

## MAZDA PISTON ENGINE

GLC  
626  
B2000

## DESCRIPTION

The Fuel Evaporation control system prevents the escape of raw fuel vapors to atmosphere. A special fuel tank with integral vapor separator is installed on GLC and 626 models. GLC Station Wagon models are equipped with a fuel tank with external vapor separator. B2000 models are equipped with a vapor valve instead of a vapor separator. Additional components of system include a check and cut valve (except B2000 models), an air vent solenoid valve (except B2000), 2 purge control valves (1 on B2000 models), a charcoal canister, a water thermo valve and connecting lines and hoses. A vacuum controlled evaporative shutter valve is installed on GLC Station Wagon and B2000 models.

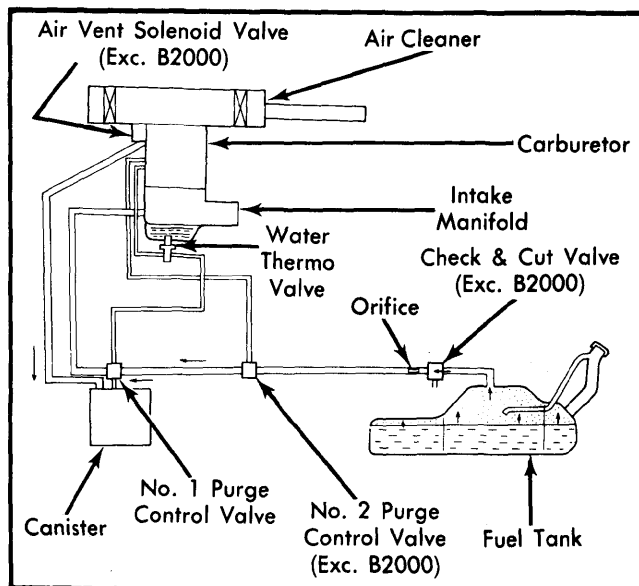


Fig. 1 Mazda Piston Engine Fuel Evaporation System

## OPERATION

When engine is not running, fuel vapors from fuel tank flow to carbon canister for storage. The check and cut valve (if equipped) prevents pressure or vacuum from forming in system. On GLC Station Wagon and B2000 models, when engine is started, manifold vacuum opens evaporative shutter valve to allow fresh air into carburetor. On all models, when engine coolant temperature reaches approximately 131°F (55°C), water thermo valve opens and intake manifold vacuum is directed to purge control valve. When manifold vacuum opens purge control valve, fresh air is drawn through inlet hole at bottom of canister. Vapors are drawn into the engine and burned.

## TESTING

EVAPORATIVE LINE CHECK  
(ALL MODELS)

1) Disconnect evaporative hose from canister. Connect detached hose to a "U" tube type pressure gauge filled with water. See Fig. 2.

2) Gradually apply low air pressure into "U" tube so that difference of water level should be 14" (356 mm).

3) Then, bind the inlet of the "U" tube and leave bound for 5 minutes. If water drops no more than 1" (25 mm) after 5 minutes, evaporative line is in good condition.

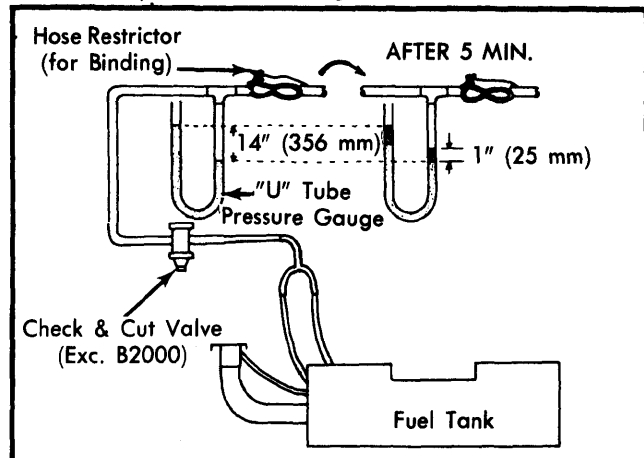


Fig. 2 Testing Evaporative Lines Using "U" Tube Pressure Gauge

CHECK & CUT VALVE  
(GLC & 626)

1) Remove check and cut valve from lines. Connect a pressure gauge with tee on nipple leading to fuel tank. Hold finger over opposite nipple. See Fig. 3.

2) Blow through open end of tee fitting. When pressure gauge reads .78-1.0 psi (.005-.07 kg/cm<sup>2</sup>), valve should open.

3) Remove tee fitting and gauge from fuel tank nipple and connect to nipple at bottom of valve (atmosphere vent). Repeat test. Valve should open when pressure gauge reads .14-.71 psi (.01-.05 kg/cm<sup>2</sup>). If valve does not operate as described, replace check and cut valve.

**NOTE** - Valve must be held horizontally.

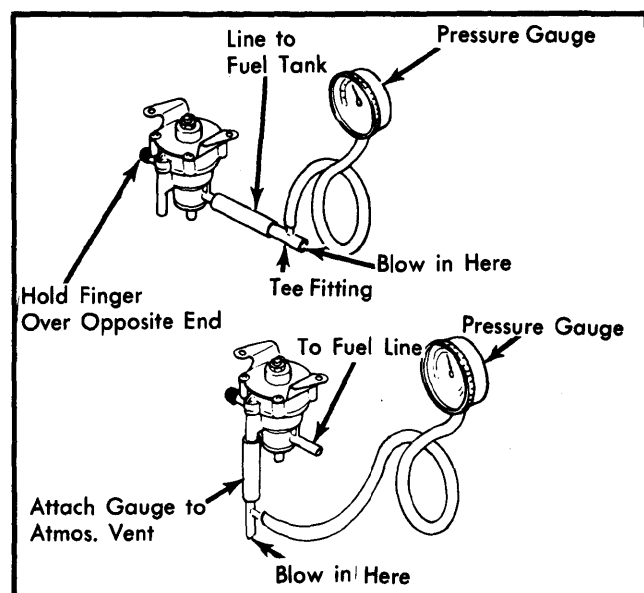


Fig. 3 Testing Check and Cut Valve (Exc. B2000)

