1982 Exhaust Emission Systems

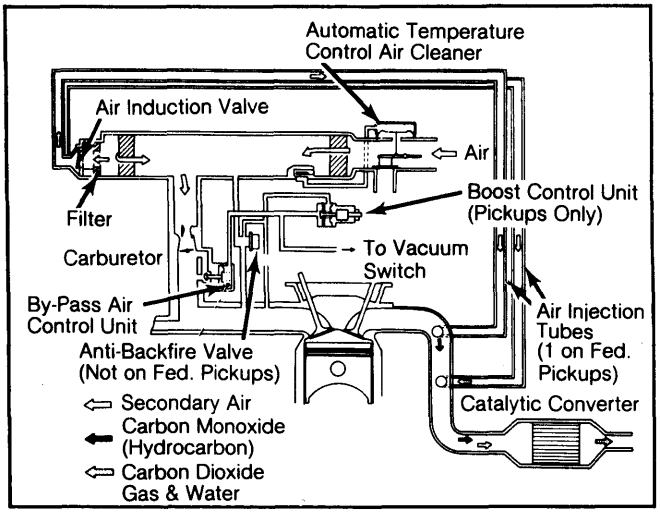
DATSUN AIR INDUCTION SYSTEM

Pickup, Sentra, Stanza, 210, 310

DESCRIPTION

The air induction system is used to reduce hydrocarbon (HC) and carbon monoxide (CO) emissions by supplying filtered air to the exhaust manifold. System consists of an air induction valve, induction valve filter, air injection tubes, and various connecting hoses.

Fig. 1: Datsun Pickup & Stanza Air Induction System



Note direction of air flow.

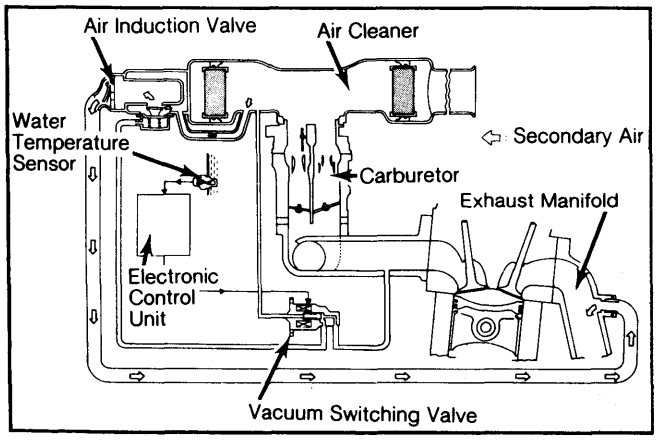
In addition, an anti-backfire valve is used on all models except Federal Pickup and a vacuum switching valve and water temperature sensor is used on Sentra M.P.G. models.

OPERATION

The Air Induction System is designed to send secondary air to the exhaust manifold, utilizing a vacuum created by exhaust pulsations in the exhaust manifold.

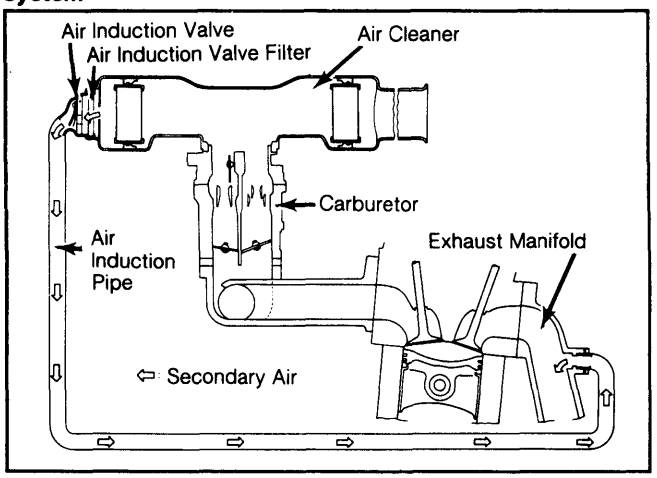
Exhaust pressure in the exhaust manifold usually pulsates in response to opening and closing of exhaust valves, and periodically it decreases below atmospheric pressure. When this happens, a vacuum is created and a secondary air intake is opened and secondary air is drawn into the exhaust manifold in proportion to the vacuum.

Fig. 2: Datsun Sentra M.P.G. Air Induction System



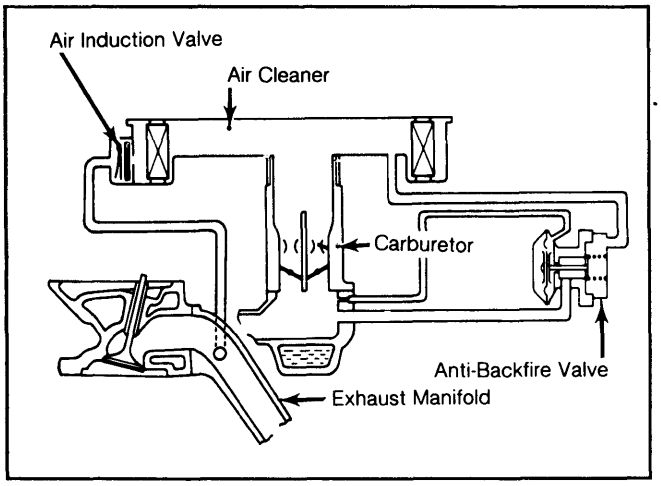
Note direction of flow.

Fig. 3: Datsun Sentra Non-M.P.G. & 310 Air Induction System



Note direction of flow.

Fig. 4: Datsun 210 Air Induction System



Note direction of air flow.

AIR INDUCTION VALVE

The air induction valve, mounted on air cleaner, is a dual reed type check valve. When exhaust pressure is lower than atmospheric pressure (negative pressure), the valve is open and secondary air is sent to exhaust manifold. When exhaust pressure is higher than atmospheric pressure, valve is closed and secondary air induction is shut off.

INDUCTION VALVE FILTER

The induction valve filter is installed on the air cleaner. This filter purifies the secondary air to be sent to exhaust manifold. The filter element should be replaced periodically in accordance with vehicle maintenance schedule.

ANTI-BACKFIRE VALVE

All Models Exc. Fed. Pickup

The anti-backfire valve is used to prevent backfire in exhaust system during deceleration. At start of

DATSUN AIR INDUCTION SYSTEM (Cont.)

deceleration, air/fuel mixture in intake manifold becomes too rich to ignite and burn in combustion chamber.

The anti-backfire valve provides additional air to intake manifold to make air/fuel mixture leaner and prevent backfire. If valve is faulty, unburned air/fuel mixture will be emitted to exhaust manifold and ignite when mixed with secondary air, causing backfire.

TESTING

AIR INDUCTION VALVE & FILTER

1) Disconnect air induction valve hoses at exhaust manifold. Apply suction to induction valve through hose and check for air flow. Air should flow freely though valve.

2) Apply air pressure to valve through hose and check for air flow. Valve should now be closed, preventing air flow. Check air induction filter for damage or blockage. Replace defective parts as necessary.

ANTI-BACKFIRE VALVE

All Models Exc. Fed. Pickup

1) Start engine. Warm to normal operating temperature and run at idle. Disconnect anti-backfire valve hose at air cleaner.

2) Place finger over end of hose and increase engine speed to 3000 RPM. Quickly release throttle and allow engine to return to idle.

3) If vacuum is felt at end of hose, anti-backfire valve is functioning properly. If no vacuum is felt, replace anti-backfire valve.