



ADVANCED WATER TECHNOLOGY
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BOSS OIL-WATER SEPARATION SYSTEM **(IMO MEPC 107-49 COMPLIANCE)**

The PETOIL BOSS, with capacities from 0,5 m³/hour to 10,2 m³/hour, to install in ship machinery rooms, accomplishes with the last international regulations about the overboard bilge discharge.

- Approved as per IMO Regulations.
- Easy and quick installation.
- New automatic operation.
- Integrated pump, pipes and baseframe.
- Sizes for all ships.
- Easy maintenance, with low operation costs.
- Oil in Water Discharge With TPH < 15 ppm (MEPC 107(49)).

The PETOIL is an automatic system that includes an integral feeding pump, starters, OCM type alarm-monitor, control panel and valves set (ball and solenoid valves). With its compact size, is appropriated for reduced locations, being able to be transported through most access doors and gates.



The installation is easy and fast and often carried out by the ship engineers, following the supplied instructions and drawings.



SPECIFICATIONS

PETOIL Model	BOSS 0.5	BOSS 1.1	BOSS 2.5	BOSS 5.7	BOSS 10.2
Height (mm)	1270	1420	1750	1830	1910
Width (mm)	690	710	910	1040	1370
Depth (mm)	1020	1240	1420	1980	2520
Dry weight (kg)	204	329	568	1184	1610
Wet weight (kg)	286	528	1007	2245	3570
Flow (m³/h)	0,5	1,1	2,5	5,7	10,2
Pipe connections In/Out	3/4" - 3/4"	1" - 3/4"	1 1/2" - 1"	1 1/2" - 1 1/2"	2" - 1 1/2"

IMO MEPC Compliance	107(49)
Operating Temp Range (°C)	1 – 70
Max. Free Oil Concentration	35 %
Oil in Water Discharge With TPH	< 15 ppm
Shingle Phase Power Options	110/120 VAC 220 VAC
Three Phase Power Options	210/220 VAC 380/415 VAC 460/480 VAC 575/600 VAC
Frequency	50 ó 60 Hz
Max Amperage	3,3-7,7 A
Máx. Turbidity for Accurate TPH Reading	35 NTU standard
Design Negative Inlet Head (m.c.a.)	3,0 m.c.a.
Level sensor	Conductance
Pump	Centrifugal w SS Housing
Coalescing Media	Polypropylene / HDPE
Coating Specification	Epoxy / Urethane
Piping and Manual Valves	Bronze / Red Brass
Vessel Metallurgy	Carbon Steel



AVAILABLE MODELS



PETOIL BOSS 0.5



PETOIL BOSS 1.1



PETOIL BOSS 2.5



PETOIL BOSS 5.7



PETOIL BOSS 10.2



OPERATION AND EQUIPMENT DESCRIPTION

The centrifugal feeding pump, with 4 maximum meters suction lift, takes the bilge water from the bilge. The suction of the pump is continuously flooded with a positive head so there is no need to prime the pump. The pump is a stainless steel centrifugal pump and therefore does not need a safety relief valve. The separation system operates in a negative pressure condition or vacuum. It is critical that **ALL** connections to the oil water separator are airtight and properly sized for the installation. Besides in the feeding pump a pre-filter (Y-strainer) and a check valve are fitted. This strainer will remove particules larger than 1/20 th of an inch in any dimension.

The oil water separator is a coalescing type gravity separator that relies on the difference in specific gravity of oil and water. The oily water flows from the pre-filter into the bottom of the separator; the water comes up through the center section of the separator through an oleophilic media (polyethylene or polypropylene). Teh media fcilitates the separation of the oil from the water by providing a surface area that attracts droplets of oil and holds them until they coalesce into larger droplets which rise rapidly to the surface of the water in the separator. As oil collets in the top of the separator it displaces the water and forces the water level in the separator downward. Any gas vapor or air that enters the separator will rise rapidly to the top of the separator where it collets with the oil. Air or vapor that collects in the separator will be discharged with the oil. The oil is collected in the top of the separator and it displaces the water and forces the water level in the separator downward. A level sensor in the top of the separator detects the water level in the separator. When the water is displaced by the collected oil to a predetermined low level, the feeding pump turns off, the inlet solenoid valve closes and the outlet valves open.

The water then flows down through the outer section of the separator, wich contains additional media. The pass through the second stage of coalescing media helps remove any residual oil and provides discharge water from the primary separator in most cases with less than 15 ppm oil content. Separated water exiting the separator comes out the bottom of the outer section and is pumped to the **polisher** unit.

A coalescing separator will not remove chemical emulsions and will only partially remove mechanical emulsions. Some form of post treatment is necessary: Polisher Filter. The standard bulk media used is generally "organoclay". This media has the advantage of being efficient and relatively very long lasting. In normal circumstances the media will last one year or longer without changing. Activated carbon con also be used but does not last as long.



There are two types of polisher housings that are supplied depending on the model:

- For BOSS 0,5 and BOSS 2,5 Models, the systems use a polyglass polisher with a tube that goes down center. The inlet and outlet are both handled through the top distributor. This vessels are rated for 125 psig pressure. The pumps are oversized so that the same pump will work in most all situations.
- For BOSS 5,7 and BOSS 10,2 Models, the systems use a steel vessel with an inlet distributor at the top and an outlet distributor at the bottom.. This vessels are rated for 65 psig pressure.

