ABC123	Entire Article 2000 Chevrolet Camaro

ARTICLE BEGINNING

2000 ACCESSORIES & EQUIPMENT
General Motors Cruise Control Systems

Camaro & Firebird

*** PLEASE READ THIS FIRST ***

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.

DESCRIPTION

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, and tap-up and tap-down. If vehicle is equipped with traction control, cruise control will disengage during low traction conditions.

The main components of the cruise control system include the cruise control module, cruise control functional switches, Vehicle Speed Sensor (VSS), cruise control clutch anticipate switch (3.8L with M/T), cruise control clutch switch (5.7L with M/T), cruise control release (ABS/TCC) switch (all with A/T) and brakelight switch. See COMPONENT LOCATIONS.

OPERATION

CRUISE CONTROL FUNCTIONAL SWITCHES

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

Cruise control functional switches are located on the end of multifunction lever, which also serves as a turn signal lever. Cruise control functional switches include a SET button and a sliding main switch with OFF, ON and RESUME/ACCEL positions. Switch functions are described as follows:

OFF - System disengages when switch is turned off.
ON - System disengages when switch is turned off. System is ready to be set when switch is turned on.
R/A (Resume/Accelerate) - Spring-loaded R/A (Resume/Accelerate) switch will not initially set cruise speed, but when cruise has been disengaged by braking, 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 button, the set speed is "tapped-up" in one MPH increments.

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

CRUISE CONTROL MODULE

The cruise control module contains an electronic controller and electric stepper motor. Controller monitors vehicle speed and operates electric stepper motor. Responding to controller, stepper motor moves a connecting strap that is attached to cruise control cable. Cable moves throttle linkage to vary throttle position in order to maintain desired cruise speed. Cruise control module contains a low speed limit function which will prevent system engagement when vehicle speeds are less than about 25 MPH.

CRUISE CONTROL RELEASE (ABS/TCC) SWITCH, BRAKELIGHT SWITCH & CLUTCH SWITCH

Cruise control release and brakelight switches disengage cruise control operation electrically when brake pedal is depressed. This is done by activating the brake cut-out input electrical circuit to cruise control module. Models equipped with manual transmissions also use a cruise control clutch anticipate switch (3.8L) or cruise control clutch switch (5.7L) located on clutch pedal bracket to stop cruise operation. Vehicle speed at brake or clutch actuation will be stored in system memory.

VEHICLE SPEED SENSOR (VSS)

VSS is mounted on transmission extension housing. VSS produces an AC signal with a frequency proportional to speed at which transmission output shaft rotates, which is also proportional to vehicle speed. The AC signal is sent to cruise control module and speedometer by Powertrain Control Module (PCM). The signal is sent at a rate of 4000 pulses per mile, and the PCM converts number of pulses per mile per to pulses per second to determine speed of vehicle.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
Brakelight switch	On Brake Pedal Bracket
Cruise Control Clutch Anticipate Switch (3.8L)	On Clutch Pedal Bracket


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Cruise Control Clutch Switch (5.7L)  ........  On Clutch Pedal Bracket
Cruise Control Functional Switches  ..........  On Multifunction Lever
Cruise Control Module  ...................  On Left Front Frame Rail,
                                                       Behind Bumper
Cruise Control Release (ABS/TCC) Switch  .....  On Brake Pedal Bracket
Vehicle Speed Sensor (VSS)  .......  On Transmission Extension Housing
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ADJUSTMENTS

CRUISE CONTROL CABLE

NOTE: If cruise control cable is adjusted too tight, throttle will not be able to close solidly, causing an unstable idle quality.

Hold throttle lever in idle/stop position while pulling cruise control cable adjustment slider until slack is removed. See Fig. 1. Cable slack should be no more than 0-.08" (.0-2 mm). Push down on adjustment lock tab on cable conduit until a snap is heard. DO NOT allow throttle lever to move from idle/stop position. Pull on terminal end to ensure connector to throttle body is hard against fitting. Check cable slack between terminal end of cable to throttle body plastic connector.

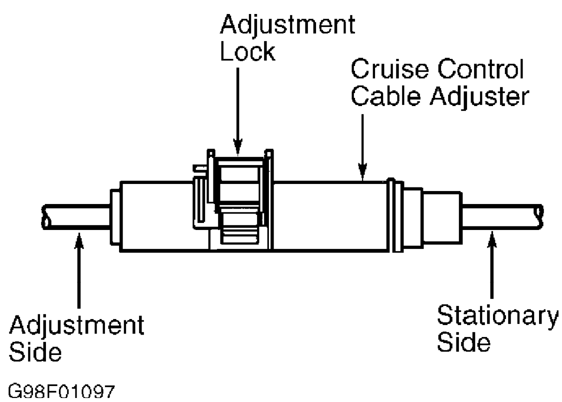

Fig. 1: Identifying Cruise Control Cable Adjuster
Courtesy of General Motors Corp.

CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH

Depress clutch pedal and insert cruise control clutch anticipate switch (3.8L) or cruise control clutch switch (5.7L) into proper pedal receptacle until retainer on switch is fully seated. See Fig. 2. Slowly pull clutch pedal back to its fully retracted position (requires 50 lbs. of force) until click sounds are no longer heard. Switch will move within switch retainer to proper adjustment.

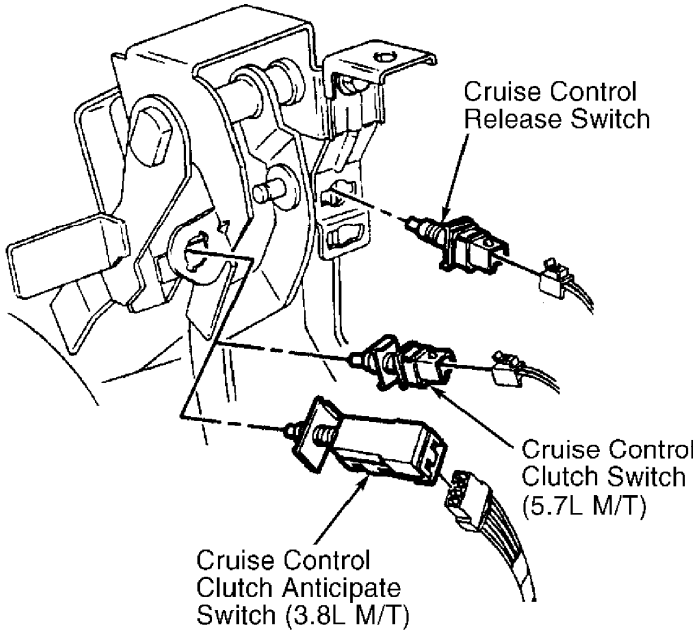

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Fig. 2: Identifying Cruise Control Anticipate, Brakelight & Clutch Switches
Courtesy of General Motors Corp.

CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH

1) Depress brake pedal and insert cruise control release switch and brakelight switch into proper pedal receptacle until retainer on switch is fully seated. See Fig. 2. Slowly pull brake pedal back to its fully retracted position (requires 50 lbs. of force) until click sounds are no longer heard. Switches will move within switch retainers to proper adjustment.

2) Ensure switch contacts are open at 1.0" (25.4 mm) or less of pedal travel. Contacts should be open at same time or before onset of braking. Cruise control system should disengage at about 1.0" (25.4 mm) of pedal travel. Check brakelights for proper operation.

TROUBLE SHOOTING

PRELIMINARY INSPECTION

1) PCM will disable cruise control if any of the following conditions are detected:

* Vehicle speed is less than 25 MPH.
* Transmission range switch indicates Park, Neutral, Low or Reverse.
* Engine speed is too high.
* An excessive over/under battery voltage condition exists.
* Low engine RPM.
* High engine RPM (fuel cut-off).
* Anti-lock brake/traction control system is active for greater than 2 seconds.

2) Check fuses, and replace as necessary. Visually inspect for broken or open wires. 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. Check brakelight and Center High-Mounted Stop Light (CHMSL) operation.

3) Check for Diagnostic Trouble Codes (DTCs). If any PCM DTCs are present, see appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE. If any traction control codes are present, see appropriate ANTI-LOCK article in BRAKES.

4) Ensure cruise control module linkage is connected and moves freely without binding. Check cruise control cable adjustment. See CRUISE CONTROL CABLE under ADJUSTMENTS. Ensure brakelight switch is installed correctly. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under ADJUSTMENTS.

5) Ensure any aftermarket electronic equipment is properly installed. Repair as necessary. After repair system functions normally, system is okay. If no problems are found or problem still exists, go to next step.

6) If vehicle is equipped with 3.8L engine, go to SELF-DIAGNOSTIC SYSTEM - 3.8L ENGINE. If vehicle is equipped with 5.7L engine, go to SYSTEM OPERATION CHECK.

SYSTEM OPERATION CHECK

1) Drive vehicle at speeds greater than 25 MPH. Place cruise control main switch in ON position. Press SET button once and release. Remove foot from accelerator pedal. Vehicle should maintain set speed. If vehicle speed does not maintain set speed, go to CRUISE CONTROL INOPERATIVE/MALFUNCTIONING or CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958) under SYMPTOM TESTS.

2) Hold slider switch in R/A position until vehicle speed increases 4-5 MPH. Vehicle should accelerate and maintain new set speed. Press SET button until vehicle speed decreases 4-5 MPH. Vehicle should decelerate and maintain new set speed. If vehicle operates as specified, go to next step. If vehicle does not operate as specified, go to CRUISE CONTROL INOPERATIVE/MALFUNCTIONING or CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958) under SYMPTOM TESTS.

3) Depress brake pedal slightly. Cruise control system should disengage. If operation is as specified, go to next step. If operation is not as specified, go to CRUISE CONTROL INOPERATIVE/MALFUNCTIONING or CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958) under SYMPTOM TESTS.

