

Selecting A Propeller

Our Goal at OC Boat Supplies is to make choosing a prop as easy as possible. Feel free to browse the information below to gain a better understanding of how to select the right prop for your boat.

Selecting the right propeller is an important factor in maximizing your boat's performance. Determining the correct size and style of prop will keep the engine operating within its recommended rpm range and allow it to apply its maximum horsepower to the water.

Not All Props Are The Same!

Size — Props size is described by referring to diameter and pitch. Diameter is twice the distance from the center of the hub to the tip of any blade. Generally, smaller diameter props correspond with smaller engines and boats, while larger diameter props correspond with larger boats. Pitch is the forward movement of a propeller through one complete revolution measured in inches. Lowering prop pitch will increase acceleration and pulling power. A higher pitch prop will make a boat go faster as long as the engine has enough power to keep the rpms in the optimum range. If the engine does not produce enough power to run a higher pitch prop all performance suffers and engine damage can result. Therefore - select the prop size that lets your engine operate at WOT within its correct rpm range.

Number of Blades —when the number of blades are changed, diameter and pitch may require a minimal adjustment to keep the RPMs in the proper range. For most purposes, 3 and 4-blade props can be used interchangeably on outboards and stern drives without much of a change in performance

Material —we offer propellers made of composite, aluminum, and stainless steel. Composite props offer good performance, are durable, and inexpensive. They also offer some protection for your lower unit during a prop strike. Aluminum props are the most common and are suitable for the widest range of applications since there are so many models and styles available. Stainless steel props offer the highest performance and best durability.

	Weight	Flex	Repair	Cost
<i>Composite</i>	<i>Least</i>	<i>Little</i>	<i>Not Possible</i>	<i>Least</i>
<i>Aluminum</i>	<i>Medium</i>	<i>Little</i>	<i>Easy</i>	<i>Medium</i>
<i>Stainless Steel</i>	<i>Greatest</i>	<i>Least</i>	<i>Difficult</i>	<i>Greatest</i>

Cupped Propellers —Special curved trailing edges enable the prop to maintain performance at higher trim levels and in tight corners. Cupped props allow most boats to achieve a higher top-end speed or at least the same speed at a lower engine RPM. They also promote more efficient fuel consumption.

Wide Open Throttle (WOT) rpm Range —when selecting a prop, the goal is to choose one that allows the engine to reach its optimal WOT. This is generally between 5000 and 5500 rpm for outboards, 4400 to 4800 for stern drives, depending on engine type. This information is included in the owner's manual of a new boat or engine.

Replacement Considerations

If your current prop's performance is acceptable (WOT is within manufacturer's guidelines) -- Choose a replacement prop that is very similar to the diameter and pitch of your current prop. You might consider upgrading to a different material such as stainless steel or trying a 4-blade prop instead of a 3 blade.

If your current prop is unsatisfactory —What if your engine operates at the wrong rpm at WOT? Pitch and rpm have an inverse relationship. Increasing pitch reduces rpm and reducing pitch increases rpm. A 1" change in pitch will usually result in a 200-RPM change in engine speed. Therefore, if your engine operates below the optimum proper rpm, you should consider a propeller with less pitch. If your engine over-revs, consider increasing the pitch.

Example: Your stern drive tach limit (red line or rpm limit) is 4800. Your motor at WOT with full trim only turns 4300 rpm. Buy a prop with 2 less pitch to bring it up within 100 rpm of your tach limit. Your acceleration will improve and your top end will stay the same or improve because your engine puts out more power closer to its rev limit.

You might also consider changing the propeller size to affect a specific performance attribute. A lower-pitch power prop makes it easier to pop skiers out of the water. Tournament bass boats may need more top end speed and should use a prop with a higher pitch. Houseboats and cruisers care more about efficiency at displacement speeds; therefore, they require a lower pitch to achieve low-end power and the largest diameter their lower unit can handle.

What's New With Propellers? Modular propellers are becoming increasingly popular. In fact, many engine manufacturers are now selling modular props as original equipment. Our current offering of modular props includes Michigan Wheel XHS Propellers in both Vortex Aluminum and Apollo Stainless Steel.

How To Order A Modular Prop

When ordering a modular prop, you will need to order both a hub kit and a prop housing. First, find your engine in the charts and order the hub kit that matches your application. Then select a propeller housing from the corresponding series that suits your boating style or is the closest replacement for your old prop.

Different props for different applications If you regularly run your boat at different altitudes, you know the importance of using props with a different pitch to match your engine performance. Maybe you have several different uses for your boat weekend cruising, wakeboarding, fishing, etc. Having two props pitched 2" apart lets you optimize the power of your engine. Modular props allow you to save money on that second propeller.

Be Prepared Always have an extra propeller on board with tools to change your propeller. If you have a prop, strike or spin out a hub you will only be delayed a few minutes and not miss out on all the fun.

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