

# MARINER OMNIPURE® Series M55



Compact Sanitation Devices for the Vessel, Workboat and Yacht Markets

SEVERN  
TRENT  
DE NORA



SERIES M55

# Clean WATER. Clear CONSCIENCE.®

The MARINER OMNIPURE® Series M55 Marine Sanitation Devices offer a fresh approach to sewage treatment in the vessel, workboat and yacht markets while resulting in wastewater effluent quality well below the new MEPC.159(55) requirements. The MARINER OMNIPURE Series M55 units incorporate the same electrolytic treatment benefits of any other OMNIPURE unit, but with the added advantages of less maintenance and a small, compact size to fit vessels in the target markets. Systems can accommodate treatment capacities up to 75 persons (black water) and up to 27 persons (black and gray); the largest unit treats a peak flow of 2160 gallons (8176 Liters) of human wastewater per day.

## Compact and Lightweight

The small, lightweight and skid-mounted configuration of the MARINER OMNIPURE Series M55 systems is easily fitted into the confined spaces found on many of today's oceangoing vessels. Local control panel houses all electronics for system operation.

## Simple Operation

The MARINER OMNIPURE Series M55 system is operated in automatic mode, with minimal operator interface. The system interfaces with a ship's sewage transfer pump(s) and seawater supply pump to determine sewage treatment demand onboard the vessel before initializing and beginning processing.

## Installed Seawater Pump (Optional)

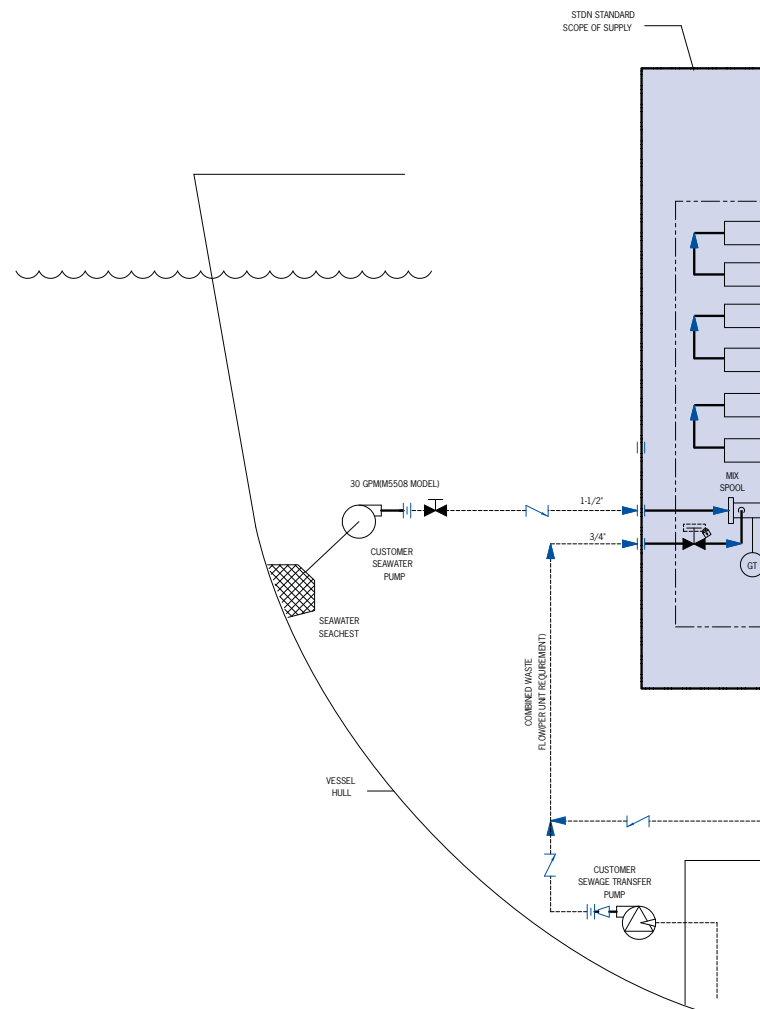
This unit can be supplied with an integral seawater pump for added convenience on vessels that may not have a pressurized seawater line. A flooded pump suction is required. No additional pump or air powered vent system is required.

## Macerator Skid (Optional)

An optional sewage collection and macerator skid system is available for vessels that do not have macerated toilets.

