

Chapter 61

PROPELLER

FBA-2C1, FBA-2C2, FBA-2C3
FBA-2C4, FBA-2C3T, FBA-2C4T

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61 PROPELLER

61-00 GENERAL

The aircraft is equipped with a Hartzell three blade all metal constant speed, single acting, hydraulically actuated, governor controlled propeller.

The propeller manufacturers instructions (Ref: Hartzell Propeller Owners Manual and Log Book - 115N) must be adhered to at all times. The inspection requirements must be included in inspections as required.

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61-10 PROPELLER

Propeller Removal

Note: Protect the propeller blades by covering the blade shanks with tape, or other suitable material, to protect blade and paint during spinner removal.

- Step 1. Remove propeller spinner by removing screws and washers that secure spinner to bulkhead. Spinner is now free.
- Step 2. Remove cowling adapter ring, 2C1 and 2C2 only.
- Step 3. Sling or support propeller in such a manner that further disconnection will not cause damage to the propeller.
- Step 4. Cut locking wire on the six attachment bolts and loosen the bolts. Ensure that the bolts are loosened off evenly so as to prevent the propeller from being misaligned with the engine propeller shaft. As the propeller is loosened oil will drain from the propeller and propeller shaft, take care to catch the oil in a suitable container.
- Step 5. When bolts are free from engine flange slide propeller forward evenly and gently until it is clear of the engine flange.
- Step 6. Cap the propeller and engine flanges to prevent the ingress of contaminants. Oil will seep from the engine flange for a while, take care that the oil does not flow down the front of the cowling into the air filter. A plastic bag of sufficient size secured over the engine flange works well for this purpose.

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61-13 SPINNER BULK HEAD

Spinner Bulkhead Removal

- Step 1. Propeller must be removed. See 61-10.
- Step 2. Remove washers and self locking nuts that secure spinner bulkhead to the propeller hub. Spinner bulkhead is now free.

To install propeller spinner bulkhead, reverse above steps. Torque bulkhead mounting bolts to 22 foot pounds.

Spinner Bulkhead Installation

Note: Due to alignment pins on the engine flange the propeller can be mounted in alignment with the pins or 180° from that position, ensure that the alignment is correct.

- Step 1. Inspect 'O' ring for wear, cuts, nicks or any other defects. If any defects are noted discard 'O' ring and use a new one. A new 'O' ring will be used to install a fresh overhauled propeller.
- Step 2. Reverse the steps in 61-10, taking care to install propeller evenly on flange.
- Step 3. Torque mounting bolts 60 - 70 ft. lbs.
- Step 4. Lock wire mounting bolts.
- Step 5. Clean all residual oil which may have been spilled.
- Step 6. Check engine oil quantity. Replenish as required.
- Step 7. Carry out independent inspection of the installation.
- Step 8. Carry out an engine run. Cycle propeller through several times to ensure it is fully purged of air and is performing correctly.
- Step 9. Check installation for oil leaks.
- Step 10. Check engine oil quantity. Replenish as required.

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61-21 PITCH CONTROL

The propeller is controlled from the cockpit by means of a cable which runs through the firewall to the propeller governor. The governor is mounted on the top Port side of the engine just aft of the starter ring gear support assembly.

The governor adjusts the propeller pitch angle by increasing oil pressure to the propeller, thereby increasing the pitch, or by restricting oil pressure to the propeller when the cockpit control is moved forward, which will allow the propeller to go towards fine pitch through centrifugal action.

Refer to Hartzell Propeller Owner's Manual and Log Book - 115N.

61-21-10 Pitch Cable

Pitch Cable Removal

- Step 1. Gain access to the engine through engine access panels CP1 (2C1 & 2C2), or remove L/H cowl (2C3 & 2C4)
- Step 2. Disconnect the pitch cable from the propeller governor.
- Step 3. Loosen off the 'scissors' clamp near the forward end of the cable where it attaches to the bracket at the aft of the oil sump.
- Step 4. Remove the pitch cable firewall seal from the forward face of the firewall.
- Step 5. Reach behind the engine control panel, and loosen the lock nut and washer which attach the cable to the panel.
- Step 6. Pull the cable aft into the cabin area, taking care that the forward end of the cable clears all lines, wires, hoses and structure while being drawn through the engine compartment and behind the dash.

Pitch Cable Installation

- Step 1. Place the forward end of the pitch cable into the opening on the engine control panel and slide the cable forward, taking care that the forward end of the cable clears all lines, wires, hoses and structure while being pushed through the dash area and the engine compartment.
- Step 2. Attach the forward end of the cable to the propeller governor and safety.

- Step 3. Install the firewall seal on the firewall. See Chapter 20-30-02 for sealant requirement.
- Step 4. Reach behind the engine control panel and tighten up the nut which holds the throttle cable to the engine control panel.
- Step 5. Carry out independent inspection of throttle cable installation.
- Step 6. Carry out an engine run and operational check of pitch cable installation.

61-21-20 Adjustments

There are two means of adjusting the maximum propeller RPM. The first is by adjusting the propeller; the second is by adjusting the governor.

To adjust the propeller and the propeller governor, refer to Hartzell Owners Manual.

61-22 GOVERNOR

Removal and Installation

- Step 1. Gain access to the propeller governor by removing the port nose cowl (2C1 & 2C2), or removing L/H cowl (2C3 & 2C4). Ref: Figure 06-30-03.
- Step 2. Disconnect the governor control cable from the governor.
- Step 3. Remove the four nuts which hold the governor to the mounting pad. Governor is now free.
- Step 4. Pull governor off of the mounting pad. Some oil may leak from the pad, take care to place rags in such a manner that the oil does not run down the engine crankcase.

To install Propeller Governor, replace the gasket, then reverse the above steps. Carry out independent installation inspection followed by an engine run to confirm governor performance.

Check engine oil level after engine run.

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