

AUDI EXHAUST GAS RECIRCULATION

5000

TESTING

DESCRIPTION

The exhaust gas recirculation (EGR) system is used to reduce NO_x emissions by recycling metered amounts of exhaust gas back into the intake/combustion system. This is done through a vacuum-controlled EGR valve which responds to a vacuum signal from the throttle housing. This signal is determined by the position of the throttle plate.

System consists of an EGR valve, temperature control valve, vacuum amplifier, vacuum delay valve (auto. trans. only) and a vacuum reservoir.

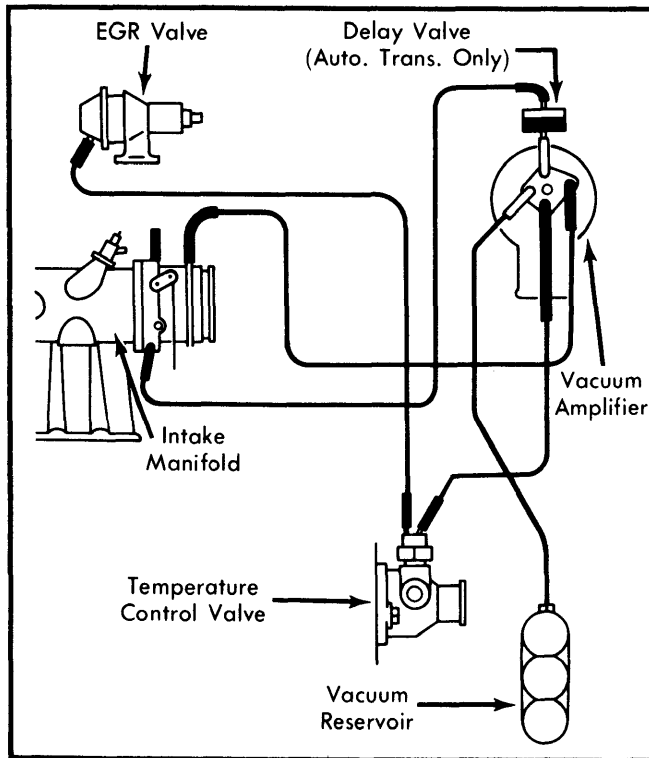


Fig. 1 Exhaust Gas Recirculation (EGR) System Schematic

OPERATION

As throttle plate opens to partial throttle, such as during cruising, a vacuum signal is sensed by the vacuum amplifier. Here, the signal is strengthened enough to be able to open the EGR valve. As the valve opens, a controlled amount of exhaust gas is taken from the exhaust manifold and sent back into the intake manifold. The temperature control valve shuts off EGR flow when engine coolant temperature is below approximately 120°F (49°C).

At sustained low vacuum conditions, such as during heavy acceleration, no EGR occurs, since the vacuum level is too low. However, the vacuum reservoir will maintain an operable vacuum level to accommodate fluctuations in engine operation and vacuum levels.

EGR VALVE

- 1) Check all vacuum lines for proper connections and good condition; replace as necessary.
- 2) Disconnect EGR valve vacuum hose (yellow) at temperature control valve and connect it to "T" connector of intake manifold vacuum hose.
- 3) If engine stalls or idle speed drops, EGR valve is okay. If idle speed does not change, EGR valve or line is dirty, blocked or damaged. Clean or replace as necessary.

VACUUM AMPLIFIER

- 1) Install "T" fitting between vacuum amplifier and temperature control valve. Connect open side of "T" to vacuum gauge. Run engine at idle. Vacuum gauge should read 2.5-2.8 in. Hg. If not, replace vacuum amplifier.
- 2) Install "T" fitting in hose between amplifier and throttle valve housing. Connect open side of "T" to vacuum gauge. Run engine at idle and check for .43 in. Hg. If not at .43 in. Hg, check throttle valve port for obstructions.

EGR TEMPERATURE CONTROL VALVE

Disconnect EGR valve-to-temperature control valve vacuum hose at EGR valve and blow through hose. Temperature control valve should be closed if coolant temperature is below 113-123°F (45-51°C) and open if coolant temperature is above 131-141°F (55-61°C). If not, replace temperature control valve.

MAINTENANCE

EGR MAINTENANCE REMINDER LIGHT

Every 15,000 miles, a light on the instrument cluster will come on. This is a reminder that the EGR system requires servicing (cleaning and inspection). After maintenance is performed, indicator light must be turned off. Press button marked "EGR" on mileage switch which is mounted in-line with speedometer cable behind instrument panel.

EGR DELAY VALVE

NOTE — If EGR delay valve requires replacement, make sure it is reinstalled with white side towards intake manifold.