

# FUEL SYSTEM

## ALL MODELS

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## DESCRIPTION AND OPERATION

### FUEL PUMP

The 1.9 liter engine uses a push rod type fuel pump.

The push rod is actuated by an eccentric on the distributor shaft. The push rod is held in contact with the eccentric at all times by a push rod spring. Each time the push rod is on the high part of the eccentric, the lighter diaphragm spring will push the diaphragm to replace any fuel used in the carburetor. The diaphragm seldom operates through a full stroke; under normal driving conditions, the diaphragm moves only a few tenths of an inch.

Fuel pump pressure is determined by the compression of the diaphragm spring. Low pressure or pressure leak-down generally indicates a leaky diaphragm or check valves.

Two holes in the lower part of the fuel pump serve to ventilate the space below the diaphragm and to drain any fuel which may have entered. If any fuel comes from these holes, this indicates a defective diaphragm.

When replacing the fuel pump, make sure the asbestos spacer is in place with a gasket on each side. See Figure 6C-1. Because of the location of the fuel pump eccentric on the distributor shaft, the fuel pump

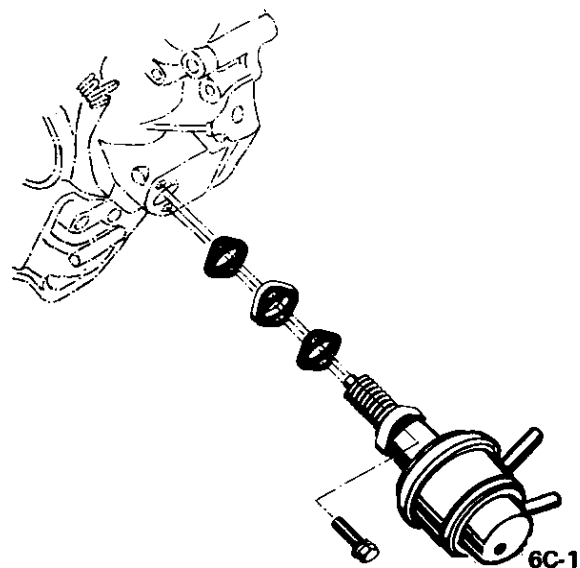


Figure 6C-1 Installing Push Rod Type Fuel Pump

must always be removed before the distributor can be removed.

**EVAPORATION CONTROL SYSTEM**

1. The function of the fuel evaporation control system is to absorb the fuel vapors developing in the fuel tank, especially when vehicle is parked, due to atmospheric pressure and temperature influences, and to release these fuel vapors during vehicle operation.

2. This system utilizes the property of the activated carbon to absorb and expel fuel vapors. The activated carbon container is installed on the left front side of the engine compartment. The fuel tank has a non-vented tiller cap. Vent hoses are joined in the area of the tank. A plastic evaporation line leads from there along vehicle underbody to the activated carbon container.

3. A small tube above the throttle valve body connects the carburetor to the activated carbon container. In this way, the fuel vapor collected in the activated carbon container is fed through the carburetor into the combustion chambers during engine operation.

4. The carburetor is provided with an internal and outside ventilation, the activated carbon container is also connected to the outside ventilation (only effective when engine is idling). In this way, the fuel vapors escaping to the outside during engine idle are collected by the activated carbon container and fed into the combustion chambers.

5. The vent lines are connected to the upper part of the activated carbon container. Fresh air enters through a foam rubber filter at the lower part and

