2003-06 ENGINE PERFORMANCE

Fuel And Emissions Systems - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 in.Hg	1
②	07406-004000A	Fuel Pressure Gauge	1
③	07NAJ-P07010A	Pressure Gauge Adapter	1
④	07AAA-S0XA100	Fuel Sender Wrench	1
⑤	07AAJ-S6MA150	Fuel Pressure Gauge Set	1
⑥-1	07406-0020201	A/T Pressure Hose	1
⑥-2	07406-0070300	A/T Low Pressure Gauge W/Panel	1
⑥-3	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	1
⑥-4	07MAJ-PY40120	A/T Pressure Hose, Adapter	1
⑦	07ZAJ-RDJA110	Pin Probe (Male)	1
⑧	07ZAJ-RDJA120	Flat Spade Probe (Male)	1
⑨	07ZAJ-S5A0200	Oil Pressure Hose	1

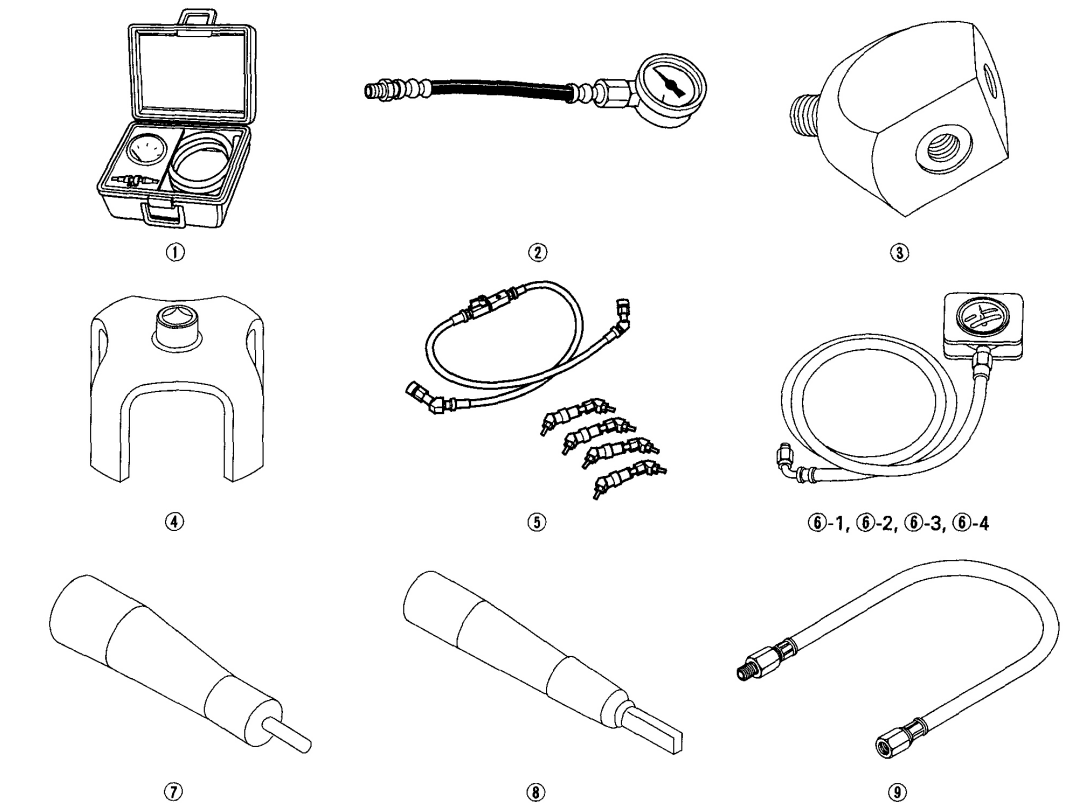

Fig. 1: Identifying Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose pins at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

OPENS AND SHORTS

"Open" and "Short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (Malfunction Indicator Lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see HOW TO SET READINESS CODES).

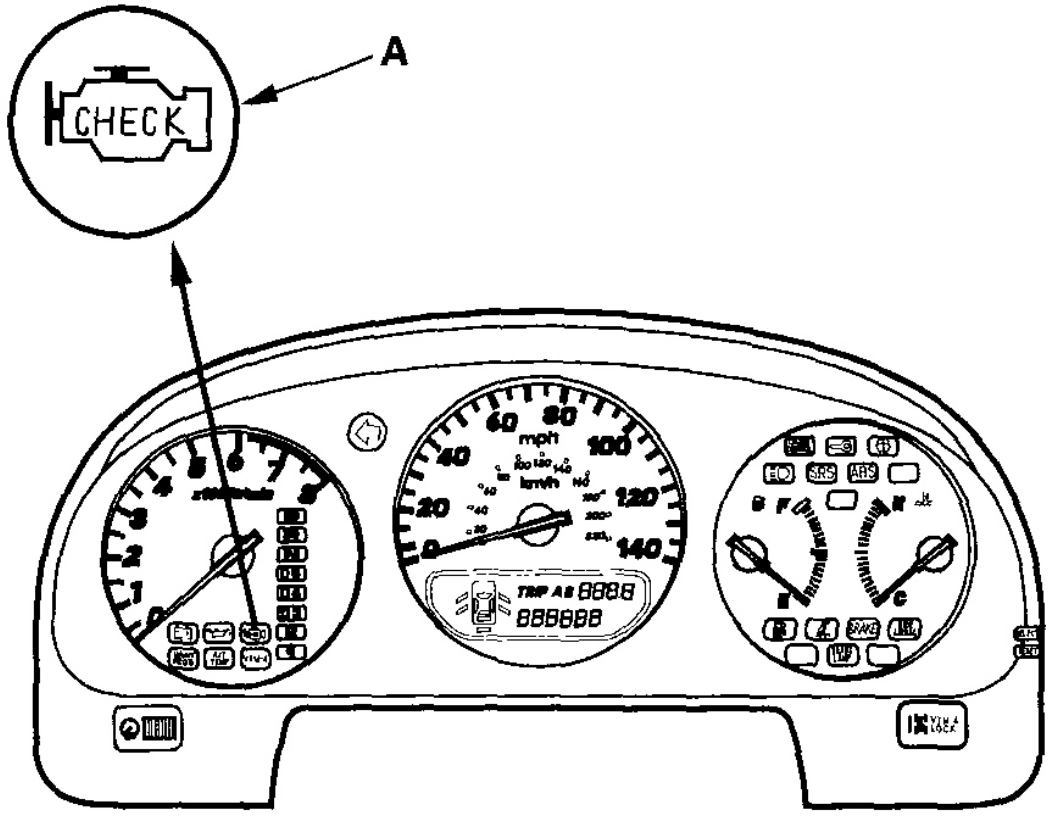

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Fig. 2: Identifying MIL
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

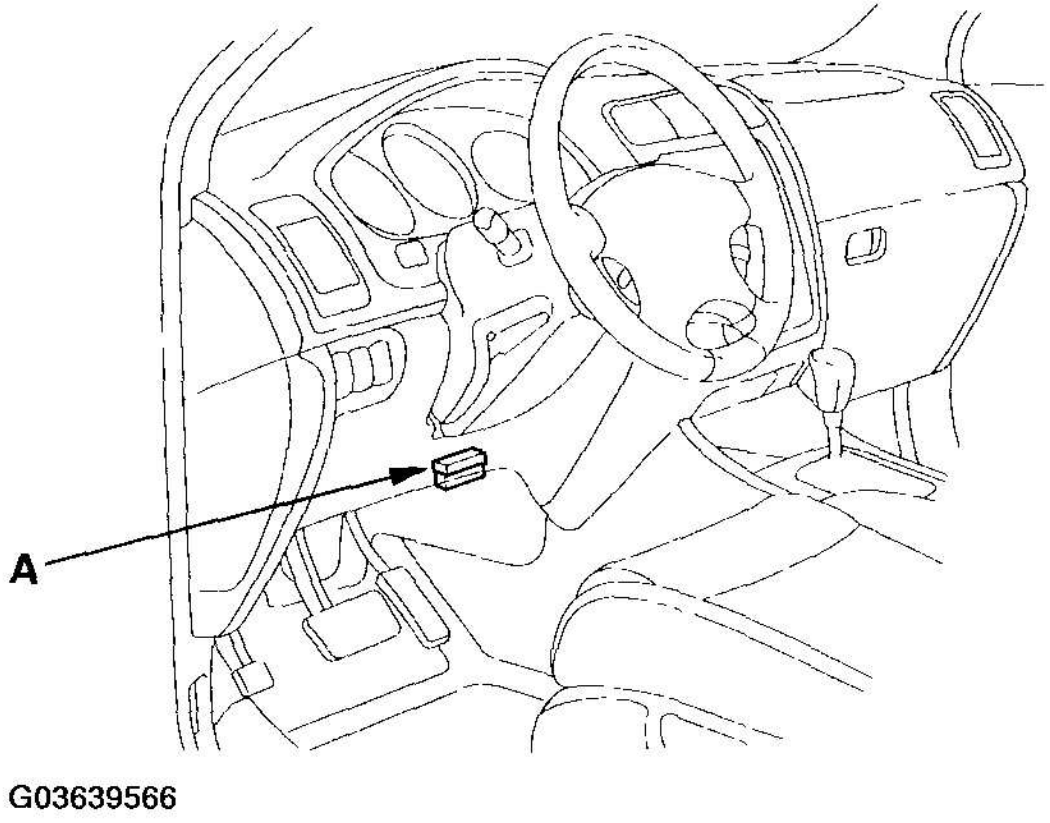

Fig. 3: Connecting HDS To DLC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTC's troubleshooting, and begin the appropriate troubleshooting procedure.

NOTE:

- **Freeze data indicates the engine conditions when the first malfunction, misfire, or fuel trim malfunction was detected.**
- **The HDS can read the DTC, freeze data, on-board snapshot current data, and other powertrain control module (PCM) data.**
- **For specific operations, refer to the user's manual that came with the HDS.**

5. If no DTCs are found, go to MIL troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the code, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced PCM.

HDS Clear Command

The PCM stores various specific data to correct the system even if there is no electrical power such as when the battery negative terminal or No. 10 BACK UP (7.5 A) fuse are disconnected. Stored data based on failed parts should be cleared by using the "CLEAR COMMAND" of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, PCM reset, and CKP pattern clear. DTC clear command erases all stored DTC codes, freeze data, on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting. The PCM reset command erases all stored DTC codes, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except CKP pattern. If the CKP pattern data in the PCM was cleared, you must do the CKP pattern learn procedure. The CKP pattern clear command erases only CKP pattern data. This command is for repair of a misfire or the CKP sensor.

Scan Tool Clear Command

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the PCM, and it clears all commands at the same time (CKP pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**); CKP pattern learn procedure; Test-drive to set readiness codes to complete (see **HOW TO SET READINESS CODES**).

DTC Clear

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

PCM Reset

This command clears stored specific data from each vehicle such as DTCs, freeze data, the on-board snapshot, and readiness codes. It does not clear CKP PATTERN data.

1. Reset the PCM with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

5. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

CKP Pattern Clear/CKP Pattern Learn

NOTE:

- **The ECT needs to be at 176°F (80°C) or higher.**
- **Before doing this procedure, check "PULSER F/B LEARN" and "PULSER F/B LEARN (HIGH RPM)" in the DATA LIST with the HDS. If both values show N/A, this procedure is not needed. Go back to the troubleshooting or other procedures you were doing.**
- **If only "PULSER F/B LEARN (HIGH RPM)" shows N/A, skip steps 4 through 9.**

1. Clear the CKP pattern while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Test-drive the vehicle on a level road: decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm to 1,000 rpm with the transmission in 2 position.
5. Stop the vehicle, but keep the engine running.
6. Check PULSER F/B LEARN in the DATA LIST with the HDS. If it is NOT COMPLETED, go to step 4. If it is COMPLETED, go to step 7.
7. Test-drive the vehicle on a level road: decelerate (with the throttle fully closed) from an engine speed of 5,000 rpm to 3,000 rpm with the transmission in 2 position.
8. Stop the vehicle, but keep the engine running.
9. Check the PULSER F/B LEARN (HIGH RPM) in the DATA LIST with the HDS. If it is NOT COMPLETED, go to step 7. If it is COMPLETED, go to step 10.
10. Turn the ignition switch OFF.
11. Turn the ignition switch ON (II), and wait 30 seconds. The CKP learning procedure is completed.

HOW TO END A TROUBLESHOOTING SESSION (REQUIRED AFTER ANY TROUBLESHOOTING)

1. Reset the PCM with the HDS.
2. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch OFF.
4. Disconnect the HDS from the DLC.

NOTE: **The PCM is part of the immobilizer system. If you replace the PCM, it will have a different immobilizer code. In order for the engine to start, you must rewrite the immobilizer code with the HDS.**

HOW TO TROUBLESHOOT CIRCUITS AT THE PCM CONNECTORS

Special Tools Required

- Digital multimeter KS-AHM-32-003 (1) or a commercially available digital multimeter
- Connector test adapter Kit J35616-A
- Pin probe (male) 07ZAJ-RDJA110
- Flat spade probe (male) 07ZAJ-RDJA120

NOTE: The PCM overwrites data and monitors the EVAP system for up to 15 minutes after the ignition switch is turned OFF. Jumping the SCS line after turning the ignition switch OFF cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.

1. With the ignition switch ON (II), connect the HDS to the data link connector (DLC), and go into any of the live data screens.
2. Turn the ignition switch OFF.
3. Exit and then restart the HDS software. Go to the SCS mode and follow the screens to ground the 16PDLC.

NOTE: Steps 1 through 3 must be done to protect the powertrain control module (PCM) from damage, or wait at least 15 minutes before disconnecting.

4. Disconnect the PCM connectors and probe the terminals from the terminal side of the connectors.
5. Make sure the connector terminals diameter and select the suitable pin probe (male) and/or flat spade probe (male).
6. Connect one side of the patch cord (A) terminals to the digital multimeter (B), and connect the other side of the patch cord terminals to the pin probe (male) and/or flat spade probe (male) (C).

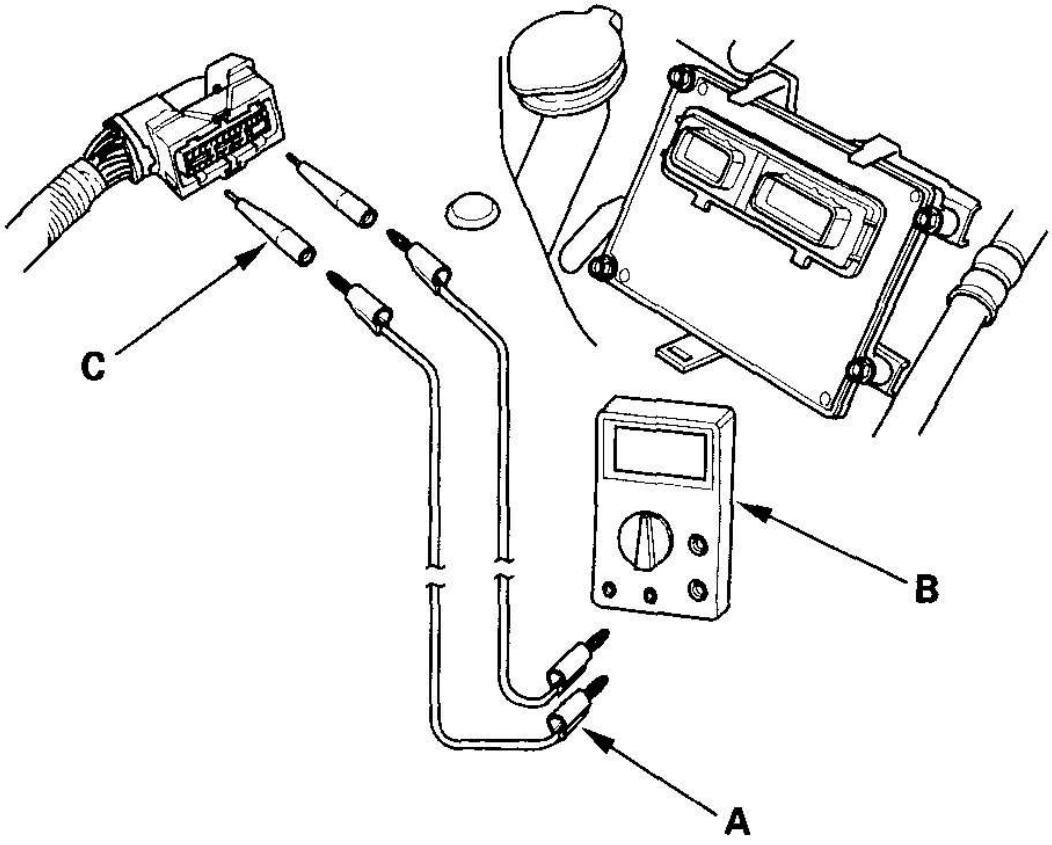

Fig. 4: Connecting Patch Cord Terminals To Digital Multimeter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Gently slide the pin probe (male) into the connector terminals from the terminal side. Do not force the tips into the terminals.

NOTE:

- **For accurate results, always use the pin probe (male).**
- **To prevent damage to the connector terminals, do not insert the test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.**
- **Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.**

PCM UPDATING AND SUBSTITUTION FOR TESTING

Special Tools Required

Honda interface module (HIM) EQS05A35570

Use this procedure when you have to substitute a known-good PCM in a troubleshooting procedure. Update the PCM only if the PCM does not have the latest software loaded.

NOTE: Do not turn the ignition switch OFF while updating the PCM. If you turn the ignition switch OFF before completion, the PCM can be damaged.

HOW TO UPDATE THE PCM

NOTE:

- **To ensure the latest program is installed, do a PCM update whenever the PCM is substituted or replaced.**
- **You can not update a PCM with the program it already has. It will only accept a new program.**
- **Before you update the PCM, make sure the vehicle's battery is fully charged.**
- **To prevent PCM damage, do not operate anything electrical (audio system, brakes, A/C, power windows, moonroof, door locks, etc.) during the update.**
- **If you need to diagnose the Honda interface module (HIM) because the HIM's red (# 3) light came on or was flashing during the update, leave the ignition switch in the ON (II) position when you disconnect the HIM from the data link connector (DLC). This will prevent PCM damage.**
- **High temperature in the engine compartment might cause the PCM to become too hot to run the update. If the engine has been running before this procedure, open the hood and cool the engine compartment.**

1. Turn the ignition switch ON (II). Do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

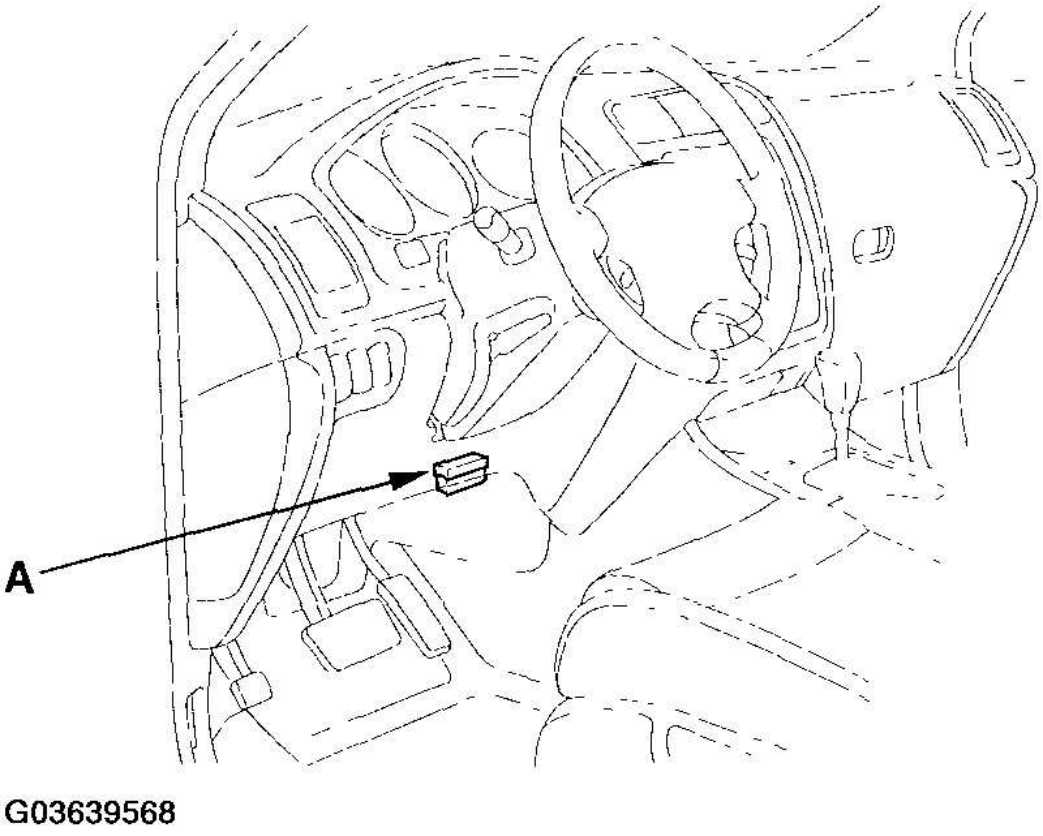

Fig. 5: Connecting HDS To DLC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the INSPECTION MENU with the HDS.
4. Do the TP POSITION CHECK in the ETCS TEST.
5. If the HDS does not have the update function, disconnect the HDS from the vehicle and connect the Honda interface module (HIM).
6. If the software in the PCM is the latest, disconnect the HDS or the HIM from the DLC, and go back to the procedure that you were doing.

   If the software in the PCM is not the latest, do the PCM update procedure as described on the HIM label or in the PCM update system.

   NOTE: If the PCM update system requires you to cool the PCM, follow what is shown in the screen.

7. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

8. Do the CKP pattern clear/pattern learn procedure.

HOW TO SUBSTITUTE THE PCM

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

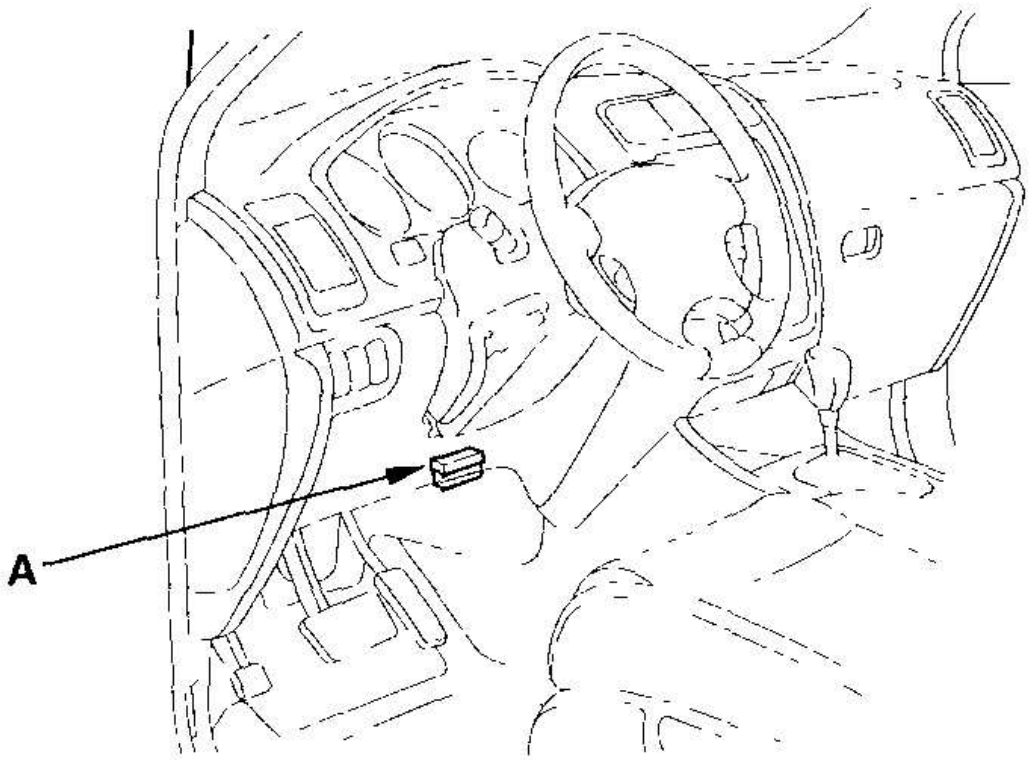

Fig. 6: Connecting HDS To DLC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Make sure the HDS communicates with the PCM. If it doesn't, skip steps 3 to 5 and clean the throttle body (see **THROTTLE BODY CLEANING**) after this procedure.
3. Turn the ignition switch ON (II).
4. Select the INSPECTION MENU with the HDS.
5. Do the TP POSITION CHECK in the ETCS TEST.
6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.

8. Remove the cover (A).

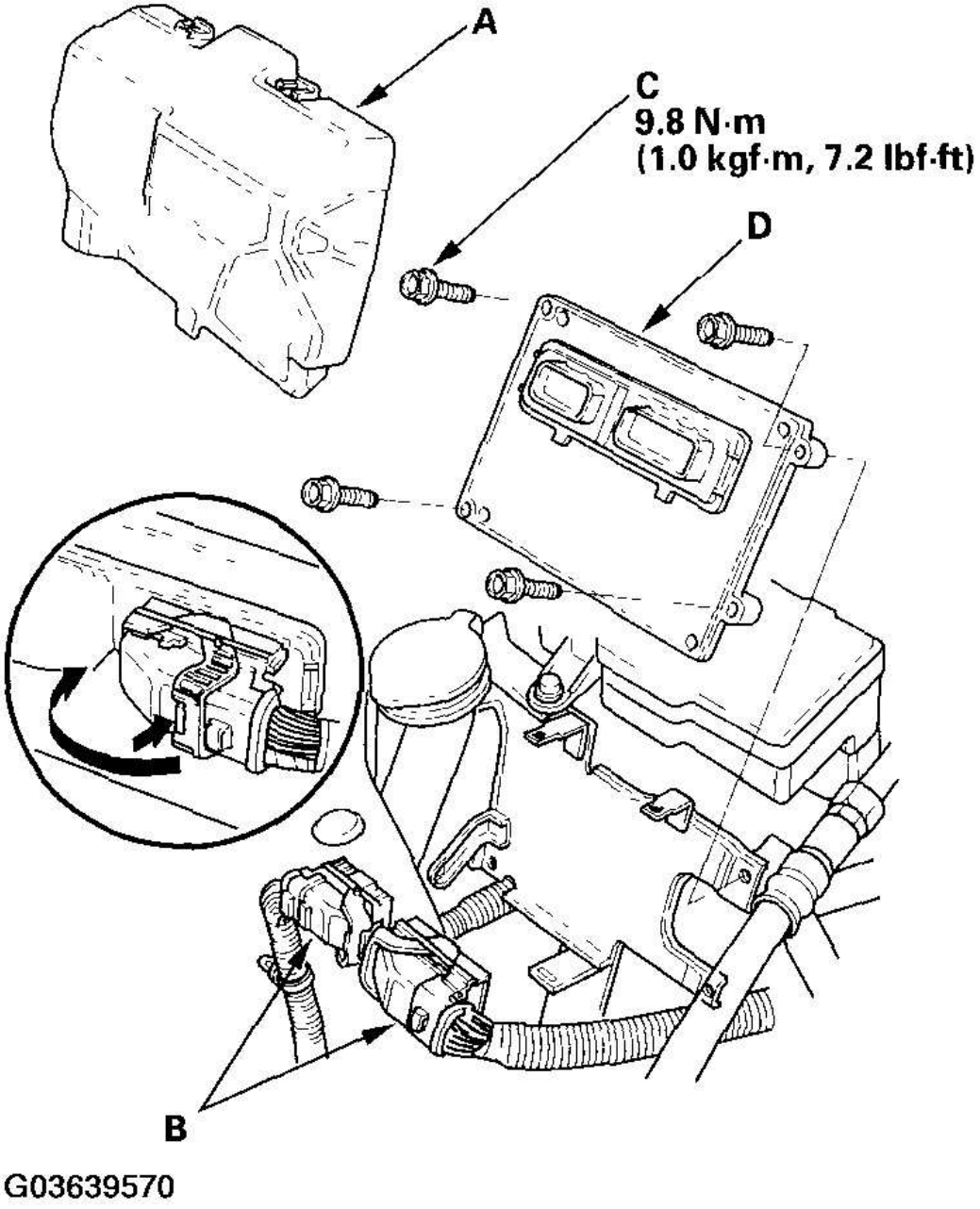

Fig. 7: Removing Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the PCM connectors (B).