4) Move slider switch to R/A position once and release. Vehicle should accelerate and maintain previously set speed. Tap-up R/A switch (less than 1/2 of a second). Vehicle speed should increase one MPH. Tap-down SET button (less than 1/2 of a second). Vehicle speed should decrease one MPH. If operation is as specified, go to next step. If operation is not as specified, go to CRUISE CONTROL INOPERATIVE/MALFUNCTIONING or CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958) under SYMPTOM TESTS.

5) Simultaneously press SET button and R/A switch. Cruise control system should disengage, but retain previously set speed in memory. Place cruise control main switch in OFF position. Cruise control system should disengage, and set speed should be erased from memory. If vehicle operates as specified, system is okay at this time. If vehicle does not operate as specified, go to CRUISE CONTROL INOPERATIVE/MALFUNCTIONING or CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958) under SYMPTOM TESTS.

SELF-DIAGNOSTIC SYSTEM - 3.8L ENGINE

NOTE: Information contained herein is specifically applicable to models equipped with 3.8L engine. Self-diagnostic information for model equipped with 5.7L engine is not available. For testing information for models equipped with 5.7L engine, go to SYMPTOM TESTS - 5.7L ENGINE.

NOTE: Diagnostic trouble code tests are written specifically for use with General Motors 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.

DIAGNOSTIC SYSTEM OPERATION CHECK

1) Ensure battery condition, cold cranking amperage and reserve capacity meet specifications. Replace as necessary. Install scan tool. If scan tool powers up, go to next step. If scan tool does not power up, see appropriate BODY CONTROL MODULES article.

2) Turn ignition on, engine off. Try to establish scan tool communication with Powertrain Control Module (PCM). If communication with PCM is established, go to next step. If communication with PCM is not established, see appropriate BODY CONTROL MODULES article.

3) Select display DTC function for PCM. Record all displayed DTCs and status of displayed DTCs. For further information and procedures for retrieved DTCs, 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 follow scan tool instructions.

SYMPTOM TESTS - 5.7L ENGINE

NOTE: Symptom tests are for vehicles equipped with 5.7L engine. For diagnostic and testing information on models equipped with 3.8L engine, go to SELF-DIAGNOSTIC SYSTEM - 3.8L ENGINE.

NOTE: The following tests are written specifically for General Motors Tech 2 scan tool. A generic scan tool may not be capable of performing all necessary test functions.

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

CRUISE CONTROL INOPERATIVE/MALFUNCTIONING

1) Turn ignition switch to OFF position. Disconnect cruise control module harness connector. Turn ignition switch to ON position. Using a test light connected to ground, probe cruise control module harness connector terminal "F" (Pink wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 35).

2) Connect test light to cruise control module harness connector terminal "E" (Black wire). Probe cruise control module harness connector terminal "F" (Pink wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 36).

3) Turn ignition switch to ON position and cruise control switch to OFF position. Individually probe cruise control module harness connector terminals "A" (Gray wire), "B" (Dark Blue wire) and "C" (Gray/Black wire). See WIRING DIAGRAMS. If test light does not illuminate, go to next step. If test light illuminates on any circuit(s), go to step 15).

4) Turn ignition and cruise control switches to ON position. Using a test light connected to ground, probe cruise control module harness connector terminal "A" (Gray wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 16).

5) Using a test light connected to ground, probe cruise control module harness connector terminal "B" (Dark Blue wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 18).

6) Using a test light connected to ground, probe cruise control module harness connector terminal "C" (Gray/Black wire). If test light illuminates, go to next step. If test light does not illuminate, go to step 19).

7) Using a test light connected to ground, probe cruise control module harness connector terminal "D" (Brown wire). If test light illuminates, leave test light connected and go to next step. If test light does not illuminate, go to step 20).

8) Depress brake pedal while observing test light. If test light does not illuminate, go to next step. If test light illuminates, go to step 21).

9) Using a test light connected to ground, probe cruise control module harness connector terminal "G" (Light Blue wire). If test light illuminates, leave test light connected and go to next step. If test light does not illuminate, go to step 22).

10) Depress brake pedal while observing test light. If test light illuminates, go to next step. If test light does not illuminate, go to step 23).

11) Using a test light connected to battery voltage, probe cruise control module harness connector terminal "H" (Dark Green wire). See WIRING DIAGRAMS. If test light does not illuminate, go to

next step. If test light illuminates, go to step 24).

12) Following manufacturer's instructions, connect General Motors Tech 2 scan tool. Command CRUISE INHIBIT/ENABLE OFF. If test light illuminates, go to next step. If test light does not illuminate, go to step 25).

13) Using a DVOM connected to ground, check for battery voltage at cruise control module harness connector terminal "J" (White wire). If battery voltage exists, go to next step. If battery voltage does not exist, go to step 26).

14) Raise and support vehicle so drive wheels may be rotated. Block one drive wheel. Set gear selector in DRIVE position. Set DVOM on AC voltage scale. Using DVOM connected to ground, measure voltage at cruise control module harness connector terminal "K" (Dark Green/White wire) while rotating unblocked drive wheel. If voltage varies 0-5 volts, go to step 34). If voltage is not as described, go to step 27).

