



HELSETH

Creating Efficiency



Propulsion Solutions

Helseth – Integrated CP Propulsion Solutions

Helseth has excellent know-how on integrated propulsion solutions for a wide range of vessels. Our solutions and experiences cover each individual aspect of the system – efficient and optimized propellers, reliable gearboxes and control systems for flexible and safe vessel operation.

Propellers

- Propeller design optimized to vessel requirements and operational profile ensuring the highest efficiency
- Engine power up to 4500 kW
- Propeller diameter up to 4500 mm
- Open and nozzle propellers
- 3- and 4-bladed

Control Systems

- Cost-effective and flexible solutions in setups adapted to vessel requirements
- When selecting solution and make, our main focus is:
 - Reliability
 - Cost/benefit
 - Manoeuvrability

Gearboxes

- Type and make selected based on what is most suitable for the vessel
- Pitch control system selections:
 - with built-in servo
 - with mounted OD-box and HPU
- 2-speed solution
- Hybrid gearboxes
- PTO/PTI selections

After Sales Service

- Startup and installation services
- Maintenance services
- Short delivery time for original spare parts
- 24/7 on-call service

Helseth Propulsion Solutions are proven to be highly efficient in a complete range of driveline setups. Based on our engineering capabilities and wide experience, we have developed powerful solutions together with vessel designers and owners within a wide range of setups.

Diesel-mechanical



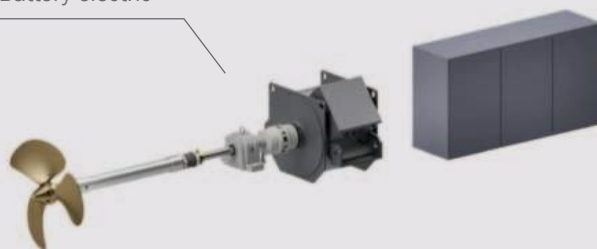
Diesel-electric



Hybrid



Battery-electric

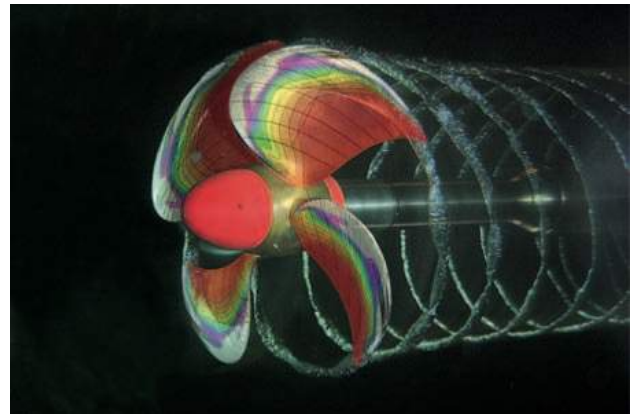


Focusing on latest technology

The core value in Helseth Propulsion Solutions, is efficiency. Our primary tool to maximize efficiency, is a strong focus on the latest technology within all parts of our systems.

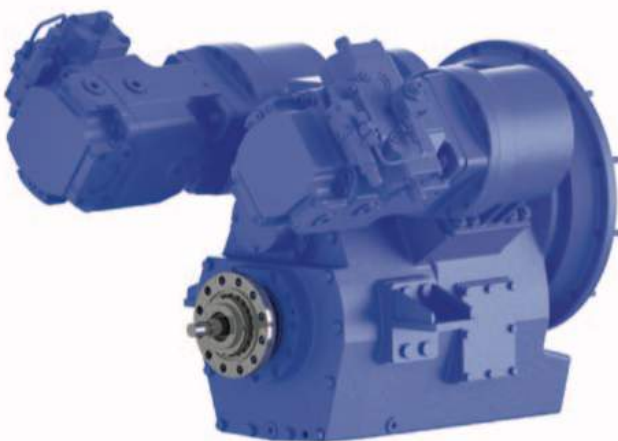
Optimized propeller design is a key factor for the overall solution efficiency. Based on the most advanced computerized tools, high knowledge in hydrodynamics and fundamental understanding and respect for vessel requirements, we are able to deliver high efficient designs.

