

Prop Shop

GYT Propeller Additions



PART NUMBERS
MAR-GYT3B-03-10
MAR-GYT3B-03-11

Yamaha's line of GYT propellers is expanding. We have added several new pitches to three of our popular GYT Performance series propellers. The first is our ever popular Performance 3 propellers for the Yamaha "G" (3.5") gearcase. This series will now include 10" and 11" pitch options.



PART NUMBERS
MAR-GYT4B-V4-14
MAR-GYT4B-V4-16

The second series is our Performance 4 for the Yamaha "K" (4.25") gearcase. For this propeller series we have added 14" and 16" pitch options to offer a broader range of four-blade options.



PART NUMBERS
MAR-GYT3B-XL-17
MAR-GYT3B-XL-19
MAR-GYT3B-XL-21
MAR-GYT3B-XL-22

The last series is our Performance XT propellers for the Yamaha "M/T" (4.75") gearcase. In this propeller family we have added 17", 19", 21", & 22" pitches to the already existing 23", 25", and 27" pitch options.

Look for these additional pitches to be available at your local Yamaha marine dealer in late summer 2014.

Bass Boats: Propping for Performance

Today's modern bass boats are capable of amazing "plant you in your seat" performance, but without proper setup and the correct propeller, you could be leaving some of that performance on the table. The go-to item for most people who look for a little more performance is the propeller, but considerations such as the gearcase and engine height come into play here as well. Once all are set up correctly, your boat will perform like the well-oiled machine you expect.



Load balance, engine setup, and propeller require some trial and error. Most boats from the factory come pretty close, but remember that every hull, like every customer, is a little different. Some things to take into consideration are the type of gearcase and type of jack plate. Crescent-shaped gearcases like the ones used on our V MAX SHO® are capable of handling very high speeds and can typically run at a higher mounting height. If you have a hydraulic jack plate, you are free to make adjustments on the fly, but with manual jack plates you have to stop and change the height and retest.

What's news?

- GYT Propeller Additions
- Bass Boats: Propping for Performance
- Parts and Pieces | A Lesson in Propeller Anatomy
- Performance Bulletins
- New: Prop Shop's Application Chart

When you are trying to dial in that new boat, you will want to look for a few things. Heavy steering when under power is a sign that the engine is too deep in the water. If the engine seems to blow out easily or not hold well in turns, the engine height could be too high.

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➤ Bass Boats: Propping for Performance | continued

Propellers may also run at different engine heights depending on their design. Two of our most popular propellers are the Yamaha V MAX SHO propeller (often mistakenly referred to as a T1. See "Cracking the Letter Code" Vol. 3, Ed. 3 November 2013) and the Turbo FXP™ propeller. Both run on similar boat types, but the FXP will typically run at slightly higher engine heights even though it is slightly smaller in diameter. Propellers like the Turbo TXP OT4 will run at extreme engine heights in true surface piercing applications. These propellers excel on very lightweight bass boats with high horsepower, and are excellent for craft capable of reaching speeds up to 90 mph.



Weight distribution is often something that most of us overlook. You need to consider where your weight is distributed around the boat. Where are your batteries, fuel tanks, tackle, rods and extra propeller stored? This may make a big difference in how the boat performs. If all of your batteries are in the bow of the boat, for example, this will cause the boat to ride in a very flat or bow down attitude. When the boat rides in this manner, not enough of the hull can get out of the water, so the excess drag will cause you to lose top speed. Simply moving a few things around could mean the difference of a few miles per hour.

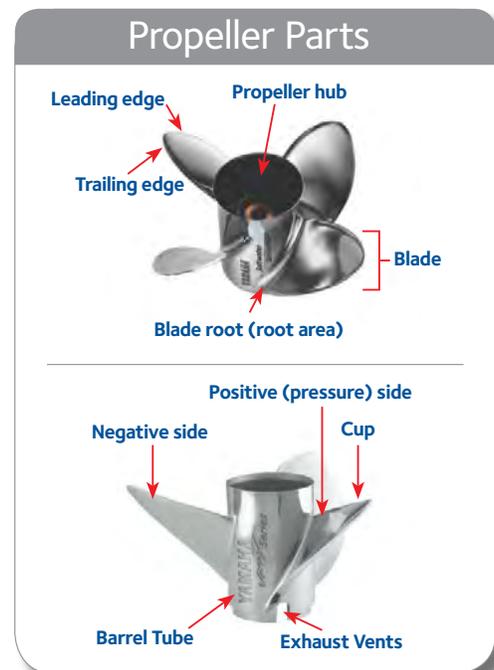
If you want to squeeze every little bit of performance out of your bass boat, taking the extra time to find the right propeller, engine setup and load balance could leave you grinning ear to ear next time you leave the dock!

➤ Parts and Pieces | A Lesson in Propeller Anatomy

Propeller blade

The blade is one of the most important parts of the propeller. Performance can be made or lost here very easily. The blade is made up of six key components: the root, the trailing edge, the leading edge, the negative side, the positive side, and the cup.

