2001 ACCESSORIES & EQUIPMENT

Cruise Control Systems - Corvette

DESCRIPTION

WARNING: Vehicles are equipped with Supplemental Inflatable Restraint (SIR) system. Before attempting ANY repairs involving steering column, instrument panel or related components, see SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM in appropriate AIR BAG RESTRAINT SYSTEMS article.

Cruise control is a speed control system that maintains a desired vehicle speed under normal driving conditions. Steep grades may cause variations in selected speeds. System has capability to cruise, coast, resume speed, accelerate, tap-up and tap-down.

The main components of the cruise control system include the Throttle Actuator Control (TAC) module, Powertrain Control Module (PCM), cruise control functional switches, cruise control release switch (A/T), cruise control brake switch (M/T), brakelight switch and clutch switch (M/T). See **COMPONENT LOCATIONS** .

OPERATION

CRUISE CONTROL FUNCTIONAL SWITCHES

NOTE: Multifunction turn signal switch may also be referred to as combination switch or multifunction switch.

Cruise control functional switches are located on the end of multifunction switch lever, which also serves as a turn signal lever. Cruise control functional switches include SET switch at end of lever and a sliding main switch with OFF, ON and R/A (Resume/Accelerate) positions. Switch functions are described as follows:

OFF

System disengages when cruise control switch is turned off.

ON

System is ready to be set when cruise control switch is turned on.

R/A

Spring-loaded R/A (resume/accelerate) switch will not initially set cruise speed, but when cruise has been disengaged by braking or depressing clutch, momentarily sliding this switch to R/A position will cause cruise to resume previously set speed. This is the resume function. Accelerate function occurs when R/A switch is held in position for more than one second. This causes the vehicle to accelerate until switch is released. When released, system maintains new set speed. Also, by quickly pressing and releasing (tapping) this switch, the set speed is "tapped-up" in one MPH increments.

SET

Spring-loaded SET switch engages cruise. During engagement, if SET switch is pressed and held, vehicle decelerates (cruise disengages) until switch is released. When switch is released, cruise engages and maintains new set speed. Also, by quickly pressing and releasing (tapping) this switch, the set speed is "tapped-down" in one MPH increments.

THROTTLE ACTUATOR CONTROL MODULE

Throttle Actuator Control (TAC) module receives inputs from Powertrain Control Module (PCM) through TAC serial data circuits and through driver-controlled inputs. By monitoring cruise control functional switches, cruise control release switch (A/T), cruise control brake switch (M/T), clutch pedal position switch, brakelight switch and throttle pedal position, TAC module commands throttle actuator motor to respond accordingly to maintain set cruising speed.

CRUISE CONTROL CLUTCH PEDAL POSITION SWITCH

Manual transaxle models are equipped with a cruise control clutch switch located on clutch pedal bracket to stop cruise operation. Vehicle speed at clutch actuation will be stored in system memory.

CRUISE CONTROL RELEASE SWITCH (A/T), CRUISE CONTROL BRAKE SWITCH (M/T) & BRAKELIGHT SWITCH

NOTE: Cruise control release switches and cruise control brake switches may also be called TCC/brake switch.

Both switches disengage cruise control operation electrically when brake pedal is depressed. This is done by activating the brakelight switch signal electrical circuit to TAC module. Vehicle speed

at brake actuation will be stored in system memory.

POWERTRAIN CONTROL MODULE

The PCM maintains constant communication with TAC module to operate cruise control system. PCM will not allow activation of cruise control system until both brake switches (cruise control release switch/cruise control brake switch and brakelight switch) and clutch switch (if equipped) signals have been verified at the beginning of the ignition cycle. PCM sets and stores DTCs to identify circuit/component faults in cruise control system. PCM will inhibit cruise control when:

- Engine is off.
- Automatic transaxle is in Park, Reverse, Neutral or 1st gear.
- Manual transaxle is in Neutral.
- Engine speed is too high/low.
- Vehicle speed is too high/low.
- Engine coolant over temperature-fuel disabled mode is active.
- TAC module detects an R/A switch fault
- TAC module detects a SET switch fault.
- ABS/traction control system is active for 2 seconds or more.
- Undercharged or overcharged battery condition exists.
- PCM detects a vehicle speed sensor fault.
- Cruise control release switch (A/T), cruise control brake switch (M/T), clutch pedal position switch (if equipped), or brakelight switch fault is detected.
- An internal PCM fault is detected.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
Brakelight Switch	On Brake Pedal Bracket
Clutch Pedal Position Switch (M/T)	On Clutch Pedal Bracket
Cruise Control Brake Switch (M/T)	On Brake Pedal Bracket
Cruise Control Functional Switches	On Multifunction Turn Signal Switch Lever
Instrument Panel Fuse Block	Right Side Footwell, Behind Carpet On Toe Board
Powertrain Control Module	Inside Right Front Fender, Below Battery

Torque Convertor Clutch/Brake Switch (A/T)	On Brake Pedal Bracket
Throttle Actuator Control Module	Inside Right Front Fender, Attached To Powertrain Control Module
Throttle Actuator Control Motor	On Left Side Of Throttle Body
Throttle Position Sensor	On Right Side Of Throttle Body
Underhood Fuse Block	Right Rear Of Engine Compartment

ADJUSTMENTS

CLUTCH PEDAL POSITION SWITCH

With clutch pedal released, switch plunger should be fully depressed against pedal shank. To adjust, depress clutch pedal and push switch until switch body is fully seated on retainer. Pull clutch pedal toward rear of vehicle, against pedal stop (until clicking sound cannot be heard while pulling pedal). Switch will adjust to proper position in retainer.

CRUISE CONTROL RELEASE SWITCH (A/T) & BRAKELIGHT SWITCH

Brake booster pushrod must be assembled to brake pedal before switches can be adjusted. With brake pedal released, switch plunger should be fully depressed against pedal shank. To adjust, depress brake pedal and push switch until switch body is fully seated on retainer. Pull brake pedal toward rear of vehicle, against pedal stop (until clicking sound cannot be heard while pulling pedal). Switch will adjust to proper position in retainer.

TROUBLE SHOOTING

PRELIMINARY INSPECTION

Verify customer complaint by operating cruise control system. Visually inspect for obvious sign of mechanical and electrical damage. Verify brakelights function properly. Inspect for faulty cruise control fuses, loose or corroded connections, damaged wiring harness and/or switches. Inspect for incorrect cruise control release switch (A/T), cruise control brake switch (M/T), cruise control clutch switch (M/T) and brakelight switch adjustments. Ensure components are properly adjusted as necessary. Check for a broken or partially broken wire inside insulation which could cause system malfunction but prove good in a continuity/voltage check with system disconnected. Ensure any aftermarket electronic equipment is properly installed. If problem is found, repair as necessary. If no problem is found, perform **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.

SELF-DIAGNOSTIC SYSTEM

NOTE: Diagnostic trouble code tests are written specifically for use with GM Tech I or Tech II scan tools. Generic scan tool can be used but may have limited functions. This article only covers the portion of those systems which relates to cruise control system diagnosis. For further information, see appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE.

CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK

1. Connect scan tool to Data Link Connector (DLC). DLC is located DLC is located below left side of instrument panel. If scan tool powers up, go to next step. If scan tool does not power up, go to TEST A: SCAN TOOL DOES NOT POWER UP under SYSTEM TESTS in BODY CONTROL MODULES - CORVETTE article.
2. Turn ignition switch to RUN position. Using scan tool, attempt to establish communication with Powertrain Control Module (PCM) and Body Control Module (BCM). If communication with PCM and BCM is established, go to next step. If communication with PCM or BCM is not established, go to TEST B: SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 DEVICE under SYSTEM TESTS in BODY CONTROL MODULES - CORVETTE article.
3. Using scan tool, select display DTC function for BCM and then PCM. Record all displayed DTCs, status of displayed DTCs, and module that set DTC. If any DTCs are displayed, go to next step. If no DTCs are displayed, repair cruise control by symptom. See **SYMPTOM TESTS** .
4. If any DTCs are displayed beginning with "U", go to TEST B: SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 DEVICE under SYSTEM TESTS in BODY CONTROL MODULES - CORVETTE article. If no "U" type DTCs are displayed, go to next step.
5. If DTC B0605 is displayed, go to DTC B0605: BCM INTERNAL MEMORY MALFUNCTION under DIAGNOSTIC TESTS in BODY CONTROL MODULES - CORVETTE article. If DTC B0605 is not set, go to next step.
6. If DTC P0562 or P0563 are displayed, perform appropriate test. See appropriate GENERATORS & REGULATOR article in STARTING & CHARGING SYSTEMS. If any other DTCs are displayed, perform appropriate test. See **DIAGNOSTIC TROUBLE CODE DEFINITIONS** .

DIAGNOSTIC TROUBLE CODE DEFINITIONS

DIAGNOSTIC TROUBLE CODE DEFINITIONS

DTC (1)	Description	Perform Test
Bxxx	Body Control Module Fault	(2)
Cxxx	Anti-Lock Brake Or Electronic Steering Controls	(3)
P0502	Vehicle Speed Sensor Circuit Low Input	(4)
P0503	Vehicle Speed Sensor Circuit Intermittent	(4)
P0562	System Voltage Low	(5)
P0563	System Voltage High	(5)
P0567	Cruise Control Resume Switch Circuit	**DTC P0567**
P0568	Cruise Control Set Switch Circuit	**DTC P0568**
P0571	Cruise Control Brake Switch Circuit	**DTC P0571**
P0704	Clutch Switch Circuit	**DTC P0704**
P1574	Stoplamp Switch Circuit	**DTC P1574**
Pxxx	Powertrain Control Module Fault	(6)

(1) Codes listed in this table are only for testing covered in this article. For complete DTC listing, see BODY CONTROL MODULES - CORVETTE article.

(2) See BODY CONTROL MODULES - CORVETTE article.

(3) See appropriate ANTI-LOCK article in BRAKES or ELECTRONIC STEERING article in STEERING.

(4) See appropriate AUTOMATIC TRANSMISSIONS article.

(5) See appropriate GENERATORS & REGULATORS article in STARTING & CHARGING SYSTEMS.

(6) For additional powertrain control module diagnostic trouble code descriptions and testing procedures, see appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE.

CLEARING DIAGNOSTIC TROUBLE CODES

To clear DTCs, connect scan tool to Data Link Connector (DLC). Establish communication with Powertrain Control Module (PCM) and Body Control Module (BCM) and follow scan tool instructions.

DIAGNOSTIC TESTS

NOTE: These tests are written specifically for use with GM Tech I or Tech II scan tools. Generic scan tool can be used but may have limited functions.

NOTE: For wire terminal, color and circuit identification, see WIRING DIAGRAMS . To aid in location of components, see COMPONENT LOCATIONS .

DTC P0567: CRUISE RESUME CIRCUIT

NOTE: If DTC P1518 is also set, diagnose DTC P1518 first. See DTC P1518: THROTTLE ACTUATOR CONTROL MODULE SERIAL DATA CIRCUIT under DIAGNOSTIC TESTS in SELF-DIAGNOSTICS - 5.7L CORVETTE article in ENGINE PERFORMANCE.

Circuit Description

Cruise control Resume/Accelerator (R/A) switch provides input to Throttle Actuator Control (TAC) module. Cruise control information is supplied to Powertrain Control Module (PCM) via serial data circuit. This allows PCM and TAC module to control and hold a requested speed. R/A switch sends an ignition positive voltage signal to TAC module when switch is applied.

DTC will set when TAC module detects R/A switch is on for longer than 90 seconds. When DTC is set, cruise control will be disabled. PCM will not illuminate Malfunction Indicator Light (MIL). PCM records operating conditions at the time of failure in FREEZE FRAME/FAILURE RECORDS data. Current DTC will clear when DTC runs and passes. History DTC will clear after 40 consecutive no fail cycles by this or any other emission related DTC. DTC can also be cleared manually using scan tool.

Code Enable Criteria

Following condition must exist for DTC to run:

- Cruise control switch is on.

Testing

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Turn ignition switch to RUN position. Ensure cruise control switch is off. Using scan tool,

monitor cruise RESUME/ACCEL switch status under PCM data list. If scan tool indicates ON, go to next step. If scan tool does not indicate ON, see **DIAGNOSTIC AIDS** .

3. Turn ignition switch to OFF position. Locate and disconnect Throttle Actuator Control (TAC) module Natural 16-pin harness connector. TAC module is smaller module located next to PCM. See **Fig. 1** . Turn ignition switch to RUN position. Using scan tool, monitor cruise RESUME/ACCEL switch parameter. If switch parameter does not indicate ON, go to next step. If switch parameter indicates ON, go to step 6 .
4. Check for short to voltage in Gray/Black wire between multifunction turn signal switch harness connector C217 terminal "D" and TAC module harness connector C2 terminal No. 5. See **Fig. 2** and **Fig. 3** . Gray/Black wire runs through underhood fuse block at harness connector C1 terminal C4 and harness connector C2 terminal B4. See **WIRING DIAGRAMS** . If no problem exists, go to next step. If problem exists, repair as necessary and go to step 9 .
5. Check for poor, loose or corroded terminals in multifunction turn signal switch harness connector C217. If problem exists, repair as necessary and go to step 8 . If no problem exists, go to step 7 .
6. Check for poor, loose or corroded terminals in TAC module connectors. If problem exists, repair as necessary and go to step 9 . If no problem exists, go to step 8 .
7. Replace multifunction turn signal lever switch. See appropriate STEERING COLUMN SWITCHES article in ACCESSORIES & EQUIPMENT. After repairs are made, go to step 9 .
8. Replace TAC module. See **THROTTLE ACTUATOR CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs are made, go to next step.
9. Using scan tool, clear DTCs. Operate vehicle within code enable criteria. If DTC does not reset, system is okay. If DTC resets, go to step 2 .

Diagnostic Aids

Check for stuck R/A switch or signal circuit shorted to voltage. If problem is intermittent, see **PRELIMINARY INSPECTION** under TROUBLE SHOOTING.