3D and 2D CAD-tools are used for design and modelling of our propellers – combined with advanced programs for analysis of strength and hydrodynamics. Three-dimensional and dynamic analysis methods facilitate the propeller design process and ensure the highest level of efficiency and functionality for our propellers.



Through partnership with some of the strongest and technically advanced gearbox makers in the marine industry, we are able to select the most suitable gearbox based on

vessel requirements – not being restricted to one single make. Over the years this flexibility has proven to add value to our propulsion solutions.



Selection of the most suitable CPP Control System, is essential for operating and accurate manoeuvring of the vessel. In addition, we have a strong focus on understanding the cost/benefit. Our experience has thought us that it is essential to understand the difference between “nice to have” and “need to have”. Depending on owner’s requirements, we can provide also suitable control systems for thrusters and rudders.



Application – Conventional Vessels

Conventional Vessels – operating at low and medium speed – is a wide group of vessels where Helseth Propulsion Solutions are well fitted. Since most of these vessels are operating in continuous duty, the fuel-economy and systems reliability are key requirements. For most workboats bollard pull will also be a important performance criteria.

Cargo Vessel, LOA 121,0 mtr.

- Power Diesel-mechanical
2760 kW @ 750 rpm
- Propeller Ø3400 mm



Live Fish Carrier, LOA 84,6 mtr.

- Power Diesel-electric
2*1200 kW @ 1800 rpm
- Gearbox Twin in/single out
- Propeller Ø3500 mm in fixed nozzle





**Aquaculture Service Vessel,
Catamaran, LOA 24,0 mtr.**

- Power Diesel-mechanical
2*368 kW @ 1800 rpm
- Propeller 2*Ø1400 mm in steerable nozzle



Fishing Vessel, LOA 28,0 mtr.

- Power Diesel-mechanical
746 kW @ 1800 rpm
- Propeller Ø2100 mm



Application – High Speed Vessels

For High Speed Vessels – normally operating above 25 knots speed – hydrodynamics becomes much more important for the optimization of the propulsion solution. In addition to the propeller design also design of brackets, rudders and propeller tunnel has to be optimized. Due to interaction with the hull design, we work closely with vessel designers for high speed applications to ensure the most efficient solution.

Wind Farm Service Vessel, Catamaran, LOA 27,5 mtr.

- Power Diesel-mechanical
2*1081 kW @ 2100 rpm
- Propeller 2*Ø1250 mm



Passenger Vessel, Catamaran, LOA 26,0 mtr.

- Power Diesel-mechanical
2*550 kW @ 2100 rpm
- Propeller 2*Ø975 mm



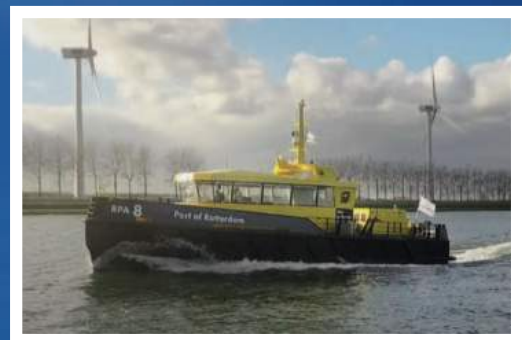
Resque Vessel, LOA 23,0 mtr.

- Power Diesel-mechanical
2*1080 kW @ 2250 rpm
- Propeller 2*Ø1250 mm



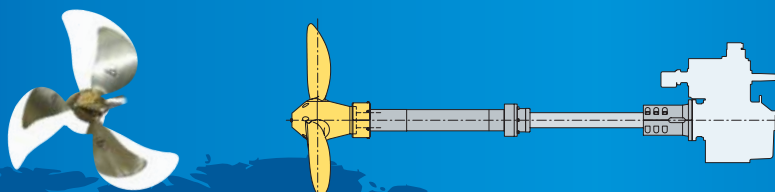
Pilot Vessel, LOA 24,6 mtr.