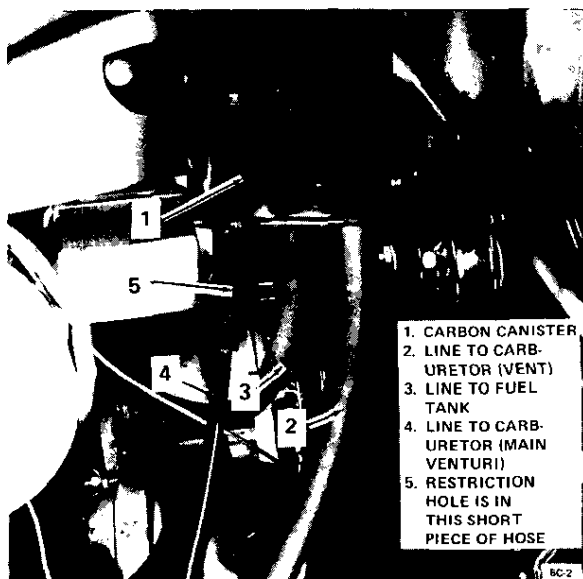


Figure 6C-2 Carbon Canister

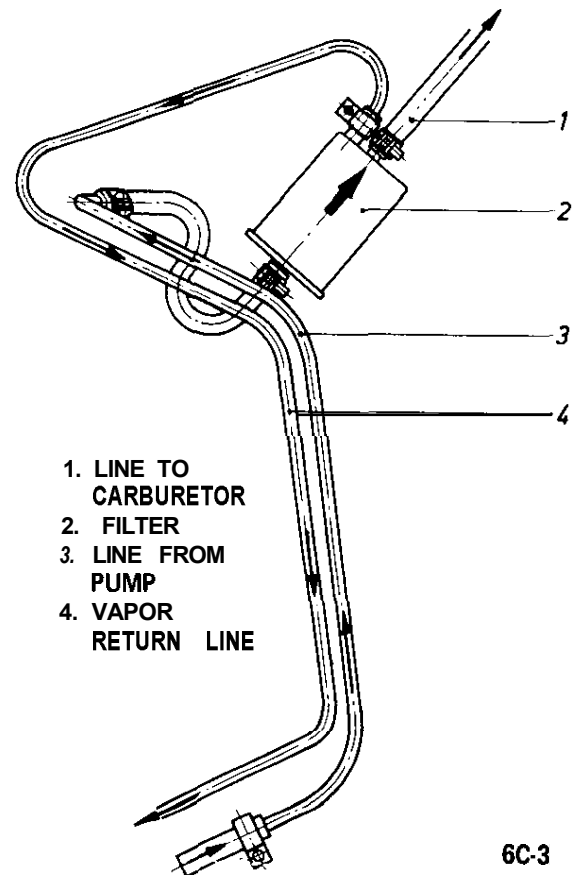
flows, together with the fuel vapor, to the carburetor. Metered bores in the hose fittings of the fuel tank control the air and fuel vapor flow through the activated carbon container to the carburetor, and the pressure release in the fuel tank and ensure complete purging of the carbon container.

Care must be taken not to mix up lines at the activated carbon container. See Figure 6C-2.

6. The metered bores in the fuel tank fitting and an overflow protection in the fuel tank, which prevents a complete filling of the tank, prevents fuel flows into the activated carbon container rendering it useless.

**FUEL FILTER**

An AC fuel filter type (GF 423) is being used on all 1973 Opels. A vapor return line returns vapors in the fuel line back to the fuel tank. Proper installation of the filter is essential. The vapor return line connector must be on top (highest point) for proper operation. See Figure 6C-3.



6C-3

Figure 6C-3 Fuel Filter

**MAINTENANCE AND ADJUSTMENTS**

**CLEANING FUEL PUMP STRAINER**

**CAUTION:** Because the fuel pump is below fuel tank level, fuel will drain from the tank, when the supply line is disconnected from the fuel pump.

1. Pull fuel supply line and rubber connector from fuel pump. Plug rubber connector to prevent fuel loss.
2. Remove fuel pump cap, gasket and plastic strainer.
3. Cover center opening in sediment bowl with finger and blow out sediment bowl with compressed air.
4. Wash plastic strainer in solvent; if strainer does not clean-up or is damaged, replace strainer.
5. Install clean parts, noting the following:

(a) Strainer must be properly seated with projections facing upward.

(b) A new cap gasket must be positioned over strainer.

(c) Sealing ring must be in place on cap retaining screw.

6. Reconnect fuel supply line. Start engine and check for leaks.

**EVAPORATION CONTROL SYSTEM**

Proper performance of the system requires the use of a non-vented fuel tank cap, hose connections be leak-free, and all hoses routed correctly to avoid a pinched or blocked line.

Maintenance requirements demand only that the accumulator purge air filter, an oiled foam filter assembled in the bottom of the canister, be replaced at 12,000 mile intervals. Under extremely dusty conditions, more frequent attention may be required.

