

HARMO®

FULLY INTEGRATED ELECTRIC BOAT CONTROL SYSTEM

Yamaha Releases HARMO® - Fully Integrated Electric Boat Control System

Innovative propulsion technology and proven joystick control combine to create a new level of environmentally friendly boating opportunities

HARMO, which derives its name from harmony between a vessel, its propulsion system and its passengers as well as with the environment, is much more than just another electric outboard. Fully designed, developed, and manufactured by Yamaha, it's a complete boat control system that combines advanced electrical propulsion with proven joystick technology to offer virtually silent operation, quick response, crisp and dramatic maneuvering, and easy-to-understand and operate controls.

Combining advanced engineering, future vision and high environmental awareness, HARMO is Yamaha's latest example of its CommandBlue™ advanced engineering and design philosophy. CommandBlue drives design and development of new, connected technologies and technology-based products from the consumer's perspective, specifically to simplify boating and instill deep feelings of confidence, satisfaction, and excitement while on the water.



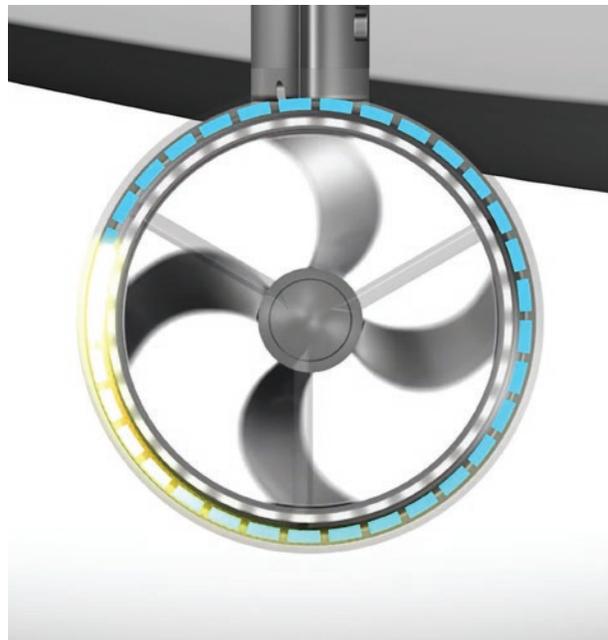
**AVAILABLE IN EUROPEAN MARKETS NOW,
MARKETS IN THE U.S.A. WITHIN 18 MONTHS.**



*HARMO is available in
single or twin configuration*

INNOVATIVE RIM-DRIVE ELECTRIC MOTOR

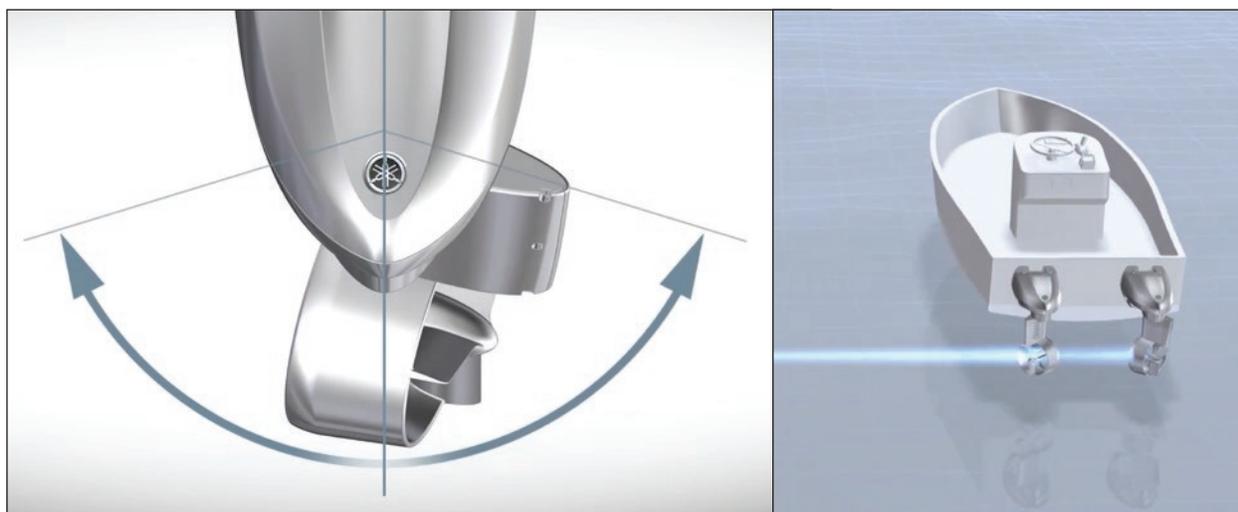
HARMO is powered by an innovative rim-drive electric motor that is mounted around the outside edge of the impeller blade, rather than at the center of it. This allows HARMO to turn an immense, specially designed impeller for outstanding thrust in a unique housing that adds additional control surface.