- **Root:** This is the attachment point of the blade to the barrel. This point is under an enormous amount of stress as the load of the propeller has to be carried from the blade through the root and ultimately to the propeller hub.
- **Leading edge:** The leading edge of the blade is just as the name implies; it is the first edge of the blade to move through the water. The leading edge should be clean and nick free to provide the most clean and efficient movement through the water. If the leading edge becomes damaged, it can lead to cavitation and a host of other performance issues.
- **Trailing edge:** Just as the leading edge was the first, the trailing edge is the last to pass through the water. This edge is important because it is where the water is released to propel your craft forward. The trailing edge needs to be clean and sharp to allow the water to release quickly.
- **Negative side:** The negative side of the blade may also be referred to as the suction side. As the propeller spins through the water, the negative side actually draws clean water in for the positive side to push against.



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➤ Parts and Pieces | A Lesson in Propeller Anatomy | continued

Propeller Blade

- **Positive side:** The positive side may be also called the pressure side. This is the pushing side of the blade. Water from the negative side is drawn in during rotation, providing clean water to the pressure side of the next blade to push against and create forward thrust.

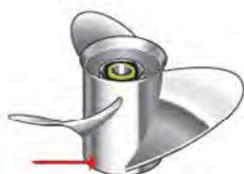


- **Cup:** The final piece of the blade is the cup. Cup can be found along the trailing edge and the tip of the blade. Cup creates the grip on the water as the propeller rotates. Too little cup can result in excess slip and a loss of performance. Too much cup can create excess grip which will bog down the engine and also cause a loss of performance, hard steering and excessive steering torque. Proper cup is essential to the overall performance of your propeller.

Barrel

The barrel, sometimes referred to as the “exhaust tube” or just the “tube,” can have different features depending on the overall performance goal of that propeller. The bulk of the propeller is located in the barrel since it houses the propeller hub. Some barrels can have exhaust vent holes while others have none, and most will have some varying level of flare at the aft end.

- **Propeller hub:** The propeller hub is splined to mate to the propeller shaft and in turn, drive the propeller. Some hubs are made of rubber and pressed-in, while others may be a square universal design made of a hard nylon composite. Yamaha's SDS™ (Shift Dampener System), is another hub type, which cushions the clunk associated with shifting in and out of gear.
- **Barrels with exhaust vents:** Vented barrels are typical in two-stroke engine applications where the engine needs to develop rpm quickly to aid in holeshot. The vents in the tube allow exhaust gases to slightly aerate the propeller blades, allowing them to slip just enough to get the engine into its powerband and get the boat on plane easier.



- **Barrels without exhaust vents:** Ventless barrels are typically used in four-stroke engine applications. The modern four-stroke engine creates torque in a manner that does not require exhaust vents to help the motor to develop rpm. Some applications, however, can benefit from the use of a vented propeller. Some bay boats – especially those in the 24 to 26 foot range – may benefit greatly from a vented propeller due to their typically heavier weight.
- **The exhaust flare:** The exhaust flare or diffuser ring is located at the aft end of the propeller. This flare keeps the exhaust from backing up into the blades and causing unwanted ventilation. The flare also adds a small amount of drag which is why high performance props like the Turbo FXP have very little to no flare. These props are typically run in surface piercing applications, meaning the exhaust is not fully submerged and so the flare is not needed for these applications.

Each piece of the propeller is important in its own aspect. Even small changes to any one piece can change the performance drastically; this is why there are so many propeller options available. Finding the best propeller for your specific application may require some trial and error, but with good on the water testing with your local Yamaha marine dealer and Yamaha's propeller performance evaluation sheet, dialing in your propeller choice is just a few easy steps away.

