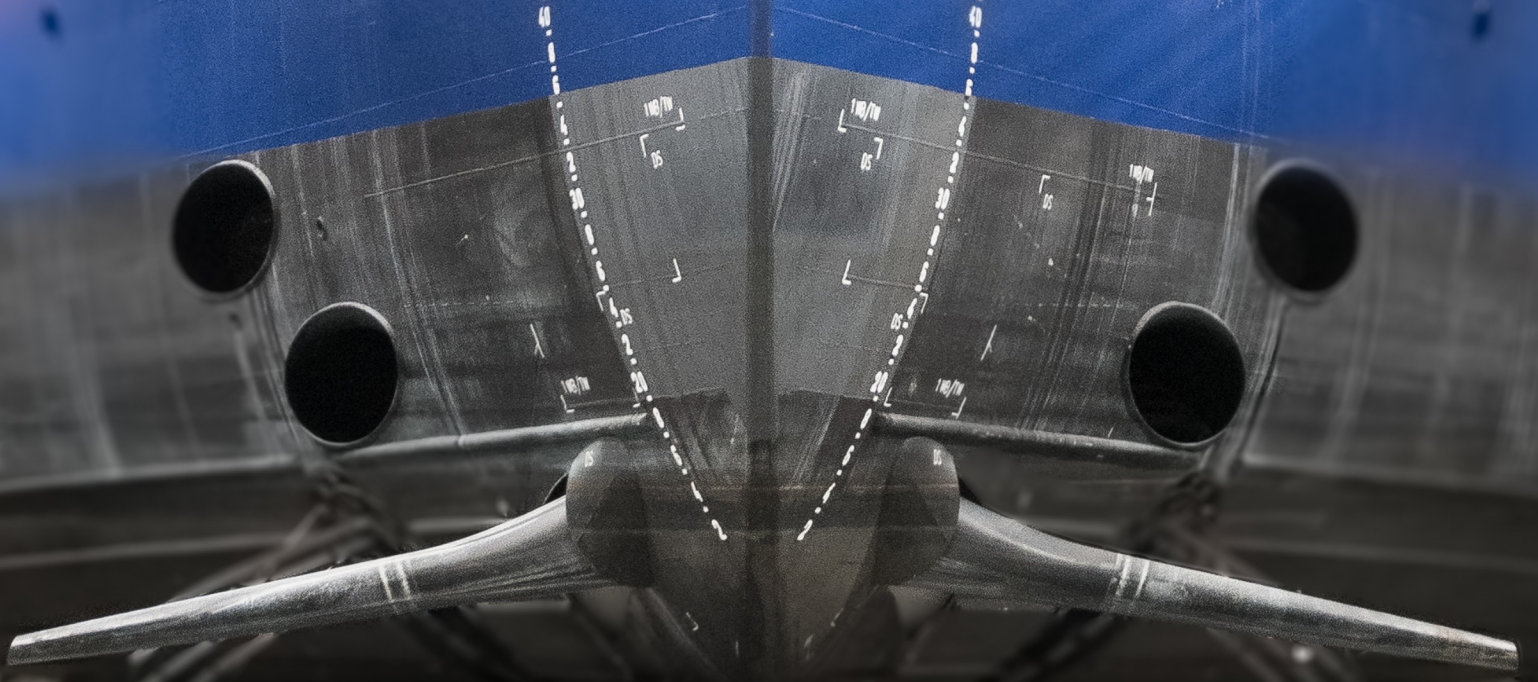
