

# Beechcraft SERVICE INSTRUCTIONS

CLASS III

33, 35

No. 0625-248  
ATA Code 61-00

**SUBJECT:** POWER PLANT - PROPELLER, TWO BLADED - INSTALLATION OF McCauley PROPELLERS AS ALTERNATE REPLACEMENTS ON EARLIER DEBONAIR/BONANZA AIRCRAFT

**EFFECTIVITY:** BEECHCRAFT Debonair/Bonanza 35-33, 35-A33 and 35-B33, serials CD-1 through CD-813;  
Bonanza H35, J35, K35, M35, N35 and P35, serials D-4866 through D-7309 except D-7140.

**REASON:** To provide installation information for use of approved McCauley propellers as alternate replacements on earlier Debonair/Bonanza aircraft.

**COMPLIANCE:** When propeller replacement is required.

**DESCRIPTION:** Propellers may be replaced with specified McCauley propellers as required. When McCauley propellers are installed, the engine crankshaft should be checked for the proper oil transfer adapter installation in accordance with the McCauley instructions copied herein. The proper oil transfer adapter applicable to the engine crankshaft and a new spinner assembly must be installed with the new propeller.

**APPROVAL:** FAA Approved - DOA CE-2.

**MANPOWER:** The following information is for planning purposes only.  
Estimated man-hours: 2.5 hours.  
Suggested number of men: 1 man.

**MATERIAL:** The following parts, if required, may be obtained through your BEECHCRAFT Parts and Service Outlet.

AIRPLANE MODEL	APPROVED McCAULEY PROPELLER MODEL	USED ON ENGINE MODEL	QUANTITY	PRICE*
H35	**2A36C23H/84B-0	***O-470-G	1 per aircraft	To be advised
J35, K35 M35	**2A36C23J/84B-0	***IO-470-C	1 per aircraft	To be advised
N35, P35	**2A36C23P/84B-0	***IO-470-N	1 per aircraft	To be advised
35-33, 35-A33 35-B33	**2A36C23D/84B-0	***IO-470-J or ***IO-470-K	1 per aircraft	To be advised

In addition, the following parts may be required as described in the ACCOMPLISHMENT INSTRUCTIONS.

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PART NUMBER	DESCRIPTION	QUANTITY	PRICE*
**D3290A	Spinner Assembly	1 per aircraft	\$68.00 each
***633189	Adapter Plug	1 per aircraft	\$ 4.94 each
***627030	Oil Transfer Tube	1 per aircraft	\$42.50 each
***627032	O-ring	1 per aircraft	\$ .74 each
AN123862	O-ring	1 per aircraft	\$ 5.00 †

NOTE

When any one of the above McCauley propellers is ordered, the Airplane Flight Manual Supplement P/N 35-001111, dated October 4, 1965, or later, must also be ordered and attached to the Airplane Flight Manual when the propeller is installed on the aircraft.

\*Suggested selling price. (Subject to change without notice.)

\*\*Part numbers of McCauley Industrial Corporation, 1840 Howell Avenue, Dayton, Ohio, 45417.

\*\*\*Part numbers of Teledyne Continental Motors, Mobile, Alabama, 36601.

†Price for a minimum buy quantity of 25 parts.

SPECIAL TOOLS:

None.

WEIGHT AND BALANCE:

Replacement of the propellers will affect the airplane empty weight and center of gravity.

The weight of the McCauley model 2A36C23 propellers including the D3290A spinner is 66 lbs., +1 arm. The weight of the propellers which may be removed is as follows:

BEECHCRAFT model 278 propeller with 278-209-84 or 278-213-84 blades (with counterweights) and including the spinner, 73 lbs., +1 arm.

BEECHCRAFT model 278 propeller with 278-208-84 or 278-214-84 blades (without counterweights) and including the spinner, 69 lbs., +1 arm.

Flottorp F12A propeller with 8400-0 blades and including the spinner, 70 lbs., +1 arm.

The difference between the weight of the new and the removed propellers should be applied to the last recorded empty weight and the center of gravity.

REFERENCES:

None.

