

October 30, 1970

Rev. 1-11-71

ENGINEERING MEMO #289

TO: Memo Distribution

FROM: R. E. Orwig

SUBJECT: COMBINATION EMISSION CONTROL (C.E.C.) SYSTEM FOR ALL 1971
CHECKER MOTORS VEHICLES EXCEPT AEROBUS

The prime purpose of this system is to eliminate distributor vacuum advance in all gears except high - in order to meet the 1971 Federal Standards for exhaust emissions. The heart of this system is a new solenoid, called the C.E.C. Valve, which is part of the carburetor assembly as purchased. This valve combines the functions of the 1970 T.C.S. Solenoid and the action of a transmission controlled throttle return check.

When the C.E.C. Valve is in the non-energized position, vacuum to the distributor vacuum advance unit is shut off and the unit is vented to atmosphere through a filter at the opposite end of the solenoid. When the solenoid is in the energized position, the vacuum port is opened and the plunger is seated at the opposite end shutting off the clean air vent. At the same time, the throttle stop adjustment screw is in the extended position. This C.E.C. Valve adjustment is set by the carburetor manufacturer and should not be changed. The vacuum connection to the C.E.C. Valve is also made by the carburetor manufacturer, thus the only connections required are those from the solenoid to the distributor vacuum advance and the electrical connections.

It should be noted that two separate throttle settings are now possible; one for curb idle and one for high gear deceleration hydrocarbon control. Curb idle speeds are set with the carburetor speed screw when the solenoid is not energized. The control of engine dieseling is achieved from the lower curb idle speeds.

It should also be noted that broken or disconnected electrical connections resulting in failure of the C.E.C. Solenoid to function result in no vacuum advance and engine idle speed will be controlled by the carburetor speed screw only.

The solenoid should be energized (vacuum advance) during any of the following conditions:

1. For approximately 20 seconds after the ignition is turned on. Full vacuum to the distributor, independent of engine temperature, for this time interval improves drive away and eliminates stall after start problems. This is achieved by a time delay relay incorporated in the circuit to energize the C.E.C. Valve for 20 seconds.

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2. When engine water temperature is below 82°F or above 260°F,
This is achieved by a thermo switch in the cylinder head (RH on V/8) to provide thermal override.
3. In high gear only, (except when conditions in #1 or #2 override).
The C.E.C. Solenoid is energized by a switch in the transmission.

Refer to Graphic Illustrations #420 A-1, A-2, A-3 and A-4 for part numbers and installation information of the vacuum and electrical connections.

Also refer to Schematic.

COMBINATION EMISSION CONTROL (C.E.C.) SYSTEM - SCHEMATIC

