

The Twin TF Marine Gas Turbine Propulsion Package: The Solution for High Performance

In three different types of vessels, a unique propulsion solution is used to maximum effectiveness.

CHALLENGE

Provide 10,000 hp of ship propulsion power in a small machinery space while maintaining the lightest possible weight.

SOLUTION

A twin marine gas turbine package employing direct mount and full support by the reduction gear.

RESULTS

The lightest power-to-weight package means speed requirements met in fast ferries, naval ships, and megayachts. With the added flexibility of single or twin engine operation. Diesels can also be added for a CODOG package.

OVERVIEW

What do the Royal Swedish Navy *Visby* class corvette, the Buquebus fast ferry *Patricia Olivia*, and the Feadship superyacht *Sussurro* have in common? Besides superb naval architecture, and an ability to glide swiftly and gracefully across the seas, they all employ a Vericor Twin TF Marine Gas Turbine Package in their propulsion systems.

The Package consists of two Vericor TF Series marine gas turbines coupled to a twin in / single out main reduction gear. This propulsion package delivers approximately 10,000 shaft horsepower to prop or waterjet and weighs three times less than the diesel engine equivalent.

For the naval architect and the operator, the advantages are numerous:

- Vericor marine gas turbines operate on diesel fuel and are controlled just like conventional diesels.
- Operation on one or both gas turbines with the ability to drop one engine offline and/or add an engine while the other engine is operating.
- Ability to orient the Package in the ship with the exhaust facing aft or forward.
- The Twin Package MRG can be configured with a diesel engine input to give a CODOG powerplant



Sweden, The Mediterranean,
Argentina



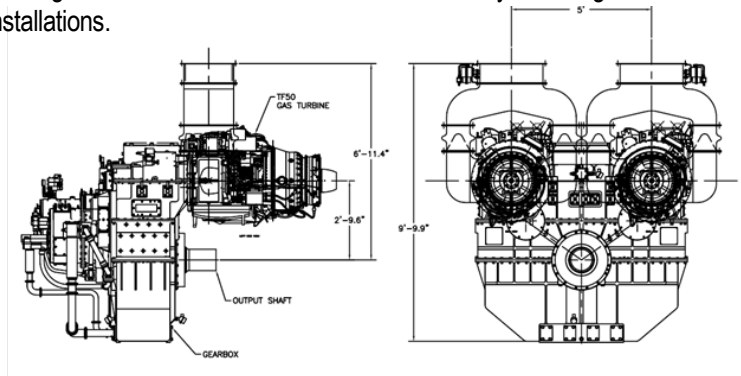


Case Study Details and the Advantages of the Twin TF Gas Turbine

The overwhelming advantage of the Twin TF Package is the low weight and small size as compared to other marine powerplants producing 10,000 hp. A modern high-speed diesel engine of comparable power is over three times the weight and over twice the length.

A key design feature of the TF engine is complete and direct mounting to the main reduction gear (MRG). This design feature contributes significantly to the weight savings of the overall package by eliminating a heavy base frame or structural support for the engine. The entire line of TF series marine gas turbines was designed specifically to be fully mounted to an MRG without further support for sea-going applications.

Other gas turbines cannot be mounted in this way resulting in much heavier installations.



The Twin Package can be configured with the engines side-by-side or with the engines mounted one over the other in a Vertical Twin configuration. This allows adaptation to a variety of hull forms including catamaran and trimaran.

Vericor is the Original Equipment Manufacturer for the TF and ASE Series marine and industrial gas turbines and provides engineered systems and packages using these engines to customers and operators worldwide. Vericor's TF50B engine is the commercial version of the engine that powers the US Navy LCAC air cushion vehicles and similar vehicles in Japan and Korea. TF engines power high-performance fast ferries, megayachts, fast patrol boats, and corvettes. There are more TF Series marine gas turbines engines in propulsion service than any other in this size class.



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