

1991-92 ACCESSORIES & SAFETY EQUIPMENT**Cruise Control - Electric Servo****DESCRIPTION & OPERATION****DESCRIPTION**

Cruise control system components include cruise control module (control module and electric stepper motor servo combined), cruise control switch, vehicle speed sensor, and brake and clutch release switches. A vehicle speed sensor buffer is used on 1991 Motorhome and 1992 vehicles.

CRUISE CONTROL MODULE

Cruise control module is mounted on upper radiator support, to left of radiator (Motorhome), or next to master cylinder (all others). See **Fig. 1**. Module incorporates an electronic control module and an electric stepper motor servo. Servo regulates throttle position in response to control module commands. Module is not serviceable.

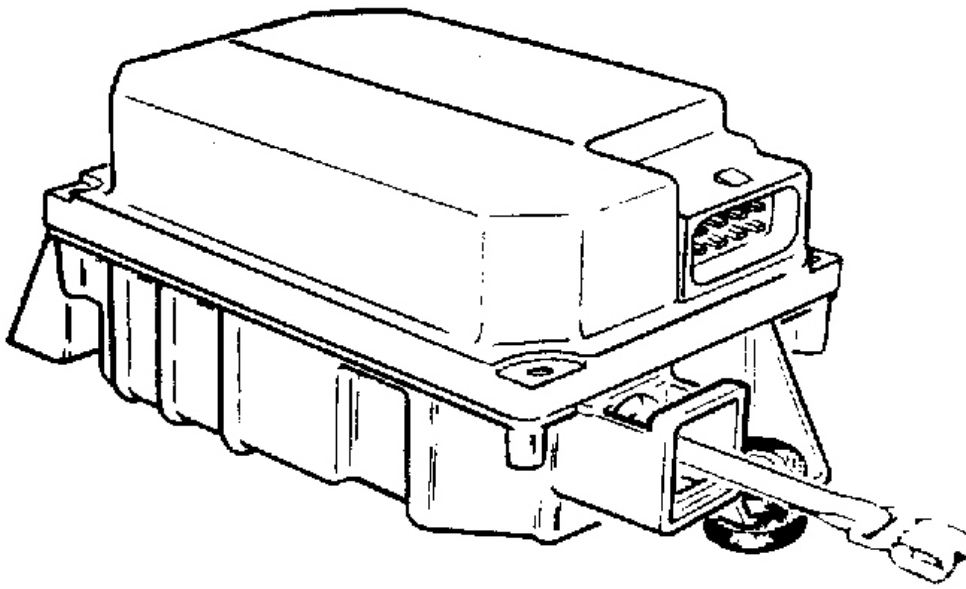


Fig. 1: Electric Motor Servo Cruise Control Module
Courtesy of GENERAL MOTORS CORP.

CRUISE CONTROL SWITCH

Cruise control switch, mounted on end of multifunction (turn signal) lever, controls system operational modes.

SET/COAST

To set vehicle speed, turn control switch to ON position. With vehicle speed at 25 MPH or more, press and release SET/COAST button. Vehicle will maintain set speed.

To increase speed during engaged cruise, accelerate to desired speed. Press and release SET/COAST button. Vehicle will maintain new set speed.

To decrease speed during engaged cruise, press and hold SET/COAST button. System will disengage. When vehicle has slowed to desired speed, release SET/COAST button. Vehicle will maintain new set speed.

To decrease speed by one-MPH increments during engaged cruise, tap SET/COAST button (quickly press and release button; DO NOT hold button). Vehicle speed will decrease one MPH for each tap of the button.

RESUME/ACCEL

To resume set speed after system has been disengaged by braking, momentarily engage and release RESUME/ACCEL switch. Vehicle will return to set speed. If RESUME/ACCEL switch is engaged for more than one second, vehicle will begin to accelerate. To accelerate using cruise control system, engage and hold RESUME/ACCEL switch until desired speed is reached.

To increase speed by one-MPH increments during engaged cruise, tap RESUME/ACCEL switch (quickly move to RESUME/ACCEL position and release). Vehicle speed will increase one MPH for each tap of the switch. After 10 taps, system must be reset to a new speed to continue this function.