10. Remove the bolts (C), then remove the PCM (D).
11. Install a known-good PCM in the reverse order of removal.
12. Open the SCS with the HDS.
13. Turn the ignition switch ON (II).

NOTE: For 2005-2006 models: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.

14. Input the VIN to the PCM with the HDS.
15. Rewrite the immobilizer code with the PCM replacement procedure in the HDS; it allows you to start the engine.
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Do the CKP pattern clear/pattern learn procedure.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the technician's repair was successfully finished. The results of diagnostic tests for the DTC are displayed as:

- PASSED: On board diagnosis is successfully finished.
- FAILED: On board diagnosis has finished but failed.
- EXECUTING: The vehicle is in enable criteria conditions for the DTC and the on board diagnosis is running.
- NOT COMPLETED: The on board diagnosis was running but is out of the enable conditions of the DTC.
- OUT OF CONDITION: The vehicle has stayed out of the enable conditions for the DTC.

DTC TROUBLESHOOTING INDEX

NOTE: The following DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system and check automatic transmission DTCs.

DTC (MIL indication *1)	Two Drive Cycle Method	Detection Item	MIL
P0036 (163)	—	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater Circuit Malfunction	ON
P0056 (164)	—	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater Circuit Malfunction	ON
P0097 (10) *2	—	Intake Air Temperature (IAT) Sensor 2 Circuit Low Voltage	ON
P0098 (10) *2	—	Intake Air Temperature (IAT) Sensor 2 Circuit High Voltage	ON
P0107 (3)	—	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage	ON
P0108 (3)	—	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage	ON
P0111 (10) *3	—	Intake Air Temperature (IAT) Sensor Circuit Range/Performance Problem	ON
P0112 (125) *2	—	Intake Air Temperature (IAT) Sensor 1 Circuit Low Voltage	ON
P0112 (10) *3	—	Intake Air Temperature (IAT) Sensor Circuit Low Voltage	ON
P0113 (125) *2	—	Intake Air Temperature (IAT) Sensor 1 Circuit High Voltage	ON
P0113 (10) *3	—	Intake Air Temperature (IAT) Sensor Circuit High Voltage	ON
P0116 (86) *2	○	Engine Coolant Temperature (ECT) Sensor Range/Performance Problem	ON
P0116 (86) *3	○	Engine Coolant Temperature (ECT) Sensor Range/Performance Problem	ON
P0117 (6)	—	Engine Coolant Temperature (ECT) Sensor Circuit Low Voltage	ON
P0118 (6)	—	Engine Coolant Temperature (ECT) Sensor Circuit High Voltage	ON
P0122 (7)	—	Throttle Position (TP) Sensor A Circuit Low Voltage	ON
P0123 (7)	—	Throttle Position (TP) Sensor A Circuit High Voltage	ON
P0125 (86) *2	○	Engine Coolant Temperature (ECT) Sensor Malfunction/Slow Response	ON
P0125 (86) *3	○	Engine Coolant Temperature (ECT) Sensor Malfunction/Slow Response	ON
P0128 (87)	○	Cooling System Malfunction	ON
P0133 (157)	○	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Slow Response	ON
P0134 (151)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction	ON
P0135 (151)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction	ON

* 1: The above DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.
* 2: 2003-2004 models
* 3: 2005-2006 models

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Fig. 8: DTC Troubleshooting Index Chart (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (MIL indication *1)	Two Drive Cycle Method	Detection Item	MIL
P0137 (161) *2	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Low Voltage	ON
P0137 (161) *3	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Low Voltage	ON
P0138 (161) *2	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit High Voltage	ON
P0138 (161) *3	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit High Voltage	ON
P0139 (161) *2	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Slow Response	ON
P0139 (161) *3	○	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Slow Response	ON
P0141 (163)	—	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater Circuit Malfunction	ON
P0153 (158)	○	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Slow Response	ON
P0154 (152)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction	ON
P0155 (152)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction	ON
P0157 (162) *2	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 2, Sensor 2)) Circuit Low Voltage	ON
P0157 (162) *3	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 2, Sensor 2)) Circuit Low Voltage	ON
P0158 (162) *2	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit High Voltage	ON
P0158 (162) *3	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit High Voltage	ON
P0159 (162) *2	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Slow Response	ON
P0159 (162) *3	○	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Slow Response	ON
P0161 (164)	—	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater Circuit Malfunction	ON
P0171 (153)	○	Rear Bank (Bank 1) Fuel System Too Lean	ON
P0172 (153)	○	Rear Bank (Bank 1) Fuel System Too Rich	ON
P0174 (154)	○	Front Bank (Bank 2) Fuel System Too Lean	ON
P0175 (154)	○	Front Bank (Bank 2) Fuel System Too Rich	ON
P0201 (71)	—	No. 1 Injector Circuit Malfunction	ON
P0202 (72)	—	No. 2 Injector Circuit Malfunction	ON
P0203 (73)	—	No. 3 Injector Circuit Malfunction	ON
P0204 (74)	—	No. 4 Injector Circuit Malfunction	ON
P0205 (75)	—	No. 5 Injector Circuit Malfunction	ON
P0206 (76)	—	No. 6 Injector Circuit Malfunction	ON
P0222 (7)	—	Throttle Position (TP) Sensor B Circuit Low Voltage	ON
P0223 (7)	—	Throttle Position (TP) Sensor B Circuit High Voltage	ON

* 1: The above DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.
* 2: 2003-2004 models
* 3: 2005-2006 models

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Fig. 9: DTC Troubleshooting Index Chart (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (MIL Indication*1)	Two Drive Cycle Method	Detection Item	MIL
P0300 and some of P0301 (71), P0302 (72), P0303 (73), P0304 (74), P0305 (75), P0306 (76)	○	Random Misfire Detected	ON
P0301 (71)	○	No. 1 Cylinder Misfire Detected	ON
P0302 (72)	○	No. 2 Cylinder Misfire Detected	ON
P0303 (73)	○	No. 3 Cylinder Misfire Detected	ON
P0304 (74)	○	No. 4 Cylinder Misfire Detected	ON
P0305 (75)	○	No. 5 Cylinder Misfire Detected	ON
P0306 (76)	○	No. 6 Cylinder Misfire Detected	ON
P0325 (23)	—	Knock Sensor Circuit Malfunction	ON
P0335 (4)	—	Crankshaft Position (CKP) Sensor A No Signal	ON
P0339 (4)	—	Crankshaft Position (CKP) Sensor A Intermittent Interruption	ON
P0340 (9)	—	Camshaft Position (CMP) Sensor No Signal	ON
P0344 (9)	—	Camshaft Position (CMP) Sensor Intermittent Interruption	ON
P0385 (54)	—	Crankshaft Position (CKP) Sensor B No Signal	ON
P0389 (54)	—	Crankshaft Position (CKP) Sensor B Intermittent Interruption	ON
P0401 (80)	○	Exhaust Gas Recirculation (EGR) Insufficient Flow	ON
P0403 (12)	—	Exhaust Gas Recirculation (EGR) Control Circuit Malfunction	ON
P0404 (12)	○	Exhaust Gas Recirculation (EGR) Control Circuit Range/Performance Problem	ON
P0406 (12)	—	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit High Voltage	ON
P0420 (165)	○	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1)	ON
P0430 (166)	○	Front Bank Catalyst System Efficiency Below Threshold (Bank 2)	ON
P0443 (92)	—	Evaporative Emission (EVAP) Canister Purge Valve Circuit Malfunction	ON
P0451 (91)	○	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON
P0452 (91)	○	Fuel Tank Pressure (FTP) Sensor Circuit Low Voltage	ON
P0453 (91)	○	Fuel Tank Pressure (FTP) Sensor Circuit High Voltage	ON
P0455 (90)*2	○	Evaporative Emission (EVAP) System Large Leak Detected	ON
P0455 (90)*3	○	Evaporative Emission (EVAP) System Large Leak Detected	ON
P0456 (90)*2	○	Evaporative Emission (EVAP) System Very Small Leak Detected	ON
P0456 (90)*3	○	Evaporative Emission (EVAP) System Very Small Leak Detected	ON
P0457 (90)	○	Evaporative Emission (EVAP) System Leak Detected Fuel Fill Cap Loose/Off	ON
P0461 (121)	—	Fuel Level Sensor (Fuel Gauge Sending Unit) Range/Performance Problem	OFF
P0462 (121)	—	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF
P0463 (121)	—	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF
P0496 (92)	○	Evaporative Emission (EVAP) System High Purge Flow	ON
P0497 (90)*2	○	Evaporative Emission (EVAP) System Low purge Flow	ON
P0497 (90)*3	—	Evaporative Emission (EVAP) System Low purge Flow	ON
P0498 (117)	—	Evaporative Emission (EVAP) Canister Vent Shut Valve Control Circuit Low Voltage	ON
P0499 (117)	—	Evaporative Emission (EVAP) Canister Vent Shut Valve Control Circuit High Voltage	ON
P0506 (14)	○	Idle Control System RPM Lower Than Expected	ON
P0507 (14)	○	Idle Control System RPM Higher Than Expected	ON
P0563 (34)	—	Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	OFF
P0603 (131)	—	Powertrain Control Module (PCM) Internal Control Module (Keep Alive Memory (KAM) Error)	ON
P0627 (127)	—	PGM-FI Main Relay 2 (Fuel Pump) Circuit Malfunction	OFF
P0630 (139)*3	—	VIN Not Programmed or Mismatch	ON
P0641 (133)	—	Sensor Reference Voltage A Malfunction	ON
P0651 (134)	—	Sensor Reference Voltage B Malfunction	ON
P0657 (129)	—	Air Fuel Ratio (A/F) Sensor Relay Circuit Malfunction	ON
P0685 (135)	—	Powertrain Control Module (PCM) Power Control Circuit/Internal Circuit Malfunction	ON

* 1: The above DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.
* 2: 2003-2004 models
* 3: 2005-2006 models

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Fig. 10: DTC Troubleshooting Index Chart (3 Of 5)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (MIL Indication*1)	Two Drive Cycle Method	Detection Item	MIL
P0700 (70)	—	A/T Control System Malfunction	ON
P0700 (70)	—	A/T Control System Malfunction	OFF
P1077 (106)	○	Intake Manifold Tuning (IMT) (Intake Manifold Runner Control (IMRC)) Valve Stuck in High RPM Position	ON
P1078 (106)	○	Intake Manifold Tuning (IMT) (Intake Manifold Runner Control (IMRC)) Valve Stuck in Low RPM Position	ON
P1109 (13)*3	—	Barometric Pressure (BARO) Sensor Circuit Out of Range High	ON
P1116 (86)*3	—	Engine Coolant Temperature (ECT) Sensor Performance Problem	ON
P1128 (5)	○	Manifold Absolute Pressure (MAP) Sensor Signal Lower than Expected	ON
P1129 (5)	○	Manifold Absolute Pressure (MAP) Sensor Signal Higher than Expected	ON
P1172 (157)*3	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Out of Range High	ON
P1174 (158)*3	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 2) Circuit Out of Range High	ON
P1297 (20)	—	Electrical Load Detector (ELD) Circuit Low Voltage	OFF
P1298 (20)	—	Electrical Load Detector (ELD) Circuit High Voltage	OFF
P1450 (118)*2	—	Two Way Valve Bypass Valve Control Circuit Low Voltage	ON
P1451 (118)*2	—	Two Way Valve Bypass Valve Control Circuit High Voltage	ON
P1454 (91)	○	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON
P1460 (121)	—	Fuel Level Sensor (Fuel Gauge Sending Unit) Power Supply Circuit	OFF
P1683 (40)	—	Throttle Valve Default Position Spring Performance Problem	ON
P1684 (40)	—	Throttle Valve Return Spring Performance Problem	ON
P2101 (40)	—	Throttle Actuator System Malfunction	ON
P2108 (40)	—	Throttle Actuator Control Module Problem	ON
P2118 (40)	—	Throttle Actuator Current Range/Performance Problem	ON
P2122 (37)	—	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low Voltage	ON
P2123 (37)	—	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High Voltage	ON
P2127 (37)	—	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit Low Voltage	ON
P2128 (37)	—	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit High Voltage	ON
P2135 (7)	—	Throttle Position Sensor A/B Incorrect Voltage Correlation	ON
P2138 (37)	—	Accelerator Pedal Position (APP) Sensor A/B (Throttle Position (TP) Sensor D/E) Incorrect Voltage Correlation	ON
P2176 (40)	—	Throttle Actuator Control System Idle Position not Learned	ON
P2195 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Signal Stuck Lean	ON
P2197 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Signal Stuck Lean	ON
P2199 (125)*2	—	Intake Air Temperature (IAT) Sensor 1, 2 Correlation	ON
P2227 (13)	○	Barometric Pressure (BARO) Sensor Range/Performance Problem	ON
P2228 (13)	—	Barometric Pressure (BARO) Sensor Circuit Low Voltage	ON
P2229 (13)	—	Barometric Pressure (BARO) Sensor Circuit High Voltage	ON
P2237 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP Line High Voltage	ON
P2238 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP Line Low Voltage	ON
P2240 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Line High Voltage	ON

* 1: The above DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.
* 2: 2003-2004 models
* 3: 2005-2006 models

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Fig. 11: DTC Troubleshooting Index Chart (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (MIL Indication*1)	Two Drive Cycle Method	Detection Item	MIL
P2241 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Line Low Voltage	ON
P2243 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Line High Voltage	ON
P2245 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Line Low Voltage	ON
P2247 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Line High Voltage	ON
P2249 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Line Low Voltage	ON
P2251 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Line High Voltage	ON
P2252 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Line Low Voltage	ON
P2254 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Line High Voltage	ON
P2255 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Line Low Voltage	ON
P2270 (161)*3	—	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Lean	ON
P2271 (161)*3	—	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Rich	ON
P2272 (162)*3	—	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Lean	ON
P2273 (162)*3	—	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Rich	ON
P2279 (109)	○	Intake Air System Leak	ON
P2413 (12)	○	Exhaust Gas Recirculation (EGR) System Malfunction	ON
P2422 (117)	○	Evaporative Emission (EVAP) Canister Vent Shut Valve Stuck Closed	ON
P2552 (40)	—	Throttle Actuator Control Module Relay Malfunction	ON
P2610 (132)	—	Powertrain Control Module (PCM) Internal Power Off Timer Performance Problem	ON
P2627 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) LABEL Circuit Low Voltage	ON
P2628 (155)	—	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) LABEL Circuit High Voltage	ON
P2630 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) LABEL Circuit Low Voltage	ON
P2631 (156)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) LABEL Circuit High Voltage	ON
P2646 (22)	—	Rocker Arm Oil Pressure Switch (VTEC Oil Pressure Switch) Circuit Low Voltage	ON
P2647 (22)	—	Rocker Arm Oil Pressure Switch (VTEC Oil Pressure Switch) Circuit High Voltage	ON
P2648 (21)	—	Rocker Arm Oil Control Solenoid (VTEC Solenoid Valve) Circuit Low Voltage	ON
P2649 (21)	—	Rocker Arm Oil Control Solenoid (VTEC Solenoid Valve) Circuit High Voltage	ON
P2A00 (157)	○	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Range/ Performance Problem	ON
P2A03 (158)	—	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Range/ Performance Problem	ON
U0073 (126)	—	F-CAN Malfunction (Bus-Off)	OFF
U0107 (30)	—	Lost Communication with Throttle Actuator Control Module	ON
U0114 (126)	—	F-CAN Malfunction (VTM-4 Control Unit-PCM)	OFF
U0122 (126)	—	F-CAN Malfunction (VSA Modulator-Control Unit-PCM)	OFF

* 1: The above DTCs will be indicated by a blinking MIL when the SCS line is jumped with the HDS.
* 3: 2005-2006 models

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Fig. 12: DTC Troubleshooting Index Chart (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there

is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
Engine will not start (MIL works OK, no DTCs set)	1. Test the battery (see **BATTERY TEST**). 2. Test the starter (see **STARTER CIRCUIT TROUBLESHOOTING**). 3. Check the fuel pressure (see **FUEL PRESSURE TEST**). 4. Troubleshoot the fuel pump circuit (see **FUEL PUMP CIRCUIT TROUBLESHOOTING**).	• Low compression • No ignition spark • Intake air leaks • Locked up engine • Broken timing belt • Contaminated fuel
Engine will not start (MIL comes on and stays on, or never comes on at all, no DTCs set)	Troubleshoot the MIL circuit (see **MIL CIRCUIT TROUBLESHOOTING**).	
Engine will not start (immobilizer indicator stays on or flashes)	Troubleshoot the immobilizer system (see **TROUBLESHOOTING**).	
Engine starts but stalls immediately (MIL works OK, no DTCs set)	Troubleshoot the immobilizer system (see **TROUBLESHOOTING**).	
Engine is hard to start (MIL works OK, no DTCs set)	1. Test the battery (see **BATTERY TEST**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Clean the throttle body (see **THROTTLE BODY CLEANING**).	• Low compression • Intake air leaks • Contaminated fuel • Weak spark
Cold fast idle too low (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**). 3. Clean the throttle body (see **THROTTLE BODY TEST**).	
	1. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**).	

Cold fast idle too high (MIL works OK, no DTCs set)	3. Inspect/adjust the throttle cable (see **THROTTLE CABLE REMOVAL/INSTALLATION**). 4. Do the throttle position learning check (see **THROTTLE POSITION LEARNING CHECK**).	
Idle speed fluctuates (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**). 3. Inspect/adjust the throttle cable (see **THROTTLE CABLE ADJUSTMENT**). 4. Do the carbon accumulation check (see **CARBON ACCUMULATION CHECK**).	Intake vacuum leaks
After warming up, idle speed is below specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see **ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING**). 2. Do the carbon accumulation check (see **THROTTLE BODY TEST**).	
After warming up, idle speed is above specification without load (MIL works OK, no DTCs set)	1. Inspect/adjust the throttle cable (see **THROTTLE CABLE ADJUSTMENT**). 2. Troubleshoot the alternator FR signal circuit (see **ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING**).	
Low power (MIL works OK, no DTCs set)	1. Check the fuel pressure (see **FUEL PRESSURE TEST**). 2. Inspect/adjust the throttle cable (see **THROTTLE CABLE ADJUSTMENT**).	• Low compression • Incorrect camshaft timing • Incorrect engine oil level
Engine stalls (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Check the idle speed (see **IDLE**	• Intake air leaks • Faulty harness and sensor

	SPEED INSPECTION). 4. Troubleshoot the brake pedal position switch signal circuit (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).	connections
Difficult to refuel (MIL works OK, no DTCs set)	1. Check the fuel vent tube between the EVAP canister and the fuel tank. 2. Check the fuel tank vapor recirculation tube between the fuel pipe and the fuel tank. 3. Check the fuel tank signal tube between the fuel pipe and the fuel tank (2003-2004 models). 4. Replace the fuel tank (see **FUEL TANK REPLACEMENT**).	Malfunctioning gas station filling nozzle.
Fuel overflows during refueling (No DTCs set)	Replace the fuel tank (see **FUEL TANK REPLACEMENT**).	Malfunctioning gas station filling nozzle.

SYSTEM DESCRIPTION

ELECTRONIC CONTROL SYSTEM

The functions of the fuel and emission control systems are managed by the powertrain control module (PCM).

Self-diagnosis

The PCM detects a failure of a signal from a sensor or from another control unit and stores a Temporary DTC or a DTC in erasable memory (RAM). Depending on the failure, a DTC is stored in the first or second drive cycle. When a DTC is stored, the PCM turns on the malfunction indicator lamp (MIL) by supplying ground to the MIL circuit.

- **One Drive Cycle Detection Method**

  When an abnormality occurs in the signal from a sensor or from another control unit, the PCM stores a DTC for the failure in the RAM and indicates the MIL immediately.

- **Two Drive Cycle Detection Method**

  When an abnormality occurs in the signal from a sensor or from another control unit in the first drive cycle, the PCM stores a Temporary DTC. The MIL does not come on. If the failure continues in the second drive cycle, the PCM stores a DTC and turns on the MIL.

Fail-safe Function

When an abnormality occurs in the signal from a sensor or from another control unit, the PCM ignores that signal and assumes a pre-programmed value that allows the engine to continue running. This causes a DTC to be stored and the MIL to come on.

MIL Bulb Check and Readiness Code Condition

When the ignition switch is first turned ON (II), the PCM supplies ground to the MIL circuit for 15 to 20 seconds to check the bulb condition. If any readiness codes are not set to complete, the MIL flashes five times. If all readiness codes are set to complete, the MIL goes out.

Self Shut Down (SSD) Mode

After the ignition switch is turned OFF, the PCM stays on for up to 15 minutes. If the PCM connector is disconnected during this time, the PCM may be damaged, To cancel this mode, disconnect the negative cable from the battery or jump the SCS line with the HDS after turning the ignition switch OFF.

PCM Electrical Connections

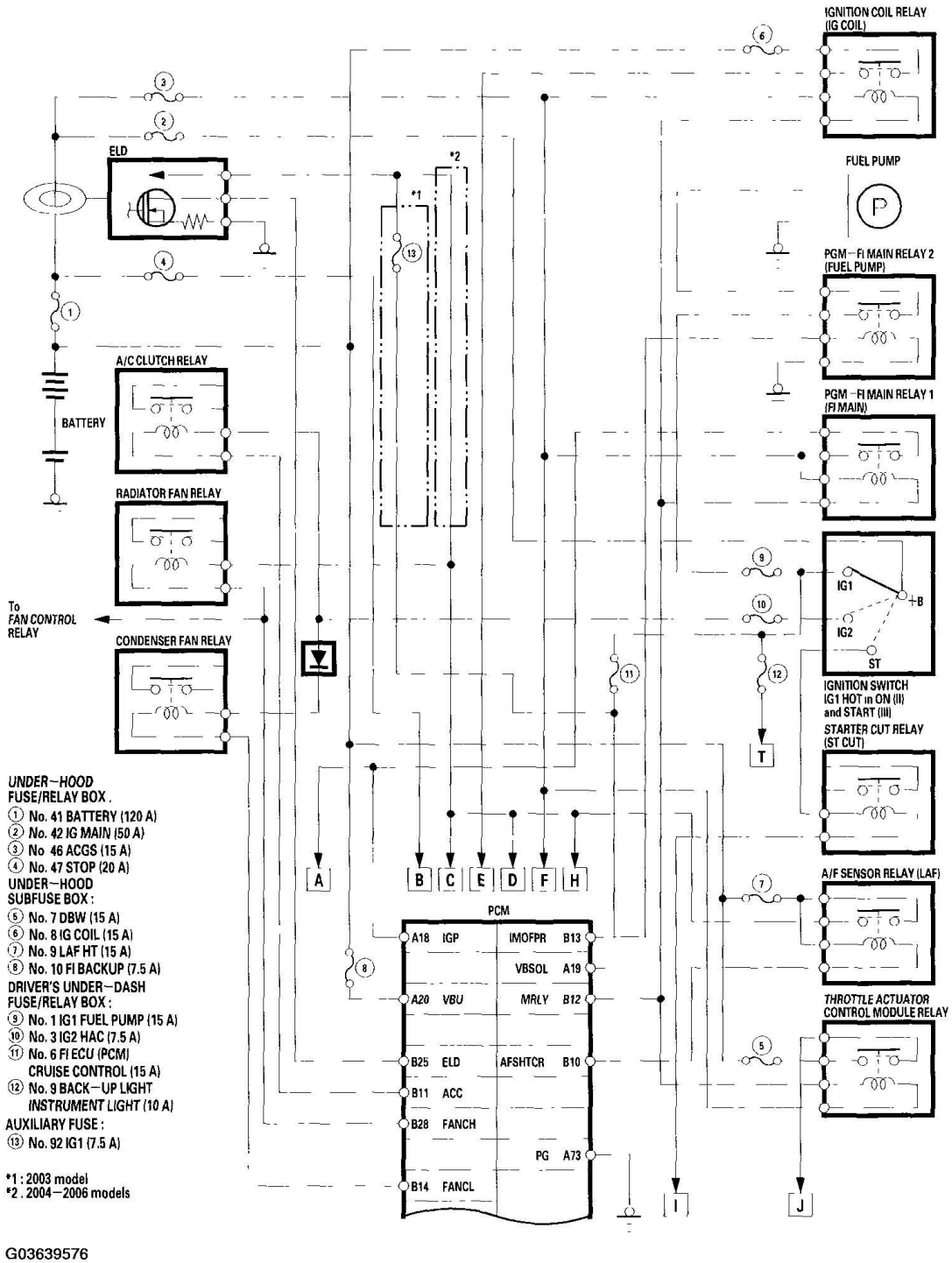


Fig. 13: PCM Electrical Connections Circuit Diagram (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

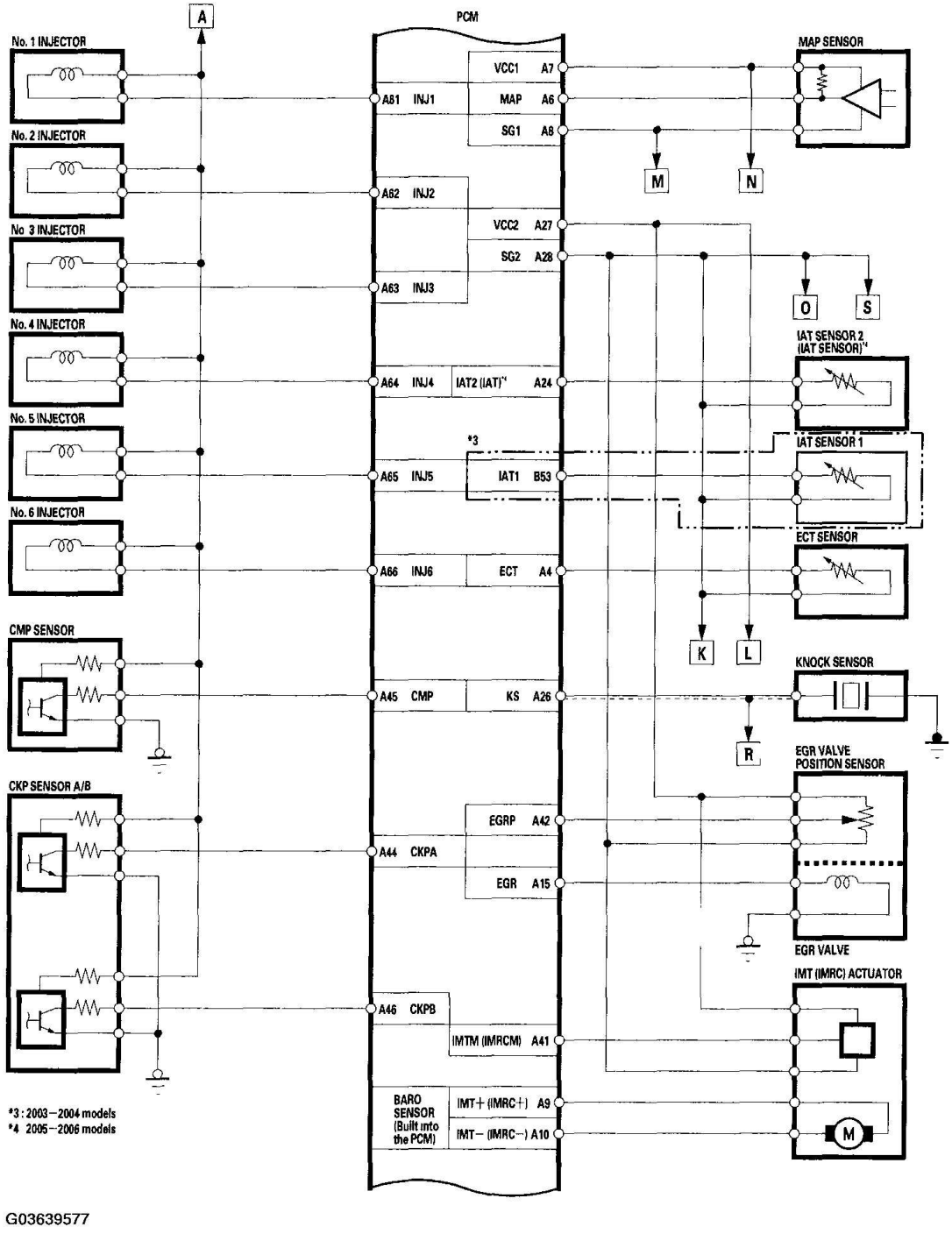


Fig. 14: PCM Electrical Connections Circuit Diagram (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

