CHEVROLET LUV ENGINE MODIFICATION

LUV Pickup (1972-73)

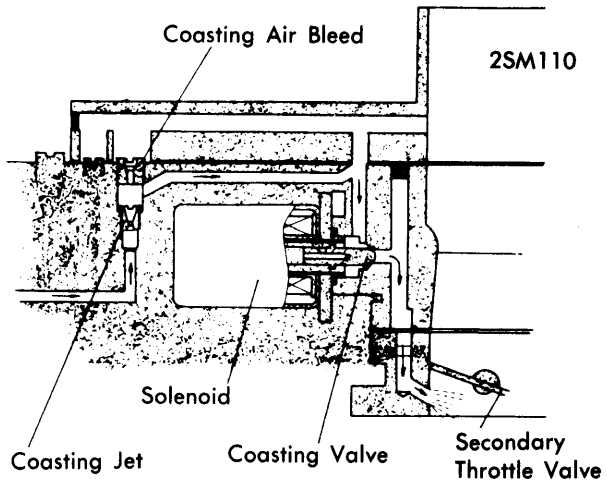
DESCRIPTION

Coasting Richer System — The system functions when the engine is decelerating (coasting). During deceleration the system enriches the air/fuel mixture to provide for more complete combustion and lower hydrocarbon emissions. The system consists of a transmission operated 4th/3rd gear switch, an accelerator switch, clutch pedal switch, relays for each switch, and a solenoid valve which is linked to the secondary side of the carburetor.

Dual Point Distributor Control — Two sets of contact points are used to permit either advanced or retarded timing to fit engine operating conditions. The retarded contact points are used when engine is accelerated or decelerated, and the advanced contact points are used for normal operation. The 2 sets of contact points are connected in parallel to the primary side of the ignition circuit. A relay is inserted into the retarded contact circuit. The distributor control shares many components with the coasting system. These are as follows: 4th/3rd gear switch, accelerator switch, clutch switch, the respective relays, and the throttle switch.

OPERATION

Coasting Richer System — All switches are turned on during periods of deceleration (coasting). This energizes the solenoid valve in the carburetor and causes the valve to open. Fuel from float chamber is mixed with air and metered through the coasting air bleed and supplied to the lower part of the secondary throttle valve. If clutch pedal is depressed, accelerator pedal is depressed, or transmission shifted to neutral, the circuit is de-energized, and the solenoid valve closes. This prevents any further supply of fuel through the valve.



COASTING RICHER VALVE

Dual Point Distributor Control — The advanced contact points come into operation whenever the distributor relay is energized by any of the following conditions:

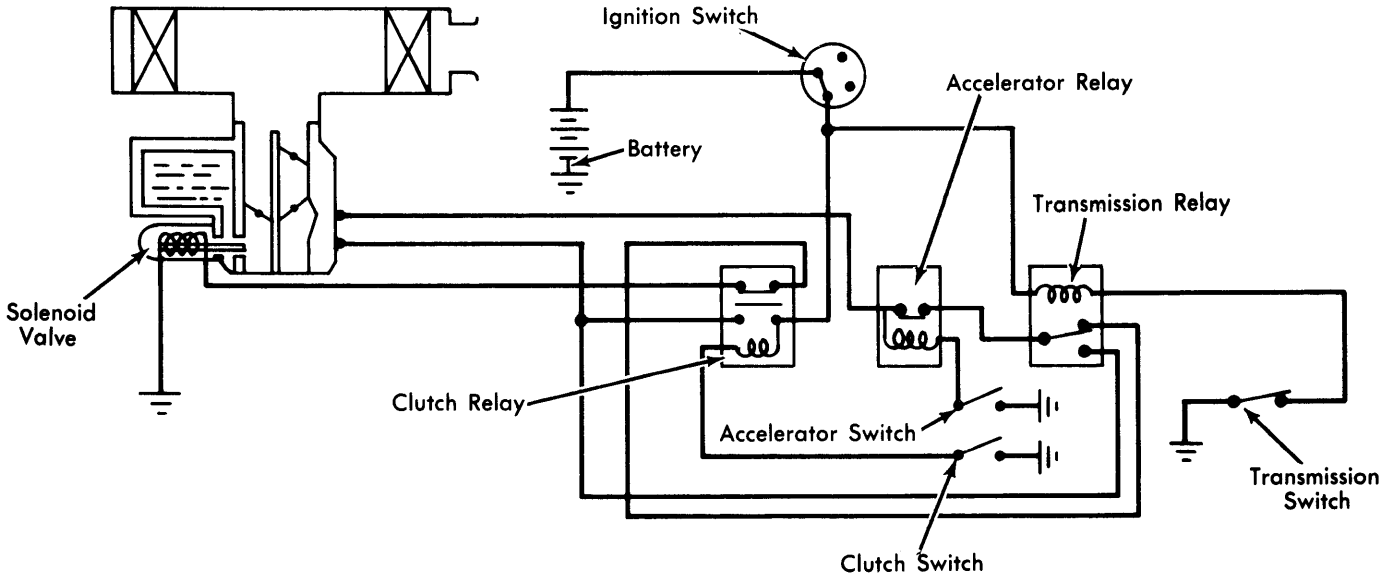
1) Transmission in a gear other than 4th or 3rd and accelerator pedal is not pressed too far down (throttle valve opening of less than 7°).

