

DATSUN MIXTURE RATIO SYSTEM

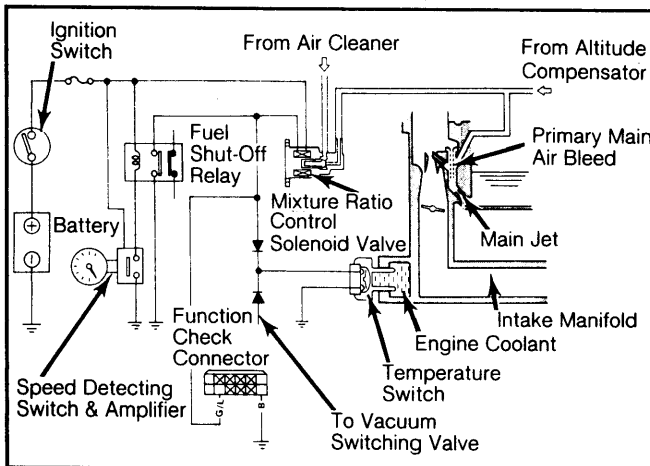
Sentra, 210, 310
(California Models)

DESCRIPTION

The Mixture Ratio system controls the air/fuel mixture ratio, which reduces fuel consumption and improves engine performance while reducing hydrocarbon (HC) and carbon monoxide (CO) emissions.

This system is controlled by engine coolant temperature and vehicle speed. System consists of a mixture ratio control solenoid valve, speed detecting switch and amplifier, and a coolant temperature switch.

Fig. 1: Datsun Sentra Mixture Ratio System

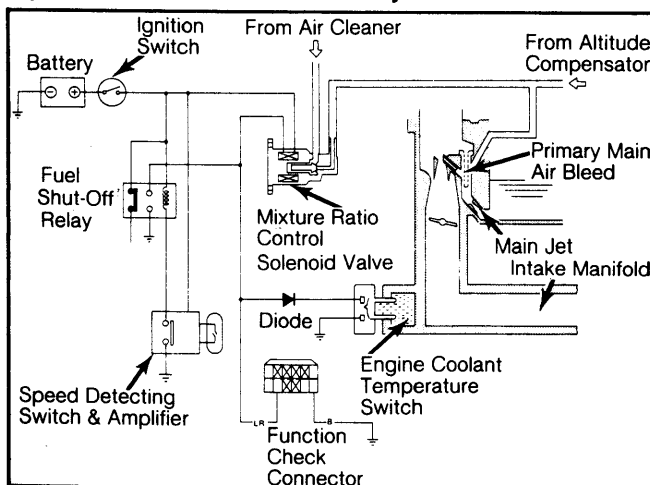


System is used on California models only.

OPERATION

When engine coolant is below predetermined temperature of coolant switch, mixture ratio valve leans out air/fuel mixture. When engine coolant is above predetermined temperature of coolant switch and vehicle speed is above predetermined speed of speed switch, mixture ratio valve is activated and leans out air/fuel mixture.

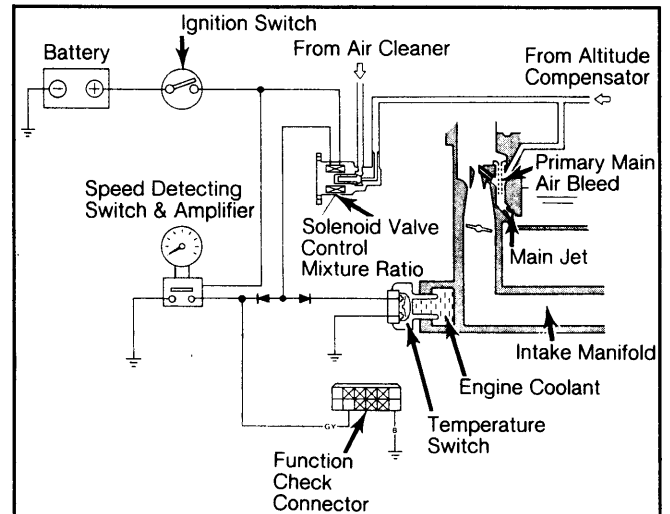
Fig. 2: Datsun 210 Mixture Ratio System



System is used on California models only.

When engine coolant is above the predetermined temperature of the coolant switch and vehicle speed is below the predetermined speed of the speed switch, mixture ratio valve is deactivated and air/fuel mixture is richened.

