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Composite Airboat Propellers

COMPOSITE GROUND ADJUSTABLE AIRBOAT PROPELLER INSTALLATION AND OPERATION INSTRUCTIONS

***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 "B" serial #'s only)
Standard Nuts+Washers
(for hubs without "A" or "B" serial #'s)

***NOTE:** Older hubs use nuts and washers with the clamping bolts, while newer hubs with "A" or "B" serial numbers use threaded drive bushings and special lock washers.*

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. Older hubs will also require an allen hex wrench and open end wrench. See **Tables 1 & 2** for socket and wrench sizes.

ATTACH MOUNTING HUB 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. Align the appropriate pitch mark 1, 2, or 3 as indicated in **Table 3**, with the face of the mounting hub half.

4. Place hub cover half over blades. *Put anti-seize compound on the clamp bolt threads* and insert with washers through the cover half and mounting half holes. Properly seat the cover half by tapping with the rubber mallet. Once the hub halves are even on all sides, hand tighten the bolts (and nuts, for older hubs). Using a torque wrench and rotating from bolt to bolt, tighten the bolts evenly to the proper torque given in **Table 2**. This may take several passes around the bolts. (NOTE: For older compact two blade hubs only, a flat screwdriver is jammed between hub and nut to prevent nut rotation during torquing.) Check the blade pitch marks for rotation away from your desired pitch. Once properly torqued, 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, and within 1/16" to the same pitch mark. Setting the pitch accurately is more important than track from blade to blade.

5. Run your propeller for approximately 5 minutes at 50% of the desired RPM. Check the clamping bolts to see if they have lost torque. If they have, it is because the blades have firmly seated themselves. Tighten again to the proper torque. **Note: This torque value should be checked after the first 5 hours of operation and every 25 hours thereafter.**

6. Run up the propeller to check your pitch for desired maximum RPM. Remember, the propeller will run approximately 100 RPM higher once moving on the water. 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. See **Table 3**. for approximate starting pitch settings and ***maximum recommended prop RPM's***.

Permanent Installation

1. Once you have achieved the desired RPM's and are satisfied with the performance of your boat, re-apply anti-seize to threads and re-torque the clamping bolts. If nuts are used, either double nut each bolt or apply medium strength thread locker to each nut one at a time. Torque each of these nuts to the proper torque.
Note: This torque value should be checked after the first 5 hours of operation and every 25 hours thereafter.

2. Permanently seal the hub and blade shanks using some silicone caulking or similar product to prevent water intrusion in the blade shanks. ***DO NOT DRILL DRAIN HOLES IN THE TIPS!***

Repitching

If repitching is needed, first loosen the bolts. The blades are loosened by grabbing the tip by hand and aggressively rocking the blades back and forth to loosen the shanks. Using a rubber mallet or your hand, tap the leading or trailing edge of the blade to change pitch. Be careful to not drop the hub or blades.

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.*
- 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.
- Epoxy wear beside the metal leading edges is normal.
- **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.
- Apply a good quality automotive paste wax to the blades. Avoid liquid waxes.
- 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 it's 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.

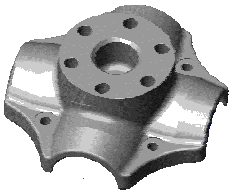
Procedure For Obtaining Warranty Service

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

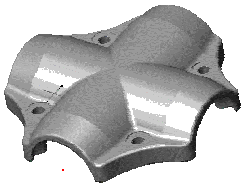
This limited warranty applies only to units that have been installed, used, and maintained properly in strict accordance with our specifications, instructions, and recommendations. It does not cover units that show abuse, alterations, improper installation, improper maintenance or repair, or improper 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 DAMAMGES 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:



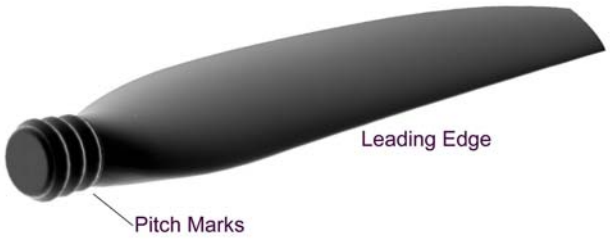
Hub Mount Half

Figure 2:



Hub Cover Half

Figure 3:



Blade

TABLE 1:
HUB MOUNTING BOLT TORQUE

Mounting Bolt Diameter	Hex Head Bolts		Flat Head Allen Screws	
(inches)	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

Notes: **Apply anti-seize compound to bolt threads. This will aid removal after long service in harsh environments.**
Check mounting bolt torque at least once a year or if vibration occurs.

*** **Newer hubs with "A" or "B" serial numbers use hex head mounting bolts with special lock washers. Each lock washer works in pairs with the "ramped" sides facing each other.**

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 (inches)
1/2	60 +/- 2	3/4	3/4
9/16	65 +/- 2	13/16	7/8

Note: **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.**

*** **Newer hubs with "A" or "B" serial numbers incorporate threaded drive bushings and special lock washers. Each lock washer works in pairs with the "ramped" sides facing each other.**

Table 3: Pitch Setting Guide

Approximate settings for initial setup are shown below. Your final setup may vary due to configuration of your particular boat and desired top RPM. Maximum performance is achieved below the maximum recommended RPM.

Maximum Recommended: Propeller RPM's:	Blade Model	blade style	blade width	Engines	Max. Prop RPM
	L72H / L78H / R78H	"narrow blade"	8 ½" wide	direct drive or reduction drive	3000 RPM
	L72Q	"swept medium"	10 ½" wide	direct drive or reduction drive	3000 RPM
	L79K / R79K	"wide blade"	12" wide	**reduction drives only!**	2800 RPM
	L79S / R79S	"swept superwide"	15" wide	**reduction drives only!**	2300 RPM

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

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".

Engine/HP	"H" SERIES NARROW BLADES		"Q" SERIES POWER SWEEP BLADES		"K" SERIES WIDE BLADES		"S" SERIES POWER SWEEP BLADES	
	no. of blades	approx. pitch setting	no. of blades	approx. pitch setting	no. of blades	approx. pitch setting	no. of blades	approx. pitch setting
150 – 220 HP Direct Drive	2	2-3/4	2	1-3/4	Not suitable for direct drive	---	Not suitable for direct drive	---
220 – 300 HP Direct Drive	3	2-3/4	2 3	2-1/2 1-1/2	Not suitable for direct drive	---	Not suitable for direct drive	---
Cadillac 472/500 Direct Drive	3	2-1/2	2 3	2-1/2 1-1/2	Not suitable for direct drive	---	Not suitable for direct drive	---
Chevy 350 345 HP, 2:1 reduction	3	2-1/4	3	1-3/4	2	1-3/4	2	1
Chevy big block 400+ HP, 2:1 reduction	4	2-1/2	3 4	2 1-1/2	2 3	2 1-1/4	2	1-1/2
Chevy big block 400+HP, 2.3:1 reduction	5	3	Not enough diameter	---	4	2	2 3	2 1-1/2