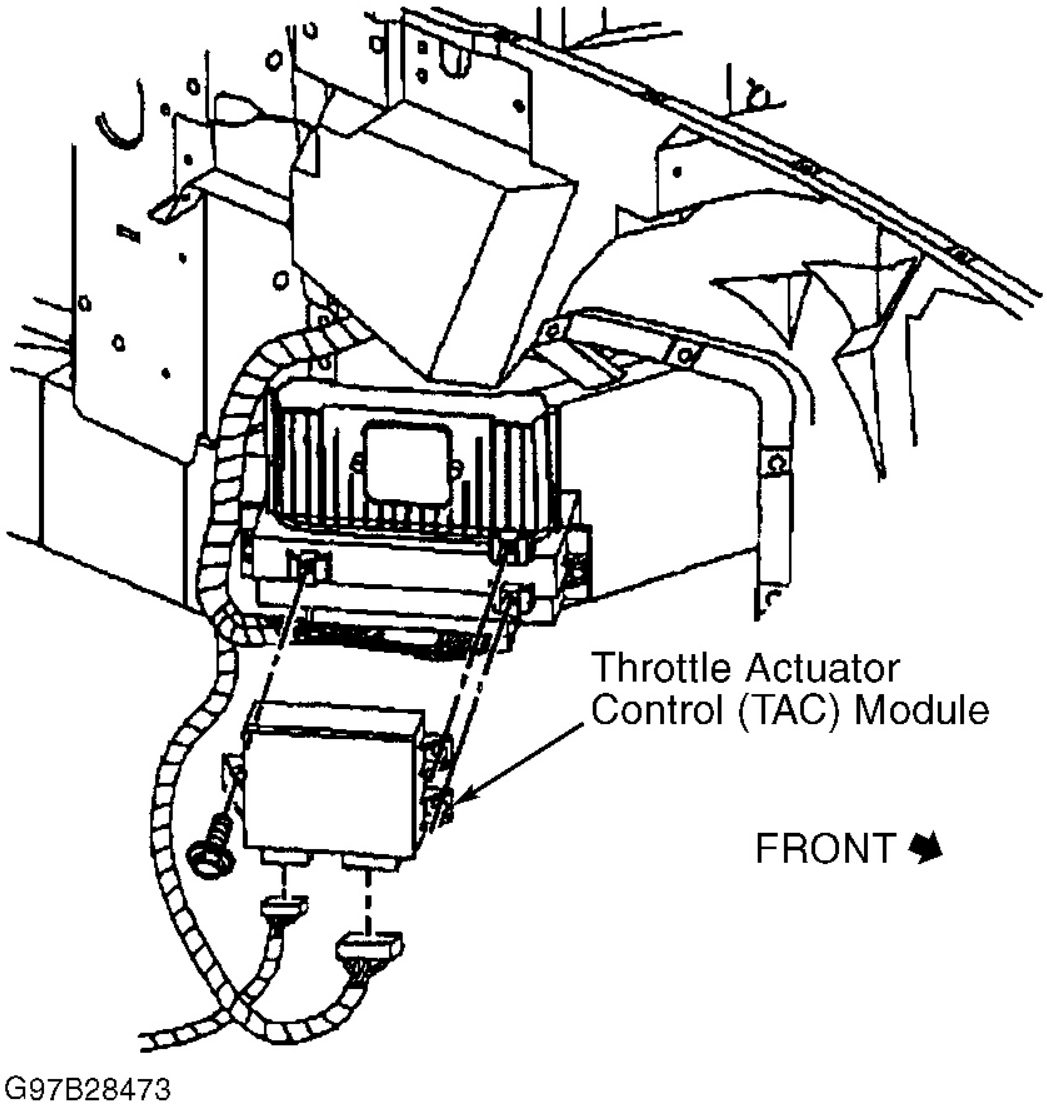


Fig. 1: Locating Throttle Actuator Control Module
Courtesy of GENERAL MOTORS CORP.

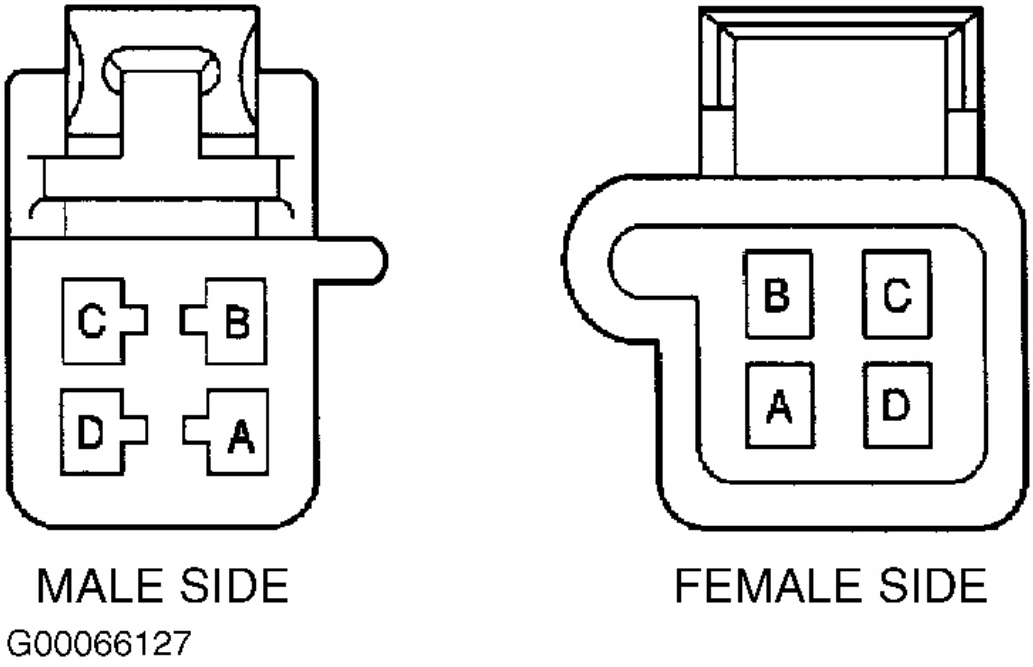


Fig. 2: Identifying Multifunction Turn Signal Switch Harness Connector C217 Terminals
Courtesy of GENERAL MOTORS CORP.

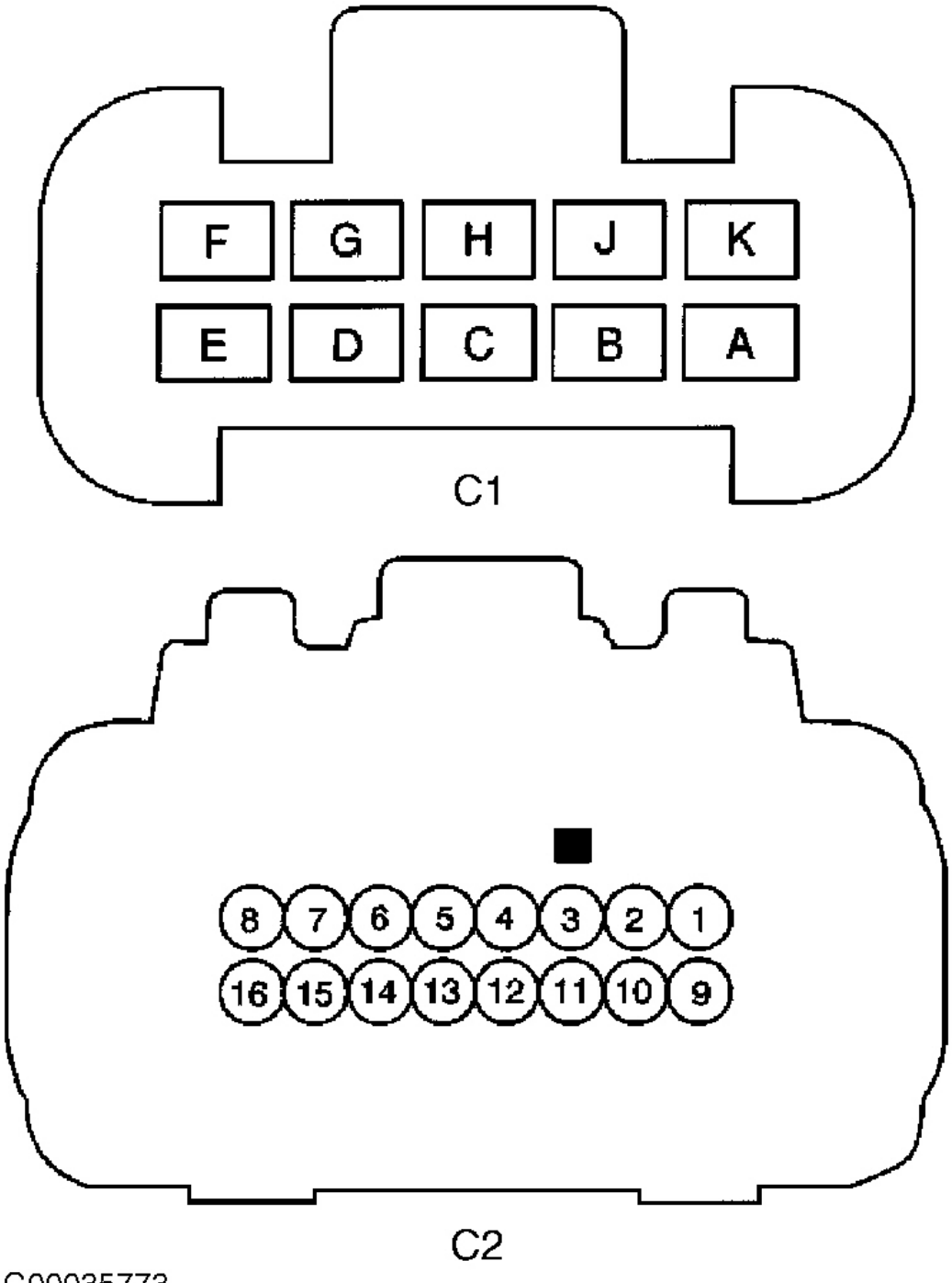


Fig. 3: Identifying Throttle Actuator Control Module Harness Connector Terminals
Courtesy of GENERAL MOTORS CORP.

