

# Wärtsilä Performance upgrade for ZA40S



Original VTR turbochargers have already accumulated a high amount of total running hours. As turbocharger efficiency reduces with age, this affects engine performance and increases specific fuel oil consumption (SFOC) – and, in some cases, also limits the maximum engine power output. The Wärtsilä Performance upgrade increases turbocharger efficiency, helping you to reduce thermal load and SFOC for ZA40S engines.

## TECHNICAL CONCEPT

The Wärtsilä Performance upgrade for ZA40S engines offers an upgrade from a VTR to TPL turbocharger combined with engine tuning. According to results obtained on a laboratory engine at 85% load, the solution reduces SFOC by a minimum of 1.5 g/kWh and exhaust gas temperatures by approximately 30°C when comparing a new VTR with a new TPL turbocharger. When comparing an older VTR with a new TPL, fuel savings may be even higher.

The Wärtsilä Performance upgrade is a package solution where a new turbocharger is installed, and all the necessary modification parts and automation are provided by Wärtsilä. Engine tuning is decided on a case-by-case basis as evaluated by Wärtsilä technical service. Wärtsilä technicians will perform onsite adjustment of the engine in accordance with the best available setup. A turbocharger automatic washing system (Wärtsilä Turbocharger wash) can also be provided in order to maintain turbocharger efficiency during engine operations.

## KEY BENEFITS

- Reduces SFOC by a minimum of 1.5 g/kWh when replacing a VTR 454 turbocharger, or 3.0 g/kWh when replacing a VTR 354 turbocharger
- Increases engine reliability and reduces thermal load
- Improves lifecycle support by updating your turbochargers to a newer design
- Brings even greater reductions in SFOC and thermal load when replacing older VTRs



## SCOPE OF SUPPLY

The solution is suitable for all ZA40S installations that mainly operate between 50% and 100% load. Preliminary engine room dimensional verification is needed in order to ensure there will be no interference with the existing structure.

Delivery includes:

- A new TPL turbocharger
- Engine tuning
- SOLAS insulation for the turbocharger
- Automation components for TPL
- Adaptation components for TPL engine arrangement
- Optional, but recommended, turbocharger automatic washing unit (Wärtsilä Turbocharger wash)
- Installation and commissioning

The Wärtsilä Performance upgrade is particularly recommended for installations operating in extreme conditions where high environmental temperatures limit the maximum continuous rating.

	Efficiency at 85% load	SFOC reduction at 85% load	Temperature reduction at 85% load	Maintenance costs
<b>TPL 69 vs. VTR 354</b> 12ZAV40S, 6ZAL40S	+5.5%	-3.0 g/kWh	-30°C	-20%
<b>TPL 73 vs. VTR 454</b> 16ZAV40S, 8ZAL40S	+2.5%	-1.5 g/kWh	-10°C	-20%

## WHY CHOOSE WÄRTSILÄ?

Wärtsilä offers a proven solution with performance data confirmed both in the laboratory and in the field. Our wide service network is available around the globe, with certified service engineers to carry out maintenance work. We also have classification approvals available for marine engines and can offer the longest warranty for equipment and spare parts on the market.

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