15) Check circuit(s) which caused test light to illuminate for short to voltage. See WIRING DIAGRAMS. Repair wire(s) as necessary. After repair, check system for normal operation. If wire(s) is okay, go to step 33).

16) Check Gray wire between cruise control module harness connector terminal "A" and cruise control functional switches harness connector for open or high resistance. Repair Gray wire as necessary. After repair, check system for normal operation. If wire is okay, go to next step.

17) Check Pink wire between cruise control module harness connector terminal "F" and A/C CRUISE fuse (15-amp) wiring harness junction block No. 2 for open or high resistance. Repair Pink wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 33).

18) Check Dark Blue wire between cruise control module harness connector terminal "B" and cruise control functional switches harness connector for open or high resistance. See WIRING DIAGRAMS. Repair Dark Blue wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 33).

19) Check Gray/Black wire between cruise control module harness connector terminal "C" and cruise control functional switches harness connector for open or high resistance. Repair Gray/Black wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 33).

20) Check Brown wire between cruise control module harness connector terminal "D" and cruise control release switch or brakelight switch harness connectors for open or high resistance. See WIRING DIAGRAMS. Repair Brown wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 28).

21) Check Brown wire between cruise control module harness connector terminal "D" and cruise control release switch or brakelight switch harness connectors for short to voltage. Repair Brown wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 28).

22) Check Light Blue wire between cruise control module harness connector terminal "G" and brakelight switch harness connector for short to voltage. Repair Light Blue wire as necessary. After repair, check system for normal operation. If wire is okay, go to step

29).

23) Check Light Blue wire between cruise control module harness connector terminal "G" and brakelight switch harness connector for open or high resistance. See WIRING DIAGRAMS. Repair Light Blue wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 29).

24) Check Dark Green wire between cruise control module harness connector terminal "H" and PCM harness connector for short to ground. Repair Dark Green wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 32).

25) Check Dark Green wire between cruise control module harness connector terminal "H" and PCM harness connector for open or high resistance. Repair Dark Green wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 32).

26) Check White wire between cruise control module harness connector terminal "J" and PCM harness connector for open or high resistance. See WIRING DIAGRAMS. Repair White wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 32).

27) Check Dark Green/White wire between cruise control module harness connector terminal "K" and PCM harness connector for open or high resistance. Repair Dark Green/White wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 32).

28) Check cruise control release and clutch switches for proper adjustment. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH and/or
CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH under ADJUSTMENTS. Adjust switch(es) as necessary. After repair, check system for normal operation. If adjustment is okay, go to step 30).

29) Check brakelight switch for proper adjustment. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under ADJUSTMENTS. Adjust switch as necessary. After repair, check system for normal operation. If adjustment is okay, go to step 31).

30) Check for poor connections or connector damage at cruise control release and clutch switch harness connectors. Repair or replace as necessary. If no problem is found, go to step 37).

31) Check for poor connections or connector damage at brakelight switch harness connector. Repair or replace as necessary. If no problem is found, go to step 38).

32) Check for poor connections or connector damage at PCM harness connector. Repair or replace as necessary. If no problem is found, go to step 39).

33) Check for poor connections or connector damage at cruise control functional switches harness connector. Repair as necessary. If no problem is found, go to step 40).

34) Check for poor connections or connector damage at cruise control module harness connector. Repair as necessary. If no problem is found, go to step 41).

35) Repair Pink wire as necessary. See WIRING DIAGRAMS. After repair, check system for normal operation.

36) Repair Black wire between cruise control module harness connector terminal "E" and chassis ground. After repair, check system for normal operation.

37) Replace cruise control release switch and/or cruise control clutch switch. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH and/or CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH under REMOVAL & INSTALLATION. After repair, check system for normal operation.

38) Replace brakelight switch. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under REMOVAL & INSTALLATION. After repair, check system for normal operation.

39) Replace and program PCM. See appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE. After repair, check system for normal operation.

40) Replace cruise control functional switches. See CRUISE CONTROL FUNCTIONAL SWITCHES under REMOVAL & INSTALLATION. After repair, check system for normal operation.

41) Replace cruise control module. See CRUISE CONTROL MODULE under REMOVAL & INSTALLATION. After repair, check system for normal operation. If system still malfunctions, return to step 1).

CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (USING TESTER J42958)

NOTE: The following tests are written specifically for General Motors Tech 2 scan tool and cruise control tester (J42958). A generic scan tool or tester may not be capable of performing all necessary test functions.

1) Connect cruise control tester (J42958) between cruise control module harness connector and cruise control module. Turn ignition switch to ON position. If IGNITION LED on cruise control tester illuminates, go to next step. If IGNITION LED does not illuminate, go to step 19).

2) If ABS/TCC LED on cruise control tester illuminates, go to next step. If ABS/TCC LED does not illuminate, go to step 21).

3) If BRAKE LIGHTS LED on cruise control tester illuminates, go to next step. If BRAKE LIGHTS LED does not illuminate, go to step 22).

