

## WÄRTSILÄ 34SGA PERFORMANCE UPGRADE



Since the release of the Wärtsilä 34SGA engine, new technological advances have been made.

Many of the new features are now available as performance upgrades for your 34SGA based power plant.

An upgrade that improves the overall operational efficiency of the plant is always a sound investment. Substantial benefits include:

- Increased knock margin
- Reduced derating
- Reduced operational costs
- Improved efficiency
- Increased engine output

The performance upgrades are available for 34SGA engines in different design stages, i.e. A, A2 (power output up to 380 kWm/cylinder).

#### POWER & EFFICIENCY UPGRADE

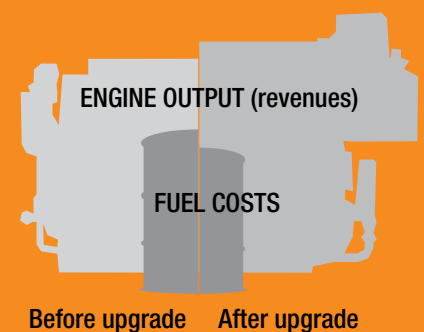
By implementing the complete Power & Efficiency upgrade, the 34SGA engine's power output can be increased by up to 20% within the alternator limit. At the same time, the engine's efficiency is also improved by up to 1%.

Should you opt for a partial power output increase, it is still possible to gain operational efficiency improvements, such as an increased knock margin. With an increased knock margin, the engine can run on gas of lower quality while maintaining the nominal output. The engine's sensitivity to high charge air temperatures or low atmospheric pressures is also reduced, resulting in reduced derating.

The engine also gains a slow-turning safety function, which evacuates any possible condensate water in the combustion chambers prior to start-up.

#### THE PRODUCT AT A GLANCE

A Performance Upgrade aimed at improving the overall cost efficiency of Wärtsilä 34SGA lean burn gas engines with 9L, with 12V and 18V cylinder configurations, and standard outputs ranging from 3780 kWm to 6840 kWm/cylinder.



Before upgrade    After upgrade



### ■ ■ ■ AUTOMATION SYSTEM UPGRADE

To get the most out of the engine modifications and thoroughly improve operational efficiency, an upgrade of the engine automation system to UNIC C3 is recommended.

The UNIC C3 system is used on the latest generation of Wärtsilä gas engines. It utilises modern bus technologies, has newly designed hardware modules, and an enhanced software architecture. The system has very high durability for vibrations and high temperatures. It also contains self-check functions to minimise the maintenance needs of the automation system.

### POWER & EFFICIENCY UPGRADES FOR THE WÄRTSILÄ 34SGA

The components that are affected or to be upgraded depend on the configuration, operation requirements, ambient conditions, etc.

- New type of pre-chambers
- Turbocharger re-specification or new turbocharger
- New, more efficient charge air cooler
- Cylinder pressure monitoring system
- UNIC C3 upgrade

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