BRAKE RELEASE SWITCHES

Brake release switches allow current flow to module when brake pedal is not applied. Switch is normally closed. When brake pedal is depressed, circuit is open. When module receives this signal it disengages servo. Switch may be combined with brakelight switch or may be a separate redundant switch. Switches are connected in series.

CLUTCH RELEASE SWITCH

Clutch release switch allows current flow to module when clutch pedal is not applied. Switch is normally closed. When clutch pedal is depressed, circuit is open. When module receives this signal it disengages servo. Switch is connected in series with brake release switches.

VEHICLE SPEED SENSOR

Vehicle speed sensor, mounted in transmission (2WD) or transfer case (4WD), generates AC voltage pulses that represent vehicle speed. On 1991 vehicles (except Motorhome), these pulses are sent to speedometer. Speedometer converts pulses to DC voltage, then sends signals to cruise control module. On 1991 Motorhome and 1992 vehicles, AC pulses are sent to vehicle speed sensor buffer (Digital Ratio Adapter Controller, or DRAC).

VEHICLE SPEED SENSOR BUFFER

Vehicle speed sensor buffer receives and conditions AC voltage pulses, then sends them to cruise control module. Buffer is located behind left side of instrument panel (Motorhome) or behind instrument panel, above glove box (all others).

ADJUSTMENTS

BRAKE & CLUTCH RELEASE SWITCHES

NOTE: Brake release switch (type 1) is part of brakelight switch. See **Fig. 2** .

Brake Release Switch (Type 1)

Press and hold brake pedal. Pull lever on brake release switch backward until it stops. See **Fig. 2** . Pull brake pedal backward against pedal stop. Release brake pedal. Switch is adjusted if brake lights do not come on with pedal released.

Brake Release Switch (Type 2) & Clutch Release Switch

1. Fully depress and hold brake pedal. Push switch through retainer and pedal bracket hole until fully seated. Clicking can be heard as switch is pushed into bracket.
2. Pull pedal fully rearward against pedal stop until clicking stops. Release pedal. Pull pedal fully rearward again to ensure no clicking can be heard.

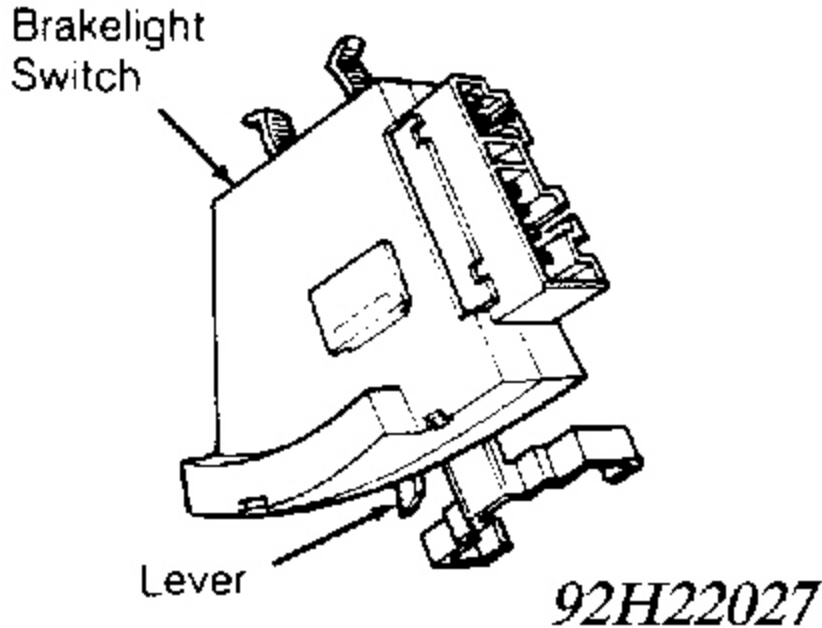
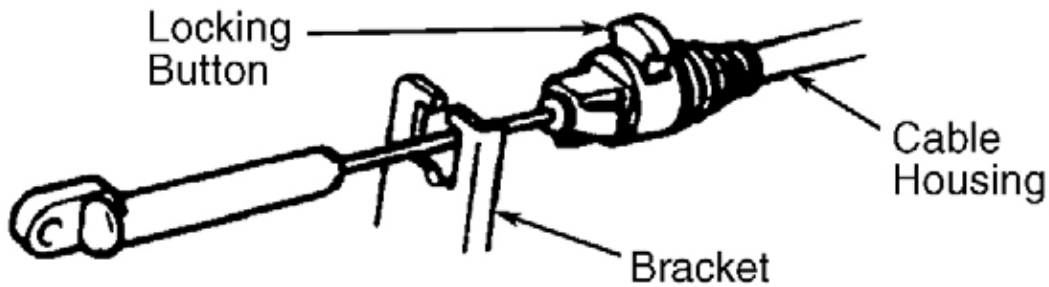