The BOSS separators are designed with an efficient control system that provides all of the needed functions without the use of a PLC. This means that the operation is constant and steady and therefor 100% reliable.

Every system has a contact for remote start and stop that can be connected to level valve to start and star the system automatically.

ADVANTAGES

- Reduced initial cost and maintenace.
- Fast and easy installation in reduced locations.
- High operation efficiency.

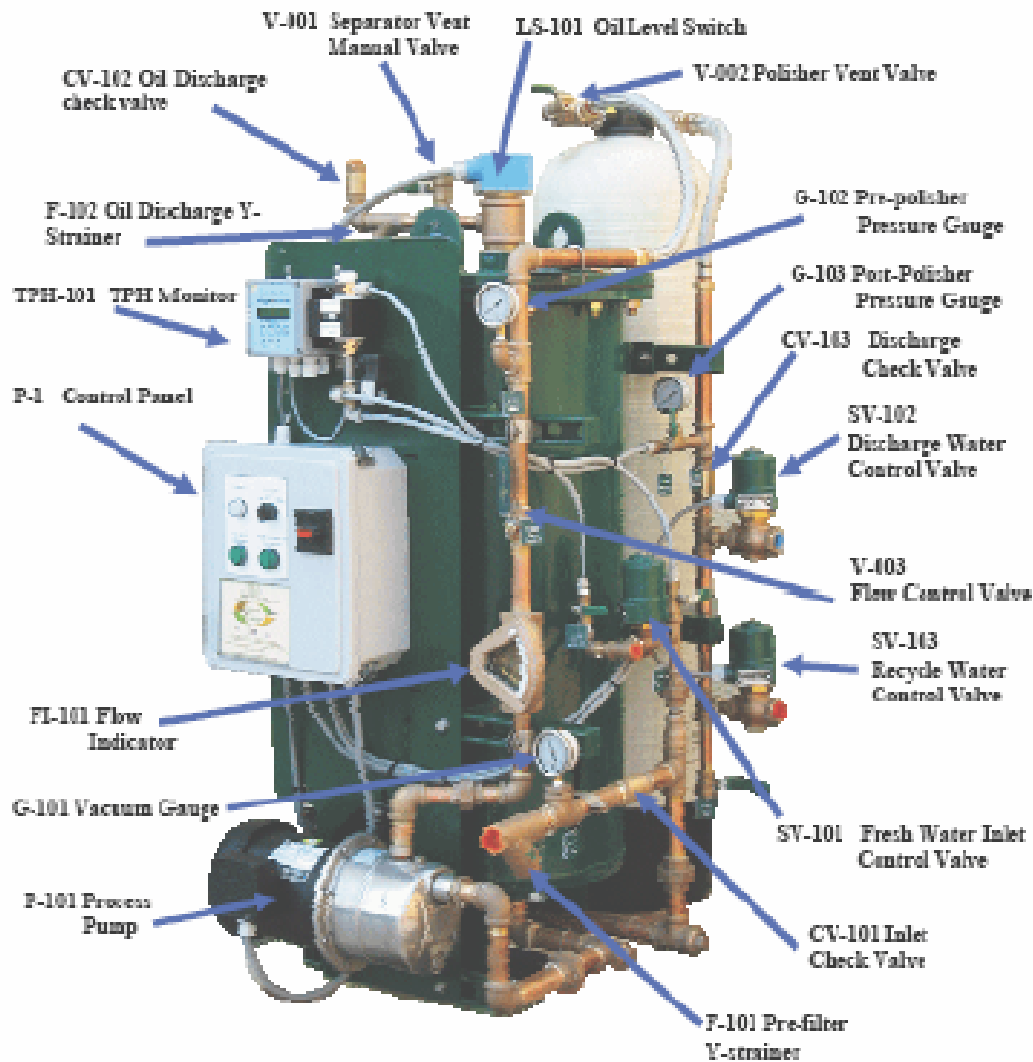
CERTIFICATION

- Approved according to IMO MEPC 107(49).
- Certificates of American Bureau of Shipping ABS.
- Approved by United States Coast Guard USCG.
- The manufacturing of each PETOIL is examined, inspect and certified by Lloyd's or other certified societies.



MAIN ELEMENTS

ANEXO 1 - IDENTIFICACIÓN DE COMPONENTES





PETOIL BOSS OIL-WATER SEPARATOR

1st and 2nd STAGES: OIL-WATER SEPARATOR.

Pre-filter y-strainer (1/20" particles).
Inlet check valve.
Oil-Water separator SS Tank.
Main process Pump.
Vacuum gauge
Oil level switch.
BOSS separator vent manual valve.
BOSS make-up water inlet control valve.
Oil discharge Y strainer.
Flow indicator
Flow control valve

SEPARATOR BOSS FILTER SYSTEM

Act. Carbon or Organoclay Charge.
Inlet pressure gauge.
Pressure gauge after filter.
Vent valve.
Discharge check valve
Discharge water control valve
Recycle water control valve

OIL CONTENT-MONITORING

Clean water inlet manual valve
Sample inlet manual valve
Return manual valve

ELECTRICAL/CONTROL

Control panel

GENERALITIES

Marine Coated Carbon Steel Vessel
Piping and valves in bronze

* Needed when the bilge is above the separator, or in general if there is a positive inlet pressure.



HOW THE SEPARATOR WORKS

