



COMPOSITE GROUND ADJUSTABLE AIRBOAT PROPELLER INSTALLATION AND OPERATION INSTRUCTIONS

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CAUTION: *Failure to follow these instructions will void all warranties, expressed and implied. Mounting difficulties and increased vibration will result with improper assembly of the propeller blades and hub parts.*

Packing List

Propeller Blades & Two Piece Hub
Mounting Bolts, for mounting hub on engine
Clamping Bolts, for clamping hub halves together
Lock Washers (for hubs with "A" or higher serial #'s only)

Tools

A good quality torque wrench is required to properly torque clamping bolts and mounting bolts. Other tools needed: a large rubber mallet, anti-seize compound, and socket wrench. See **Tables 1 & 2** for socket sizes.

Attach Mounting Bolt Half

1. Disable engine starter/magneto to prevent inadvertent engine startup. Clean dirt and oil residue from the engine flange. Refer to **Figures 1 - 3** for views of the hub halves and blade.

2. Place the hub mount half, as shown in **Figure 1**, on the engine or reduction unit mounting flange. Check for proper bushing and pilot stub fit into the hub half. The hub must sit flush on the mounting flange. Put anti-seize compound on the mounting bolt threads and insert bolts into the 6 mounting holes. (Use lock washers with "A" & "B" hubs only) Torque the 6 bolts using a star pattern. See **Table 1** or blade decals for mounting bolt torques.

Note: The hub must sit flush against the mounting flange. Some installations may require a hub spacer kit or trimming of the drive bushings for proper fit on the engine flange. Bolt breakage will occur if not flush.

Insert Blades in Hub Mounting Half

3. Each blade has a round side and a flat side. Insert one blade at a time into the hub mounting half with the round side of the blade facing towards the front of the boat.

4. Place hub cover half over blades. Put anti-seize compound on the clamp bolt threads and insert with lock washers through the cover half and mounting half holes. See **Figure 4**. Make sure the cover half is fully seated on all blades. Hand tighten the bolts, making sure to have an even gap around the hub between cover and mount halves.

5. There are three methods for setting blade pitch: by Pitch Marks (good for narrow and medium blades), by Blade Track (preferred for wide blades and Superwide blades), and by Protractor Blade Angle (most accurate method but requires additional tools).

Pitch Mark: Align each blade pitch mark at 2 ½ or 3 with the face of the mounting hub half.

Blade Track: Align one blade pitch mark at 2 ½ or 3, then measure the distance aft from the blade tip trailing edge to a fixed point on the airboat, such as transom lip or radiator. Rotate the other blades into the same position and set at the same track distance.

Protractor Blade Angle: Align one blade pitch mark at 2 ½ or 3, then measure in 3" from the blade tip and mark a straight line across the flat side of the airfoil, from leading edge to trailing edge. NOTE: the blade airfoil must be flat at this location. Measure the blade angle with an angle protractor, then rotate the other blades into the same position and set at the same pitch angle.

6. Using a torque wrench and rotating from bolt to bolt, tighten the bolts evenly in a star pattern to the proper torque given in **Table 2**. This may take several passes around the bolts. Check the blade pitch marks after full torque; a small gap may remain between hub halves. Check the propeller blades for track. The blades should track within 1/8" of each other at the tip (track method), or within 1/16" to the same pitch mark (pitch mark method).

6. Refer to **Table 3** for maximum recommended prop RPM's. Run up the propeller to check your pitch for

desired maximum RPM. If your RPM's are too low, adjust the blades to a lower pitch setting. If the RPM's are too high, adjust the blades to a higher pitch setting. Re-torque clamp bolts to the proper torque. Remember, the propeller will run approximately 100 RPM higher once moving on the water.

Note: This torque value should be checked after the first 5 hours of operation and every 25 hours thereafter.

Permanent Installation

1. Once you have achieved the desired RPM's and are satisfied with the performance of your boat, re-torque the clamping bolts. **Note: This torque value should be checked after the first 5 hours of operation and every 25 hours thereafter.**

2. **DO NOT DRILL DRAIN HOLES IN THE TIPS!**

Repitching

If repitching is needed, first loosen the bolts. Carefully using a rubber mallet or the heel of your hand, tap the leading or trailing edge of the blade to change pitch. Be careful to not drop the hub or blades. Re-torque according to **Table 2**.

Composite Propeller Operating Tips:

Sensenich composite propellers should be fairly maintenance free besides an occasional torque check and cleaning of the hub and blades. The following will help you to operate your propeller safely, keep it looking good and help it to last longer.

