

HIGH-PERFORMANCE PROPELLER SELECTION

boat-and-motor combination -- capable of 45 MPH or greater with a standard propeller at an engine speed of 2000 RPM and standard transom height -- can be increased to 2 MPH by switching to a High-Performance Propeller that is 1" lower in pitch. This is necessary, because High-Performance Propellers operate with less slippage.

Most boats will gain an additional 1-to-2 MPH with High-Performance Propellers for each additional inch in transom height, not to exceed 20½" with a short shaft engine or 25" with a long shaft engine. High-Performance Propellers are designed to provide maximum speed at maximum transom height allowable.

All 6-cylinder gear shift and 4-cylinder Merc 800 and Merc 50 models should use the Heavy-Duty Propeller Shaft with High-Performance Propellers when operating at transom heights that exceed standard recommendations by more than 1" or in rough water. The Heavy-Duty Propeller Shaft Assembly (A-44-46966A1) includes a new thrust hub (A-46961A1) which also is available separately. This propeller shaft is not plated, therefore, it requires a periodic coating of Anti-Corrosion Grease (C-92-45134A1) on the splines to prevent rusting.

High-Performance Quicksilver Propellers will not clear the standard trim tab. If a trim tab is desired, No. A-6399A1 must be used.

With a High-Performance Propeller, maximum speed normally will occur with the engine propped for 5300 RPM. This setup is recommended for long, straightway endurance marathons. By propping at a higher RPM, acceleration will improve, but at a slight cost in top speed.

For short course racing, or where greater acceleration is required, it is suggested that the next lower pitch propeller be used to increase engine speed to approximately 5600 RPM.

Still another pitch should be dropped when drag racing to allow the engine to turn up to approximately 6000 RPM.

It is recommended that the engine not be operated at this speed beyond the duration of the drag.

The following information may be used as a guide for initial propeller selection:

1. Most 6-cylinder, single engine, conventional-bottom boats (I and J class) use either a 22" or 24" pitch propeller and run between 55 and 60 MPH.
2. Most dual engine, conventional-bottom boats (JJ class) use 24" or 26" pitch and run between 60 and 65 MPH.
3. Special high performance (tunnel bottom) boats, either single or dual engine installation, normally will use a 26" or 28" pitch propeller and run 65 to 70 MPH.

NOTE: When operating engine above maximum recommended RPM, or when used for racing, the warranty is void.

The 14" diameter High-Performance Quicksilver Propellers are designed for the standard lower unit gear housing of 6-cylinder Mercury models built after 1962. The 13" diameter series is designed primarily for 4-cylinder Merc 650's, however, they also have been used successfully on 6-cylinder engines in some cases. The 4-cylinder Merc 800 can effectively utilize either the 13" or 14" diameter series, depending upon the particular application.

Refer to Parts or Service Manual for available propellers.

CUPPING PROPELLERS

"Cupping" refers to altering a propeller by rolling or turning the trailing edge of the blade. The cup causes the propeller to do more work on the water before it slides off the trailing edge of the blade.

When a propeller is cupped, its effective pitch is increased 1" to 2".

There are two basic reasons for using a cupped propeller.

1 - If a standard propeller cavitates (thus allowing the propeller to spin, as if in air, and providing little thrust) when accelerating in a tight turn or above certain speeds on a straight course, this effect may be greatly reduced or eliminated by selecting the next lower pitched cupped propeller. This problem usually exists with a boat bottom which has either a poor design, a large keel or an appendage that causes surface air to feed into the propeller. The cup enables a propeller to still produce thrust.

Cupping probably will not improve top speed, unless the boat suffers from wide-open throttle cavitation.

2 - Finally, the engine or drive may have been installed too high on the transom in an effort to obtain higher top speed. The propeller, then, draws down surface air around the anti-cavitation plate, thereby impeding planing the boat. Here, again, a cupped propeller is required for good performance in a water-air mixture. Top speed should be improved by going up on the transom for less lower unit drag and installing a cupped propeller.

A propeller may cavitate if boat reaches a relatively severe angle of attack to the water when attempting to plane. This may require a cupped propeller to achieve planing. It may be necessary to go to the next lower pitch cupped propeller for better acceleration without loss of top speed.

Cupped propellers are listed in the charts in the Mercury Parts Manual.