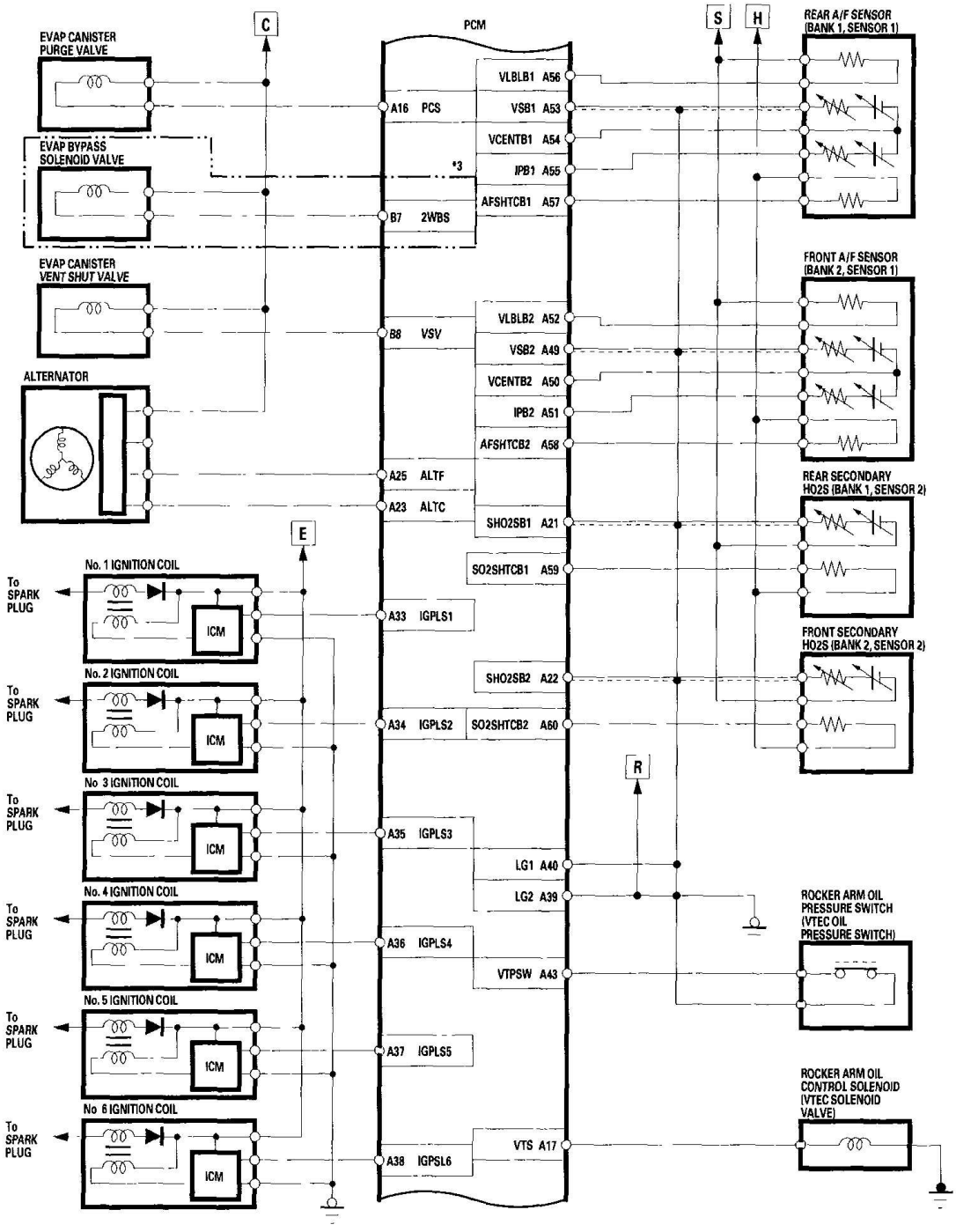


Fig. 15: PCM Electrical Connections Circuit Diagram (3 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

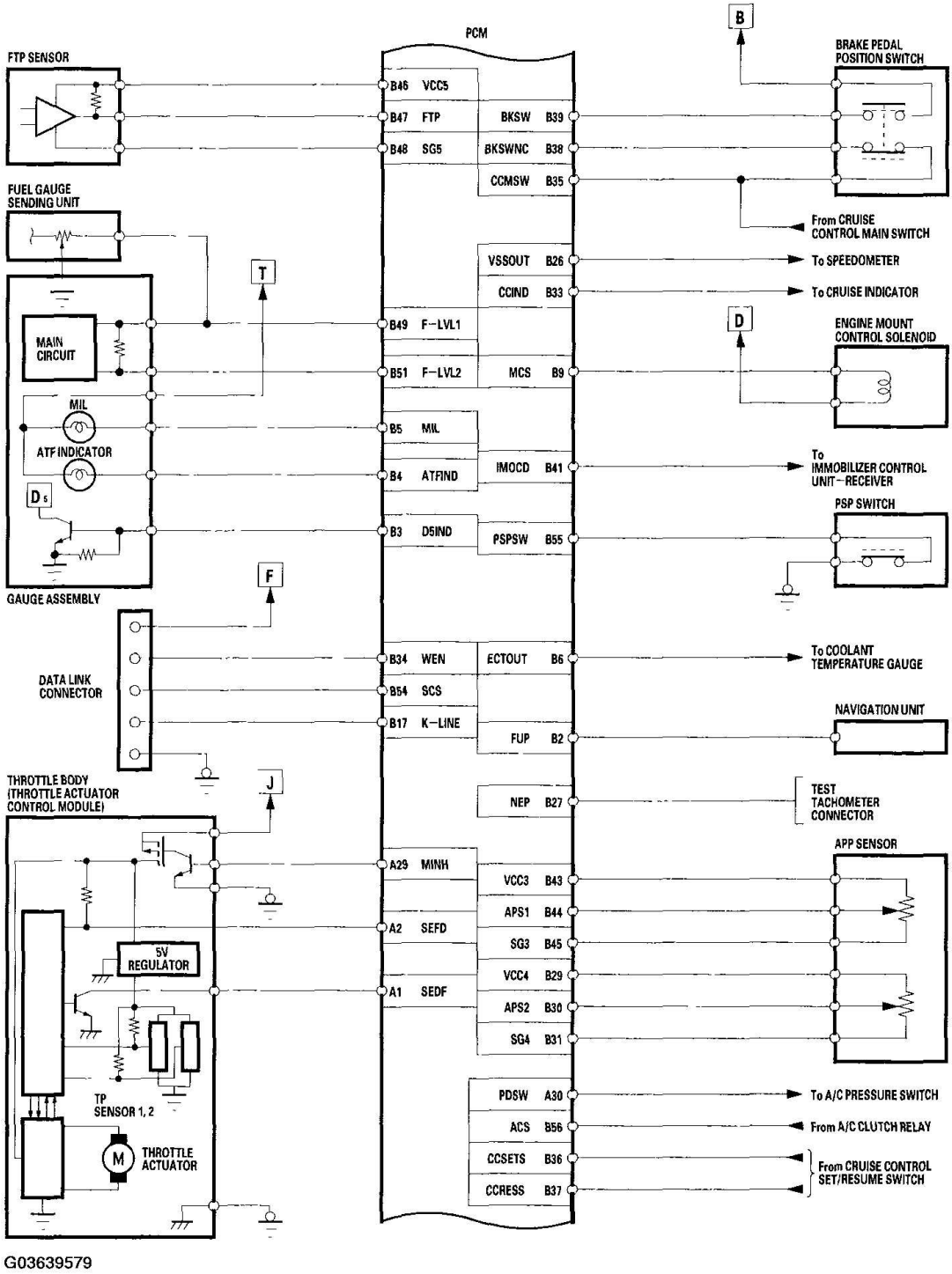


Fig. 16: PCM Electrical Connections Circuit Diagram (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

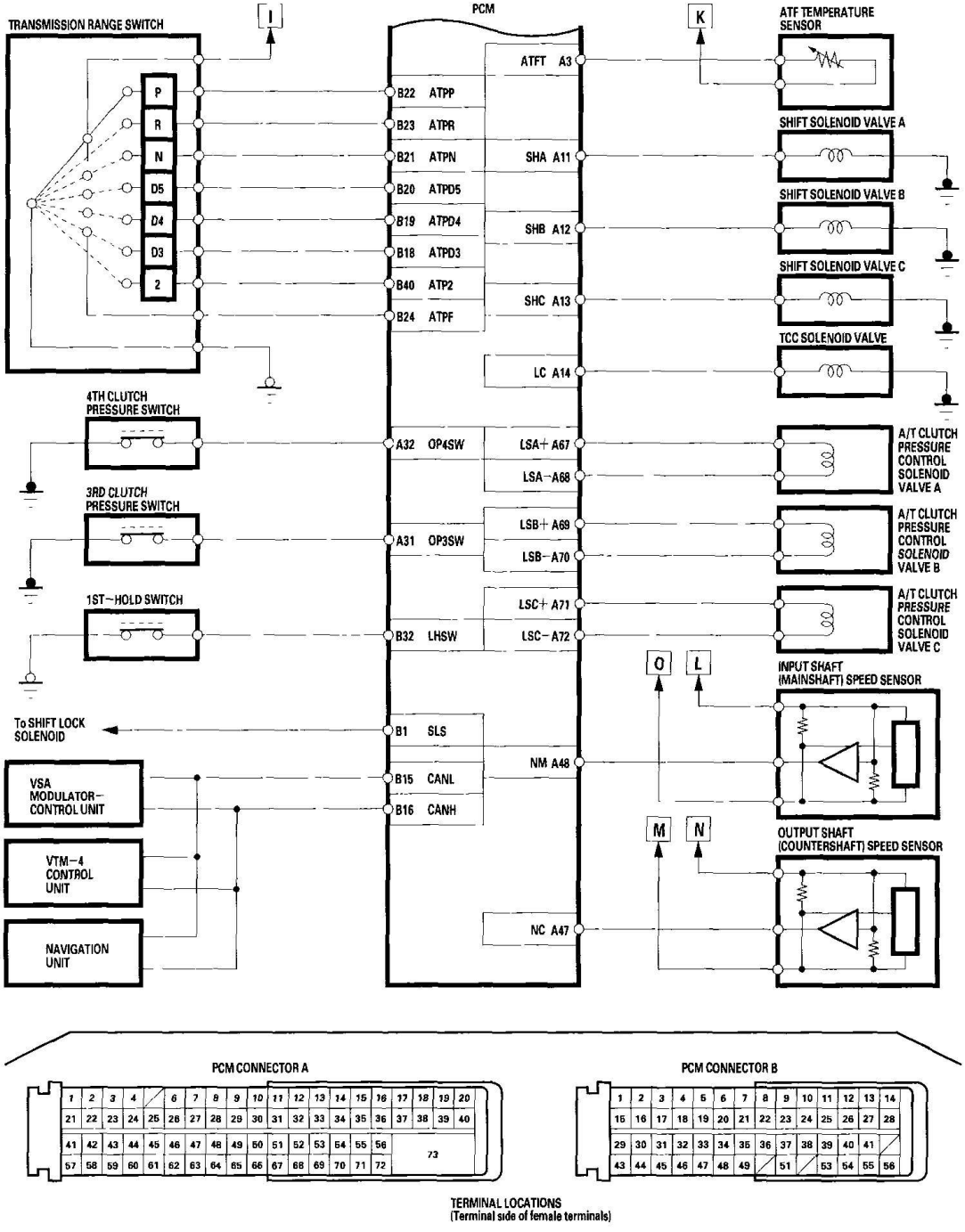
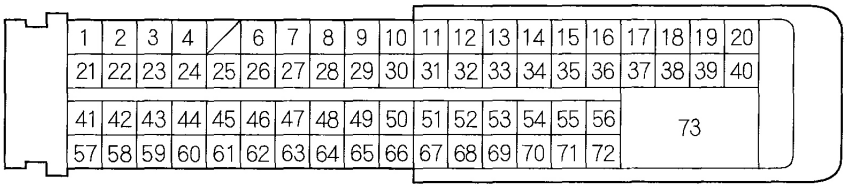


Fig. 17: PCM Electrical Connections Circuit Diagram (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM INPUTS AND OUTPUTS AT CONNECTOR A



Terminal side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
A1	BLU	SEDF (SERIAL DATA LINE)	Communicates with the throttle body (throttle actuator control module)	With ignition switch ON (II): pulses
A2	GRN	SEFD (SERIAL DATA LINE)	Communicates with the throttle body (throttle actuator control module)	With ignition switch ON (II): pulses
A3	BLU/YEL	ATFT (A/T TEMPARATURE SENSOR)	Detects ATF temperature sensor signal	With ignition switch ON (II): about 0.1—4.2 V (depending on ATF temperature)
A4	RED/WHT	ECT (ENGINE COOLANT TEMPERATURE (ECT) SENSOR)	Detects ECT sensor signal	With ignition switch ON (II): about 0.1—4.8 V (depending on engine coolant temperature)
A6	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR)	Detects MAP sensor signal	With ignition ON (II): about 3.0 V At idle: about 1.0 V (depending on engine speed)
A7	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
A8	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
A9	WHT/BLU	IMT+ (IMRC+) (INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) ACTUATOR +SIDE)	Drives IMT (IMRC) actuator	With ignition switch ON (II): battery voltage
A10	WHT/RED	IMT— (IMRC—) (INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) ACTUATOR —SIDE)	Ground for IMT (IMRC) actuator	With ignition switch ON (II): battery voltage
A11	BLU/YEL	SHA (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	With engine running in 1, 2, or D3, D4, D5 (in 1st and 2nd gears), or D5 (in 5th gear): battery voltage With engine running in P, R, N, or D4, D5 position (in 4th gear), or D3, D4, D5 (in 3rd gear): about 0 V
A12	GRN/WHT	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in 1, 2, or D3, D4, D5 position (in 1st, 2nd, 3rd gear), or P, R, N: battery voltage With engine running in D4, D5 (in 4th, 5th gear), or D5 (in 5th gear): about 0 V

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Fig. 18: PCM Inputs And Outputs At Connector A (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
A13	GRN	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in 1, or D4, D5 (in 1st and 5th gears), or D3 (in 3rd gear): battery voltage With engine running in 2, or D3, D4, D5 (in 2nd gear), or D4, D5 (in 4th gear), or P, R, N: about 0 V
A14	YEL	LC (TORQUE CONVERTER CLUTCH (TCC) SOLENOID VALVE)	Drives TCC solenoid valve	With lock-up ON: battery voltage With lock-up OFF: about 0 V
A15	BLU/RED	EGR (EXHAUST GAS RECIRCULATION (EGR) VALVE	Drives EGR valve	With EGR operating: duty controlled With EGR not operating: about 0 V
A16	RED/YEL	PCS (EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE)	Drives EVAP canister purge valve	With engine running, engine coolant below 149 °F (65 °C): battery voltage With engine running, engine coolant above 149 °F (65 °C): duty controlled
A17	GRN/YEL	VTS (ROCKER ARM OIL CONTROL SOLENOID (VTEC SOLENOID VALVE))	Drives rocker arm oil control solenoids (VTEC solenoid valves)	At idle: about 0 V
A18	YEL/BLK	IGP (POWER SOURCE)	Power source for the PCM circuit	With ignition switch ON (II): battery voltage
A19	BLK/YEL	VBSOL (POWER SOURCE FOR SOLENOID VALVE)	Power source for solenoid valves	With ignition switch ON (II): battery voltage
A20	WHT/GRN	VBU (VOLTAGE BACK UP)	Power source for the PCM memory	Battery voltage at all times
A21	GRN	SHO2SB1 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) BANK 1, SENSOR 2)	Detects rear secondary HO2S (Bank 1, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
A22	WHT	SHO2SB2 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) BANK 2, SENSOR 2)	Detects front secondary HO2S (Bank 2, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
A23	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal	With engine running and fully warmed up: battery voltage
A24	RED/YEL	IAT2 (INTAKE AIR TEMPERATURE (IAT) SENSOR 2) *3 (INTAKE AIR TEMPERATURE (IAT) SENSOR) *4	Detects IAT sensor 2 *3 (IAT sensor) *4 signal	With ignition switch ON (II): about 0.1—4.8 V (depending on intake air temperature)
A25	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal	With engine running: 0—5.0 V (depending on electrical load)
A26	RED/BLU	KS (KNOCK SENSOR)	Detects knock sensor signal	With engine knocking: pulses

* 3: 2003-2004 models
* 4: 2005-2006 models

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Fig. 19: PCM Inputs And Outputs At Connector A (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
A27	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
A28	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less then 1.0 V at all times
A29	GRN/WHT	MINH (MOTOR INHIBIT SIGNAL)	Drives throttle actuator control module	With ignition switch ON: battery voltage
A30	GRN/RED	PDSW (A/C PRESSURE SWITCH)	Detects A/C pressure switch signal	With A/C pressure switch ON: about 0V With A/C pressure switch OFF: battery voltage
A31	BLU/WHT	OP3SW (3RD OIL PRESSURE SWITCH)	Detects 3rd clutch oil pressure switch	With ignition switch ON (II): about 10.0 V
A32	BLU/YEL	OP4SW (4TH OIL PRESSURE SWITCH)	Detects 4th clutch oil pressure switch	With ignition switch ON (II): about 10.0 V
A33	YEL/GRN	IGPLS1 (No. 1 IGNITION COIL PULSE)	Drives No. 1 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
A34	BLU/RED	IGPLS2 (No. 2 IGNITION COIL PULSE)	Drives No. 2 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
A35	WHT/BLU	IGPLS3 (No. 3 IGNITON COIL PULSE)	Drives No. 3 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
A36	BRN	IGPLS4 (No. 4 IGNITION COIL PULSE)	Drives No. 4 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
A37	BLK/RED	IGPLS5 (No. 5 IGNITION COIL PULSE)	Drives No. 5 ignition coil	With ignition switch ON (II): about 0 V With engine running : pulses
A38	BRN/WHT	IGPLS6 (No. 6 IGNITION COIL PULSE)	Drives No. 6 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
A39	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
A40	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
A41	WHT/BLK	IMTM (IMRCM) (INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) VALVE MONITOR)	Detects IMT (IMRC) valve position	With engine running: about 5.0 V With engine speed above 3,700 rpm: about 0 V
A42	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: 1.2—2.0 V (depending on EGR valve lift)
A43	BLU/BLK	VTPSW (ROCKER ARM OIL PRESSURE SWITCH (VTEC OIL PRESSURE SWITCH))	Detects rocker arm oil pressure switch (VTEC oil pressure switch) signal	With engine at low engine speed: about 0 V With engine at high speed: battery voltage

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Fig. 20: PCM Inputs And Outputs At Connector A (3 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
A44	BLU	CKPA (CRANKSHAFT POSITION (CKP) SENSOR A)	Detects CKP sensor A signal	With engine running: pulses
A45	YEL	CMP (CAMSHAFT POSITION (CMP) SENSOR)	Detects CMP sensor signal	With engine running: pulses
A46	BLU/RED	CKPB (CRANKSHAFT POSITION (CKP) SENSOR B)	Detects CKP sensor B signal	With engine running: pulses
A47	BLU	NC (COUNTERSHAFT SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II), and front wheels rotated by hand: pulses
A48	RED	NM (MAINSHAFT SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signal	With engine running: pulses
A49	RED/BLU	VSB2 (VS CELL+ BANK 2)	Detects front A/F sensor (Bank 2, sensor 1) VS CELL signal	With ignition switch ON (II): about 5.0 V
A50	RED/WHT	VCENTB2 (VIRTUAL GROUND BANK 2)	Reference voltage supply for front A/F sensor (Bank 2, sensor 1)	With fully warmed up engine at idle: about 3.0 V
A51	GRN/RED	IPB2 (IP CELL+ BANK 2)	Detects front A/F sensor (Bank 2, sensor 1) pump cell	With ignition switch ON (II): about 0.5—5.3 V
A52	WHT/RED	VLBLB2 (LABEL RESISTER BANK 2)	Detects front A/F sensor (Bank 2, sensor 1) LABEL signal	With engine running: about 0.3—4.9 V
A53	BLU	VSB1 (VS CELL+ BANK 1)	Detects rear A/F sensor (Bank 1, sensor 1) VS CELL signal	With ignition switch ON (II): about 5.0 V
A54	RED	VCENTB1 (VIRTUAL GROUND BANK 1)	Reference voltage supply for rear A/F sensor (Bank 1, sensor 1)	With fully warmed up engine at idle: about 3.0 V
A55	GRN	IPB1 (IP CELL+ BANK 1)	Detects rear A/F sensor (Bank 1, sensor 1) pump cell	With ignition switch ON (II): about 0.5—5.3 V
A56	WHT	VLBLB1 (LABEL RESISTER BANK 1, SENSOR 1)	Detects rear A/F sensor (Bank 1, sensor 1) LABEL signal	With engine running: about 0.3—4.9 V
A57	BLK/WHT	AFSHTCB1 (AIR FUEL RATIO (A/F) SENSOR HEATER CONTROL BANK 1, SENSOR 1)	Drives rear A/F sensor heater	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V
A58	GRN/WHT	AFSHTCB2 (AIR FUEL RATIO (A/F) SENSOR HEATER CONTROL BANK 2, SENSOR 1)	Drives front A/F sensor heater	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V
A59	BLK/WHT	SO2SHTCB1 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) HEATER CONTROL BANK 1, SENSOR 1)	Drives rear secondary HO2S heater	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled

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Fig. 21: PCM Inputs And Outputs At Connector A (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
A60	GRN/RED	SO2SHTCB2 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) HEATER CONTROL BANK 2, SENSOR 2)	Drives front secondary HO2S heater	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
A61	BRN	INJ1 (No. 1 INJECTOR)	Drives No. 1 injector	At idle: duty controlled
A62	RED	INJ2 (No. 2 INJECTOR)	Drives No. 2 injector	
A63	BLU	INJ3 (No. 3 INJECTOR)	Drives No. 3 injector	
A64	YEL	INJ4 (No. 4 INJECTOR)	Drives No. 4 injector	
A65	BLK/RED	INJ5 (No. 5 INJECTOR)	Drives No. 5 injector	
A66	WHT/BLU	INJ6 (No. 6 INJECTOR)	Drives No. 6 injector	
A67	RED	LSA+ (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A +SIDE)	Drives A/T clutch pressure control solenoid valve A power supply positive terminal	With ignition switch ON (II): duty controlled
A68	WHT	LSA− (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A −SIDE)	Drives A/T clutch pressure control solenoid valve A power supply negative terminal	With ignition switch ON (II): duty controlled
A69	BRN/WHT	LSB+ (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B +SIDE)	Drives A/T clutch pressure control solenoid valve B power supply positive terminal	With ignition switch ON (II): duty controlled
A70	GRN	LSB− (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B −SIDE)	Drives A/T clutch pressure control solenoid valve B power supply negative terminal	With ignition switch ON (II): duty controlled
A71	GRN/RED	LSC+ (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C +SIDE)	Drives A/T clutch pressure control solenoid valve C power supply positive terminal	With ignition switch ON (II): duty controlled
A72	RED/BLU	LSC− (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C −SIDE)	Drives A/T clutch pressure control solenoid valve C power supply negative terminal	With ignition switch ON (II): duty controlled
A73	BLK	PG (POWER GROUND)	Ground for PCM circuit	Less than 1.0 V at all times

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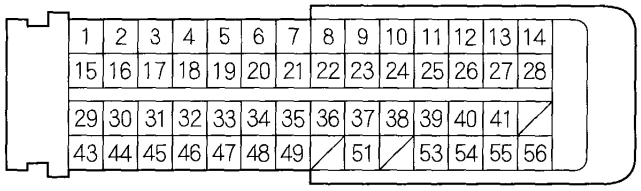
Fig. 22: PCM Inputs And Outputs At Connector A (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM INPUTS AND OUTPUTS AT CONNECTOR B



Terminal side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
B1	WHT/GRN	SLS (SHIFT LOCK SOLENOID)	Drives interlock control unit	With ignition switch ON (II) and brake pedal pressed: about 2.5 V
B2	PNK	FUP (FUEL USAGE PULSE OUTPUT)	Communicates with navigation unit	Depending on vehicle speed: pulses
B3	BLK/RED	D5IND (D5 INDICATOR)	Drives D5 indicator	With D5 indicator ON: above 0 V With D5 indicator OFF: about 0 V
B4	RED/GRN	ATFIND (ATF INDICATOR)	Drives ATF indicator	With ATF indicator ON: about 0 V With ATF indicator OFF: battery voltage
B5	GRN/ORN	MIL (MALFUNCTION INDICATOR LAMP)	Drives MIL	With MIL ON: about 0 V With MIL OFF: battery voltage
B6	YEL/GRN	ECTOUT (ENGINE COOLANT TEMPERATURE SIGNAL OUTPUT)	Sends ECT signal to ECT gauge	With ignition switch ON (II): duty controlled
B7 *3	ORN/WHT	2WBS (EVAPORATIVE EMISSION (EVAP) BYPASS SOLENOID VALVE)	Drives EVAP bypass solenoid valve	With ignition switch ON (II): battery voltage
B8	GRN/BLK	VSV (EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE	Drives EVAP canister vent shut valve	With ignition switch ON (II): battery voltage In any other position: battery voltage
B9	WHT/BLU	MCS (ENGINE MOUNT CONTROL SOLENOID VALVE)	Drives engine mount control solenoid valve	At idle: about 0 V Above idle: battery voltage With ignition switch ON (II): battery voltage
B10	ORN	AFSHTCR (AIR FUEL RATIO (A/F) SENSOR RELAY)	Drives A/F sensor relay	With ignition switch ON (II): about 0 V
B11	RED	ACC (A/C CLUTCH RELAY)	Drives A/C clutch relay	With compressor ON: about 0 V With compressor OFF: battery voltage
B12	YEL/GRN	MRLY (PGM-FI MAIN RELAY)	Drives PGM-FI main relay 1 (FI MAIN) power source for DTC memory	With ignition switch ON (II): about 0 V With ignition switch OFF: battery voltage
B13	GRN/YEL	IMOFPR (IMMOBILIZER FUEL PUMP RELAY)	Drives PGM-FI main relay 2 (FUEL PUMP)	0 V for 2 seconds after ignition switch ON (II), then battery voltage
B14	GRN	FANCL (RADIATOR FAN RELAY LOW)	Drives condenser fan relay	With ignition switch ON (II): battery voltage
B15	RED	CANL (CAN COMMUNICATION SIGNAL LOW)	Sends communication signal	With ignition switch ON (II): pulses
B16	WHT	CANH (CAN COMMUNICATION SIGNAL HIGH)	Sends communication signal	With ignition switch ON (II): pulses
B17	GRY	K-LINE	Sends and receives scan tool signal	With ignition switch ON (II): pulses or battery voltage

* 3: 2003-2004 models

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Fig. 23: PCM Inputs And Outputs At Connector B (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
B18	RED *1 PNK *2	ATPD3 (TRANSMISSION RANGE SWITCH D3 POSITION)	Detects transmission range switch D3 position signal	In D3 position: about 0 V In any other position: about 5.0 V or battery voltage
B19	YEL	ATPD4 (TRANSMISSION RANGE SWITCH D4 POSITION)	Detects transmission range switch D4 position signal	In D4 position: about 0 V In any other position: about 5.0 V or battery voltage
B20	YEL/GRN *1 GRN *2	ATPD5 (TRANSMISSION RANGE SWITCH D5 POSITION)	Detects transmission range switch D5 position signal	In D5 position: about 0 V In any other position: about 5.0 V or battery voltage
B21	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH NEUTRAL POSITION)	Detects transmission range switch N position signal	In N position: about 0 V In any other position: about 8.5 V
B22	BLU/BLK *1 BLK/BLU *2	ATPP (TRANSMISSION RANGE SWITCH PARK POSITION)	Detects transmission range switch P position signal	In P position: about 0 V In any other position: about 8.5 V
B23	WHT	ATPR (TRANSMISSION RANGE SWITCH R POSITION)	Detects transmission range switch R position signal	In R position: about 0 V In any other position: battery voltage
B24	LT BLU	ATPF (TRANSMISSION RANGE SWITCH D3/D4/D5 POSITION)	Detects transmission range switch D3/D4/D5 position signal	In D3, D4 or D5 position: about 0 V In any other position: about 5.0 V or battery voltage
B25	GRN/RED	ELD (ELECTRICAL LOAD DETECTOR (ELD))	Detects ELD signal	With ignition switch ON (II): about 0.1—4.8 V (depending on electrical load)
B26	BLU/WHT	VSSOUT (VEHICLE SPEED SENSOR OUTPUT SIGNAL)	Sends vehicle speed sensor signal	Depending on vehicle speed: pulses
B27	GRN/BLU	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse	With engine running: pulses
B28	LT BLU	FANCH (RADIATOR FAN RELAY FAN CONTROL RELAY HIGH)	Drives radiator fan relay, fan control relay	With ignition switch ON (II): battery voltage
B29	YEL/WHT	VCC4 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
B30	PNK/BLK	APS2 (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II) and accelerator pedal pressed: about 3.0 V With ignition switch ON (II) and accelerator pedal released: about 0 V
B31	BLK	SG4 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
B32	BRN	LHSW (1ST-HOLD SWITCH)	Detects 1st-hold switch signal	With 1st-hold switch ON: about 0 V With 1st-hold switch OFF: battery voltage
B33	BLU/BLK	CCIND (CRUISE CONTROL INDICATOR)	Drives cruise indicator	With cruise main switch ON (II): battery voltage
B34	RED/WHT	WEN (WRITE ENABLE SIGNAL)	Detects write enable signal	With ignition switch ON (II): about 0 V
B35	LT GRN	CCMSW (CRUISE CONTROL MAIN SWITCH)	Detects cruise control main switch signal	With ignition switch ON (II) and cruise control main switch ON: battery voltage

