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MERCURY RACING FLEXES OUTBOARD MUSCLE WITH NEW SUPERCHARGED V8 500R MODEL

Unrelenting Horsepower and Torque Paired with Sophisticated Technology and Rugged Design

FOND DU LAC, Wisc., June 14, 2023 (GLOBE NEWSWIRE) -- Mercury Racing elevates outboard engine power and technology with the introduction of the Mercury Racing V8 500R model. This supercharged 500hp V8 outboard was created for no-compromise owners of the fastest luxury sport boats. The 500R introduces a host of new components engineered to complement the raw power produced by this engine and the challenging demands of extreme-performance boating.

“Capable of delivering more than 500 horsepower in a wide range of conditions, and weighing as little as 720 pounds, the 500R establishes a new benchmark for outboard power density,” said Stuart Halley, Mercury Racing general manager. “This motor offers incredible mid-range punch and pulls with unrelenting authority all the way to wide-open throttle. This is the most exciting production outboard to ever emerge from the Mercury Racing shop.”

The 500R delivers more than 500 eager horsepower, 50 more horsepower plus 10 percent higher torque than the 450R model. Its 4.6-liter 64-degree V8 FourStroke powerhead is boosted by an exclusive Mercury Racing supercharger. The engine is designed to perform on pump fuel with a minimum 89-octane (95 RON) rating.

To handle this new level of power and to satisfy the most demanding performance boat owners, the 500R features upgraded component designs in the powerhead, cooling system, midsection and steering system. An all-new, 5.9" diameter gearcase, available in R-Drive and R-Drive Sport configurations, efficiently transfers the power to the water while delivering outstanding durability, handling characteristics, and cooling. The 500R is available in four lengths – 20", 25", 30" and 35" – to accommodate any single or multi-engine performance application. The 26-inch center-to-center mounting distance on multi-engine transoms enables seamless installations on new boats and repower applications.

Stout Powerhead
While the 500R model is based on the same 4.6-liter V8 powerhead as the 450R model, the engine has been upgraded with a number of new components intended to support the scaled-up power output. A stout new crankshaft specific to the 500R model rides in 230-degree groove main bearings for improved oiling and features larger, more robust 1-inch driveshaft splines. Connecting rods, rod bearings and pistons are strengthened to handle increased combustion pressure and a higher 6600 RPM redline. A new low-inertia flywheel allows the engine RPM to climb faster for improved acceleration.

Supercharger boost pressure is increased by 26 percent compared to the 450R model. To

accommodate increased airflow demand, the 500R features a new attenuator with a larger intake. Throttle body diameter is increased by 15 percent from 80mm to 92mm, and the shape of the supercharger inlet is redesigned to improve flow. The charge air cooler fin density and flow pattern are optimized to improve efficiency.

Humidity Compensation Technology
To promote consistent performance in a broad range of atmospheric conditions, the 500R outboard is equipped with a new sensor located in the intake attenuator to measure the humidity level of the incoming air. This allows the engine ECM to combine reported humidity with air pressure and air temperature data to determine the ideal spark timing for prevailing conditions. This is the first time humidity compensation technology has been applied to a marine engine, making it possible to maintain the most aggressive calibration to optimize performance under virtually all conditions. Boaters will notice a significant gain in power in challenging, very humid conditions – up to 30 additional horsepower than would be available without humidity compensation, and a 15-second reduction in 0-to-70 mph acceleration in testing conducted by Mercury Racing using a Tidewater 2700 boat powered by a single Mercury Racing 500R outboard.

New Midsection: Advanced Racing Core
The 500R is the first Mercury Racing product to feature the exclusive Advanced Racing Core (ARC), a new midsection that upgrades durability and performance. A stronger, redesigned transom plate can accommodate three inches of vertical adjustment via seven transom mounting holes, twice the adjustment range available with the six-hole 450R transom plate. An enhanced trim system features two main hydraulic rams plus two new booster rams for added trim authority under full load, and the speed of the trim adjustment, like the 450R, is reduced to permit very fine resolution for more-precise trim adjustment at high speeds. Precision-fitted heavy-duty guide plates and stiffened engine mounts are tuned to stabilize the engine for enhanced high-speed handling.

