



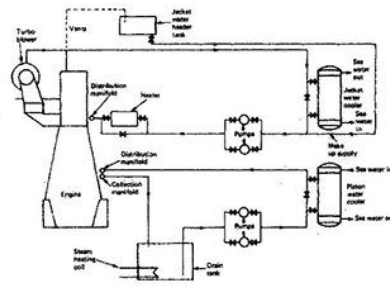
Marine Engine Cooling System



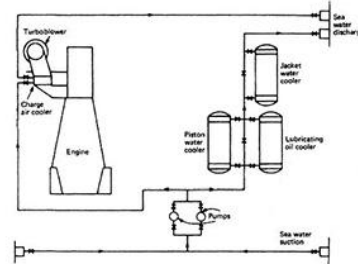
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Marine Engines Cooling System

Marine Engine Cooling System is achieved by circulating a cooling liquid around internal passages within the engine. The cooling liquid is thus heated up and is in turn cooled by seawater circulated cooler. Without adequate cooling certain parts of the engine which are exposed to very high temperatures, as a result of burning fuel, would soon fail.



Fresh water cooling system



Sea water cooling system

Three types of Engine Cooling systems

Freshwater cooling system

The various coolants that circulate the engine are themselves cooled by seawater. The usual arrangement uses separate coolers for the lubricating oil, jacket water, and piston cooling systems, each of which is circulated by seawater. Some modern



ships use what is called a “central cooling system”, with only one large seawater circulating cooler. This cools the freshwater supply, which is then circulated to other separate coolers. Since there is less equipment in contact with seawater, corrosion problems in this system are greatly reduced.

Seawater cooling system

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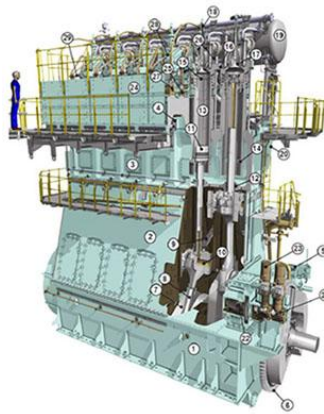
Central cooling system

In a central cooling system, the seawater circuit consists of high and low suction, usually located on both sides of the machine space, a suction filter, and several seawater pumps. Seawater is circulated through the intercooler and discharged overboard.

Advantages of central cooling systems

1. Reduced maintenance because freshwater systems have clean, treated water
2. Fewer brine pumps, and associated corrosion and bird problems
3. simplified and easier cleaning of coolers higher water speeds possible with a freshwater system,,
4. thereby reducing pipe size and installation costs
5. Significantly reduces the number of valves made of expensive materials, also allowing the use of cheaper materials throughout the system.
6. Maintains constant temperature levels, independent of seawater temperature, no cold starts, reduced cylinder liner wear, etc.

Main Bearing Spares:



- | | |
|--------------------------|---------------------------|
| 1. Bedplate | 16. Cylinder cover |
| 2. Column | 17. Exhaust valve |
| 3. Cylinder block | 18. Exhaust valve drive |
| 4. Tie rods | 19. Exhaust manifold |
| 5. Turning gear | 20. Scavenge air receiver |
| 6. Flywheel | 21. Supply unit |
| 7. Crankshaft | 22. Gearwheel supply unit |
| 8. Connecting rod | 23. Fuel pumps |
| 9. Knee lever | 24. Rail unit |
| 10. Crosshead | 25. Fuel common rail |
| 11. Piston | 26. Fuel Injector |
| 12. Gland box piston rod | 27. Servo Oil Rail |
| 13. Cylinder liner | 28. High pressure pipes |
| 14. Scavenge air ports | 29. Starting air valve |
| 15. Anti-polishing ring | |

Marine Engine Main Bearing Brands



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