

Propeller rpm is controllable by an electric motor which will vary the pitch of the blades throughout its full range. The blade angle is changed by a gear and cam arrangement driven by an electric motor mounted on the engine nose case. The motor is controlled by a three-position toggle switch on the control console, just to the left of the throttle. To select propeller rpm, the switch is held in the increase or decrease rpm position until the desired rpm is obtained; then the switch is returned to the center OFF position.

An optional governor which electronically controls the propeller pitch change motor may be installed. The governor changes the propeller blade angle with variations in load or engine output to maintain a constant engine rpm. The rpm is selected by turning a small knob just above the propeller control switch on the console. This knob has positions for take-off and climb; positions further counter-clockwise will select cruise settings. The propeller control switch used with the governor installation has both the standard HI RPM, LO RPM and OFF positions as well as an AUTO (automatic control) position, so that both manual and governor control are available.

FUEL SYSTEM

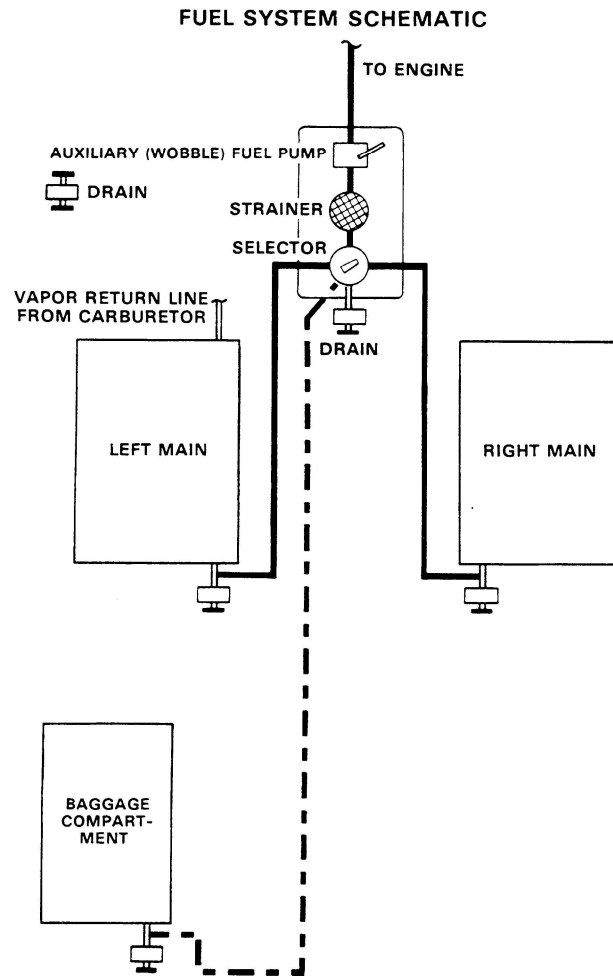
The airplane is designed for operation on 80/87 grade (red) aviation gasoline. In the event this grade is not available only a higher rated fuel shall be used.

CAUTION

Before refueling, make certain the airplane and fuel dispensing unit are properly grounded. Failure to do so creates a fire hazard.

Section VII
Systems Description

BEECHCRAFT
Bonanza A35 and B35



FUEL CELLS

Fuel supply is carried in two bladder-type cells with a total capacity of 20 gallons each, located in the wings just outboard of the fuselage. Usable fuel of each 20 gallon main tank is 17 gallons.

Fuel is fed from the cells to a selector valve just forward of the front seat, on the left side, then through a strainer to the fuel pump and the engine. The fuel tank fillers are located in the wing leading edges.

CAUTION

Do not allow bladder fuel cells to remain completely empty for any length of time, since this may result in cracking and checking of the inner liner of the cell. If fuel cells are to be left empty for longer than a week, a thin coating of light engine oil should be sprayed, flushed or rubbed on the inner liner of the cells.

AUXILIARY FUEL CELL

Optional fuel system: Either one 10 gallon or one 20 gallon auxiliary tank installed in the baggage compartment. All of the capacity of the 10 gallon tank is usable. The 20 gallon tank adds 19 gallons usable fuel to the system.

FUEL QUANTITY

Fuel quantity is measured by float operated sensors, located in each fuel tank. These transmit electrical signals to the indicator through selector switches on the panel that indicate fuel remaining in the tank selected. There are sensors in each fuel tank connected to the switches and indicator.

The fuel level of the fuselage auxiliary cell may be read by switching the auxiliary fuel gage selector switch on the subpanel to Aux position.

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AUXILIARY (WOBBLE) FUEL PUMP

A manually operated pump incorporated with the fuel selector unit provides pressure for starting and emergency operation if the engine-driven pump should fail. The manual pump is operated by working the handle up and down. Leave fuel unit handle in full down position and engaged in selector valve when not using wobble pump.

ELECTRIC PRIMER

The engine may be equipped with an electric primer which injects a small quantity of fuel directly into the cylinders, for easier starting. The primer is operated by pressing a push button switch on the control console, which opens a solenoid valve to direct fuel through the primer lines. Fuel pressure must be built up with the hand pump to operate the primer, which should be used in brief shots while turning the engine with the starter until it starts firing. If the primer button is held down, it will flood the cylinders with fuel.

FUEL TANK SELECTION

The fuel selector unit handle is located forward and to the left of the pilot's seat. Take-offs should be made using the left main tank and landings should be made using the main tank that is more nearly full. In no case should a take-off be made if the fuel indicators are in the yellow band or, with less than 10 gallons of fuel in each main tank.

SWITCHING FUEL TANKS

When switching fuel tanks, if one tank is allowed to run completely dry, it may be necessary to place the mixture control to Full Rich position and maintain fuel pressure with the Auxiliary (Wobble) Fuel Pump to aid in restarting the engine. Close the throttle as necessary to prevent engine overspeed on starting. As soon as the engine is running normally, discontinue the Auxiliary (Wobble) Fuel Pump and reset the mixture control.

The pressure type carburetor returns about 3 gallons per hour of excess fuel to the left main cell regardless of the cell selected. To provide space for the returned fuel, the left main cell should be used to approximately half full before switching.

If the engine is allowed to stop firing, due to insufficient fuel, refer to the EMERGENCY PROCEDURES section for the Air Start procedures.

FUEL REQUIRED FOR FLIGHT

It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and be certain of ample fuel for a flight. Takeoff is prohibited if the fuel quantity indicators do not indicate above the yellow arc. An inaccurate indicator could give an erroneous indication of fuel quantity. A minimum of 10 gallons of fuel is required in each main tank before takeoff.

The filler caps should be removed and fuel quantity checked to give the pilot an indication of fuel on board. The airplane must be approximately level for visual inspection of the tank. If the pilot is not sure that at least 10 gallons are in each tank, add necessary fuel so that the amount of fuel will be not less than 10 gallons per tank at takeoff. Plan for an ample margin of fuel for any flight.

LANDING GEAR SYSTEM

CAUTION

Never taxi with a flat strut.

The landing gears are operated through adjustable linkage connected to an actuator assembly mounted beneath the front seats. The actuator assembly is driven by an electric motor. The landing gears may be electrically retracted and extended, and in an emergency may be extended manually.