

DATSUN GASOLINE EXHAUST GAS RECIRCULATION

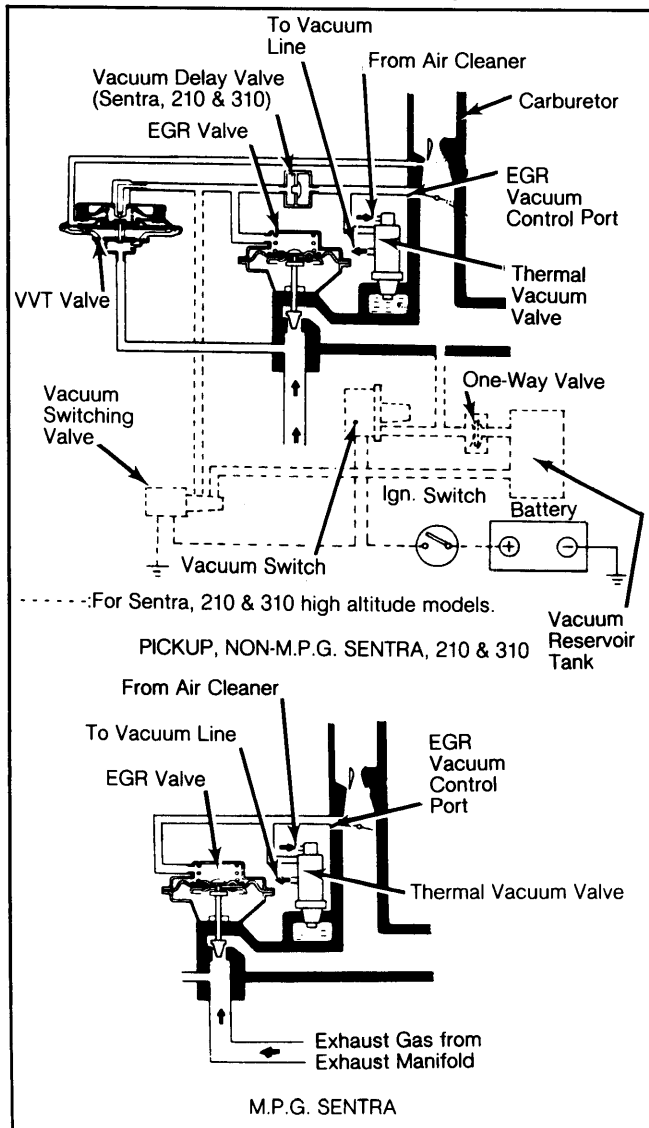
Maxima, Pickup, Sentra, Stanza, 200SX, 210, 280ZX, 310

DESCRIPTION

The Exhaust Gas Recirculation (EGR) system recirculates exhaust gases into the combustion chamber to reduce combustion temperatures. The reduction in temperature acts to reduce oxides of nitrogen (NOx) emissions. The system consists of an EGR control valve (2 on Calif. Stanza), thermal vacuum valve, and various connecting hoses and tubes.

In addition, a venturi vacuum transducer (VVT) valve is used on Pickup, Sentra, Stanza, 210 and 310. A vacuum delay valve is used on Calif. Stanza, Non. M.P.G. Sentra, 210 and 310. A vacuum switching valve and vacuum switch is used on high altitude compensation (HAC) equipped Sentra, 210 and 310. A vacuum reservoir tank is used on Calif. Stanza, and high altitude compensation (HAC) equipped Sentra, 210 and 310. Minor differences exist between application of thermal vacuum valves on all models.

Fig. 1: Pickup, Sentra, 210 & 310 EGR System



OPERATION

Exhaust gases are directed from exhaust manifold, through EGR tube and into EGR control valve(s). The VVT valve monitors exhaust pressure in order to control intake manifold vacuum applied to EGR control valve(s). The EGR control valve(s) regulates actual amount of exhaust gas to be recirculated into intake manifold.

Open/Close operation of EGR control valve(s) is directed by the thermal vacuum valve which operates on ported vacuum and engine coolant temperature. EGR system does not operate at idle or under full throttle (heavy load) conditions, when coolant temperature is low (thermal vacuum valve closed), or when exhaust pressure is low.

