

## MAZDA ROTARY ENGINE

RX7

### DESCRIPTION

System prevents escape of fuel vapors into atmosphere. Components consist of a non-vented fuel tank with integral vapor separator, vapor valve, check and cut valve (located at fuel tank), charcoal canister, air vent solenoid valve, purge valve and connecting hoses.

### OPERATION

When engine is not running, fuel vapors formed in fuel tank pass through vapor valve. Those vapors that do not condense to liquid fuel are routed through vent lines to charcoal canister where they are adsorbed. When engine is running, filtered air is drawn into the system through the air cleaner, mixed with gases and vapors that blow by the rotor and are drawn through purge valve and into intake runner to be burned. The purge valve operates as the PCV and check valve.

### AIR VENT SYSTEM

An air vent solenoid on carburetor prevents carburetor bowl evaporated fuel from collecting in the

Fig. 1: Mazda RX7 Check and Cut Valve

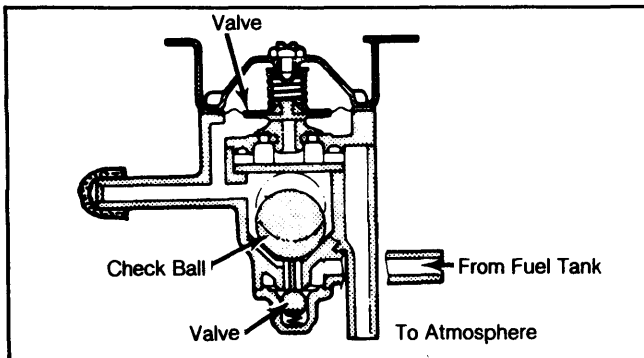
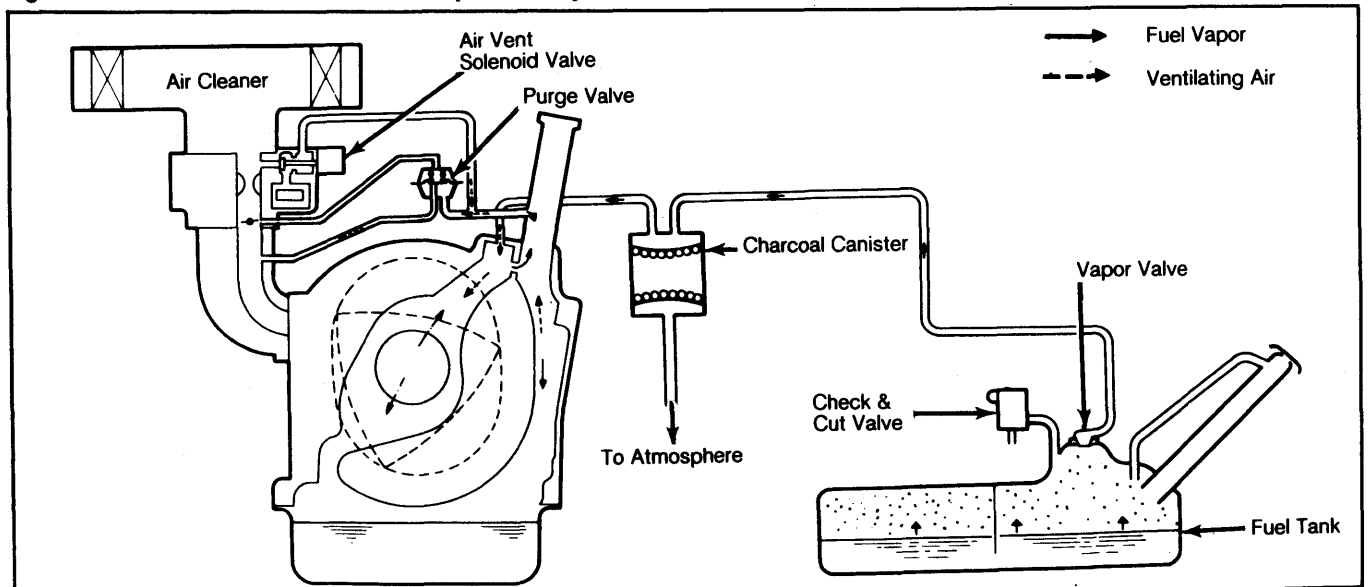


Fig. 2: Mazda RX7 Air Vent and Fuel Evaporation System



intake manifold after hot engine shut off. With ignition off, the solenoid closes an air vent in the carbon canister, trapping the evaporated fuel.

### CHECK & CUT VALVE

This valve has 3 functions: When fuel tank pressure becomes too high, valve releases pressure to atmosphere. When vacuum becomes too high, valve allows air into tank to prevent tank from collapsing. If vehicle is overturned, valve prevents fuel leakage by sealing the line with a check ball.

### TESTING

#### EVAPORATIVE LINE CHECK

**NOTE:** Ventilation line test is the same as on piston engines. See "Evaporative Line Check," in "Mazda Piston Engine" article in this section.

#### CHECK & CUT VALVE

**NOTE:** Check and cut valve test is same as piston engines. See "Check and Cut Valve," in "Mazda Piston Engine" article in this section.

#### AIR VENT SOLENOID VALVE

Check air vent hose for cracks or damage. Disconnect air vent hose from ventilation pipe. Slowly blow through hose. Air should pass through solenoid. Turn ignition "ON" and blow through hose again. Air should not pass through valve. If valve does not operate as described, replace valve.

### MAINTENANCE

Check system function every 15,000 miles. Check and Cut Valve should be tested every 25,000 miles. Replace parts as necessary.