

## SUBARU EXHAUST GAS RECIRCULATION

### All Models

### DESCRIPTION

Exhaust gas recirculation (EGR) system is used to help control formation of NOx emissions. By recycling some exhaust gas from exhaust ports back to intake system, combustion temperatures are lowered, which helps keep NOx emissions down.

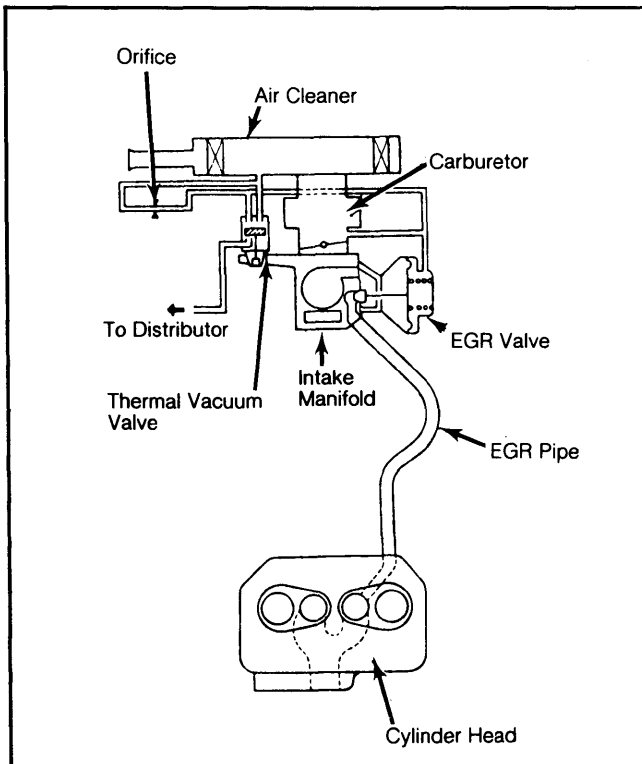
System consists of EGR valve, EGR pipe, thermal vacuum valve and control valve orifice (except Auto. Trans. and 4-WD models with Hitachi carburetors).

### OPERATION

Vacuum signal is supplied to EGR valve from a port upstream from throttle valve. When intake manifold temperature is below 86°F (30°C), vacuum signal is modulated by air bleed to air cleaner. When temperature of manifold is above 104°F (40°C), signal is not modulated through an orifice on models with Auto. Trans. and 4-WD with Hitachi carburetors and modulated on all others.

When EGR valve is open, exhaust gases flow through EGR pipe through valve and into intake manifold. The strength of vacuum signal at EGR valve determines how much exhaust gas is recirculated.

**Fig. 1: Subaru Exhaust Gas Recirculation System (Exc. Auto. Trans. & 4-WD Models with Hitachi Carbs.)**



### TESTING

#### EGR VALVE

1) Look 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 does not operate, clean or replace. Check EGR pipe for deposits or clogging.

#### THERMAL VACUUM VALVE

1) Remove thermal vacuum valve from intake manifold. Connect hoses to 2 upper ports and cap lower port. Submerge valve in container of water.

**CAUTION: Do not allow water to enter valve.**

2) With water below 86°F (30°C), blow air through valve. If air does not pass freely, replace valve. Heat water above 104°F (40°C). No air should pass. If air passes through valve, replace valve.

**Fig. 2: Subaru Exhaust Gas Recirculation System (Auto. Trans. & 4-WD Models with Hitachi Carbs.)**