2) Clutch pedal depressed.

3) Throttle wide open (throttle valve opening of more than 35°).

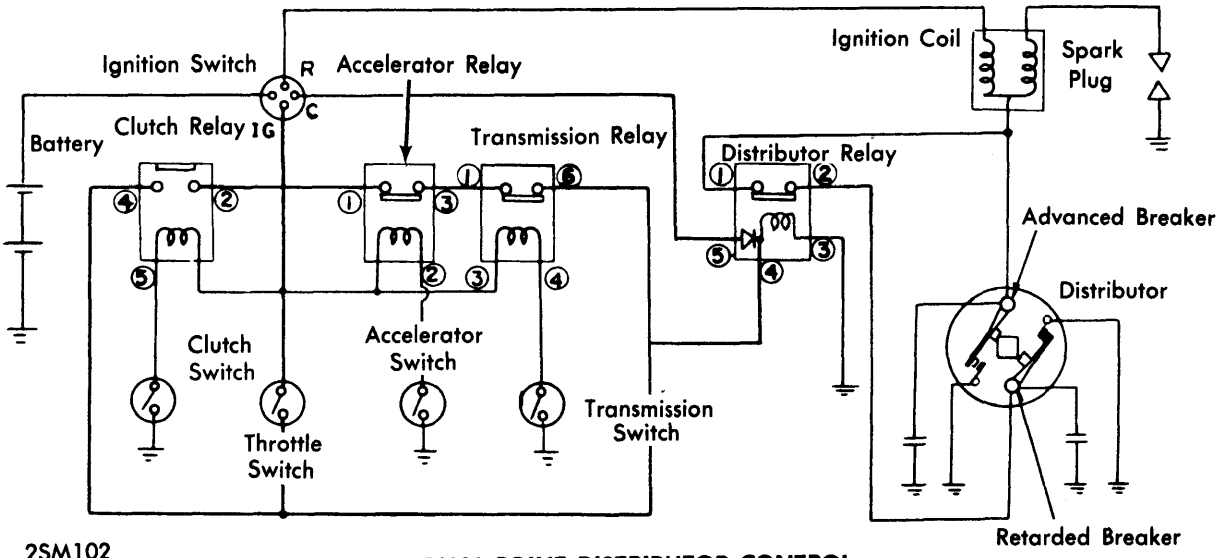
4) Ignition turned on.

Throttle Switch — Controlled by a cam interlocked with the primary side throttle valve of carburetor, switch turns ON when throttle valve is opened more than 35°



COASTING RICHER SYSTEM

CHEVROLET LUV ENGINE MODIFICATION (Cont.)

