Fuel Selector Valves — Electric

FORD & GENERAL MOTORS

Ford
("F" & "E" Models Only)
General Motors
("C" & "K" Models Only)

DESCRIPTION

Fuel tank selector valves are used in conjunction with auxiliary fuel tanks on subject models. Systems consist of a main and auxiliary fuel tank, a selector valve to route fuel from desired tank through fuel pump, a selector switch to choose tanks, necessary fuel lines and electrical wiring.

OPERATION

Ford — The electrically actuated fuel selector valve is spring loaded and in the de-energized state feeds the fuel pump from the front tank on "F" models, and the rear tank on "E" models. When activated by a minimum of 9.5 volts by the selector switch, the fuel feed transfers to the rear tank on "F" models and the front tank on "E" models.

General Motors — Two types of valves are used on GM trucks. Those models with a fuel return system use a 6 port valve, while those without a fuel return system use a 3 port valve. Valve operation is the same for both valves. When instrument panel switch is in the Aux. (left hand) position, selector valve solenoid is energized. When switch is in Main (right hand) position, selector valve solenoid is de-energized.

The dash switch is energized only when the ignition is on. When vehicle is operated in Aux. position, fuel in feed lines as well as return lines (if equipped) will always return to main tank when ignition is turned off. Operation of Aux. switch position with main tank full will result in overfilling of main tank.

TESTING

Ford — **1)** Turn ignition switch "ON" and place fuel selector switch on rear for "F" models, or front for "E" models. Disconnect selector valve feed wire and connect a 12 volt test light between wire harness terminal and ground.

2) If light does not come on, check fuse at fuse block. If fuse is blown, check fuel valve circuit and valve for short. If fuse is okay, check switch for continuity. If no continuity, replace switch. If switch is okay, check wiring and valve for open circuit and repair as necessary.

3) If test light comes on, reconnect feed wire and place a paper clip on end of valve opposite port end. Paper clip should adhere to valve. If not, ground valve case to frame rail with short piece of wire and repeat paper clip test.

4) If paper clip does not adhere, replace valve and solenoid assembly. If paper clip adheres, remove valve mounting bolts and clean mounting surface. Install new mounting bolts that are zinc or cadmium plated.

5) If the paper clip adhered in step **3)** position selector switch on front for "F" models, or rear for "E" models. Pinch off fuel hose from valve to main tank and remove fuel line from carburetor and place end in a container. Remove battery feed from coil and crank engine.

6) If fuel flows continuously, remove and replace valve solenoid assembly. If no fuel flows into container, unpinch fuel hose and crank engine to reestablish fuel flow.

7) Place selector switch on rear for "F" models, or front for "E" models. Pinch off hose from valve to rear tank on "F" models, or front tank on "E" models. Crank engine and observe fuel flow.

8) If fuel flows continuously, replace solenoid and valve assembly. If no fuel flows, system is operating correctly and problem has been misdiagnosed.

NOTE — *Testing procedures for General Motors vehicles were not available from manufacturer.*

REMOVAL & INSTALLATION

SELECTOR VALVE

Ford — **1)** Disconnect fuel hoses from selector valve. Remove electrical connections. Remove nut and ground wire. Remove valve attaching bolts and remove valve.

2) To install, reverse removal procedures, making sure to attach the ground wire. Specified mounting bolts must be installed as the solenoid is internally grounded.

NOTE — *Removal and installation procedures for General Motors vehicles were not available from maufacturer.*