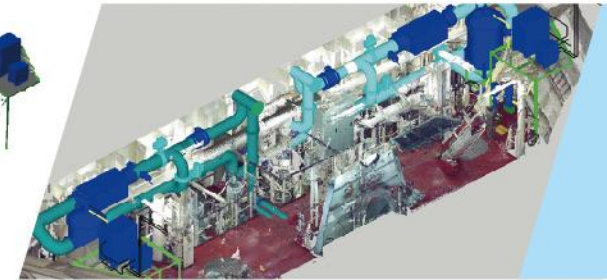
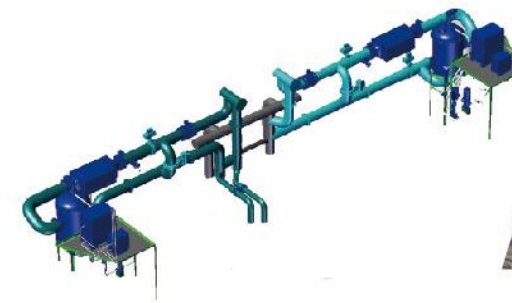
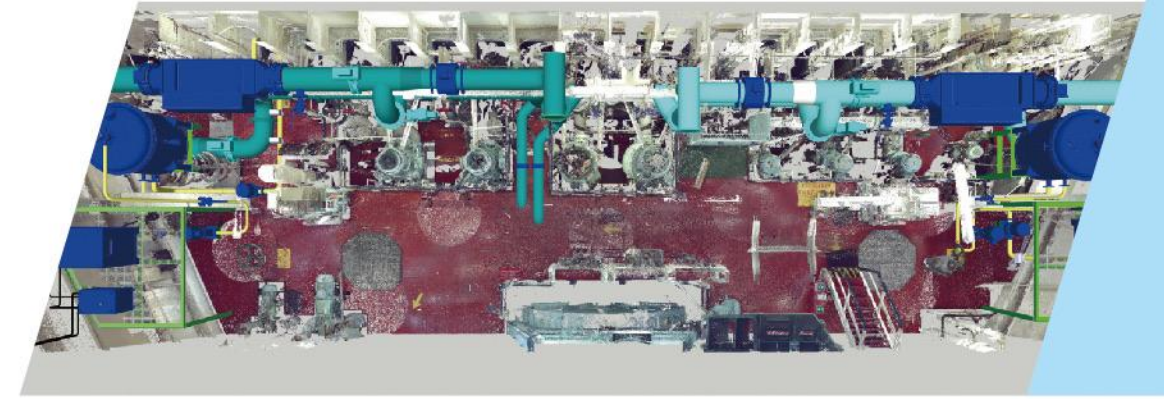
WEEK  
11 - 12

- Installation
- Commissioning
- Class Approval
- Operation Training

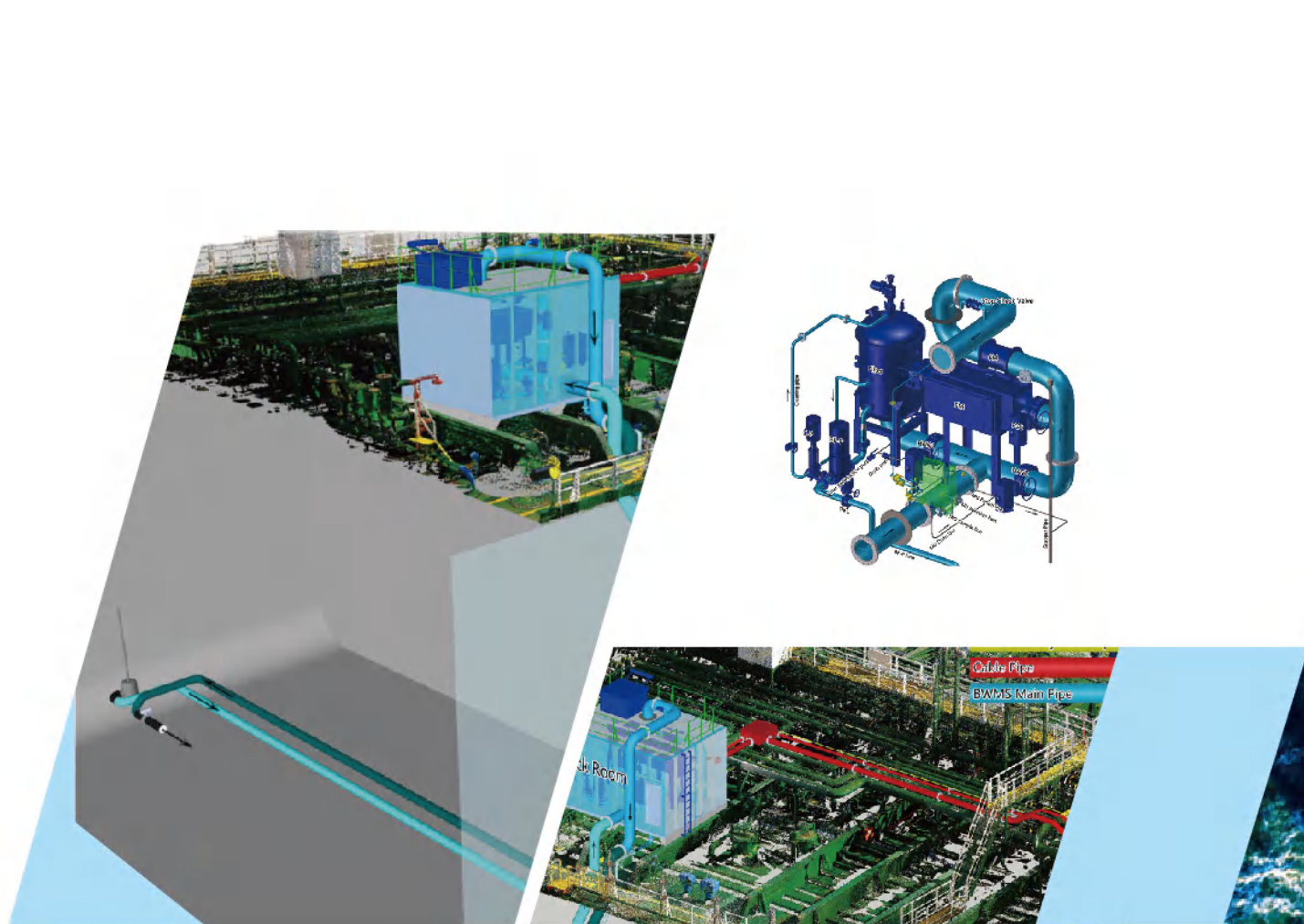




## BWMS SOLUTIONS



<b>TYPE</b>	Bulk Carrier
<b>SIZE</b>	82,000 DWT
<b>MODEL</b>	HMT-1200 x 2



<b>TYPE</b>	Chemical Tanker
<b>SIZE</b>	35,000 DWT
<b>MODEL</b>	HMT-1500 (Ex)