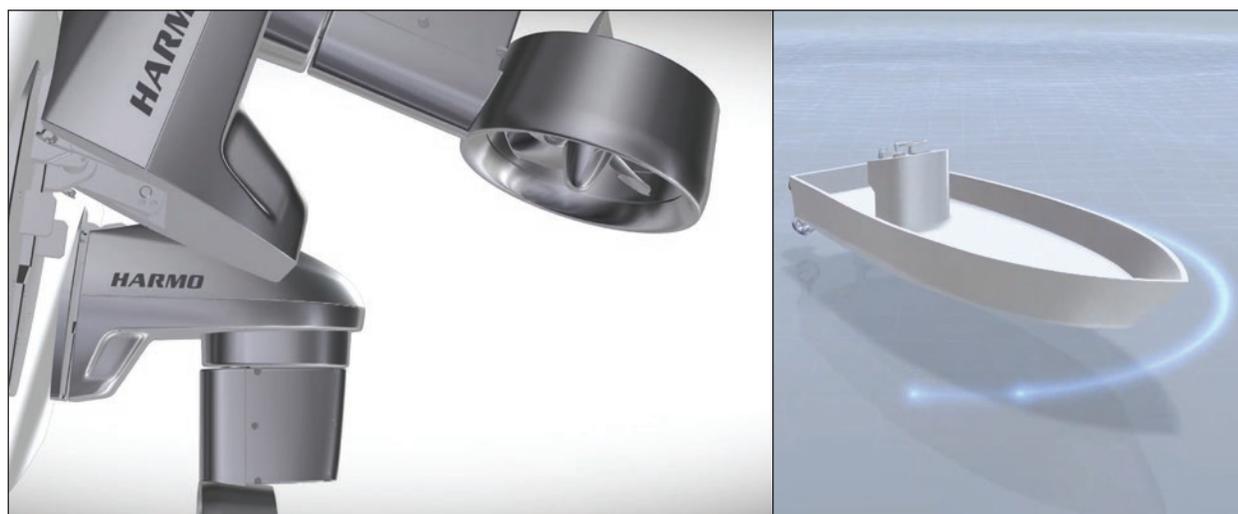
By coupling a 48V power supply with a high-yield, low-drag 3.7-kilowatt motor, HARMO's rim-drive and specially encased impeller provide an incredible 225 pounds of static thrust — the equivalent of a conventional 9.9 horsepower internal combustion outboard. In addition, the HARMO unit itself is virtually maintenance-free. Run time depends on battery type, size, configuration, and throttle setting.

ACCELERATION, HANDLING & CONTROL

Featuring integrated Digital Electric Steering (DES), Helm Master® EX joystick, and a super-wide 140° total steering angle, HARMO combines strong, smooth acceleration with incredibly sharp handling and control — including rotating a single-engine boat within its length and true lateral operation when used as twins.



HARMO's smart and elegant design complements today's high-tech look, while its extreme 74-degree tilt angle helps keep the unit clear of the water when not in use for improved corrosion protection.



AVAILABLE IN SINGLE OR TWIN CONFIGURATIONS

Available in single or twin configurations, the HARMO system can effectively maneuver boats up to 32' in most conditions. It's the perfect system for horsepower- or gasoline-restricted waterways, or for those who just want a fun, easy, and environmentally conscious way to cruise.



**SINGLE
CONFIGURATION**



**TWIN
CONFIGURATION**

SPECIFICATIONS

Motor Power	3.7 kW
Static Thrust	102 kgf / 225 lbf
Comparable Thrust	9.9 horsepower (gasoline outboard)
Configuration	Single or twin
Control System	Helm Master EX, including joystick, remote control, and Digital Electric Steering (DES)
Steering Angle (max)	140 degrees
Nominal Voltage	48vdc
Run Time	Depends on battery type, size, configuration, and throttle setting
Weight (motor unit)	55 kg / 121 lbs

The complete HARMO system is OEM-installed only and currently available in European markets. Markets in the U.S.A. within 18 months. Due to the flexibility of battery configuration, batteries are sourced separately.

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REMEMBER to always observe all applicable boating laws. Never drink and drive. Dress properly with a USCG-approved personal floatation device and protective gear. Boat smart from the start. Take a boating safety course and get a free vessel safety check annually for your boat. For more information, contact: United States Coast Guard Auxiliary online at www.cgaux.org, or United States Power Squadrons at 888-for-usps or www.usps.org.

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