

1974-79 EXHAUST EMISSION SYSTEMS

Mazda Spark Delay Timing Control

1979 B2000 & GLC

NOTE: On GLC 5-speed transmission equipped models, a transmission controlled spark system is also used. See **MAZDA TRANSMISSION SPARK DELAY TIMING CONTROL SYSTEM** article in this section.

DESCRIPTION

Spark delay timing control system is used on Federal GLC station wagon, California GLC models, and on all B2000 models. System is designed to reduce oxides of nitrogen (NOx) and hydrocarbon (HC) emissions by delaying vacuum to distributor advance unit during acceleration. A spark delay valve is located in carburetor-to-distributor vacuum line and delays vacuum spark signal for a short period when acceleration mode occurs.

On California B2000 models, a water thermo valve is also installed in this same vacuum line. This device will hold vacuum from reaching advance unit under any mode until engine coolant warms to 122°F (50°C) or more. This assists in catalytic converter warm up.

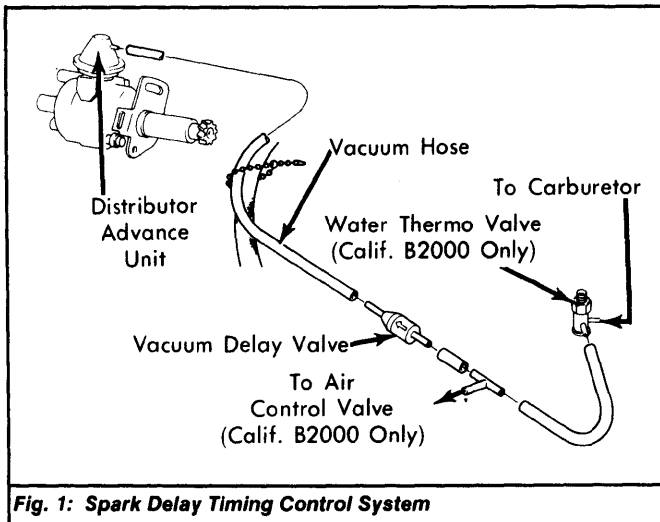


Fig. 1: Spark Delay Timing Control System

TESTING

VACUUM DELAY VALVE

1) Remove vacuum delay valve from vehicle. Connect vacuum gauge to carburetor side of valve (flat side of valve). Connect distributor side (tapered side) to intake manifold vacuum source.

2) Start and run engine at idle. Note vacuum reading on gauge. Pull intake manifold vacuum source hose off and record time it takes vacuum to change from idle vacuum level to 12 in. Hg. It should be within specifications shown in DELAY VALVE SPECIFICATIONS table. If not, replace spark delay valve. Ensure that arrow on delay valve is installed toward distributor.

DELAY VALVE SPECIFICATIONS

Application	Seconds
B2000	4-6
GLC	
Federal (Wagon)	4-10
Calif.	
Sedan	4-10
Wagon	10-20

WATER THERMO VALVE

1) Remove cap from filter portion of water thermo valve. Clean filter and allow to dry. Install filter in original position. Ensure there is no water leak from thermo valve.

2) With engine cold, run engine at 2000 RPM. Detach vacuum sensing hose from thermo valve (leading to vacuum delay valve). Hold finger over valve nipple and be sure no suction is felt. If suction is present, replace valve.

3) Warm engine to normal operating temperature. Remove cap from filter portion of valve. Check that no air suction is felt at filter. If suction is present, replace valve.