- Power Hybrid; diesel
2*382 kW @ 1800 rpm
PM/electric 2*150 kW
- Propeller 2*Ø850 mm

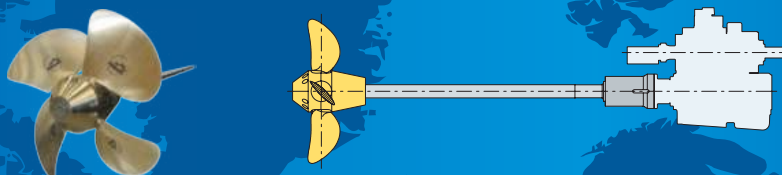


Helseth Propeller Assortment

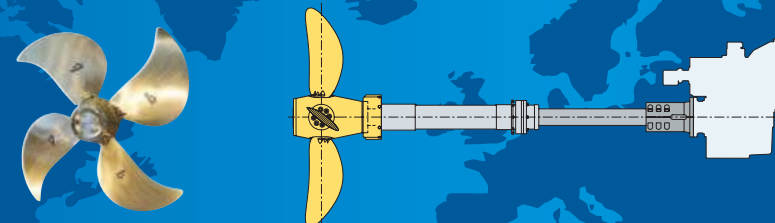
Helseth product portfolio consists of 3- and 4-bladed propellers designed with the most advanced tools and produced in high quality materials. The design is adapted to each vessel and according to the vessel operational requirements. Helseth propellers have been delivered according to requirements from all major classification societies – the highest Ice Classes included.



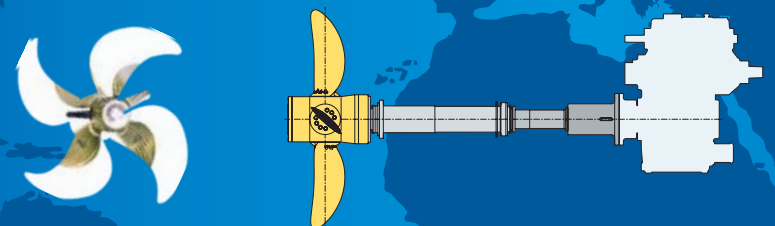
3H: 3-bladed CP propeller for small size conventional vessel. Propeller diameter range 500-2300 mm.



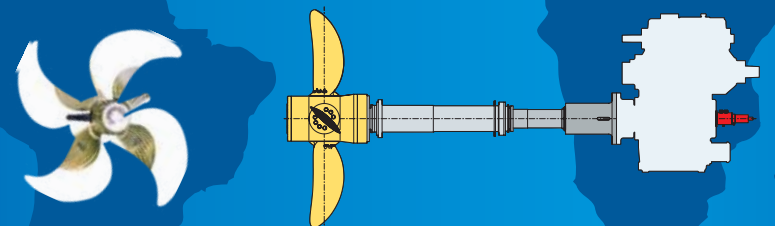
4H: 4-bladed CP propeller for small size conventional vessels and high speed vessels. Propeller diameter range 700-1700 mm.



4T: 4-bladed CP propeller for medium size conventional vessels and high speed vessels. Propeller diameter range 1300-2300 mm.



4TX: 4-bladed CP propellers for large size conventional vessels (and gearbox with built-in servo for pitch control). Propeller diameter range 1800-4500 mm.



4SX: 4-bladed CP propellers for large size conventional vessels (incl. OD-box mounted to gearbox for pitch control). Propeller diameter range 1800-4500 mm.

For the systems 3H, 4H and 4T a Manually Adjustable Pitch Propeller (APP) is also available. APP is operated as a Fixed Pitch Propeller (FPP), i.e. in combination with a reversing gearbox – but pitch setting can be adjusted manually.

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