

MARINOMATE™

Ballast Water Management System

SMALL FOOTPRINT

LOW POWER CONSUMPTION

NO CORROSION EFFECT

LOW INSTALLATION COST & MAINTENANCE COST

HIGH PERFORMANCE



THE BEST TECHNOLOGY FOR MARINE ECOSYSTEM PRESERVATION

MARINOMATE™ BWMS provides the best solution with energy-efficiency and high performance for ships ballast water treatment.

Company Profile

Company Name	KT Marine Co.,LTD.
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Telephone	+82) 51-441-0692~3
E-mail	ktm@ktmarine.co.kr
Website	www.ktmarine.co.kr
Establishment	1st May 2001
Main Business	Ship Management & Marine Supply Ballast Water Management System

Certificates and Patents



PREPARATION FOR THE BWMS INSTALLATION

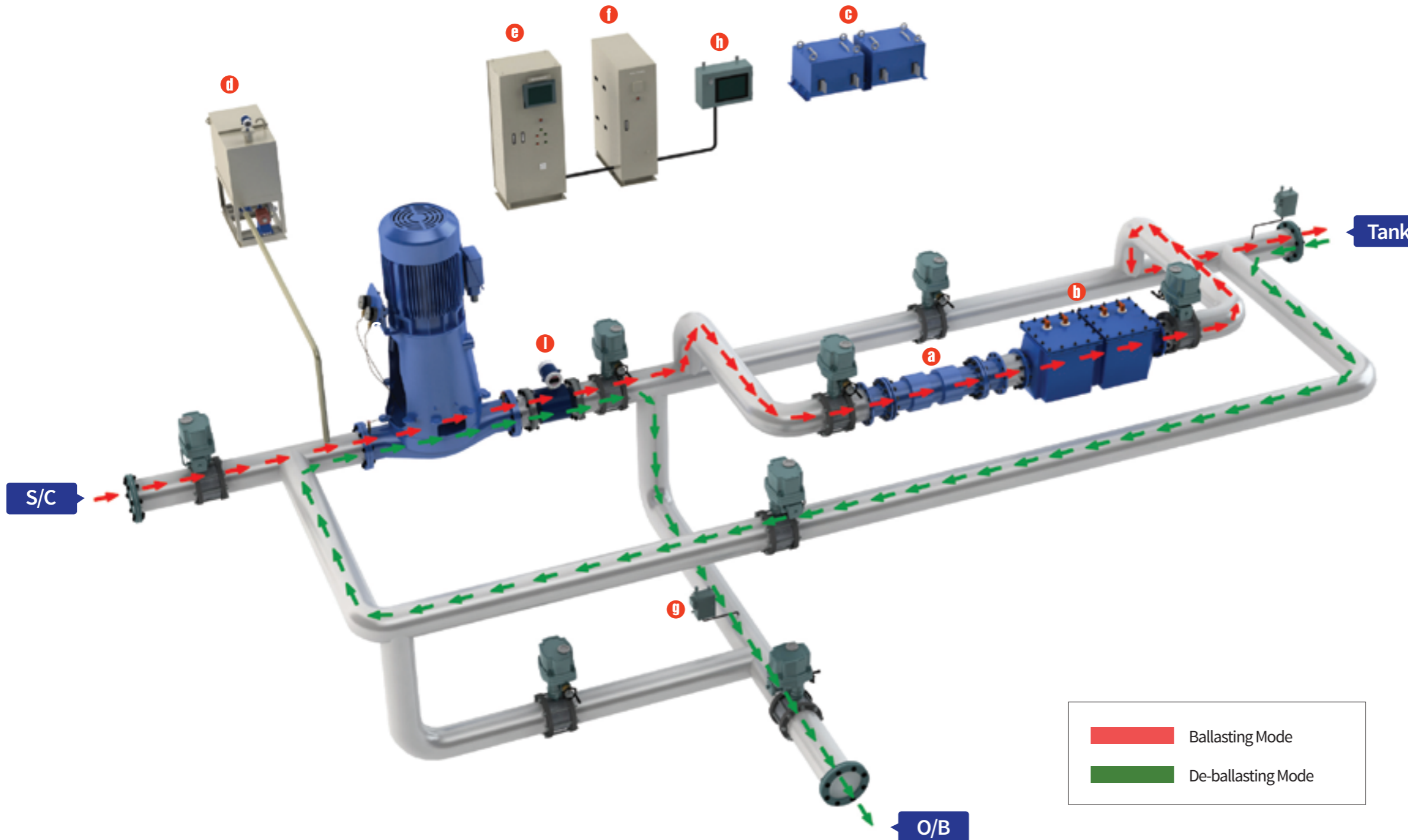
- 01 STEP PREVIEW**
 - Survey on the ship
 - Select types of the BWMS
- 02 STEP SHIP SURVEY**
 -Check the installation location, new pipelines, power supply etc.
- 03 STEP SELECTION OF BWMS TYPES**
 -Check the price of the BWMS, construction cost
- 04 STEP DRAWING MODIFICATION FOR BWMS**
 -Decision the specification of the BWMS and modification
 -Order BWMS
 -Obtain approval DWG by Class
 -Make the working DWG and detailed construction DWG.
- 05 STEP INSTALLATION/INSPECTION/FINAL CONFIRMATION**
 -Pipeline, BWMS installation, power supply, commissioning, class inspection, final confirmation

