

WHIRL WIND PROPELLERS

--- Airboat Propeller Installation Instructions ---

Congratulations on the purchase of your new Whirl Wind airboat propeller – the very best there is! Your new Whirl Wind not only offers excellent performance and durability, but easy assembly and blade pitch adjustment as well.

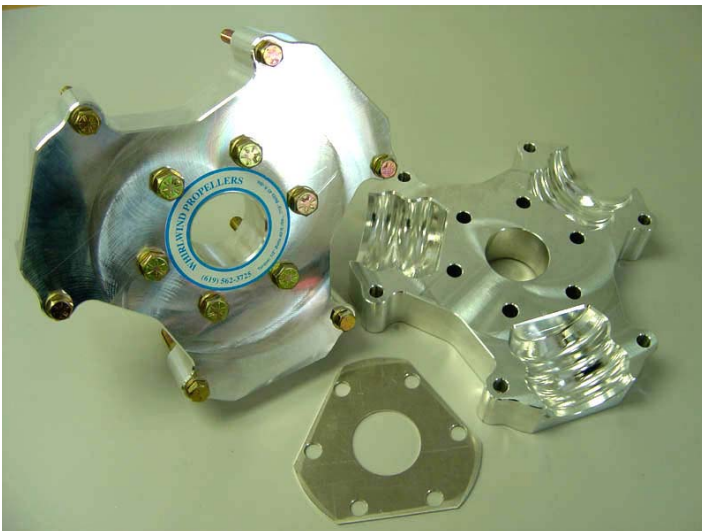


WARNING: Read Instructions Before Operating Propeller.

Propellers are dangerous. Use Extreme Caution anytime you are near the propeller whether the propeller is turning or not. Propellers Can Cause Severe Bodily Harm or Death.

Keep Hands & Feet & Body Away From Propeller At All Times. Failure to do so will result in severe bodily harm or death.

To ensure years of trouble free service – **READ and FOLLOW ALL DIRECTIONS.** Failure to do so may lead to propeller failure.



* Anti-seize compound & WD40 highly recommended

Step 1

Carefully unpack your propeller from the factory box and take inventory of parts. Verify parts and hardware supplied, agree with packing list.

- 1 – Hub (front & back)
- 1 – Spacer
- 6 – 1/2" bolts & washers
- 2 – 7/16" bolts & washers per blade
- X - Blades

Tools Required:

- 5/8" socket,
- 3/4" socket,
- ratchet, and
- torque wrench



Step 2

- Place the propshaft side of the hub half on a clean flat table.
- Place the flat spacer in the center on inside hub half.
- Carefully place blade shanks into the hub.

Step 3

Place the second half of the hub over the other half of the hub, spacer and blade shanks. Gently lift the blade tips and seat the hub halves. At this point, install the 7/16" bolts (use an Anti-Seize compound on threads) into the hub. Take care not to cross-thread these bolts into the hub. Repeat this for all blades. Tighten the 7/16" bolts so the prop blades are firmly held in hub, but so that the blades can still be smoothly rotated in the hub.

NOTE: Do NOT force or hammer any propeller parts together.

******* WARNING:: DO NOT EXCEED MAX RPM *******

<u>Blade Style</u>	<u>Diameter</u>	<u>Max RPM</u>	<u>RPM Range</u>
Master Blaster 2.3	78" to 84"	2250	1700 to 2250
Master Blaster 2.0	78" to 84"	2500	1700 to 2500
Stump Puller	82" to 84"	2500	2000 to 2500
	76" to 80"	2700	2200 to 2700
	70" to 74"	3000	2500 to 3000
Super Snapper	66" to 74"	3000	2500 to 3000
Whisper Tip	69" to 74"	3000	2500 to 3000
	76" to 83"	2500	2000 to 2500

Step 4

Install the Propeller on the Airboat

Make sure your propshaft is clean and free of rust and corrosion. This cannot be stressed enough. A clean and rust free flange will ensure proper installation and will prevent the hub from permanently bonding to your flange with rust. It is recommended to spray your flange with a rust inhibitor (such as LPS or WD40) prior to propeller installation.