## MAZDA PISTON ENGINE (Cont.)

### NO. 1 PURGE CONTROL VALVE (ALL MODELS)

- 1) Disconnect manifold vacuum hose from manifold. Disconnect and plug control valve-to-water thermo valve hose. See Fig. 4.
- 2) Start engine and run at idle. Blow through manifold vacuum tube. Air should not pass through control valve.
- 3) Unplug thermo valve hose and reconnect to purge control valve. Blow through manifold hose again. Air should pass through control valve. If valve does not respond as described, replace purge control valve.

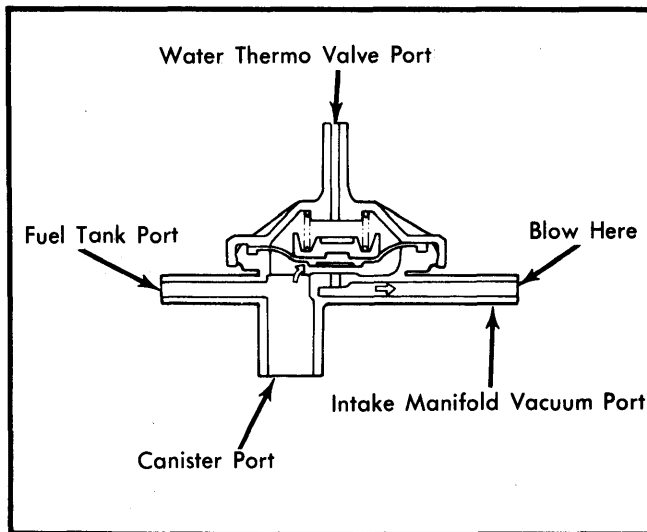


Fig. 4 Testing No. 1 Purge Control Valve

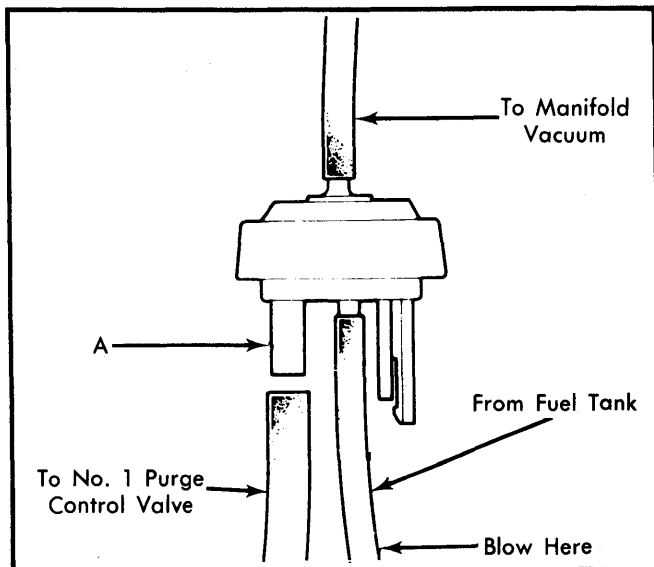


Fig. 5 Testing No. 2 Purge Control Valve  
(GLC & 626 Models)

### NO. 2 PURGE CONTROL VALVE (GLC & 626)

- 1) Disconnect fuel tank hose from No. 2 purge control valve. Disconnect No. 2 purge control valve-to-No. 1 purge control valve hose from No. 2 purge control valve. Using light mouth pressure, blow into hose which was connected to No. 1 purge control valve. Air should not come out port "A".
- 2) Start engine and run at 1500 RPM (2000 RPM on 626 models). Blow into hose again. Air should escape from port "A". If valve does not operate as described, replace No. 2 purge control valve.

### WATER THERMO VALVE

**B2000** – Remove water thermo valve and connect a piece of tubing to each nipple. Immerse the valve in a container of water. Insert thermometer and slowly heat water. At temperature of 131°F (55°C) or above, blow into one of the hoses. Air should pass through valve; if not, replace water thermo valve.

**All Other Models** – Disconnect water thermo valve-to-purge control valve hose and water thermo valve-to-vacuum amplifier hose. Start engine and run at idle. With engine cold, no vacuum should be present at hoses. With engine coolant temperature above 131°F (55°C), vacuum should be felt. If not, replace water thermo valve.

### SHUTTER VALVE (GLC STATION WAGON & B2000)

Remove air cover and element. With engine cold, shutter valve should be completely closed. Start engine and run at idle. Shutter valve should be open. With engine running, disconnect and reconnect vacuum hose to shutter valve diaphragm. Shutter valve should open and close smoothly. If not, replace shutter valve.

### AIR VENT SOLENOID VALVE (GLC & 626)

- 1) Check air vent hose for cracks or deterioration. Disconnect air vent hose from canister.
- 2) Slowly blow through hose. Air should pass through solenoid valve. Turn ignition "ON" and blow through hose again. Air should not pass through valve. If solenoid valve does not respond as described, replace air vent solenoid valve.

### MAINTENANCE

Check entire system for proper functioning every 15,000 miles. Check and cut valve should be tested every 25,000 miles. Replace parts as necessary.