

Azimuthing Electric Podded Propulsion Systems

Marine Propulsion Solutions Group, is recognized as one of the world's leading Electric Podded Thruster and Propulsion Systems Manufacturer and introduces its unique Electric Podded Rotatable Propulsion Units for all types of Marine vessels.

Owner/Operator benefits:

- Propeller speed is independent of engine speed leading to better maneuverability
- Increased propulsion system efficiency
- Increased propulsion system redundancy and power availability
- Reduced total installed power generation
- Reduced noise & vibration levels

Shipyard & Construction benefits:

- Flexible machinery arrangement
- Modularized design
- Simpler vessel machinery installation
- Simpler hull form and structure

Optional Carbon Fibre Propellers

Design:

Marine Propulsion Solutions through-hull Electric Podded Drives are engineered products of European design based on the latest marine propulsion technologies, ANSYS Finite Element Analysis and the most modern manufacturing technologies available. They are of very heavy duty design and incorporate many unique features to optimize reliability, longevity and easy maintenance.

Integrated Propulsion Packages:

- Dual Azimuthing Propulsion Drives
- Water or Air Cooled Variable Speed Drives
- Diesel Generator Sets (Tier 2 & 3 – IP44)
- Main Switchboards with built-in Power Management System
- Integrated Bridge Controls with full system monitoring.
- Fully Classed Systems (ABS, B.V., Lloyds and other available)

“One Source Solution”



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The Electric Podded Drive is designed for installation in wells. The wells (shipyard furnished) are large enough to allow top-side installation and removal of the completely assembled thruster unit. Installation and removal takes place through soft patches in the main deck. If practical, the top flange of the well is at an elevation slightly above waterline in light ship condition. This allows removal and installation of the Propulsion Drive while the vessel remains in the water, i.e., without dry docking.

The thruster mount is provided with a top flange for bolting to the well flange. The well flange is also provided, along with the flange gasket and bolting, allowing easy and accurate installation without the need for any machining on the vessel well structure.



Model Selection

Model	Unit	A200E	A275E	A350E	A500E	A850E	A1000E	A1200E	A1500E	A2100E	A3000E
Cont. Torque	MdaN	200	300	480	860	1950	3400	4100	7000	9000	13300
Continuous Power	Kw	200	275	350	500	850	1000	1200	1500	2100	3000
	Hp	268	368	470	670	1140	1340	1610	2010	2815	4021
Prop Dia	MM	1100	1175	1250	1400	1750	1925	2300	2475	2800	3450
Rev Speed	RPM	580	540	500	450	360	325	265	250	215	180

Ease of Installation with reduced costs...

With the electric motor designed as part of the thruster pod and water cooled, there are no requirements for forced air ventilation of the electric motor, no shafting requirements with any couplings and alignments necessary.

Noise Suppression Technology...

Because the electric motor is designed as an integral part of the thruster hub and attached directly to the propeller shaft, there are no gears boxes or gear reductions providing maximum system efficiency with lower noise and vibration levels produced.



Application for Yachts

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Integrated Bridge Controls

Integrated Bridge Controls are inclusive of Navigation Screens, Electric Pod Status Screens, Diesel Gen-Set Status Screens, Emergency Gen-set and Switchboard Screens, Main Switchboard functions, AFE functions and all required alarm functions.



The Azimuth Thruster Control System (ACS) fully automates from bridge the control of the electric azimuth thruster systems through the VFD or AFE drive control and provides full 360 degree control with full feedback (closed loop) units.

The Azimuth Thruster Control System fulfills the rules of the classification societies and includes steering control, remote control, safety, steering, RPM indication and a back-up control system. The Azimuth Thruster Control System can be used in combination with a Dynamic Positioning or Joystick System.

Operator Panels can be supplied for bridge fore, bridge aft, bridge wings and control room. Operator panels are equipped with a combined steering and RPM setting lever and a control display to select various operator modes and to indicate steering, RPM and motor load or amperage.

Competence & experience in propulsion technology

The Push/Pull Propulsion system with the azimuthing asymmetrical strut can be used for all yacht designs (from 200 to 3,000 kW per pod). Moreover we can offer a "One Source Solution" providing complete control systems, Switchboards with Power management Systems and motor speed controllers (air and water cooled).

Special Features

The electrical power (KW) is divided equally between the gen-sets allowing for full power management and therefore maximizing fuel economy;

- Reduced cavitation and noise
- More thrust at low or high speeds
- Fully azimuthing
- No hydraulics required.... fully 100% electrical



Application for Yachts

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Joystick Control

The JP4000NAV is a new and innovative solution for mega-yachts (as well as for multi-purpose vessels) covering mooring, docking and low-speed maneuvering, to make operations more safe and comfortable.

The JP4000NAV has been designed especially for those ship owners who highly appreciate the safety of maneuvering and full control over vessel motion, irrespective of weather conditions and the area available for maneuvering.

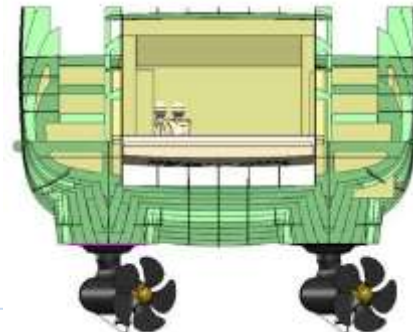
The JP4000NAV has been specifically designed for yacht and workboat applications when free maneuvering in limited space is required; it conforms to the requirements set for Dynamic Positioning Systems of ABS DPS-0, DPS-1 and DNV-AUT classes. Please note that the system is not intended for use on any DP (Dynamic Positioning) classed vessel as an approved solution for dynamic positioning. In such a case, the range of IVCS/NavDP4000 series products has to be considered.



When a yacht is moving forward at high speed, the JP4000NAV acts as the autopilot, providing the vessel heading control by using the azimuthing drives or track control by using an external track controller. The AP4000 autopilot is an integral part of the JP4000NAV system.

The JP4000NAV also provides semi-automatic heading control, which means that the system automatically holds the heading while the ship's master controls fore-and-aft and transverse vessel motion; in this case there is no need to compensate for possible vessel rotation, which can occur as a result of the operator's actions. The 'Hold Position' and 'Anchor Watch' control modes are optional. In these modes the system automatically holds the vessel in a pre-set position, at the same time controlling its heading.

Branch Offices



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MPS16201B ELECTRICAL PODDED PROPULSION DRIVES