4) Press and release brake pedal. Press and release clutch pedal (if equipped). If ABS/TCC LED on cruise control tester turns off upon each pedal application, go to next step. If ABS/TCC LED does not turn off, go to step 24).

5) Set cruise control on/off switch in ON position. If ON/OFF and INHIBIT/ENABLE LEDs illuminate, go to next step. If ON/OFF and INHIBIT/ENABLE LEDs do not illuminate, go to step 26).

6) If CRUISE LAMP LED on cruise control tester illuminates, go to next step. If CRUISE LAMP LED does not illuminate, go to step 27).

7) Press and release SET/COAST switch. If SET/COAST LED on cruise control tester illuminates, go to next step. If SET/COAST LED does not illuminate, go to step 29).

8) Press and release RESUME/ACCEL switch. If RESUME/ACCEL LED on cruise control tester illuminates, go to next step. If RESUME/ACCEL LED does not illuminate, go to step 30).

9) Perform the following operations in the listed sequence:

* Press and release INHIBIT OVERRIDE button on cruise control tester.
* Press and release BRAKE button on cruise control tester.
* Press and release SET/COAST button on cruise control tester.

If CRUISE ENGAGE LED on cruise control tester illuminates continuously after SET/COAST button was pressed and released, go to next step. If CRUISE ENGAGE LED does not illuminate as described, go to step 19).

10) While observing throttle lever at throttle body, press RESUME/ACCEL button on cruise control tester. If throttle lever moves toward full throttle and then closes to about one-half throttle, go to next step. If throttle lever does not operate as described, go to step 34).

11) While observing throttle lever at throttle body, press SET/COAST button on cruise control tester. If throttle lever moves toward closed throttle position and then returns to about one-half throttle, go to next step. If throttle lever does not operate as described, go to step 34).

12) Quickly press and release (tap) RESUME/ACCEL button on cruise control tester 3 times. Press and release BRAKE button on cruise control tester. If CRUISE ENGAGE LED turns off and throttle lever returns to closed throttle position, go to next step. If CRUISE ENGAGE LED does not turn off and/or throttle lever does not operate as described, go to step 34).

13) Raise and support vehicle so that drive wheels may be rotated. Block one drive wheel. Turn ignition switch to ON position. Set gear selector in DRIVE position. Observe VSS LED on cruise control tester while rotating unblocked drive wheel. Return gear selector to PARK position. If VSS LED flashes while drive wheel is being rotated, go to next step. If VSS LED does not flash as described, go to step 32).

14) Inspect cruise control module harness connector. If Dark Green wire is attached to terminal "H", go to next step. If there is no wire attached to terminal "H", go to step 18).

15) Following manufacturer's instructions, connect General Motors Tech 2 scan tool. Turn ignition switch to ON position. Select POWERTRAIN SPECIAL FUNCTIONS and then OUTPUT CONTROLS for CRUISE CONTROL INHIBIT. Observe cruise control tester INHIBIT ENABLE LED. Use scan tool to enable cruise control. If INHIBIT ENABLE LED dims during enable command, go to next step. If INHIBIT ENABLE LED does not dim, go to step 31).

16) Turn ignition switch to OFF position. Disconnect cruise control tester. Reconnect harness connector to cruise control module. Road test vehicle at speeds greater than 25 MPH and operate cruise control. Using Tech 2 scan tool, observe cruise inhibit status. If scan tool displays ENABLED, go to next step. If scan tool does not display ENABLED, see appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE.

17) If cruise control operated normally in previous step, condition is intermittent. See PRELIMINARY INSPECTION under TROUBLE

SHOOTING. If cruise control did not operate normally, go to step 34).

18) Disconnect all test equipment. Ensure all components are properly connected. Road test vehicle at speed greater than 25 MPH and operate cruise control. If cruise control operates normally, condition is intermittent. See PRELIMINARY INSPECTION under TROUBLE SHOOTING. If cruise control does not operate normally, go to step 34).

19) Check Pink wire between cruise control module harness connector terminal "F" and A/C CRUISE fuse (15-amp) in engine harness junction block No. 2 for open, high resistance or short to ground. See WIRING DIAGRAMS. Repair Pink wire as necessary. After repair, check system for normal operation. If wire is okay, go to next step.

20) Repair open or high resistance in Black wire between cruise control module harness connector terminal "E" and chassis ground. After repair, check system for normal operation. If wire is okay or condition still exists, go to step 34).

21) Inspect cruise control release and clutch switches for proper adjustment. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH and/or
CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH under ADJUSTMENTS. Adjust switch(es) as necessary. After adjustment, check system for normal operation. If adjustment(s) is okay, go to step 23).

22) Check brakelight switch for proper adjustment. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under ADJUSTMENTS. Adjust brakelight switch as necessary. After repair, check system for normal operation. If adjustment is okay, go to step 25).

23) Repair open or short to ground in Brown wire between cruise control module harness connector terminal "D" and cruise control release switch harness connector. See WIRING DIAGRAMS. After repair, check system for normal operation. If wire is okay or condition still exists, go to step 32).

