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Best prop for mercury 40hp

View Full Version : Propeller Selection and Replacement Powered by vBulletin® Version 4.2.3 Beta 3 Copyright © 2021 vBulletin Solutions, Inc. All rights reserved. I have a 2002 Fisher pontoon with a 40 hp 4-stroke EFI, would like to change props to a Solas 4 blade, what size prop would be best for this motor and boat? Re: Prop for 40hp Mercury 4-stroke not bigfoot Provided the motor turns within the recommended rpm range(5500-6000) with the current prop, it is recommended to select a 4 blade of one inch less pitch in order to maintain rpm. Re: Prop for 40hp Mercury 4-stroke not bigfoot Welcome,what size pontoon? Have you run it with the present prop?What size is the prop.(usually under the prop nut). What is the wot rpm and gps speed. Re: Prop for 40hp Mercury 4-stroke not bigfoot It is a 20 foot pontoon, and I am getting 5800 RPM with current prop, will pull off nut today to get current size, it's not on the blade so must be under the nut, thank you both for your quick response.... Re: Prop for 40hp Mercury 4-stroke not bigfoot Would help to have your wot rpm and speed,preferably by gps. Re: Prop for 40hp Mercury 4-stroke not bigfoot My wot rpm is now 6000, no speedo or gps, got the prop off and the only numbers found are Michigan 032141, found not under the nut but on the back side of the prop on inside washer, best I can measure it's a 12 inch prop, prop decal on motor is scratched off only number you can read is 13 which I believe is the spline number. Re: Prop for 40hp Mercury 4-stroke not bigfoot Your present prop is a 12 1/2 X 8" 3 blade.What is your speed some cells have a gps app. Why did you want to try the 4 blade? I don't see a Solas 4 blade here but there is a Michigan Vortex 4 blade at a competitive price. If your making a good strong 6000 I think you could stay with a 8" 4 blade, probably put you at about 5900. Re: Prop for 40hp Mercury 4-stroke not bigfoot Was hoping to get more control with the 4 blade prop, just upgraded pontoon from an 18 footer to a 20 that's heavier and less responsive in the wind with the top up, also built a boat house and would like more control trying to get it into it's slot.... Re: Prop for 40hp Mercury 4-stroke not bigfoot A 4 blade should give better control around the dock.How much it can respond against the wind remains to be seen. Re: Prop for 40hp Mercury 4-stroke not bigfoot So are you saying to go with a 12 1/2 " x 8" x4 blade prop, in other words keep the same pitch? As opposed to the other advice to go with 1 " less pitch to get the same RPM's. Re: Prop for 40hp Mercury 4-stroke not bigfoot Yes I'm thinking if you have a good strong 6000 rpm you could stay with the same pitch lose 100 or so and maintain your speed better than dropping an inch of pitch.Just a hunch. Re: Prop for 40hp Mercury 4-stroke not bigfoot Sounds like a good plan so to be sure I'm looking for a 12 1/2 " x 8" x 4 blade prop correct ? Re: Prop for 40hp Mercury 4-stroke not bigfoot Don't fixate on the diameter a 4 blade may be slightly less diameter. If you have a choice of diameter get the larger one. Re: Prop for 40hp Mercury 4-stroke not bigfoot Thanks I appreciate everyones help, thanks Mariner..... HomePropellers Repairs Used & ClearanceHardware & AccessoriesResources Contact Image not available forColour: To view this video download Flash Player We put six boat propellers from Mercury Marine through their pacesUpdated: August 25, 2017More Boats A Mercury Racing propeller is the final critical component of a performance outboard system. Cast from proprietary stainless-steel alloys, handfinished and zero-balanced by artisan technicians in our prop shop, Mercury Racing propellers offer the ultimate in performance and durability. Step up in performance with a prop that's hand finished and fine tuned from a raw stainless steel casting with perfectly matching cup heights and a custom blade thickness profile. In most applications a Pro Finish propeller will deliver more RPM and higher top-end speed than a standard production propeller. Hand-finished to perfection with additional blade thinning to cut through the water with less power-robbing drag and an increase in top-end RPM. These blueprinted propellers feature perfectly matched blade profiles for consistent multi-engine RPM. The ultimate performance propeller for light-weight boats running over 75 mph. (Published in the September 1997 issue) More: Jets vs. Props. Each year, hundreds of boaters spend countless thousands of dollars on machine-shop equipment and bolt-on gadgets in their quest to increase outboard horsepower. Yet the easiest and least expensive way to improve performance is to change propellers. Regardless of your rig's size, horsepower or application, the right prop can make the difference, whether you seek increased speed, better handling or more power. Even if you're happy with your boat's performance, you and your family might participate in more than one watersport, and you may benefit from changing props. Fishing, cruising and waterskiing all place special demands and different loads on your engine. Choosing