Fig. 2: Stanza (Calif.) EGR System

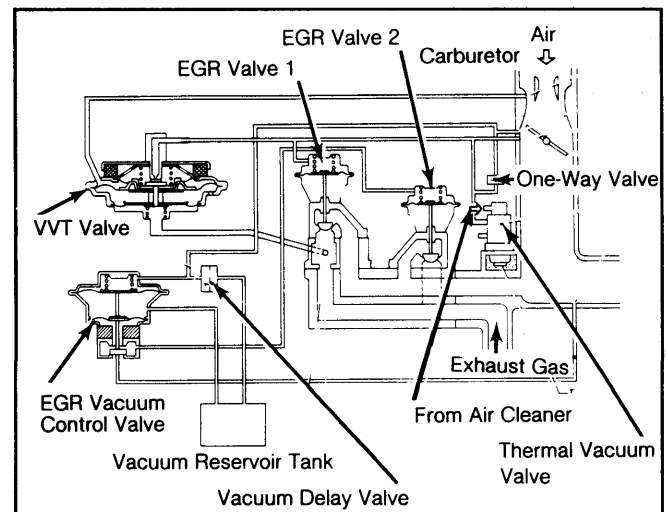
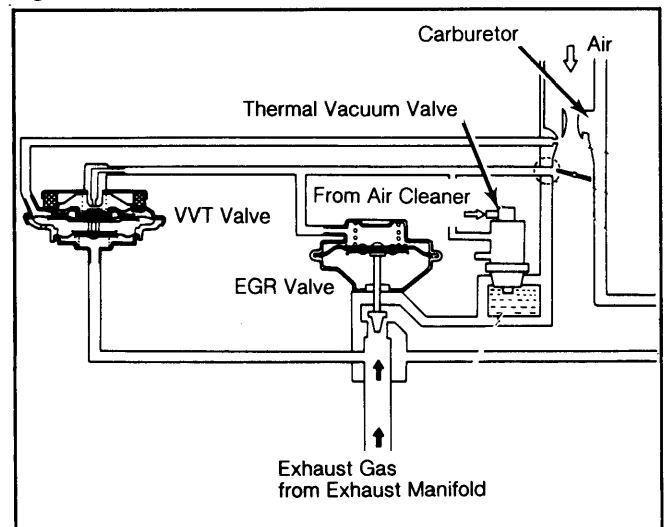


Fig. 3: Stanza (Federal) EGR System



TESTING

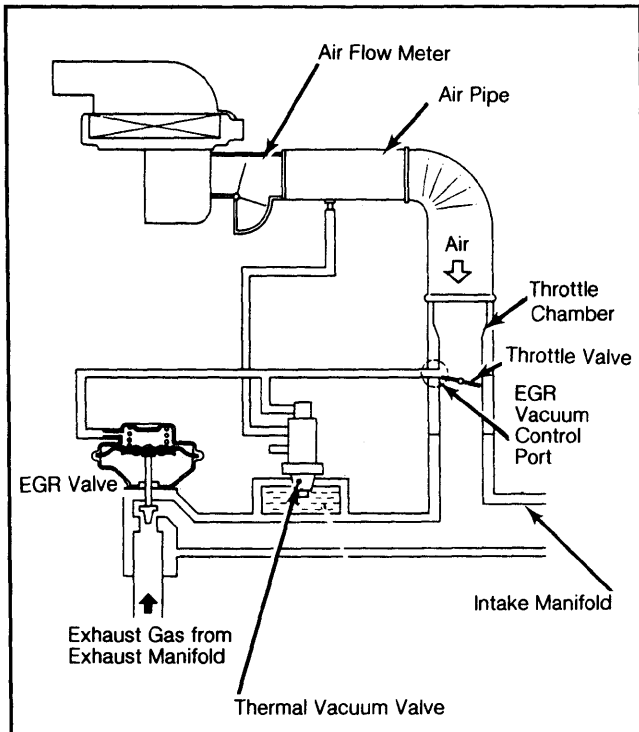
EGR SYSTEM

1) With engine stopped, visually inspect entire EGR system and clean as necessary. Replace hoses that are cracked or broken. Inspect EGR valve(s) for signs of binding or sticking by moving valve diaphragm upwards with finger.

1982 Exhaust Emission Systems

DATSUN GASOLINE EXHAUST GAS RECIRCULATION (Cont.)

Fig. 4: 200SX EGR System



2) With engine running, check operation of EGR valve(s) and thermal vacuum valve by placing finger on diaphragm of EGR valve and checking diaphragm movement.

3) With engine coolant temperature below "Closed" value, increase engine speed to 3000-3500 RPM (2000-2500 RPM on Pickup and 200SX). EGR valve diaphragm should remain closed.

4) With engine coolant temperature above "Open" value, increase engine speed to 3000-3500 RPM (2000-2500 RPM on Pickup and 200SX). EGR valve diaphragm should open and allow exhaust gas recirculation.

5) If EGR valve does not operate as indicated, disconnect EGR valve-to-thermal vacuum valve vacuum hose at EGR valve and air pipe line (200SX only).

6) Increase engine speed to 3000-3500 RPM (2000-2500 RPM on Pickup and 200SX). Check for vacuum at end of disconnected hose.

7) If vacuum is present, check EGR, VVT, thermal vacuum, and vacuum delay valves on Pickup, Sentra, 210 and 310. If vacuum is present, on all others, replace EGR valve(s). If vacuum is weak or not present, replace TVV.

THERMAL VACUUM VALVE SPECIFICATIONS

Application	Valve Closed Above °F (°C)	Valve Open Below °F (°C)
Maxima & 280ZX	1	2
Pickup, Stanza & 210	140 (60)	140 (60)
Sentra & 310	122 (50)	122 (50)
200SX	104 (40)	104 (40)

¹ — Between 131 (55) and 203 (95).

