1970 BUICK RIVIERA ELECTRIC FUEL PUMP

Buick Riviera (1970)

DESCRIPTION

1) Pump is located in fuel tank, and is an integral part of the tank unit assembly, which includes the fuel gauge metering unit. Both metering unit and pump are positioned and supported by the fuel tube of the tank unit. Pump consists of a rotating turbine-type hydraulic pump directly coupled to a permanent magnet motor. *NOTE – Pump is factory crimped and cannot be disassembled for repair.*

2) A single pole, double throw control switch is located near the oil filter and actuated by engine oil pressure. At approximately 3 psi, one electrical circuit is broken and another circuit established. Three fixed connections are provided on switch to make contact with a matching three terminal wiring connector in a splash-proof boot.

OPERATION

Pump is energized when ignition switch is in the start (cranking) position. After engine starts, pump receives current through oil pressure switch as long as there is approximately 3 psi of oil pressure. If, for any reason, oil pressure drops below 3 psi, contact is broken at the pressure switch and pump is deactivated. *NOTE – Two fuses are involved in fuel pump operation; the 4 ampere in-line fuse located in the dark blue wire at front of cowl just above the master cylinder, and the 4 ampere "Gauges" fuse on the fuse block.*

TESTING & TROUBLE SHOOTING

With engine running, check for leaks at all feed hoses, loose connections, plugged or cracked hoses. Disconnect feed line near carburetor, ground distributor terminal of coil with a jumper wire so engine can crank without firing and place a suitable container at end of line, crank engine a few revolutions. If no fuel flow, or only a little flows through, feed line is clogged or pump is inoperative. If fuel flows freely, it may be assumed that pump and line are in working order.

PRESSURE TEST

Connect a suitable pressure gauge, and with gas line near carburetor disconnected, electrical accessories turned OFF and engine at idle speed, check pressure. Pressure should be 4½ lbs. minimum. Check supply voltage and ground at pump. If voltage to pump is 12 volts or more, but pressure is low, replace pump.

VOLUME TEST

Disconnect feed line from carburetor and place end in a suitable container. Observe second hand of a clock or watch, run engine at idle until a pint of fuel is attained, one pint should be pumped in 30 seconds. If low fuel volume, check line for restriction or low voltage to pump. If line is clear and voltage to pump is 12 volts or more, replace pump.

Engine Won't Run – 1) Turn ignition switch on and make sure oil and alternator lights are lit. If not, check "Gauges" fuse on fuse block and replace if burned. Make sure oil light goes out while cranking engine. If not, replace in-line fuse in dark blue wire just above master cylinder, and again check to make sure oil light goes out during cranking.

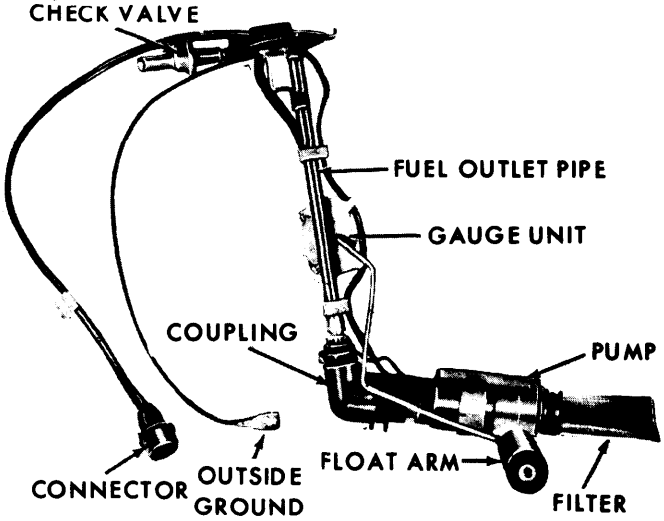
2) Make sure there is sufficient fuel in tank, then perform volume test outlined above. If fuel flow OK, check carburetor inlet filter. If filter OK, look for trouble in ignition system.

3) If no fuel flow, unplug connector from oil pressure switch. With ignition switch on, check two parallel slots of connector with a test light. If test light lights in one slot, place jumper wire between two parallel slots and again check for fuel flow. If no fuel flow, leave ignition on and jumper in place. Reinstall fuel hose and raise car. Unplug connector at fuel tank and check dark blue wire terminal with test light. If test light lights and ground connection to frame is clean and tight, remove rubber hose from tank unit tube and again check for flow. If fuel flow is OK, check fuel lines for restriction. If no fuel flow, replace pump.

Engine Cuts Out At Heavy Acceleration or High Speed – Perform pressure test outlined above. If pressure is adequate, perform volume test outlined above. If fuel pump pressure is low, check voltage at fuel tank connector, if voltage is 12 volts or more, and fuel flow is alright, replace pump. If only fuel flow is low, remove rubber hose from tank unit and repeat flow check. If fuel flow is still low, replace pump. If fuel flow from tank is alright, check for a dented, pinched or kinked fuel line. If pressure and flow are both alright, check carburetor inlet filter, if filter is alright, difficulty is being caused by an ignition system defect.