DTC P0568: CRUISE SET CIRCUIT

NOTE: If DTC P1518 is also set, diagnose DTC P1518 first. See DTC P1518: THROTTLE ACTUATOR CONTROL MODULE SERIAL DATA CIRCUIT under DIAGNOSTIC TESTS in SELF-DIAGNOSTICS - 5.7L CORVETTE article in ENGINE PERFORMANCE.

Circuit Description

Cruise control set/coast switch is an input to Throttle Actuator Control (TAC) module. Cruise control information is supplied to Powertrain Control Module (PCM) via serial data circuit. This input allows PCM and TAC module to control and hold a requested speed. Cruise control set/coast switch sends ignition positive voltage signal to TAC module when momentary switch is applied.

DTC will set when TAC module detects set/coast switch is on for more than 90 seconds. When DTC is set, cruise control will be disabled. PCM will not illuminate Malfunction Indicator Light (MIL). PCM records operating conditions at the time of failure in FREEZE FRAME/FAILURE RECORDS data. Current DTC will clear when DTC runs and passes. History DTC will clear after 40 consecutive no fail cycles by this or any other emission related DTC. DTC can also be cleared manually using scan tool.

Code Enable Criteria

Following condition must exist for DTC to run:

- Cruise control switch is on.

Testing

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Connect scan tool to DLC. Turn ignition switch to RUN position. Ensure cruise control switch is off. Using scan tool, monitor cruise SET/COAST switch status under PCM data list. If scan tool indicates ON, go to next step. If scan tool does not indicate ON, see **DIAGNOSTIC AIDS** .
3. Turn ignition switch to OFF position. Locate and disconnect Throttle Actuator Control (TAC) module Natural 16-pin harness connector. TAC module is smaller module located next to PCM. See **Fig. 1** . Turn ignition switch to RUN position. Using scan tool, monitor cruise SET/COAST switch parameter. If scan tool does not indicate ON, go to next step. If

scan tool indicates ON, go to step 6 .

4. Check for short to voltage in Dark Blue wire between multifunction turn signal switch harness connector C217 terminal "C" and TAC module harness connector C2 terminal No. 4. See **Fig. 2** and **Fig. 3** . Dark Blue wire runs through underhood fuse block at connector C1 terminal F4 and connector C2 terminal A4. See **WIRING DIAGRAMS** . If no problem exists, go to next step. If problem exists, repair as necessary and go to step 9 .
5. Check for poor, loose or corroded terminals in multifunction turn signal switch harness connector C217. If problem exists, repair as necessary and go to step 9 . If no problem exists, go to step 7 .
6. Check for poor, loose or corroded terminals in TAC module harness connectors. If problem exists, repair as necessary and go to step 9 . If no problem exists, go to step 8 .
7. Replace multifunction turn signal switch. See appropriate STEERING COLUMN SWITCHES article in ACCESSORIES & EQUIPMENT. After repairs are made, go to step 9 .
8. Replace TAC module. See **THROTTLE ACTUATOR CONTROL MODULE** under REMOVAL & INSTALLATION. After replacing module, go to next step.
9. Using scan tool, clear DTCs. Operate vehicle within code enable criteria. If DTC does not reset, system is okay. If DTC resets, go to step 2 .

Diagnostic Aids

Check for stuck SET/COAST switch or signal circuit shorted to voltage. If problem is intermittent, see **PRELIMINARY INSPECTION** under TROUBLE SHOOTING.

DTC P0571: CRUISE CONTROL BRAKE SWITCH CIRCUIT

Circuit Description

Torque converter clutch/brake switch is a normally closed switch. When cruise control release switch is closed, (brake pedal released) Powertrain Control Module (PCM) senses ignition voltage on cruise control release switch signal circuit.

DTC will set when PCM detects voltage on cruise control release switch circuit for 1.5 seconds when cruise control release switch should be open. When DTC is set, PCM will not illuminate Malfunction Indicator Light (MIL). PCM records operating conditions at the time of failure in FREEZE FRAME/FAILURE RECORDS data. Current DTC will clear when DTC runs and passes. History DTC will clear after 40 consecutive no fail cycles by this or any other emission related DTC. DTC can also be cleared manually using scan tool.

Code Enable Criteria

Following conditions must exist for DTC to set:

- Engine speed is 700 RPM or more.
- Engine operates for 2 seconds or more.
- Wheel speed is 30 MPH or more to enable diagnostic. The diagnostic disables when wheel speed is below 10 mph.

Testing

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Connect scan tool to DLC. Turn ignition switch to RUN position. Using scan tool, select PCM data list and monitor cruise control release switch status. If scan tool parameter indicates APPLIED, go to next step. If scan tool parameter does not indicate APPLIED, go to **DIAGNOSTIC AIDS** .
3. Turn ignition switch to OFF position. Locate and disconnect cruise control release switch Gray 2-pin harness connector C1. See **Fig. 4** . Turn ignition switch to RUN position. Using scan tool, monitor cruise control release switch status. If scan tool does not indicate RELEASED, go to next step. If scan tool indicates RELEASED, go to step 5 .
4. Using DVOM, measure voltage between ground and cruise control release switch connector C1 terminal "A" (Purple wire). See **Fig. 5** . If problem is found, repair as necessary and go to step 10 . If no problem is found, go to step 7 .
5. Check for proper adjustment of brakelight switch. See **CRUISE CONTROL RELEASE SWITCH (A/T) & BRAKELIGHT SWITCH** under ADJUSTMENTS. Adjust if necessary. After adjustment, go to step 10 . If adjustment is not necessary, go to next step.
6. Check for poor, loose or corroded terminals in brakelight switch. If problem is found, repair as necessary and go to step 10 . If no problem exists, go to step 8 .
7. Check for poor, loose or corroded terminals in PCM harness connectors. If problem exists, repair as necessary and go to step 10 . If no problem exists, go to step 9 .
8. Replace cruise control release switch. See **CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH** under REMOVAL & INSTALLATION. After repairs are made, go to step 10 .
9. Replace PCM. See **POWERTRAIN CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs are made, go to next step.
10. Using scan tool, clear DTCs. Operate vehicle within code enable criteria. If DTC does not reset, system is okay. If DTC resets, go to step 2 .

Diagnostic Aids

Check for stuck RESUME/ACCEL switch or signal circuit shorted to voltage. If problem is intermittent, see **PRELIMINARY INSPECTION** under TROUBLE SHOOTING.

