DATSUN 1200 ENGINE MODIFICATION

Datsun 1200 Sedan & Coupe (1970-73)

NOTE — Air Injection is not used with this system.

DESCRIPTION

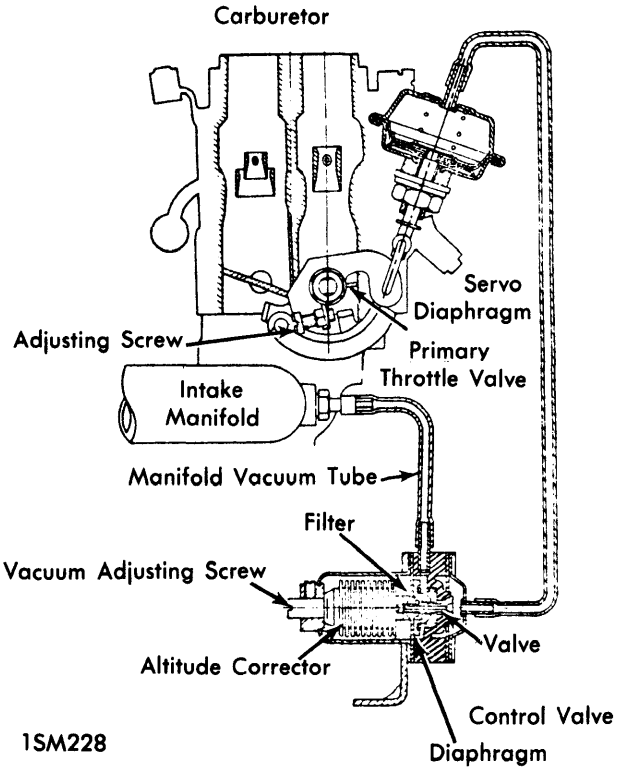
The Datsun 1200 Sedan and Coupe use an engine modification system which consists of automatic temperature control air cleaner, leaner carburetion, a throttle opener, and transmission controlled vacuum advance (manual transmission cars only).

OPERATION

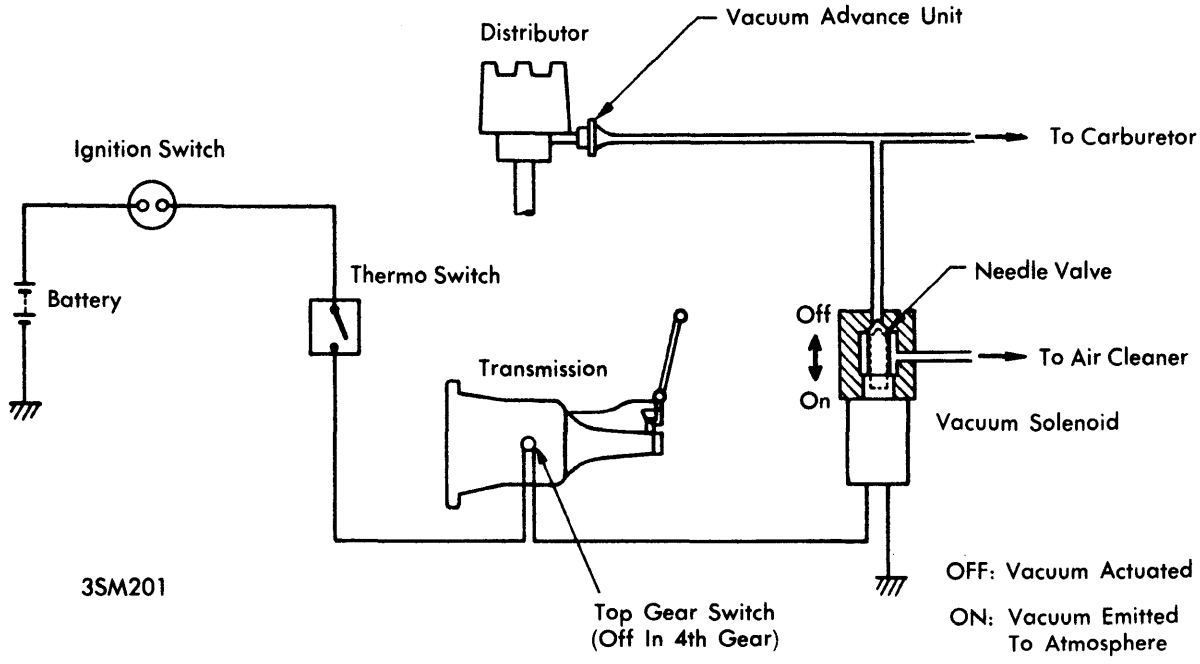
Transmission Controlled Vacuum Advance — System allows advance only when in top (fourth) gear. The system allows vacuum advance during warm up period and ensures satisfactory driving performance after starting the engine. When solenoid valve is energized, a needle valve opens and vacuum advance is eliminated. When valve is de-energized, the needle valve closes and vacuum is introduced to the vacuum unit of the distributor to advance the timing. A gear switch, located on the transmission cover, allows current to flow to the solenoid in all gears except top (fourth) gear.

