CHEVROLET & GMC CRUISE CONTROL

Chevrolet (1968-74)
GMC (1968-74)

DESCRIPTION

System uses manifold vacuum to power a throttle servo unit. When speed adjustment is necessary, servo moves the throttle by receiving a varying amount of controlled vacuum from regulator unit. Speedometer cable from transmission drives regulator and a cable from regulator drives instrument panel speedometer. Engagement of regulator unit is controlled by an engagement switch located at end of turn signal lever or on instrument panel. Two brake release switches are provided. An electric switch disengages regulator unit and a vacuum (switch) valve decreases vacuum in servo unit to quickly return throttle to idle position when brake pedal or clutch is depressed.

OPERATION

Driver accelerates to desired speed, then depresses and slowly releases speed control engagement switch button. System is designed to operate at speeds above 40 MPH. To change speed setting to higher speed, depress accelerator until desired speed is reached, then slowly depress and release switch button. System will re-engage at higher speed when button is slowly released. To change speed setting to lower speed, depress switch button fully and hold in this position until vehicle has decelerated to new desired speed, then release button slowly.

TROUBLE SHOOTING

SYSTEM INOPERATIVE-WILL NOT ENGAGE

Fuse blown. Brake or clutch switch circuit open. Defective engagement switch. Vacuum leak in servo and/or brake switch and connecting lines. Vacuum hose not connected to vacuum switch. Vacuum release switch misadjusted (always open). Crossed hoses at regulator. Open in wiring harness. Pinched or plugged hose supplying servo. Defective regulator.

DOES NOT CRUISE AT ENGAGEMENT SPEED

Orifice tube misadjusted.

SYSTEM HUNTS, PULSES OR SURGES

Bead chain loose. Hoses reversed at servo. Kinked or deteriorated hoses (air leak). Defective and/or improperly positioned drive cables and/or casing assemblies. Defective regulator.

SYSTEM DOES NOT DISENGAGE WITH BRAKE OR CLUTCH PEDAL

Brake clutch and/or vacuum switch misadjusted or defective. Red wires (which should be connected to pedal switches) connected to fuse block.

SYSTEM ACCELERATES OR APPLIES FULL THROTTLE WHEN ENGAGED

Manifold vacuum connected directly to servo. Defective regulator. Pinched or plugged air hose connected to outboard tube of servo.

SYSTEM WILL NOT ADJUST SPEED DOWNWARD

Defective engagement switch or wiring.

ENGAGES AT SPEEDS BELOW 40 MPH

Defective regulator.

TESTING

ELECTRICAL SYSTEM

1) Check fuse and connector. Unplug electric brake switch connector at switch. Connect ohmmeter at two terminals on brake switch. Ohmmeter must indicate no continuity when pedal is depressed and continuity when pedal is released. Replace switch if necessary. Check clutch release brake switch in same manner.

2) Unplug engagement switch connector at electrical wiring harness connector. Connect ohmmeter between terminal No. 1 (brown wire) and terminal No. 2 (blue wire). Continuity should be maintained until switch is pressed all the way in. Connect ohmmeter between terminal No. 1 (brown wire) and terminal No. 3 (black wire). No continuity should be shown except when button is depressed halfway. Connect ohmmeter between terminal No. 2 (blue wire) and terminal No. 3 (black wire). With button released, no continuity should be shown. With button depressed partially and fully, continuity should be shown.

3) Disconnect engagement switch wire harness connector from main harness connector. Connect ohmmeter between brown-white striped wire in main wiring harness and ground. *NOTE – Ensure regulator is well grounded to chassis.* Ohmmeter should read 42-49 ohms. If resistance is not within specifications, disconnect the connector from regulator and measure resistance of brown-white striped wire. Resistance should be 40 ± 2 ohms. If not within specifications, replace main wiring harness.

4) Measure solenoid coil circuit resistance between hold terminal and ground. Resistance should be 5-6 ohms. A reading of less than 4 ohms indicates shorting of coil circuit and a reading of more than 7 ohms indicates excessive coil circuit resistance. Either high or low condition indicates replacement of regulator assembly. Check white wire of main harness from engagement switch to regulator for continuity.

SERVO & VACUUM CHECK

To determine condition of diaphragm, remove hose from servo unit and apply 14" of vacuum to tube opening and hold in for one minute. Vacuum should not leak down more than 5" in one minute. If leakage excessive, replace servo. To utilize engine as vacuum source, proceed as follows:

1) Disconnect servo cable or bead chain and hose from servo unit, then connect engine vacuum directly to servo fitting.

2) Note position of servo diaphragm and start engine. Diaphragm should pull in. Clamp off engine vacuum supply line and check for leakage.