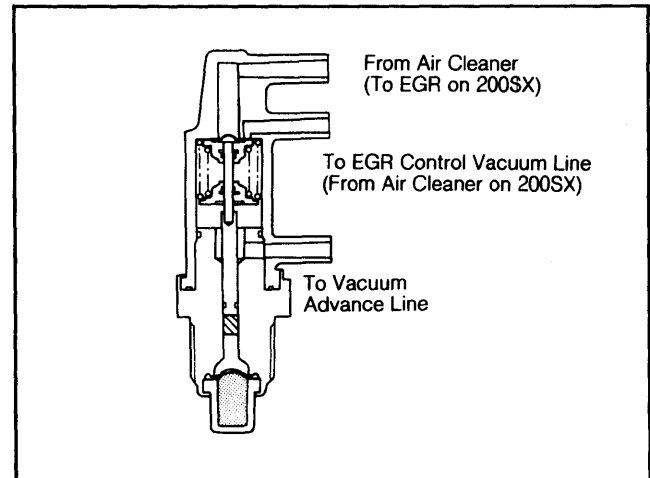
² — Below 131 (55) and Above 203 (95).

THERMAL VACUUM VALVE

1) Drain engine coolant. Remove thermal vacuum valve from engine leaving hoses attached. Without letting water enter valve, submerge valve and thermometer in a container of water.

2) Heat water and observe temperature. Apply vacuum to EGR port. Check that valve opens and closes according to specified value. If valve does not operate as specified, replace it.

Fig. 5: Datsun Thermal Vacuum Valve (TVV)



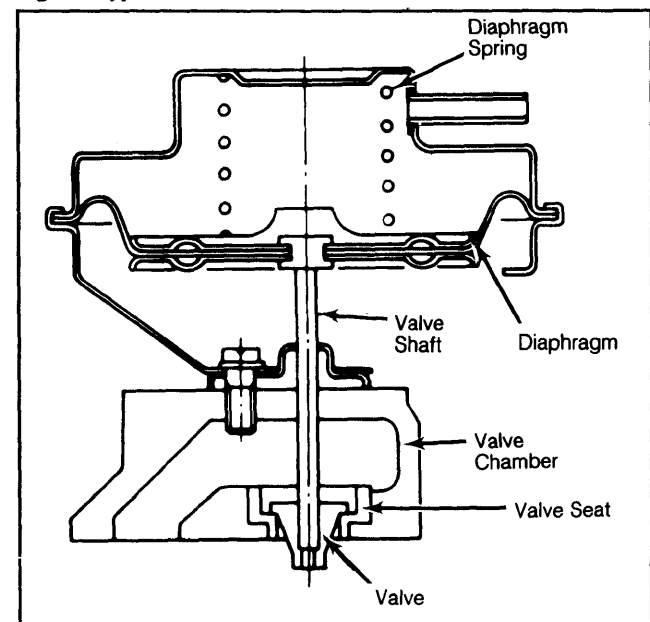
EGR VALVE

1) Remove EGR valve from engine and inspect it for damage. Apply vacuum to EGR valve and watch diaphragm movement.

2) Diaphragm should move to full open position and should remain in this position for at least 30 seconds after vacuum is shut off.

3) Before reinstalling EGR valve, clean mating surface with a wire brush and compressed air. Remove foreign material from around valve and port.

Fig. 6: Typical Datsun EGR Valve

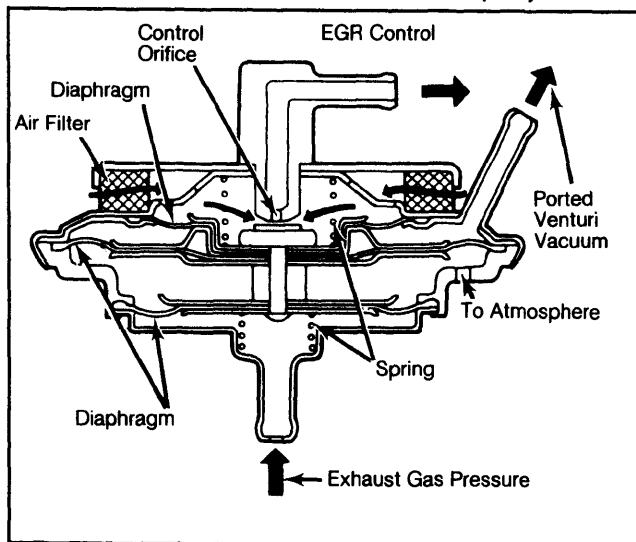


DATSUN GASOLINE EXHAUST GAS RECIRCULATION (Cont.)

VENTURI VACUUM TRANSDUCER (VVT) VALVE

Remove VVT valve from engine. Apply slight pressure to one port and slight vacuum to other port. If any leakage is noted, replace valve.

Fig. 7: Datsun Venturi Vacuum Transducer (VVT) Valve



Used on Pickup, Sentra, Stanza, 210 and 310 only.

VACUUM DELAY VALVE

1) Remove vacuum delay valve. Apply air pressure to EGR valve side of vacuum delay valve. Air should flow through valve.

2) Apply air pressure to thermal vacuum valve side of delay valve. Resistance should be felt.