

Advantages

- Environmentally safe
- High-efficiency
- Low capital and operating costs
- Impossible to overdose
- Nothing added to alter fluid being treated
- No chlorine residual required

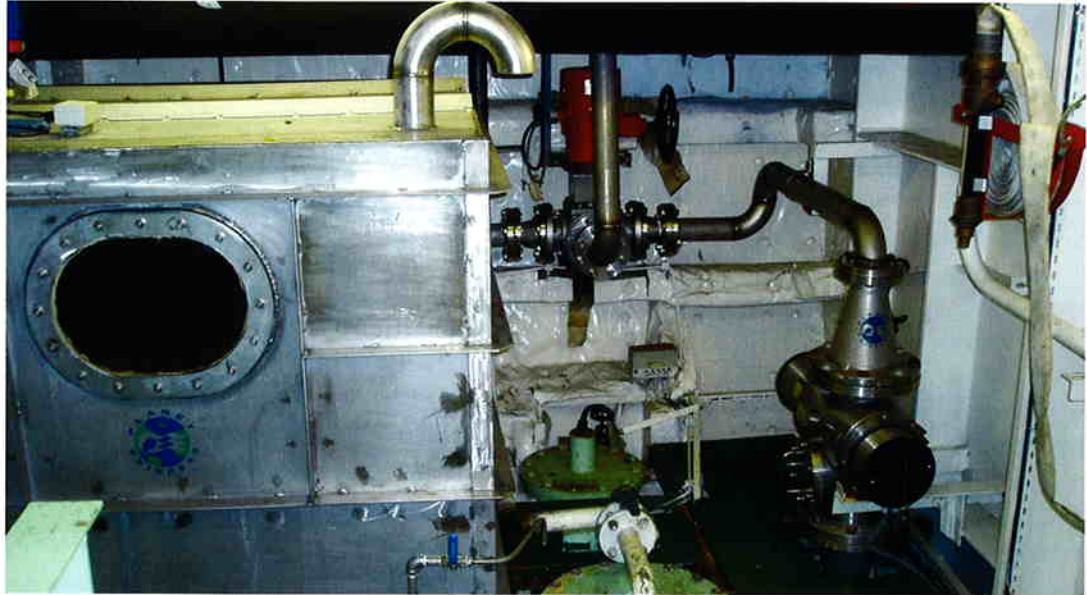
Proven Performance

- Successful results on many shipboard applications
- Same technology used for decades in municipal and industrial waste streams
- Accepted by all governing bodies, i.e. EPA, NSF, DVGW etc.
- Destroys chlorine resistant bacteria and pathogens
- Designed for the challenges of the shipboard environment

Total Solutions

- Capacities to meet any requirement
- Totally automatic turnkey packages available
- May be installed on operating ships with minimal disruption
- Full service available from Hyde Marine
- Ship checks, installation support, and spare parts available worldwide

Hyde Wastewater Disinfection System



Hyde UV Treatment Systems Disinfect Effluent Prior to Discharge

Public awareness has led to more stringent monitoring and tightened tolerance levels of viable pathogens, viruses, residual chemicals, and disinfection by-products in overboard discharges. Release of this contamination could result in fines, operational restrictions and costly cleanup. Hyde Marine's ultraviolet technology will assist in eliminating contamination and help protect the marine environment.

Hyde Marine's ultraviolet systems provide nonchemical disinfection for all types of treated wastewater, including MBR permeate, black water, and gray water. Ultraviolet systems also eliminate the use of hazardous chlorine used for disinfection.

Hyde Wastewater Disinfection Systems are specifically designed to meet the demanding requirements of shipboard installation. Hyde offers technologically superior products, innovative process engineering, and the highest level of customer support.

Hyde Wastewater Disinfection System

PRODUCT DATA CONTINUED

The Hyde Marine System

The typical waste stream has a very erratic flow pattern. To overcome this challenge the Hyde Marine UV System uses a process tank for recirculation. The waste stream is circulated through the UV reactor continuously until a high level is reached. At that point the water is passed one last time through the disinfection process before being discharged overboard.

Control Unit

The control unit has a full suite of indicators, alarms, and UV intensity meter output with a real-time VFD display. The unit can be integrated with the ship management systems or operated as a stand-alone. It has a constant wattage power supply and is built to the highest electrical standards.

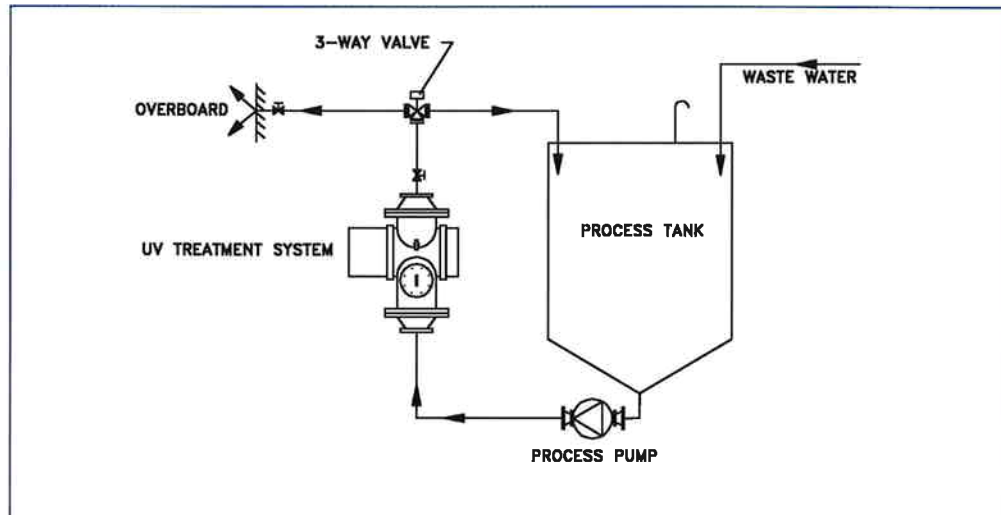
Treatment Chamber

The UV reactor is made of 316L stainless steel and designed for optimum hydraulic effectiveness. The chamber design ensures uniform treatment.

UV Lamp

High output, medium pressure lamps are oriented perpendicular to the fluid flow which ensures high UV dosage even if transmission is low in these fluid streams. An automatic quartz sleeve cleaning mechanism ensures consistent, reliable performance and minimum operator attention.

Flow Diagram



Application

- MBR Permeate
- Laundry Water
- Black Water
- Bilge Water
- Gray Water

Why Hyde

- Complete range of ultraviolet equipment for waste stream disinfection
- Complete solution provider
- Over 36 years of marine experience
- Dozens of marine UV installations

Features

- Fully automatic, only minimal maintenance and surveillance required
- Fits anywhere, smallest footprint in the industry
- Automatic wiper to keep sleeves clean
- Inspection hatch for easy maintenance



MBR permeate disinfection system

Hyde Marine, Inc.

28045 Ranney Parkway, Unit G • Cleveland, OH 44145-1144 USA
Tel: 440.871.8000 • Fax: 440.871.8104 • www.hydemarine.com