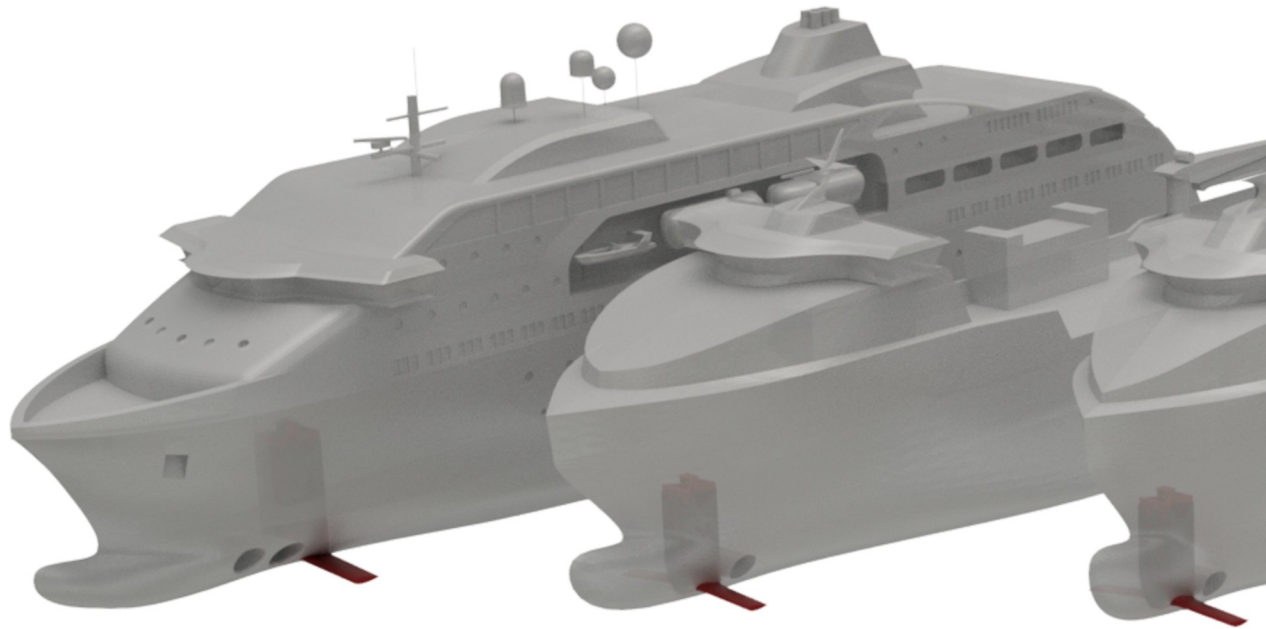




