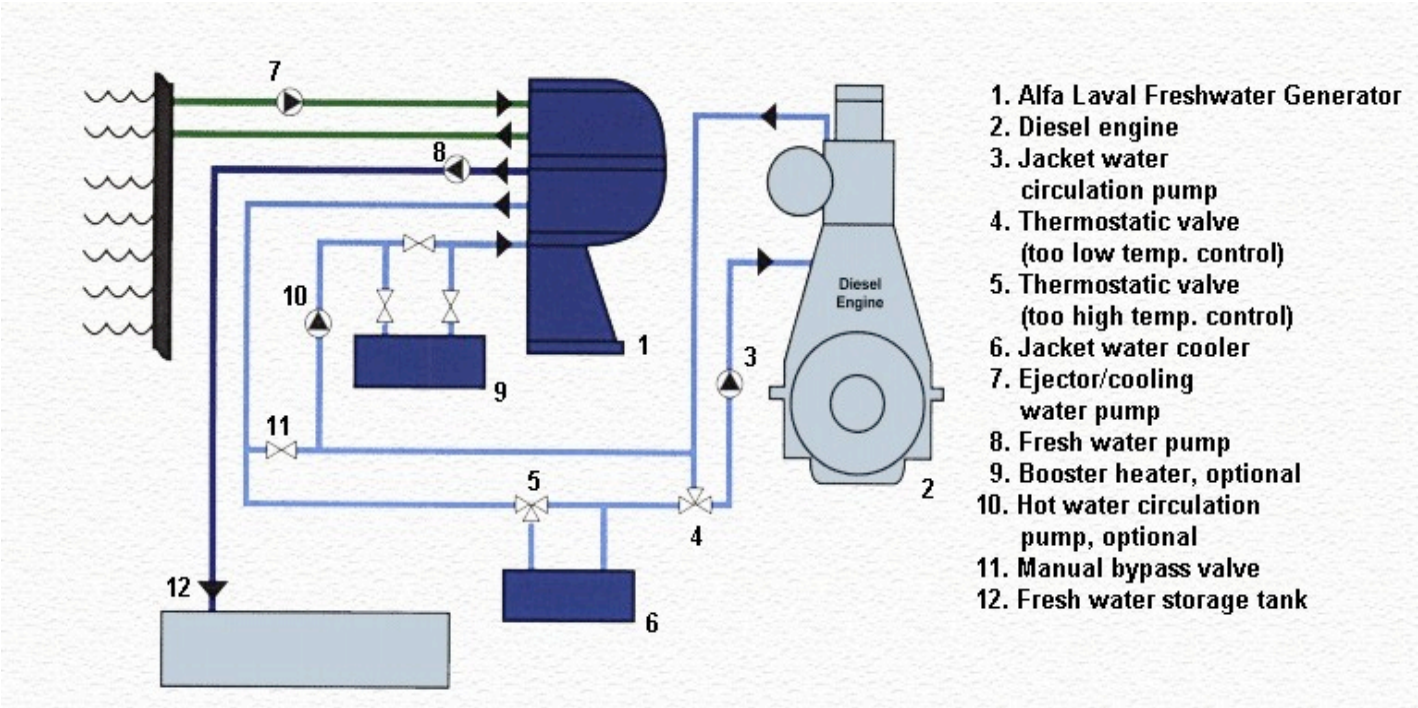
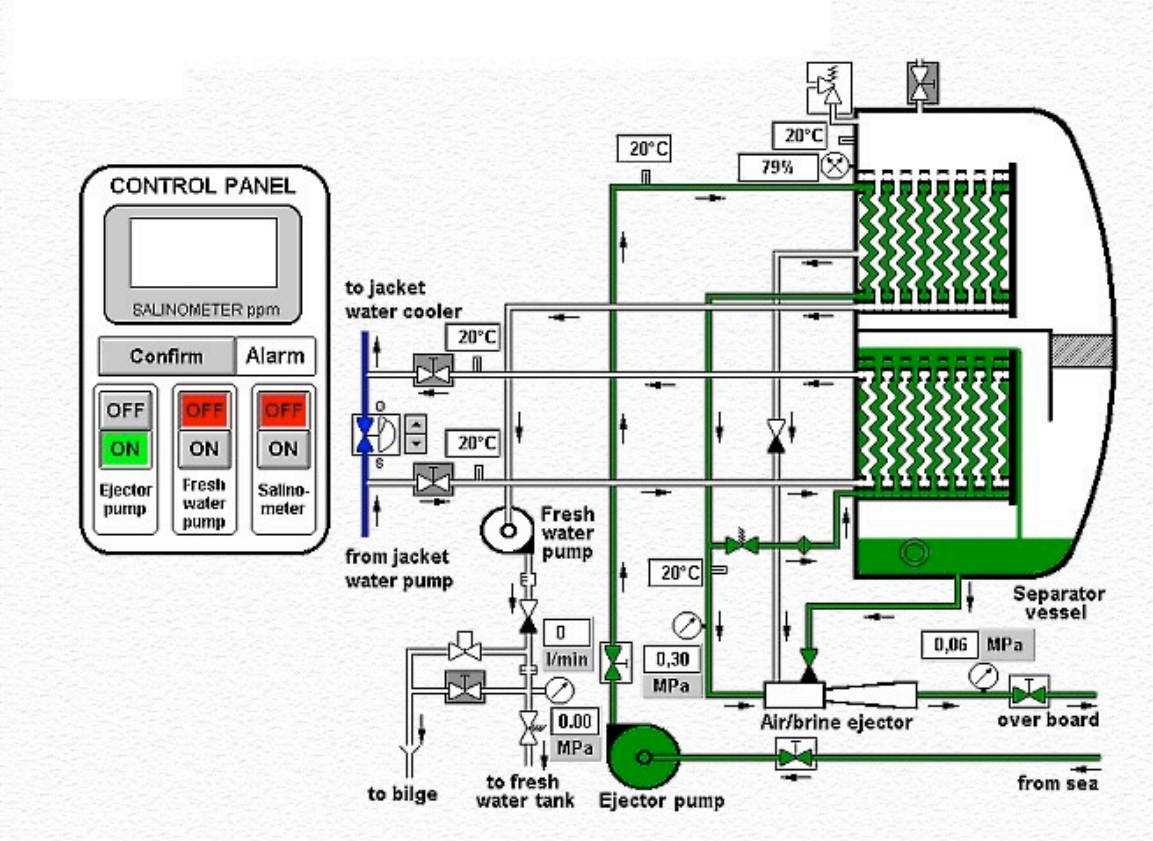
General Arrangement