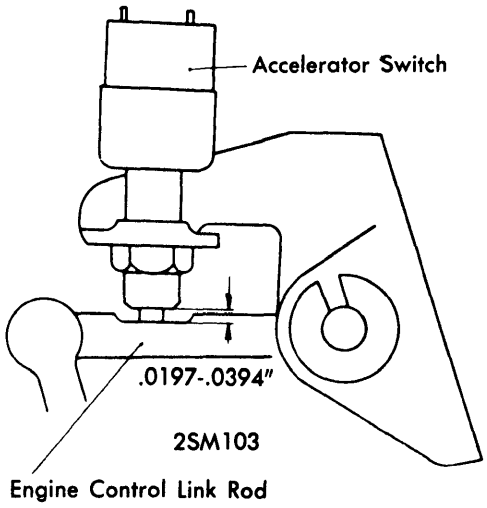


2SM102

DUAL POINT DISTRIBUTOR CONTROL

SERVICE PROCEDURES

Accelerator Switch – Inspect positioning of switch. Switch plunger should contact engine control link rod with about .0197-.0394" of switch plunger exposed (see illustration). Disconnect switch wiring and connect a circuit tester in its place. Switch should turn OFF when pedal is released, and ON when pedal is depressed. If operation is faulty, replace switch.

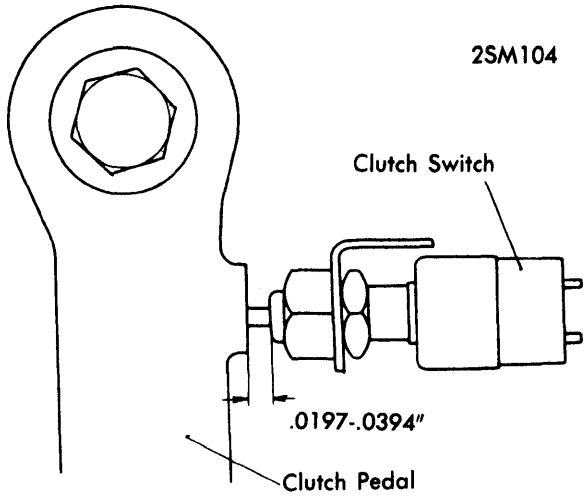


2SM103

ACCELERATOR SWITCH

Clutch Switch – Inspect positioning of switch. Switch plunger should contact clutch pedal with about .0197-.0394" of switch plunger exposed (see illustration). Disconnect switch wiring and connect a circuit tester in its place. Switch should turn OFF when pedal is released, and ON when pedal is depressed. If operation is faulty, replace switch.

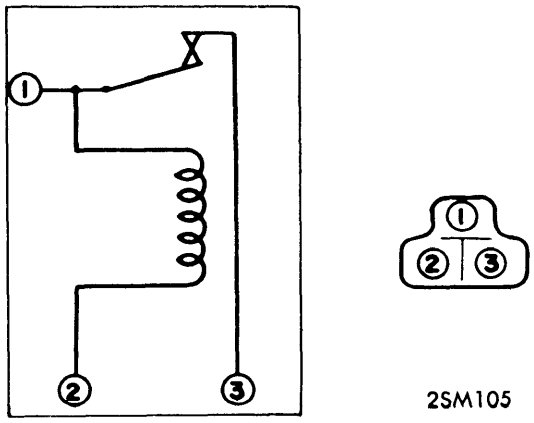
Transmission Switch – Disconnect switch wiring and connect a circuit tester in its place. Move gear selector through all gear positions. Switch should turn ON only when shifted into 4th or 3rd gear. If switch does not turn ON when shifted into 4th or 3rd gear, it is defective and should be replaced.



2SM104

CLUTCH SWITCH

Accelerator Relay – Using a voltmeter, check voltage from terminal "3" and then terminal "1". With accelerator switch turned OFF, voltage at each source should be the same. Depress accelerator pedal; the supply of voltage to terminal "3" should be interrupted (see illustration). If relay found to be faulty, replace.

