1974-79 EXHAUST EMISSION SYSTEMS
Subaru Exhaust Gas Recirculation

All Models

DESCRIPTION

The Exhaust Gas Recirculation (EGR) system is used to help control formation of NOx emissions. By recycling some exhaust gas back to the intake system, combustion temperatures are lowered, which helps keep NOx emission down. On 1976-79 models, system consists of an EGR valve, vacuum modulator, temperature valve (if equipped), and vacuum tubing.

OPERATION

On 1974-75 models, when coolant temperature is about 122°F (50°C), the coolant temperature switch cuts current to EGR solenoid valve. This allows vacuum from throttle valve area of carburetor to act upon diaphragm of EGR valve. The EGR valve opens and allows exhaust gases to recirculate.

When engine coolant temperature is below 122°F (50°C), coolant temperature switch supplies current to EGR vacuum solenoid valve. This causes solenoid valve to shut off vacuum flow to EGR valve, thus preventing exhaust gas recirculation from occurring when engine is cold.

On 1976-79 models, a vacuum signal (transmitted from the carburetor through the vacuum modulator and to the EGR valve) causes the valve to open. This allows exhaust gas flow from the exhaust ports, through the connecting pipe, to the EGR valve. Here, the flow is metered through the valve and into the intake system. The strength of the vacuum signal determines how much exhaust gas passes through the EGR valve (flow is metered by position of EGR valve stem).

On some 1979 models, a temperature valve is installed on the intake manifold, between the vacuum modulator and the EGR valve. This valve shuts off vacuum to the EGR valve until engine temperature reaches 95°F (35°C).

TESTING

1) Looking through opening in EGR valve body, check that valve shaft moves when engine reaches 3000-3500 RPM under no-load condition.

2) If shaft does not move as specified, remove valve and manually check valve movement. If valve appears okay, check vacuum lines for leaks.

3) If valve is sticking or binding, clean or replace as necessary. Check EGR pipe and gas passages from clogging and leaks. *See Fig. 1.* Clean or replace as necessary.

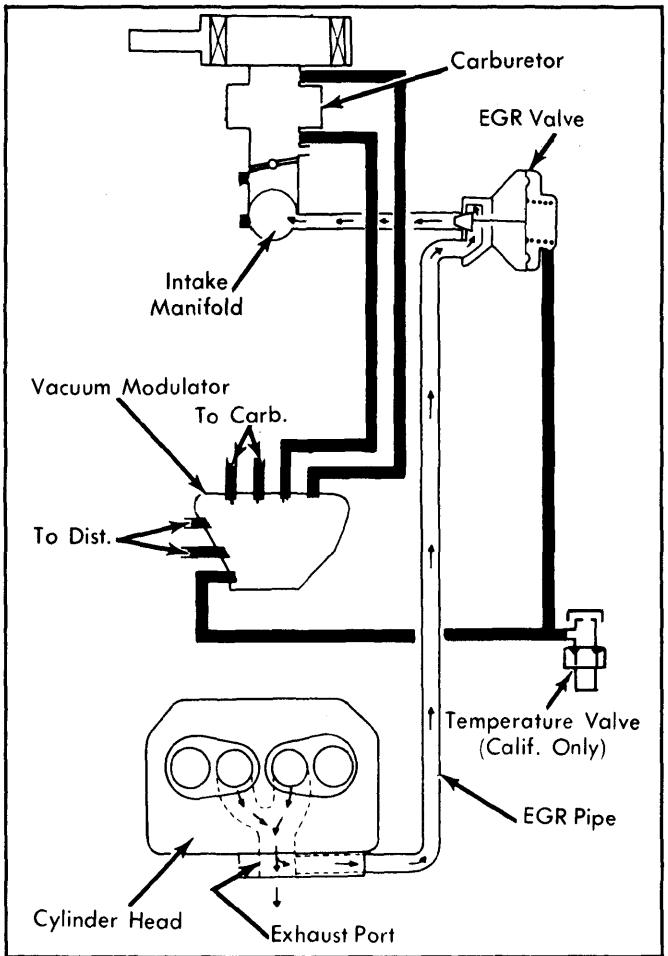

Fig. 2: 1976-79 Exhaust Gas Recirculation System (Typical)

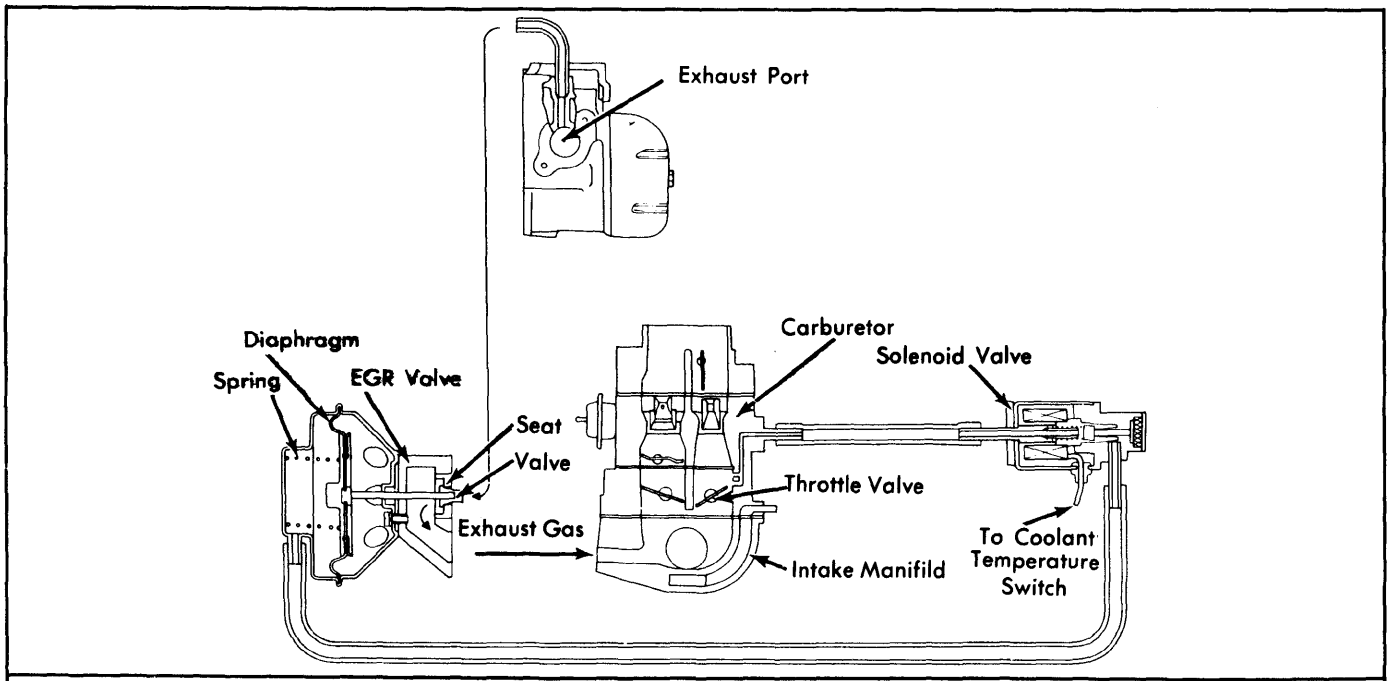

Fig. 1: 1974-75 Exhaust Gas Recirculation System (Typical)

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