

DATSUN THERMOSTATIC AIR CLEANER

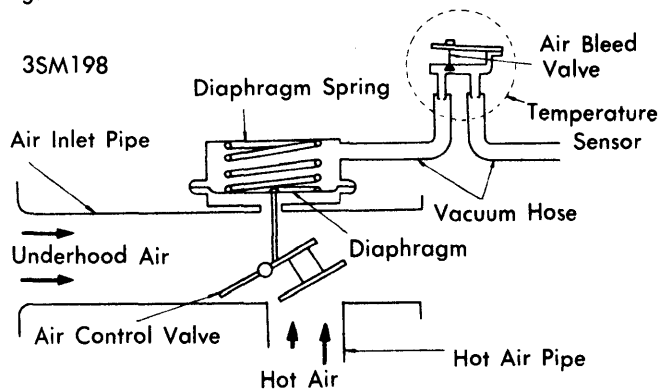
1200 Sedan & Coupe (1973)
 510 Sedan & Station Wagon (1973)
 610 Sedan & Station Wagon (1973)
 Pickup (1973)
 240Z (1973)

DESCRIPTION

The Datsun automatic temperature control air cleaner is used to keep intake air temperature about 110°F (all except 1200 models) or 115°F (1200 models). This unit consists of a temperature sensor, a vacuum operated air control valve, a hot and cold air inlet and various connecting vacuum lines. In addition, all models except 1200 models are also equipped with a hot idle compensator, located in air cleaner housing, to correct rich mixture caused by hot idle conditions.

OPERATION

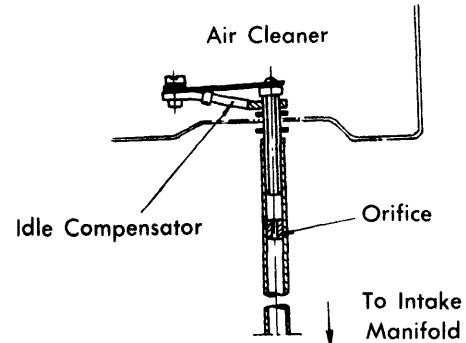
Air Cleaner – When temperature of intake air is low with engine running, air control valve closes underhood air intake and allows only heated air from shroud around exhaust manifold to enter air cleaner. When intake air reaches about 100°F (all except 240 Z & 1200) or 110°F (240 Z & 1200) sensor actuates to start to open air control valve. At about 118°F (all except 240 Z & 1200) or 120°F (240 Z & 1200) air control valve will completely open to prevent entrance of hot air and allow only engine compartment air to enter air cleaner. When engine is operated under a heavy load (high manifold vacuum) air control valve opens fully to underhood air intake to obtain full power regardless of air temperature. This control of air temperature allows leaner carburetor settings with accompanying reduced emissions and also eliminates carburetor icing.



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Hot Idle Compensator (All Except 1200 Models) – When underhood temperatures are high, bimetal strip in compensator is heated. This causes valve to open and permit additional fresh air to flow into intake manifold by way of a calibrated .055" dia. (all except 240 Z) or .118" dia. (240 Z) orifice. This controlled flow of air into intake manifold leans out mixture in order to maintain smooth idle operation. Valve begins to open at 149°F (all except 240 Z) or 122°F (240 Z)

and will be fully open at a temperature of 167°F (all except 240 Z) or 140°F (240 Z). Never attempt to disassemble this unit since it is sealed for tightness and properly adjusted at factory.



3SM199

HOT IDLE COMPENSATOR

TESTING

Air Cleaner Vacuum Motor – With engine off, check that air control valve is open to underhood air intake. If not, check valve for binding. Disconnect vacuum hose from vacuum motor and connect motor directly to vacuum source. If underhood air inlet is closed, vacuum motor is operating correctly. If not, and linkage is not binding, replace air cleaner assembly. With vacuum applied, twist or pinch off vacuum hose. If valve remains closed to underhood air, vacuum motor is operating correctly. If not, replace air cleaner assembly.

Air Cleaner Temperature Sensor – Before starting test make sure that temperature around sensor is below 86°F. With engine off, make sure air control valve is open to underhood air intake. Start engine and allow to idle. Valve should immediately close to underhood air. Carefully watch valve to ascertain that it gradually begins to open as engine warms up. *NOTE* – If ambient air temperature is low, it will take a considerable length of time for valve to begin to open, or, in some cases, it may hardly open. This is to be considered as normal. Above test may also be performed with a thermometer taped near sensor. In this case valve should begin to open at a temperature of 100-118°F (all except 240 Z & 1200) or 100-130°F (240 Z & 1200). If results of test are abnormal, replace sensor.

Hot Idle Compensator – The most liable problem with this device is that it will stick open. This problem will not be noticed in warm weather, but in cold, weather poor engine performance will result. If device is stuck closed, trouble will appear in the form of excessive fuel consumption and a decrease in engine power. If these symptoms appear and all hoses are connected correctly and are not otherwise damaged, replace compensator.