JV Verhaar Omega

manoeuvring equipment

OMEGA TRANSVERSE THRUSTERS

In addition to the successful Omega 360 degrees Azimuth Channel thruster, Verhaar Omega has now developed a new range of transverse thrusters. The range consists of the OMEGA Controllable Pitch (OCP) and Fixed Pitch (OFP) thrusters up to a maximum power of 1100 kW.

Our philosophy of anticipating customer needs has resulted in innovative solutions that confirm Verhaar Omega's leading position as a manufacturer of highly reliable bow thrusters and continue to enhance our national and international reputation for superior quality.

Design philosophy

- High efficiency with the smallest possible tunnel diameter
- Easy manoeuvring with dynamic power control
- Heavy-duty bearings and gears
- Easy maintenance

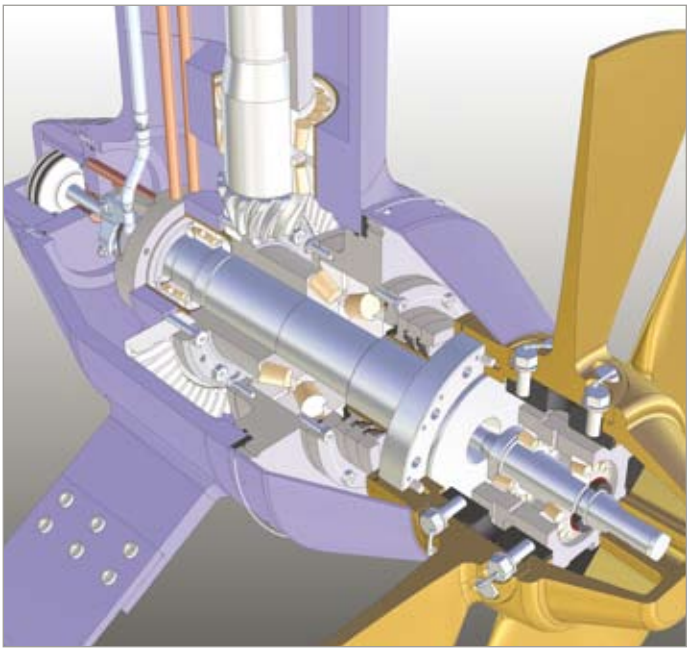
Propeller / blade design

The standard blades are skewed and feature rounded tips for optimum thrust efficiency. The large blade area and the shape of the blades keep cavitation volume low to minimize noise and achieve optimum comfort levels inside the boat. The completely flat surface of the blades minimizes trailing under sailing conditions and reduces the peak load on the thruster unit, thereby significantly extending the useful service life of the hydraulic system and the unit as a whole. The blades are bolted to the blade carriers and can be replaced inside the tunnel. The propeller can be designed for special applications on request.

Seals
High-quality seals are fitted to the propeller shaft and the pinion shaft to prevent water ingress and oil leakage. All seals can be replaced without dismantling the complete unit.

Pinion Shaft
A viton double-lip seal combined with a chrome steel liner. The top of the shaft is protected by an NBR V-ring.

Propeller shaft
As standard, three viton seals combined with a ceramic steel liner and an easily removable rope guard. The seals can be replaced without dismantling the complete unit.



Bearings and gears
The bearings have an L10h design life of a minimum of 40,000 hours. The pinion shaft is supported by two pairs of tapered roller bearings. The propeller shaft is supported by a tapered roller bearing and two spherical roller bearings.

The gears, pinion and crown wheel are of Klingelnberg Cyclo-Palloid HPG SP design. The teeth are case hardened and fine-machined. The gears satisfy DIN 3965, Class 6.

Oil lubrication / Hydraulic system
The lubrication system consists of a header tank placed above the load waterline to obtain over-pressure in the system.

The hydraulic pitch system consists of a hydraulic power pack equipped with:
- Level gauge with temperature indication
- Combined level and temperature switch
- Electric motor (50 Hz / 400 V) to drive the pump
- Control valve with pressure safety
- Return filter with by-pass
- Flow control valve for lubrication

The hydraulic pack is fitted with a separate flow control valve to ensure a constant feed of fresh, filtered oil to the complete system (hydraulics and lubrication).

Control system
The control system has been specially developed to satisfy all class requirements and meet the demands of modern ship owners. Being of modular design, the control system can easily be updated from a relatively simple set-up to a full Joystick system with a VDR or DP interface.
The system is available with a built-in touch screen (password protected) for zero pitch and full pitch adjustment (PS-SB). An automatic menu guides the user through the procedure.

Tunnel
The mild steel centre tunnel section is reinforced with strips and can be welded directly into the hull. A stainless steel liner is welded into the tunnel in the area of the propeller to prevent localised erosion.
We can provide specialist advice about tunnel location and entrance port design.

Installation
The thruster assembly is installed as a complete unit in a transverse tunnel at the bow or stern. Easy handling and assembly keep installation costs to a minimum. For optimum performance, we recommend a total tunnel length at the centre line of a least twice the diameter of the tunnel.
The minimum depth below the loaded waterline should be one to one and a half times the diameter of the tunnel (measured from the centre of the thruster tunnel).

Service

OCP and OFP thrusters are manufactured to the highest standards and have been designed for maximum durability and reliability. Technical support is available from our team of professional service engineers in the unlikely event of a breakdown and our well-equipped workshops can make and ship most parts to any destination in the world within 24 hours.

All OCP models and most of the units in the OFP range are available from stock. In an emergency, we are capable of supplying a complete unit within 48 hours.

Fixed Pitch Thrusters

Type	Maximum Power	Diameter
VB-320	22 kW	320mm
VB-420	45 kW	420mm
VB-520	60 kW	520mm
VB-570	75 kW	570mm
VB-620	95 kW	620mm
VB-670	120 kW	670mm
VB-715	150 kW	715mm
VB-805	200 kW	805mm
VB-960	250 kW	960mm
VB-1100	330 kW	1100mm
VB-1160	400 kW	1160mm

Fixed and Controllable Pitch Thrusters

Type	Diameter mm	Input rpm	Frequency Hz	Gear ratio z1/z2	Reduction i	Output rpm	Maximum Power kW AUX.	Maximum Power kW CONT.*
OCP/OFP-400	1250	1485	50	14/49	3.50	424	530	460
		1780	60	14/49	3.50	509	630	550
OCP/OFP-600	1550	1485	50	14/57	4.07	365	715	640
		1780	60	14/57	4.07	437	800	730
OCP/OFP-800	1800	1485	50	11/51	4,64	320	1050	900
		1170	60	14/49	3,50	334	1100	1000
		1780	60	11/54	4,90	366	1000	850

** Duty=24/7, Bearings L10h=40,000 hours, Load factor=100% OCP = Controllable Pitch; OFP = Fixed Pitch*

CHOOSE VERHAAR OMEGA

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