

1974-79 EXHAUST EMISSION SYSTEMS

Mazda Exhaust Gas Recirculation

1976-79 Piston Engines

DESCRIPTION

The Exhaust Gas Recirculation (EGR) system is designed to lower the burning temperatures of gases in combustion chambers, thereby reducing formation of oxides of nitrogen (NOx). Metered amounts of exhaust gas dilutes the air/fuel mixture to lower combustion temperatures.

On 1976-78 models, system consists of EGR valve, three-way solenoid valve, water thermo switch, and vacuum amplifier. On 1979 models, system consists of an EGR valve, water thermo valve, and vacuum amplifier (if equipped).

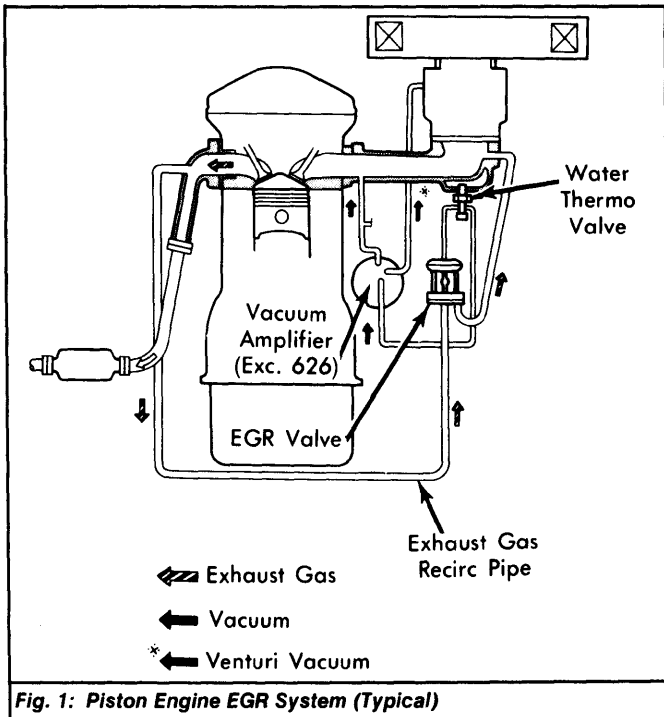


Fig. 1: Piston Engine EGR System (Typical)

TESTING

EGR VALVE

1976-78 Models - Remove air cleaner. Start and run engine at idle. Disconnect vacuum sensing tube from EGR valve. Connect EGR valve directly to intake manifold vacuum source. When connection to EGR valve is made, engine should run rough or stall. If so, EGR valve is operating properly. If not, replace EGR valve.

1979 Models - 1) Warm engine to normal operating temperature. Stop engine. Detach EGR vacuum sensing tube from EGR valve and apply intake manifold vacuum directly to EGR valve.

2) Pinch off intake manifold vacuum hose while engine is restarted. Release hose. If EGR valve is okay, engine will idle very rough or stall. If idle quality does not change, replace EGR valve.

THREE-WAY SOLENOID VALVE

1) Unplug connectors from water thermo switch. Connect jumper wires to both connectors. Disconnect vacuum sensing tube from EGR control valve and from three-way solenoid valve.

2) Turn ignition on. Apply air pressure to disconnected EGR vacuum sensing tube. See Fig. 3. Air should pass through valve and come out air valve filter.

3) Remove jumper wire from both connectors. Apply air pressure to same tube. Air should pass through three-way solenoid valve and come out port "D". If three-way solenoid valve does not test as specified, it must be replaced.