ADJUSTMENTS

BRAKE RELEASE SWITCHES

Electric – The brake or clutch switch plunger must clear pedal arm when arm is moved ¼", measured at switch.

Vacuum – The brake switch plunger must clear pedal arm when arm is moved 5/16", measured at switch.

CHEVROLET & GMC CRUISE CONTROL (Cont.)

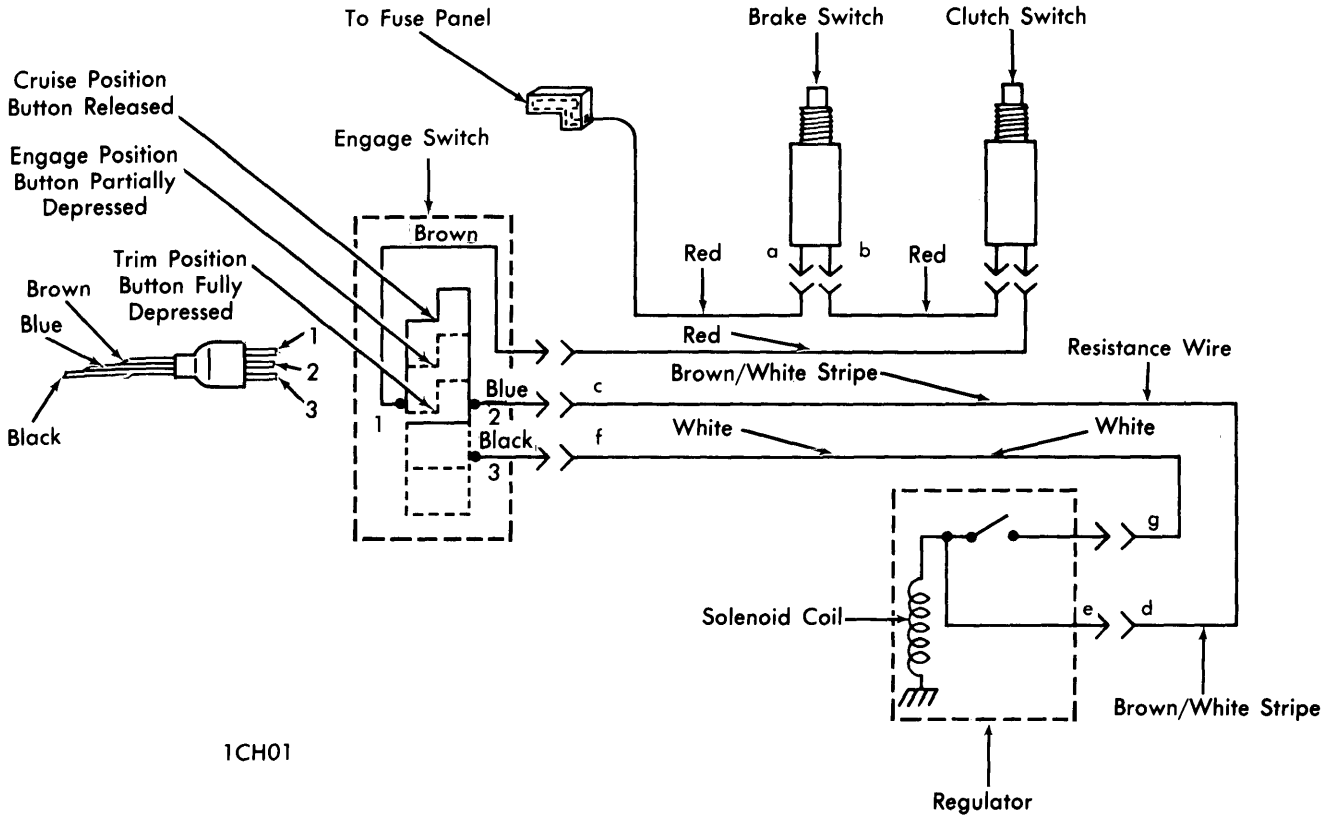
SERVO UNIT

Adjust bead chain or cable slack so it is as tight as possible without holding throttle open when carburetor is set at its lowest idle throttle position. When adjusting the chain or cable, with engine stopped, manually set fast idle cam at its lowest step and connect chain or adjust cable so idle screw is not held off the cam.

REGULATOR

NOTE — No adjustments should be made until following items have been checked: 1) Servo adjustment correct. 2) All hoses in good condition, properly attached, not leaking, pinched or kinked. 3) Electric and vacuum release switches properly adjusted.

If cruising speed is lower than engagement speed, loosen orifice tube lock nut and turn tube outward. If cruising speed is higher than engagement speed, turn orifice tube inward. Each ¼ turn will alter engagement-cruising speed difference by one MPH. Tighten lock nut after adjustment and check system operation at 60 MPH.



CRUISE CONTROL WIRING DIAGRAM