

2-BLADE FIXED

# *PerfectPitch*

## PROPELLER

INSTALLATION AND USE MANUAL



***Performance Propellers, Inc***

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## CAUTION

Before you install your new *PerfectPitch* Propeller, please be aware that you must have adequate tip clearance around the prop and the keel/hull. You need at least 10% of the prop diameter in clearance between the tips of the blades and the hull as well as fore and aft. More is better. Note that *PerfectPitch* props flex fore and aft up to 1" while in use.

## INSTALLATION

1. Remove your old propeller.
2. Remove any burrs or debris on the shaft or in the keyway.
3. If using a shaft adapter, see the Shaft Adapter section.
4. Without the key in place, slide the *PerfectPitch* prop up the shaft as far as you can, and mark the point reached. Remove the prop.
5. Make sure your key fits in both the shaft keyway and the keyway in the bore of the prop.
6. If the key doesn't fit, rub the sides of the key on some 100-180 grit sandpaper placed on a flat surface. The key should be a snug fit, but not a force fit. To ease installation, sand a 45 degree angle (chamfer) on each edge, but the chamfers should be barely visible (about 1/64" x 45 degrees).
7. Place the key in the shaft keyway. Make sure the key does not extend past either end of the keyway. If the key is too long, shorten as necessary by sanding it, and chamfer the end. The top of installed key should project parallel to the shaft.
8. Slide the prop on the shaft, engaging the key. If the prop does not reach the mark you made in Step 4, the key has either slid too far up the keyway, or the key is too high. In this case, first try repositioning the key. If that fails, sand the top of the key.
9. Remove the old prop. Install the *PerfectPitch* prop, again insuring that it reaches or exceeds the mark you made in Step 4.
10. Install the shaft nut or nuts. Most people over-tighten shaft nuts; 50–100 foot pounds is plenty. That's the equivalent of 50-100 pounds on a 12 inch wrench. If using a thick and a thin nut, be sure to tighten the outer lock nut while holding the inner nut. If using a single nut or a castellated nut, be sure to replace the cotter pin. See the section on shaft nuts for more information.

## REMOVING THE PROP

Propellers should never be removed by hammering on the hub (see the Warranty.) Our propellers can be removed using standard marine prop pullers.

## SHAFT ADAPTERS

To install, slide the adapter sleeve up the taper until you can insert the key. If the key is “stepped” (narrower on the bottom), the narrower side goes into the shaft keyway. You may have to sand the key itself (see Steps 6-8). After the key is in place, slide the adapter sleeve back down the taper until the adapter sleeve just touches the key on both sides.

The adapter sleeve should fit as supplied (see photo). Do not cut the plastic sleeve. If the adapter does not fit, call us as you may have a non-SAE tapered shaft.



## SHAFT NUTS

Some *PerfectPitch* Props have a recessed hole for the propeller shaft nut, which makes it difficult to use locknuts or cotter pins. These props with recessed holes are shipped with a silicon bronze stoPnut to replace your old locknuts, or nuts with cotter pins. This silicon bronze stoPnut can be reused as many as five times before the plastic insert must be replaced. (The silicon bronze nut itself should last indefinitely.) The stoPnut has been proven over many years of use on propellers, and is compatible with stainless or bronze prop shafts.

To install (or remove) the stoPnut, use a standard 1” or 1 1/8” deep set socket on a 6” extension.

If the plastic insert in the stoPnut has been used beyond a reasonable amount, you can either replace the plastic insert yourself, or buy a new stoPnut with insert from us. The stoPnut costs \$20.00. Call to order for insert replacement instructions.

## MAINTENANCE

### ZINCS

Although our props are immune to galvanic corrosion and electrolysis, and do not require zincs, we recommend that you use zinc on your shaft.

### PAINTING

A small amount of barnacle growth can severely impact the performance of any prop. In warm water this can take place in as little as three weeks. Currently there is only one antifouling paint that we can recommend.

We like No Foul WB. It’s made by Epaints in Falmouth, MA and its brand name is EP2000. It doesn’t use toxins, it stays effective for one year, and it works far

better than standard bottom paints, which rapidly lose their efficacy the more you motor.

If you do apply paint, sand the prop with 200 or finer grit sandpaper to remove the mold release. Do not use coarser sandpaper as this will void the warranty. Try not to change the shape of the prop, especially at the edges, as this will adversely affect performance.

## **REPAIRS**

Any small nicks or scratches on the prop can be repaired using auto body putty (Bondo).

For larger repairs, use Epoxy mixed with filler. We recommend Gougeon 105 Resin with 410 Filler and 406 Thickener.

As in paint preparation, the final sanding should be done using 200 or finer grit sandpaper.

## **LIMITED WARRANTY**

Two Blade Fixed *PerfectPitch* Propellers are warranted against breakage due to manufacturing defects for a period of two (2) years from the date of purchase. We will repair or replace any propeller that fails due to such a defect. Freight and costs associated with removal and reinstallation of the propeller, including hauling the boat, are not covered. Nor does this warranty cover consequential damage to other boats, or other property or personal injury resulting from the sudden failure of the propeller, whether or not the propeller itself is covered.

Propellers that break due to striking an object or becoming entangled with lines can be replaced at half the price of a new propeller.

Use of force to remove the propeller other than a standard prop puller, evidence of heavy scratches from sanding, evidence of excessive tightening of the shaft nut, or use of an improperly fitted key also voids the warranty.

This warranty is not transferable and only applies to the original purchaser of the prop.