Explore another world with **PT. Marine Propulsion Solutions**



MPS Marine Thruster and Propulsion Systems

Transverse Tunnel Thruster Systems Driven by Hydraulics, Electric Motors or by Direct Engine Drives



Standard type Transverse tunnel thrusters rated from 50 up to 1500KW. Marine Propulsion Solutions Pte Ltd manufactures the Tunnel Thruster with an input flange in either the vertical or the horizontal position. Customersupplied power may be in the form of a diesel engine, electric motor or hydraulic motor. MPS can supply the complete package

The MPS Thruster consists of a cylindrical weldment, supporting near its center a right angle gear pod with an input shaft, coupling, propeller shaft, and a Kaplan type propeller with blades working in close proximity to a corrosion and abrasion resistant wear ring. Stainless steel shafts are mounted on tapered and straight roller bearings. Gears are case hardened, spiral bevels designed for shock resistance, long life and quietness.

Dual Prop – Contra Rotating Transverse Tunnel Thruster Systems Driven by Hydraulics, Electric Motors or by Direct Engine Drives



Using a **Dual Propeller / Counter Rotating design**, a highly efficient thruster system has been developed which recovers rotational lost energy and maximizes thrust in a very small tunnel diameter. The drive motor is mounted directly to the thruster, by using a hollow shaft configuration (standard SAE/DIN sizes) for input shafts from electric, or hydraulic, motors. Alternatively, from an optional stub shaft configuration (for direct drives), eliminating the need of an adapter housing and coupling. It uses rubber isolation mountings to eliminate vibration. The complete thruster unit is compact, efficient, *"Silent"* and ruggedly designed for the Super Yacht of today.

Transverse tunnel thrusters rated from 50 up to 300KW.

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Continued...

Rotatable Propeller Drives – "Well Mounted"



A full Series of Azimuthing Propeller Drives ranging from 200 to 6000 Hp providing full 360 degree Capabilities. RPI manufactures and Markets a unique *"Series"* of deck and through hull mounted 360 degree Rotatable Propeller Drives in the standard "Z" and "L" configurations.

The **Rotatable Propeller Drives** are normally deck mounted or through hull units mounted in a well, with the engine inside an enclosure or the hull and are usually installed in barges, ships, tugs, deck cranes, supply vessels and platforms for special work, diving, pipe laying, cable laying/repair, where maneuverability is a must and sometimes are used with dynamic positioning systems. Systems are complete with full Bridge Control Systems and units are available with/without kort type nozzles.

Rotatable Deck-Mounted Electric & Hydraulic Propeller Drives



Deck Mounted Rotatable Propeller Drives (hydraulic and electrical configurations) with Height Adjustment and 90 degree tilt capability and ranging from 200kw up to 1500Kw complete with Diesel/Diesel Gen-Sets, accessories and full enclosure package...The RPI-Deck Mounted, Rotatable Propeller Drives units are available from 200Kw up to 1500Kw. They offer 360 degree continuous steering in either rotation, right.

Hydraulic Drives

The hydraulic transmission is diesel engine driven through a combined marine clutch and PTO driving the hydraulic variable displacement pump. The diesel engine operates at a constant speed with full rpm control through the hydrostatic drive. The unit incorporates our unique transmission kick-up device which is specifically designed for shallow water or beaching applications.

The Rotatable Propeller Drive has full height adjustment to allow operation in shallow draft application.



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Rotatable Deck-Mounted Electric Propeller Drives



Electric Drives

The electric motor is designed as an integral part of the thruster hub with no reduction gears required. The E-Motor is attached directly to the propeller shaft. The diesel engine genset operates at a constant speed with full rpm control through the VFD Motor drive. The unit incorporates our unique transmission kick-up device which is specifically designed for shallow water or beaching applications.

The Rotatable Propeller Drive has full height adjustment to allow operation in shallow draft application or can be swung up 90 degrees for inspections and/or repairs..

We would offer our Series of **Electric Podded Propulsion Drives** with consisting of:

- Removable Propulsion Drive Legs
- Removable 20ft Power Containers
- Full Bridge Controls
- DP Interface
- No Dry-Docking Required

Power Management, Fuel Economy, Redundancy and Less Noise Are Key Features.

We offer compact designs, efficient, silent operation with low maintenance costs and only a few of the advantages....

- High Thrust to HP Ratio Maximum Efficiency
- Full Azimuthing with the ability to be swiveled to the "Up" position
- Water Cooled
- Environmentally "Green" Friendly
- Full Proportional Thrust with VFD Drives...
- DP Interface
- Less moving parts....increased reliability
- Diesel-electric propulsion system is inherently more efficient that a mechanical/hydraulic drive system and therefore the vessel owners can use lesser horse power engines which equate to lower fuel bills, lower maintenance costs and lower emissions

Electrical Power Management and Propulsion

The electrical power available in the multiple Generator-Set combination can be used in various configurations and modes of operation. The power plant can automatically or manually adapt to the power demand and start or stop the right diesel generator. The Chief Engineer can choose to use different generators, just to keep the running hours of the equipment equal. In case a generator fails or is not available, the four thrusters can still operate at reduced power but retain the DP Mode of operation.

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Continued...

The AC electrical propulsion engines have the advantage they are low maintenance machines and very quiet with little vibration. The power management system can be programmed such to ensure the most efficient, maintenance friendly and most environmentally friendly operational mode is achieved.

The ultimate goal is to keep the generators running at their most efficient power range determined by the typical diesel characteristics with maximum fuel efficiency, and this is programmed into the power management system.

Automated power management simplifies the operation of the electrical power system by monitoring the electrical loads on the propulsion systems and starting and stopping generators as needed. Generator paralleling is provided as well as seamless transfers between generators.

POWER MANAGEMENT FEATURES:

- 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
- Failing generator's pre-alarms automatically start & transfer to standby generator
- Generator pre-start alarm warns engine room/bridge personnel of imminent generator operation Load shed intelligently sheds & reconnects load to the bus as power availability permits

Azimuthing PumpJets – For shallow Draft Vessels, Landing Craft, Ferries etc.



Azimuthing PumpJet Systems offering Maneuverability, Propulsion and Stand-by Propulsion for precise positioning, steering and EMERGENCY VESSEL CONTROL. The Azimuthing PumpJet Thruster Series is available in power ranges from 75 to 4000 horsepower (50-3000kw), delivering thrust 360 degrees, bi-rotational and suitable for diesel, electric and hydraulic drive systems.

The Azimuthing PumpJet System is mounted with no vulnerable parts protruding past the ship's hull. They will provide full thrust for both shallow and heavy draft vessels, are simple and therefore reliable with



extended life. Ideal for slow to medium speed ranges for tank barges, workboats, tugs, military landing craft, fishing boats and research vessels.

Electric Podded Thruster Systems for Main Propulsion & Maneuvering Systems



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Control Consoles

Thruster System comes complete with a fully operational bridge mounted control consoles. The system provides power "On/Off", Main or Remote Switch, alarms and a *Fully Operational Joystick Controller for variable speed* and direction.

The Complete system is designed for easy installation, hookup and service. The major components to be installed are the thruster, motor controller, bridge console and remotes if required. All electrical interfaces are well marked and ready to be hooked-up.

Main Propulsion Integrated Control Systems – DP and Joystick Compatable



MPS manufacturing base is located in Batam, a strategic location within an international shipping route between the Indian and the Pacific Ocean; It lies only 20 kilometers to the Southeast of Singapore which has one of the busiest seaports in the world.





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