REMOVAL & INSTALLATION

Removal – Raise car and disconnect the two-terminal connector at fuel tank. Remove ground wire screw, lower car, pull back trunk carpeting and remove five screws from access hole and remove cover. Unscrew retaining cam ring and remove fuel pump-tank unit assembly.



ELECTRIC FUEL PUMP & GAUGE UNIT

Replacement – Remove flat wire connector from plastic clip on fuel tube, squeeze clamp and pull pump straight back (½ inch). Remove two nuts and lockwashers and conductor wires from pump terminals. Squeeze clamp and pull pump straight back to remove from tank, being careful not to bend circular support bracket. Slide replacement pump through circular support bracket until resting against rubber coupling (make sure pump has rubber isolator and saran strainer attached). Attach two conductor wires to pump terminals, making sure that flat conductor is attached to terminal on side away from float arm. Squeeze clamp and push pump into rubber coupling. Replace flat wire conductor in plastic clip on fuel pick-up tube.

Installation – Reverse removal procedure.

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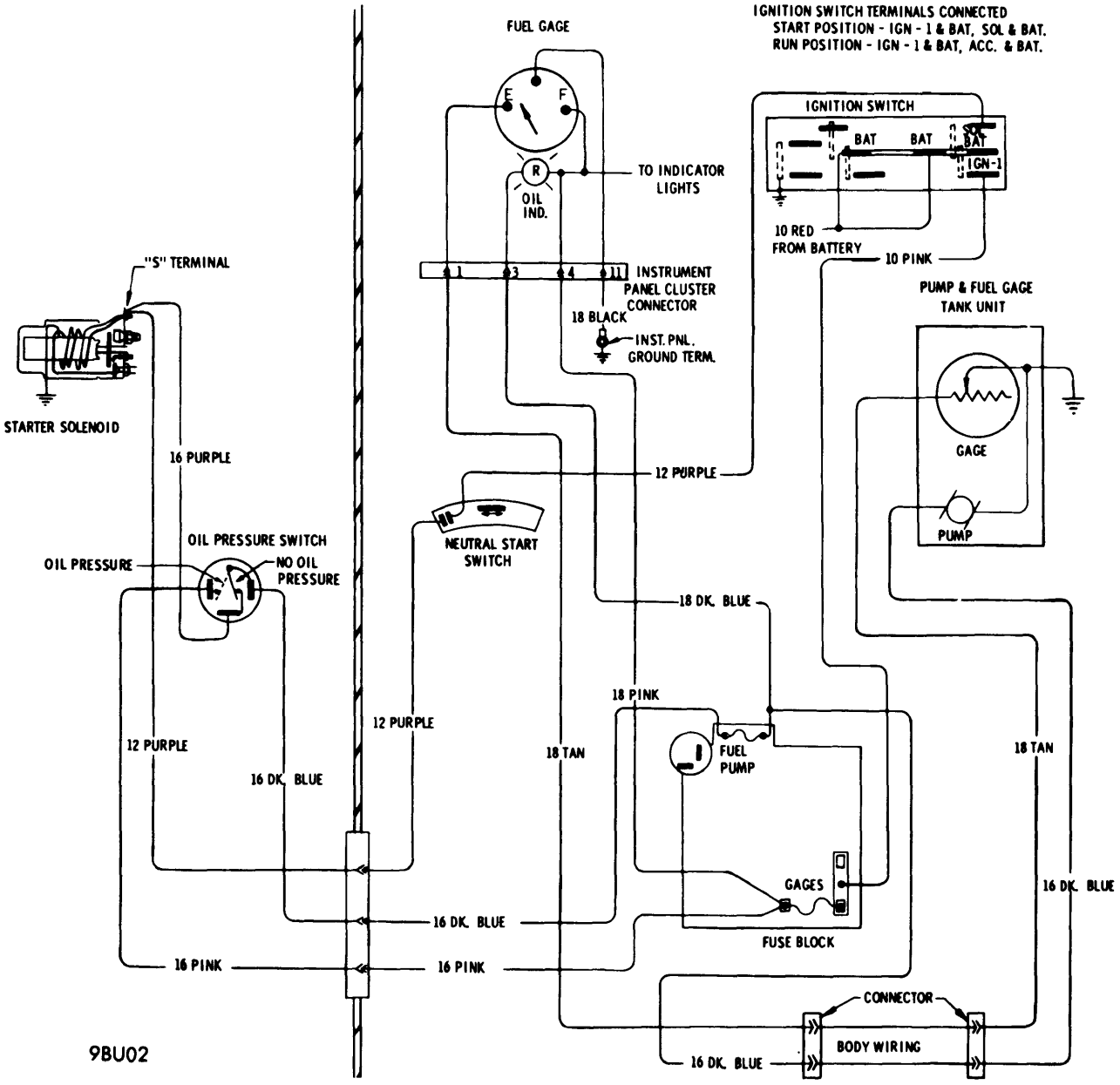

1970 BUICK RIVIERA ELECTRIC FUEL PUMP CIRCUIT