Fig. 2: View Of Brakelight Switch
Courtesy of GENERAL MOTORS CORP.

SERVO CABLE

NOTE: On vehicles with diesel engine, throttle lever refers to injection pump lever in this procedure.

1. Disconnect servo cable from throttle lever. Lightly pull cable end out of cable housing. If cable cannot be pulled out of cable housing, cable is adjusted. If cable can be pulled out of cable housing, connect cable end to throttle lever. Pull up locking button at end of cable housing. See **Fig. 3**.
2. Pull cable housing until throttle lever begins to move off of idle stop screw. Move cable housing in opposite direction until throttle lever just contacts idle stop screw. While holding cable housing in this position, push down locking button.



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Fig. 3: Locating Servo Cable Locking Button

Courtesy of GENERAL MOTORS CORP.

TESTING

Ensure servo cable and throttle linkage move freely. Check servo cable adjustment. See **SERVO CABLE** under ADJUSTMENTS. Some problems may be related to vehicle speed sensor circuit. Check for Code 24, Vehicle Speed Sensor Circuit. See appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE.

MOTORHOME

NOTE: For 1991 wiring diagram, see Fig. 4 . For 1992 wiring diagram, see appropriate chassis wiring diagram in WIRING DIAGRAMS.

NOTE: To distinguish between brake release switches No. 1 and 2, look at color of wires that terminate at each switch. Gray and Brown wires terminate at switch No. 1. Tan and Brown wires terminate at switch No. 2.

Cruise Control Does Not Engage

1. Ensure ALT and IGN fuses are okay. Turn ignition switch to RUN position. Turn on cruise control. Check for battery voltage at Pink/Black wire terminal of cruise control switch connector and cruise control module connector.
2. If battery voltage is not present, repair Pink/Black wire. If battery voltage is present, check for battery voltage at Gray wire terminal of cruise control switch connector. If battery voltage is not present, replace cruise control switch.
3. If battery voltage is present, check for battery voltage at Gray wire terminal of cruise control module connector. If battery voltage is not present, repair Gray wire. If battery voltage is present, check for battery voltage between Gray and Black wire terminals at cruise control module connector.
4. If battery voltage is not present, repair Black wire. If battery voltage is present, check for battery voltage at Gray wire terminal of brake release switch No. 1 connector. If battery voltage is not present, repair Gray wire. If battery voltage is present, check for battery voltage at Tan wire terminal of brake release

switch No. 2 connector.

5. If battery voltage is not present, repair Tan wire. If battery voltage is present, check for battery voltage at Brown wire terminal of brake release switch No. 2 connector. If battery voltage is present, go to step 7). If battery voltage is not present, go to next step.
6. Adjust brake release switches. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace brake release switches if they cannot be adjusted.
7. Check for battery voltage at Brown wire terminal of brake release switch No. 1 connector. If battery voltage is present, go to next step. If battery voltage is not present, adjust brake release switches. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace brake release switches if they cannot be adjusted.
8. Check for battery voltage at Dark Blue wire terminal of cruise control switch connector. If battery voltage is present, replace cruise control switch. If battery voltage is not present, check for battery voltage at Dark Blue wire terminal of cruise control switch connector while pressing SET switch.
9. If battery voltage is not present, replace cruise control switch. If battery voltage is present, check for battery voltage at Dark Blue wire terminal of cruise control module connector. If battery voltage is not present, repair Dark Blue wire.
10. If battery voltage is present, check for battery voltage at Dark Green wire terminal of cruise control switch connector while pressing RESUME/ACCEL switch. If battery voltage is not present, replace cruise control switch.
11. If battery voltage is present, check for battery voltage at Dark Green wire terminal of cruise control module connector. If battery voltage is not present, repair Dark Green wire.
12. If battery voltage is present, raise and support vehicle with drive wheels off of ground. While slowly turning drive wheels, check voltage between Pink/White and Dark Green wire terminals of cruise control module connector.
13. If voltage pulses between zero and battery voltage, replace cruise control module. If voltage does not pulse between zero and battery voltage, or if no voltage is present, check vehicle speed sensor circuit.