a prop with the correct pitch, diameter, rake, surface area and contour will keep your engine within factory-recommended wide-open throttle (WOT) rpm ratings. Besides, having more than one prop on board is cheap insurance and good common sense. Whether you're interested in props with names like "chopper" or "cleaver," or if you just want to know the differences between sizes, materials and trade names, your dealer's an expert. But PM wanted to go beyond theory and show how different props can change boat performance, so we tested six props (on a single boat) that incorporate a variety of materials and designs, from the most basic to the technologically advanced. Basic properties Props are initially classified by numbers showing diameter and pitch. Diameter is the width of a circular column of water flowing off the face of the prop. Pitch is the number of inches your boat and motor should move forward in the water when that prop makes one complete revolution. A 13 x 21 prop has a 13-in. diameter and a 21-in. pitch. You'll get optimum performance when pitch and diameter allow your motor to operate within the factory-recommended full-throttle rpm range. That calls for a careful match between engine power, gross weight and the intended use of the boat. Generally, the heavier the boat, the lower the prop pitch required. The same horsepower motor on a lighter boat needs a higher pitched prop to give it more speed and efficiency in its use of the engine rpm. Assuming you use the same engine-and boat for three different sports, a 13 x 21 prop might be ideal for general cruising, while a 13 x 23 would be more suitable for lightly loaded fishing trips, with a 13 x 19 just right for waterskiing. Just to make things a bit more confusing, there are two types of pitch: constant and progressive. On a constant-pitch prop, the pitch stays the same across the face of the blade, while on a progressive-pitch screw it starts low and increases across the face of the blade, making the prop appear twisted. Built for high-speed and high-rpm applications, including those instances when the prop is breaking the water's surface, progressive-pitch props are used in virtually all outboard applications. The number designated on a progressive-pitch prop represents the average pitch. While progressive pitch gives you some compromise in the tradeoff between acceleration and top end, it's still a fixed blade. A variable-pitch propeller allows your boat to shift gears like a car, since it's designed to maintain a low pitch angle during initial acceleration, then shift to a higher pitch angle in the higher rpm ranges. Some boaters don't like the variable-pitch because it's more expensive and just as vulnerable to damage, while others say their high initial cost can be balanced against the cost of carrying a second prop for different activities. Two other considerations, blade rake and cup, also affect your propeller performance. Blade rake describes the angle of the blade to the hub. A perpendicular blade has no rake, whereas a high-performance blade may have 20 or more degrees of slant aft to decrease blade drag through the water. Cup is a lip or sharp contour near the trailing edge of the blade that keeps water on the blade longer for high-speed applications. In recent years, 4- and 5-blade props have become popular because they suppress vibration and improve acceleration by putting more blade area in the water, especially when the prop is breaking the surface. They can also provide more bow lift for added speed. Material matters The thinner the blade's edges, the less energy required to spin it. But thickness varies based on a number of factors, including the material used in building the prop, which plays a key role in helping the blades achieve and hold the desired shape. Because of its low cost and light weight, aluminum dominates the market. For low- or high-horsepower applications, aluminum props are the industry standard and widely available in a range of sizes to suit virtually every application. Dings and nicks can be repaired relatively easily, but corrosion resistance is dependent on careful monitoring of the prop's coating. Keeping an aluminum prop touched up with paint will result in years of additional service. For strength and durability, nothing touches stainless steel. Stainless-steel props can have thinner blades than aluminum props because they're five times stronger, making them desirable for heavy or high-speed applications. Those who want improved acceleration and top-end speed, along with increased trimming and holding ability, select stainless-steel props that are application- and engine-specific solutions for optimum boating performance and pleasure. You hear a great deal about plastic props these days. You can't find a more corrosion-resistant prop material, and it weighs about half as much as a comparable aluminum wheel and costs significantly less. Some earlier plastic props suffered from distortion under heavy load, making them far less efficient at transmitting torque than their metal counterparts. More recent plastic props are said to be stiffer, which would make them excellent