PUBLICATIONS AFFECTED:

It is recommended that a note be made in Figure 47 of all applicable Parts Catalog copies to "See Service Instructions No. 0625-248".

ACCOMPLISHMENT

INSTRUCTIONS:

McCauley propellers may be installed on the specified earlier aircraft as follows.

1. Remove the nuts from the six studs which attach the propeller hub to the engine crankshaft flange.
2. Place an oil absorbing cloth under the propeller hub and the engine crankshaft flanges to prevent oil from draining into the engine cowling.
3. Remove the propeller from the engine crankshaft flange.

extension previously used with the propeller are not compatible when installing a McCauley propeller. The extension is not used and the oil transfer tube must be changed on Continental Engines O-470-G, IO-470-C, and IO-470-N as follows:

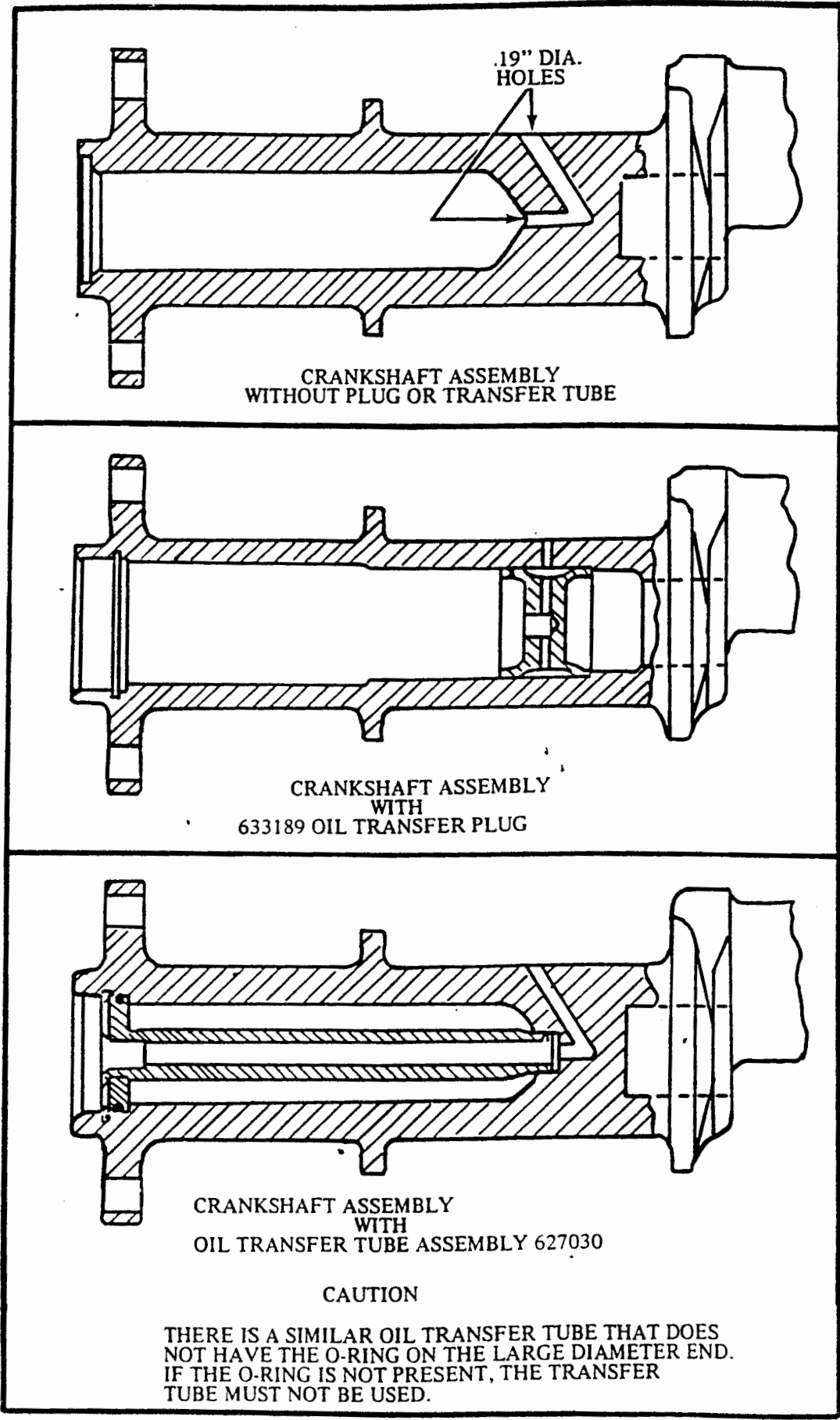
a. There are two types of tubes which must be changed, each of which requires different replacement parts. The only reliable method for determining which replacement parts are necessary is by examination and measurement of the propeller end of the crankshaft.

