

Beechcraft

Debonair 33 Series

CD-1 Thru CD-1118 , CE-1 Thru CE-179

Bonanza 33 Series

CD-1119 Thru CD-1304 , CE-180 Thru CE-771 Except CE-748

CJ-1 Thru CJ-148

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h. Clean the gasket contact area on the fuel cell and fuel cell access plate.

i. Close the zipper in the baffle.

j. Install a new gasket, and secure the fuel cell access plate in place.

k. Tighten the fuel cell access plate attaching bolts to a torque of 45 to 50 inch-pounds and safety wire.

l. Reinstall the rectangular access plate on the wing leading edge skin.

INSPECTION OF THE FUEL CELL VENT LINES

a. On the 33 and A33, and on the B33, C33, and E33 equipped with 25-gallon (22 gallon usable) fuel cells, plug the tank filler neck opening of the siphon break line and open the tank filler neck. Blow through the end of the vent line and check for air coming into the tank through the extended vent line.

b. The end of the fuel tank vent line should extend 1-3/4 inches below the lower surface of the wing skin and have a gradual curve forward 10 degrees from vertical. The end of the vent is scarfed at a 45° angle, facing forward. This ensures a positive vent pressure. Any configuration other than described herein may create a negative vent pressure, thus pulling the air, or air and fuel from the tank.

c. On airplanes equipped with the flush vent system, block the flush vent and blow into the vent adjacent to the flush vent. Open the tank filler cap and listen for air blowing into the tank. To check for obstructions in the syphon break and for proper operation of the check valve in the vent line outboard of the fuel tank, blow air into the syphon break vent on the underside of the wing, outboard of the main fuel tank, then check that air comes out of the vent and the flush vent.

FUEL TRANSMITTER REPLACEMENT

a. Turn off electrical power.

b. Drain and purge the fuel cells.

c. Remove the access door on the upper wing at station 98.854.

d. Disconnect the transmitter wiring.

e. Cut the safety wire and remove the transmitter support screws.

NOTE

Clean the area around the transmitter before removing the transmitter.

f. Remove the transmitter and gasket from the fuel cell.

g. Inspect the fuel cell for wrinkles or other obstructions that might impede transmitter float travel.

h. Set the new gasket and transmitter in position and ensure that the float is unrestricted through its full travel from stop to stop. The float arm may be bent, if necessary to provide clearance.

i. Install the transmitter support screws, torque to 25 inch-pounds and safety.

j. Connect transmitter wiring, Turn the power on and check the fuel gage for empty reading.

NOTE

If the gage does not read empty, reinspect all transmitters to ensure the float arm is on the down stop and the float clears the bottom of the fuel cell. Check all wiring for faulty connections.

k. Fill the tanks and check the fuel gage for full reading.

FUEL CELL REMOVAL

a. Drain and purge the fuel cells.

b. Remove the outboard fuel cell access plate and fuel quantity sensor. (The outboard fuel quantity sensor is installed only in the 80-gallon fuel system).

c. Remove the inboard access cover and fuel quantity sensor.

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d. Disconnect all fuel and vent plumbing.

e. Unsnap the fuel cell and remove it through the outboard fuel cell access hole.

CAUTION

Tape the edge of the access hole to prevent damage to the fuel cell.

FUEL CELL INSTALLATION

CAUTION

Care should be taken when replacing fuel cells to ensure that the correct type fuel cell is used as a replacement. All 33 series airplanes except CJ-149 and after use baffled fuel cells. CJ-149 and after incorporates a fuel cell with a non-collapsible fuel cell reservoir in place of a baffled fuel cell. To avoid damage to the fuel cells, the fuel cell cavities MUST be clean of any debris before installing a replacement cell.

a. Return the fuel cell through the outboard fuel cell access hole and snap it into place.

CAUTION

Before closing the zipper, inspect the fuel cell for any foreign material. If the cell is not thoroughly clean, it should be cleaned with a lint-free cloth moistened in water, alcohol or kerosene. No other solvent should be used to clean the fuel cell.

b. Close the zipper in the fuel cell dam. Reinstall the filler adapter, flow line, quantity sensors, drain and access covers that were previously removed. Use new Gaskets.