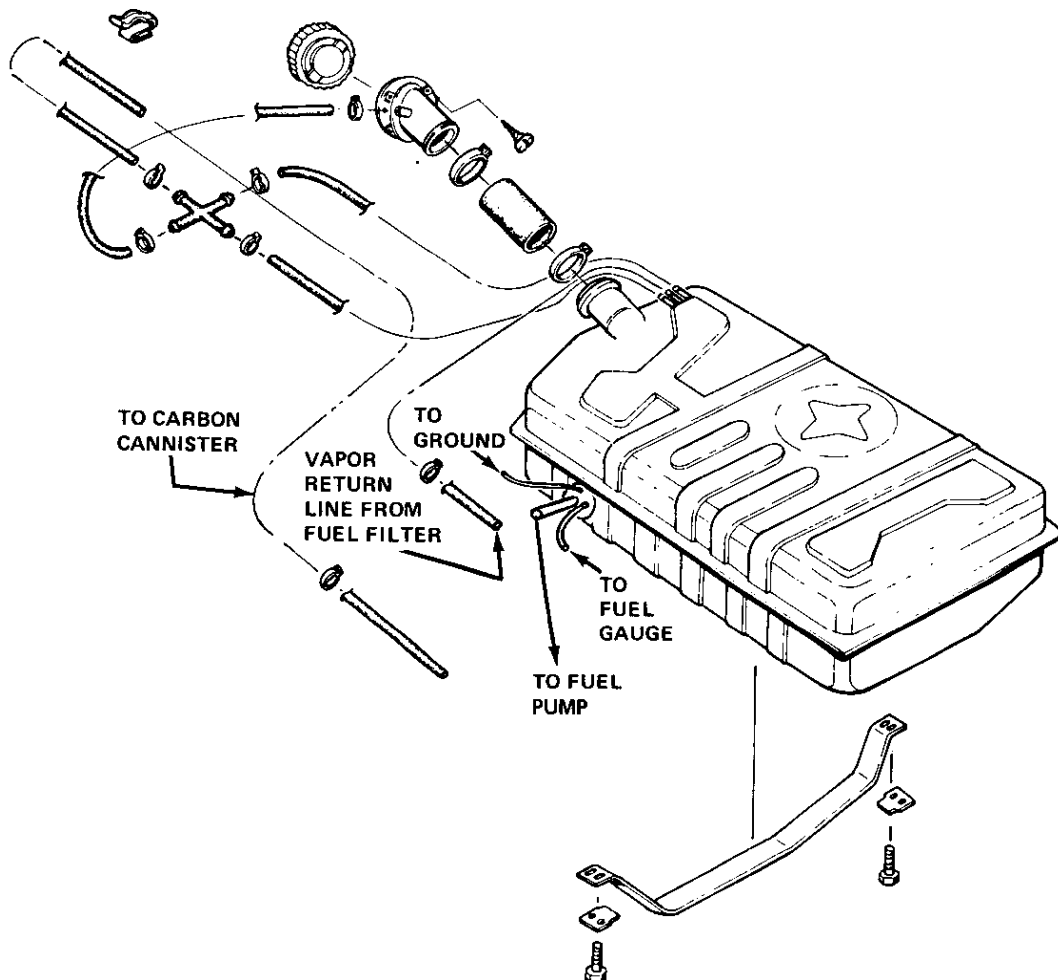


Figure 6C-4 Exploded View of Opel 1900 and Manta Fuel Tank

## MAJOR REPAIR

### FUEL TANK OPEL 1900 AND MANTA

The fuel tank is located below the luggage compartment floor panel and is attached with a strap.

The plastic tank vent hoses join in a connector from where the fuel vapors escape through a fourth hose attached to the upper flange of the tank.

On all vehicles, the vent hose is connected to an activated carbon container mounted to the front wheel house panel.

#### Removal

1. With a pinch clamp, close connecting hose between tank and fuel line. After loosening hose clamp, pull hose off fuel line. See Figure 6C-5.