IMO D-2 & USCG Phase-1, 2 Standard

Category	Regulation	Regulation	
		IMO, USCG Phase-1	USCG Phase-2
Aquatic organisms	in minimum dimension, < 10µm	-	< 1,000 bacteria/100ml < 10,000 virus/100ml
	in minimum dimension, ≥ 50µm	< 10 viable organisms/m ³	< 1 visible organisms/100m ³
	in minimum dimension, 10~50µm	< 10 viable organisms/ml	< 1 visible organisms/100ml
Human health	Toxicogenic Vibrio cholerae (serotypes O1 and O139)	< 1 CFU/100ml	< 1 CFU/100ml
	Escherichia coli	< 250 CFU/100ml	< 126 CFU/100ml
	Intestinal Enterococci	< 100 CFU/100ml	< 33 CFU/100ml

PROCESS

▶ BALLASTING MODE



- d** **Neutralization Unit**
 - Reduction of residual TRO in the ballast tank during deballasting
 - Size : W 1m×D 0.7m×H 1.1m
- e** **PDU(Power Distribution Unit)**
 - Supply power to MARINOMATE components
- f** **MCU(Main Control Unit)**
 - Control and monitor the operating status in real time

- a** **Plankill pipe Unit**
 - Reduction of aquatic organisms by physical effect as collision and turbulence
 - No power supply, easy to install and maintain
 - Size : L 1m
- h** **Electrolyzer Unit**
 - Disinfect aquatic organisms in the ballast water
 - Including rectifier & electrode by special coating
- c** **Rectifier**
 - INPUT AC 440V
 - OUTPUT DC 10V 2000A
- g** **TRO Sensor**
 - Monitor TRO values during ballasting & deballasting
- i** **CCU**
 - Automatically monitor and control the MARINOMATE in cargo control room
 - Touch panel PC Type
- l** **Flow Meter**
 - Monitor flow rates of ballast pump during ballasting & deballasting
 - Check optimal inlet flow rates of Electrolyzer during ballasting

ADVANTAGES



1

Small footprint

- Can be installed by a skid arrangement with compact, modular type

2

Low power consumption

- Based on 1,000 m³/hr capacity, power consumption under 30kwh (>30psu)

3

No corrosion effect

- The result of the corrosion test proves that there is no effect of corrosion on ballast tanks and pipe lines

