



WÄRTSILÄ 46 VARIABLE INJECTION TIMING – IMPROVE YOUR VESSEL'S FUEL ECONOMY AND REDUCE EMISSIONS

Vessel operators are continuously looking for ways to improve their fuel efficiency in order to remain competitive and profitable while complying with stricter emissions regulations. Wärtsilä 46 Variable Injection Timing (VIT) for Wärtsilä 46 engines is a low-load optimisation solution that reduces fuel oil consumption and therefore emissions by optimising fuel injection timing for the most commonly used engine loads.

A small adjustment with a big impact

Wärtsilä 46 VIT is an integrated function that ensures optimum fuel consumption during part-load operation – typically in the 50–85% load range – by adjusting the start of injection (SOI) according to the actual engine load.

VIT is implemented by changing the physical shape of the fuel pump plunger. The injection timing and injected fuel volume are also carefully aligned and spare injection pumps and elements replaced.

The solution has been performance tested and is EIAPP certified.

Although Wärtsilä 46 VIT can be delivered as a standalone upgrade, it is recommended to combine it with other performance upgrade solutions such as the Wärtsilä 46 Performance upgrade – TPL 73-A4X and short overlap Miller upgrade. When combined with a performance upgrade, the fuel savings enabled by VIT will be greater and the engine's EIAPP technical file only needs to be updated once.

KEY BENEFITS

- Reduce fuel consumption by approximately 3 g/kWh at 75% load
- Ensure lower smoke levels during low-load operation
- Reduce CO₂ emissions



Scope of supply

Converting the engine to variable injection timing can be done in two ways:

1. By changing the fuel element (barrel and plunger) in the existing fuel injection pump
2. By replacing the existing fuel injection pumps with VIT fuel injection pumps

NOTE: All of an engine's cylinders must be converted at same time in order to avoid unbalancing the engine.

Why choose Wärtsilä?

Wärtsilä is a leading supplier to the marine industry with a global service and support network.

As an OEM, we combine data from engines with modern analysis technology and decades of historical engine running data from thousands of vessels to create solutions that enhance your vessel's operation.

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