Mate propeller to propshaft and install ½” bolts. Tighten bolts symmetrically and make sure propeller is securely pulled up to propshaft – no gaps allowed. Next, torque 7/16” blade shank bolts to 45 ft-lbs and ½” propshaft bolts to 60 ft-lbs.

Blade Track: Check the blade track to ensure the blades are within 0.100 inch of each other and that the blades are held firmly in the hub. Ensure hub has been installed flat against mounting flange, and ensure that each blade is well seated in the hub (not misaligned or crooked).

Blade Movement: Any blade movement in the hub is unacceptable.

WARNING!

**Do Not Exceed Max Propeller RPM (See Page 2)
Propeller blade failure may occur if max. propeller RPM is
exceeded - Resulting in severe bodily injury or death!**

WARNING!

**Harmonic Damper is required on the following engines. Warranty
void if installed otherwise.**

- 8 Cylinder Continental GPU engines
- Direct Drive Cadillac Auto Engines

Step 5

Initial Pitch Setting

To set the initial pitch, line-up the mold parting line of each blade on the leading or trailing edge to degree marks on hub. The propeller has been designed to operate from 10 degrees to 30 degrees for optimum performance. The pitch is adjustable in 2.5 deg increments.

Initial Pitch Setting: Start with a pitch setting at about 20 degrees (refer to Step 7 – Maximum RPM Setting).

Note: Some blades come with A-B-C stickers, start with mark at B.

WARNING!

Before operation, ALL blades must be secure in hub as per Step 4.

Step 6

Initial Engine Run-Up

Important Note: Before starting your engine and new propeller for the first time, ensure the propeller blades clear all engine parts (suggested minimum clearance of at least 2"). Repeat this step each time you change the pitch setting of your propeller.

Run the engine up to 2000 propeller RPM. Shut down the engine and inspect the overall condition of blades, leading edge and hub. Firmly grab each blade tip and apply a forward and aft force to ensure each blade is tight in the hub. Do not operate propeller if blades have any movement in hub. Check for proper torque on all bolts (7/16" bolts to 45 ft-lbs -- 1/2" bolts to 60 ft-lbs).

Check bolt torque and perform visual inspection as described in "Care and Maintenance" after every 20 to 25 hours of operation. Enjoy your new propeller and *have fun!*

Step 7

Maximum RPM Setting

You may run the engine up to max. engine RPM, but **DO NOT EXCEED MAX. PROPELLER RPM!**
(See Page 2)

To find the pitch setting for maximum RPM, start with a blade pitch setting of 20 deg. (The degree marks on the hub range from 10 deg to 30 deg.) and do a full throttle run-up while the boat is secured. **DO NOT EXCEED MAX RPM**

- if the engine RPM is low - decrease the blade pitch to increase RPM;
- if the engine RPM is too high – increase the blade pitch to decrease RPM.
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For Maximum push performance, set the propeller up for 100 to 200 less than max RPM (see chart on page 2) at full throttle. (The reason for setting under max RPM while static is that RPM will be gained when operating the boat out in the open.) However, you may not want or need to turn your engine this fast if you are interested in reducing noise or increasing fuel economy.

Care and Maintenance

Proper care and maintenance of your Whirl Wind propeller will ensure a long life with many hours of trouble free operation.

A complete inspection of your propeller should be performed periodically, at least after every 25 hours of operation.

Blades

- Wash & Clean all blades with a mild detergent (such as Simple Green)
- Optional: Polish blades with clear liquid automotive polish for an additional layer of protection. (such as Turtle Wax Ice)
- Inspect overall condition of blades, looking for chips, cracks, and any leading edge damage. If the leading edge is damaged, this can be repaired by returning to Whirl Wind with the full set of blades. If damage is neglected, it may worsen, making repair impossible.

