



# Oily Water Separators

globally focused on cleaner solutions

# Oily Water Separators

Victor Marine's bilge oily water separators are specifically engineered for the marine environment. Victor Marine have been supplying systems for over 80 years and have installed over 7000 units. Combining the long experience and the latest technologies, Victor Marine have developed oily water separators which ensure reliability, maintainability, affordability and compliance with the latest IMO regulation MEPC 107(49).

The compact **CS Series** is designed to fit the smallest engine rooms and is easy to install. Its unique three-stage separation system is effective and reliable. Its simple design and fully automatic operation make it easy to use and maintain.

## System Benefits

- Fully compliant with IMO regulation MEPC 107(49)
- Easy to operate  
No special training required  
Supplied as a complete turnkey package
- Economical to run
- No backwashing or cleaning cycle required
- Reliable discharges below 5ppm oil content
- Worldwide support and service
- Our separators are approved by ABS, BV, CCS, USCG, RMRS, MED, and comply with DNV's 5ppm CLEAN-DESIGN notation
- High quality separation is achieved with a three-stage separation process. This involves a hydrophobic high viscosity removal system (Hi-VOR system), an oleophilic coalescing filter element and an adsorption granular media polishing unit (AGM filtration)



## Military, Offshore, Retrofit and Special Editions

Victor Marine has an in-house design team able to develop bespoke systems, for example, systems tailored for retrofitting in tight spaces, (shock mounted) aircraft carriers, (low-magnetic) minesweepers, offshore rigs (ATEX requirement) and power stations.

The **CS Lite** is specifically engineered to be lightweight for use on vessels where the weight of a standard separator would be an issue e.g. fast attack craft and superyachts. Constructed from marine-grade aluminium, this model offers a 30% weight saving over the standard CS Series model. Please contact us for any special requirements.



