

# Water to Water Heat Exchangers

## Why do I need a water to water heat exchanger?

There are two main reasons to use a water to water heat exchanger in a marine heating application. First you can integrate the engine's fresh water cooling system with the hot water heating system. The second is to heat domestic water for uses in the galley and shower.

The engine's fresh water cooling system is often used to heat the interior of the boat. This is a wonderfully efficient way to heat. The heat produced by the engine is "waste heat", might as well use it. Also the room heat exchangers add to the cooling capacity of the engines overall cooling system. The system has only two drawbacks. The first is apparent. If the engine is not running, no heat is produced. The second drawback is less apparent, but could be catastrophic. Engine coolant must be piped throughout the vessel. All of the extra plumbing and devices add vulnerability to the system. If a fitting or other component fails, the engine coolant might be lost. A failure of this kind could result in costly engine repairs. The best way to solve the first drawback is to add an Espar Hydronic heater to the system. The best way to overcome the second drawback is to add a water to water heat exchanger.

The Espar Hydronic heater automatically monitors the heating system's water temperature. As the engine's heat production increases, the Espar's production decreases, and vice versa. This makes for a smooth and comfortable automatic transition between the two heat sources.

Engine cooling water is routed only to the water to water heat exchanger, reducing the risk of engine coolant loss.

The capacity of the domestic water heater, on most boats, is quite limited. Adding a water to water heat exchanger, to heat the domestic water is a good way to increase hot water availability.

The compact [Triangle Tube](#) line is a favorite with installers and end users alike.

