

b. With the air cleaner in position, secure a dial type temperature gauge next to the sensor. Install air filter cover. Do not install wing nut.

c. Start engine. When the control valve begins to open (viewed through end of snorkel), remove air filter cover and observe temperature gauge. It must read between 85°F. and 128°F.

**CAUTION:** Do not accidentally touch moving parts such as the engine fan. When the snorkel tube is so positioned so as to make inspection difficult, the use of a mirror is recommended.

d. If the system fails to operate the valve at the temperature indicated, proceed to the Motor Check.

### 3. Motor Check -

a. With the engine shut off, the position of the control valve should be open to outside air. (Fig. 6D-7).

b. To determine if the motor is operable, apply at least nine inches of vacuum (either from the engine or from an independent source) to the vacuum fitting on the motor.

c. The control valve should close the cold air passage as long as vacuum is applied. The hot air pipe will be open.

d. If the vacuum motor fails to operate the control valve with the direct application of vacuum, first check to determine if the motor linkage is properly connected to the door or if a bind is present. If the linkage is found satisfactory, then motor replacement is indicated.

e. If the motor check is found to be satisfactory, then sensor replacement is indicated.

## CARBURETOR

The carburetor is specifically calibrated throughout critical engine ranges. An adjustable off-idle feature included in all carburetors is pre-set at the factory and no attempt should be made to adjust it in service.

### DUAL ACTING DISTRIBUTOR (Fig. 6D-9)

All distributors on C.C.S. equipped engines feature a dual acting advance/retard vacuum unit, the purpose being to provide retarded ignition timing at idle. This provides reduced emissions at idle and coast down conditions. In order to provide a smooth running engine at idle with the timing retarded, the idle speed is increased allowing a wider throttle opening and consequently a greater intake of air.

Retarded timing is achieved at idle by applying vacuum to the rear side of the distributor vacuum diaphragm, thereby retarding the distributor breaker

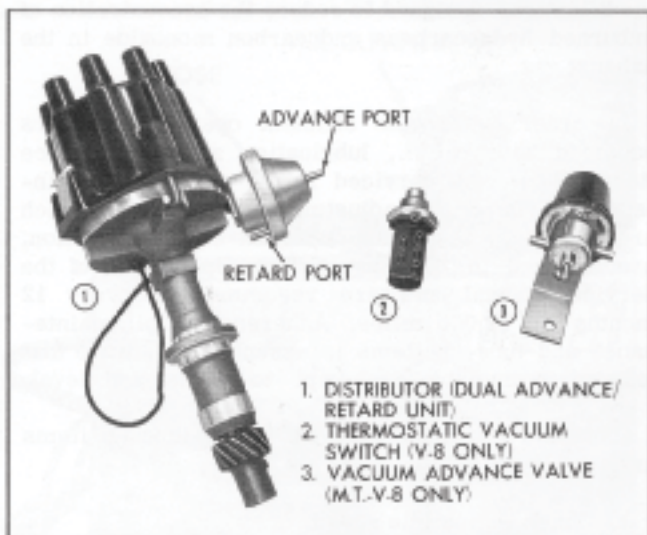


Fig. 6D-9 Components of Controlled Combustion System

plate. This is accomplished by providing a second port in the carburetor below the throttle plates. The advance side of the diaphragm is connected to a port above the throttle plates and therefore is not subject to vacuum (Fig. 6D-12).

At any throttle opening above idle, the retard port is above the throttle plate which eliminates spark retard. At the same time, vacuum is applied to the advance side of the diaphragm and the unit operates in the conventional manner having no adverse effects on the driveability of the car. When the engine is operated at wide open throttle, insufficient vacuum exists at either the advance or retard ports. Under this condition, the distributor advance unit assumes a neutral position.

To ensure correct installation of the hoses to the distributor, the hose to the advance side is the longest in the harness and the hose to the retard side, the second longest in the harness.

### VACUUM ADVANCE VALVE (Fig. 6D-9)

The vacuum advance valve is used on all V-8's with manual transmission and operates only during deceleration when manifold vacuum exceeds 21 h.g. Cars with automatic transmission do not require this valve since on deceleration or coast down engine speeds drop rapidly due to the fluid coupling, therefore manifold vacuum rarely exceeds 21 h.g.

Air/fuel mixtures obtained during coast down conditions on V-8 manual transmission cars burn slower under higher vacuum conditions. Therefore, early ignition is needed during this period to provide more complete combustion and consequent reduced emissions. The valve operates in the following manner, under a coast down condition where manifold vacuum exceeds 21 h.g., the vacuum is sufficient to overcome the spring in the valve. This shuts off the