Service Bulletin - 218-HHP-01

Date Issued: October 16th, 2018 SB Revision Number: 02

DO NOT USE OBSOLETE OR OUTDATED INFORMATION. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. MAKE EVERY EFFORT TO ENSURE THIS DOCUMENT IS NOT OUTDATED.

IF FOR ANY REASON YOU ARE UNABLE OR UNCOMFORTABLE COMPLYING WITH THIS SERVICE BULLETIN YOU MAY RETURN YOUR PROPELLER TO WARP DRIVE INC FOR INSPECTION.

Revisions

2018-10-16

- Additional Clarification: Applicability, Discussion, and bolt torque values.

Applicability

New model 2-Blade & 3-Blade HP Hubs when used with the following engines.

- All engine variants of the Continental O-200 & C-90 engines.
- All engine variants of the Lycoming O-235 engines.

NOTE: To determine if you have a new model HP hub use Figure 1 and Figure 2 below. Two visual indications of a new model HP hub are curved sides and a shiny surface finish. Older models have straight-sides, four propeller clamping bolts per blade, and a dull surface finish.

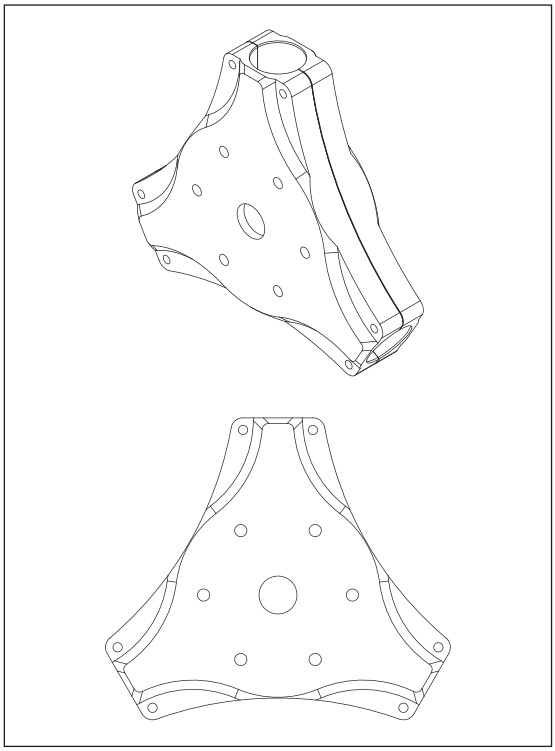

Figure 1: New Model 3-Blade HP Hub

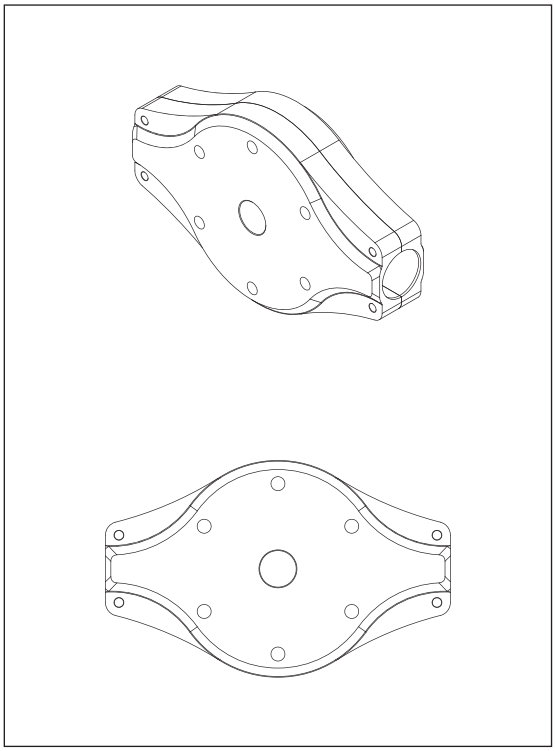

Figure 2: New Model 2-Blade HP Hub

Discussion

Warp Drive Inc has identified that newer model HP hubs may crack when paired with some models or configurations of Continental O-200, Continental C-90, or Lycoming O-235 engines. No complete hub failures have resulted from this issue. Improper bolt torquing can negatively contribute to this issue. Be sure to tighten all bolts to the proper torque specifications with a calibrated torque wrench and ensure all threads are clean and dry.

Figure 3 (below) indicates where cracks may initiate. From the very few cases that have presented themselves, cracking may start under the faceplate or under the engine propeller flange/extension therefore removing the propeller is required.

The newly-imposed inspection interval applies to all newer model HP hubs that look similar to those shown in Figure 1 and Figure 2. We have made a substantial effort to reach-out to owners with these engine-hub combinations but haven't gathered enough data to alter the inspection interval. We are reacting conservatively to this issue. We are working diligently to remove this inspection interval.