WAVEFOIL



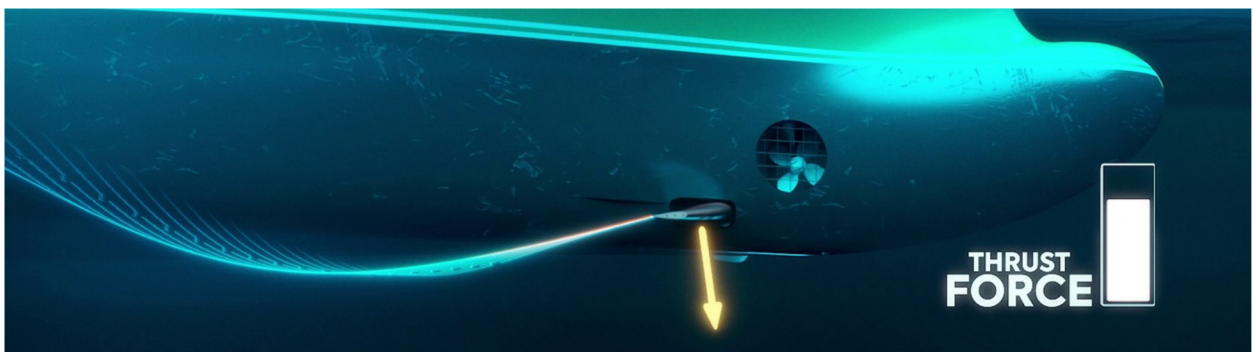
POWERED BY THE SEA



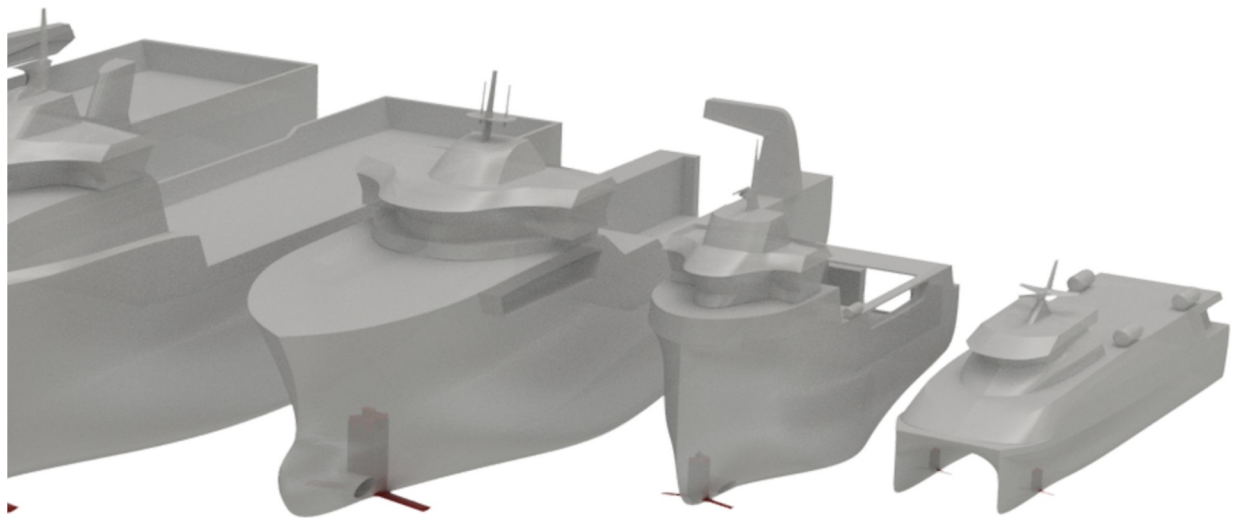
# RETRACTABLE BOW FOILS

Wavefoil provides retractable bow foils that reduce fuel consumption and ship motions in waves. Fuel saving for suitable ships is typically in the range of 5-15%, while ship motions typically are reduced by 10-25%.

A vessel operating in waves experiences increased resistance and decreased propulsion efficiency. This is effectively counteracted by the foils. In addition, the foils generate a thrust force due to the nature of an oscillating foil at forward speed – exploiting the same hydrodynamic principles as a swimming whale.



*The lift from the foils works against the vessel motion and pulls the vessel forward*



**5-15%**

FUEL CONSUMPTION AND EMISSION REDUCTION

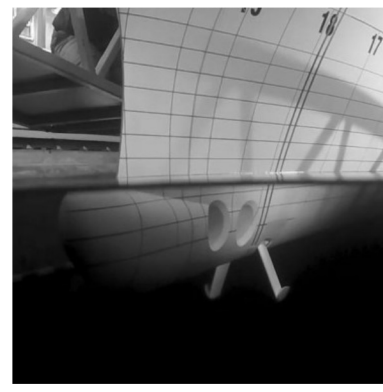
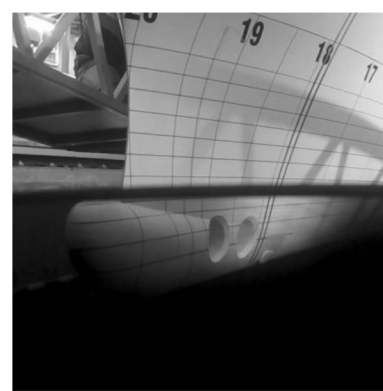
**10-25%**

