

Deck Mounted Electric Rotatable Propeller Drives

PT. Propulsion Solutions 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.

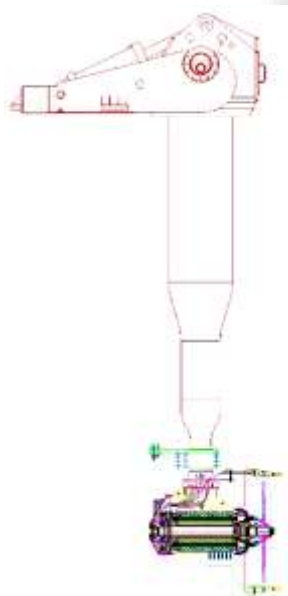
Owner/Operator benefits:

- 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
- 90 degree "SWING Capabilities"

FULL 360° AZIMUTHING PROPULSION



Design:

PT. 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

Integrated Propulsion Packages:

- Azimuthing Propulsion Drives – Deck Mounted
- Full 90 degree swing up position
- 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)

unique features to optimize reliability, longevity and easy maintenance.

“One Source Solution”



***For Ocean Going Barges – Ferries – River and Coal Barges - Passenger Vessels
Pipe / Cabling laying Vessels and Wind Turbine Installation Barges***

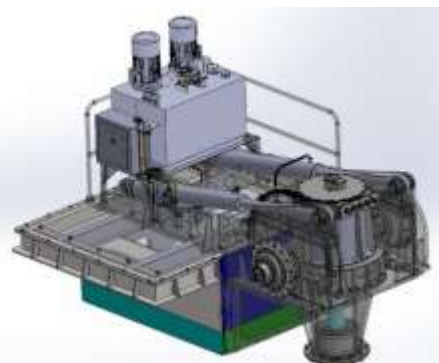
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Designed especially for vessels that require deck or stern mounted propulsion systems, the PT. Marine Propulsion Solutions Deck Mounted Rotatable Electric Propulsion Systems combines full Maneuverability with effective azimuthing propulsion. The system is ROBUST with little required maintenance and is... **RUTHLESSLY RELIABLE**

Propulsion "L" Leg	Power Enclosure
<ul style="list-style-type: none">• L" Drive with electric motor built in• Emergency "Kick Up" protection• Ability to adjust Draft position• Ability to "Swing Up" 90 degrees• Steering or Fully Azimuthing	<ul style="list-style-type: none">• Enclosure with Diesel/Gen Set• VFD Drive - Air Cooled• Fire Protection System• Local Control and Engineer's Panel• Fully Class Approved
Electric Power Available for other supply when not at full power	
SIDE.....TRANSOM..... DECK MOUNTED	

The unit incorporates our unique transmission kick-up device which is specifically designed for protection in shallow water or beaching applications. The Rotatable Propeller Drive can offer full height/depth adjustment to allow operation in shallow draft applications.



Model Selection

Model	Unit	A200EL	A275EL	A350EL	A500EL	A850EL	A1000EL	A1200EL	A1500EL	A2100EL	A3000EL
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 Offshore Platforms

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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.



Competence & experience in propulsion technology

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 panels modes and to indicate steering, RPM and motor load or amperage.

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
- Rugged construction with FULL RELIABILITY



Application for Self Propelled Barges

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Gen-Set Power Containers... Marine Propulsion Solutions can supply the COMPLETE PACKAGE with Dynamic Position Systems if required with full classification.

Each Marine Approved Container shall include the following equipment:

- Diesel/Gen Set
- Engine Frame
- Fuel Tank & Filters
- Oil/Water separators
- Starting Batteries
- Charger
- Fire Suppression System
- VFD Drive
- Air Conditioner
- Engineers Local Station



Main & Common Switchboards...

Main Switch Board with breakers for four (4) Gen-sets – Includes up to 10 additional breakers for optional use.

With Optional Power Management System for:

Auto start & seamless transfer to the main switchboard.

Automatic parallel of each generator when loading increases

Automatic rotation of generators on and off line to extend life.

Automatic seamless transfer to and from all power sources.



...Things Start Moving...

PT. Marine Propulsion Solutions



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