- ❑ **Do not spin your propeller above the maximum RPM given in Table 3.**
- ❑ *Before each airboating excursion, carefully examine the propeller blades and hub for looseness, any signs of damage, excessive wear or any other condition that would make the propeller unsafe to operate.*
- ❑ *In particular, before operating check: blade shanks for roughness or raised fibers, blades for impact damage or cracks, and the metal erosion shield for tightness.*
- ❑ Never run up your propeller with someone standing in the plane of the propeller.
- ❑ For maximum leading edge life, maintain a *minimum* of 2-3" clearance from the blade to the cage and hull. This is especially important for deck-over hulls and the transom area for fiberglass hulls.
- ❑ Wear on the blade tips and beside the metal erosion shield depends on your maximum rpm's, type of running, and tip clearance.
- ❑ **Check hub clamping bolts every 25 hours of operation.** Always check in a tightening direction.

- ❑ Keep your propeller clean. Soapy water will remove most residue, but 409 or similar cleaner can be used to remove stubborn residue.
- ❑ To help maintain blade gloss and reduce fading, store the propeller out of direct sunlight and apply a good quality automotive paste wax several times a year.
- ❑ Be mindful of airboat noise around people and homes. Operate at the lowest RPM's possible.

LIMITED WARRANTY

We hope you enjoy your new composite propeller. We have worked hard to ensure that your propeller will meet or exceed your expectations for years to come.

We offer a one year limited warranty on any defect in materials and workmanship.

In the event a unit does not conform to this express warranty, Sensenich Wood Propeller Company will repair or replace the defective material at its place of business at Plant City, FL USA. Sensenich Wood Propeller Company will decide which remedy, repair, or replacement it will provide. Any replacement of a unit or a part of a unit during the warranty period will not extend the warranty beyond the original duration. The remedy of repair or replacement is exclusive and does not include the cost of shipping, removal, or installation, all of which are the customer's responsibility.

Procedure For Obtaining Warranty Service

Units or parts that are defective must be shipped prepaid to Sensenich Wood Propeller Company at the address listed on page 1. The unit must be accompanied by a copy of the original (Distributor or Dealer) invoice, a Return Authorization Number (which can be obtained by phoning Sensenich Wood Propeller Company), and a brief description of the defect.

Conditions, Exclusions, and Disclaimers

This limited warranty applies only to units that have been installed, used, and maintained properly in strict accordance with our specifications, instructions, and recommendations. It does not cover units that show abuse, alterations, improper installation, improper maintenance or repair, or improper packaging for shipment; and it does not pertain to damage due to object strike, or excessive blade wear due to operation. **Racing use of any kind or use on or with engines or equipment not approved by Sensenich Wood Propeller Company automatically voids this warranty.**

This limited warranty is the only warranty provided with respect to covered units, and **THERE ARE NO OTHER WARRANTIES, REPRESENTATIONS, CONDITIONS OR GUARANTEES, EXPRESS OR IMPLIED, WITH RESPECT TO THE COVERED UNITS OR THE MANUFACTURE THEREOF, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

Repair or replacement of a nonconforming unit or part is the exclusive remedy for breach of this limited warranty, and shall constitute fulfillment of all liabilities of Sensenich Wood Propeller Company to a customer or user, whether based on contract, negligence or otherwise. **IN NO EVENT SHALL SENSENICH WOOD PROPELLER COMPANY BE LIABLE FOR ANY OTHER EXPENSES, CLAIMS OR DAMAGES OF ANY KIND HOWSOEVER CAUSED, INCLUDING (WITHOUT LIMITATION) ANY OTHER PRODUCT REPLACEMENT OR INSTALLATION COSTS AND/OR ANY DIRECT, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES.**

The purchaser of the covered units has read, understood and, by purchasing the units, agrees to be bound by the above terms and conditions.

Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you.