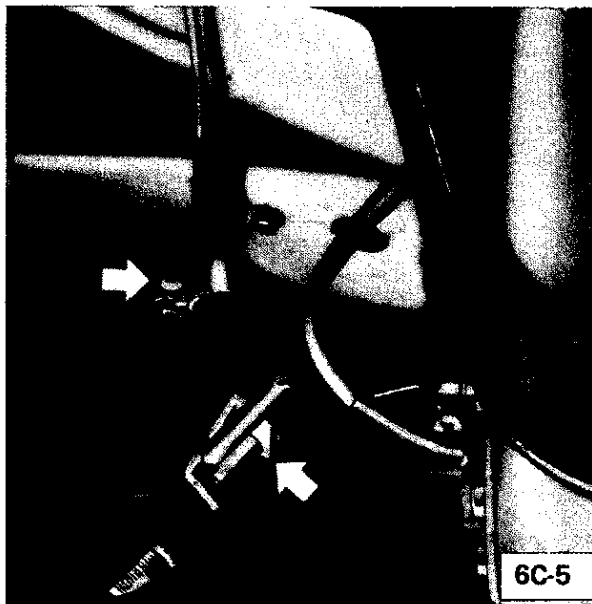


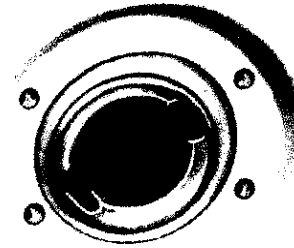
Figure 6C-5

2. Take off tiller cap and unscrew tiller neck from side panel. Pull off fuel **tank** hose and plug connecting tubes on tank. See Figures 6C-4 and 6C-6.

3. With a jack and suitable support (wooden board 12 x 12"), support fuel tank **and unscrew** strap. Lower fuel tank. See Figure 6C-7.

#### Installation

1. Raise tank into position and install strap.
2. Install 4 filler neck to side panel attaching screws and filler cap.



6C-6

Figure 6C-6

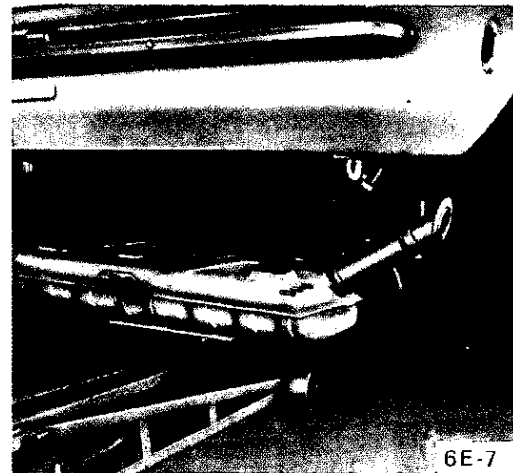


Figure 6C-7

3. Install **tank** vent hoses and fuel line, taking care not to kink lines.

4. Remove pinch clamp from fuel line.

### FUEL TANK (GT MODELS)

#### Removal

1. Disconnect battery.
2. Remove rubber cap, unscrew fuel line from tank, and drain fuel. See Figure 6C-8.
3. Remove spare tire and **jack**.
4. Remove spare tire hold-down and brackets. See Figure 6C-9.
5. Remove spare tire support panel.



Figure 6C-8 Fuel Line Attachment at Tank

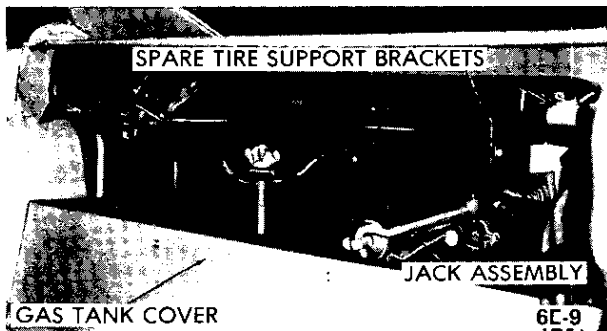


Figure 6C-9 Spare Tire Hold-Down and Brackets

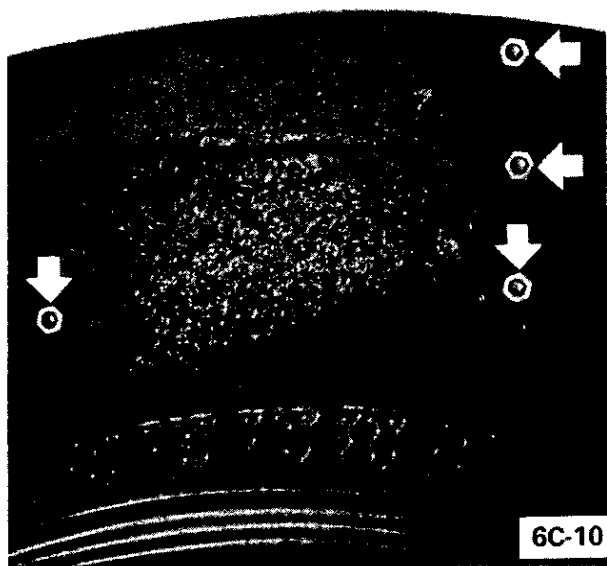


Figure 6C-10 Support Attachments

6. Remove spare tire support attaching brackets. Spare tire hold-down and support attaching brackets are attached to the rear wheel house panel and are