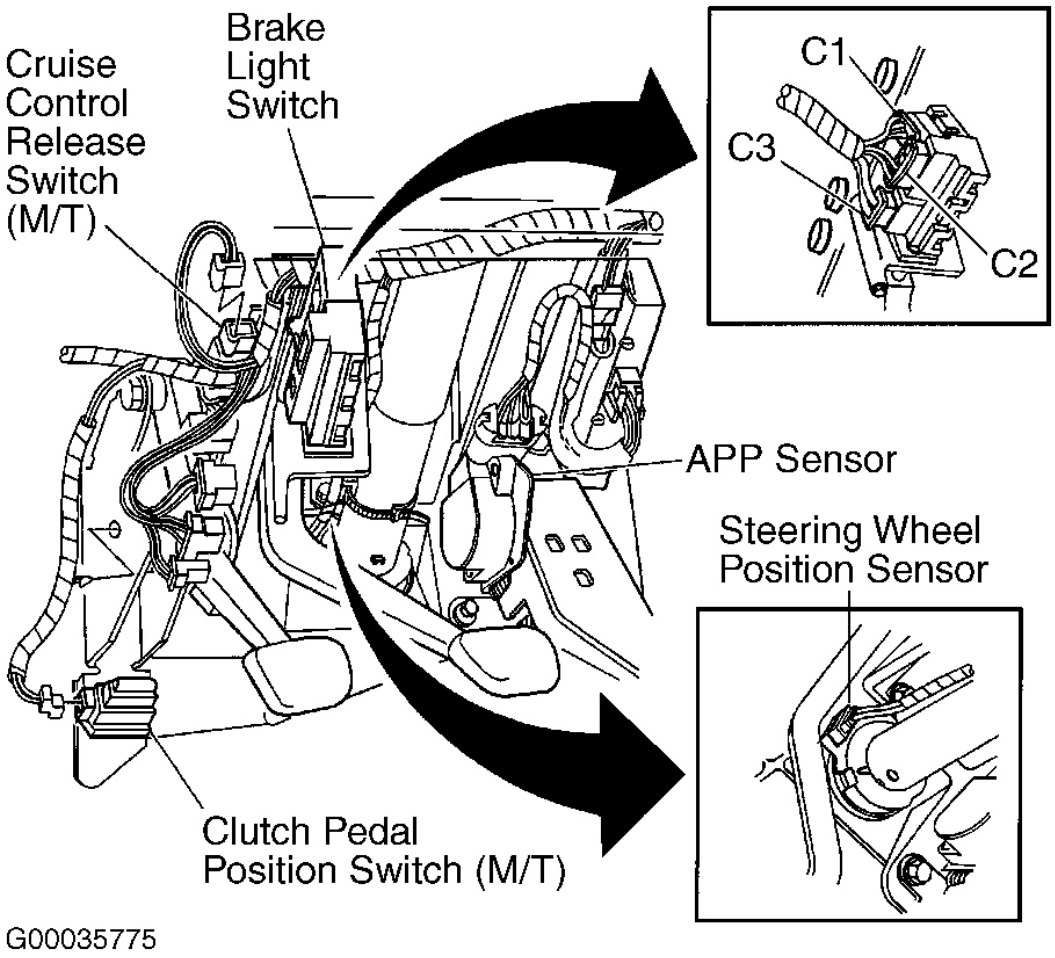
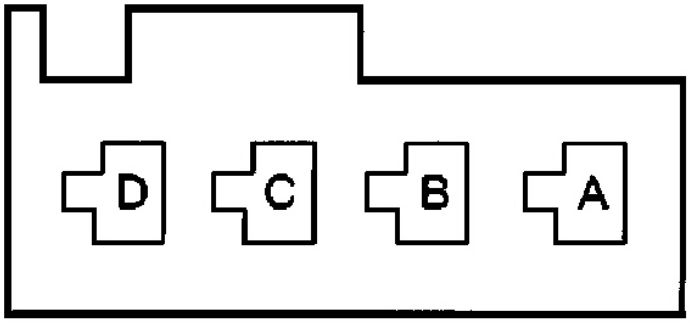
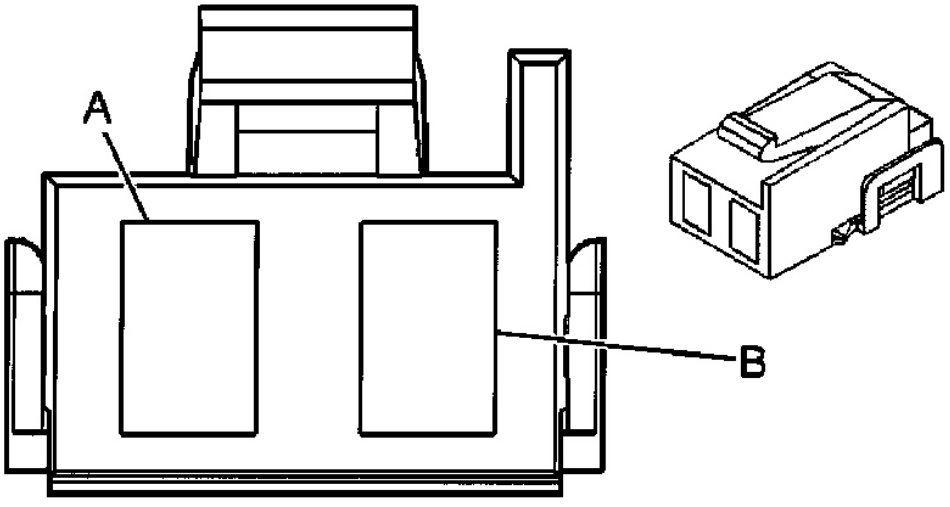


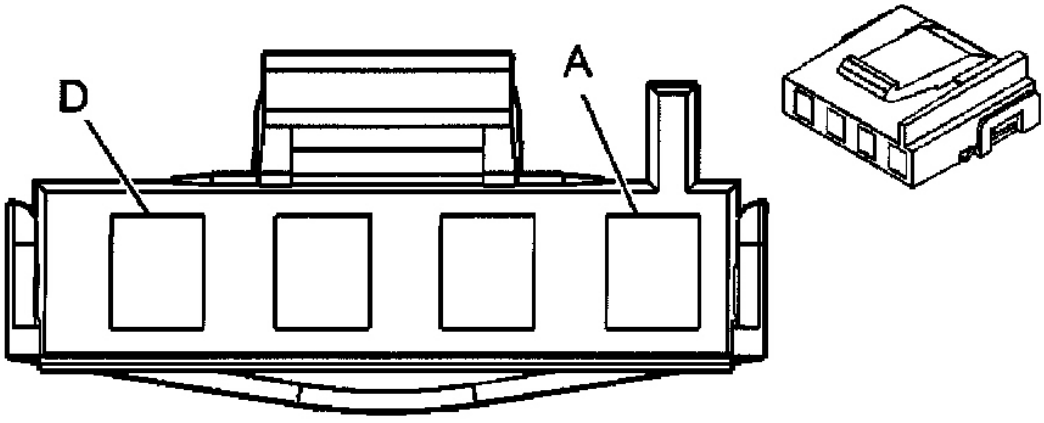
Fig. 4: Locating Components Under Left Side Of Instrument Panel
Courtesy of GENERAL MOTORS CORP.



C1



C2



C3

G00035774

Fig. 5: Identifying Brakelight Switch Connectors & Terminals
Courtesy of GENERAL MOTORS CORP.

DTC P0704: CLUTCH SWITCH CIRCUIT

Circuit Description

Clutch Pedal Position (CPP) switch is a normally closed switch. When CPP switch is closed, (clutch pedal released) Powertrain Control Module (PCM) senses ignition voltage on the CPP switch signal circuit. If PCM senses a voltage on CPP switch signal circuit when CPP switch should be open, DTC P0704 sets. Above conditions must be present for 1.5 seconds or more.

When DTC sets PCM stores DTC information into memory when diagnostic runs and fails. Malfunction Indicator Light (MIL) will not illuminate. PCM records operating conditions at the time diagnostic fails. PCM stores this information in the FAILURE RECORDS.

Code Enable Criteria

Following conditions must exist for DTC to set:

- Engine speed is 700 RPM or more.
- Engine operates for 2 seconds or more.
- Wheel speed is 30 MPH or more to enable diagnostic. The diagnostic disables when wheel speed is below 10 mph.