The fresh water generator is arranged as shown in the diagram. In some cases, the jacket water may be replaced by steam for providing the heat to boil the sea water. The sea water temperature inside the evaporator should however be maintained below 45 ° C for optimum results.



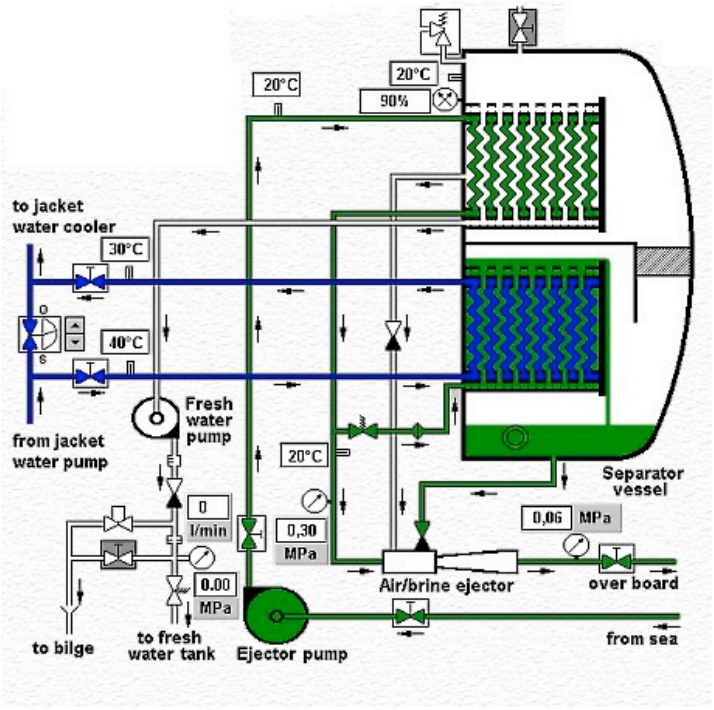
Step 1 (Creating a vacuum)

Sea Water is passed through the system using the ejector pump. The water first enters and exits the condenser coil and then the evaporator coil. As it exits the evaporator coil and passes overboard via the air/brine ejector the vacuum is created. A minimum vacuum of 90% is necessary.



Step 2 (Hot Water Supply)

The valves from the jacket water pumps are then opened allowing hot water into the evaporator section of the chamber, thereby heating the sea water and allowing it to evaporate. The ejector pump runs continuously and feeds sea water to the evaporator.



Step 3 (Fresh Water Production)

As the sea water inside the evaporator boils and vapour forms, it passes through the demister into the condenser where the vapour condenses on the coils forming condensate. The condensate is removed via the fresh water pump and transferred to the storage tanks after passing through a treatment system. In the event the salinometer registers a higher value than the pre-set value, an audible alarm will sound and the solenoid valve is activated to dump the water to the bilge. It may be necessary to stop the system and restart by drawing a vacuum again.