INSTRUCTIONS NO. 1A

Installation of C-2052, C-2052-1, C-2052-2 or C-2052-3 Governor and "T" Drive Kit on Bonanza

These instructions are provided for the installation of Hartzell "T" drive on Continental E-185, E-205, and E-225 engines for the use of a constant speed governor in conjunction with Hartzell HC-12X20-7D, HC-D2X20-7, or HC-A2(X,V)20-4 propellers on Beechcraft Bonanza Model 35 Series Airplane.

1) Install AN-823-6D elbow (45°) on C-137-1B or -3B "T" drive unit as shown on Print C-2052.
2) Install #57354D gasket on governor pad and install governor on C-137-1B "T" drive.

NOTE: For HC-12X20-7D and HC-12X20-7 propellers (diaphragm type), use A-1F of A-1B governor as installed on C-2052 print.

For HC-12(X,V)20-4 propeller, use A-1C or A-1E governor as installed on C-2052 print.

3) Install B-197 bracket on governor as shown on Print C-2052.
4) Install A-199 link on governor with A-121 linkscrew. (2) AN960-416L washers, and H10-4 kaylock nut as shown on Print C-2052.
5) Install (2) AN742D7C Adel clamps on B-197 bracket as shown on Print C-2052, but do not tighten screws.
6) Remove fuel pump from pad on engine. Cover opening of fuel lines with tape. Do not stuff material in lines.
7) Remove adaptor 40722 and gear shaft 40724.
8) Remove gear shaft from adaptor.
9) Remove 25102 seal from adaptor. This is not to be used when using "T" drive.

10) Modify adaptor #40722 by drilling two additional 1/8" holes through and one 3/16" hole 1.750 deep as shown on Print B-145.

    NOTE: After drilling operation, thoroughly clean adaptor to remove chips and dirt.

11) Use AN742D4C adel clamp to tie down cabin heater control line to firewall.

12) Rebend hydraulic brake reservoir supply line to clear governor "T" drive-fuel pump assembly.

13) Cowl flap mechanism must be altered for clearance. While cowl flap is closed, remove the bolt on the right side of the engine that holds the crescent-shaped control arm to the shaft. Looking at the left side of the engine, turn the pear shaped control arm clockwise 75°. Mark the position of the new bolt hole on the right side of the engine. Remove shaft and drill new hole. Reassemble.

14) Relocate fuel pump drain hole and rebend fuel pump air blast tube to suit.

15) Remove fuel lines to firewall and carburetor.

16) Replace fuel line with AN6260-6-29 hose and reroute under engine cylinders with (2) AN742D12C adel clamps.

17) Install 6-C6BX-S elbow on fuel line tee firewall fitting and install original fuel line.

18) Remove two outboard studs on engine pad and install longer studs A-148-2. (See Print C-2052.)

19) Replace gasket 352061 on pad on engine. (See Print C-2052.)

20) Replace gear shaft in adaptor and replace this assembly in engine with the <u>3/16 hole located on top as shown on Print C-2052.</u>

21) Install new AN4045-1 gasket on adaptor (B-145). (See Print C-2052.)

22) Install new AN4045-1 gasket on fuel pump pad of C-137-1B "T" drive, and install fuel pump on "T" drive with #530371 heat shield between fuel pump and "T" drive.

23) Install governor "T" drive-fuel pump assembly on engine pad using (4) H10-4 nuts and (4) AN960-416 washers.

(24) Connect AN6260-6-48 hose to fitting in "T" drive and route over the center of the engine, through the 1" diameter hole in baffling with grommet AN931-11-16 and attach with AN 742C12C Adel clamps to engine. See Print B-2055.

25) For HC-12X20-7D and HC-12X20-7 propellers only: Attach oil line from "T" drive to AN822-6D elbow (90°) installed on the pressure side of valve assembly and install AN822-6D elbow (90°) on the drain side.

26) For HC-12X20-7D and HC-12X20-7 propellers only: Replace the linkage on the valve assembly with A-173-4. (Print 93-BG).