* 1: 2003 model
* 2: 2004-2006 models

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Fig. 24: PCM Inputs And Outputs At Connector B (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
B36	LT GRN/RED	CCSETS (CRUISE CONTROL SET SWITCH)	Detects cruise control SET switch signal	With ignition switch ON (II) and cruise SET switch ON: battery voltage
B37	LT GRN/BLK	CCRESS (CRUISE CONTROL RESUME SWITCH)	Detects cruise control RESUME switch signal	With ignition switch ON (II) and cruise RESUME switch ON: battery voltage
B38	WHT/RED	BKSWNC (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With the cruise control main switch on, ignition switch ON (II), and brake pedal released: battery voltage With ignition switch ON (II), and brake pedal pressed: about 0 V
B39	WHT/BLK	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: about 0 V With brake pedal pressed: battery voltage
B40	BLU	ATP2 (TRANSMISSION RANGE SWITCH 2ND POSITION)	Detects transmission range switch 2 signal	In 2 position: about 0 V In any other position: battery voltage
B41	RED	IMOCD (IMMOBILIZER CODE)	Detects immobilizer signal	
B43	YEL/BLK	VCC3 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
B44	GRN/YEL	APS1 (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II) and accelerator pedal pressed: about 5.0 V With ignition switch ON (II) and accelerator pedal released: about 0 V
B45	BLK	SG3 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
B46	YEL/BLU	VCC5 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
B47	LT GRN	FTP (FUEL TANK PRESSURE (FTP) SENSOR)	Detects FTP sensor signal	With ignition switch ON (II) and fuel fill cap removed: about 2.5 V
B48	GRN/BLK	SG5 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
B49	YEL/BLU	F-LVL1 (FUEL LEVEL SENSOR 1)	Detects fuel level	With ignition switch ON: battery voltage
B51	LT GRN/ WHT	F-LVL2 (FUEL LEVEL SENSOR 2)	Detects fuel level	With ignition switch ON: battery voltage
B53*3	RED/BLU	IAT1 (INTAKE AIR TEMPERATURE (IAT) SENSOR 1)	Detects IAT sensor 1 signal	With ignition switch ON (II): about 0.1—4.8 V (depending on intake air temperature)
B54	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With SCS line shorted with HDS: about 0 V With SCS line open: about 5.0 V
B55	LT BLU	PSPSW (POWER STEERING PRESSURE SWITCH SIGNAL)	Detects PSP switch signal	At idle with steering wheel in straight ahead position: about 0 V At idle with steering wheel at full lock: battery voltage
B56	BLU/RED	ACS (A/C SWITCH)	Detects A/C switch signal	With A/C switch ON: about 0 V With A/C switch OFF: about 5.0 V or battery voltage

* 3: 2003-2004 models

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Fig. 25: PCM Inputs And Outputs At Connector B (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM HOSE ROUTING

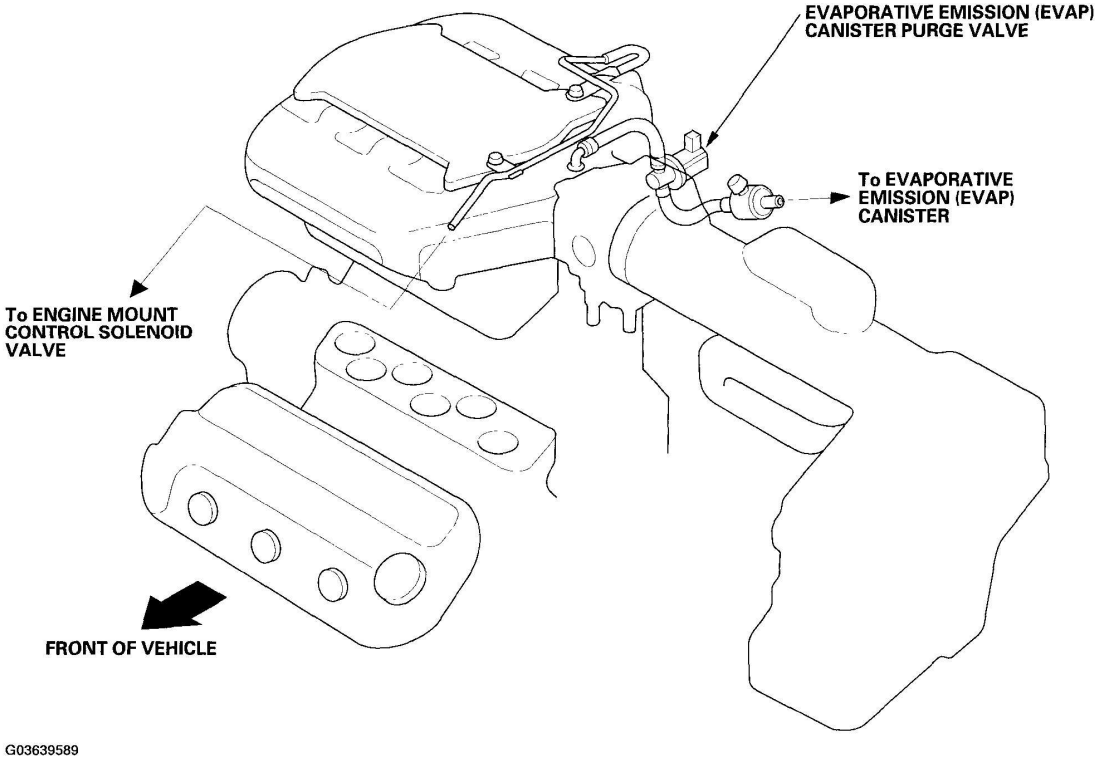
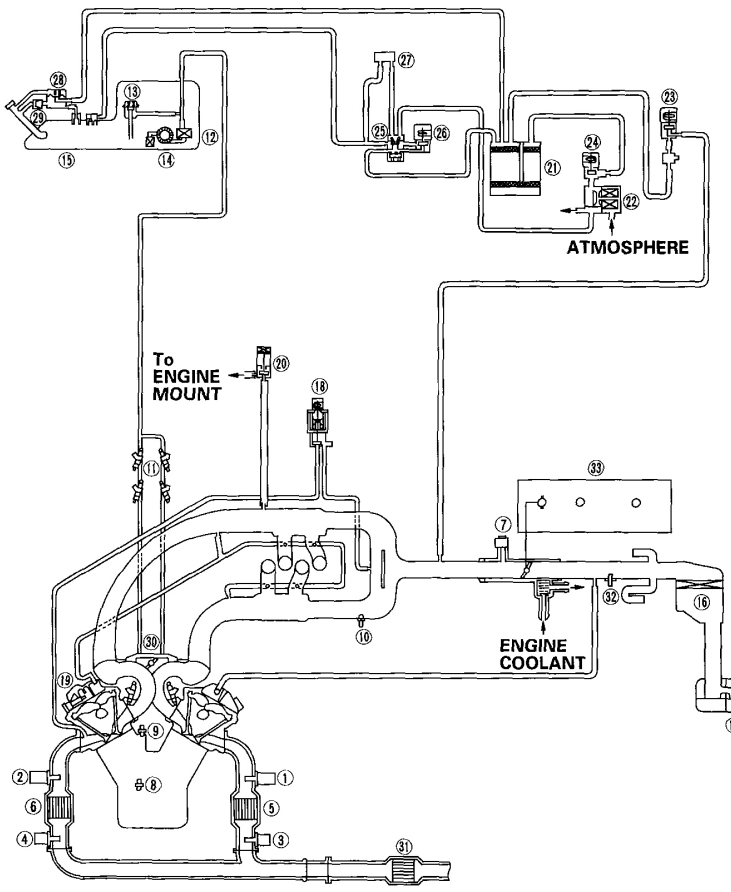


Fig. 26: Identifying Vacuum Hose Routing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM DISTRIBUTION

2003-2004 models



① REAR AIR FUEL RATIO (A/F) SENSOR 1 (BANK 1, SENSOR 1)
② FRONT AIR FUEL RATIO (A/F) SENSOR 2 (BANK 2, SENSOR 1)
③ REAR SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK1, SENSOR 2)
④ FRONT SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK 2, SENSOR 2)
⑤ REAR WARM UP THREE WAY CATALYTIC (WU-TWC) CONVERTER
⑥ FRONT WARM UP THREE WAY CATALYTIC (WU-TWC) CONVERTER
⑦ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
⑧ ENGINE COOLANT TEMPERATURE (ECT) SENSOR
⑨ KNOCK SENSOR
⑩ INTAKE AIR TEMPERATURE (IAT) SENSOR 2
⑪ INJECTOR
⑫ FUEL FILTER
⑬ FUEL PRESSURE REGULATOR
⑭ FUEL PUMP
⑮ FUEL TANK
⑯ AIR CLEANER
⑰ RESONATOR
⑱ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR
⑲ POSITIVE CRANKCASE VENTILATION (PCV) VALVE
⑳ ENGINE MOUNT CONTROL SOLENOID VALVE
㉑ EVAPORATIVE EMISSION (EVAP) CANISTER
㉒ EVAPORATIVE EMISSION (EVAP) CANISTER FILTER
㉓ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE
㉔ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE
㉕ EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE
㉖ EVAPORATIVE EMISSION (EVAP) BYPASS SOLENOID VALVE
㉗ FUEL TANK PRESSURE (FTP) SENSOR
㉘ FUEL TANK VAPOR CONTROL VALVE
㉙ FUEL TANK VAPOR RECIRCULATION VALVE
㉚ INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) ACTUATOR
㉛ THREE WAY CATALYTIC (TWC) CONVERTER
㉜ INTAKE AIR TEMPERATURE (IAT) SENSOR 1
㉝ THROTTLE ACTUATOR CONTROL MODULE

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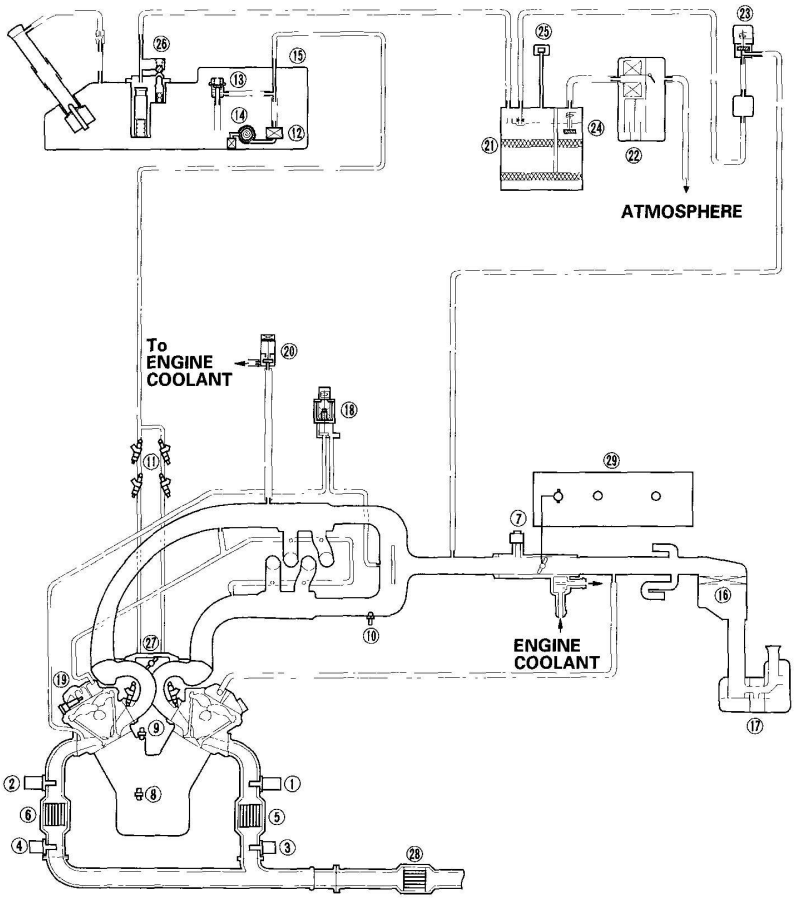
Fig. 27: Identifying Vacuum Distribution (2003-04 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2003-2004 models



① REAR AIR FUEL RATIO (A/F) SENSOR 1 (BANK 1, SENSOR 1)
② FRONT AIR FUEL RATIO (A/F) SENSOR 2 (BANK 2, SENSOR 1)
③ REAR SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK1, SENSOR 2)
④ FRONT SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK 2, SENSOR 2)
⑤ REAR WARM UP THREE WAY CATALYTIC (WU-TWC) CONVERTER
⑥ FRONT WARM UP THREE WAY CATALYTIC (WU-TWC) CONVERTER
⑦ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
⑧ ENGINE COOLANT TEMPERATURE (ECT) SENSOR
⑨ KNOCK SENSOR
⑩ INTAKE AIR TEMPERATURE (IAT) SENSOR
⑪ INJECTOR
⑫ FUEL FILTER
⑬ FUEL PRESSURE REGULATOR
⑭ FUEL PUMP
⑮ FUEL TANK
⑯ AIR CLEANER
⑰ RESONATOR
⑱ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR
⑲ POSITIVE CRANKCASE VENTILATION (PCV) VALVE
⑳ ENGINE MOUNT CONTROL SOLENOID VALVE
㉑ EVAPORATIVE EMISSION (EVAP) CANISTER
㉒ EVAPORATIVE EMISSION (EVAP) CANISTER FILTER
㉓ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE
㉔ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE
㉕ FUEL TANK PRESSURE (FTP) SENSOR
㉖ FUEL TANK VAPOR CONTROL VALVE
㉗ INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) ACTUATOR
㉘ THREE WAY CATALYTIC (TWC) CONVERTER
㉙ THROTTLE ACTUATOR CONTROL MODULE

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Fig. 28: Identifying Vacuum Distribution (2005-06 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PGM-FI SYSTEM

The programmed fuel injection (PGM-FI) system is a sequential multiportfuel injection system.

Alternator Control

The alternator signals the PCM during charging.

Air Conditioning (A/C) Compressor Clutch Relay

When the PCM receives a demand for cooling from the A/C system, it delays the compressor from being energized, and enriches the mixture to assure smooth transition to the A/C mode.

Air Fuel Ratio (A/F) Sensor

The A/F sensor operates over a wide air/fuel range. The A/F sensor is installed upstream of the WU-TWC, and sends signals to the PCM which varies the duration of fuel injection accordingly.

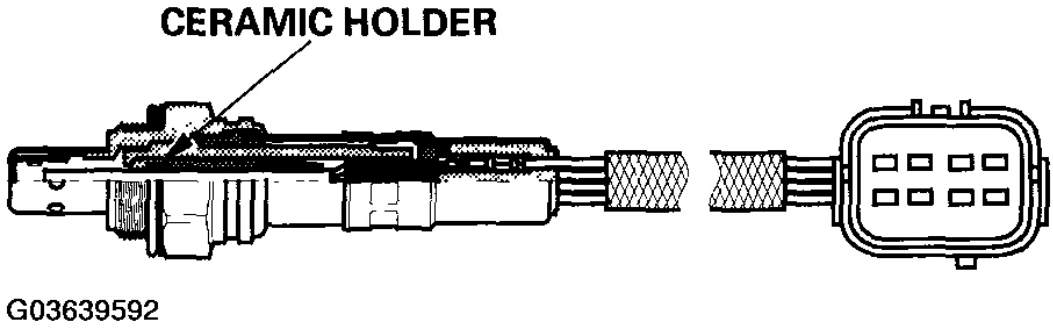

Fig. 29: Identifying Ceramic Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Barometric Pressure (BARO) Sensor

The BARO sensor is inside the PCM. It converts atmospheric pressure into a voltage signal that is used by the PCM to modify the basic duration of the fuel injection discharge.

Camshaft Position (CMP) Sensor

The CMP sensor input is used by the PCM to determine ignition timing at start up (cranking) and when crank angle is abnormal.

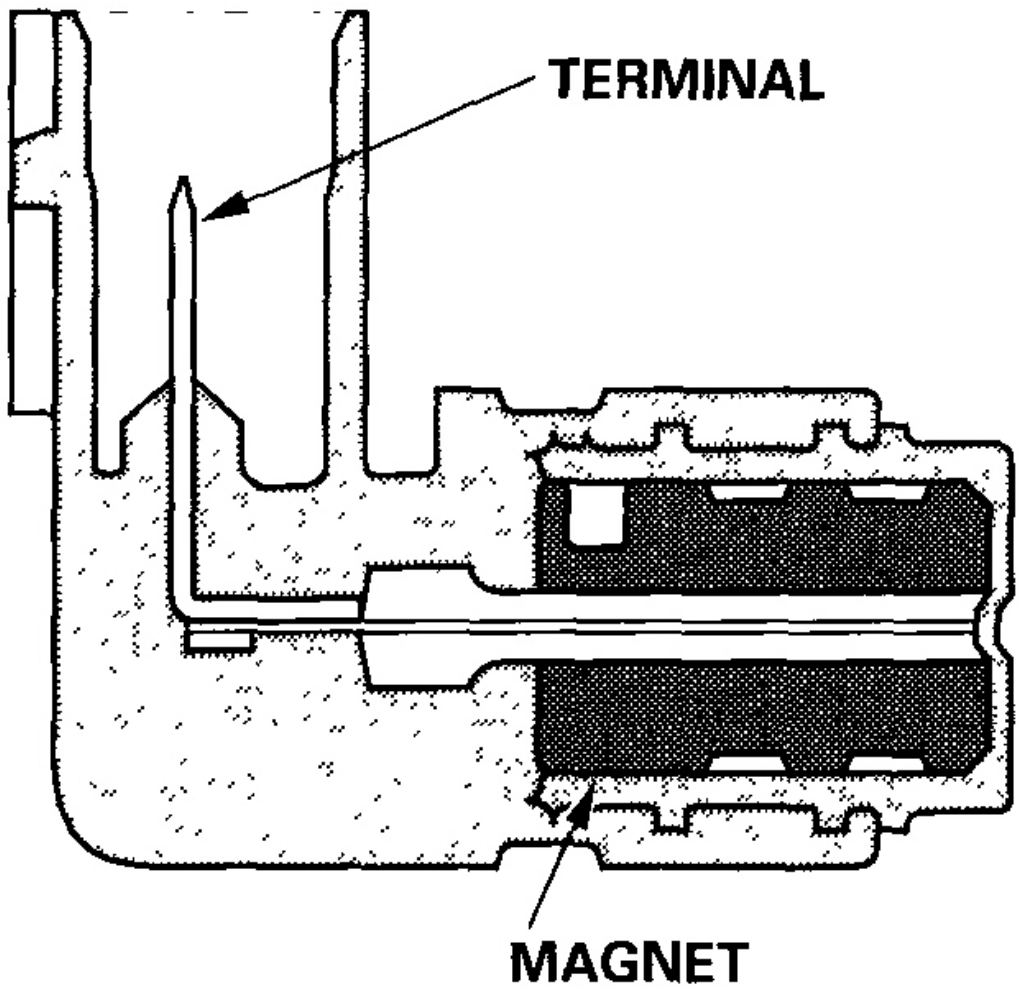

Fig. 30: Identifying CMP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Crankshaft Position (CKP) Sensor

The CKP sensor detects crankshaft speed and is used by the PCM to determine ignition timing and timing for fuel injection of each cylinder as well as detecting engine misfire.

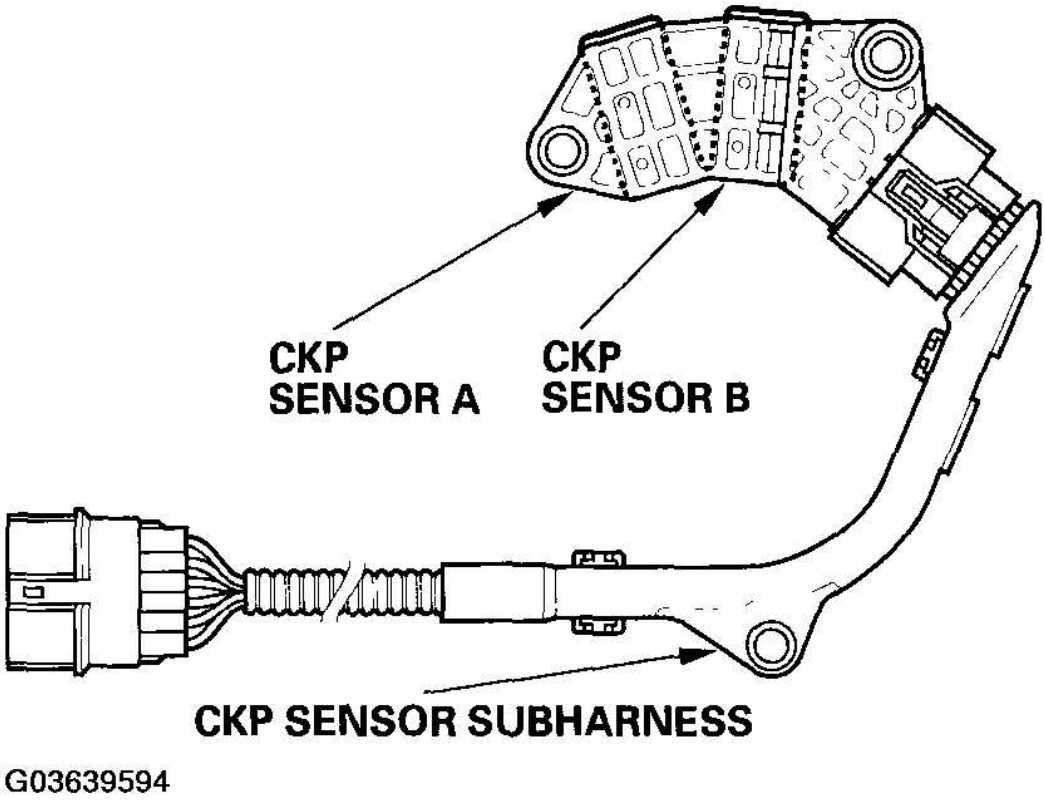

Fig. 31: Identifying CKP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Engine Coolant Temperature (ECT) Sensor

The ECT sensor is a temperature dependent resistor (thermistor). The resistance of the thermistor decreases as the engine coolant temperature increases.

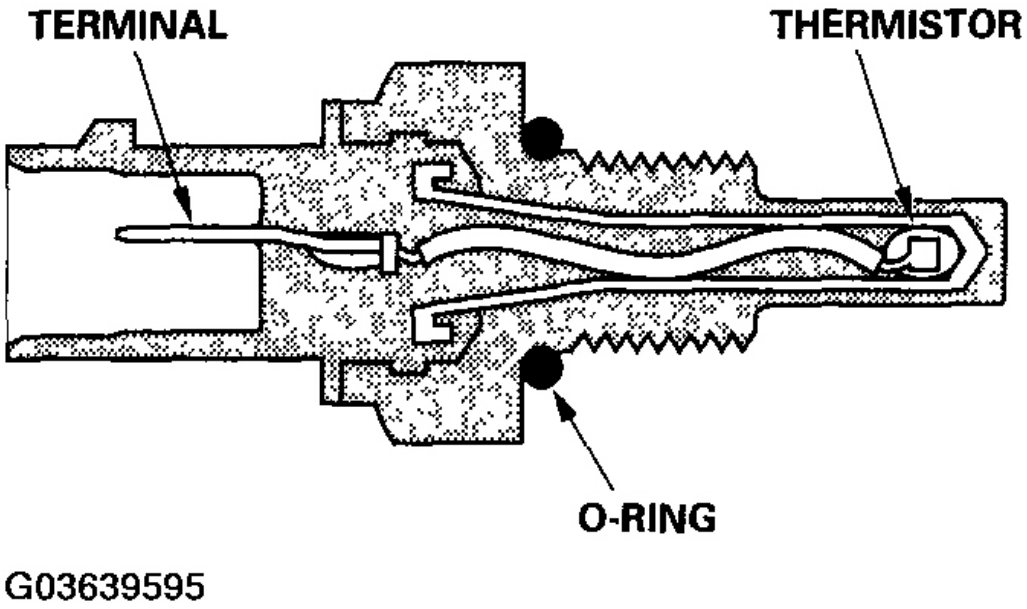

Fig. 32: Identifying ECT Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ignition Timing Control

The PCM contains the memory for basic ignition timing at various engine speeds and manifold absolute pressure. It also adjusts the timing according to engine coolant temperature.

Injector Timing and Duration

The PCM contains the memory for basic discharge duration at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

By monitoring long term fuel trim, the PCM detects long term malfunctions in the fuel system and sets a diagnostic trouble code (DTC).

Intake Air Temperature (IAT) Sensor 1/Intake Air Temperature (IAT) Sensor 2 (2003-2004 models) Intake Air Temperature (IAT) Sensor (2005-2006 models)

The IAT sensor is a temperature dependent resistor (thermistor). The resistance of the thermistor decreases as the intake air temperature increases.