Cruise Control Does Not Disengage Using Brake Pedal

1. Ensure ALT and IGN fuses are okay. Turn ignition switch to RUN position. Turn on cruise control. While depressing brake pedal, check voltage at Brown wire terminals of both brake switch connectors.
2. If battery voltage is not present, replace cruise control module. If battery voltage is present, adjust brake release switches. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace brake release switches if they cannot be adjusted.

SIERRA, SUBURBAN, YUKON & "C" & "K" SERIES BLAZER & PICKUP

NOTE: For 1991 wiring diagram, see Fig. 5 . For 1992 wiring diagram, see appropriate chassis wiring diagram in WIRING DIAGRAMS. It is important to distinguish between cruise release switch and brake switch during testing.

Cruise Control Does Not Engage

1. Ensure GAGES fuse is okay. Turn ignition switch to RUN position. Turn on cruise control. Check for battery voltage at Pink wire terminal of cruise control switch connector and cruise control module

connector.

2. If battery voltage is not present, repair Pink wire. If battery voltage is present, check for battery voltage at Gray wire terminal of cruise control switch connector. If battery voltage is not present, replace cruise control switch.
3. If battery voltage is present, check for battery voltage at Gray wire terminal of cruise control module connector. If battery voltage is not present, repair Gray wire. If battery voltage is present, check for battery voltage between Gray and Black/White wire terminals of cruise control module connector.
4. If battery voltage is not present, repair Black/White wire. If battery voltage is present, check for battery voltage at Gray wire terminal of cruise release switch connector. If battery voltage is not present, repair Gray wire. If battery voltage is present, check for battery voltage at Light Green wire terminal of cruise release switch connector while depressing brake pedal.
5. If battery voltage is present, go to next step. If battery voltage is not present, ensure brake pedal is not depressed and brake switch is not out of adjustment. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. If brake pedal is not depressed and brake switch is not out of adjustment, replace cruise release switch.
6. Check for battery voltage at Light Green wire terminal of brake switch connector while depressing brake pedal. If battery voltage is not present, repair Light Green wire. If battery voltage is present, check for battery voltage at Brown wire terminal of brake switch connector while depressing brake pedal.
7. If battery voltage is present on vehicles with automatic transmission, go to step 9). If battery voltage is present on vehicles with manual transmission, go to next step. If battery voltage is not present, adjust brake switch. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace brake switch if it cannot be adjusted.
8. Check for battery voltage at Brown wire terminal of clutch switch connector while depressing brake pedal. If battery voltage is present, go to next step. If battery voltage is not present, adjust clutch switch. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace clutch switch if it cannot be adjusted.
9. Check for battery voltage at Brown wire terminal of cruise control module connector while depressing brake pedal. If battery voltage is present, replace cruise control module. If battery voltage is not present, repair Brown wire.

Cruise Control Does Not Disengage Using Brake Or Clutch Pedal

1. Ensure GAGES fuse is okay. Turn ignition switch to RUN position. Turn on cruise control. While depressing brake pedal, check for battery voltage at Brown wire terminal of brake switch connector.
2. If battery voltage is not present, replace cruise control module. If battery voltage is present, adjust brake switch. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace brake switch if it cannot be adjusted. On vehicles with manual transmission, go to next step.
3. While depressing clutch pedal, check for battery voltage at Brown wire terminal of clutch switch connector. If battery voltage is not present, replace cruise control module. If battery voltage is present, adjust clutch switch. See **BRAKE & CLUTCH RELEASE SWITCHES** under ADJUSTMENTS. Replace clutch switch if it cannot be adjusted.