Hub

- Wash & clean hub with a mild detergent (such as Simple Green)
- Inspect overall condition of hub. Inspect interior and exterior thoroughly for any signs of hair-line cracking. If any cracks are detected, contact Whirl Wind for assessment

Bolts

Check bolt torque on all bolts

- 7/16" bolts to 45 ft-lbs
- 1/2" bolts to 60 ft-lbs

NOTE - Every Whirl Wind propeller blade is manufactured using a state-of-the-art production process that yields a smooth surface finish on each blade. There may be slight marks on the surface, such as small bubbles and/or pinholes – these marks are common to this type of advanced manufacturing process and do not affect the structural integrity of the blade.

WHIRL WIND PROPELLERS CORPORATION

COMPOSITE AIRBOAT PROPELLERS - 30 Day Satisfaction Guarantee

Whirl Wind Propellers Corporation guarantees your satisfaction for a period of 30 days. If during this time you are not satisfied with our product you may send it back for a full or partial refund. Any shipping and handling charges are non-refundable. If the propeller has not been used, you will receive a full refund. If you have tested the propeller on your boat, it will be subject to a 15% restocking fee. If the propeller shows excessive signs of wear or abuse, the refund will be reduced appropriately. Simply return the propeller to our plant at the address below. Returned items must be within 30 days of purchase to qualify. The cost of returning the propeller is incurred by the customer. Return shipping must be prepaid and insured for the full value of the propeller or parts. Whirl Wind Propellers reserves the right to refuse any return found to be the result of a suspicious origin or untrustworthy nature.

COMPOSITE AIRBOAT PROPELLERS - LIMITED WARRANTY

Whirl Wind Propellers Corporation expressly warrants its products to be free from defects in material and workmanship under normal use and service for a period of twelve (12) months after delivery to the original retail purchaser.

WARNING: Whirl Wind airboat propellers are not suitable for installation on the following engines without the use of a harmonic damper. Installation on these engines will void all warranty claims.

- **8 Cylinder Continental GPU engines**
- **Direct Drive Cadillac Auto Engines.**

Whirl Wind Propellers Corporation's obligation under this limited warranty is limited to repairing or replacing, at its option, any propeller or propeller hub, determined by Whirl Wind to have been defective and which is properly returned by the owner, with a written statement describing the alleged defect, to its place of business at El Cajon, California USA. Any replacement of a unit or a part of a unit during the warranty period will not extend the warranty beyond the original duration.

Procedure For Obtaining Warranty Service All warranty returns are to be shipped prepaid and insured for the full value of the item being returned to Whirl Wind Propellers Corporation at the address listed below. Upon receipt of the unit, Whirl Wind Propellers Corporation will decide which remedy, repair, or replacement it will provide. The unit must be accompanied by a copy of the original (Distributor or Dealer) invoice and a brief description of the defect. 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.

Whirl Wind Propellers – Warranty Returns
1800 Joe Crosson Drive, Ste C
El Cajon, CA 92020

Conditions, Exclusions, and Disclaimers This limited warranty applies to units that have been used and maintained properly. It does not cover units that show abuse, alterations, improper installation, or improper packaging for shipment; and it does not pertain to damage due to object strike or excessive blade wear due to operation.

To the extent allowed by applicable law, THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED IN FACT OR BY LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OF REPAIR OR REPLACEMENT SET FORTH HEREIN ARE THE ONLY REMEDIES UNDER THIS WARRANTY. Whirl Wind DISCLAIMS ANY OBLIGATION OR LIABILITY, WHETHER IN CONTRACT OR IN TORT, INCLUDING LOSS OF USE OF THE PRODUCT WARRANTED, LOSS OF TIME, INCONVENIENCE, LOSS OF PROFITS, COMMERCIAL LOSS OR ANY OTHER DIRECT, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES. THIS WARRANTY IS IN LIEU OF ANY OBLIGATION OR LIABILITY ON THE PART OF Whirl Wind TO ANYONE OF ANY NATURE WHATSOEVER by reason of the manufacture, sale, lease or use of the warranted products and Whirl Wind neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with such warranted products.

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 Whirl Wind Propellers Corporation to a customer or user, whether based on contract, negligence or otherwise. IN NO EVENT SHALL WHIRL WIND PROPELLERS CORPORATION BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.