

## PIPER COMANCHE SERVICE MANUAL

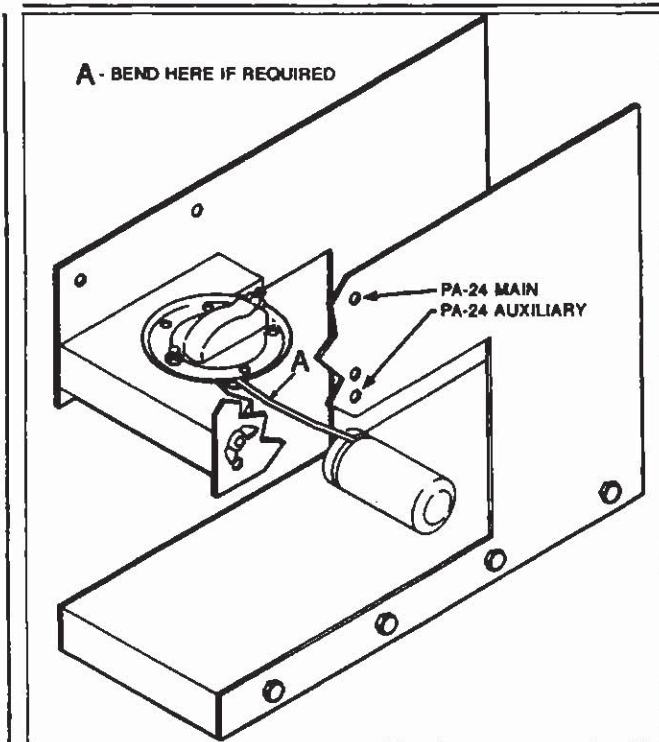


Figure 8-9. Checking Sender Unit

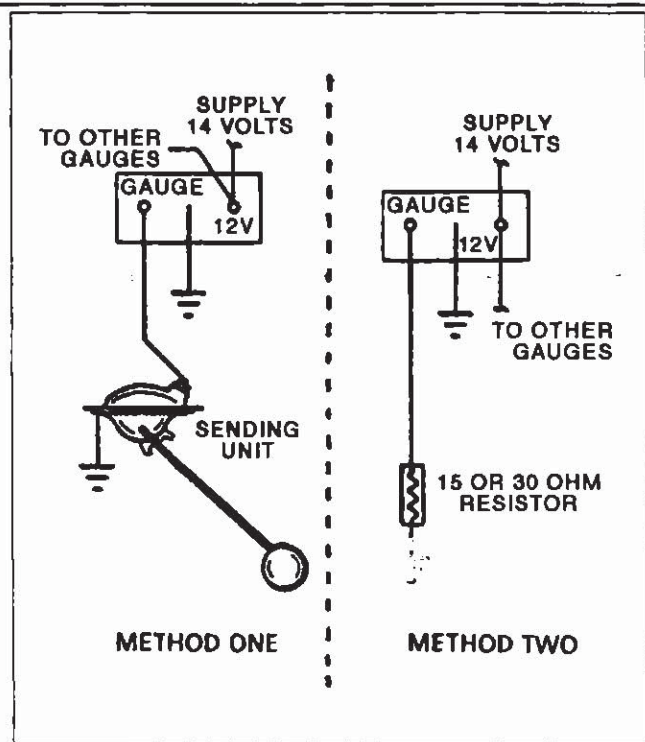


Figure 8-10. Checking Fuel Gauge

4. After the sender has been adjusted, check for the proper amount of resistance by the following procedure:

- (a) Connect an ohmmeter to the sender unit.
- (b) Position the float arm against its bottom stop and ascertain the ohmmeter indicates 0.0 to 0.5 ohms resistance.
- (c) Slowly move the float arm from the bottom stop to the top stop. The ohmmeter needle should steadily move up the scale, without fluctuation, as the float arm is moved.
- (d) With the float arm against its top stop, the ohmmeter should indicate 29.6 to 31.3 ohms resistance (except for individual PA-24-400 auxiliary cell senders which should indicate 14.6 to 16.3 ohms resistance). If incorrect resistance or fluctuation is found, the sender should be replaced.

### c. Wiring Check.

1. Check all ground connections throughout the indicating system for corrosion or loose connections that may cause excessive resistance in the circuit.
2. Check all splices and terminal connections for corrosion and security.
3. Check wiring between connections for excessive resistance due to frayed or broken strands.

### d. Gauge Check.

#### 1. Sender Method:

- (a) Position and secure a calibrated main cell sender to the fabricated checking jig.
- (b) Connect the sender directly to the gauge being checked using Number 16 or larger wire. (Refer to Figure 8-10.)
- (c) Connect a 14-volt power supply to the electrical system of the airplane.
- (d) Operate the power supply and move the sender float arm through its travel. Ascertain that the empty and full positions of the sender and the gauge correspond. If not, the gauge should be replaced.

## FUEL SYSTEM

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2. Resistor Method:

(a) Connect a 15-ohm resistor to the sender unit terminal of the gauge being checked. (See Figure 8-10.)

CAUTION

Make certain the sender resistor is connected to the proper side of the gauge.

- (b) Connect a 14-volt power supply to the electrical system of the airplane.
- (c) Operate the power supply and ascertain the gauge indicates one-half full.
- (d) Repeat the procedure using a 30-ohm resistor which should cause the gauge to indicate full.
- (e) If the gauge does not indicate properly, it should be replaced.

8-10b. Removal of Fuel Sender.

- a. Remove screws attaching the oval cover plate to the top of the wing.
- b. Disconnect electrical leads from the sender unit.
- c. Remove screws and washers attaching sender to mounting plate and remove sender.

8-10c. Installation of Fuel Sender.

- a. Place the sender unit gasket on mounting plate and install sender.
- b. Secure sender to mounting plate with washers and screws.
- c. Connect electrical leads to sender.
- d. Install cover plate and secure with screws.

8-11. Repair of Fuel Cell.

CAUTION

No repairs are to be made on the radius of a cell or in the fitting area of a cell. Cells with such damage are to be returned to the factory for repairs. No damaged areas such as cuts and tears larger than 1 inch are to be repaired in the field.

a. Outside the Cell.

- 1. Use a piece of synthetic rubber coated fabric (U.S. Rubber Co. 5200 outside repair material) large enough to cover damage at least 2 inches from cut in any direction. Buff this material lightly and thoroughly with fine emery cloth (180 grit) and wash with Methyl Ethyl Ketone solution (U.S. Rubber Co. 3339) to remove buffing dust.
- 2. Cement buffed side of patch with two coats of U.S. Rubber Co. 3230 cement or Minnesota Mining Co. EC-678. Allow each coat to dry 10 to 15 minutes.
- 3. Buff cell area to be patched lightly and thoroughly with fine emery cloth and wash with 3339 solution to remove buffing dust.
- 4. Cement buffed area with two coats of U.S. Rubber Co. 3230 or Minnesota Mining Co. EC-678 cement. Allow each coat to dry 10 to 15 minutes.
- 5. Freshen cemented area of patch and cemented area of cell with 3339 solution.
- 6. While still tacky, apply edge of patch to edge of cemented area on the cell. With a