WIRING DIAGRAMS

1992 Chevrolet Suburban C2500

1991-92 ACCESSORIES & SAFETY EQUIPMENT 'Cruise Control - Electric Servo

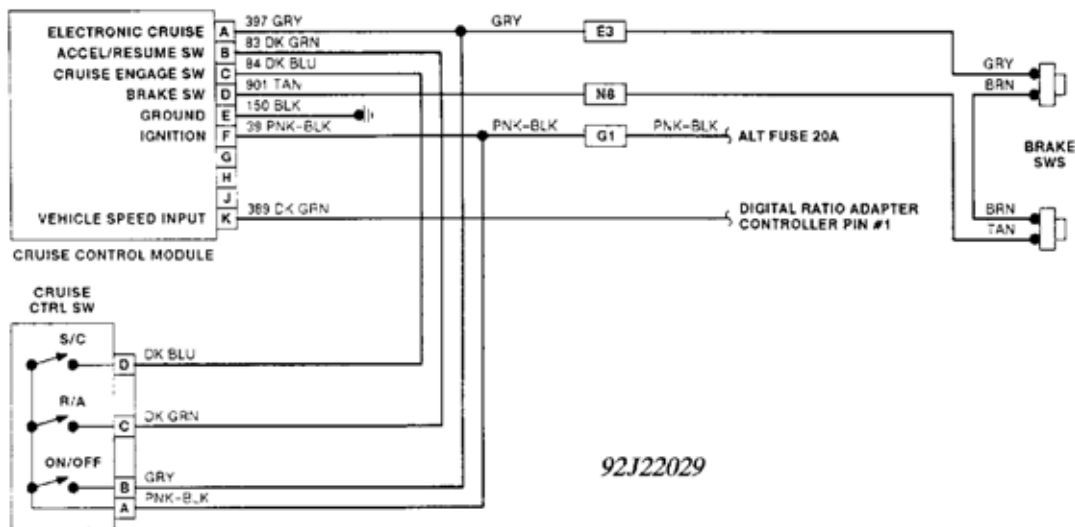


Fig. 4: 1991 Cruise Control System Wiring Diagram (Motorhome)

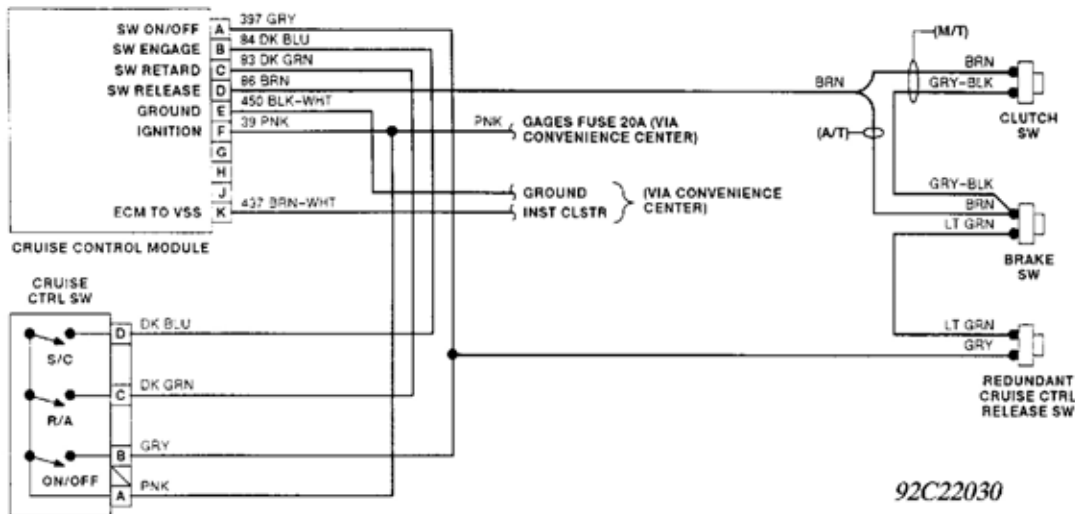


Fig. 5: 1991 Cruise Control System Wiring Diagram (Sierra & "C" & "K" Series Pickup)