24) Repair short to voltage in Brown wire between cruise control module harness connector terminal "D" and cruise control release switch and/or clutch switch harness connectors. After repair, check system for normal operation. If wire is okay or condition still exists, go to step 32).

25) Repair open or high resistance in Light Blue wire between brakelight switch harness connector and cruise control module harness connector terminal "G". After repair, check system for normal operation. If problem still exists, go to step 33).

26) Repair open or short to ground in Gray wire between cruise control module harness connector terminal "A" and cruise control functional switches harness connector terminal "L" located at multifunction switch. See WIRING DIAGRAMS. After repair, check system for normal operation. If wire is okay, go to step 35).

27) Disconnect cruise control tester from cruise control module. Leave cruise control tester connected to wiring harness connector. If CRUISE LAMP LED remains off when cruise control module was disconnected, go to next step. If CRUISE LAMP LED illuminates, go to step 34).

28) Check White wire between cruise control module harness connector terminal "J" and PCM harness connector for open or short to ground. Repair White wire as necessary. After repair, check system for

normal operation. If wire is okay, go to step 36).

29) Check Dark Blue wire between cruise control module harness connector terminal "B" and cruise control functional switches harness connector terminal "K" for open or short to ground. Repair Dark blue wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 35).

30) Check Gray/Black wire between cruise control module harness connector terminal "C" and cruise control functional switches harness connector terminal "J" for open or short to voltage. See WIRING DIAGRAMS. Repair Gray/Black wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 35).

31) Check Dark Green wire between cruise control module harness connector terminal "H" and PCM harness connector for open or high resistance. Repair Dark Green wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 37).

32) Check Dark Green/White wire between cruise control module harness connector terminal "K" and PCM harness connector for open or high resistance. Repair Dark Green/White wire as necessary. After repair, check system for normal operation. If wire is okay, go to step 37).

33) Replace cruise control release and/or clutch switch(es). See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH and/or CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH under REMOVAL & INSTALLATION. After repair, check system for normal operation.

34) Replace brakelight switch. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under REMOVAL & INSTALLATION. After repair, check system for normal operation.

35) Replace cruise control module. See CRUISE CONTROL MODULE under REMOVAL & INSTALLATION. After repair, check system for normal operation.

36) Replace cruise control functional switches. See CRUISE CONTROL FUNCTIONAL SWITCHES under REMOVAL & INSTALLATION. After repair, check system for normal operation.

37) Replace and program PCM. See appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE. After repair, check system for normal operation.

REMOVAL & INSTALLATION

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.

CRUISE CONTROL CABLE

Removal (Without Traction Control)

1) Remove cruise control cable from engine bracket. Rotate throttle lever rearward. Push down on cable end fitting to disengage cable from throttle body lever stud. Slide cable off throttle lever.

2) Raise and support vehicle. Remove cruise control servo

cover. Remove cruise control servo retainer from cruise control module. Compress conduit tangs and pull cable out of cruise control module. Disconnect cable bead from cruise motor band end fitting on cruise control module.

3) Remove cruise control cable from brake pipe clip. Remove cruise control shield retaining bolts and nuts, and remove shield. Lower vehicle. Mark cruise control cable position on brake booster and unclip cable. Note routing of cruise control cable and remove cable from vehicle.

Installation

To install, reverse removal procedure. Pull on engine end of cable until tight and turn cable until ribbon is flat. Ensure ribbon into cruise control module is not twisted. Adjust cruise control cable. See CRUISE CONTROL CABLE under ADJUSTMENTS.

Removal (With Traction Control)

1) Remove cruise control cable from engine bracket. Unsnap cruise control cable from accelerator control cable clip. Remove accelerator and cruise control servo cover. Rotate upper cam and remove cable slug from accelerator and cruise control servo.

2) Raise and support vehicle. Remove cruise control servo retainer from cruise control module. Compress conduit tangs and pull cable out of cruise control module. Disconnect cable bead from cruise motor band end fitting on cruise control module.

3) Remove cruise control cable from brake pipe clip. Remove cruise control shield retaining bolts and nuts, and remove shield. Lower vehicle. Mark cruise control cable position on brake booster and unclip cable. Note routing of cruise control cable and remove cable from vehicle.

Installation

To install, reverse removal procedure. Pull on engine end of cable until tight and turn cable until ribbon is flat. Ensure ribbon into cruise control module is not twisted. Rotate upper cam and insert cable slug into accelerator and cruise control servo. Adjust cruise control cable. See CRUISE CONTROL CABLE under ADJUSTMENTS.

CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH

Removal & Installation

Disconnect negative battery cable. Remove left-side instrument panel sound insulator. Disconnect electrical connectors. Remove switch from retainer. See Fig. 2. To install, depress clutch pedal and insert switch into pedal bracket receptacle until retainer on switch is fully seated. Adjust switch. See CRUISE CONTROL CLUTCH ANTICIPATE SWITCH & CRUISE CONTROL CLUTCH SWITCH under ADJUSTMENTS.