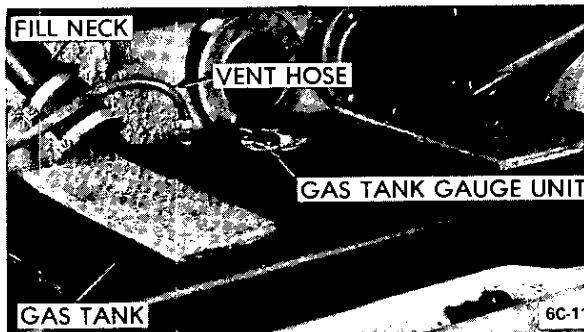
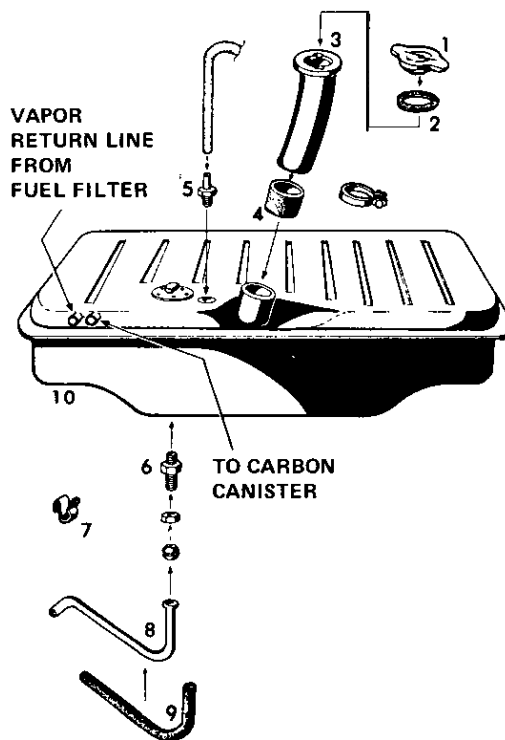


Figure 6C-11 Tank Vent and Filler Hoses



G.T. - FUEL SYSTEM

KEY	DESCRIPTION
1	CAP, FUEL TANK
2	GASKET, FUEL TANK CAP
3	FILLER NECK, FUEL TANK
4	HOSE, FILLER NECK
5	FITTING, FUEL TANK VENT
6	THREADED CONNECTOR, FUEL TANK
7	MOUNTING CLAMP, FUEL VENT HOSE
8	PIPE, FUEL LINE
9	CONNECTING HOSE
10	FUEL TANK, LESS GAUGE

Figure 6C-12 Exploded View of GT Gas Tank

covered with sound deadening compound. See Figure 6C-10.

7. Remove fuel tank vent hose and tiller hose. See Figure 6C- 11.

8. Remove fuel tank attaching bolts and gauge wire and remove tank.

**Installation**

1. Install tank and tighten attaching bolts.
2. Replace gauge wire. Install vent hose, making certain it is not kinked and seal vent hose hole in floor.
3. Install spare tire support attaching brackets, support panel, hold-down, and brackets.
4. Install spare tire and jack.
5. Install fuel line and rubber cap.
6. Connect battery.

**FUEL LINES. FUEL GAUGE TANK UNITS**

All fuel lines are plastic and have an outside diameter of .240 inches. Unlike metal lines, plastic lines are not flared.

When replacing a plastic line, place the line in hot water to make it flexible. Using the old line as a pattern, form the new line. Let the line cool completely, then route it in the same location as the old line. To prevent chafing against the underbody, nine (9) rubber grommets are placed at points on the line between the fuel tank and the fuel pump. When replacing fuel gauge tank units, coat gasket on both sides and first threads of attaching screws with sealing compound.

**CLEANING FUEL TANK**

1. Remove fuel tank.
2. Empty fuel tank through filler neck.
3. Remove fuel gauge tank unit, together with suction tube and screen. Clean screen and blow out from cover side. Flush fuel tank.

**SPECIFICATIONS**

Fuel Tank Capacity (Gallons)	
Opel 1900 and Manta .....	11.9
GT .....	13.2
Fuel Gauge Type .....	Electrical
Fuel Pump Type .....	Mechanical
Fuel Pump Drive .....	Eccentric on Camshaft
Fuel Pump Pressure at 1950 (RPM) .....	3.1 to 3.7 P.S.I.
Fuel Filter .....	In-Line Filter