DATSUN AIR INDUCTION SYSTEM

200SX
210 (Federal Only)
280ZX (Federal Only)
310 (Federal Only)
510
810 (Federal Only)
Pickup (Federal Only)

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 and various connecting hoses. An anti-backfire valve is also installed on all models, except 200SX, 280ZX, Federal 510 and 810.

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 the opening and closing of the 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.

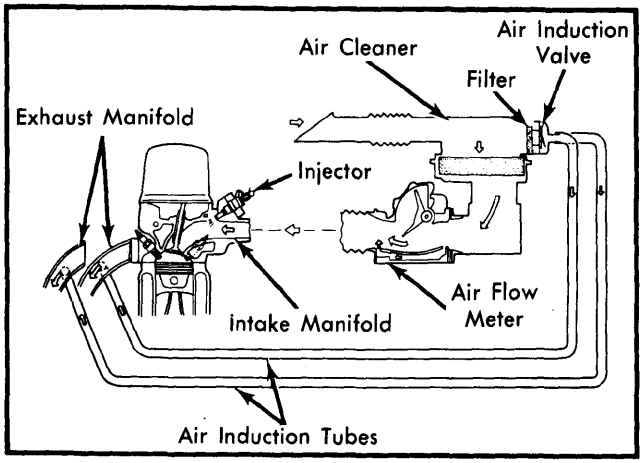

Fig. 1 Datsun Air Induction System Schematic (California 200SX Shown)

AIR INDUCTION VALVE

The air induction valve, mounted on air cleaner (in air induction line of 280ZX), is a dual-reed valve 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.

NOTE — *Air induction valve of California model 200SX and 510 consists of 2 air induction pipes to distribute secondary air to exhaust manifold.*

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.

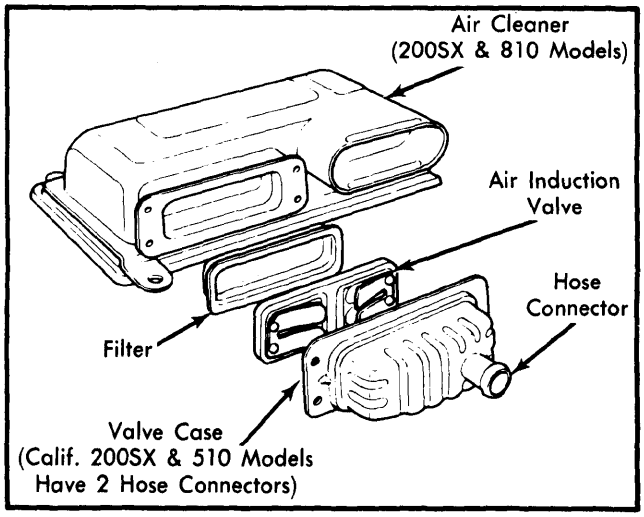

Fig. 2 Exploded View of Air Induction Components (Except 280ZX Models)

ANTI-BACKFIRE VALVE (210, 310, PICKUP AND CALIF. 510 MODELS ONLY)

The anti-backfire valve is used to prevent backfire in the exhaust system during deceleration. At the start of deceleration, the air/fuel mixture in the intake manifold becomes too rich to ignite and burn in the combustion chamber. The anti-backfire valve provides additional air to the intake manifold to make the air/fuel mixture leaner and prevent backfire. If the valve is faulty, unburned air/fuel mixture will be emitted to the exhaust manifold and ignite when mixed with secondary air, causing backfire.

TESTING

AIR INDUCTION VALVE

Disconnect air induction valve hose at exhaust manifold. Apply suction to induction valve through hose and check air flow. Air should flow freely through valve. Next, apply air pressure to valve through hose and check air flow. Valve should now be closed, preventing air flow.

ANTI-BACKFIRE VALVE (210, 310, PICKUP AND CALIF. 510 MODELS ONLY)

1) With engine at normal operating temperature and idling, disconnect anti-backfire valve hose at air cleaner. Place finger over end of hose and increase engine speed to 3000 RPM, then quickly release throttle and allow engine to return to idle.

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