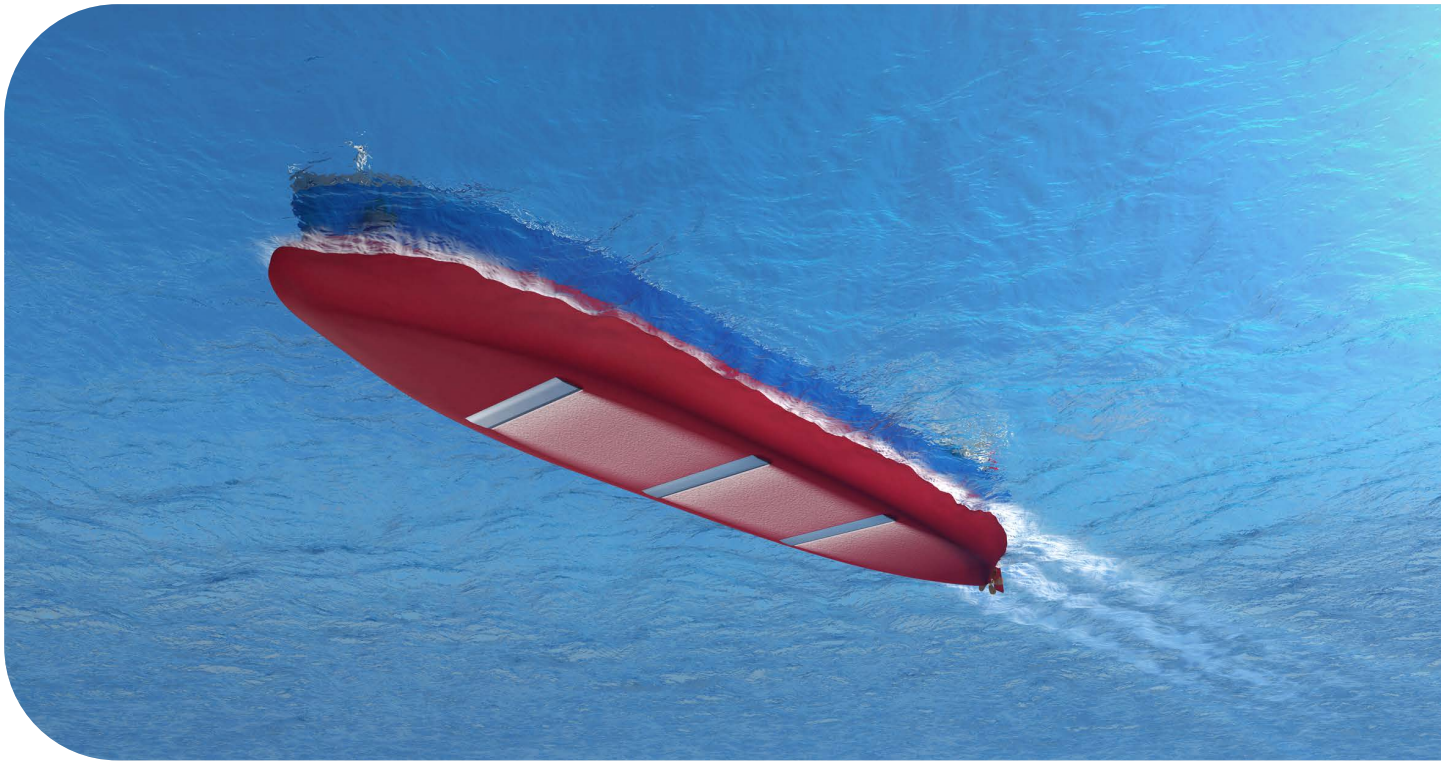
Alfa Laval OceanGlide

Fluidic air lubrication for energy and fuel efficiency on marine vessels



Alfa Laval OceanGlide is an easily installed air lubrication solution with fluidic technology. By creating an even and controllable air layer across the entire flat bottom of the vessel, it provides the best possible setup for drag reduction. This improves energy efficiency and reduces fuel consumption, which results in lower fuel costs and CO_2 emissions.

Application

By reducing friction between a vessel's hull and the surrounding water, air lubrication can reduce vessel fuel consumption and related emissions. The amount of fuel saved, however, depends on the effectiveness of the air layer and the amount of compressor power needed to produce it. Both factors are optimized with OceanGlide, which uses high-efficiency fluidic technology to distribute the air.