MOTION DAMPING

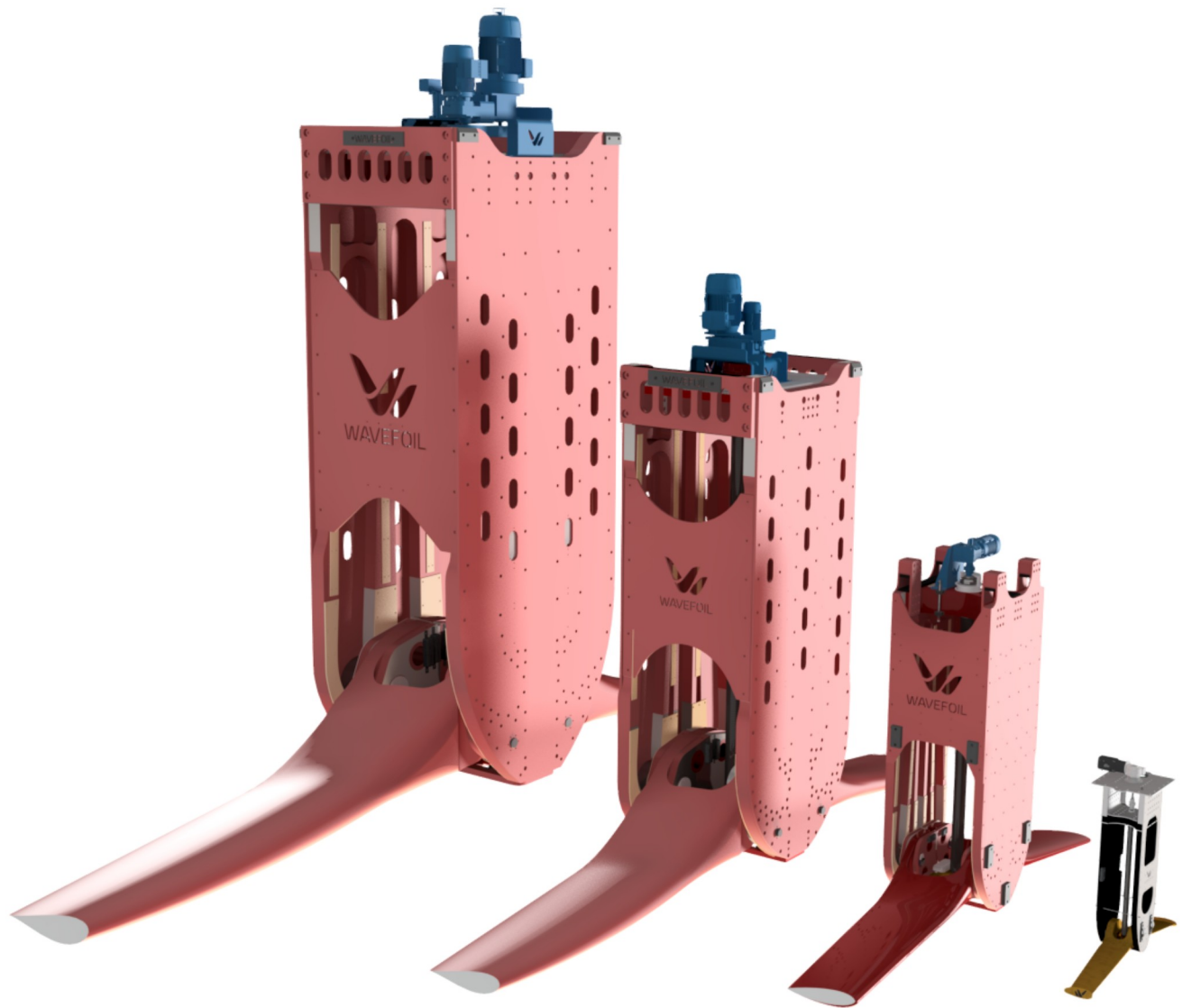
Wavefoil's unique retraction mechanism allows the crew to optimize the vessel performance based on the weather conditions. A decision support system (to be launched) will assist the crew to optimize fuel savings and to avoid extreme loads.



