



DATA SHEET // CUSTOM SERIES PROPELLERS

Our advanced 'State of the Art' propeller designs are truly custom and application specific. The variable pitch, chord, camber, rake and skew distributions are modelled to deliver maximum performance, minimal noise and vibration and to manage the elimination of cavitation induced damage.

MMP

MICHIGAN MARINE PROPULSION
INTERNATIONAL

SUPPORT & SERVICE

For new construction, retro fit and major repower projects we work closely with the Naval Architects, Design Consultants, Engine and Transmission suppliers and the Shipyard. Our own in-house engineering team, technical resources and propeller designers are based in the USA, Europe and the Middle East.

From these strategically located centres we are able to support our global network of OEM, Consultant and aftermarket customers.

We manufacture to comply with all major classification societies. This service includes the preparation and submission of propeller design for plan approval, the manufacture and the independent laboratory endorsement of specified test bars plus the full inspection survey by the relevant agency.

APPLICATIONS

Propellers designed for high speed ships requiring cavitation management, multi blade designs that call for vibration free ride and maximum fuel economy or Kaplan style propellers designed for maximum bollard pull in Nozzle applications – these are typical of the applications that we are regularly designing and building propellers for.

Our customers include International Government Naval Bureaus, Maritime Security Agencies, Independent Shipyards, Exploration Rig crew and supply ship fleet owners, Wind Farm operators and Harbour

MATERIALS

At Michigan we generally build our Custom propellers in Nickel Aluminium Bronze - NiBrAl (CU3) or in Manganese Bronze (CU1). The NiBrAl alloy has superior strength characteristics which results in improved propeller and vessel performance due to the thinner blades sections that our technicians are able to design. The alloy is easy to repair and has exceptional resistance to erosion and fatigue stress. The alternative Manganese Bronze alloy is mainly used in less demanding applications that are not under extreme cavitation loading or where high vessel speeds are not a requirement and customers can benefit from the economic advantage of this less expensive material. For those special applications we are also able to supply propellers in Stainless Steel.

All our propellers are stamped with individual serial numbers that allow full traceability of the alloy chemical composition and mechanical characteristics.

and Port Authorities.

PRODUCT SIZE AND RANGE:

We design and supply propellers to a maximum diameter of 3 meters. All are built to the highest applicable industry standards which include ISO484-2 and ISO484-1. Included in our semi-custom series are the premium models such as Marlin, Powerline and the CX series all of which have the capability to improve vessel speed and cruising range whilst at the same time provide exceptional passenger comfort levels.



WHY FIT A MICHIGAN CUSTOM DESIGNED PROPELLER?

- ▷ Utilization of some of the most sophisticated hydrodynamic analysis software and design tools in the world.
- ▷ Advanced resistance and propulsion calculations.
- ▷ The use of computational fluid dynamics (CFD).
- ▷ Thrust and bollard pull predictions and propeller efficiency curves.
- ▷ CAD modelling and NC programming + 3D software.
- ▷ Certification of raw materials.
- ▷ Rigorous control of the sand moulding and metal melting processes.
- ▷ CNC high speed propeller finishing.
- ▷ Close tolerance manufacture 100% compliant to globally recognised ISO standards.
- ▷ Modern factory inspection equipment and gauges.

MICHIGAN WHEEL WAS ESTABLISHED OVER 100 YEARS AGO – THE BUSINESS WAS BUILT ON A FUNDAMENTAL PRINCIPLE OF ENGINEERING EXCELLENCE AND EXPERTISE.

TODAY, WE CONTINUE TO FOCUS ON THESE VALUES AND SUPPORTED BY OUTSTANDING DESIGN TECHNIQUES AND A DIVERSE PRODUCT RANGE, WE OFFER A PROPELLER AND PROPULSION SERVICE THAT IS GLOBALLY UNRIVALLED.



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