1968-74 GENERAL MOTORS THERMAC AIR CLEANER

DESCRIPTION

The Thermac Air Cleaner assembly is installed to reduce amount of carbon monoxide in exhaust gases. This reduction is accomplished by regulating air temperature at air cleaner inlet. System consists of air cleaner assembly with integral damper assembly, temperature sensor, vacuum motor, vacuum hoses and exhaust shroud with connecting pipe. Oldsmobile uses two different temperature sensors, a green one with 1 and 4 barrel carburetors and a blue one with 2 barrel carburetors.

OPERATION

When temperature of air entering air cleaner is less than setting of temperature sensor, sensor closes to allow engine vacuum to operate vacuum motor which closes damper assembly to outside air. Air is then drawn from around exhaust manifold, through shroud and into cleaner as heated air. As air inside air cleaner warms, sensor valve begins to open, bleeding off vacuum to vacuum motor. This allows damper to begin to open to outside air. When temperature of air entering air cleaner reaches specified temperature, damper opens completely, closing off heated air inlet. Under full throttle conditions, vacuum cannot hold damper closed and allows only outside air to enter carburetor regardless of temperature.

TESTING

1) Tape a thermometer in air cleaner next to temperature sensor. If temperature in engine compartment is more than closing temperature of sensor, let air cleaner cool to at least 7° below closing temperature of sensor. Install a tee in vacuum line at vacuum motor and connect a vacuum gauge in line.

2) With engine off, control damper will be open (check visually). Install cover on air cleaner (without wing nut) and start engine. With engine at idle and ambient temperature below closing temperature of sensor, damper should close.

3) When damper in snorkel begins to move toward open position, quickly remove cover on air cleaner and check thermometer and vacuum gauge. Vacuum should be 5-9 in. Hg when damper is closed to outside air.

4) Replace cover and wait until damper is fully open, again note vacuum and temperature reading. Vacuum should be 3 in. Hg or less and temperature should be at opening temperature of sensor. If temperature is not within specifications, but vacuum is correct, replace sensor. If both temperature and vacuum are not within specifications, replace vacuum motor. *NOTE – Temperature sensor is preset at factory. Do not adjust.*

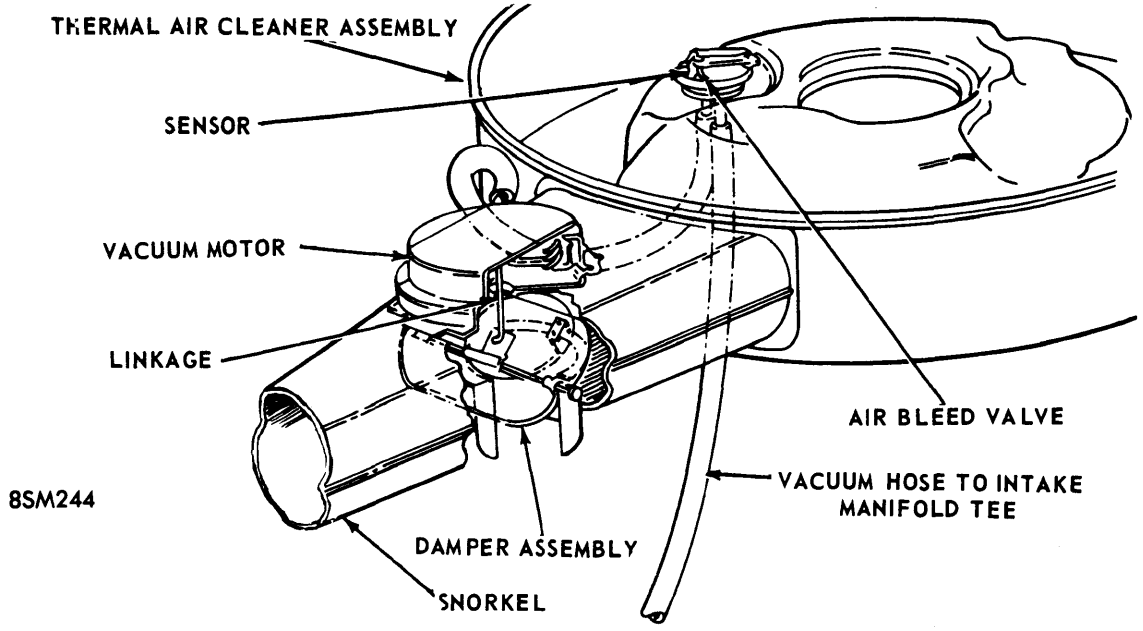
TEMPERATURE SENSOR SPECIFICATIONS

Application	Opening Temp.	Closing Temp.
Buick (1968-74)		
250" 6 Cylinder	85°F	105°F ±20°F
All V8	85°F	115°F ±20°F
Cadillac (1970-74)		
All V8	85°F	105°F
Chevrolet (1968-74)		
All Engines	85°F	128°F
Oldsmobile		
All Engines (1968-71)	85°F	128°F
All Engines (1972)	77°F	123°F
① Blue Sensor (1973)	107°F	151°F
② Green Sensor (1973-74)	79°F	123°F
Pontiac (1968-74)		
All Engines	85°F	128°F

① – 2-Bbl. carburetor application.
② – 1-Bbl. and 4-Bbl. carburetor application.

MAINTENANCE

Check all hoses and fittings at 12 month or 12,000 mile intervals for obstructions, loose connections and malfunction. Replace components as necessary. No maintenance is required for damper assembly, temperature sensor or vacuum motor other than testing for proper operation.



THERMAC AIR CLEANER ASSEMBLY (TYPICAL)