IAT SENSOR 1 (2003-2004 models)

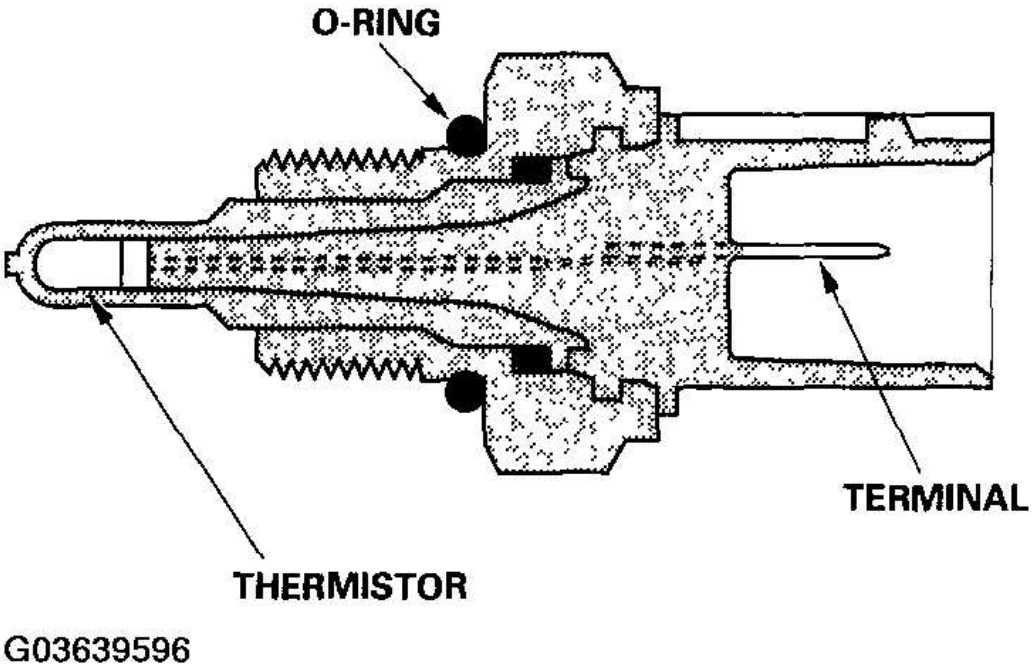

Fig. 33: Identifying IAT Sensor 1 (2003-04 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IAT SENSOR 2 (2003-2004 models); IAT SENSOR (2005-2006 models)

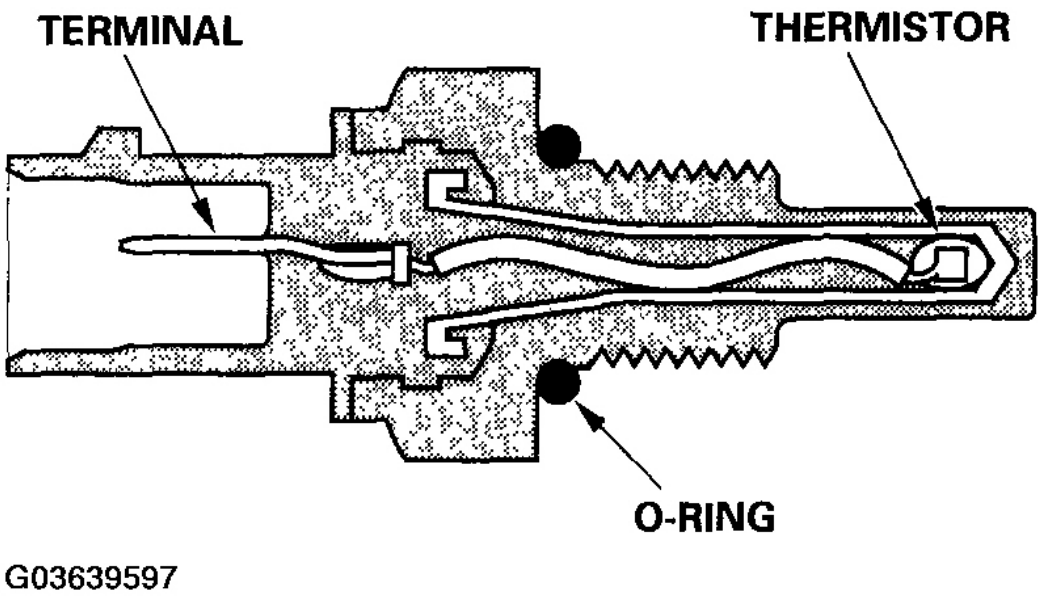

Fig. 34: Identifying IAT Sensor 2 (2003-04 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Knock Sensor

The knock control system adjusts the ignition timing to minimize knock using signals from the knock sensor (KS).

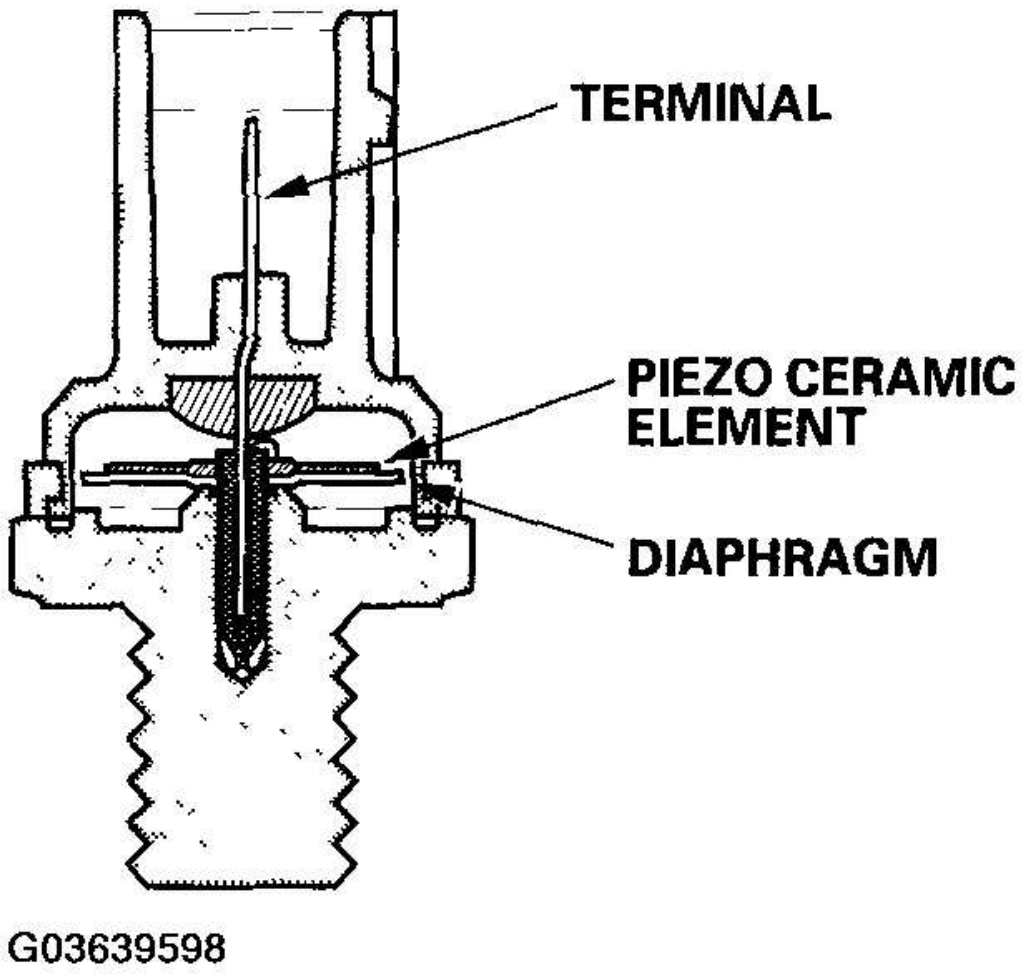

Fig. 35: Identifying Knock Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the PCM has been reset, these codes are reset. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not set to complete. To set each code, drive the vehicle or run the engine

as described in the procedures (see **HOW TO SET READINESS CODES**).

Manifold Absolute Pressure (MAP) Sensor

The MAP sensor converts manifold absolute pressure into electrical signals to the PCM.

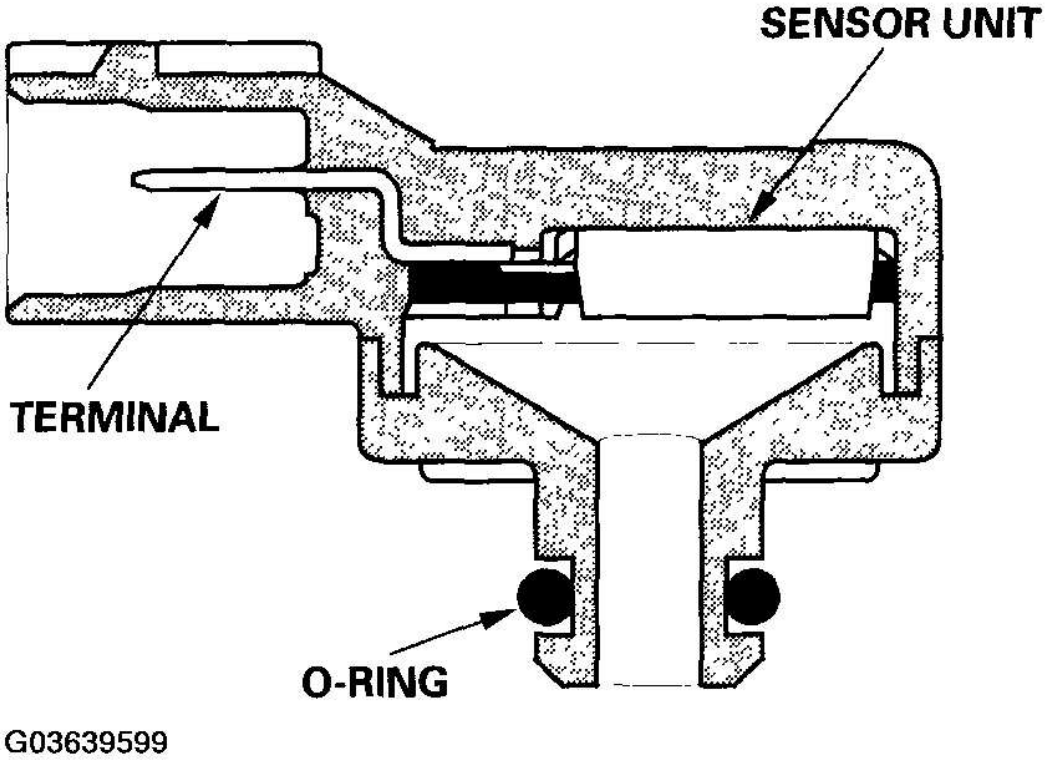

Fig. 36: Identifying MAP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Heated Oxygen Sensor (Secondary HO2S)

The secondary HO2S detects the oxygen content in the exhaust gas downstream of the warm up three way catalytic converter (WU-TWC), and sends signals to the PCM. To stabilize its output, the sensor has an internal heater. The PCM compares the HO2S output with the A/F sensor output to determine catalyst efficiency. The secondary HO2S is on the WU-TWC.

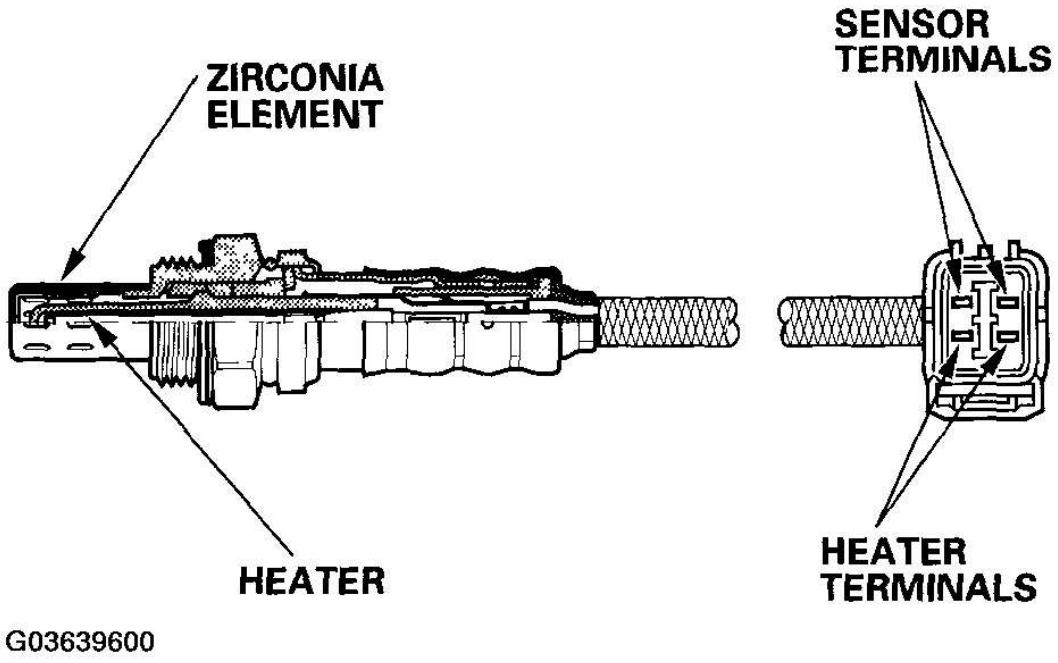

Fig. 37: Identifying Secondary HO2S
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM

The throttle is electronically controlled by the electronic throttle control system. Refer to the **ELECTRONIC THROTTLE CONTROL SYSTEM DIAGRAM** to see the functional layout of the system.

Idle control: When the engine is idling, the PCM controls the throttle actuator to maintain the proper idle speed according to engine loads.

Acceleration control: When the accelerator pedal is pressed, the PCM opens the throttle valve depending on the accelerator pedal position (APP) sensor signal.

Cruise control: The PCM controls the throttle actuator to maintain set speed when the cruise control is operating. The throttle actuator takes the place of the cruise control actuator.

Accelerator Pedal Position (APP) Sensor

As the accelerator pedal position changes, the sensor varies the signal voltage to the PCM.

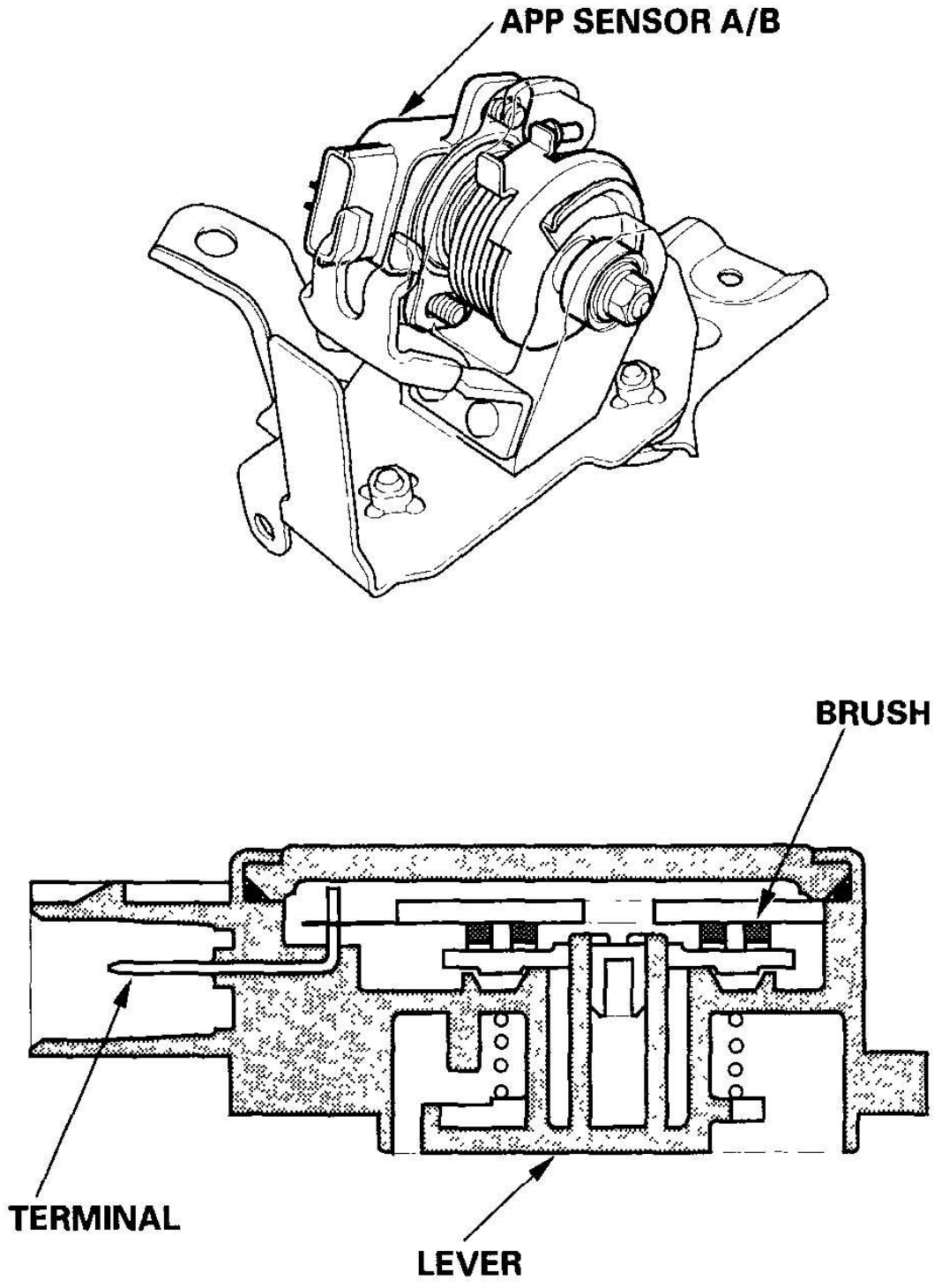

Fig. 38: Identifying APP Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Throttle Body

The throttle body is a single-barrel side draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head to prevent icing of the throttle plate.

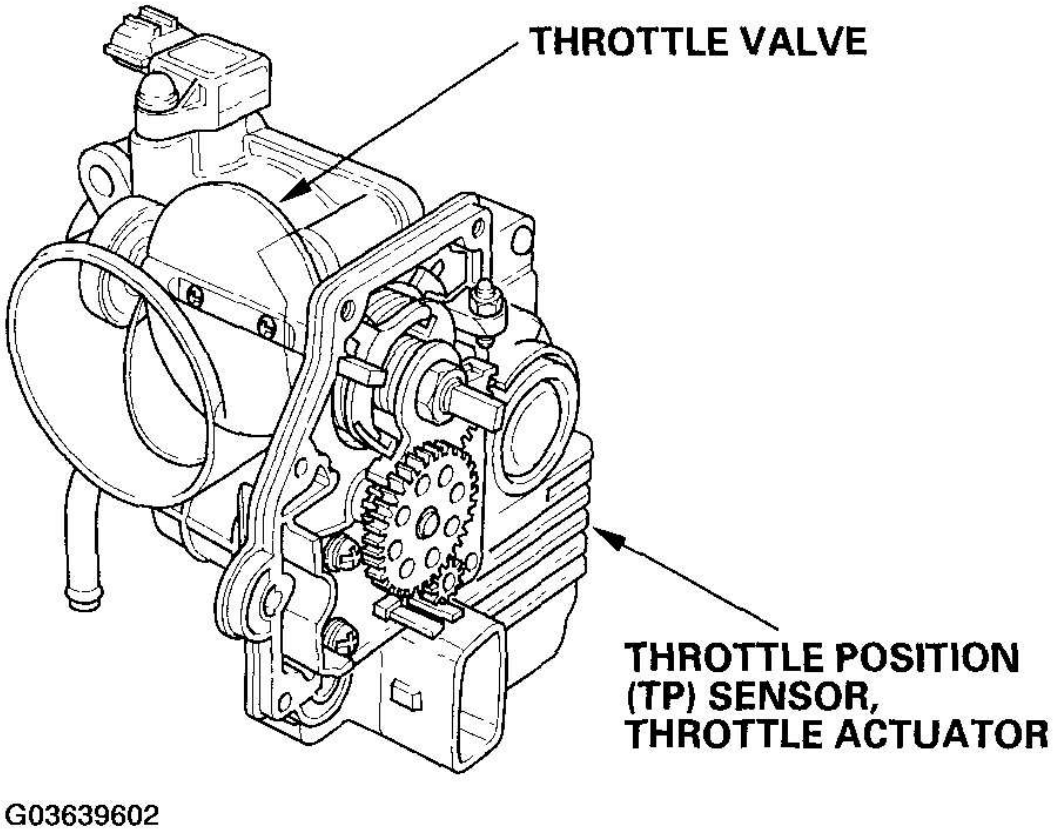

Fig. 39: Identifying Throttle Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLE CONTROL SYSTEM

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is pressed, the power steering load is high, or the alternator is charging, the PCM controls current to the throttle actuator to maintain the correct idle speed.

Brake Pedal Position Switch

The brake pedal position switch signals the PCM when the brake pedal is pressed.

Power Steering Pressure (PSP) Switch

The PSP switch signals the PCM when the power steering load is high.

FUEL SUPPLY SYSTEM

Fuel Cut-off Control

During deceleration with the throttle valve closed, current to the injectors is cut off to improve fuel economy at engine speeds over 950 rpm. Fuel cut-off control also occurs when the engine speed exceeds 6,500 rpm, regardless of the position of the throttle valve, to protect the engine from over-revving. When the vehicle is stopped, the PCM cuts the fuel at engine speeds over 5,000 rpm. On a cold engine, fuel cut occurs at a lower engine speed.

Fuel Pump Control

When the ignition is turned on, the PCM grounds PGM-FI main relay 2 (FUEL PUMP) which feeds current to the fuel pump for 2 seconds to pressurize the fuel system. With the engine running, the PCM grounds PGM-FI main relay 2 (FUEL PUMP) and feeds current to the fuel pump. When the engine is not running and the ignition is on, the PCM cuts ground to PGM-FI main relay 2 (FUEL PUMP) which cuts current to the fuel pump.

PGM-FI Main Relay 1 and 2

PGM-FI main relay 1 (FI MAIN) is energized whenever the ignition switch is ON (II) to supply battery voltage to the PCM, power to the injectors, and power for PGM-FI main relay 2 (FUEL PUMP). PGM-FI main relay 2 (FUEL PUMP) is energized to supply power to the fuel pump for 2 seconds when the ignition switch is turned ON (II), and when the engine is cranking or running.

CATALYTIC CONVERTER SYSTEM

Warm UP Three Way Catalytic Converter (WU-TWC) and Three Way Catalytic Converter (TWC)

The WU-TWC/TWC converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to carbon dioxide (CO_2), nitrogen (N_2), and water vapor.

WU-TWC

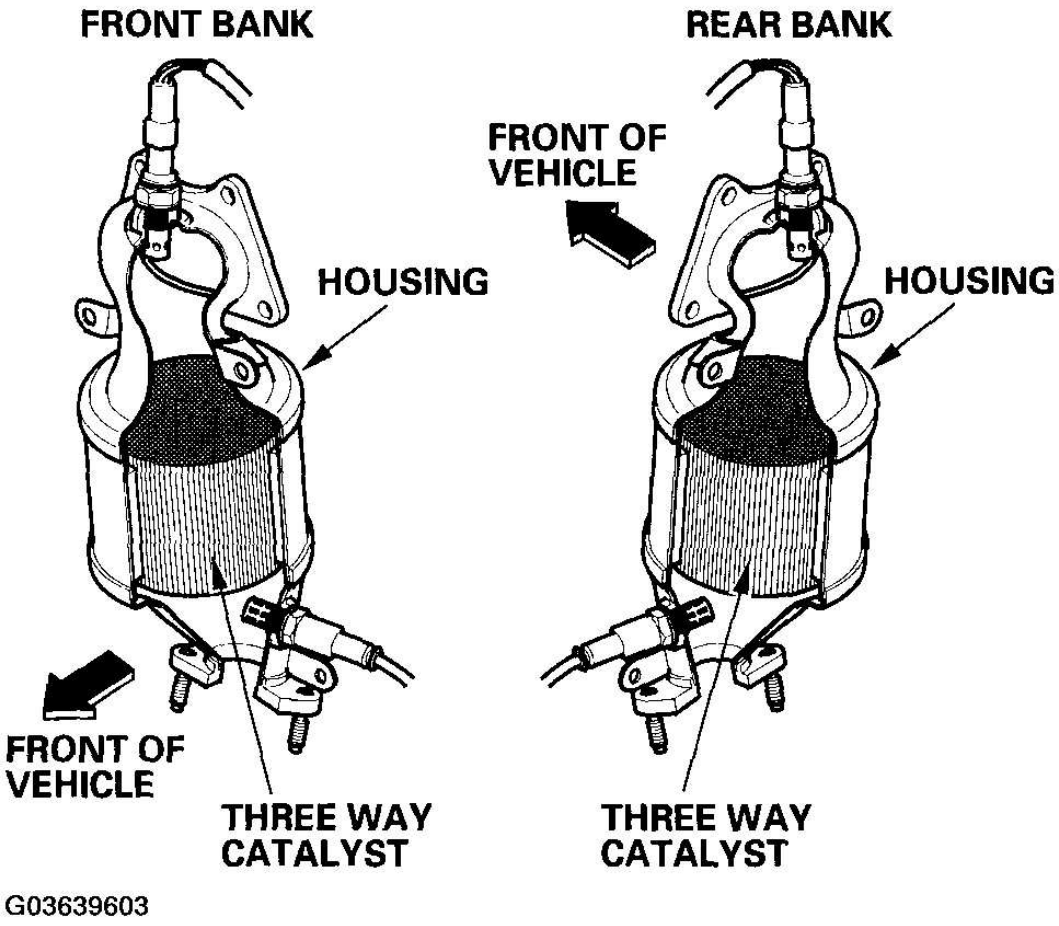

Fig. 40: Identifying WU-TWC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TWC

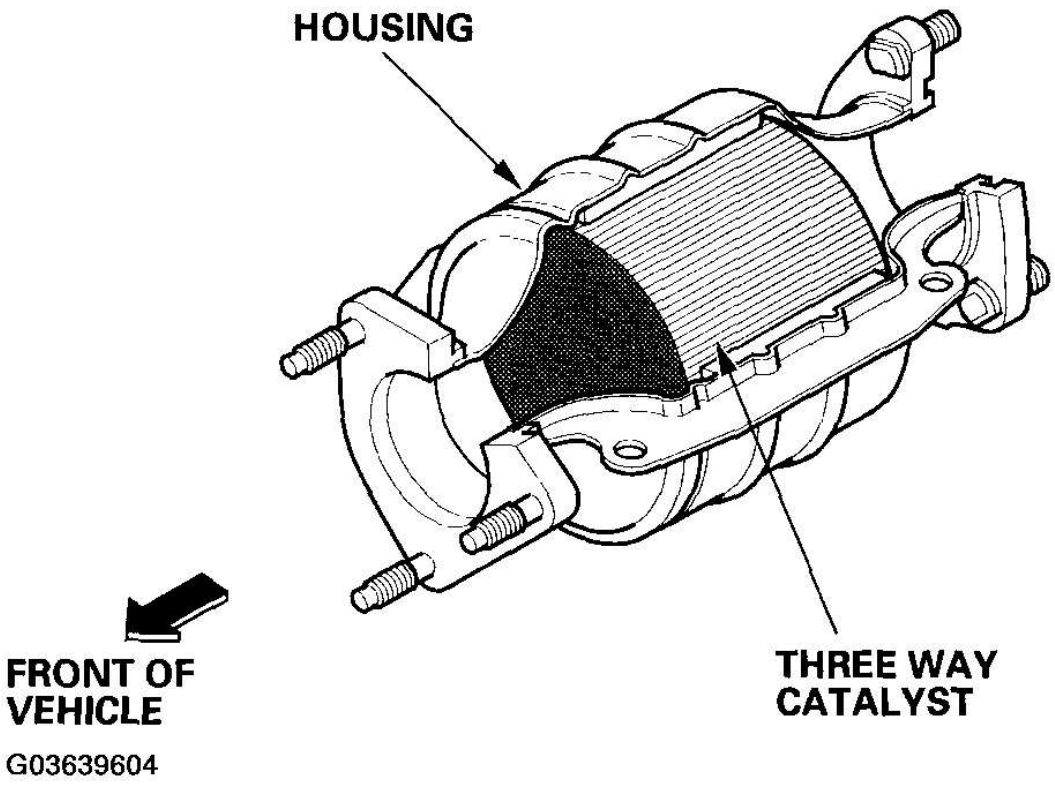

Fig. 41: Identifying TWC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

Refer to the **EXHAUST GAS RECIRCULATION (EGR) SYSTEM DIAGRAM** to see a functional layout of the system.

EGR Valve

The EGR valve lowers peak combustion temperatures and reduces oxides of nitrogen emissions (NOx) by recirculating exhaust gas through the intake manifold and into the combustion chambers.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM

The PCV valve prevents blow-by gasses from escaping into the atmosphere by venting them into the intake manifold.