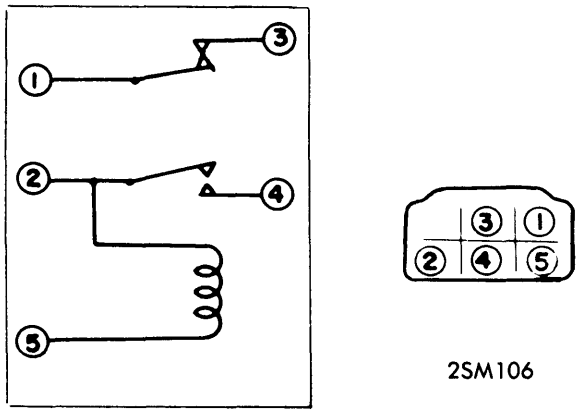


2SM105

ACCELERATOR RELAY

CHEVROLET LUV ENGINE MODIFICATION (Cont.)

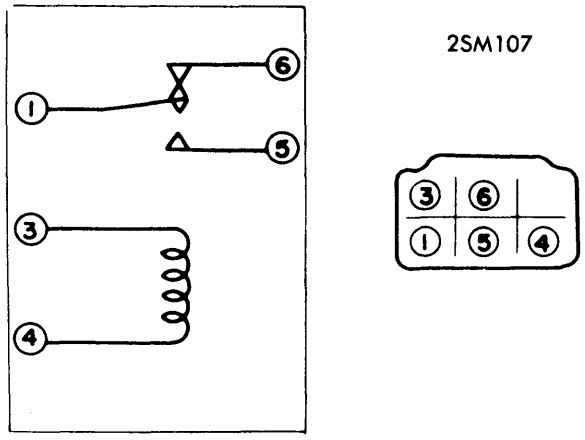
Clutch Relay – With accelerator pedal released (accelerator switch OFF) and transmission in 4th or 3rd gear (transmission switch ON), check to be sure relay terminals "1" and "2" are supplied with voltage. Terminal "3" should be supplied with voltage when clutch pedal is released. With clutch pedal depressed, voltage to terminal "3" should be interrupted and terminal "4" should be supplied with voltage. If voltage supply to terminal "3" is not interrupted, or there is not voltage at terminal "4" (see illustration), the relay should be replaced.



2SM106

CLUTCH RELAY

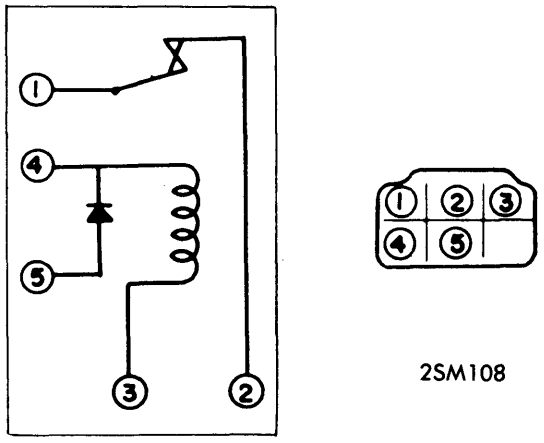
Transmission Relay – With accelerator pedal released, terminals "1" and "4" should be supplied with voltage. Shift transmission into neutral position. Voltage should be supplied to terminal "6". Shift transmission into 4th or 3rd gear, terminal "5" should be supplied with voltage (see illustration). If relay found to be faulty, replace.



2SM107

TRANSMISSION RELAY

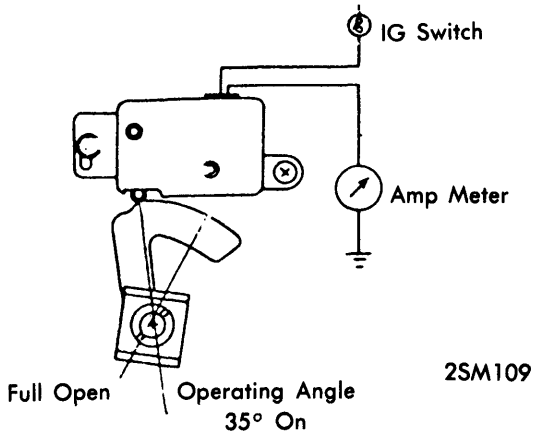
Distributor Relay – With engine running at idle, make sure voltage is applied to terminal "4". Distributor relay is normal if terminals "2" and "5" are not supplied with voltage (see illustration).



