

Filtration Solutions on Board Ships



The certification for Eaton's filtration products provides demonstrated compliance with internationally recognized standards and ABS (American Bureau of Shipping) rules.

The ABS certification is applicable for the following Eaton filtration products: Model 72, 73, and 53BTX pipeline strainers, as well as DU and DSF pressure filters.

The marine industry serves as a critical link, connecting industries and economies across the globe. As ships crisscross the world's oceans, the reliability and safety of marine operations is of the utmost importance.

The diverse systems and equipment on board ships are protected by hydraulic and industrial filters that ensure the quality of fluids and performance of fluid-based processes.

Hydraulic systems are employed in various critical applications including navigational steering, cargo handling, propulsion systems, deck gear and bow thrusters, all of which require reliable oil filtration.

Pressure and return-line filters for auxiliary hydraulic systems, duplex pressure filters for propulsion gearboxes and lubrication systems, and mobile fluid purifiers for water removal are essential components in the marine industry. These filters are responsible for removing harmful contaminants from the hydraulic fluids, keeping these systems operating trouble free, while out at sea. Without proper filtration of lube and hydraulic oils, accelerated wear and shortened system life will occur, resulting in costly downtime and repairs.

Alongside the protection of hydraulic system components, there are additional industrial filtration requirements on board a ship. A complex network of pipelines connects to technical equipment such as pumps, valves or tanks, all working to ensure the safety and proper functioning of the ship's machinery and systems. Many of these pipelines and devices rely on seawater. This seawater enters the sea chests and requires filtration before being pumped into individual systems. A strainer is typically located

between the sea chest and the pumps to filter out larger particles.

Downstream from the sea chest, there is a wide variety of systems that require further filtration with higher retention rates. The cooling system contains heat exchangers and coolers, which use manual pipeline strainers and automatic self cleaning filters to protect against blockages and fouling.

Another such example is firefighting systems. Filtration is a critical step that protects the spray nozzles of deluge fire systems and lances from blocking in case of a fire on board.

Eaton's gas/liquid separators are used for exhaust gas cleaning, steam generator systems as well as cargo handling. In these processes, it is important to catch all liquids and particles inside of gas or steam streams to protect equipment as well as the environment.

To ensure compliance with marine certification requirements for pressure equipment such as filters, please contact Eaton's filtration experts for ABS certification assistance.

Customers choose Eaton's filtration products and solutions for the high product quality, diverse offering and extensive industry knowledge.

Eaton also offers customized filtration solutions to meet the complex demands of marine applications.

EATON

Powering Business Worldwide

Eaton's Filtration Solutions for Maritime Precision

Industrial filters and strainers

Hydraulic filters and systems



Automatic Self-Cleaning Strainers

Model 2596 automatic self-cleaning pipeline strainers are ideal for various water applications that demand continuous flow, simplified maintenance and a worry-free operation. These filters are available with an inside coating or rubber lining upon request.



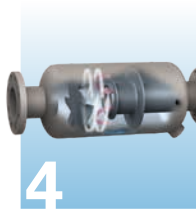
Pipeline Strainers

Pipeline strainers protect pumps, filters, nozzles, flow meters, valves, heat exchangers, oil burners, boilers and other process system components from harmful pipe scale or sea water debris.



High Volume Filters and Strainers

Mechanically cleaned filters and strainers are pneumatically driven disc cleaning filters that are ideal from water-like to highly viscous, abrasive, or sticky process liquids. The MCF and MCS magnetically coupled actuation eliminates the need for dynamic seals.



Gas/Liquid Separators

Gas/liquid separators remove up to 99% of all liquid and solid entrainment particles $\geq 10 \mu\text{m}$. Special types also offer smaller retention rates. Installed in steam, compressed air or compressed gas lines, they assure clean, dry flow.



Pressure and Return-Line Filters

HP3 high-pressure filters and TEF return-line filters provide reliable protection to the ship's auxiliary hydraulic equipment and components from contaminants like solid particles.



Duplex Pressure Filters

DU, DA, and DWF duplex filter line provides reliable uninterrupted filtration for propulsion gearboxes and lubrication systems. Duplex filters offer long lasting switch over valves and are available in cast iron, carbon steel and stainless steel.



Fluid Purifier Systems

The fully-automated, PLC-controlled purifiers IFPM 33 and IFPM 73 effectively remove free, emulsified and dissolved water, free and dissolved gases, and particulate contamination down to $3 \mu\text{m}$ from light transformer oils to heavy lubricating oils.

Clean Shipping from Bow to Stern

Accommodations block



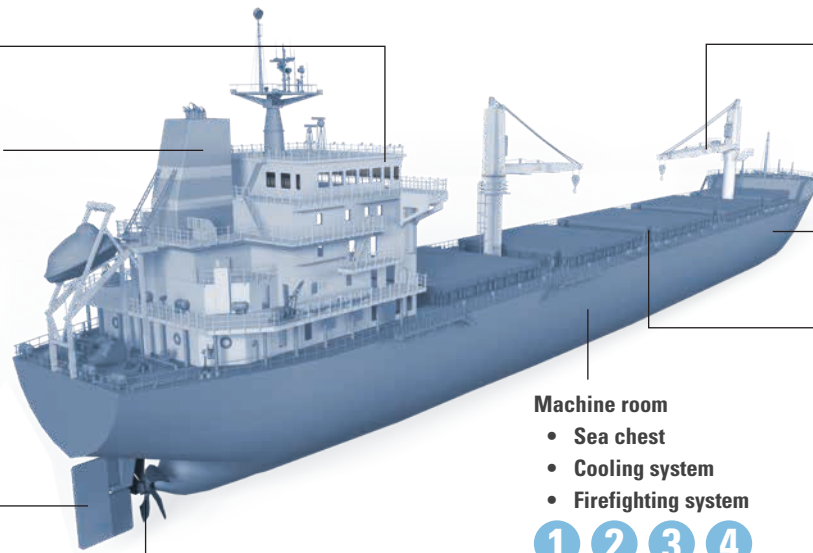
Exhaust gas cleaning systems



Hydraulic steering systems



Propulsion support systems



Cargo handling



Bow thruster hydraulics



Deck gear



Machine room

- Sea chest
- Cooling system
- Firefighting system



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