## CS Series

## CS Lite Series

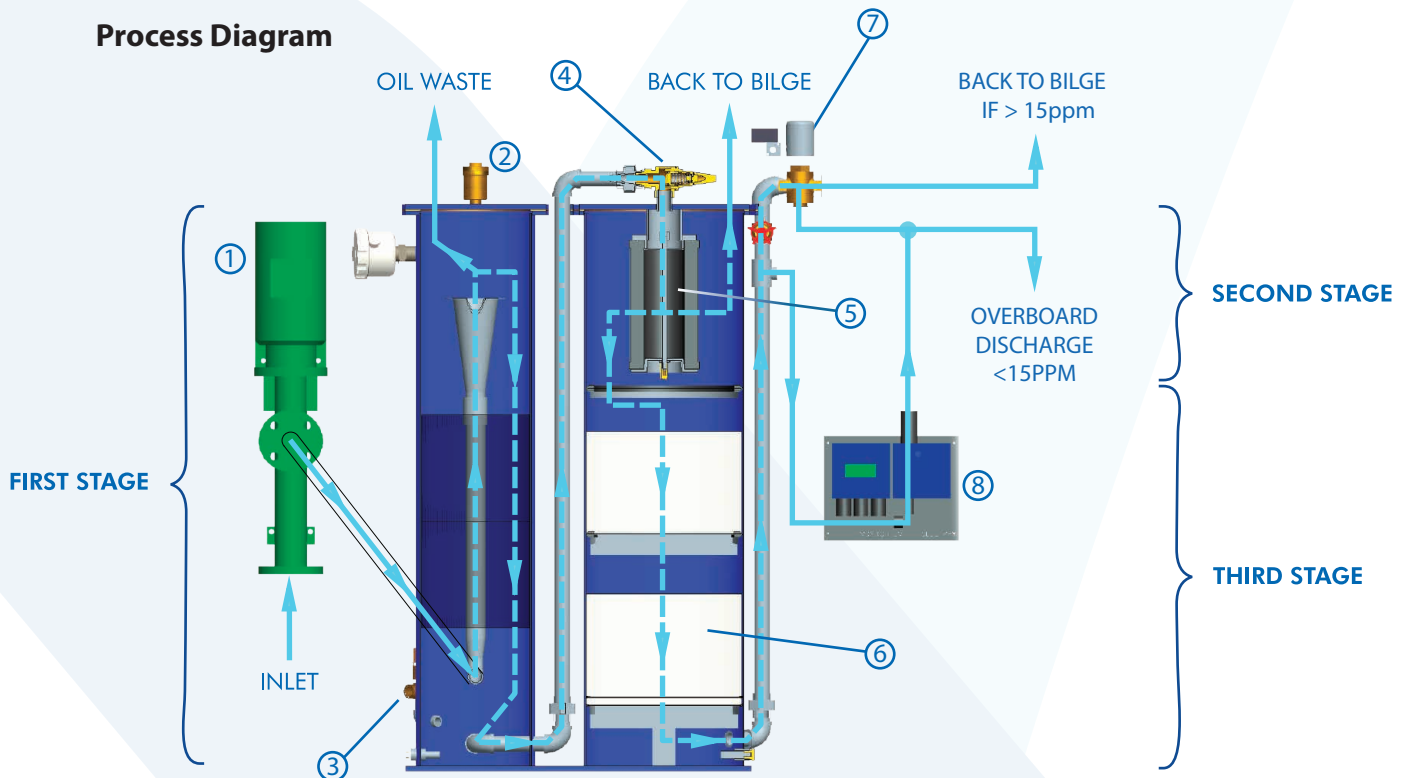
	CS0250	CS0500	CS1000	CS2000	CS3000	CS4000	CS5000	CS0500 Lite
<b>Capacity</b>								
m <sup>3</sup> /hr	0.25	0.5	1.00	2.00	3.00	4.00	5.00	0.5
US gal/hr	66	132	264	528	792	1056	1320	132
<b>Dimensions (mm)</b>								
Width (Inc. Maint.)	1041 (1655)	1041 (1655)	1300 (2075)	1300 (2075)	1550 (2300)	1550 (2300)	1690 (2452)	1041 (1655)
Depth (Inc. Maint.)	655 (1080)	655 (1080)	831 (1300)	831 (1300)	1035 (1560)	1035 (1560)	1069 (1715)	655 (1080)
Height (Inc. Maint.)	1474 (1700)	1474 (1700)	1474 (1750)	1474 (1750)	1548 (1750)	1548 (1750)	1548 (2000)	1474 (1700)
<b>Weight (kg)</b>								
Dry	270	270	500	500	600	600	770	170
Wet	420	420	950	950	1330	1330	1650	320
<b>Power (kW)</b>								
50Hz (60Hz)	0.55 (0.55)	0.55 (0.55)	0.75 (0.75)	1.1 (1.1)	1.1 (1.3)	1.5 (1.5)	1.5 (1.8)	0.55 (0.55)
inc. heater	1.55 (1.55)	1.55 (1.55)	1.75 (1.75)	2.1 (2.1)	2.1 (2.3)	2.5 (2.5)	2.5 (2.8)	1.55 (1.55)
<b>Connections (mm/inch)</b>								
Inlet Suction	32 (1 1/4")	32 (1 1/4")	50 (2")	50 (2")	50 (2")	50 (2")	50 (2")	32 (1-1/4")
Overboard	25 (1")	25 (1")	25 (1")	25 (1")	40 (1 1/2")	40 (1 1/2")	40 (1 1/2")	25 (1")
Return to Bilge	25 (1")	25 (1")	25 (1")	25 (1")	40 (1 1/2")	40 (1 1/2")	40 (1 1/2")	25 (1")
Recovered oil	25 (1")	25 (1")	40 (1 1/2")	40 (1 1/2")	40 (1 1/2")	40 (1 1/2")	40 (1 1/2")	25 (1")
Flush Valve	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")
Pressure Relief	15 (1/2")	15 (1/2")	15 (1/2")	15 (1/2")	20 (3/4")	20 (3/4")	25 (1")	15 (1/2")
<b>Pressure (Bar/psi)</b>								
Operating	1.38 (20)	1.38 (20)	1.38 (20)	1.38 (20)	1.38 (20)	1.38 (20)	1.38 (20)	1.38 (20)
Maximum	3.45 (50)	3.45 (50)	3.45 (50)	3.45 (50)	3.45 (50)	3.45 (50)	3.45 (50)	3.45 (50)

**Water Requirement** No back-washing required. Clean water required for oil content monitor and commissioning. Recommended pressure 0.5 - 4 bar.

