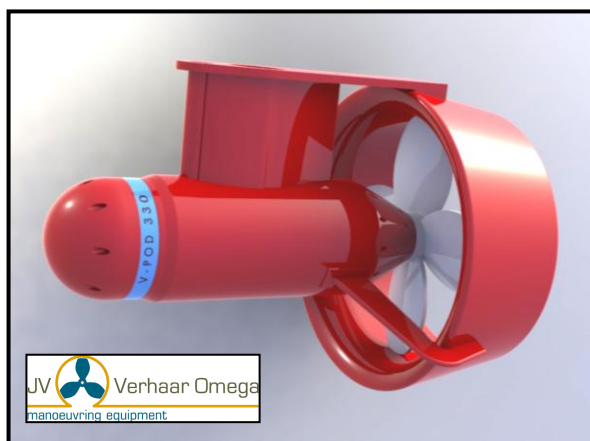


Verhaar introduces new 360° 'V-POD' electric propulsion



Following an extensive research in cooperation with IMC, SARC and Marvox, Verhaar Omega has introduced the new patented V-Pod at the Gorinchem Construction and Shipping Industry Exhibition from 10-12th of May 2011.

This new 360° rotatable propulsion offers an attractive electric propulsion and manoeuvring system for diesel/LNG-electric propulsion and combines a compact design, high propulsion efficiency with attractive pricing.

In the nineties, various POD designs were developed, installed and operated, however, their number remained limited to specialized ships for various reasons:

- High price: Main contributor are the size of the direct drive E-motor and the expensive permanent magnet technology.
- Lower efficiency: Although the large E-motor drives the propeller directly without gear losses, the propeller rotations are relative high with a lower efficiency.
- Both the lack of stringent maritime regulations and the required associated diesel-electric systems hindered the wider applications of POD drives.

Nowadays, the maritime regulations have moved on to require cleaner and more fuel efficient propulsion drives and for this purpose industry wide diesel-electric generator sets and controllers have been improved significantly and price levels have dropped. Hence, the right moment to reconsider the design of the POD.

The new V-POD counters the drawbacks of high price and low propulsion efficiency by a integrating a compact planetary gear on the opposite side of the E-motor and connected to the propeller by means of a long shaft running through the hollow shaft of the E-motor, see figure below.

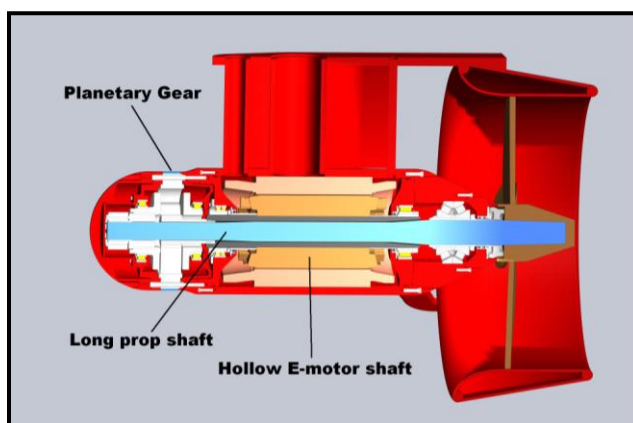
This arrangement offers a robust mechanical design due to the large distance between the propeller shaft bearings (on opposite sides of the gondola) and long shaft length between the propeller and the gears for torsional flexibility. The E-motor size is reduced significantly compared to a conventional POD and the expensive permanent magnet technology is not required to reduce the motor size further, hence offering a low cost price of the E-motor.

The planetary gear is selected to enable the propeller shaft to pass through the sun-shaft and results in relative large gears with exceptional safety margins and long running hours.

The first 330 kW POD prototype is under construction and will be thoroughly tested in the coming months.

Verhaar has introduced the V-Pod for inland shipping in sizes of 330 kW and 520 kW. The POD can be fitted with or without a nozzle and delivered in either pull or push condition, depending on the owners requirements. In near future also larger sized PODs are planned with a power up to 2 MW. PODs with a 2-stage reduction gear and/or a CPP propeller will be available on request.

Various shipowners and shipyards have already shown considerable interest in this new V-POD due to the attractive features of price and efficiency and are near to ordering.



Patent pending.

For more information, please contact Mr. Dick-Jan de Blaeij of Verhaar Omega.

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