CAUTION

The molded nipple fittings used on the fuel cell are lightweight fittings developed for ease of installation in certain locations in the airplane. To get the best service from this type fitting it

is necessary to exercise certain procedures at the time of the installation. The specific precautions other than the general care in handling are as follows:

1. Insert the flow tube into the fitting until 3/8 inch or more of the tube extends through the fitting.

2. Locate the hose clamp on the fabric-reinforced area of the nipple; it should clear the end of the fitting by 1/4 inch.

3. Torque the hose clamps as indicated in Chart 1. They should be drawn up in one operation; if retightening is necessary, release the clamp completely and wait at least 15 minutes before retightening.

4. Use no sealing paste or gasket compounds.

c. Apply a thin film of Simonize wax to metal flow tubes as a lubricant. No other lubricant should be used.

Fuel Cell Nipple Clamp Torques

Inside diameter (in inches) of nipple	Inch-pounds of torque
Outside diameter (in inches) of tube	for fuel cell nipple clamps
.25 thru .62	12 to 16
.75 thru 1.00	15 to 20
1.50	25 to 30
2.00	30 to 35
3.00	35 to 40

CAUTION

If replacement Goodyear fuel cells have clear/yellow nipples, torque the fuel cell nipple clamps to 25 ± 5 inch-pounds.

FUEL QUANTITY INDICATOR CALIBRATION (CE-409 AND AFTER, CJ-52 AND AFTER)

EMPTY POSITION

a. Make certain the fuel cell is empty.

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- b. Remove the access cover from over the transmitter.
- c. Disconnect the electrical wiring.
- d. Remove the fuel quantity transmitter.
- e. Bend the arm as required to get a correct reading on the indicator.
- f. Install the transmitter.
- g. Connect the electrical wiring.
- h. Install the access cover.

FULL POSITION

- a. Remove the glareshield from over the instrument panel.
- b. Locate the two printed circuit boards located on the back of the instrument panel just to the left of center.
- c. Locate the calibration screw in the back of each printed circuit board

NOTE

Calibration should be done only with a bus voltage of $14.25 \pm .25$ or $28.25 \pm .25$ as applicable to the airplane system.

- d. Calibrate the fuel quantity indicator as follows:

- 1. Ensure that the fuel tank that corresponds to the fuel quantity indicator being calibrated is full.

- 2. Turn the calibration screw in back of the corresponding circuit board until the needle on the fuel quantity indicator points to the "F" (full) mark.

- e. Reinstall the glareshield.

ENGINE FUEL PUMP ADJUSTMENT

- a. Tee into either the fuel pump outlet fitting or metering unit inlet fitting (whichever is more accessible) with an appropriate pressure gage and extended fuel line to observe fuel pump pressures. (This gage should be vented to atmosphere).

- b. Adjust the engine idle speed to the specified RPM with the throttle plate adjusting screw, clockwise to increase, counterclockwise to decrease air.

- c. Turn the fuel pump relief valve adjustment on the centerline of the pump, to obtain the pump pressure limits specified for idle RPM, clockwise to increase pressure, counterclockwise to decrease pressure.

- d. Maintaining idle pump pressure and idle RPM, obtain the correct idle mixture with the adjustment provided at the metering unit. Optimum idle mixture exists if, upon leaning with the mixture control, an increase of 25 to 50 RPM is experienced.

NOTE

The preceding steps have provided the correct idle pump pressure, correct fuel flow and correct metering cam to throttle plate orientation.

NOTE

Do not adjust idle mixture without first determining that idle pump pressure is correct.

- e. Advance to full throttle and maximum rated engine RPM to check pump pressure and nozzle (metered) pressures or flows.

NOTE

Nozzle pressure or flow values may be monitored by either the gage in the airplane or an auxiliary pressure gage teed into the fuel manifold valve pressure port.

Criteria for full throttle full rich adjustment of the fuel system should be specified nozzle pressure or flow values. Unmetered pump pressures at full throttle are included for reference only and may be used for troubleshooting the metering unit portion of the fuel system.

- f. To obtain specified values of nozzle pressure or fuel flow at full throttle and rated RPM, turn the variable orifice adjusting screw (located on the side of the pump) clockwise to increase