2SM108

DISTRIBUTOR RELAY

Throttle Switch – Connect ammeter between distributor relay and ground. Turn on ignition and open throttle valve to an angle of 35° (see illustration). Check operation of switch. If switch not actuated when throttle valve opened to angle of 35°, loosen switch screws and adjust setting position of switch.



2SM109

THROTTLE SWITCH

MAINTENANCE

Inspect components of coasting richer system for proper operation every 3,000 miles (6,000 miles on 1973 models). Inspect components of distributor control system for proper operation every 3,000 miles (24,000 miles on 1973 models). Carburetor adjustment and ignition timing should be checked every 6,000 miles, to maintain correct emission levels. *For specifications, see Tune-Up Tables and individual carburetor story.*

Ignition Timing – With engine at normal operating temperature and timing light connected to either cylinder number one or four, loosen distributor clamp, disconnect and plug distributor vacuum line. Set timing to 8°BTDC at 700 RPM. Ignition timing may also be "fine tuned" by means of the micro adjuster octane selector on distributor body. Engine should make a slight knocking sound when accelerator is floored while driving at 15 MPH in high gear, knocking should decrease as vehicle speed increases. If not recheck ignition timing.

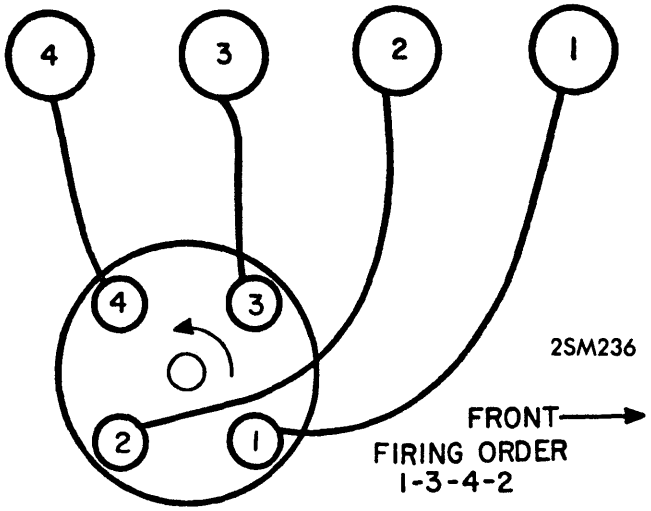
CHEVROLET LUV ENGINE MODIFICATION (Cont.)

Idle Adjustment – Ignition timing must be correctly adjusted before adjusting engine idle. Proceed as follows:

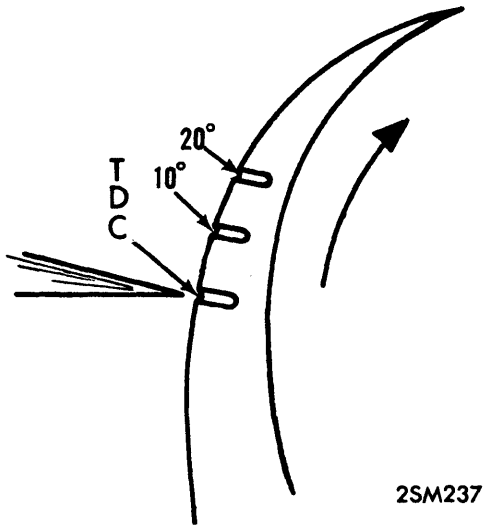
1) Turn idle adjustment screw all the way in and then back off 3½ turns. Turn throttle screw to obtain 700 RPM and then turn idle adjustment screw until engine runs at fastest smooth idle.

2) If vacuum gauge is used, the point of fastest smooth idle should correspond with maximum vacuum reading.

3) Turn throttle screw again to achieve 700 RPM and turn idle adjustment screw to achieve fastest smooth idle (maximum vacuum). Finally, adjust throttle screw to obtain 700 RPM.



LUV 4-CYLINDER FIRING ORDER



LUV TIMING MARKS