Instead of injecting rough air into a sea chest at the front of the vessel, OceanGlide covers the flat bottom in sections. This creates a thin, even and controllable air layer over the maximum area, ensuring that the whole vessel benefits from reduced drag. Unlike traditional air lubrication, this patented solution requires very little compressor power and no major vessel modifications.

In total, these factors mean that any vessel – new or existing – can use OceanGlide to achieve reliable fuel savings of up to 12%.

Benefits

- Fuel savings of up to 12% mean reduced CO_2 and improved EEDI, EEXI and CII
- Fluidic technology uses few compressors to produce an even and dynamic air layer
- Coverage of the entire flat bottom area maximizes drag reduction
- Individually controllable sections allow full optimization of the air layer
- Easy installation, even as a retrofit – no large sea chests, minimal penetrations and free compressor placement

Working principle

OceanGlide is unique in combining air lubrication with fluidics – the control of fluid pressure and flow by means of precisely shaped channels, without any moving parts. Fluidic technology allows distributed creation of the air layer, and it significantly reduces the compressor power needed. With maximized efficiency and minimum energy overhead, the solution reduces specific drag by 50–75%.

Design

Rather than injecting large amounts of air into a frontal sea chest, OceanGlide utilizes one or more air distribution bands across the vessel's flat bottom. The number and placement of the bands is determined by the vessel's specific parameters.

The hydrodynamic bands have a low, wing-shaped profile and a row of fluidic oscillators at their trailing edge. The oscillators produce tiny, uniform bubbles that coalesce almost instantly, which ensures an even and homogenous air layer.

Since each air distribution band produces its own air layer section, the compressor power for each section can be fine-tuned individually. This makes the air layer dynamic and controllable, so that performance and savings can be optimized. The compressors themselves can be located anywhere on board, as there are no requirements for their placement.

Installation and retrofitting

OceanGlide is quick and cost-effective to implement – not only on newbuilds, but also as a retrofit solution. It involves:

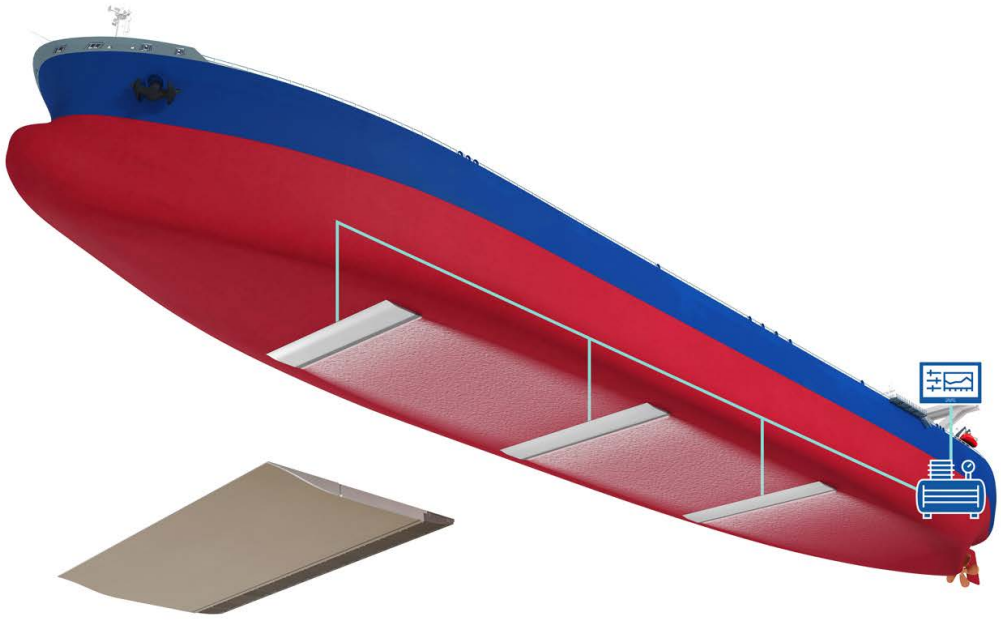
- No restrictions on vessel size
- No limits on vessel draft
- No minimum vessel speed
- No major vessel modifications

Since OceanGlide requires no sea chest and only a small number of freely placed compressors, it demands little space inside the vessel. Outside, the air distribution bands are fast and easy to install, with minimal hull penetrations and no special training.

The whole OceanGlide installation, which can be performed at any shipyard, generally takes less than two weeks.

Key components

- Air distribution bands (1–5)
- Compressor pool
- Alfa Laval control system
- Connecting pipe system



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How to contact Alfa Laval

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