Testing

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Turn ignition switch to OFF position. Disconnect Powertrain Control Module (PCM) Blue 80-pin harness connector C1. PCM is located inside right front fender, below battery. Turn ignition switch to RUN position. Using test light connected to ground, probe PCM harness connector C1 terminal No. 35 (Gray wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 4 .
3. Press brake pedal. If test light illuminates, go to step 6 . If test light does not illuminate, go to step 9 .
4. Turn ignition switch to OFF position. Disconnect CPP switch 2-pin harness connector. CPP switch is located above clutch pedal. Turn ignition switch to RUN position. Using test light connected to ground, probe CPP switch harness connector terminal "B" (Pink wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 7 .

5. Check for open, high resistance or short to ground in CPP switch signal circuit, Gray wire between CPP switch harness connector terminal "A" and PCM harness connector C1 terminal No. 35. If problem is found, repair as necessary and go to step 12 . If no problem exists, go to step 8 .
6. Check for short to voltage in CPP switch signal circuit, Gray wire between CPP switch harness connector terminal "A" and PCM harness connector C1 terminal No. 35. If problem is found, repair as necessary and go to step 12 . If no problem exists, go to step 8 .
7. Repair open, high resistance or short to ground in CPP switch ignition voltage circuit, Pink wire between CPP switch harness connector terminal "B" and underhood fuse block Gray harness connector C2 terminal B7. After repairs are made, go to step 12 .
8. Check for poor, loose or corroded terminals in CPP switch harness connector. If problem exists, repair as necessary and go to step 12 . If no problem exists, go to step 10 .
9. Check for poor, loose or corroded terminals in PCM harness connectors. If problem exists, repair as necessary and go to step 12 . If no problem exists, go to step 11 .
10. Replace CPP switch. See **CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH** under REMOVAL & INSTALLATION. After repairs are made, go to step 12 .
11. Replace PCM. See **POWERTRAIN CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs are made, go to next step.
12. Using scan tool, clear DTCs. Test drive vehicle. Operate vehicle within code enable criteria. If DTC does not reset, system is okay. If DTC resets, go to step 2 .

Diagnostic Aids

If a switch or circuit condition cannot be located test drive vehicle. An intermittent condition may be duplicated during a test drive. Following may cause an intermittent failure, poor connections, corrosion, misrouted harness, rubbed through wire insulation or broken wire inside insulation.

Using freeze frame and failure records data may aid in locating an intermittent condition. If DTC cannot be duplicated, the information included in freeze frame and failure records data can aid in determining how many miles since DTC set. The fail counter and pass counter can also aid determining how many ignition cycles the diagnostic reported a pass or a fail. Operate vehicle within same freeze frame conditions, such as RPM, load, vehicle speed, temperature etc., observed on scan tool. This will help isolate when DTC set.

DTC P1574: BRAKELIGHT SWITCH CIRCUIT

Circuit Description

This diagnostic test functions on the assumption that a sudden decrease in a non-drive, wheel speed must be caused by brake application. Non-drive wheel speed and brakelight switch status are supplied to Powertrain Control Module (PCM) through serial data from the Electronic Brake Control Module (EBCM). If there is a 2.5 MPH or more decrease of non-drive wheel speed in 0.4 seconds and a transition of TCC or extended travel contacts of the cruise control release switch without a transition of brakelight switch, DTC P1574 is set.

Code Enable Criteria

Following conditions must exist for DTC to set:

- DTCs P0502, P0503, P0719, P0724, P1575 and P1602 are not set.
- Traction control and anti-lock brake systems have not failed.
- Traction control and anti-lock brake systems are not active.
- Non-drive wheel speed goes above 20 MPH and then doesn't go below 4 MPH.

Testing

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Connect scan tool to DLC. Turn ignition switch to RUN position. Using scan tool, retrieve DTCs from EBCM. If no DTCs are retrieved, go to next step. If any DTCs beginning with "C" are set, perform appropriate test. See DIAGNOSTIC TROUBLE CODE DEFINITIONS in BODY CONTROL MODULES - CORVETTE article.
3. Repair short to voltage in Light Blue wire between brakelight switch harness connector C2 terminal "B" and Throttle Actuator Control (TAC) module harness connector C2 terminal No. 6. See **Fig. 3** and **Fig. 5** . After repairs are made, go to next step.
4. Using scan tool, clear DTCs. Operate vehicle within code enable criteria. If DTC does not reset, system is okay. If DTC resets, go to step 2 .

Diagnostic Aids

DTC P1574 indicates brakelight switch signal to the EBCM or EBCM's ability to send brakelight switch signal to PCM has failed. See appropriate ANTI-LOCK article in BRAKES.

SYMPTOM TESTS

NOTE: These tests are written specifically for use with GM Tech I or Tech II scan tools. Generic scan tool can be used but may have limited

functions.

NOTE: For wire terminal, color and circuit identification, see WIRING DIAGRAMS . To aid in location of components, see COMPONENT LOCATIONS .

CRUISE CONTROL INOPERATIVE

NOTE: To avoid misdiagnosis, ensure preliminary inspection and all checks have been performed. See TROUBLE SHOOTING . Ensure proper operation of brakelight system, and proper operation of transmission range switch.

1. If cruise control diagnostic system check has been performed, go to next step. If cruise control diagnostic system check has not been performed, go to **CRUISE CONTROL DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.
2. Turn ignition switch to OFF position. Connect scan tool to Data Link Connector (DLC). DLC is located DLC is located below left side of instrument panel. Turn ignition switch to RUN position. Using scan tool, observe CRUISE ON parameter in Powertrain Control Module (PCM) data list. Turn cruise control switch on. If scan tool parameter changes state, go to next step. If scan tool parameter does not change state, go to step 9 .
3. Observe cruise control SET/COAST parameter in PCM data list. Press and release SET button. If cruise control SET/COAST parameter changes state, go to next step. If cruise control SET/COAST parameter does not change state, go to step 14 .
4. Observe cruise control RESUME/ACCELERATE parameter in PCM data list. Press and release RESUME/ACCELERATE button. If cruise control RESUME/ACCELERATE parameter changes state, go to next step. If cruise control RESUME/ACCELERATE parameter does not change state, go to step 15 .
5. Observe STOP LAMP SWITCH parameter in PCM data list. Press and release brake pedal. If STOP LAMP SWITCH parameter changes state, go to next step. If STOP LAMP SWITCH parameter does not change state, go to step 10 .
6. Observe CRUISE CONTROL RELEASE SWITCH parameter in PCM data list. Press and release brake pedal. If parameter changes state, go to next step. If parameter does not change state, go to step 11 .
7. If vehicle is equipped with a manual transmission, go to next step. If vehicle is equipped with a automatic transmission, go to step 29 .
8. Observe CLUTCH PEDAL POSITION switch parameter in PCM data list. Press and release clutch pedal. If CLUTCH PEDAL POSITION switch parameter changes state, go to

step 29 . If CLUTCH PEDAL POSITION switch parameter does not change state, go to step 12 .