*The WF3970, on a pelagic trawler designed by Salt Ship Design for Liegruppen*



# PRODUCT RANGE

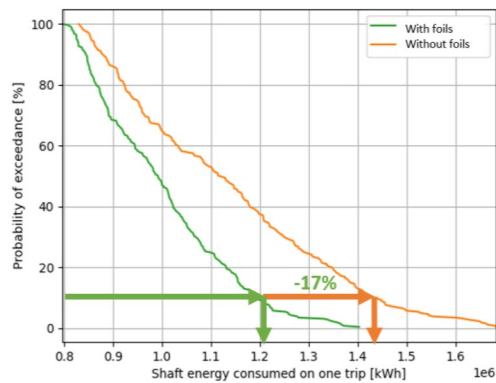
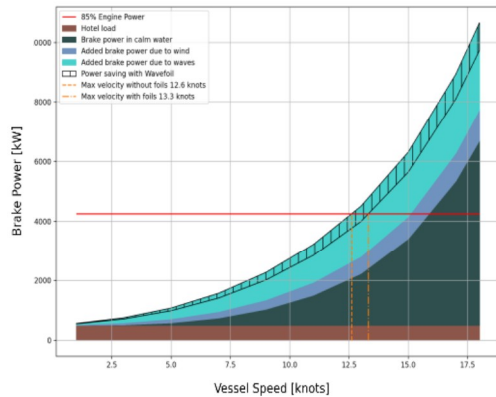
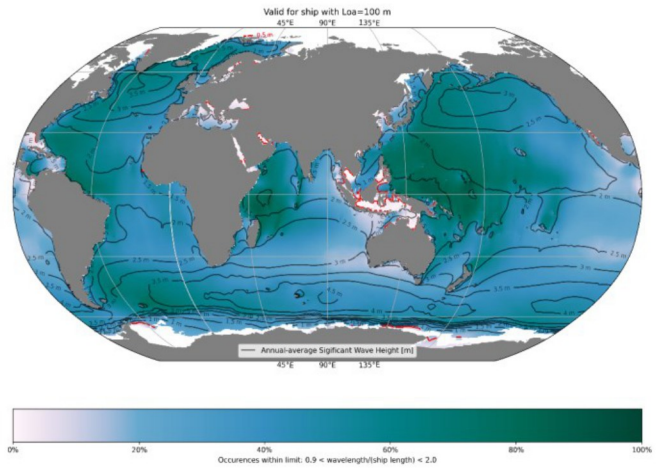


	WF5910	WF3970	WF2640	WF1050
Typical vessel types	<ul style="list-style-type: none"> <li>Expedition cruise vessels</li> <li>Chemical tankers</li> <li>Cargo vessels</li> <li>Coast Guard vessels</li> </ul>	<ul style="list-style-type: none"> <li>Fishing vessels</li> <li>Live fish carriers</li> <li>Ocean-going ferries</li> <li>Small cargo</li> <li>Yachts</li> </ul>	<ul style="list-style-type: none"> <li>Fishing vessels</li> <li>Research vessels</li> <li>Small car/passenger ferries</li> <li>Yachts</li> </ul>	<ul style="list-style-type: none"> <li>High-speed passenger ferries</li> <li>Ambulance vessels</li> <li>Offshore wind crew transfer vessels</li> </ul>
Typical hull type	Conventional vessels	Conventional vessels	Conventional vessels	High-speed catamarans
Typical vessel length	90-200 meters	50 - 100 meters	35 - 60 meters	20 – 40 meters
Typical vessel speed	12 - 18 knots	10 - 18 knots	8 - 13 knots	20 - 35 knots
Dimensions:				
Foil length (CL to foil tip)	5910 mm	4200 mm	2640 mm	1050 mm
Longitudinal	2392 mm	1770 mm	1200 mm	475 mm
Transverse	2940 mm	2160 mm	1270 mm	460 mm
Height	8890 mm	6475 mm	3795 mm	1685 mm

# SIMULATIONS

Wavefoil has developed a simulation program that can predict energy consumption statistics for any route world-wide. The program includes a world-leading software package to predict the savings from retractable bow foils.