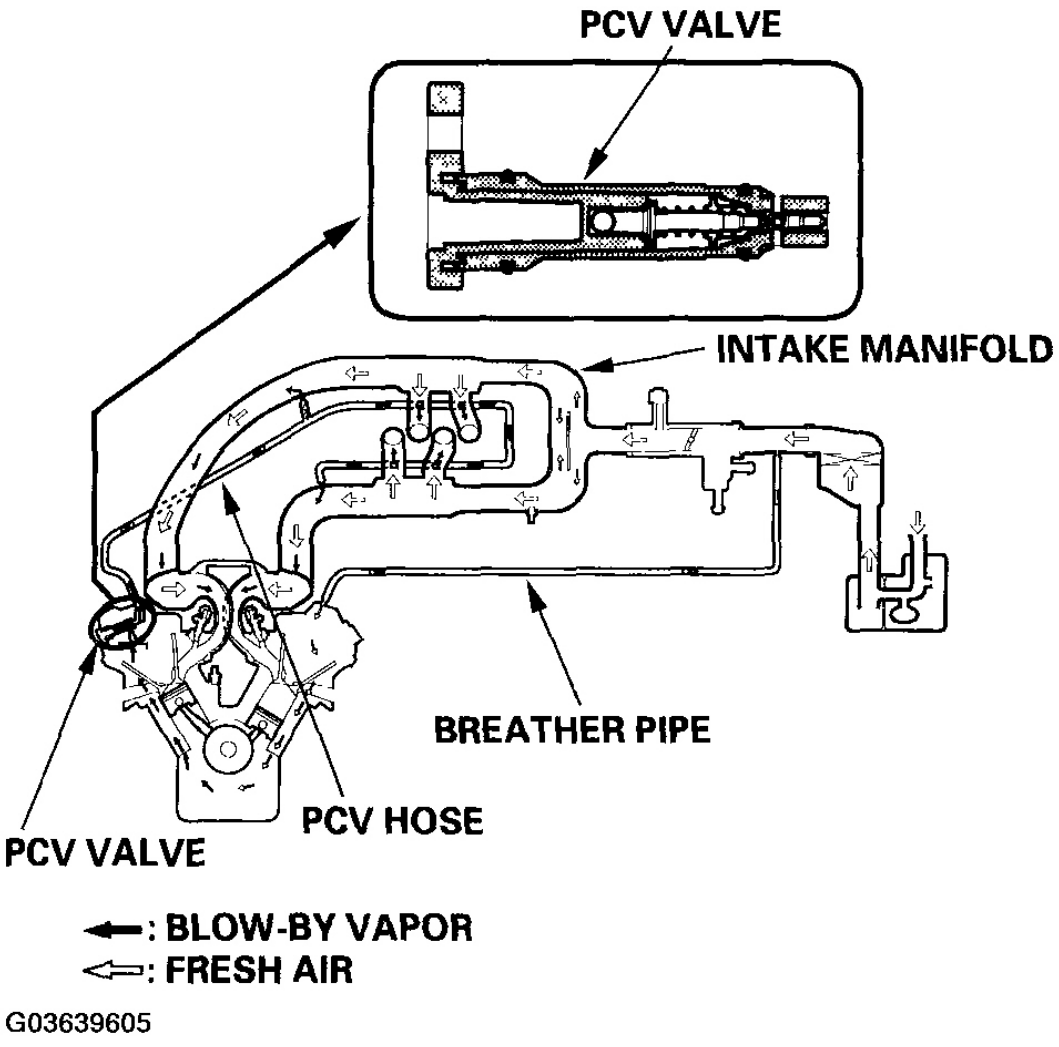

Fig. 42: Identifying PCV System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM

Refer to the **EVAPORATIVE EMISSION (EVAP) CONTROL DIAGRAM** to see a functional layout of the system.

EVAP Canister

The EVAP canister temporarily stores fuel vapor from the fuel tank until it can be purged from the EVAP canister into the engine and burned.

EVAP Canister Purge Valve

When the engine coolant temperature is below 149°F (65°C), the PCM turns off the EVAP canister purge valve which cuts vacuum to the EVAP canister.

Fuel Tank Pressure (FTP) Sensor

The FTP sensor converts fuel tank absolute pressure into an electrical input to the PCM during the EVAP leak check.

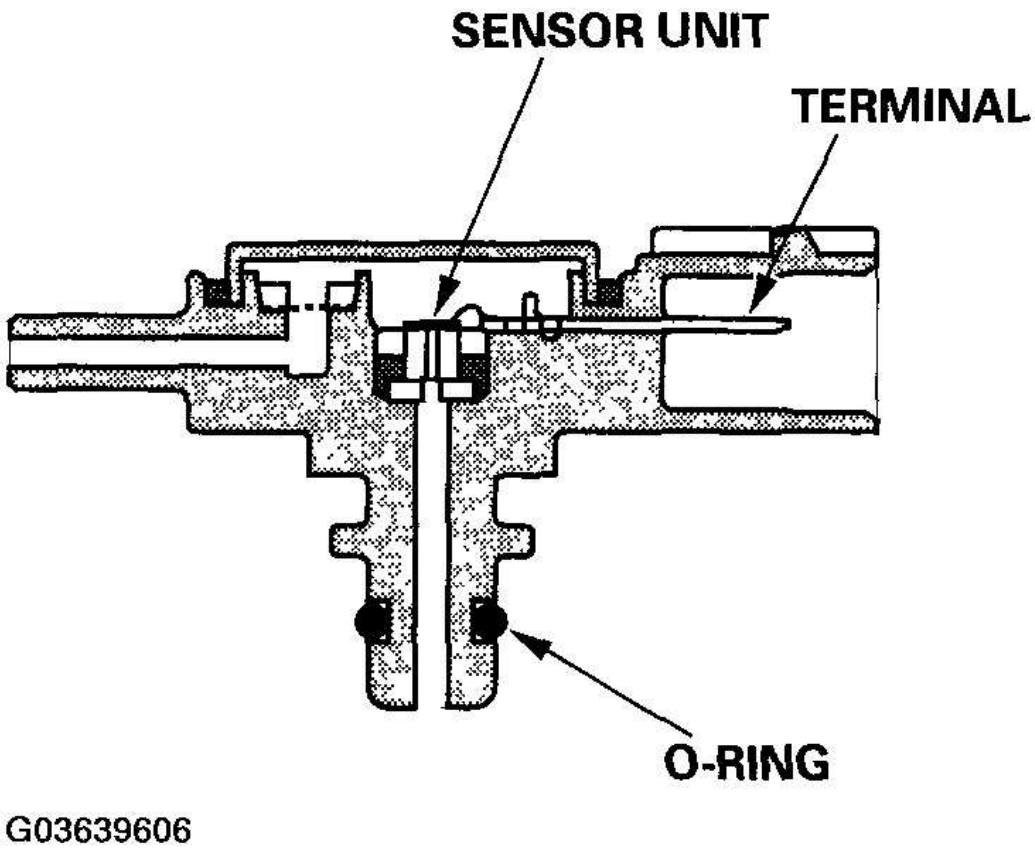

Fig. 43: Identifying FTP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAP Canister Vent Shut Valve

The EVAP canister vent shut valve is in the EVAP drain module (2003-2004 models).

The EVAP canister vent shut valve is on the EVAP canister (2005-2006 models).

The EVAP canister vent shut valve controls the venting of the EVAP canister.

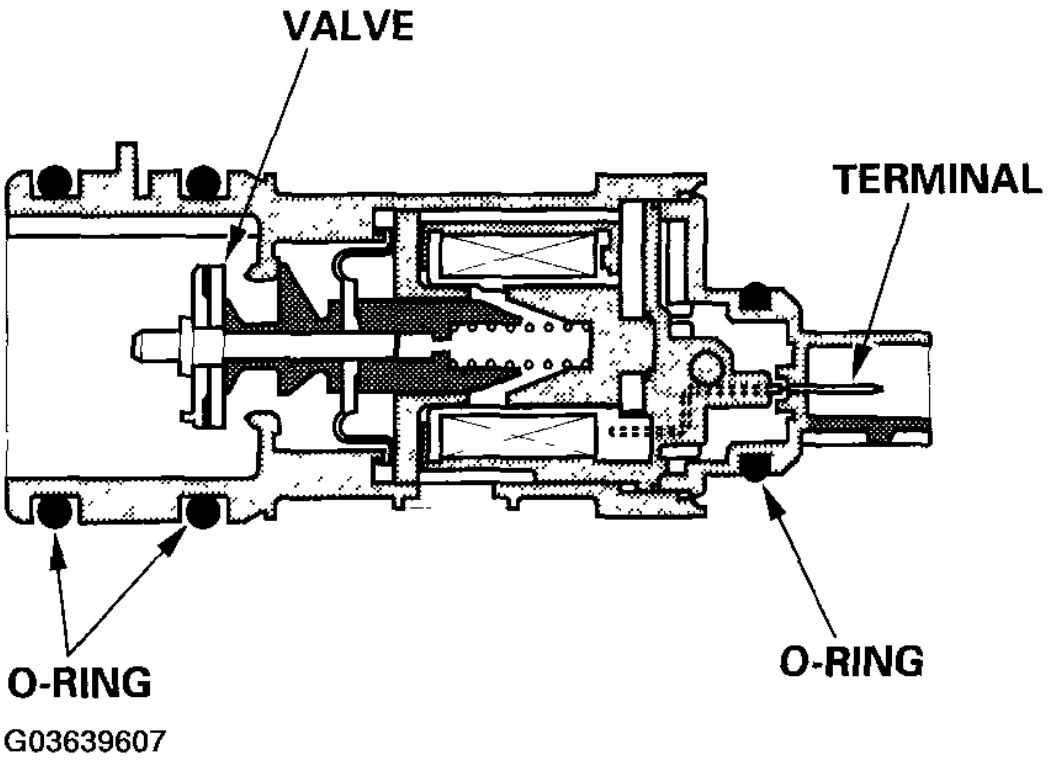

Fig. 44: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAP TWO WAY VALVE AND EVAP BYPASS SOLENOID VALVE (2003-2004 MODELS)

The EVAP two way valve is installed between the fuel tank and the EVAP canister.

The EVAP two way valve sends fuel vapor to the EVAP canister corresponding to the pressure inside the fuel tank and prevents excessive vacuum in the fuel tank by drawing in fresh air through the EVAP canister. The EVAP bypass solenoid valve opens to bypass the two way valve when doing the EVAP leak check.

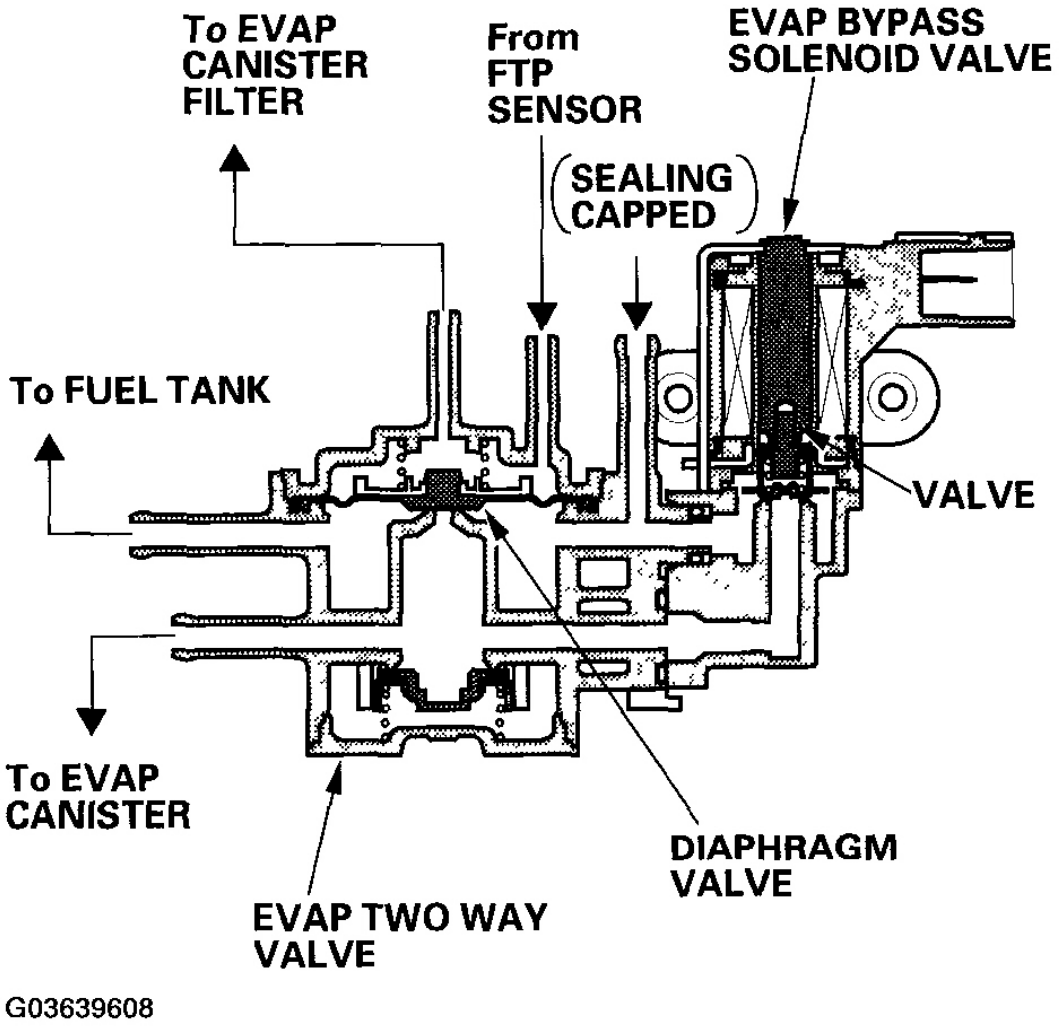

Fig. 45: Identifying EVAP Two Way Valve And EVAP Bypass Solenoid Valve (2003-04 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM DIAGRAM

The Electronic Throttle Control System consists of the throttle actuator, throttle actuator control module, throttle actuator control relay, throttle position (TP) sensors, accelerator pedal position (APP) sensor, and the PCM. The throttle is electronically controlled by this system.

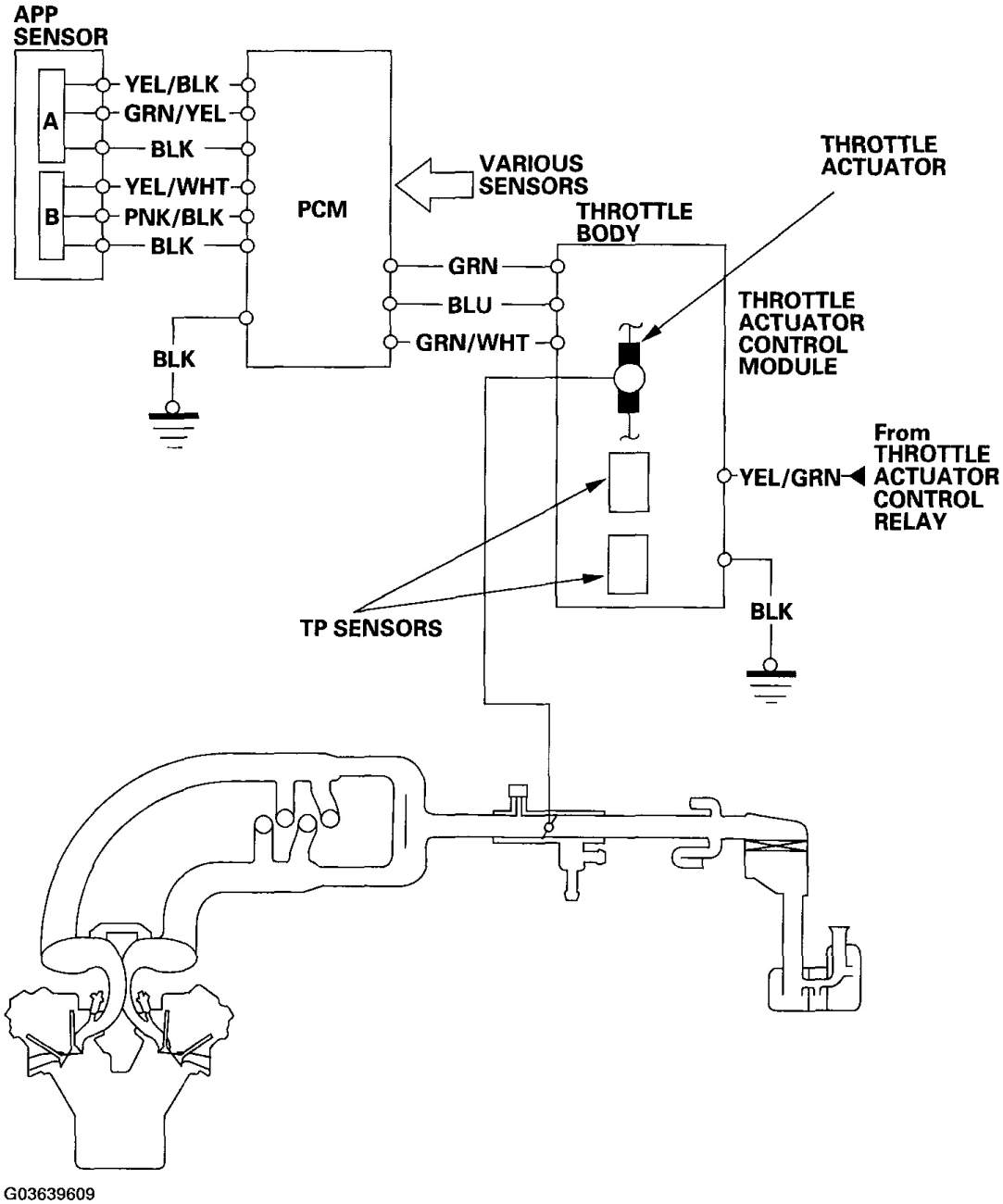

Fig. 46: Identifying Electronic Throttle Control System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM DIAGRAM

The EGR system reduces oxides of nitrogen (NOx) emissions by recirculating exhaust gas through the EGR valve and the intake manifold into the combustion chambers. The PCM memory includes the ideal EGR valve position for varying operating conditions.

The EGR valve position sensor detects the amount of EGR valve lift and sends it to the PCM. The PCM then compares it with the ideal lift in its memory (based on signals sent from other sensors). If there is any difference between the two, the PCM cuts current to the EGR valve.

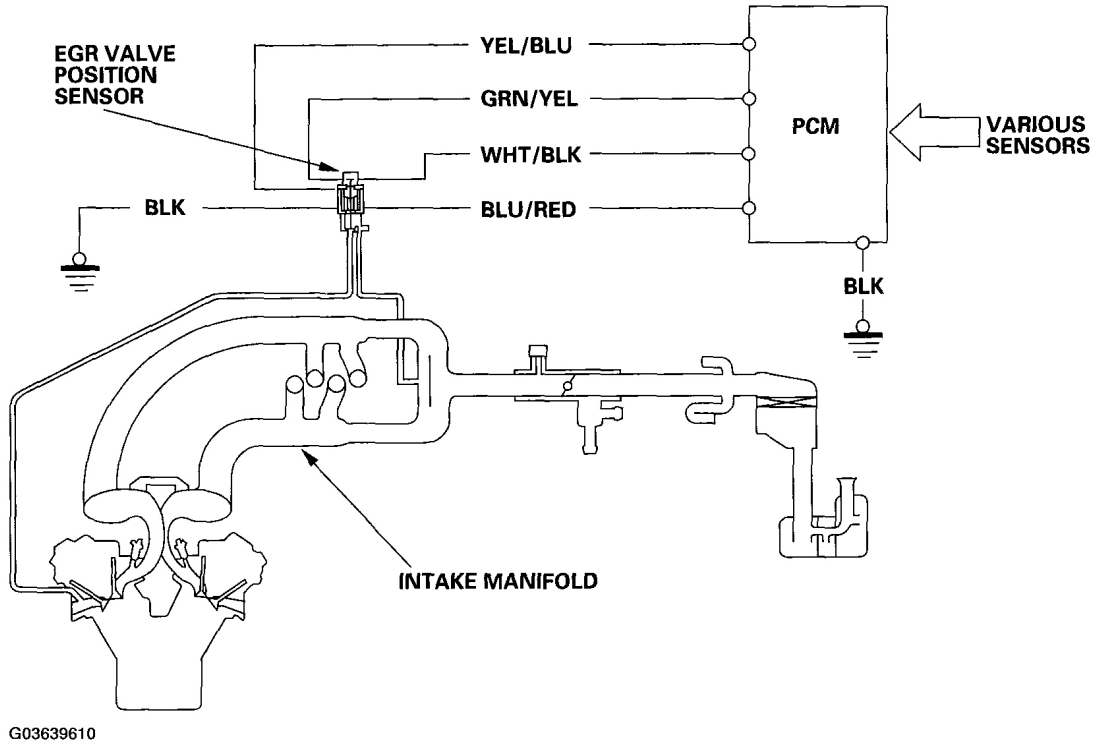

Fig. 47: Identifying EGR System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL DIAGRAM

2003-2004 models

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

- The EVAP canister is purged by drawing fresh air through it and into a port on the throttle body. The purging vacuum is controlled by the EVAP canister purge valve, which is open whenever engine coolant temperature is above 149°F (65°C).
- When vapor pressure in the fuel tank is higher than the set valve of the EVAP two way valve, the valve opens and regulates the flow of fuel vapor to the EVAP canister.
- During refueling, the fuel tank vapor control valve opens with the pressure in the fuel tank, and feeds the vapor to the EVAP canister.

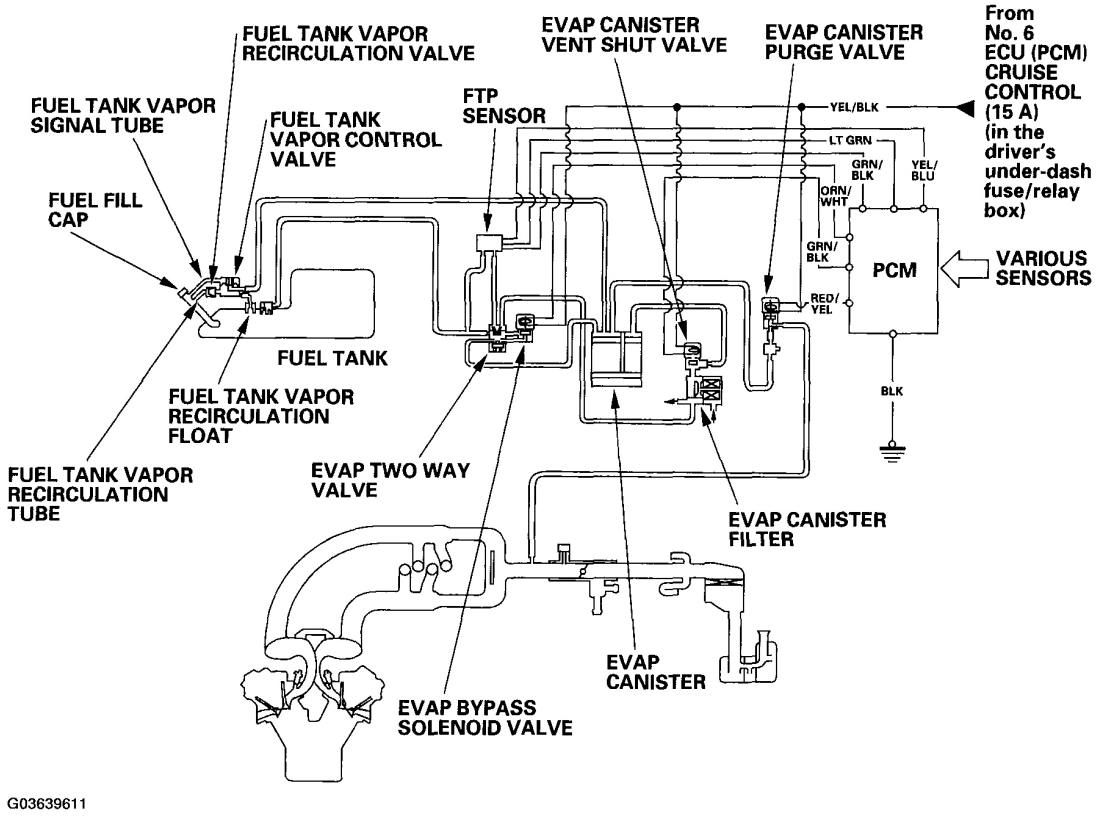

Fig. 48: Identifying EVAP Control Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2005-2006 models

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

- The EVAP canister is purged by drawing fresh air through it and into a port on the intake manifold. The purging vacuum is controlled by the EVAP canister purge valve, which operates whenever engine coolant temperature is above 149°F (65°C).
- During refueling, the fuel tank vapor control valve opens with the pressure in the fuel tank, and feeds the fuel vapor to the EVAP canister.

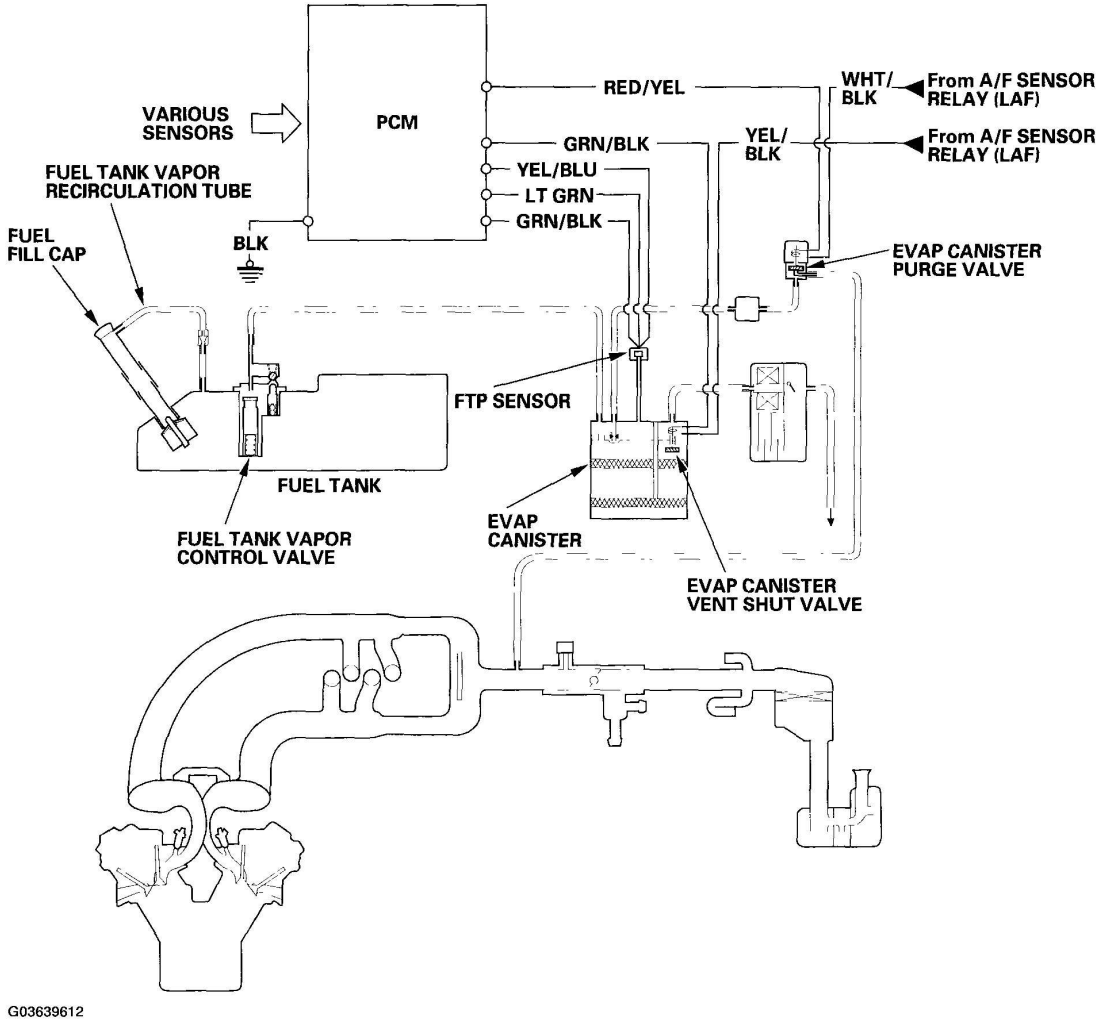

Fig. 49: Identifying EVAP Control Diagram (2005-06 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTAKE MANIFOLD TUNING (IMT) (INTAKE MANIFOLD RUNNER CONTROL (IMRC)) SYSTEM

Engine power is adjusted by opening and closing the intake manifold tuning (IMT) (intake manifold runner control (IMRC)) actuator. When the valve is closed, there is high torque at low engine speed. When the valve is open, there is high torque at high engine speed. The intake manifold tuning (IMT) (intake manifold runner control (IMRC)) valve actuator contains a sensor that detects the IMT (IMRC) valve position and sends it to the PCM.