9. Turn ignition switch to OFF position. Disconnect multifunction turn signal switch Black 4-pin harness connector C217. Harness connector C217 is located at left hand side of steering column, attached to lower instrument panel bar. Turn ignition switch to RUN position. Using test light connected to ground, probe multifunction turn signal switch harness connector C217 terminal "B" (Pink wire). See **Fig. 2** . If test light illuminates, go to step 13 . If test light does not illuminate, go to step 21 .
10. Turn ignition switch to OFF position. Disconnect brakelight switch Gray 2-pin harness connector C2. Brakelight switch is located on brake pedal bracket. Turn ignition switch to RUN position. Using test light connected to ground, probe brakelight switch harness connector C2 terminal "A" (Orange wire). See **WIRING DIAGRAMS** . If test light illuminates, go to step 16 . If test light does not illuminate, go to step 22 .
11. Turn ignition switch to OFF position. Disconnect cruise control release switch 4-pin Black harness connector C1. Cruise control release switch is located above brake pedal. Turn ignition switch to RUN position. Using test light connected to ground, probe cruise control release switch harness connector C1 terminal "B" (Pink wire). See **WIRING DIAGRAMS** . If test light illuminates, go to step 18 . If test light does not illuminate, go to step 23 .
12. Turn ignition switch to OFF position. Disconnect Clutch Pedal Position (CPP) switch 2-pin harness connector C1. CPP switch is located on clutch pedal bracket. Turn ignition switch to RUN position. Using test light connected to ground, probe CPP switch harness connector terminal "B" (Pink wire). See **WIRING DIAGRAMS** . If test light illuminates, go to step 20 . If test light does not illuminate, go to step 24 .
13. Check for a open, high resistance, short to ground or short to voltage in cruise control switch ON signal circuit, Gray wire between multifunction turn signal switch harness connector C217 terminal "A" and Throttle Actuator Control (TAC) module harness connector C2 terminal No. 14. See **Fig. 2** and **Fig. 3** . If problem exists, repair as necessary and go to step 35 . If no problem exists, go to step 28 .
14. Check for a open, high resistance, short to ground or short to voltage in cruise control switch SET/COAST signal circuit, Dark Blue wire between multifunction turn signal switch harness connector C217 terminal "C" and TAC module harness connector C2 terminal No. 4. See **Fig. 2** and **Fig. 3** . If problem exists, repair as necessary and go to step 35 . If no problem exists, go to step 28 .
15. Check for a open, high resistance, short to ground or short to voltage in cruise control switch RESUME/ACCELERATE signal circuit, Gray/Black wire between multifunction turn signal switch harness connector C217 terminal "D" and TAC module harness connector C2 terminal No. 5. See **Fig. 2** and **Fig. 3** . If problem exists, repair as necessary and go to

step 35 . If no problem exists, go to step 28 .

16. Check for a open, high resistance, short to ground or short to voltage in brakelight switch signal circuit, Light Blue wire between brakelight switch harness connector C2 terminal "B" and TAC harness connector C2 terminal No. 6. See **Fig. 3** and **Fig. 5** . If no problem exists, go to next step. If problem exists, repair as necessary and go to step 35 .
17. Check brakelight switch for proper adjustment. See **CRUISE CONTROL RELEASE SWITCH (A/T) & BRAKELIGHT SWITCH** under ADJUSTMENTS. After adjusting brakelight switch, or if adjustment is okay, go to step 25 .
18. Check for a open, high resistance, short to ground or short to voltage in cruise control release signal circuit, Purple wire between cruise control release switch harness connector C1 terminal "A" and PCM Blue harness connector C1 terminal No. 33. See **Fig. 6** . If no problem exists, go to next step. If problem exists, repair as necessary and go to step 35 .

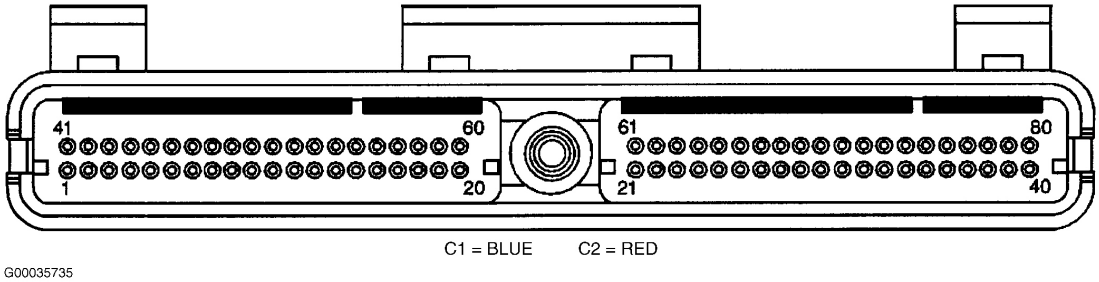


Fig. 6: Identifying Powertrain Control Module Harness Connectors
Courtesy of GENERAL MOTORS CORP.

19. Check cruise control release switch for proper adjustment. See **CRUISE CONTROL RELEASE SWITCH (A/T) & BRAKELIGHT SWITCH** under ADJUSTMENTS. After adjusting brakelight switch, or if adjustment is okay, go to step 26 .
20. Check for open, high resistance, short to ground or short to voltage in CPP signal circuit, Gray wire between CPP switch harness connector terminal "A" and PCM Blue harness connector C1 terminal No. 35. See **Fig. 6** . If problem exists, repair as necessary and go to step 35 . If no problem exists, go to step 27 .
21. Repair open, high resistance or short to ground in multifunction turn signal switch ignition voltage circuit, Pink wire between instrument panel fuse block harness connector C1 terminal E6 and multifunction turn signal switch harness connector C217 terminal "B". See **Fig. 2** . After repairs are made, go to step 35 .
22. Repair open, high resistance or short to ground in brakelight switch battery voltage circuit, Orange wire between instrument panel fuse block harness connector C1 terminal B2 and brakelight switch harness connector C2 terminal "A". See **Fig. 5** and **Fig. 7** . After repairs

are made, go to step 35 .

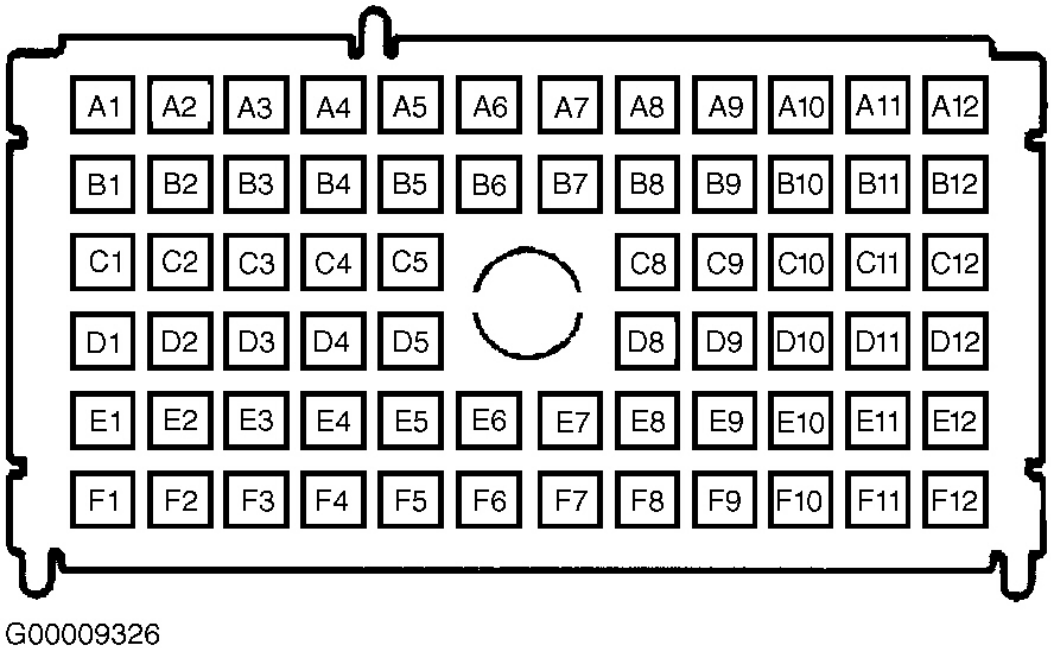


Fig. 7: Underhood Junction Block Harness Connector Terminals
Courtesy of GENERAL MOTORS CORP.

23. Repair open, high resistance or short to ground in cruise control release switch battery voltage circuit, Pink wire between cruise control release switch harness connector C1 terminal "B" and underhood fuse block harness connector C2 terminal B7. See **Fig. 5** and **Fig. 7** . After repairs are made, go to step 35 .
24. Repair open, high resistance or short to ground in CPP switch battery voltage circuit, Pink wire between CPP harness connector terminal "B" and underhood fuse block harness connector C2 terminal B7. See **Fig. 7** . After repairs are made, go to step 35 .
25. Check for poor, loose or corroded terminals in brakelight switch harness connector. If problem exists, repair as necessary and go to step 35 . If no problem is found, go to step 30 .
26. Check for poor, loose or corroded terminals in cruise control release switch harness connector. If problem exists, repair as necessary and go to step 35 . If no problem is found, go to step 31 .
27. Check for poor, loose or corroded terminals in CPP switch harness connector. If problem exists, repair as necessary and go to step 35 . If no problem is found, go to step 32 .