**Air Requirement** Air Pressure of 4-7 bar for operation of pneumatic valves only.



## Process Diagram



- |                  |                         |                             |                       |
|------------------|-------------------------|-----------------------------|-----------------------|
| ① PUMP           | ③ PRESSURE RELIEF VALVE | ⑤ COALESCING FILTER ELEMENT | ⑦                     |
| ② AIR ELIMINATOR | ④ WATER VALVE           | ⑥ ADVANCED GRANULAR MEDIA   | ⑧ OIL CONTENT MONITOR |

\CloudStation\Presentations

## Process Description

Bilge water is taken from the vessel bilge tank via a slow-revving positive displacement pump to prevent further emulsification. The oily bilge water is fed into the first stage High Viscosity Oil Removal (Hi-VOR) system and initial sludge oil separation takes place. Free oils are removed via a high matrix oleophilic coalescing pack which draws oil to its surface creating large globules of oils that are floated to the top of the tank. This waste oil is then discharged to the waste oil tank. The second stage 20 micron coalescer cartridge system coalesces the remaining free oils. Emulsified oils enter the final AGM stage for treatment.

Our engineered Advanced Granular Media (AGM) is a specially formulated organoclay and has extremely high adsorption properties that remove emulsified oil, grease and low soluble organic compounds from waste water streams. The AGM is very efficient due to the large surface active areas and can adsorb up to 60% of its own weight in organic contaminants, in comparison to only 2-5% for granular activated carbon. Designed to be quick acting, the AGM is both hydrophobic and oleophilic making it extremely effective. This remarkable adsorption can produce continuous and reliable effluent below 5ppm. With no cleaning cycles, no back wash discharges and no extra downtime for replacements or the use of chemicals, running costs for our system are kept to a minimum.





# Oily Water Separator Ancillaries

## Spares

All equipment is manufactured to the highest quality. Oily Water Separator spares are available worldwide and ex-stock. Recommended on-board spares kit includes Advanced Granular Media, Coalescer Set, Gasket Set and Pump Stator.



## Inlet Pre-Strainer

A high quality simplex strainer complete with 60 mesh Stainless Steel basket filter. This provides a cost effective method to protect the oily water separator system - includes a quick release cover mechanism for ease of maintenance.



## Shock Mount

Approved by the MoD for Naval use, these mounts were designed and developed primarily to protect delicate equipment against shock and vibrations to NSSII standards. The 'X' mount provides a space efficient shock mount design, which can be fitted to all oily water separator systems.



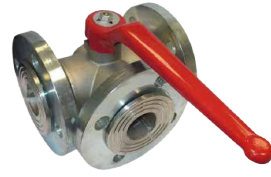
## Electronic Oil Record Book

The SMARTSAFE ORB Bilge Overboard Security System was developed to prevent vessels from illegal discharge "Magic Pipes" and minimise discrepancies in the oil record book. It is a complete interlocked system ensuring security of your discharges. The discharge data can also be used as an automated entry into your electronic ORB or interpreted and recorded in the Rivertrace Connected database providing the user with a full auditable trail of the discharges.



## Manual Three-Way L-Port Valve

Flanged cast iron three way valve to be used for in-port servicing and inspection. Refer to IMO MEPC 107(49) Section 6.1.1.



## Integrated Direct-on-Line Starter Control Panel – Multi-Voltage

Direct-on-Line pump motor starter installed in a mild steel polyester powered coated enclosure, protected to IP54, incorporating all necessary power supplies for the separator. The only shipboard supply required is the incoming power to the interlock isolator. All internal controls are 24V AC. Dry running protection & a first stage vessel heater are included.



## Dry Running Protection

The possible malfunction of a progressive cavity pump can be easily avoided by using dry running protection device. Pre-installed within the panel and pump this is a recommended way to protect and prolong the life of your pump.



## Low Level Switch

Small and lightweight, the bilge switch is extremely stable in non-static, highly contaminated liquids. It is designed for low or high level detection and can be wired into the OWS control panel to control automatic stop for the separator. The bilge switch is supplied with 2 metres of three-core SW4 marine-grade cable. It is a submersible float type with slosh & debris shield to suit the bilge tank environment. It has an IP68 rating and can be pipe or wall mounted and has earned Class Type Approval.



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