

Prop Shop

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Yamaha introduces Talon™ aluminum propeller with SDS™



Talon is the latest addition to Yamaha's Endless Propeller Solutions. The all-new Talon features Yamaha's patent pending shift dampener system (SDS), making it the first aluminum propeller to benefit from the quiet and smooth in-gear operation and clunk-free shifting of SDS, and there's no special hardware required.

Talon is the first propeller with SDS for the Yamaha "K" series gearcase (4.25"), which fits all T50, T60, and F70 through F115 models. Specifically designed to complement the all-new F115B, it works very well for Pontoon boats, as well as Deep V, Walleye, and Multi Species boats. It even works in some fiberglass boat applications. The Talon is available now in 9", 10.5", 12", 14", and 16" pitches.



Springtime boat prep

Spring has sprung, which means it is time to get your boat ship shape for the boating season. Most people only think about the motor itself...changing oil, spark plugs, fuel filters, etc. But what about the propeller? For most of us the propeller is sort of "out of sight, out of mind" and we don't think about it until we have to.

A little time and a few simple checks now may save you precious boating time later this boating season.



Start by removing the propeller so you can get a better look at it on the bench. Go ahead and throw out that old cotter pin since you are going to replace it with a new one. (see Don't forget the pin? [Prop Shop Vol 3, ed. 2, September 2013.](#))

Pull the forward thrust washer off (you might need to tap it with a flat metal punch and a hammer to get it free). Check for fishing line or other debris that may have wrapped itself around the washer or the prop shaft. If you find some, it may have damaged the seals in the gearcase. This would be a good time to contact your local Yamaha dealer and have the lower unit pressure tested to make sure there are no leaks.

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What's news?

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With the propeller on the bench, start your inspection. If you have a propeller that uses a pressed-in rubber hub, look for signs of overheating or hub spinning. If the hub has spun in the past you will usually see chunks of rubber rolled up or melted around the edges of the hub. If your propeller uses a universal type hub such as the Guardian SQ-Lok™ Hub System, check for any cracks or splits in the hub or anything else that looks abnormal. Don't remove this type of hub from the prop to inspect it unless absolutely necessary. Regardless of the hub type your propeller has, you'll more than likely need to seek the services of your Yamaha Marine dealer or a local propeller shop for repair or replacement.



Check all the blades for nicks, dings or cracks. Make sure none of the blades are bent or distorted which could leave the propeller out of balance. Minor issues can be repaired by a reputable propeller repair shop. If you find any major issues, you should consider replacing the propeller and having this one refurbished to keep for an emergency spare.

If your propeller checks out with a clean bill of health, it's time to reinstall it. Before you put the propeller back on, take a minute to clean the old grease from the propeller splines, prop shaft, and thrust washer. Once clean, apply a light coating of fresh grease to the prop shaft and propeller splines, install the thrust washer, prop, and aft spacer. Tighten the propeller nut to factory spec and install that new cotter pin. Remember, if the cotter pin doesn't line up with the castle nut, always tighten further to align them and insert the cotter pin. Never back the nut off to line up the pin.

Doing an annual inspection of your propeller is easy and it can save you lost time and money if you catch problems early. Then you're free to tackle those oil changes, fuel filters, and spark plugs so that you're ready when that first warm spring day rolls in.

➤ Fuel Inefficient Propping correctly can save you big at the pump.

With gas prices hanging around the \$4.00/gal price depending on where you are in the country, we would bet your boating habits have changed slightly to adjust to the current fuel cost. Maybe you have just slowed down a bit, or you don't go as far offshore, or maybe you just bring more buddies to help float the fuel cost. Regardless of your method, there is one thing you should consider... is your boat propped correctly?

A boat that is propped correctly will be much more fuel efficient than you may even realize. Outboard motor manufacturers design motors to be able to run a specified RPM when at wide open throttle to achieve maximum power and efficiency. If an outboard can't reach this specified RPM range, then it's not reaching its potential and is going to be inefficient.

We often hear comments such as, "My boat turns about 4800rpm at wide open throttle so I should be conserving fuel, right?" or "Why do I have to prop my boat to wide open throttle if I don't run it at wide open?" These are completely logical statements, but that doesn't mean they are correct.

Let's look at that first statement, "My boat turns about 4800rpm at wide open throttle so I should be conserving fuel, right?" The common perception is that if your motor is turning less rpm it's not burning as much fuel, but that may not be the case.



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➤ Fuel Inefficient | Propping correctly can save you big at the pump. continued

In this example, if these are four-stroke engines, they likely should be turning 6000rpm at wide open throttle. With these engines only turning 4800rpm at WOT, they are struggling to create RPM, which is the result of too much pitch or too much diameter. The downside is that the motor is working as hard as it can just to make 4800rpm, so you are losing power. When this scenario happens, and it does more often than you think, you are burning more fuel.