28. Check for poor, loose or corroded terminals in multifunction turn signal switch harness connector C217. If problem exists, repair as necessary and go to step 35 . If no problem is found, go to step 33 .
29. Check for poor, loose or corroded terminals in PCM Blue harness connector C2. If problem exists, repair as necessary and go to step 35 . If no problem is found, go to step 34 .
30. Replace brakelight switch. See **CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH** under REMOVAL & INSTALLATION. After repairs are made, go to step 35 .
31. Replace cruise control release switch. See **CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH** under REMOVAL & INSTALLATION. After repairs are made, go to step 35 .
32. Replace CPP switch. See **CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH** under REMOVAL & INSTALLATION. After repairs are made, go to step35 .
33. Replace multifunction turn signal lever switch. See MULTIFUNCTION SWITCH under REMOVAL & INSTALLATION in STEERING COLUMN SWITCHES - CORVETTE article. After repairs are made, go to step 35 .
34. Replace PCM. See **POWERTRAIN CONTROL MODULE** under REMOVAL & INSTALLATION. After repairs are made, go to next step.
35. Check cruise control system for normal operation. If cruise control operates normally, testing is complete. If cruise control does not operate normally, go to step 2 .

REMOVAL & INSTALLATION

WARNING: Vehicles are equipped with Supplemental Inflatable Restraint (SIR) system. Before attempting ANY repairs involving steering column, instrument panel or related components, see SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM in appropriate AIR BAG RESTRAINT SYSTEMS article.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION before disconnecting battery.

NOTE: Before replacing any control module, ensure all module ground and power circuits are functioning properly. For circuit identification, see GROUND DISTRIBUTION and POWER DISTRIBUTION articles in WIRING DIAGRAMS.

CRUISE CONTROL RELEASE SWITCH (A/T), BRAKELIGHT SWITCH & CLUTCH PEDAL POSITION SWITCH

Removal & Installation

Disconnect negative battery cable. Remove left side instrument panel sound insulator. Disconnect electrical connector from switch. Remove switch from retainer. To install, reverse removal procedure. Adjust switch. See **CRUISE CONTROL RELEASE SWITCH (A/T) & BRAKELIGHT SWITCH** and **CLUTCH PEDAL POSITION SWITCH** under ADJUSTMENTS.

CRUISE CONTROL FUNCTIONAL SWITCHES

NOTE: Cruise control functional switches are located on the end of multifunction switch lever, which also serves as a turn signal lever. Switches are not serviceable and must be replaced with multifunction switch lever as an assembly. See appropriate STEERING COLUMN SWITCHES article.

POWERTRAIN CONTROL MODULE

Removal & Installation

1. Disconnect negative battery cable. Remove TAC module. See **THROTTLE ACTUATOR CONTROL MODULE** . Loosen, but do not remove rear PCM retaining fastener. Use rear fastener as an anchor for outer bracket.
2. Remove front PCM retaining fastener. Reposition PCM outer bracket. Remove PCM from bracket and extract from vehicle. To install, reverse removal procedure. After installation, perform computer relearn procedure. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION.

THROTTLE ACTUATOR CONTROL MODULE

Removal & Installation

1. Disconnect negative battery cable. Raise and support vehicle. Remove right front wheel.

2. Remove wheelhouse filler panel. Remove screws retaining Throttle Actuator Control (TAC) module to powertrain control module bracket. See **Fig. 8** . Disconnect TAC module harness connector. Remove TAC module.
3. To install, reverse removal procedure. Tighten TAC module retaining screws to 17 INCH lbs. (1.9 N.m). Tighten negative battery cable bolt to 11 ft. lbs. (15 N.m).

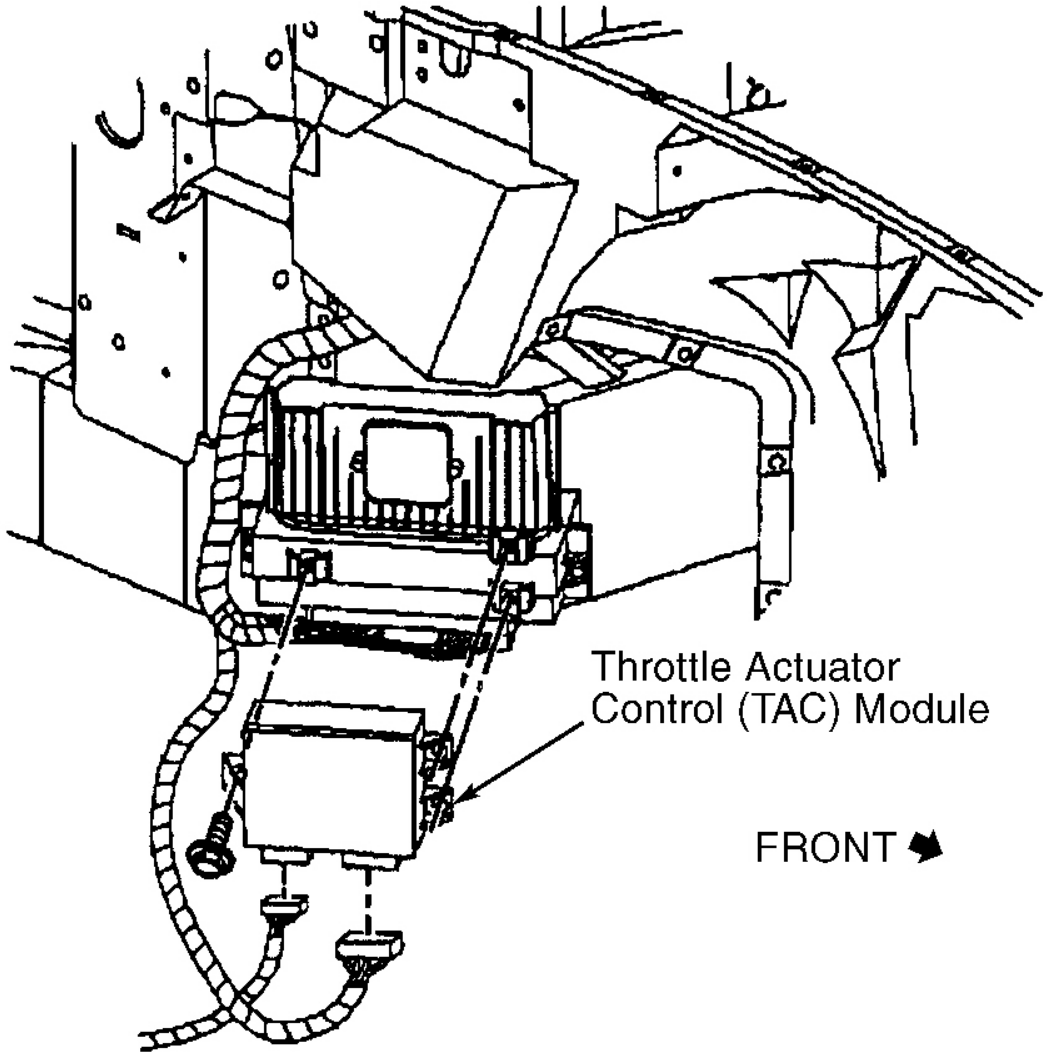


Fig. 8: Removing Throttle Actuator Control Module
Courtesy of GENERAL MOTORS CORP.

WIRING DIAGRAMS

2001 Chevrolet Corvette

2001 ACCESSORIES & EQUIPMENT Cruise Control Systems - Corvette

Fig. 9: Cruise Control System Wiring Diagram (Corvette)