b. The two types of tubes requiring replacement will be readily identified as having one 7/16-inch diameter hole in the center and two 3/16-inch diameter holes (one on each side of large hole). The inner diameter of the crankshaft near the propeller flange end will measure approximately 1.656 or 1.867 inches, and this size

NOTE

Portions of the following information are taken from the McCauley instructions for determining the crankshaft adapter that will be required.

4. On aircraft with Continental Engines O-470-G, IO-470-C or IO-470-N, the engine oil transfer tube and



CAUTION

THERE IS A SIMILAR OIL TRANSFER TUBE THAT DOES NOT HAVE THE O-RING ON THE LARGE DIAMETER END. IF THE O-RING IS NOT PRESENT, THE TRANSFER TUBE MUST NOT BE USED.

Figure 1. Acceptable Crankshaft Configurations

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determines which replacement parts are required.

c. If the shaft ID is 1.656 inches diameter, remove the oil transfer tube P/N 625475 (Continental) and replace with one each tube P/N 627030 (Continental), O-ring P/N 627032 (Continental), and O-ring P/N AN123862. (Figure 1.)

d. If the shaft ID is 1.867 inches diameter, remove oil transfer tube P/N 633254 (Continental) and replace with oil transfer plug P/N 633189 (Continental). (Figure 1.)

### NOTE

Care should be taken to follow proper Continental instructions when press-fitting the P/N633189 plug in place. It is possible to press the plug in too far and partially block the flow of oil to propeller. The plug should be located so that the center oil passage in plug is in alignment with the oil hole through the wall of the crankshaft.

Existing oil transfer tubes or plugs that must be removed and are a press fit may be removed by using a slide hammer puller, which may be locally fabricated as shown in Figure 2. The center hole in the transfer tube or plug must be threaded to install the puller. Carefully clean out all thread cuttings before and after removing the plug.

5. The McCauley propeller may be used with governor already installed (see table below).

Aircraft Model	Woodward Governors (all revisions)
35-33, A33, B33, C33	210235, 210350, 210452, A210680

Aircraft Model	Woodward Governors (all revisions)
H35 J, K, M35 N,P35	210172, 210175, 210235, 210452, A210680 210235, 210452

A Flottorp governor IF-1 (Garwin 34-825 model) may also be installed on 35-33 series and H35 aircraft, and is satisfactory.

### NOTE

IO-470-J and IO-470-K engines on Debonair/Bonanza 35-33, 35-A33 and 35-B33 should also be checked as described above. Some engines will have the correct plug or tube. If the plug or tube has a single small hole in its center, no change is necessary. (See Figure 1.)

6. Partially disassemble the D3290A spinner assembly by removing the spinner shell from the spinner bulkhead.

7. Install the spinner bulkhead on the propeller hub with six each A1635-6 bolts and six each A1638-4 washers (included with the propeller assembly). Torque the bolts to 75 to 85 inch-pounds and safety-wire between pairs of bolts.

8. Lubricate the A1633-3 O-ring (included with the propeller assembly) with engine oil and insert it into the groove in the propeller hub.

9. Install the propeller and torque the six attaching nuts to 55 to 60 foot-pounds.

10. Install the spinner shell on the bulkhead. Torque the attaching screws (included with the spinner assembly) to 40 to 45 inch-pounds.