How about the second statement, “Why do I have to prop my boat to WOT if I don’t run it at WOT?” Propping the boat in this manner ensures that your motor can reach the manufacturer’s specified WOT range. This means your motor is not struggling to perform, and is operating at its specified level of power and efficiency.

Once you’ve found the correct pitch, you can back the throttle down and cruise at, say, 4800rpm and get the fuel efficiency you wanted in the first place because the motor is not working so hard to keep it there.

➤ Steps to Speed Stepped hulls and propping them.

Stepped hull boats are becoming more and more popular and not just in the offshore center console world. This technology is making its way to bay boats, and similar design ideas are showing up on flats boats, too. Propping a stepped hull boat is usually a little different than a traditional V-hull; here are some things to help you prop them right.

How does a stepped hull work? The step or steps are shaped so that when on plane the steps are open to the port and starboard side of the hull. This allows the steps to draw in air under the hull, which provides more boat lift and reduces the amount of wetted surface on the hull. The less wetted surface a hull has, the less drag it will have when moving through the water. This helps relieve the engines in pushing the load of the boat. Because of these factors, stepped hulls are usually faster and more responsive.



Due to their speed and responsiveness, stepped hulls sometimes exhibit characteristics that give the captain the impression that the boat is unstable or too touchy at the helm. To help combat this feeling, four-blade propellers such as the Yamaha Saltwater Series HS4 (V6s), XL4-HP (V8s), and the Turbo Fusion 4 are often used. The four-blade propellers provide the added grip and stability that stepped hulls sometimes need.

When it comes to proper pitch, a stepped hull will typically require a slightly higher pitch than a traditional V-hull due to its higher speed potential. For Yamaha 4.2L V6 Offshore outboards, the Saltwater Series HS4 with Yamaha’s exclusive Shift Dampener System (SDS™), available in 21”, 22”, and 23” pitches, would be a great choice. Another V6 option is the Turbo Fusion 4, available in 21”-26” pitch in right- and select left-hand rotations. For Yamaha V8 F350s, Saltwater Series XL4 SDS in 15” or 17” pitch or XL4-HP SDS in 22” or 24” pitch is the choice.

As with any boat, you should conduct on-water testing to narrow down the correct pitch for your needs, and to verify that your engine(s) can reach the upper limit of the manufacturer’s wide open throttle specification. This helps ensure you’re getting the maximum performance and fuel efficiency from your stepped hull boat.

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Endless Propeller Solutions – making solutions simpler

In 2011, Yamaha launched Endless Propeller Solutions, in part to help dealers and consumers find answers to their propping questions. Endless Propeller Solutions brings an application-based approach to propeller selection that focuses on boat types and recommends propellers that work well with those boat types.

This year, with the introduction of the Talon propeller, we have taken a fresh look at Endless Propeller Solutions and made some refinements to help make your propeller selection even easier. With Yamaha's 36-plus families of props it can be a bit daunting with the broad range of choices, so we have highlighted our most popular propellers, by boat type, as a guide. Listed propellers are the go-to choice for the vast majority of boats in each category, so, all you typically have to do is select the right pitch for your needs and you're ready to go boating.



LARGE BOATS

SOLUTIONS

Most Popular

- Saltwater Series II™ - SDS™*
- Saltwater Series XL®
3-blade - SDS™* (F350)
- Offshore 1 (4-blade)

*SDS™ = Yamaha's patent-pending Shift Dampener System

➤ You've got propeller questions? We've got answers.

Our continuing series aims at 'demystifying' the world of propellers.

Q. I have been shopping around for a new Center Console Offshore boat and I notice a lot of the triple engine rigs have a different propeller in the center. Why is this?

- A. In triple engine installations, the center engine may turn a slightly higher RPM. In an effort to equalize the RPMs for all engines, and to help provide more "grip" in the center, a different propeller may be used. Some set-ups use three-bladed props on the outside and one four-blade in the center, while still others use all three-bladed props with the center being a higher pitch.

Determining the best combination is not always easy, and all hulls are different, so the best way to figure it out is with on-water testing.



Working with your dealer or boat builder directly may be the best way to get the most out of your new boat package.



If you'd like more information about which Yamaha propeller is right for your needs, contact your local authorized Yamaha Marine Dealer at yamaha-motor.com/outboard/dealers/dealerhome/home.aspx.

For short videos on Yamaha propellers, including proper installation, maintenance, and more, scan this symbol using your smart phone or tablet.



Message and data rates may apply. May not be available on all devices.

Also, please join us on Facebook at facebook.com/yamahaoutboards. We'll be happy to help you get pointed in the right direction.

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