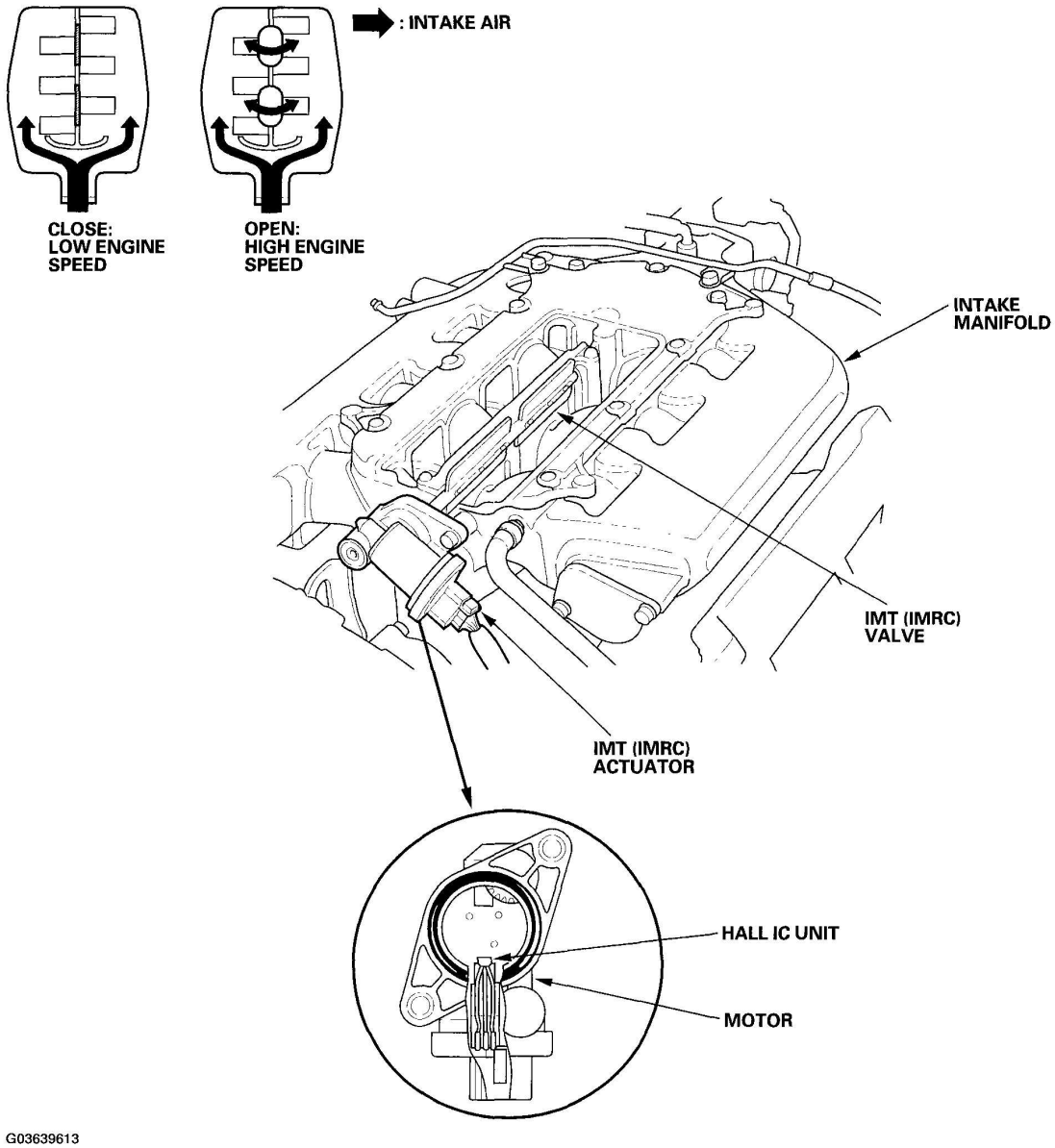

Fig. 50: Identifying IMT (IMRC) System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM Circuit Diagram-2003 Model

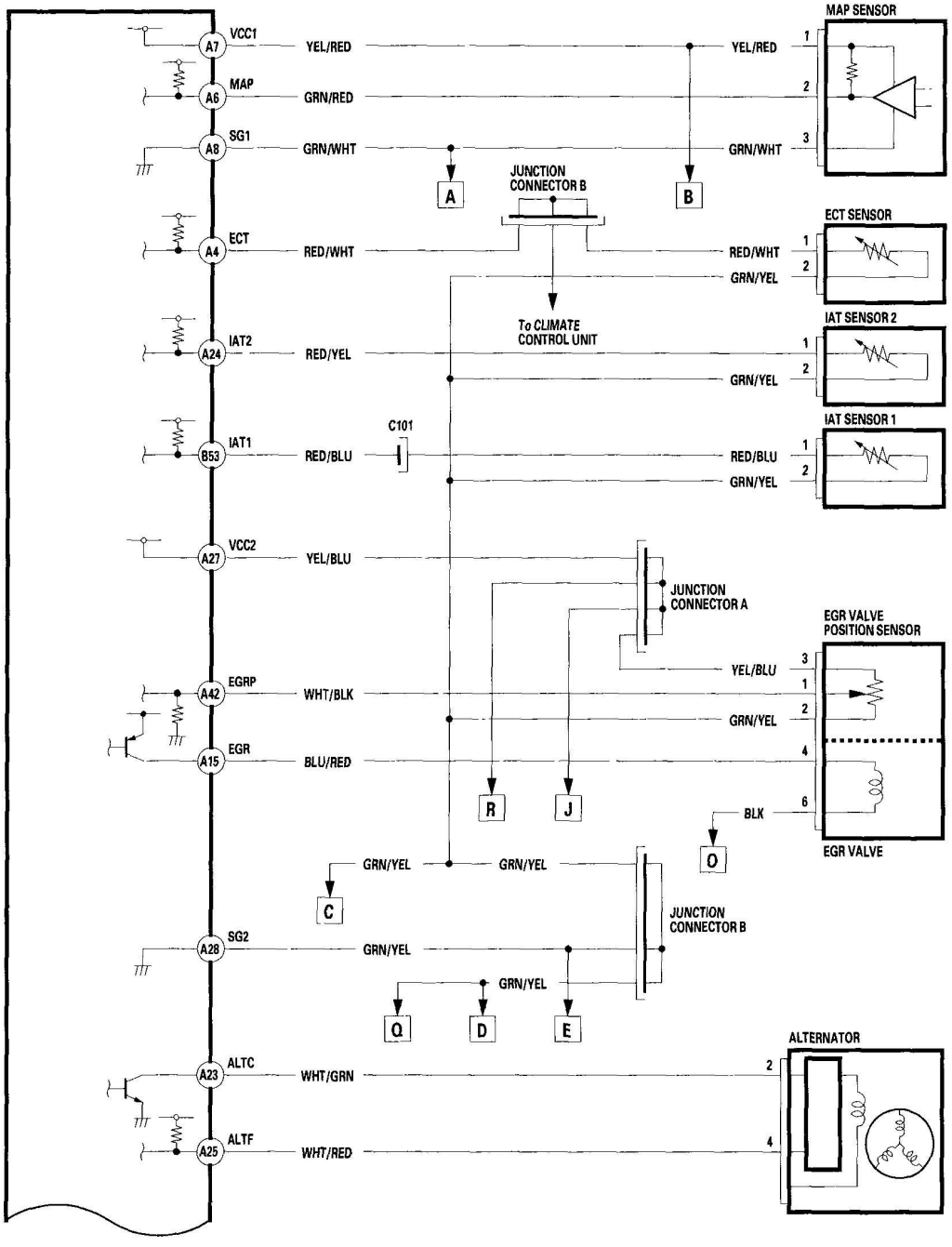

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Fig. 51: Identifying PCM Circuit Diagram (2003 Model - 1 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

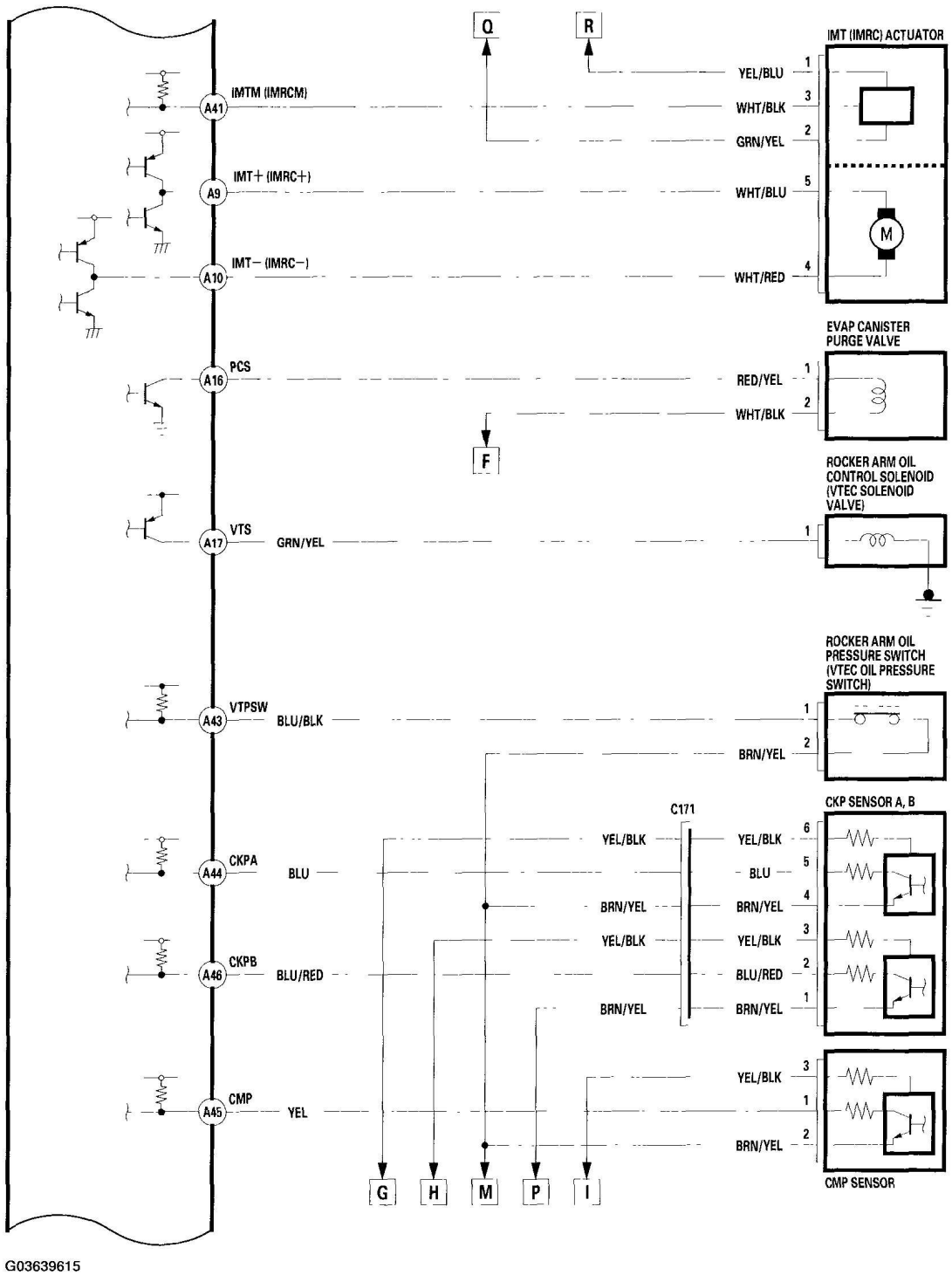

Fig. 52: Identifying PCM Circuit Diagram (2003 Model - 2 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

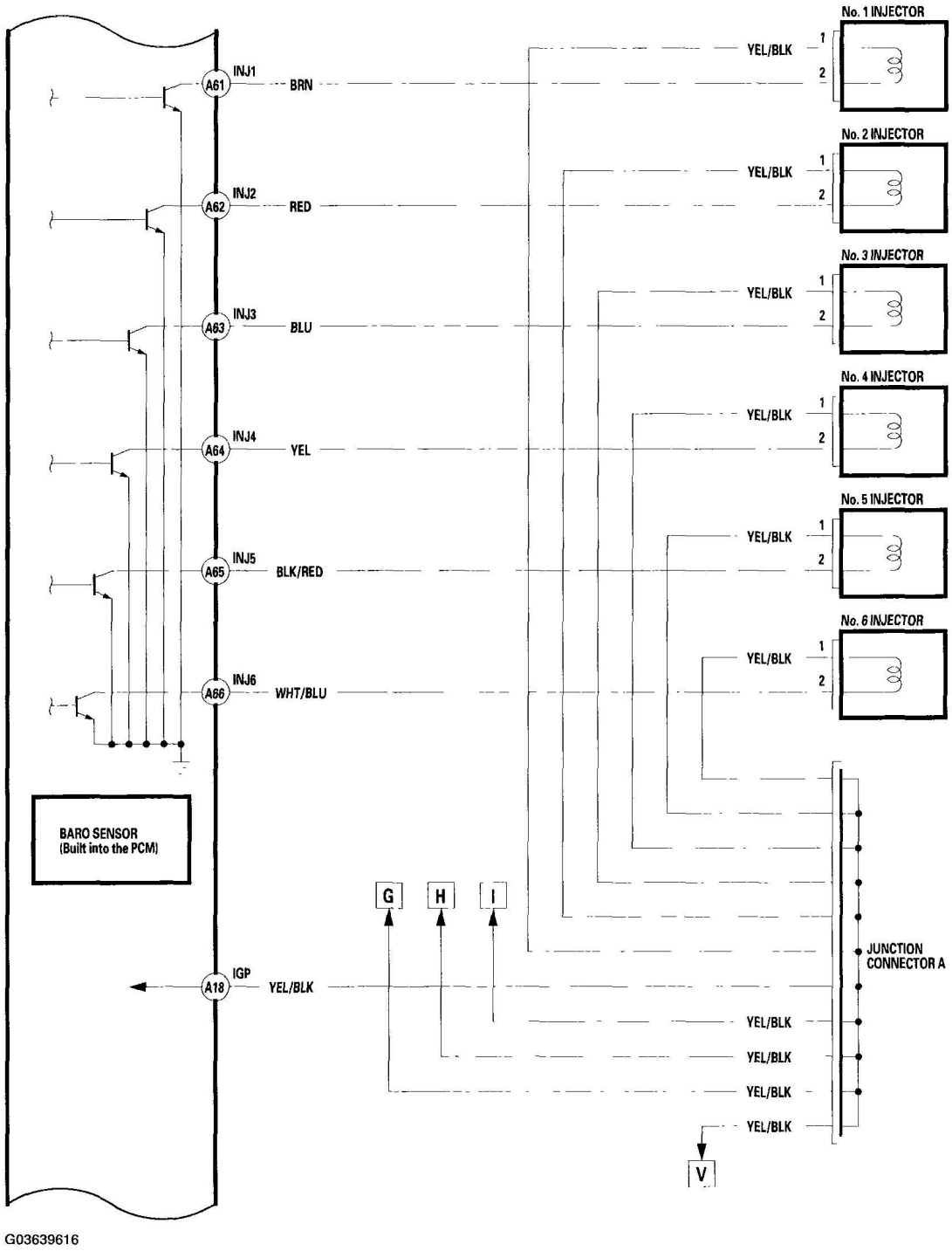

Fig. 53: Identifying PCM Circuit Diagram (2003 Model - 3 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

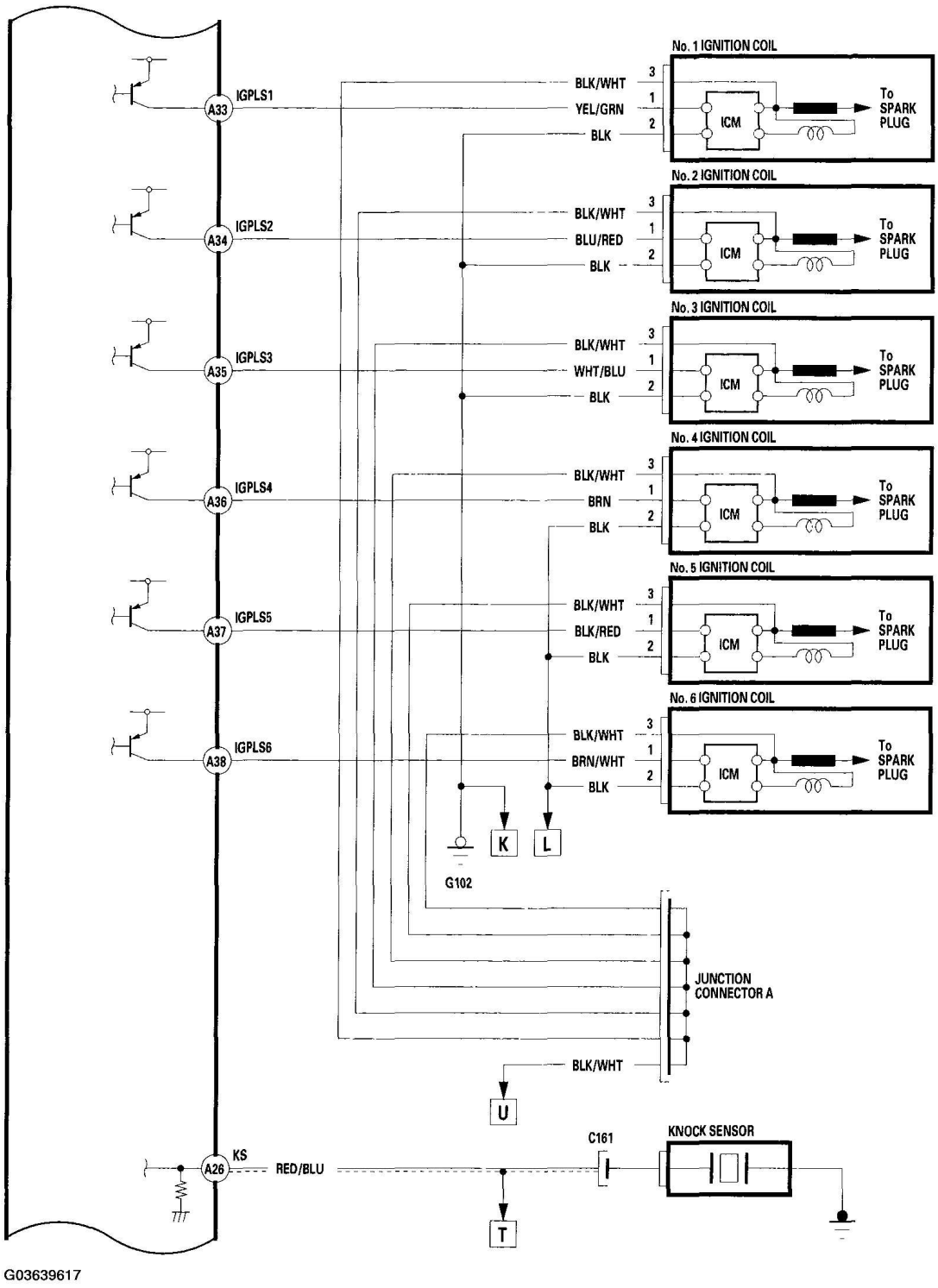

Fig. 54: Identifying PCM Circuit Diagram (2003 Model - 4 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

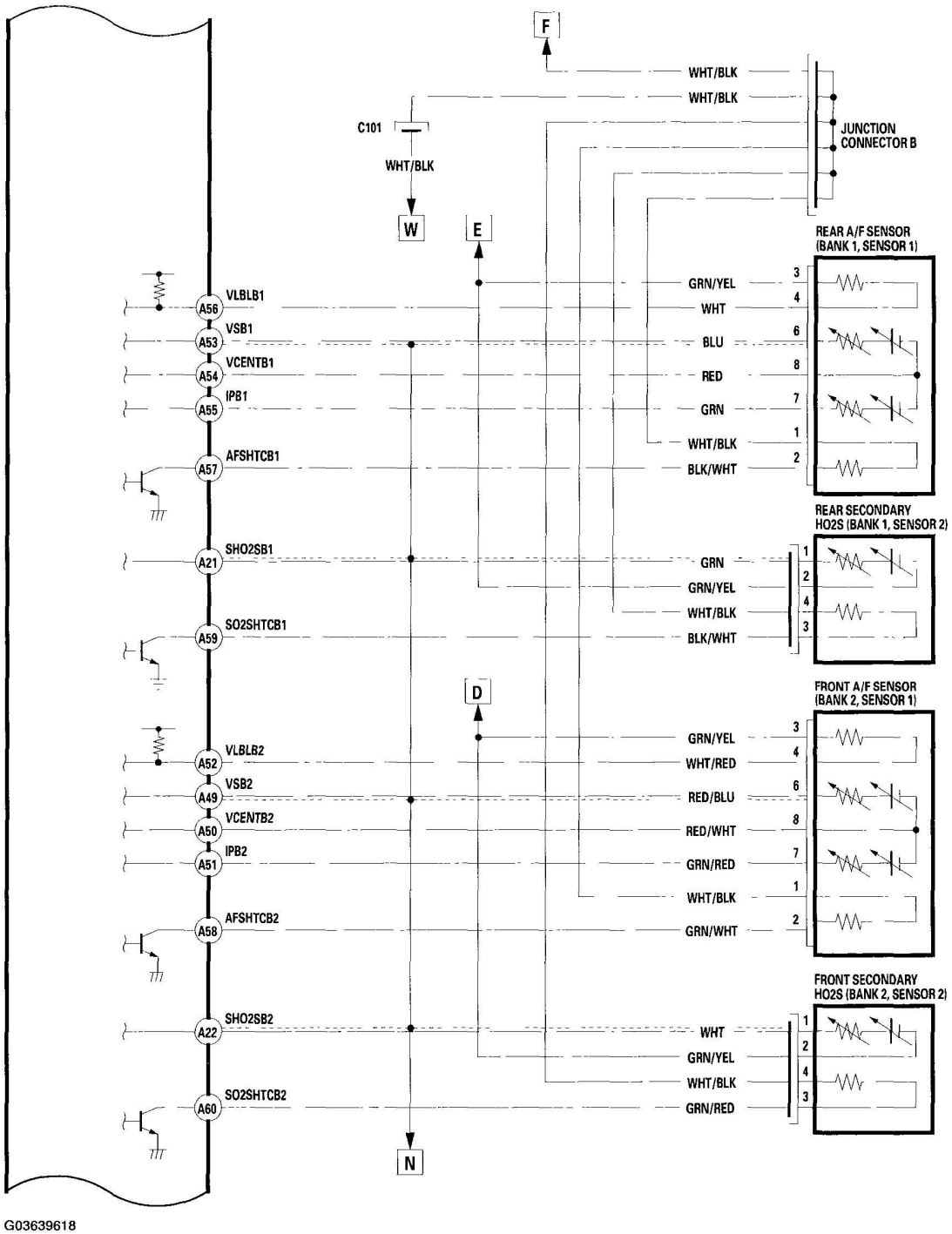

Fig. 55: Identifying PCM Circuit Diagram (2003 Model - 5 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

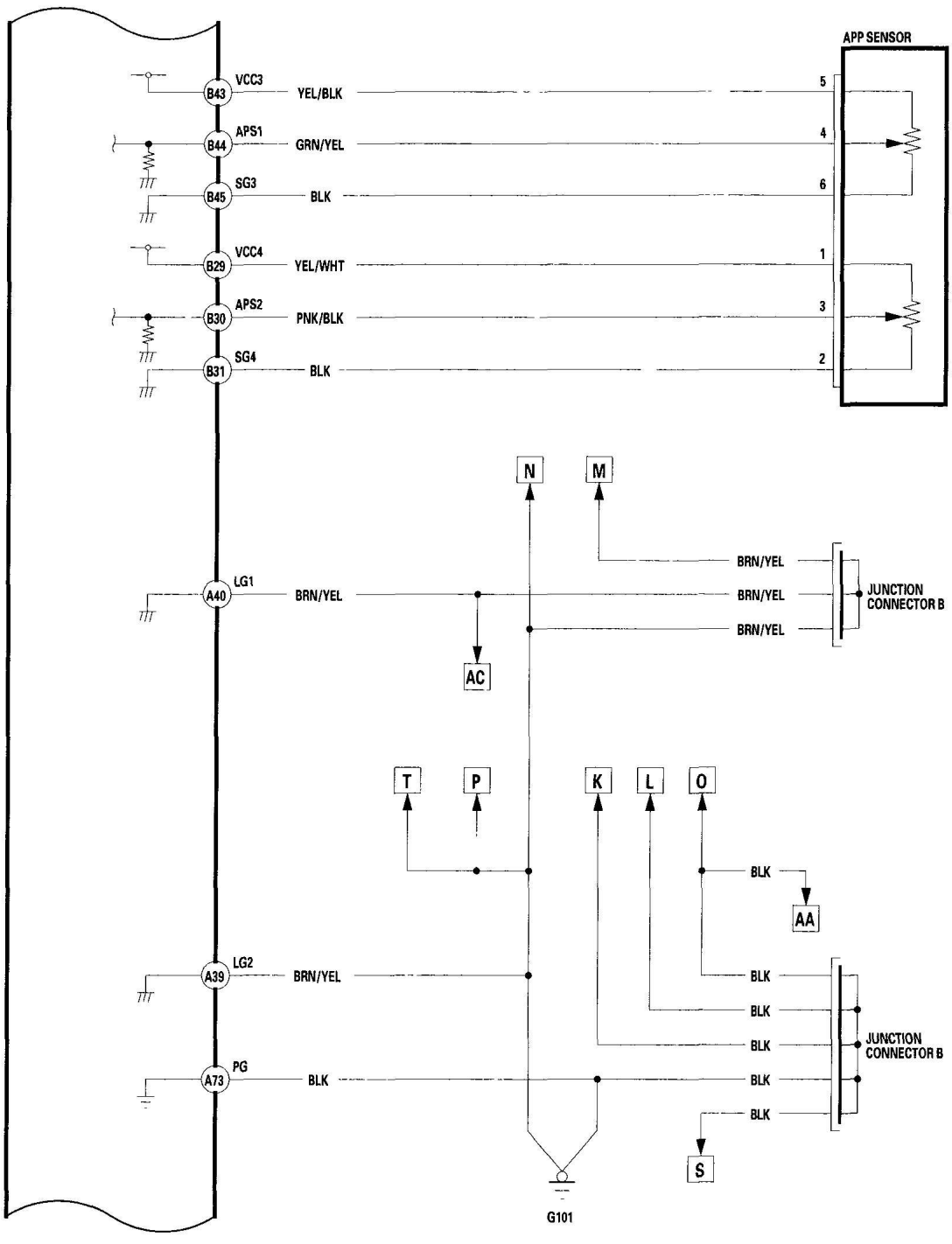

Fig. 56: Identifying PCM Circuit Diagram (2003 Model - 6 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

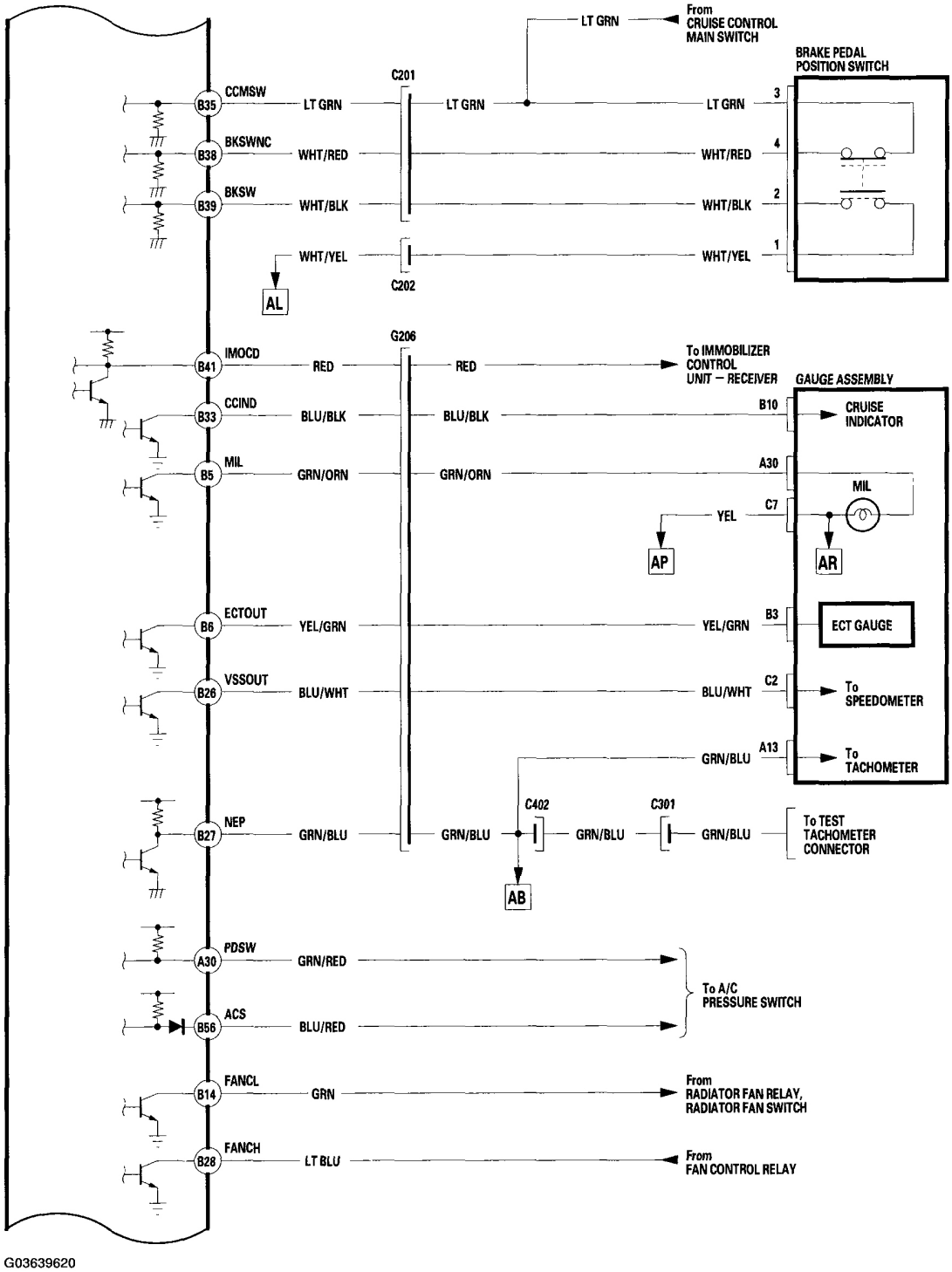

Fig. 57: Identifying PCM Circuit Diagram (2003 Model - 7 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

