LUV THERMOSTATIC AIR CLEANER

LUV

DESCRIPTION

The automatic temperature controlled air cleaner is designed so that the temperature of air drawn into the carburetor is automatically controlled. This helps to maintain a constant fuel/air ratio for more efficient fuel combustion. The system consists of a thermo-sensor, vacuum motor, hot air control valve, hot idle compensator and connecting pipes. All components are mounted to the air cleaner body.

OPERATION

When air cleaner is cold the vacuum motor diaphragm is pulled by intake manifold vacuum and opens the hot air control valve. This allows intake of hot air from a stove on exhaust manifold. When the air cleaner reaches a temperature of 100-111°F, the thermo-sensor comes into function and stops the supply of vacuum from the intake manifold. When vacuum is stopped, the hot air control valve opens and permits entry of cool outside air. This holds the temperature of intake air at a nearly constant temperature. As negative pressure in the intake manifold decreases (closing throttle valves) the vacuum motor diaphragm returns to its normal state and permits entry of cool air into the carburetor even when thermo-sensor is out of function.

Hot Idle Compensator – The air/fuel mixture tends to richen when engine is running at idle during periods of high operating temperatures. To offset these high temperatures, a hot idle compensator feeds cool ambient air into intake manifold to lean the air/fuel mixture.

TESTING

Vacuum Motor & Hot Air Control Valve – Connect vacuum motor directly to intake manifold vacuum source. With vacuum at zero, look through air cleaner snorkle and make sure hot air control valve is completely closed. Start engine and allow to idle; hot air control valve should open immediately. If valve does not operate smoothly, check for binding.

Thermo-Sensor – Remove air cleaner cover and place suitable thermometer (thermocouple type) on thermo-sensor; replace cover. With thermo-sensor cool, start engine and check that hot air control valve is closed to outside air. When valve begins to move, read thermometer; it should read 100-111°F, if not, replace thermo-sensor.

Hot Idle Compensator – With thermometer installed in air cleaner housing, run engine at idle with air cleaner cover removed. Hot idle compensator should begin to open at 115-126°F. If not, replace hot idle compensator.

MAINTENANCE

The thermostatic air cleaner and hot idle compensator should be inspected every 12 months or 15,000 miles for proper operation. Replace air cleaner element every 30,000 miles.

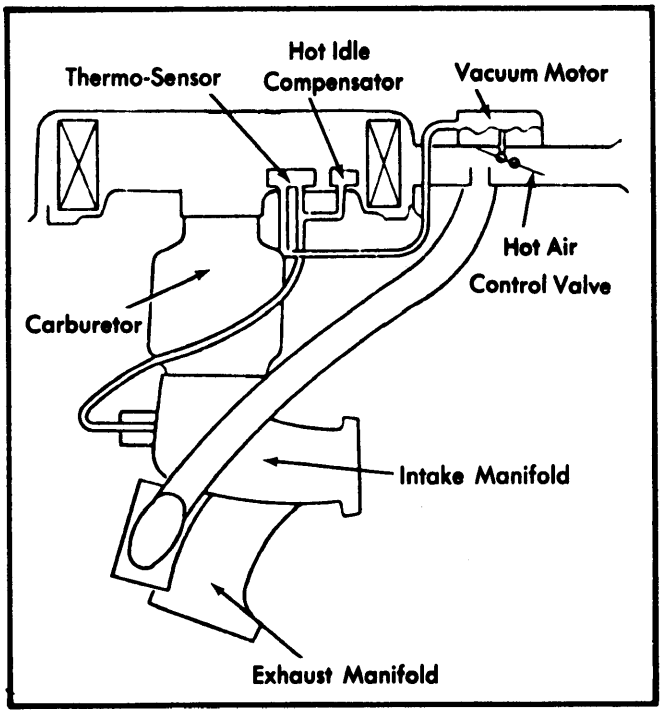

Fig. 1 Temperature Controlled Air Cleaner (Controlled Combustion System)