4

Low installation cost & maintenance cost

- Installed directly due to its compact size and modular type
- Can install within a few days during voyage
- No filter system, and can save the replacement cost of filters

5

High performance

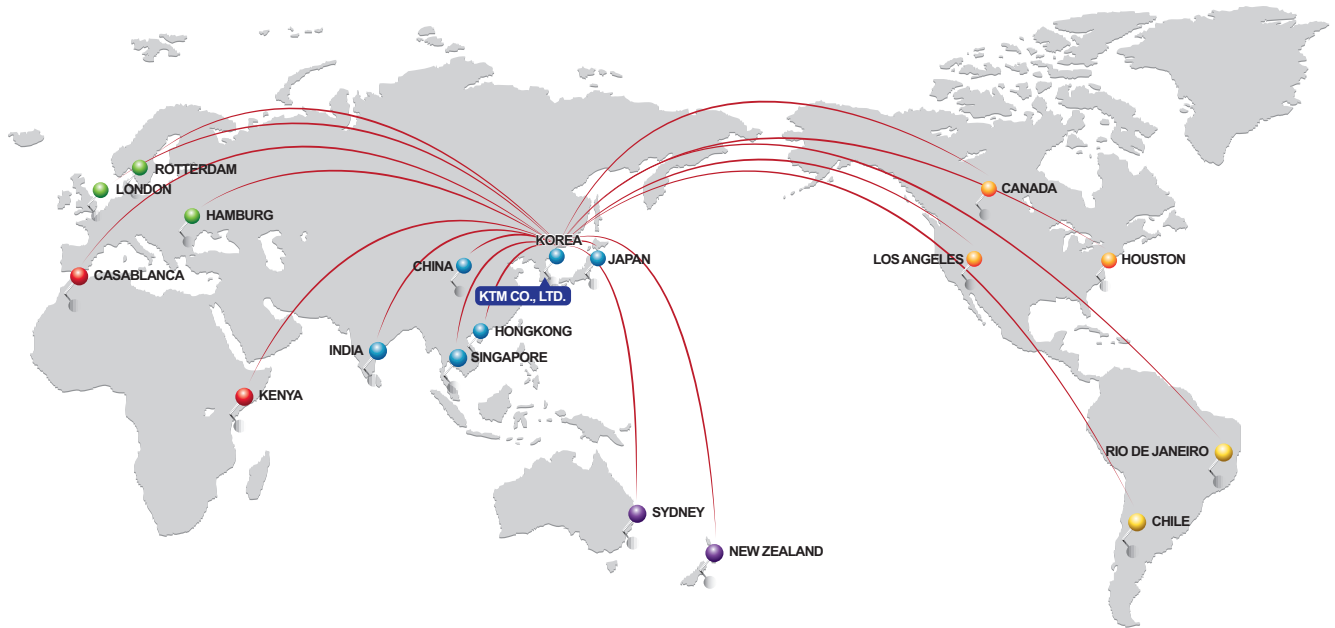
- The MARINOMATE™ generates disinfectants having residual effects that can disinfect aquatic microorganisms in the ballast water
- High reliability on inhibition of re-growth of microorganisms

TYPICAL DESIGN MODEL

▶ TYPICAL DESIGN MODEL

Model	Ballast Pump Capacity	Power consumption	Size (Unit : mm)
 MARINOMATE-150	150m ³ /h	4kw	564X790X480
 MARINOMATE-300	300m ³ /h	8kw	564X1360X480
 MARINOMATE-600	600m ³ /h	16kw	1128X1360X480
 MARINOMATE-900	900m ³ /h	24kw	1692X1360X480
 MARINOMATE-1200	1200m ³ /h	32kw	1128X2500X480
 MARINOMATE-2400	2400m ³ /h	64kw	2254X2500X480

Global Supply Chain Management



ASIA

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 JAPAN
 SINGAPORE
 CHINA
 HONGKONG
 INDIA

EUROPE

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 HAMBURG
 LONDON

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