27) For HC-A2(X,V)20-4 propeller only: Attach oil line from "T" drive to AN826-6D elbow (45o) installed on the pressure side of the slip ring assembly. (See Print D-220.) remove old pressure and drain lines and install 1/8" pipe plugs in engine where lines were removed.

28) For HC-12X20-7D and HC-12X20-7 propellers only: Remove 1/8" pipe plug and install 3204-2 coupling. Install AN822-6D elbow (90°) in 3204-2 coupling and install AN6270-6-10 hose between valve assembly and fittings in engine.

29) Install 3A42-7 vernier control 4" to the right of the center of the cockpit just below the dashboard. Control should go straight forward through the 3/4" hole in the firewall and through five-piece Beech fireproof grommet. (Grommet consists of (1) 112436-6 retainer, (2) 112413-4 ball half, and (2) 112412 split grommet.) Route the control over the generator and use AN742D7C Adel clamp to secure control to generator cover. Route control through AN742D7C Adel clamps on B-197 Bracket. (See Instructions No. 5).

30) Install AN316-5R check nut and AN-276-6 ball joint on vernier control.

CAUTION: Minimum of five threads of vernier control to be in AN276-6 ball joint.

31) Push vernier control handle in cockpit forward or "in" position. Attach ball joint to A-199 link with (2) AN960-416 washers and (1) H-10-4 kaylock nut according to Print C-2052. Tighten Adel clamps on B-197 bracket and tighten check nut against ball joint.

NOTE: The normal position of pulley wheel on the governor (hands off) is in high RPM position or low pitch (pulley wheel against the stop on governor). While the governor is in this position, the vernier control handle in the cockpit should be forward or "in" position.

32) Set low pitch stop screw at governor for rated engine RPM. For 2300, this setting can be made on the ground. For engine rated RPM, which is higher than the static RPM with the governor inoperative, this setting must be made in flight by adjusting the propeller control. The propeller control then is not used until after the plane is landed and the low pitch stop screw at the governor is set. For maximum RPM eligible, refer to the airplane specifications for each model airplane.

33) For HC-12X20-7D and HC-12X20-7 propellers only: For the 1/16" diaphragm, the maximum travel allowed with the governor is 3/8". For the 1/8" diaphragm, the maximum travel allowed with the governor is 7/16". Use an 1/8" spacer behind rear cone to obtain 1/8" travel.

IMPORTANT: Do not attempt to use the piston with 1/8" diaphragm without contour rework, according to drawing C-112.

34) Specification for Blade settings for 8433 blades.

Beech Model 35 (Continental E-185 Series and E-225-8 Engines)

Diameter not over 84", not under 82 1/2".
Pitch setting at 30" station:
Low 11° (governor inoperative-Static 2350 RPM)
High 25° (-7 Model)-High 26°-27° (-4 Model).

Beech Model A-35 (Continental E-185 Series and E-225-8 Engines)

Using -7 Model Propeller Only
Diameter not over 84", not under 82 1/2".
Pitch setting at 30" station:
Low 11° (governor inoperative-Static 2350 RPM)
High 25°

34) Beech Model A35, B35, C35, D35, E35, F35 (Continental E-185 Series)

Using -4 Model Propeller Only
Diameter not over 84", not under 82 1/2".
Pitch setting at 30" station:
Low 11° (governor inoperative-Static 2450 RPM)
High 26°-27°

Beech Model G35, 35R (Continental E-225 rated at 225 HP @ 2650 RPM)

Using -4 Model Propeller Only
Diameter not over 84", not under 82 1/2".
Pitch setting at 30" station:
Low 12° (governor inoperative-Static 2600 RPM)
High 26°-27°

For -7 Models, the low pitch is determined by running the engine on the ground at about 1500 RPM with the propeller control in for high RPM. Stop the engine and check the angle at the 30" station without changing position of the blades. The high pitch angle can be determined by measuring the distance between the piston and cylinder of the hydraulic unit as shown in detail B, Drawing B-161. One degree of blade angle is equal to 1/32" of piston travel. For -7D and -7, this piston travel is 1/16" or less. For -4 model, the high and low pitch angles can be measured.