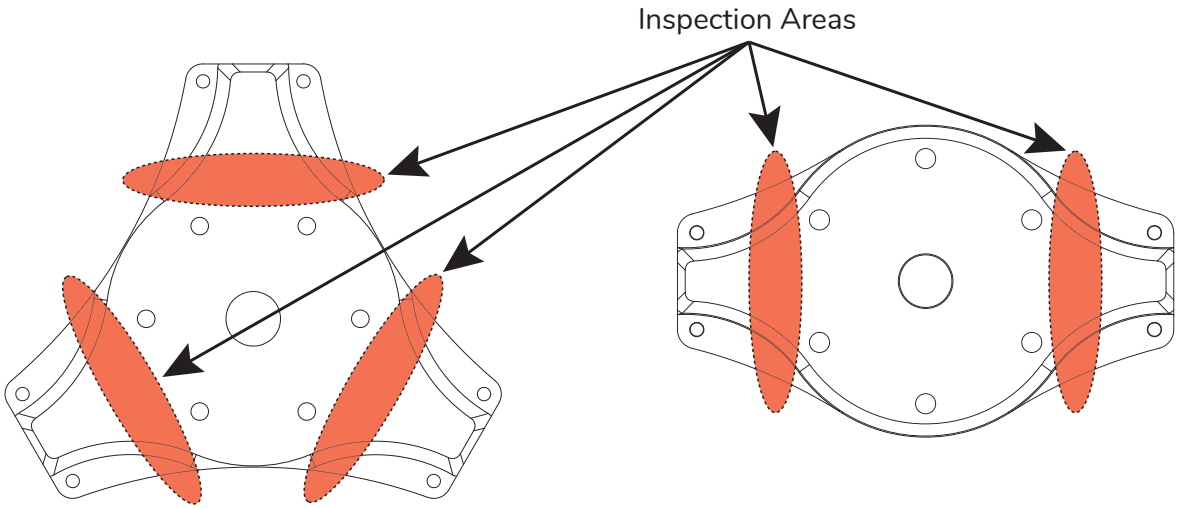

Figure 3: HP Hub Inspection Areas

Hub Inspection Interval

Inspect hub for cracks before next flight and then **every 15 flight-hours or 12 months**, which ever comes first.

Required Action: Hub Inspection

1. If applicable, remove the spinner.
2. Use a Warp Drive Protractor to measure propeller blade pitch. Record this value.
3. Remove 3/8-inch propeller mounting bolts and faceplate (or spinner bulkhead if used).
   NOTE: The propeller clamping bolts do not need to be removed for this inspection.

Required Action: Hub Inspection (continued)

4. Clean and inspect the propeller mounting bolts for damage, replace as required.
5. Remove the propeller assembly from the engine and place on a suitable work surface.
   NOTE: A crack may initiate under the faceplate and/or under the engine propeller flange. The hub must be removed from the engine.
6. Clean both hub halves using mild soap and water and/or denatured alcohol.
7. Visually inspect both hub halves using a flashlight and a 10x magnifying glass. Pay close attention to the areas shown in Figure 3. Figures 4 and 5 below show crack examples.
   NOTE : A NEW CRACK IS SMALL AND DIFFICULT TO SEE. YOU MUST CLEAN THE SURFACE AND LOOK CLOSELY.

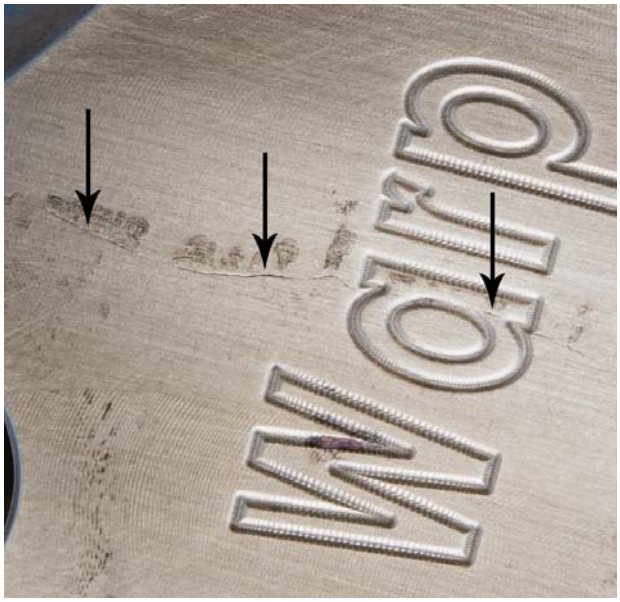

Figure 4: Initial Crack

Figure 5: Crack Propogation

8. If a crack is found, proceed to the “IF A CRACK IS FOUND” section of this service bulletin.
9. Clean the engine propeller flange.
10. Install propeller assembly onto the engine propeller flange.
11. Install faceplate (or spinner bulkhead if used) and 3/8-inch propeller mounting bolts.
12. Ensure there is no gap between the hub and the engine propeller flange.

    CAUTION: Ensure propeller mounting bolt threads, engine propeller flange drive lug threads, and propeller clamping hardware are clean and dry (free of lubricant).

    CAUTION: Tighten propeller mounting bolts evenly to avoid hub damage.

13. Using a calibrated torque wrench, torque the 3/8-inch propeller mounting bolts to 360-in-lbs.
14. Using a calibrated torque wrench, torque propeller clamping bolts to 120-in-lbs.
15. Using a Warp Drive Protractor, measure the pitch of each propeller blade and compare it to the value recorded in Step 2 to verify the propeller blade pitch setting did not change.

IF A CRACK IS FOUND

1. Do not use your propeller.
2. Contact Warp Drive Inc. and return your hub and propeller blades for evaluation.
   NOTE: Include a Repair Form with your propeller.
   www.warpdriveinc.com/downloads

Warp Drive Inc apologizes for any inconvenience this causes. We understand that disassembling and shipping your propeller is a time-consuming task. We take pride in providing high-quality components that make the sport we all enjoy safer. We are very glad that no injuries have resulted from this issue. We are working diligently to remove this inspection interval.

Warp Drive Inc stands behind our products.
If you have any questions, comments, or concerns please contact us.

Thank you for being a Warp Drive customer.

contact@warpdriveinc.com

641-357-6000

1-800-833-9357

Please call toll-free with any questions, comments, or concerns.