Fig. 3: Datsun 310 Mixture Ratio System

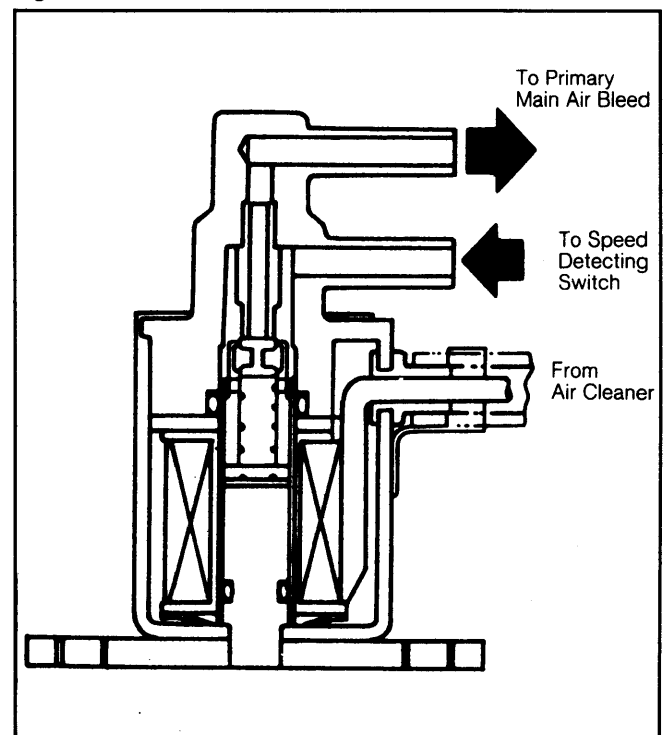


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MIXTURE RATIO CONTROL SOLENOID VALVE

This valve, controlled by an electrical signal, changes the air flow passage size and controls air flow to the main air bleed to change the air/fuel ratio.

Fig. 4: Datsun Mixture Ratio Control Solenoid Valve



Note direction of flow.

1982 Exhaust Emission Systems

DATSUN MIXTURE RATIO SYSTEM (Cont.)

COOLANT TEMPERATURE SWITCH

This switch is installed on the rear of the cylinder head. Temperature switch senses coolant temperature for the mixture ratio control solenoid valve.

SPEED DETECTING SWITCH & AMPLIFIER

This speed detecting switch is installed in the speedometer and the amplifier is installed on back side of instrument panel. The speed detecting switch changes vehicle speed into an electrical pulse signal. This signal is detected by the amplifier which then sends an electrical control signal to mixture ratio control solenoid valve.

3) When water temperature is above 104°F (40°C) on Sentra models or 95°F (35°C) on 210 and 310 models, ohmmeter should not show continuity. If switch does not operate within specifications, replace it.

SPEED DETECTING SWITCH & AMPLIFIER

If mixture ratio control solenoid valve and coolant temperature switch are operating correctly and system still does not function properly, the speed detecting switch and amplifier should be replaced.

TESTING

SYSTEM CHECK

1) Visually check mixture ratio system. Check all hoses and electrical connections for proper installation. Start engine and warm to normal operating temperature.

2) Connect voltmeter positive lead to Green/Blue wire on Sentra models, Blue/Red wire on 210 models or Green/Yellow wire on 310 models. Connect negative lead to Black wire on all models at function check connector (located under left side of instrument panel).

3) Coolant temperature switch functions properly if voltmeter reads 0 volts when coolant temperature is below 104°F (40°C) on Sentra models or 95°F (35°C) on 210 and 310 models or 12 volts if above.

4) Disconnect mixture ratio control solenoid valve connector. With engine running at 2000 RPM, apply 12 volts to valve. If valve is operating properly, a clicking sound can be heard from valve and engine speed will change. If not, replace mixture ratio control solenoid valve.

5) Lift front of vehicle (rear on 210 models) high enough so that wheels turn freely. Support front of vehicle (rear on 210 models) with safety stands, and block rear wheels (front on 210 models). Start engine and place transmission in high gear.

6) Reconnect voltmeter positive lead as described in step 2). Speed detecting switch and amplifier is operating correctly if voltmeter reads 12 volts when vehicle speed is below 40 MPH on Sentra models or 45 MPH on 210 and 310 models or 0 volts if above.

NOTE: Be sure that vehicle speed does not exceed 55 MPH.

MIXTURE RATIO CONTROL SOLENOID VALVE

1) Remove hoses, wire connector and attaching screws from valve. Remove valve.

2) Apply 12 volts directly to valve. Air should flow through valve. If it does not, replace mixture ratio control solenoid valve.

COOLANT TEMPERATURE SWITCH

1) Drain engine coolant, disconnect wiring, and remove coolant temperature switch. Connect ohmmeter leads to switch and place end of switch in a pan of water.

2) When water temperature is below 59°F (15°C) on Sentra models or 63°F (17°C) on 210 and 310 models, ohmmeter should show continuity.