The Mercury hydraulic power steering system has been upgraded to deliver more steering authority, now producing 18 percent more torque than the 450R power steering system. To support this added steering torque, a newly designed steering arm, steering tube and steering cylinder are 20 percent stronger, with an upgraded tube material changed from aluminum to stainless steel. An optional rear tie-bar bracket integral to the ARC provides a strong, ultra-light mounting point for rock-solid precision steering on catamaran and other ultra-high-speed applications.

Introducing R-Drive
Mercury Racing has designed an all-new gearcase specifically for the 500R outboard. R-Drive is available in two versions to accommodate a variety of applications, and both versions feature a crescent leading edge and long aspect torpedo hydrodynamically tuned for high speeds. The new 5.9-inch gearcase can accommodate propellers up to 17 inches in diameter, one inch larger than the 450R gearcase.

The R-Drive gearcase, both base and sport variants, have been engineered with low water pick-ups, a torpedo shape designed to thrive in submerged, transition (semi-surfacing), and full surfacing applications, and a 1.60:1 gear ratio. A new intermediate spray plate reduces drag in submerged and transition applications. An application-based adjustable nose cap pick-up system allows for optimizing cooling water flow for specific boat applications. The nose cones are available in two basic shapes – one for submerged and transition

applications which have several water inlet hole variations, and another that is shaped to run fully surfaced on ultra-high-speed vessels. An all-new water pump increases cooling capacity by 57 percent by ensuring optimal water flow to the 500R. Both R-Drive versions benefit from larger, more robust shafts. The driveshaft diameter is increased to 1 inch from 7/8 inch and the propshaft diameter is increased to 1.5 inches from 1.25 inches compared to the 450R model.

The base **R-Drive** is designed to perform well in submerged and transition applications on boats capable of speeds between 85 and 100 mph, beyond the speed range of the Mercury Racing 5.44 HD gearcase. Many high-speed center console boats fall into this category and will benefit from this design. The R-Drive gearcase features a standard skeg length with a very efficient parabolic cross-section shape and is offered with left- or right-hand camber to balance steering force with standard and counter rotation props.

The **R-Drive Sport** version is optimized for ultra-high-speed surfacing applications, primarily high-performance catamarans and center consoles capable of regularly reaching speeds beyond 100 mph. It features a longer skeg than the base R-Drive version, which allows it to maintain steering control while operating fully surfaced at the high mounting positions desirable for many of the fastest hulls. The R-Drive Sport skeg has a wedge shape from leading edge to trailing edge and is available with no camber or with a right-hand camber for single engine boats. The R-Drive Sport variant is equipped with a propshaft made from an ultra-high-strength aerospace stainless steel alloy similar to the material used for the Mercury Racing M6 and M8 sterndrive propshafts. This alloy was selected specifically to better endure the vibratory stress caused with the loading and unloading of a surfacing propeller.

Tech Solutions

The 500R model features Mercury Racing technology solutions designed to enhance the boating experience, including the precision of Digital Throttle and Shift (DTS) with available Mercury Racing Digital Zero Effort controls. Adaptive Speed Control maintains engine RPM as load changes due to sea conditions or turning maneuvers to maintain boat authority with less control input. The 500R model supports all Mercury SmartCraft technologies, including the Engine Guardian monitor system and VesselView multi-function displays. The Top Cowl Service Door eases routine maintenance by providing easy access to the oil dipstick and fill without removing the cowl.

Color Options

Three color options are offered for the Mercury Racing 500R model: Phantom Black or Cold Fusion White are finished with Mercury Racing graphics and Devil Eye Red trim. For boaters planning a custom paint application, the 500R is also available in “ready for paint” in Phantom Black with no applied graphics or trim panel. Graphics and an application mask are included for installation after custom painting.

The 500R is covered by a three-year limited factory warranty with up to five additional years of Mercury Product Protection extended factory warranty available. Learn more about Mercury Racing high-performance products at mercuryracing.com.

For product information and images, please visit mercuryracing.com/newsroom.

About Mercury Racing
Based in Fond du Lac, Wis., Mercury Racing, a division of Mercury Marine, is a leading provider of high-performance marine propulsion systems for discriminating boaters worldwide, offering an exciting and fulfilling power boating experience on the water. Using leading-edge technology, Mercury Racing produces high-performance outboards, sterndrives, propellers, parts and accessories. Mercury Marine is a division of Brunswick Corp. (NYSE: BC), the world's largest manufacturer of pleasure boats, marine engines, and accessories.

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