spares to carry aboard. Plastic props are commonly used for low-horsepower gasoline motors such as "kickers" or electric trolling motors. Procedures With the help of Ranger Boats, Mercury Outboards and the engineers at Mercury Marine Propeller Co. (MMPC), we witnessed how much of an improvement changing props could offer. Our test boat was a Ranger 692VS from the formidable Fisherman series, with Mercury's 175 EFI V6 on the transom providing the push. Our prop selection, with four props from MMPC and two interesting outsiders, included: MMPC Trophy, 13 3/4 x 21, 4-blade, stainless steel; MMPC Black Max, 14 1/4 x 21, 3-blade, aluminum; MMPC Vengeance, 13 3/4 x 21, 3-blade, stainless steel; MMPC Tempest, 14 3/4 x 23, 3-blade, stainless steel; Gil Marine Six-Gun, 14 1/2 x 21, 6-blade, plastic; and AeroStar Switch Blade Pro, 14 1/2 x 22, 3-blade, stainless steel, variable pitch. Using replaceable blades swung by gear-driving counterweights mounted inside the hub, this last prop automatically switches from a 15-in. pitch to the final 22-in. pitch at the rpm you select. We conducted test runs on the Fox River in Oshkosh, Wisconsin. We measured top speed, acceleration times from a standstill to 20 mph and from a standstill to 30 mph, and recorded rpm readings at 40 mph to see which props were most efficient and produced the least engine wear (see Test Parameters below). The engine was mounted at a transom height of 23 1/4 in., placing the cavitation plate 3 1/4 in. from the boat's bottom. Results King of the high-speed tests was the Tempest, although it proved to be less than stellar in the timed 0-20-mph and 0-30-mph acceleration runs. In our fixed-speed tests, which measure rpm and overall efficiency, it was the clear winner. Second across the top-speed finish line was the Trophy, but it only finished in the middle of the fleet for acceleration and efficiency. AeroStar's Switch Blade Pro barely edged out the Vengeance for third place in high-speed honors, but because of its ability to start out in a lower pitch, it shined brightly in the acceleration portions of our test. The aluminum Black Max provided a baseline for comparison with all of the other stainless-steel props. Gil Marine's Six-Gun was well off the pace in all categories except price, yet it still produced respectable speeds. When testing was complete at the 23 1/4-in. transom height, we opted to remove the additional weight, raise the engine to a 2 3/4-in. transom height and retest all the props for top speed. Within recommended ranges, this trick can reduce drag by lifting more of the lower unit out of the water, but it is not a universal solution. Interestingly, the three fastest props all showed slight gains in top speed without changing ranking, while all the other props were slower. Whichever prop you decide to buy, inspect it from time to time, or any time you feel unusual vibration or sluggishness. A badly nicked or warped blade can spoil an otherwise pleasant boat ride and create serious engine problems if left unattended. Change the prop if the vibration is serious. The damaged prop may be repairable, but that must be weighed against the cost of repair, which might make a new prop more cost-effective. When choosing a prop, remember that your engine will last longer if you pay attention to proper blade selection and maintain it carefully. If you have any questions at all, check with your dealer. He can give you advice on the right prop or props for your rig and your favorite sports, and he knows that the key to having fun on the water requires only a simple turn of the screw. border=2->TEST PARAMETERS Each test was conducted with full fuel, the same test gear package and the same two people in the boat (designated Light). Then, we added 400 pounds of shot in appropriate locations for a second series of tests (designated +400 Lb.). All results are averages of multiple runs. MODEL SWITCH BLADE PRO BLACK MAX TEMPEST TROPHY VENGEANCE SIX-GUNPrice \$949 \$160 \$575 \$595 \$475 \$105Diameter x Pitch, Material 14 1/2 x 22, stainless steel 14 1/2 x 21, aluminum 14 3/4 x 23, stainless steel 13 3/4 x 21, stainless steel 13 3/4 x 21, stainless steel 14 1/2 x 21, plastic23 1/4" Transom Ht. (Light) Top Speed & Rpm 54.9 @ 5560 51.6 @ 5850 56.1 @ 5395 55.3 @ 5705 54.5 @ 5595 45.2 @ 551023 1/4" Transom Ht. (Light) 0-20/0-30 Sec. 2.6/4.6 3.2/5.0 4.0/6.3 3.7/5.9 3.6/5.7 3.9/6.423 1/4" Transom Ht. (Light) Rpm @ 40 Mph 4140 4455 3900 4215 4175 434023 1/4" Transom Ht. (+400 Lb.) Top Speed & Rpm 52.5 @ 5450 50.4 @ 5665 53.6 @ 5240 53.1 @ 5650 52.2 @ 5340 43.5 @ 542523 1/4" Transom Ht. (+400 Lb.) 0-20/0-30 Sec. 3.2/5.9 4.1/6.4 5.1/7.8 4.7/7.3 4.7/7.3 5.1/8.123 1/4" Transom Ht. (+400 Lb.) Rpm @ 40 Mph 4200 4420 3975 4280 4225 450524 3/4" Transom Ht. (Light) Top Speed & Rpm 55.2 @ 5740 49.5 @ 6130 56.4 @ 5505 55.4 @ 5840 50.8 @ 5920 44.9 @ 5610 This content is created and maintained by a third party, and imported onto this page to help users provide best prop for 40hp mercury 4 stroke. best prop for 40hp mercury 2 stroke. best prop for a 90hp mercury. best prop for 30hp mercury

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