Automatic Temperature Control Air Cleaner — Air cleaner uses a temperature sensor and a vacuum operated valve to allow heated air from the exhaust manifold to enter engine at temperatures below 110°F. At 110°F or above, the sensor actuates to open the valve and begins to shut off the hot air. When sensor reaches 120°F, the valve is completely open and prevents entrance of heated air and allows only under hood air to be introduced to the carburetor.

Throttle Opener — The function of the throttle opener is to open the throttle plate of carburetor slightly during periods of deceleration. During deceleration, manifold vacuum rises and air/fuel mixture is such that normal combustion cannot continue. The throttle opener supplies engine with an adequate charge of mixture to maintain proper combustion during deceleration. At the moment when manifold vacuum inscreases, the control valve opens to transfer vacuum to servo diaphragm chamber and throttle valves of carburetor open slightly. As vehicle speed decreases, vacuum control valve begins to close gradually, keeping manifold vacuum at a predetermined level. As a result, both low hydro-carbon emissions and normal



THROTTLE OPENER



TRANSMISSION CONTROLLED VACUUM ADVANCE (1973)

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DATSUN 1200 ENGINE MODIFICATION (Cont.)

engine braking during deceleration are obtained. An altitude corrector is provided with a slight preload to compensate for variation of atmospereic pressure.

TESTING

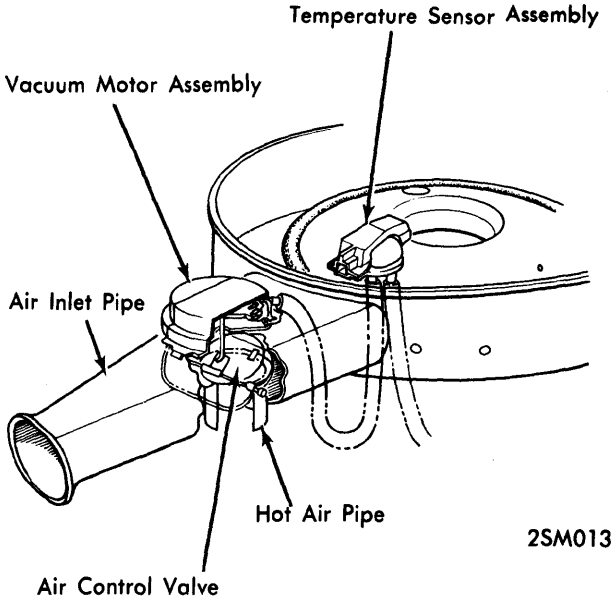
Transmission Controlled Vacuum Advance – With engine warm, disengage clutch and race the engine. Pull off vacuum hose from distributor. If vacuum is felt at top gear position and is not felt at other positions, operation is satisfactory. Vacuum should always be felt at temperatures below 50°F (before engine is warmed up). If operation is not satisfactory, one of the following may be the cause:

1) Air leakage due to poor connection of vacuum tube.
2) Malfunction of transmission switch.
3) Malfunction of temperature sensing switch.
4) Blown fuse or poor electrical connection.

ADJUSTMENT

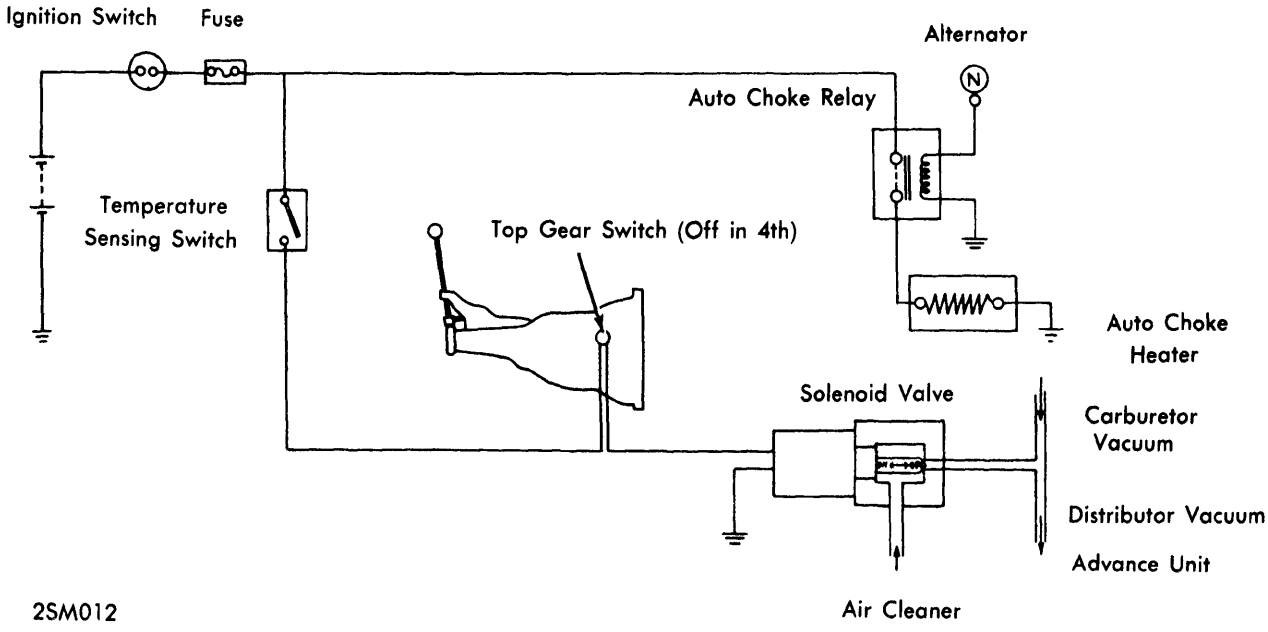
Ignition timing and idle should be checked and adjusted every 3000 miles. Throttle opener should be checked and adjusted every 12,000 miles.