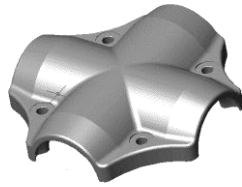
This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Figure 1:



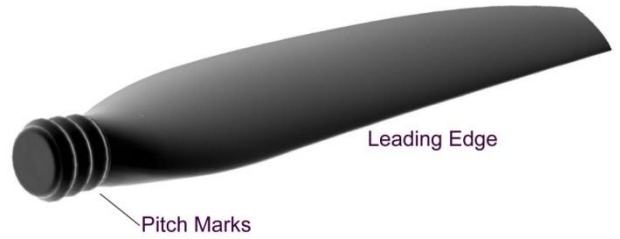
Hub Mount Half

Figure 2:



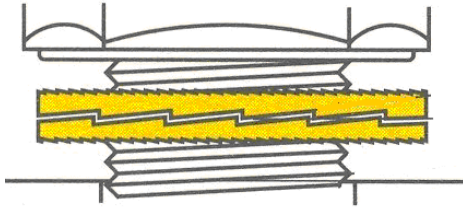
Hub Cover Half

Figure 3:



Blade

Figure 4:



Special Lock Washer

Newer hubs with “A” or higher serial numbers incorporate threaded drive bushings / hubs and special lock washers. Each lock washer works in pairs with the “ramped” sides facing each other.

**TABLE 1:
HUB MOUNTING BOLT TORQUE**

| Mounting Bolt Diameter (inches) | Hex Head Bolts | | Flat Head Allen Screws <i>*(only for old hubs)</i> | |
|------------------------------------|--------------------------------|------------------------------|---|---------------------------|
| | Socket wrench size (inches) | Recommended Wrench Torque*** | Allen Hex Wrench Size | Recommended Wrench Torque |
| 3/8 | 9/16 | 45 +/- 2 | 7/32 | 35 +/- 2 |
| 7/16 | 5/8 | 45 +/- 2 | 1/4 | 45 +/- 2 |
| 1/2 | 3/4 | 60 +/- 2 | 5/16 | 45 +/- 2 |

**TABLE 2:
HUB CLAMPING BOLT TORQUE**

| Clamping Bolt Diameter (inches) | Recommended Wrench Torque (ft-lbs)*** | Hex Bolt Socket Wrench Size (inches) | Nut* Open End Wrench Size <i>*(only for old hubs)</i> (inches) |
|--------------------------------------|--|---|---|
| 1/2 | 60 +/- 2 | 3/4 | 3/4 |
| 9/16* <i>*(only for old hubs)</i> | 65 +/- 2 | 13/16 | 7/8 |

*****Bolt Torque Notes:** Check mounting bolt torque at least once a year or if vibration occurs. Check clamping bolt torque after the first 5 hours of operation and every 25 hours thereafter. Apply anti-seize compound to bolt threads. This will aid removal after long service in harsh environments.

Table 3: Pitch Setting Guide

Set all blades at Pitch Mark 2 ½ or 3 to start. **DO NOT EXCEED MAXIMUM PROPELLER RPM'S**. Adjust pitch as needed. The pitch marks indicate general pitch; ex) “3” is a higher pitch than a “2”. While only three marks are indicated, higher pitches than “3” can be used, up to a maximum of “4”. Your final setup may vary due to configuration of your particular boat and desired top RPM.

WARNING: Propeller blade failure may occur if maximum propeller RPM is exceeded – resulting in severe bodily injury or death!

| | Blade Model | Blade Style | Blade Width | Engines | Max prop RPM | Optimum Prop RPM |
|---------------------------------|--------------------|---------------------------|-------------|---------------------------------|--------------|---|
| <i>Maximum Propeller RPM's:</i> | L68W / R68W | “W” Saber blade | 6 ½” wide | Direct drive or reduction drive | 3000 | 2800-2900 direct drive 2000-2600 prop rpm on reduction drive |
| | L72H / L78H / R78H | “H” narrow blade | 8 ½” wide | Direct drive or reduction drive | 3000 | 2750-2850 |
| | L72N | “NGH” winglet blade | 9 ½” wide | Direct drive or reduction drive | 3000 | 2700-2800 |
| | L72Q | “Q” swept medium blade | 10 ½” wide | Direct drive or reduction drive | 3000 | 2650-2750 |
| | L79K / R79K | “K” wide blade | 12” wide | Reduction drives only! | 2800 | 2200-2500 |
| | L79R / R79R | “R” swept wide blade | 13” wide | Reduction drives only! | 2800 | 2000-2300 |
| | L79S / R79S | “S” swept superwide blade | 15” wide | Reduction drives only! | 2300 | 1800-2100 |

WARNING: Due to the infinite variety of racing modifications and setups, there is ABSOLUTELY NO WARRANTY FOR RACING USE OF ANY KIND. The racer assumes all risks and accepts personal responsibility for any and all loss, liability, damages, or costs following such injury, permanent disability, or death.