



# 100 YEARS ANNIVERSARY

Over 100 years of experience, advanced machining capabilities, and highly qualified employees enable us to design and manufacture optimum and individual solutions.



**HUNDESTED**  **PROPELLER A/s**

# COMPLETE CONTROLLABLE PITCH PROPULSION SYSTEMS FOR COMMERCIAL VESSELS AND SUPERYACHTS

Hundested Propeller A/S design and manufacture industry leading controllable pitch propellers, controllable pitch gearboxes, thrusters and pitch control units to meet the needs of fishing boats, tugs, ferries, coasters, smaller tankers, pleasure boats and superyachts.



## WORLD LEADERS

Hundested Propeller work with leading designers and naval architects from concept through to final installation to deliver world leading Controllable Pitch solutions. The Hundested Propeller is the name leaders in the industry come to for CP Propellers from

150 HP to 4500 HP, CP Gear Boxes from 300 HP to 4500 HP and Thrusters as tunnel units from 25 HP to 2700 HP rotating and retracting pods up to 1400 HP and retractable swing units in four models from 25 HP to 200 HP.



## FORWARD THINKING

Hundested Propeller A/S is at the forefront of increasing power and propulsion efficiency. Custom hybrid and regeneration solutions are a steppingstone to the future, where eventually there will be a requirement

for electric power only. Hundested is committed to product evolution and developing systems that increase efficiency and reduce our impact on the environment.



## EVERY PROPELLER IS UNIQUE

Every Hundested Propeller is designed, and precision engineered from the ground up to meet the individual specifications of customers and their vessels. However, the design philosophy has remained

unchanged for 100 years: make it to last. That's why nothing is left to chance at Hundested Propeller, and everything is manufactured in-house to meet our own extremely high standards.



## PITCH CONTROL UNITS

We made our first pitch control units in 1929 for the Hundested engine in connection with our propeller system. This was of the mechanical type with a big hand wheel to change the pitch. A lot has changed since then. We have used this extensive experience to update our units through the years. Our pitch control units are shaft line units designed for to be installed aft of a standard reduction gearbox without built in pitch control.

### THIS SYSTEM HAS MANY ADVANTAGES:

- In combination with a conversion from fixed into a controllable propulsion system.
- If a very noise and vibration free installation is required.
- If a reverse function in combination with a CPP system is required.

The shaft line pitch control units all have built in thrust bearing, long stroke for feathering propeller and can be delivered with semi-flexible foundations. We can supply two different types of pitch control units. The difference is in the way the pitch is activated: It can either be electrically (FR-ELC) or hydraulically (FR-HP) activated. We can also supply a system (FR-HFC) with an O.D. box built on to an existing reduction gearbox without built in pitch control.

The biggest market for our pitch control solution is the mega yacht industry but we have also delivered to both fishing vessels and ferries.



## CP GEARBOXES

### CONTROLLABLE PITCH GEARBOXES

We have designed and produced our own marine gearboxes since 1985. We call them CPG (Controllable Pitch Gearbox). This is because they all have built in pitch control for the propeller. The hydraulic system of all CPG gearboxes includes a double oil pump. One pump is utilized exclusively for the pitch control and the other one is utilized for the clutch, a possible shaft brake, and lubrication.

- From 300 HP to 4500 HP – Depending on engine RPM and the reduction ratio
- All sizes have ground, case hardened, helical gear wheels

### Special features and Individually Developed Gearboxes Available

A special feature is the modular PTO system to drive hydraulic pumps or generators.

All PTO's have an individual hydraulic clutch. Up to 3 PTO's is available for all sizes.

If an extremely noise and vibration free system is required our gearboxes can be delivered with both semi-flexible foundations as well as a semi-elastic coupling on the gearbox output shaft. These features mean that any noise and vibrations will not be transmitted to the hull. These features have become a request from our customers in the pleasure boat industry.

Beside our standard product line we offer individually developed gearboxes to meet whichever special requirements the customer may have regarding dimensions, power, reduction ratio, PTO's, angle gears etc. This means that we can supply special gearboxes which no other supplier can deliver.

## THRUSTERS



### TUNNEL THRUSTERS

In 1985 we introduced our line of tunnel thrusters and since then we have delivered more than 500 units. Our tunnel thrusters are designed for heavy use in all types of commercial vessels. We can supply 4 different models ranging from 20 HP and up to 2700 HP. Depending on size, the propeller is either fixed, adjustable or CP type. They can be hydraulic, electric or diesel powered. We are very flexible regarding special requests such as tunnel diameters and lengths that are not in our standard product range.