CRUISE CONTROL FUNCTIONAL SWITCHES

NOTE: Cruise control functional switches are located on end of multifunction lever, which also serves as a turn signal

lever. Switches are not serviceable and must be replaced with multifunction lever as an assembly. See appropriate STEERING COLUMN SWITCHES article.

CRUISE CONTROL MODULE

Removal & Installation

1) Cruise control module is located on left front frame rail, behind bumper. Disconnect negative battery cable. Raise and support vehicle. Remove front bumper left lower deflector. Remove cruise control servo cover. Disconnect cruise control module harness connector. Remove cruise control cable from brake pipe clip. Disconnect cruise control cable from cruise control module. See CRUISE CONTROL CABLE.

2) Remove cruise control module bracket bolts. Remove cruise control module and bracket from frame rail. Remove cruise control module-to-bracket bolts, and remove cruise control module from bracket.

3) To install, reverse removal procedure. Tighten cruise control module-to-bracket bolts to 40 INCH lbs. (4.5 N.m). Tighten cruise control module bracket top bolts to 89 INCH lbs. (10 N.m), and side bolts to 18 INCH lbs. (2 N.m). Adjust cruise control cable. See CRUISE CONTROL CABLE under ADJUSTMENTS.

CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH

Removal & Installation

Disconnect negative battery cable. Remove left-side instrument panel sound insulator. Disconnect electrical connectors. Remove switch from retainer. See Fig. 2. To install, depress brake pedal and insert cruise control release switch and/or brakelight switch into proper pedal bracket receptacle until retainer on switch is fully seated. Adjust switch. See CRUISE CONTROL RELEASE (ABS/TCC) SWITCH & BRAKELIGHT SWITCH under ADJUSTMENTS.

VEHICLE SPEED SENSOR (VSS)

Removal & Installation

Disconnect negative battery cable. Raise and support vehicle. Disconnect VSS electrical connector. Remove VSS mounting bolt. Remove VSS from transmission extension housing. Remove VSS "O" ring and gear from sensor (if equipped). To install, reverse removal procedure. On A/T models, tighten bolt to 97 INCH lbs. (11 N.m). On M/T models, tighten bolt to 89 INCH lbs. (10 N.m).