YAMAHA		PROPELLER PERFORMANCE EVALUATION	
Boat Information		Propeller Information	
Boat Name		Propeller Model	
Engine Type		Blade Count	
Engine Size		Blade Pitch	
Boat Length		Blade Cup	
Boat Weight		Blade Flare	
Boat Type		Blade Material	
Boat Year		Blade Color	
Boat Make		Blade Finish	
Boat Model		Blade Shape	
Boat Hull		Blade Tip	
Boat Deck		Blade Base	
Boat Cabin		Blade Hub	
Boat Trailer		Blade Shaft	
Boat Storage		Blade Mount	
Boat Location		Blade Size	
Boat Date		Blade Price	
Boat Dealer		Blade Warranty	
Boat Contact		Blade Notes	
Boat Phone		Blade Comments	
Boat Email		Blade Signature	
Boat Address		Blade Date	
Boat City		Blade Time	
Boat State		Blade Location	
Boat Zip		Blade Country	
Boat Postal		Blade Region	
Boat District		Blade Zone	
Boat Sector		Blade Area	
Boat Grid		Blade Code	
Boat System		Blade ID	
Boat Network		Blade Key	
Boat Domain		Blade Value	
Boat IP		Blade Port	
Boat Protocol		Blade Host	
Boat Application		Blade User	
Boat Language		Blade Password	
Boat Charset		Blade Session	
Boat Cookie		Blade Expires	
Boat Cache		Blade Maxage	
Boat Expires		Blade Smaxage	
Boat Path		Blade Sminage	
Boat Query		Blade Ssecure	
Boat Request		Blade Sstrict	
Boat Response		Blade Sverbose	
Boat Timeout		Blade Sxss	
Boat UserAgent		Blade Sxss2	
Boat Version		Blade Sxss3	
Boat XPoweredBy		Blade Sxss4	
Boat XRequest		Blade Sxss5	
Boat XResponse		Blade Sxss6	
Boat XStatus		Blade Sxss7	
Boat XType		Blade Sxss8	
Boat XMethod		Blade Sxss9	
Boat XScheme		Blade Sxss10	
Boat XAuthority		Blade Sxss11	
Boat XHost		Blade Sxss12	
Boat XPort		Blade Sxss13	
Boat XProtocol		Blade Sxss14	
Boat XScheme		Blade Sxss15	
Boat XAuthority		Blade Sxss16	
Boat XHost		Blade Sxss17	
Boat XPort		Blade Sxss18	
Boat XProtocol		Blade Sxss19	
Boat XScheme		Blade Sxss20	
Boat XAuthority		Blade Sxss21	
Boat XHost		Blade Sxss22	
Boat XPort		Blade Sxss23	
Boat XProtocol		Blade Sxss24	
Boat XScheme		Blade Sxss25	
Boat XAuthority		Blade Sxss26	
Boat XHost		Blade Sxss27	
Boat XPort		Blade Sxss28	
Boat XProtocol		Blade Sxss29	
Boat XScheme		Blade Sxss30	
Boat XAuthority		Blade Sxss31	
Boat XHost		Blade Sxss32	
Boat XPort		Blade Sxss33	
Boat XProtocol		Blade Sxss34	
Boat XScheme		Blade Sxss35	
Boat XAuthority		Blade Sxss36	
Boat XHost		Blade Sxss37	
Boat XPort		Blade Sxss38	
Boat XProtocol		Blade Sxss39	
Boat XScheme		Blade Sxss40	
Boat XAuthority		Blade Sxss41	
Boat XHost		Blade Sxss42	
Boat XPort		Blade Sxss43	
Boat XProtocol		Blade Sxss44	
Boat XScheme		Blade Sxss45	
Boat XAuthority		Blade Sxss46	
Boat XHost		Blade Sxss47	
Boat XPort		Blade Sxss48	
Boat XProtocol		Blade Sxss49	
Boat XScheme		Blade Sxss50	

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Performance Bulletins



With so many propeller choices and so many different boat types, picking the right propeller can be a daunting task. There are many resources available to help point you in the right direction. One of those resources is Yamaha's Performance Bulletins. At Yamaha we have an entire team that is dedicated to working strictly with boat manufacturers. One of their tasks is to help those manufacturers get their boat packages propped for optimum performance. The Performance Bulletin is a direct result of their hard work and testing. This tool will tell you what propeller was tested and what the overall performance results were. This is a great starting point when propping a boat; just be sure to consider the load and test conditions found on the Performance Bulletin.

All Yamaha Performance Bulletins can be found online at www.yamahaoutboards.com/owner-resources/performance-bulletins

NEW Prop Shop's Application Chart

In this issue of Prop Shop, we are introducing the Application Chart, a recurring segment that will feature a propeller family and typical applications that propeller family will excel in.

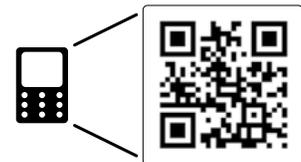
Talon Propeller Models				
Gear Case Size: 4.25" (Yamaha "K")				
Description	Diameter/Pitch/# of Blades	Rotation	Yamaha Part #	Availability
Talon	13.5" x 9" x 3	RH	6EK459410000	Available Now
Talon	13.5" x 10.5" x 3	RH	6EK459430000	Available Now
Talon	13.5" x 12" x 3	RH	6EK459450000	Available Now
Talon	13.5" x 14" x 3	RH	6EK459470000	Available Now
Talon	13.5" x 16" x 3	RH	6EK459490000	Available Now

This issue's Application Chart features the new Talon™ Aluminum propeller with SDS™. Talon's all-new blade geometry and high efficiency, low-slip design work great in many applications. You will find that the Talon series works very well in heavy boat applications or applications requiring additional thrust. Pontoon boats using F70 through F115, as well as T50 or T60 outboards, are excellent candidates for the Talon series. These propellers also work really well in Deep-V aluminum applications. In fact, if you run a boat with our 17" or 19" Deep-V aluminum propeller, our new 14" and 16" Talon are designed to run at the same level of performance, but now with the clunk-free shifting and smooth, quiet in-gear operation of SDS. These are just two examples of excellent applications for Talon propellers, but there are many more.



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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