- From 20 HP to 2700 HP
- Hydraulic, electric or diesel powered

### RETRACTABLE SWING THRUSTERS

In 1989 we were approached by one of our loyal customers in the sailing yacht industry. They wanted us to design and produce a thruster for one of their

sailing yachts. The idea was that it had to be swing retractable. That type of thruster didn't exist at the time. We thought that was an exciting challenging task so we developed the first swing retractable thruster in the world. Our retractable thrusters are available in 4 model sizes ranging from 25 HP to 200 HP. In the ejected mode the retractable thruster works like a conventional thruster. In the retracted mode a plate welded to the thruster tunnel covers the opening in the hull ensuring a minimum of added resistance. This feature is especially popular in the sailing yacht industry. As standard the housing is manufactured in aluminium and it comes with a 3- or 4-bladed propeller in either Aluminium or Nickel Aluminium Bronze. The prime mover is hydraulic and the retraction mechanism is either electrically or hydraulically activated.

We supply complete controllable pitch propulsion systems, including pitch integrated gearboxes, flexible couplings, power take offs, power take ins, remote control systems, intermediate and propeller shafts, stern tubes with your choice of lubrication system, controllable pitch propellers and thrust nozzles.

# CP PROPELLERS



## WE DELIVER

We have two main categories in our propeller program:

- The VP-sizes. The VP stands for Variable Pitch
- The MP-sizes. The MP stands for Multi Pitch

The propellers range in powers from approx. 150 HP up to 4500 HP depending on engine speed and reduction ratio of the gearbox.

The diameter of the propellers ranges from approx. 750 mm up to 4000 mm.

We manufacture propeller shafts in one piece in lengths up to 12m.

## MADE TO ORDER PRODUCTS

We are a made to order business which means that every system is designed especially for the individual project. We have no "standard" system that we pick of the shelf.

We deliver complete CP propulsion systems for nearly all types of vessels: Fishing boats, tugs, ferries, coasters, smaller tankers and pleasure boats.

We can supply everything from the engine and aft: CP gearbox or pitch control unit, flexible coupling, PTO's, mechanical or electronic remote control system, intermediate and propeller shaft in carbon or stainless steel, stern tube with your choice of lubrication system, CP propeller with standard or specially designed skewed propeller blades and thrust nozzle.

## VP AND MP PROPELLERS

The propeller blades are as standard mounted in a traditional split propeller hub. This is the VP system. But can also (for the larger sizes) be delivered in a bolted

on version. We call this version MP for Multi Pitch. There are several great advantages of the MP version:

- It is possible to replace one blade without disassembly of the entire propeller hub.
- Because of the good sealing system between the hub and blades means that the risk of contamination to the sea is minimal.
- Grease lubrication is only necessary every 5 years.

Our propellers have a simple but sturdy design with only mechanical parts in the propeller hub. Our design with grease filled hubs enables a design without any critical seals and thus avoids leakages. We are a leading manufacturer of CP propulsion systems for larger sailing yachts which require feathering propellers for minimum drag when under sail.

## THE ADVANTAGES OF CONTROLLABLE PITCH PROPELLERS

- A fixed propeller, designed for maximum speed, cannot give maximum power at low speed, while a fixed propeller designed for power, cannot achieve maximum speed.
- With a controllable pitch propeller it is always possible to obtain full utilization of the engine, irrespective of the purpose of the vessel.
- Maximum horsepower can be taken from the engine – without overloading – by changing the pitch.
- Even if the engine drives a winch or a shaft generator, the number of revolutions can be kept constant – and the speed of the vessel can then be regulated by means of the propeller pitch.

- At speeds lower than the maximum speed the engine's fuel consumption can be reduced considerably by increasing the pitch and lowering the number of revolutions while maintaining the required speed. In this way the loading of the engine and the total efficiency of the unit is increased.
- When using sail and engine power at the same time the correct pitch can always be obtained so that wind and engine together are utilized in the best possible way.
- Prompt and inexpensive replacement of individual blades in case of damage to the propeller.
- Engine idle speed on a fixed pitch propeller vessel often propels the vessel too fast for docking manoeuvres whereas a CP propeller offers superior low speed vessel control.



## SERVICE AND MAINTENANCE

Hundested Propeller A/S provide fast and intelligent service for all of our product lines. Our customers receive the best possible service by telephone, e-mail as well as on-site. Experienced service engineers offer their assistance across the world, and when they are not travelling, they handle the assembly and testing of both the propeller units, gearboxes and thrusters at the workshop in Hundested. We have a number of local service centres around the world. For further information please contact our service department.

# SKILLED WORKMANSHIP & PRECISION MANUFACTURE

Every unit is designed to meet the individual customer's requirements.

This is possible as everything from the design to the manufacturing and assembly are done in house.

A high priority of ours is to deliver technically robust products by design that will last for many years.

All our products, at a minimum, are designed to classification society rules and can be delivered with their classification certificate.



## EXCELLENCE ONBOARD

BSI Group provides you with specialist equipment for cruising, racing, and super yachts from some of the business' most dedicated brands – all under one sail



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