## Electrolytic Cell

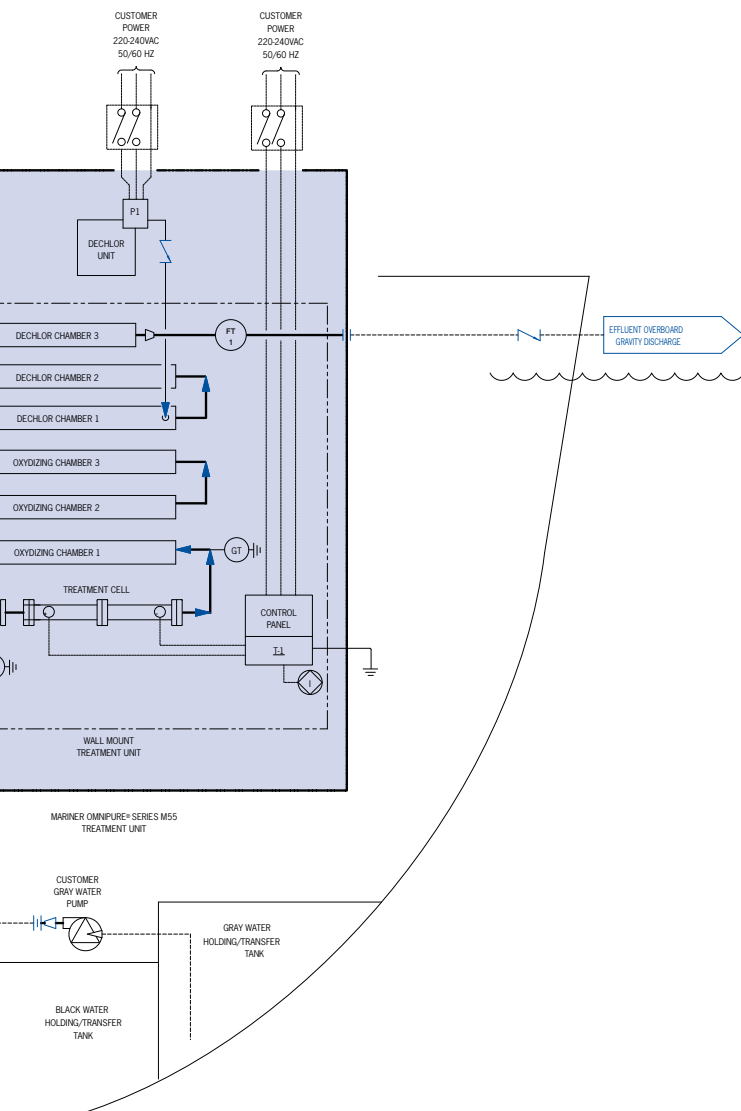
The MARINER OMNIPURE® Series M55 provides effective electrolytic treatment of both black and gray water through a patented and certified treatment process. Like other OMNIPURE products, this unit produces a sodium hypochlorite disinfection solution from seawater in the presence of sewage to effectively treat all sewage. Electrolytic treatment of marine sewage puts an end to chemical storage issues, dosing equipment and costs associated with the use of hazardous chemicals since the disinfection solution is produced onsite while the unit is in operation. The cell employs current reversal for self cleaning of the electrodes.



# Treatment Process

## MARINER OMNIPURE® Series M55 Treatment Process

The processing function of every MARINER OMNIPURE Series M55 unit is the same — regardless of size. The automatic treatment process for generating oxidant on-demand is simple and proven effective.



Process for largest MARINER OMNIPURE Series M55 system depicted – smaller systems have only two oxidizing and dechlorination chambers.

- **Stage 1:** The sewage and seawater are combined within a mixing spool to insure a homogeneous mix. Then the process flow is routed through the tubular electrolytic cell where DC current and voltage are applied to effectively oxidize the waste stream. Significant changes in the waste stream take place due to a rapid oxidation of the bacteria and the sodium hypochlorite produced by the electrolytic cell.
- **Stage 2:** Upon exiting the electrolytic cell, the process stream is further oxidized within multiple oxidizer chambers that allow for an extended contact time and agitation of the stream.
- **Stage 3:** Upon exiting the oxidation chambers, the stream passes through multiple dechlorination chambers where a sodium sulfite solution is injected to effectively dechlorinate the treated process stream.
- **Stage 4:** Once the treated effluent stream exits the unit, the flow is then routed overboard via the ship's sea-check valve to sea. Since this is a pressurized flow-through system, additional overboard pump(s) are not required.

## MARINER OMNIPURE® Series M55 Features and Benefits

- Accommodates varying crew complements
- Automatic operation
- Compliant to CE/ATEX norms
- Easy to install, start up, operate and service
- Eliminates storage, handling and purchasing of hazardous chemicals
- No complicated pre-treatment of raw inlet sewage stream
- No odor or bio-active sludge associated with process
- No raw sewage screens, vibrators or filters to manage
- Not affected by typical cleaning agents
- Small footprint and weight

MARINER OMNIPURE® Series M55 Design Standards		Model M5503	Model M5505	Model M5508
Personnel Complement (Maximum)	Black Water Only	27†	50†	75†
	Black & Gray Water	9†	16†	25†
Treatment Ratings (Maximum)	Treatment Volume: L/day (Gal/Day)	2900 (781)	5450 (1440)	8176 (2160)
Dimensions & Weights	Length: mm (inches)	1626 (64)	2797 (64)	2797 (64)
	Width: mm (inches)	406 (16)	664 (16)	664 (16)
	Height: mm (inches)	838 (33)	1451 (33)	1041 (41)
	Weight: kg (pounds)	100 (220)	370 (220)	109 (240)
Utility Requirements	Power: KVA	1.2	1.2	2.5
	Seawater: L/min (G/min) @ 30–120 PSIG Max	75.7 (20)*	75.7 (20)*	113.6 (30)*
* MARINER OMNIPURE Series M55 units require seawater when treating sewage. Values indicated assume no seawater pump option is selected. Flooded suction required if seawater used.				
† 100% capacity shown, STDN recommends that actual operation capacities not exceed 90% of maximum capacity.				
The MARINER OMNIPURE Series M55 system consists of an internal electrical control panel, a highly efficient tubular electrolyzer cell, and multiple oxidation and dechlorination chambers contained in a compact package to better fit the various shaped installation spaces that can be found aboard vessels.				
All information is subject to change.				

**SEVERN  
TRENT  
DE NORA**

**United States**

1110 Industrial Blvd  
Sugar Land, TX 77478 USA  
Tel +1 281 240 6770  
Fax +1 281 240 6762  
sales@severntrentdenora.com

**Europe**

Via Bistolfi, 35  
20134 Milano, Italy  
Tel +39 02 2129 2452  
Fax +39 02 2129 2451  
seaclor@severntrentdenora.it

**Asia/Pacific**

15 Scotts Road, #03-02 Thong Teck Building  
Singapore 228218  
Tel +65 67379565 Ext. 103  
Fax +65 68875026  
asiapacific@severntrentdenora.com.sg

® Registered Trademark. © 2009. All Rights Reserved.

750.0006.0 SEP/09

