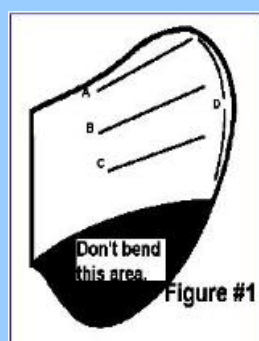


Prop Cutting and Altering for Performance.

By Rcboat.com

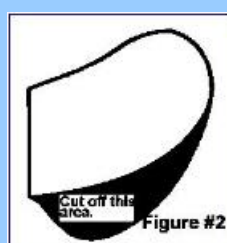
Areas to Bend Prop: 14 & 16 Series

Refer to figure #1 and you will see A, B, & C bend lines. You can bend on any or all lines and increase performance. Put into your mind that this area should be like a very gradual ski jump area with any changes in pitch a smooth increase over the rear of the prop blade. (If you don't make this area a smooth ramp, you will add cavitation and actually make the prop less efficient) Add pitch in a VERY TINY AMOUNT to line C, more bend to line B, and the most bend on line A. Area D is the outer edge of the prop. In this area after you make bends in areas A, B, C you will have created some wrinkles in the edge. These wrinkles should be smoothed out with pliers. I might tell you that bending on lines B and C are much more critical than bends on line A. You can get good performance with bends on line A only. Don't bend prop in other areas in any LARGE AMOUNT. You can experiment in other areas but be very careful. Bending areas along the outer edge will add or decrease lift. Added cup to the outer edge decreases lift and flattening the outer edge adds lift.



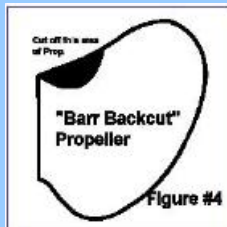
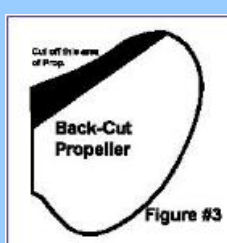
Areas to Cut Prop:

Refer to figure #2 for removal of the "Tongue Area" of the prop. This area has been found to greatly limit the top speed of all props. If you will visualize a prop entering the water and starting to move the water along the prop. The water is started along the prop at the Tongue and accelerated in increasing pitch until it is dumped off the rear edge of the prop. The next thing that enters the water is the tongue of the other blade THAT IS THE LOWEST PITCH PART OF THE PROP. This is as if having a governor on the boat since this lower pitch will slow the boat down from the push it got from the water exiting the trailing edge of the previous blade. What to do!! Just cut off this tongue area and you will see a HUGE increase in acceleration and much higher top speed. A note here that this works really well with 14 series props but is UNBELIEVABLE on X Series props.

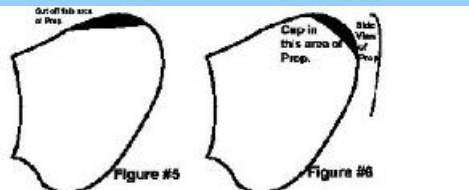


Backcutting Props: Typical M series by Octura

Refer to figure #3 and figure #4. Backcutting props will allow you to remove an area of the prop that loads the engine and provides little speed at the upper end of the RPM range. The area which you backcut is only effective when the prop is in its lower RPM bands. There are high engine loads at these RPM areas. Not a very desirable effect if you want to push a lot of pitch and go very fast. A short side note should be helpful here. I raced at a State Series Event in southern Indiana a few years ago and was soundly beaten by a good racer. On the way home I was trying to figure out how to reverse this result the next time we met. After pondering long and hard it was evident that I had to deliver more pitch to go faster, but with more pitch came more load to the engine. What if I removed material from the trailing edge of the prop and added more pitch to the tips and bends at A, B, C? This proved to add the MPH I needed to reverse the tables the next time. Some time later another local guy tried this back-cut by using a slightly different method. Look at figure #4 and you will see that he used a ball mill or dremel to make a round cut and accomplish the same reduction of load in the trailing edge. Both methods work very well.



Assuming that the water exits off the trailing edge, and especially the tips of the prop, there may be an advantage to exiting the water all at one time. A very successful individual had started working on a cutting method that he says will accomplish this. Look at figure #5, you may want to experiment with this. It has reportedly worked very well with full size outboards. Another item which is very interesting in its possible application, is the cupping of the extreme tip of the prop in order to keep the water from spilling off the sides of the prop. This will force the water to exit off the trailing edge of the prop and gain all possible pitch ramping. Experiment with these. They may gain you a great deal of performance.



Current Best Shape Modifications:



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At this point in time, the drawings above are in my opinion the best modifications for 1400 Series, 1600 Series, and X Series props. Bending points for each are shown by line and shaded areas are portions to remove. Some people have had success with "Texas Cutting" X Series Props.