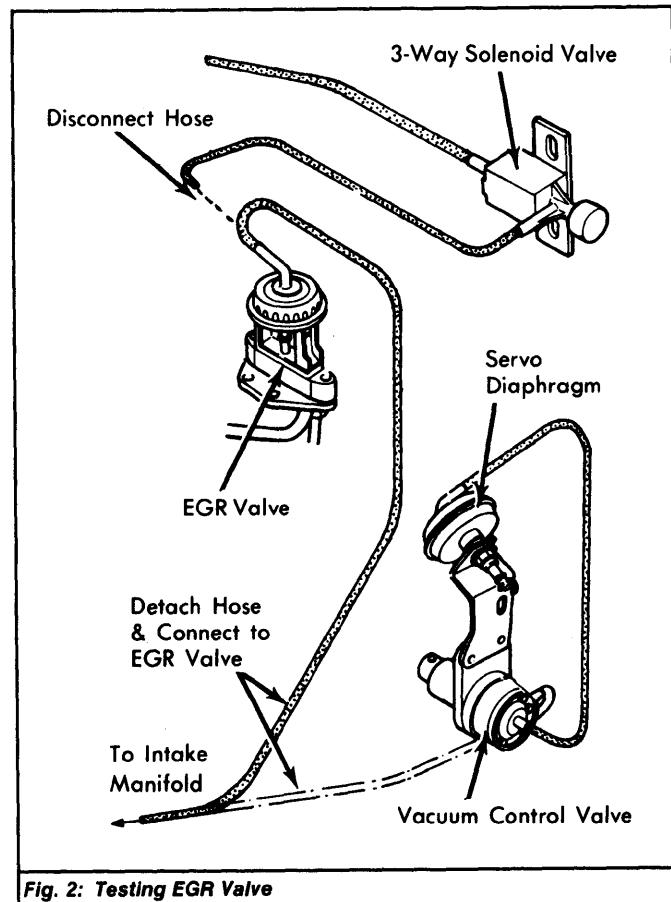


Fig. 2: Testing EGR Valve

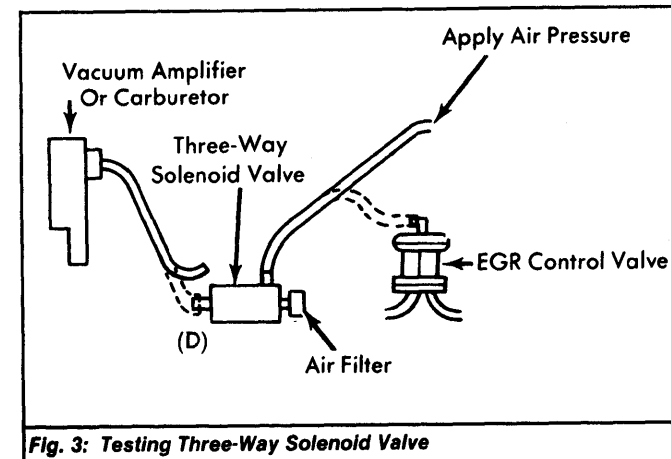


Fig. 3: Testing Three-Way Solenoid Valve

VACUUM AMPLIFIER

GLC, B1800, B2000 & 808 (1600 cc) - 1) Remove air cleaner and disconnect vacuum line (to vacuum amplifier) from three-way solenoid valve. Connect a vacuum gauge to vacuum line. Run engine at idle and disconnect vacuum line at carburetor.

2) Gauge reading should be about 2 in. Hg. Reconnect vacuum line to carburetor. Slowly increase engine speed to 3500 RPM and gauge should read 3.5 in. Hg. If vacuum amplifier does not operate properly, replace amplifier.

WATER THERMO SWITCH

1976-78 Models - 1) Remove switch from intake manifold and place in container of water with thermometer. Suspend switch in water so it does not touch side of container. Heat water gradually.

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Mazda Exhaust Gas Recirculation (Cont.)

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2) At temperatures below 122-140°F (50-60°C), continuity should exist when testing switch with ohmmeter. Above specified temperatures, no continuity should exist. If not, replace switch.

1979 Models – 1) Remove switch from vehicle and place in container of water with thermometer. Suspend parts in water so they do not touch side of container. With vacuum hoses attached to fittings, blow into either hose.

2) Air should NOT pass while water thermo valve is below 121°F (50°C); below 138°F (59°C) for 626. If it does, replace valve. Heat water to above temperatures mentioned. Blow into hose. Air should now pass through valve. If not, replace valve.