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 from the exhaust ports back to the intake system, combustion temperatures are lowered, which helps keep NOx emission down. System consists of an EGR valve, connection to exhaust ports, vacuum modulator/orifice (except Calif. man. trans. models), temperature valve (Calif. auto. trans. models only) and vacuum tubing.

OPERATION

A vacuum signal, transmitted from the carburetor through the vacuum modulator/orifice (except Calif. man. trans. models) and to the EGR valve, causes the valve to open. This allows exhaust gas to 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 California models, a temperature valve is installed on the intake manifold, between the vacuum modulator and the EGR valve. This valve allows modulated vacuum to the EGR valve until engine temperature reaches 88-99°F (31-37°C). Above this temperature, the EGR vacuum signal is not modulated.

TESTING

EGR VALVE

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.

TEMPERATURE VALVE

1) Remove temperature valve from engine. Connect vacuum hoses to ports of valve, then submerge valve in a container of water with open end of hoses outside container.

CAUTION — *Do not allow water to enter temperature valve.*

2) With water temperature below 88°F (31°C), blow air into valve. Valve should be open, allowing air to flow through valve freely. If not, valve is defective and should be replaced.

3) Heat water to above 99°F (37°C) and again blow air into valve. Valve should now be closed, blocking air flow. If not, valve is defective and should be replaced.

NOTE — *The EGR temperature valve has 3 ports and vacuum hoses are connected as follows:*

- *Top port goes to carburetor.*
- *Middle port goes to EGR valve.*
- *Bottom port goes to air cleaner.*

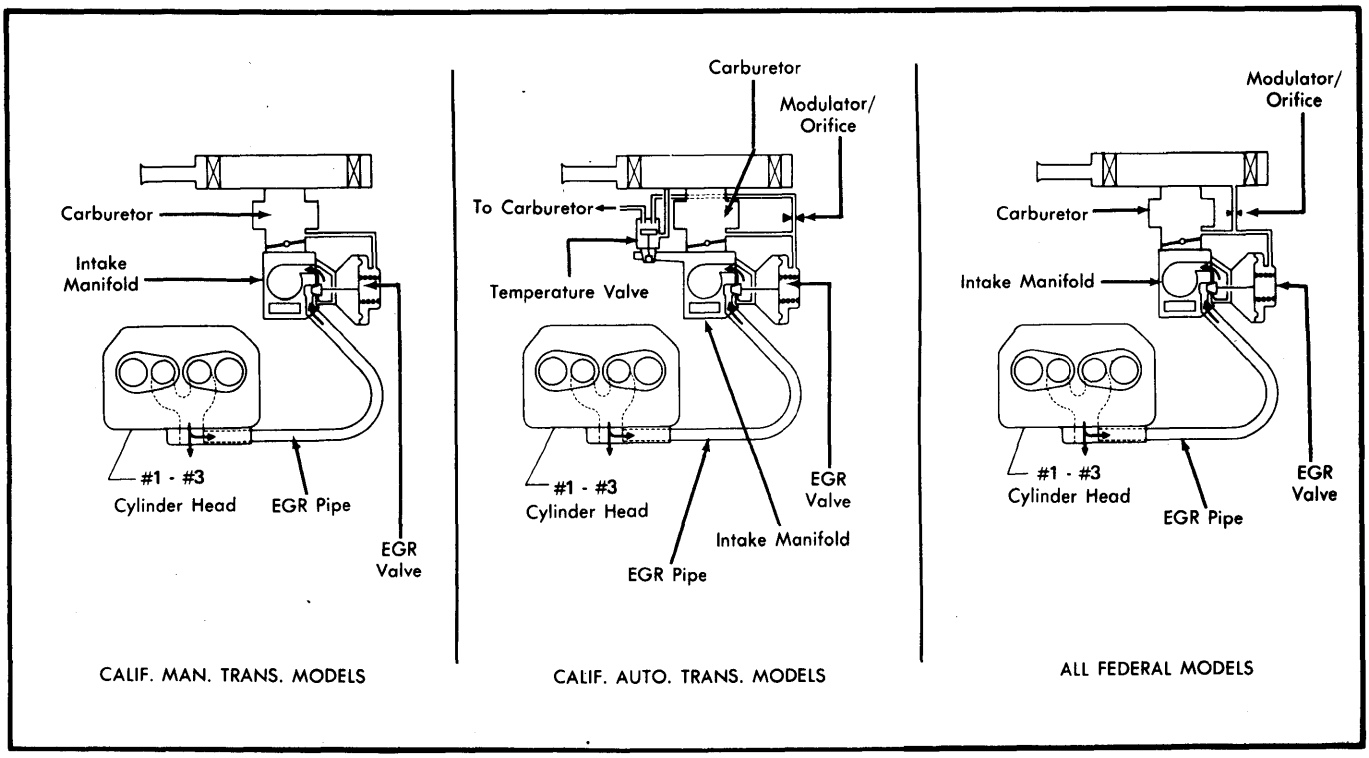

Fig. 1 Subaru Exhaust Gas Recirculation System