Ignition Timing – Set ignition timing with engine at normal operating temperature, spark plugs correctly gapped and breaker points correctly set. With engine idling at approximately 800 RPM, set ignition timing to 5° BTDC.



AUTOMATIC TEMPERATURE CONTROL AIR CLEANER

Idle Speed & Mixture Adjustment – With engine at normal operating temperature, let idle for one minute. Adjust throttle



ON .....Vacuum emitted into atmosphere
OFF .....Vacuum actuated

TRANSMISSION CONTROLLED VACUUM ADVANCE (1970 & 1972)

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DATSUN 1200 ENGINE MODIFICATION (Cont.)

adjusting screw so that engine speed is 800 RPM with transmission in "N". Adjust idle adjusting screw so that CO percentage is 1.5±.5%. Repeat adjustment until CO is 1.5±.5% at 800 RPM. On models with Auto. Trans. shift transmission into "D" and check that idle speed drops to 650 RPM. If not, repeat adjustment until 650 RPM is achieved with a CO reading of 1.5± .5%.

Throttle Opener Adjustment – This system is set at the factory and adjustment is not normally required. If adjustment is needed, proceed as follows:

1) With engine at normal operating temperature and choke fully open, connect vacuum gauge to intake manifold, and tachometer to engine. Disconnect wiring harness to throttle opener solenoid to ensure solenoid is OFF.

2) Place transmission in "P" or "N" (Auto. Trans.) or "N" (Man. Trans.). Increase engine speed to 3000 RPM under no load and release throttle rapidly.

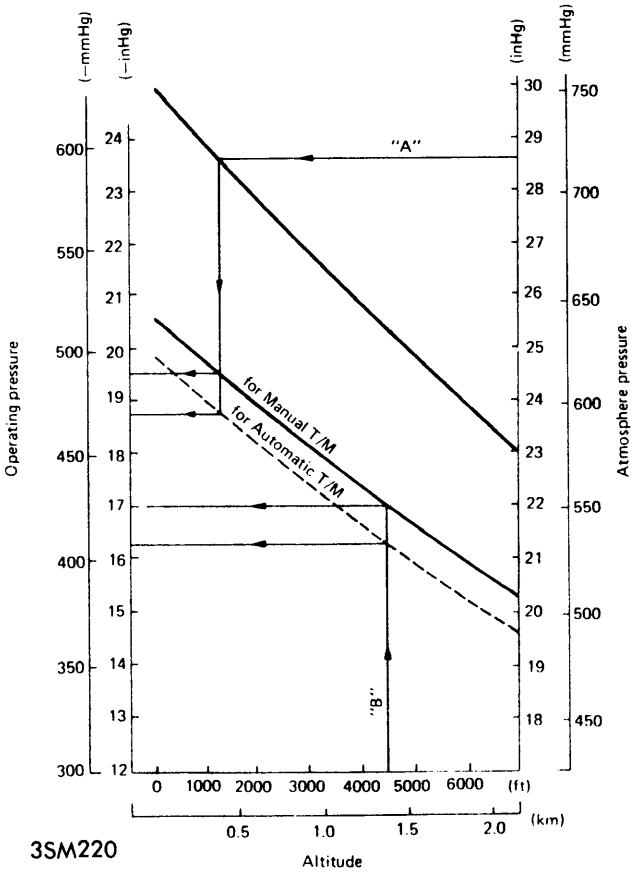
3) Manifold vacuum should rise, causing control valve to operate. Following this, both speed and manifold vacuum should reduce. Speed and vacuum should stabilize after a few seconds. Manifold vacuum at this time is called "Operating Pressure".

TROUBLE SHOOTING

Rough Engine Idle or Engine Stops – Incorrect carburetor adjustment or ignition timing.

Engine Idle Too Fast – Throttle linkage or cable binding or out of adjustment, throttle opener adjustment incorrect, throttle opener control valve not working.

Car Knock When Decelerating – Throttle opener adjustment incorrect, throttle control valve not working.



CONTROL VALVE OPERATING PRESSURE (OPERATING VACUUM)

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