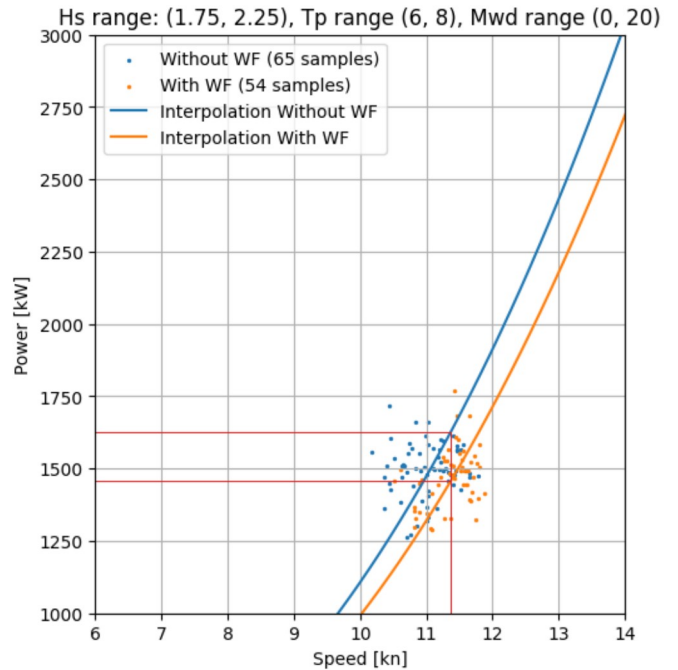
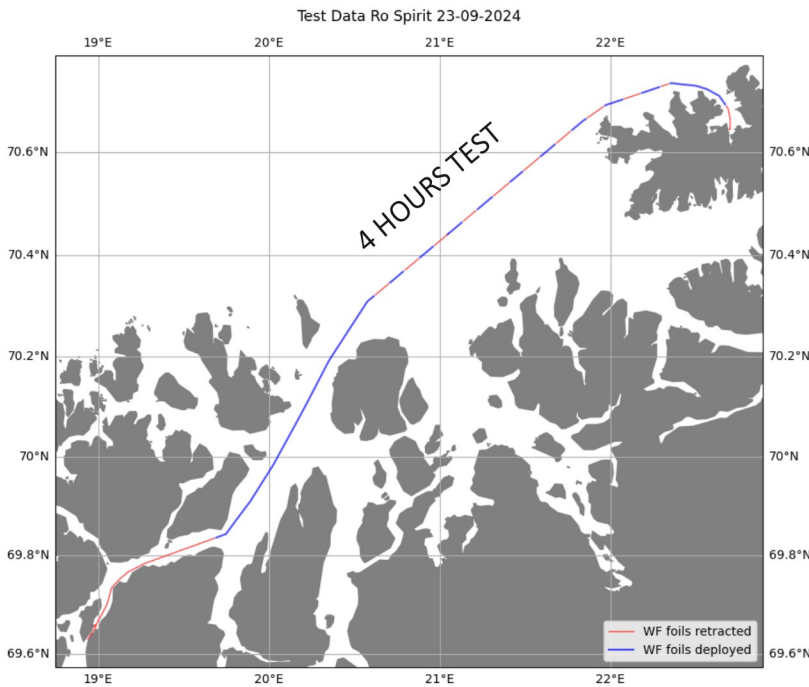
However, the program is not limited to bow foil simulations. Wavefoil may assist decision makers in any phase of the design process – from early-stage predictions to third-party evaluations of the final design.



## Insight and decision support through:

- Prediction of fuel consumption and motions with and without retractable bow foils
- Early-stage prediction of critical parameters like installed power and energy storage capacity based on the vessels' main dimensions.
- Continuous dialog though the design process to evaluate current design.
- Third-party evaluation of the final design parameters based on the customer's hull geometry.
- Fuel saving potential for wind-assisted propulsion (a generic model)
- Animation of the vessels' motion in waves.





RO SPIRIT  
79 M  
LIVE FISH CARRIER

**10%**  
FUEL SAVING

WAVE HEIGHT 2 M  
WAVE PERIOD 7 S  
DIRECTION 0-20 DEG

Ro Spirit, the first live fish carrier with Wavefoil's retractable bow foils WF3970, operates in harsh Norwegian waters, ensuring safe salmon transport. A four-hour test in September 2024 measured propulsion power savings by alternating foil deployment every 10 minutes. Results showed a notable 10% reduction in power consumption when the foils were deployed.



M/S Thea Jensen with WF1050 interacting with Norwegian rescue

## HIGH-SPEED VESSELS

High-speed catamarans achieve significant motion damping by installing our WF1050 foil module in each hull. Full-scale measurements on board M/S Thea Jensen have shown 30% motion damping with the foils deployed.

M/S Thea Jensen operates in up to 10 knots higher speed with the foils deployed for a given comfort criteria. Similarly, the vessel can handle up to 50% higher waves before wet deck slamming occurs.



WF1050 foil module

## INCREASED EFFICIENCY

**30%**  
REDUCTION IN  
VERTICAL MOTION

**50%**  
HIGHER WAVES AT A GIVEN  
COMFORT CRITERIA





Sales Inquiries:  
[sales@wavefoil.com](mailto:sales@wavefoil.com)

Service Inquiries:  
[service@wavefoil.com](mailto:service@wavefoil.com)



[www.wavefoil.com](http://www.wavefoil.com)

Org nr. 832 004 642

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