WIRING DIAGRAMS

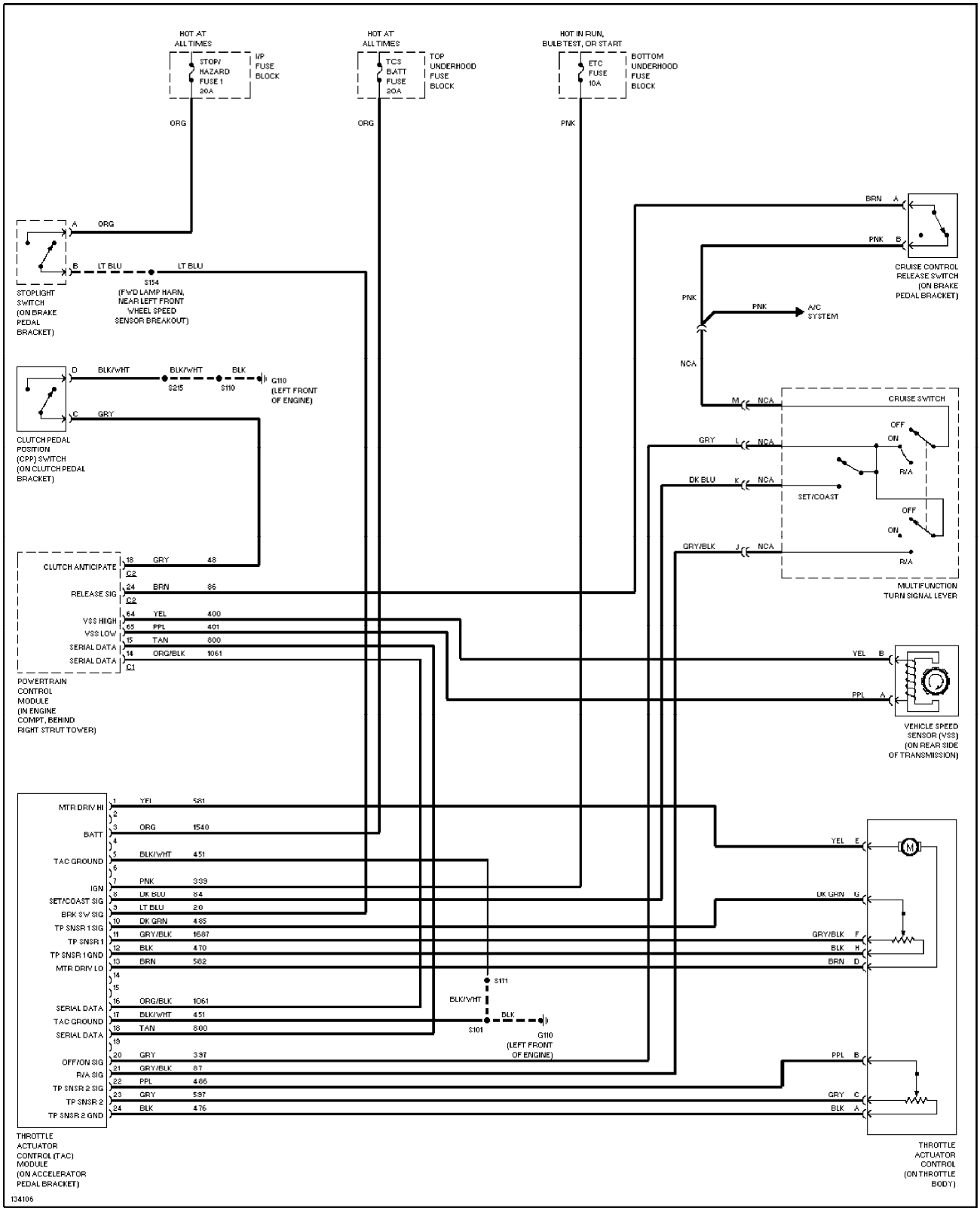

Fig. 3: Cruise Control System Wiring Diagram (Camaro & Firebird - 3.8L)

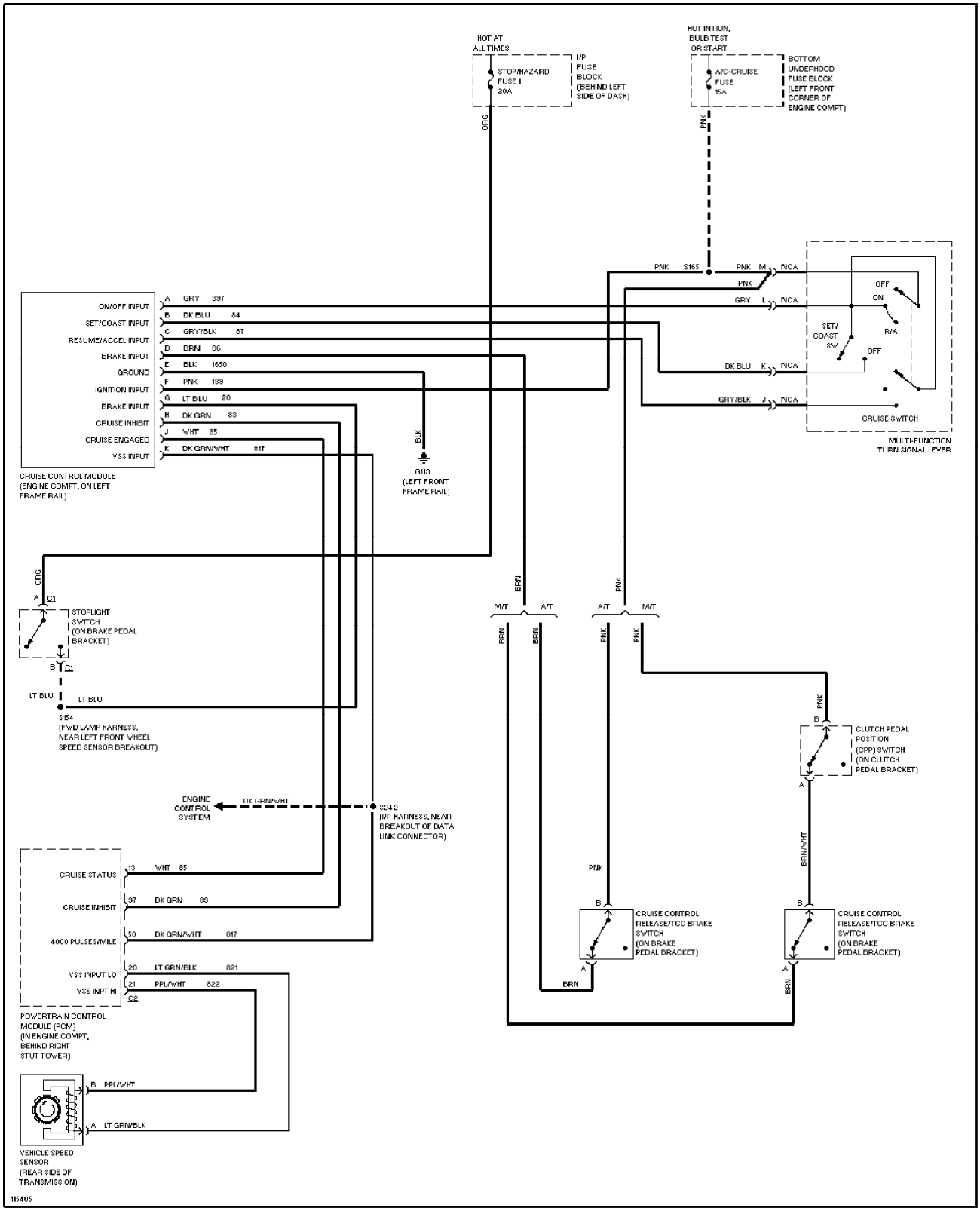

Fig. 4: Cruise Control System Wiring Diagram (Camaro & Firebird - 5.7L)

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