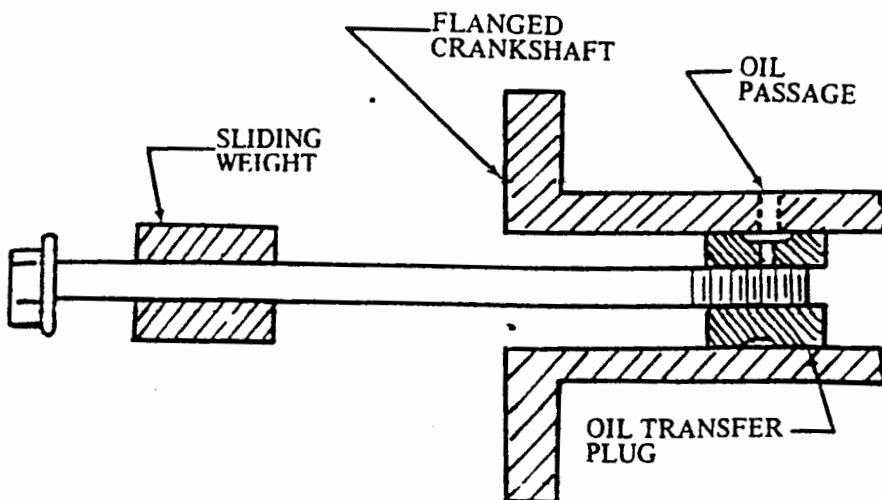


Figure 2. Slide Hammer Puller

RECORD COMPLIANCE:

Upon completion of these Service Instructions, make an appropriate maintenance record entry.

Crank Shaft I.D.

Small Diameter Crank (1.656 in)

	Has	Needs
IO-470-N (pre S/N 97170)	625475	627030 Transfer Tube
IO-470-C	625475	627030 Transfer Tube
IO-470-N (from S/N 97170)	Nothing	Nothing

Large Diameter Crank (1.867 in)

IO-470-N	633189 Plug	Same
IO-470-C	633254	633189 Plug

625475 is a tube with two small holes either side of a center hole (no flange)

627030 is a tube with center hole only (no flange)

633189 is a plug

633254 is a tube with two small holes either side of a center hole (flange on the other end)

# HARTZELL PROPELLER INC.

## SERVICE CENTER

The Propeller Place  
Piqua, Ohio 45356-2634 U.S.A.

# HARTZELL

INSTRUCTIONS FOR INSTALLATION OF HARTZELL PROPELLERS,  
MODEL PHC-L3YF-1RF/F8468A-6R OR BHC-L2YF-1BF/F8468AR,  
ON BEECH MODEL 35-33, 35-A33, 35-B33, 35-C33,  
E33, F33, G33, J35, K35, M35, N35, AND P35 AIRPLANES

1. Remove original propeller and spinner.
2. Install new propeller and spinner in accordance with Hartzell owners manual 115(). Follow Beech Service Instruction 0625-248 for proper oil transfer adapter installation when removing Beech or Flottorp propellers (follow oil transfer instructions only, disregarding McCauley installation instructions).
3. If necessary, remove governor and replace with governor type required by this STC. Ensure that the governor being installed is set at the proper RPM limitation for the specific engine model.
4. Attach Hartzell Propeller Inc. Airplane Flight Manual Supplement to existing Beech Owners Manual.
5. Revise weight and balance records to show removal of original propeller and spinner and the addition of the appropriate propeller and spinner as listed on the Airplane Flight Manual Supplement.

6. If necessary, revise weight and balance records to show the removal of original governor and the addition of one of the following:

Woodward	210452	(3.0 lbs. @ +10)
Woodward	V210992	(2.8 lbs. @ +10)
Woodward	A210680	(3.0 lbs. @ +10)
Woodward	A210760	(3.0 lbs. @ +10)
Woodward	D2100-001	(3.0 lbs. @ +10)
Flottorp	IF-1	(5.0 lbs. @ +10)
Garwin	34-825	(5.0 lbs. @ +10)

FAA  
APPROVED  
MAR 31 1995  
CHICAGO AIRCRAFT  
CERTIFICATION DEPT.

7. Return aircraft to service with appropriate logbook entry and FAA Form 337 referring to this STC.

Date MAR 31 1995