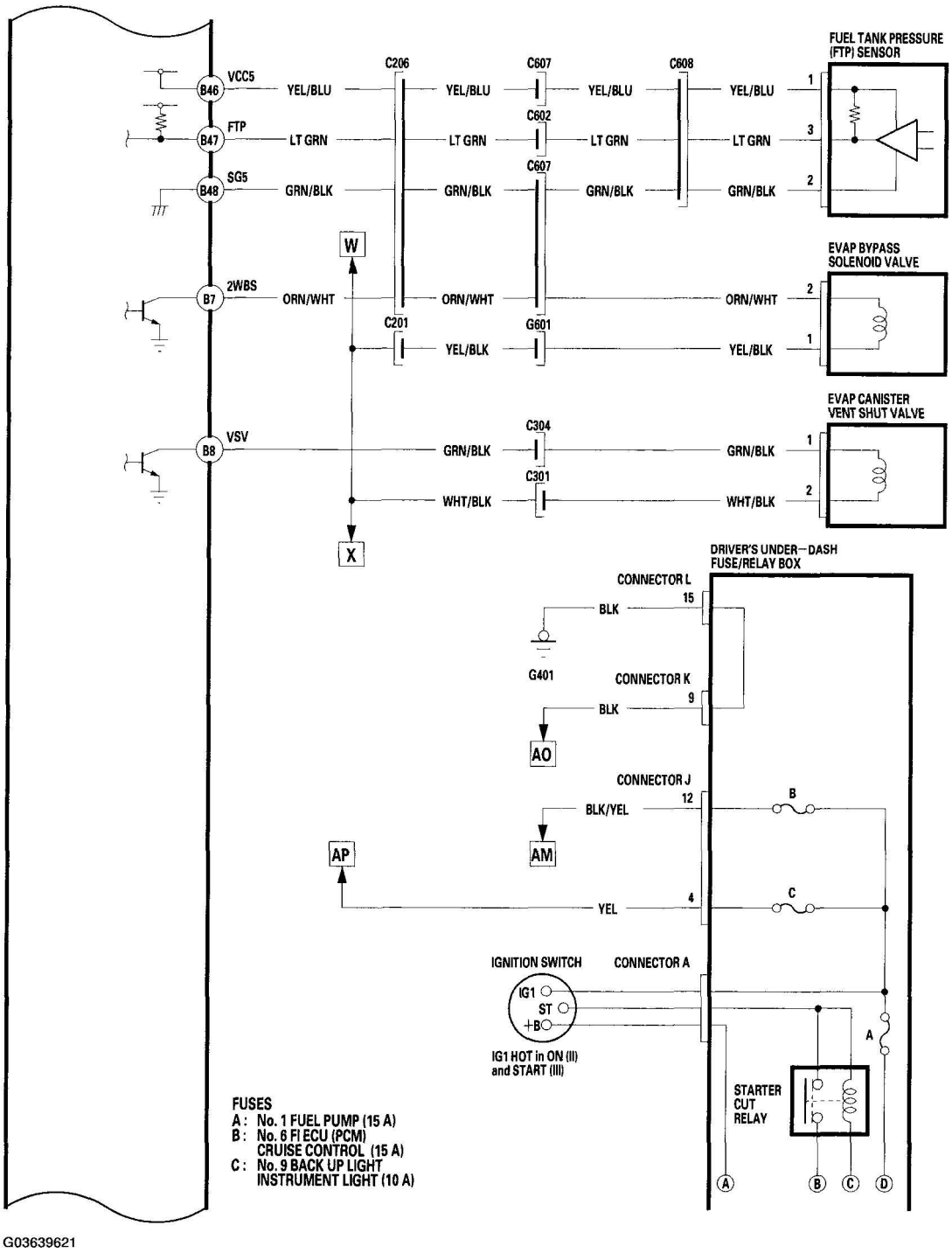

Fig. 58: Identifying PCM Circuit Diagram (2003 Model - 8 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

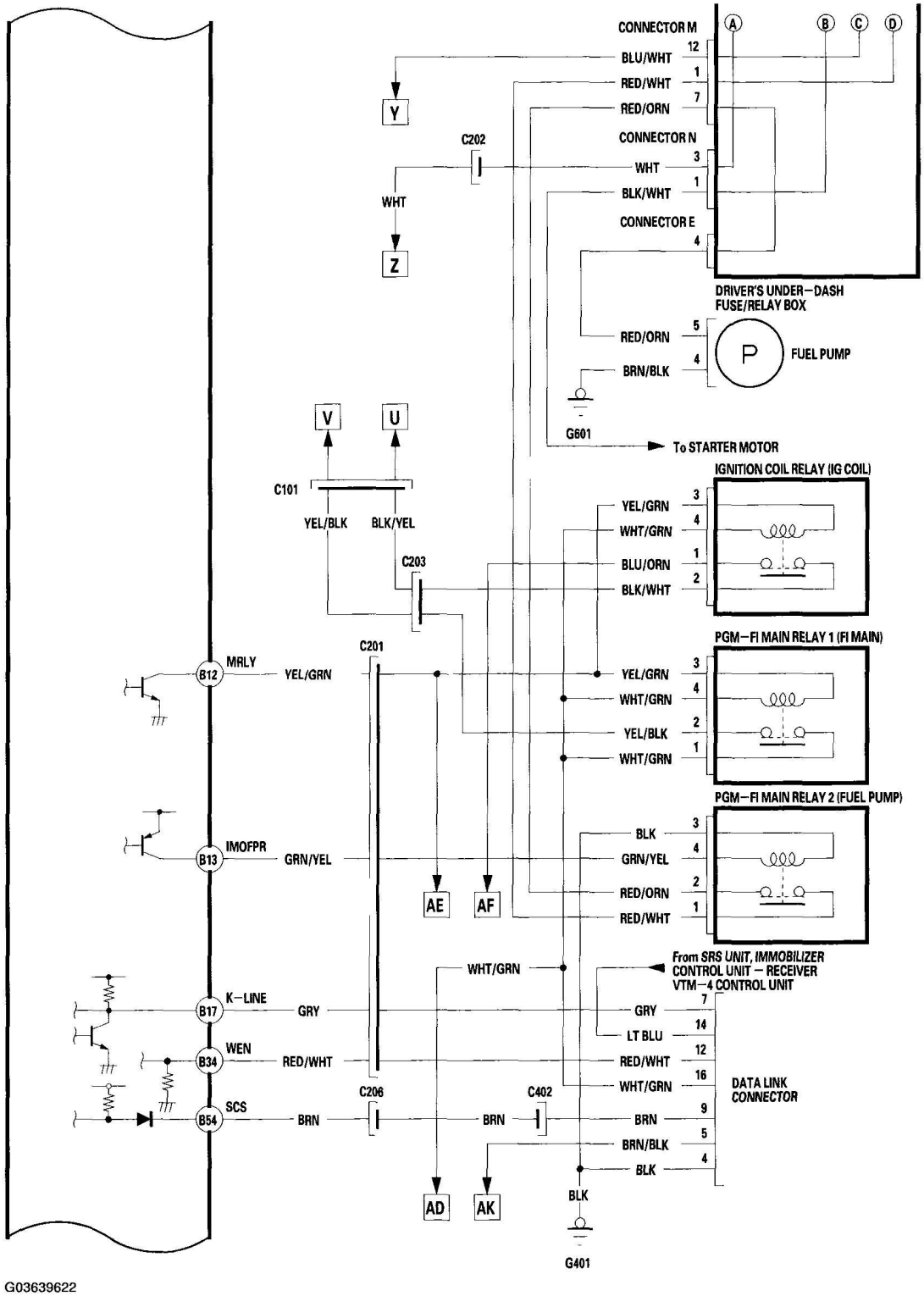

Fig. 59: Identifying PCM Circuit Diagram (2003 Model - 9 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

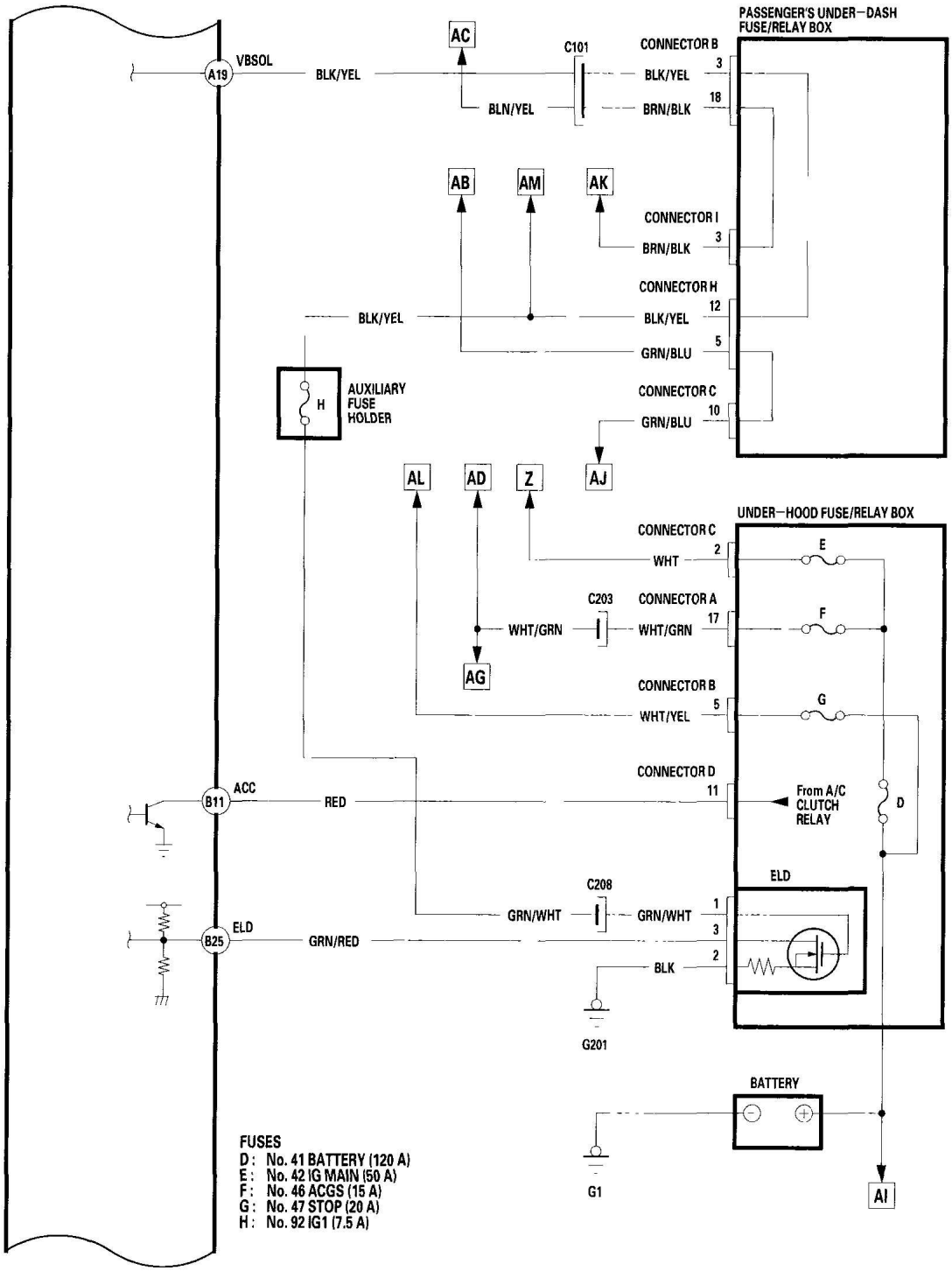

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Fig. 60: Identifying PCM Circuit Diagram (2003 Model - 10 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

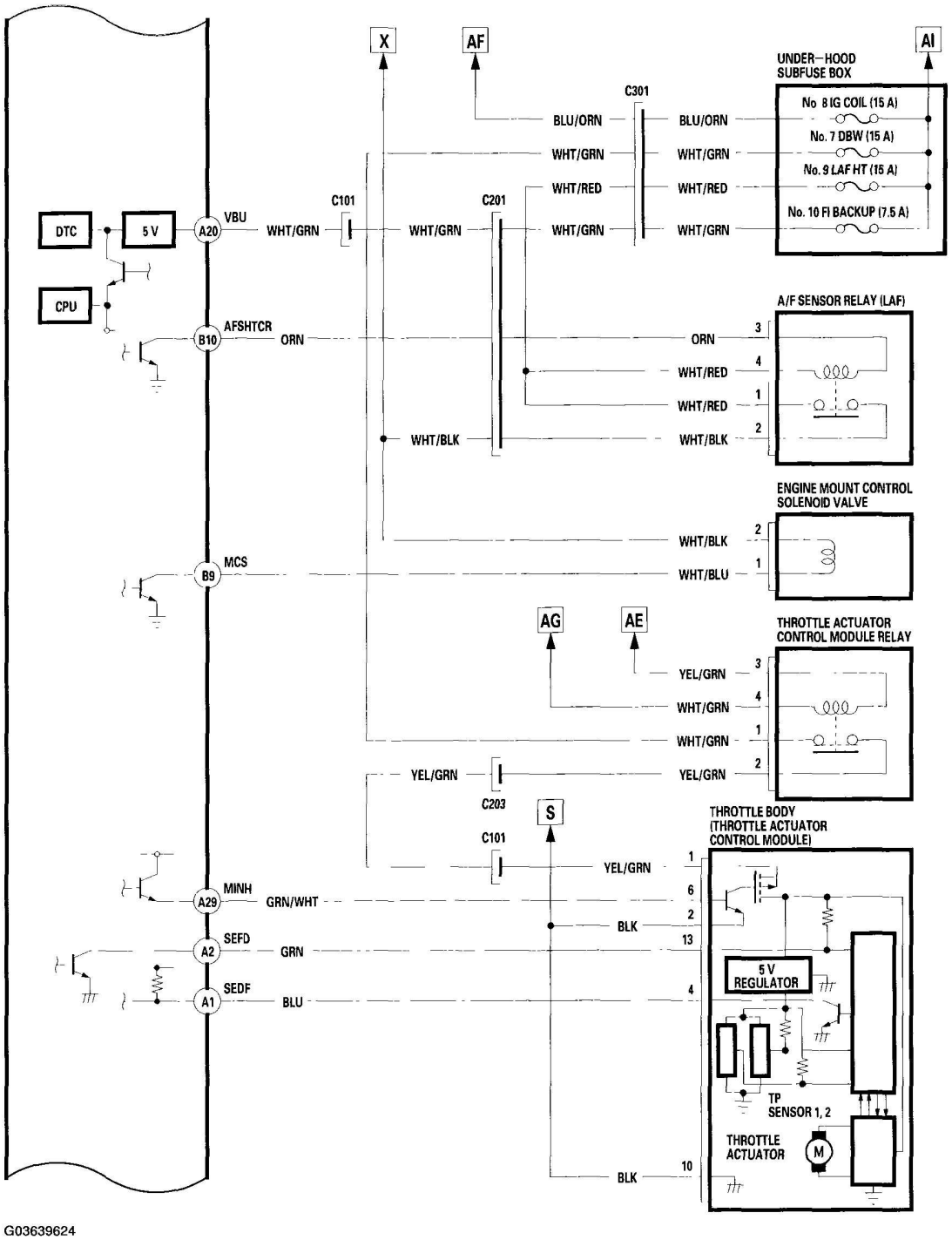

Fig. 61: Identifying PCM Circuit Diagram (2003 Model - 11 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

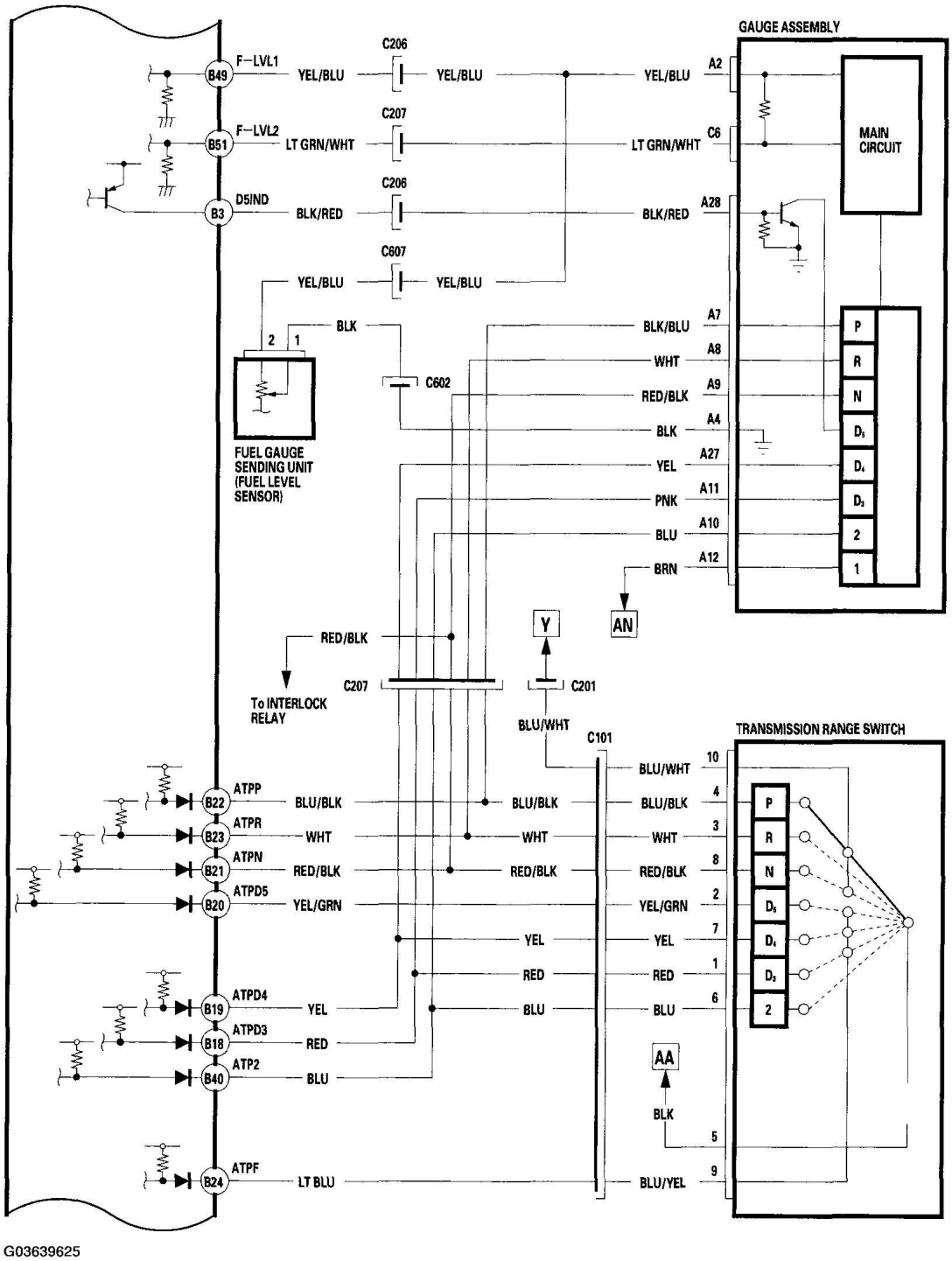

Fig. 62: Identifying PCM Circuit Diagram (2003 Model - 12 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

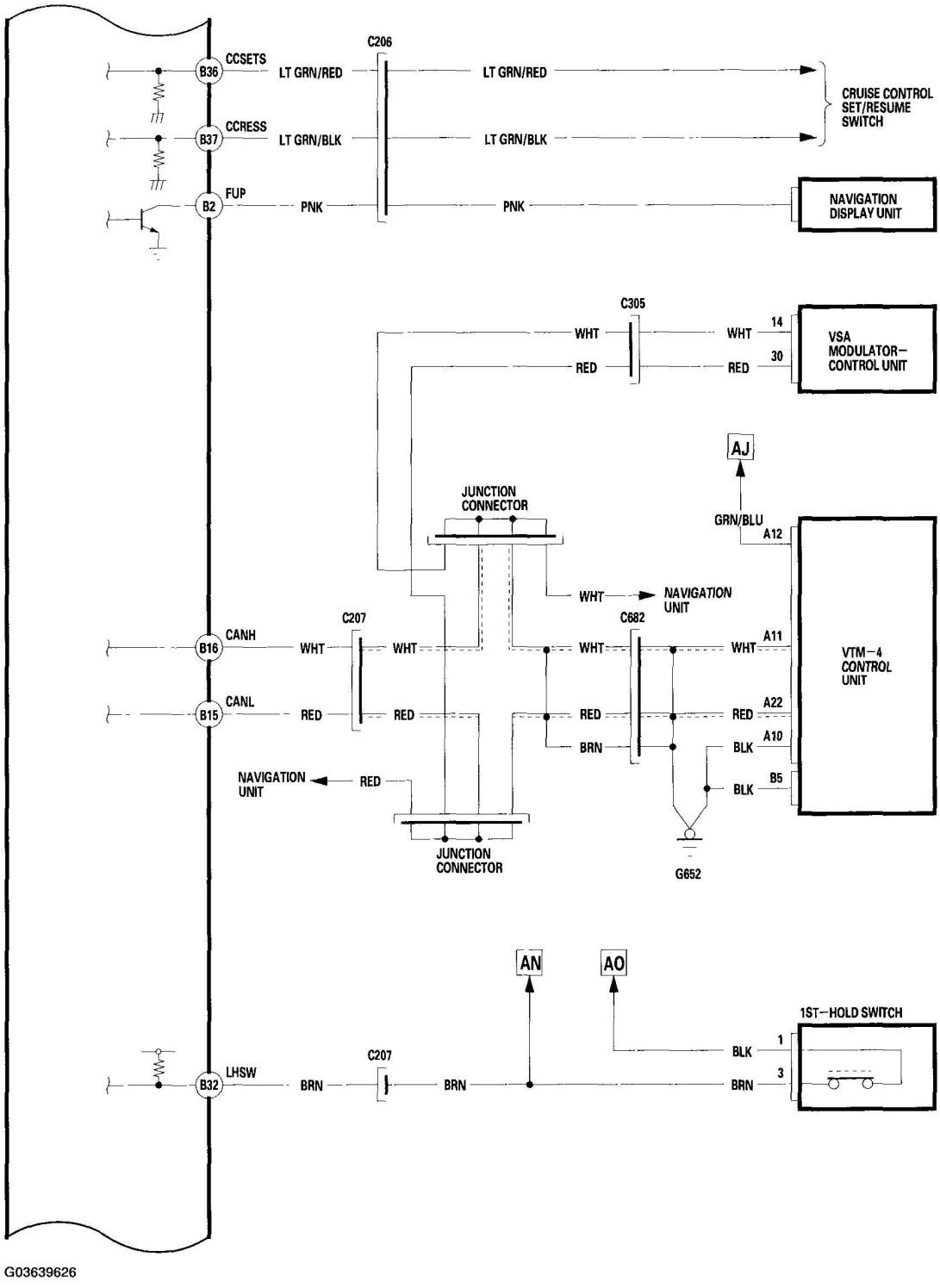

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Fig. 63: Identifying PCM Circuit Diagram (2003 Model - 13 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

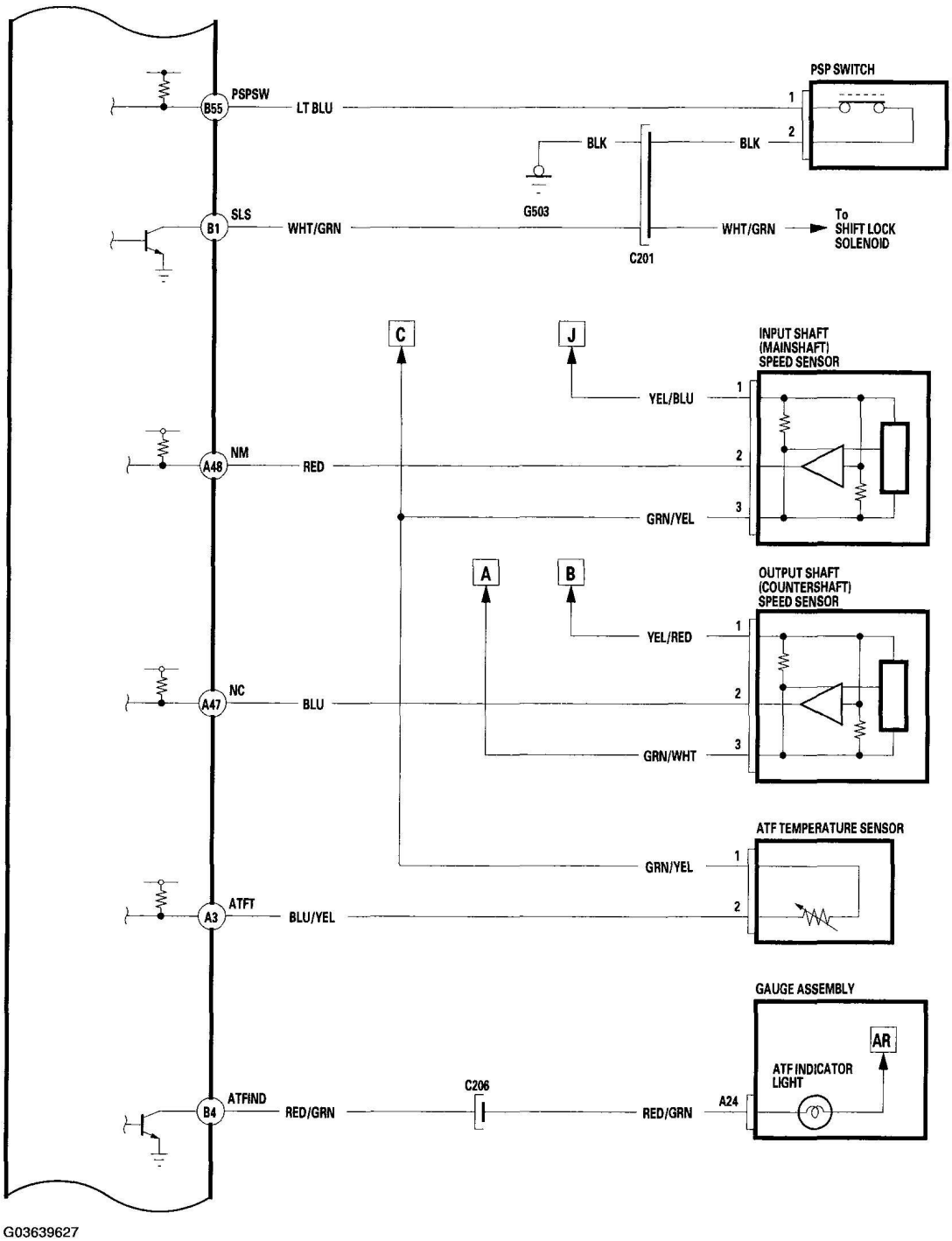

Fig. 64: Identifying PCM Circuit Diagram (2003 Model - 14 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

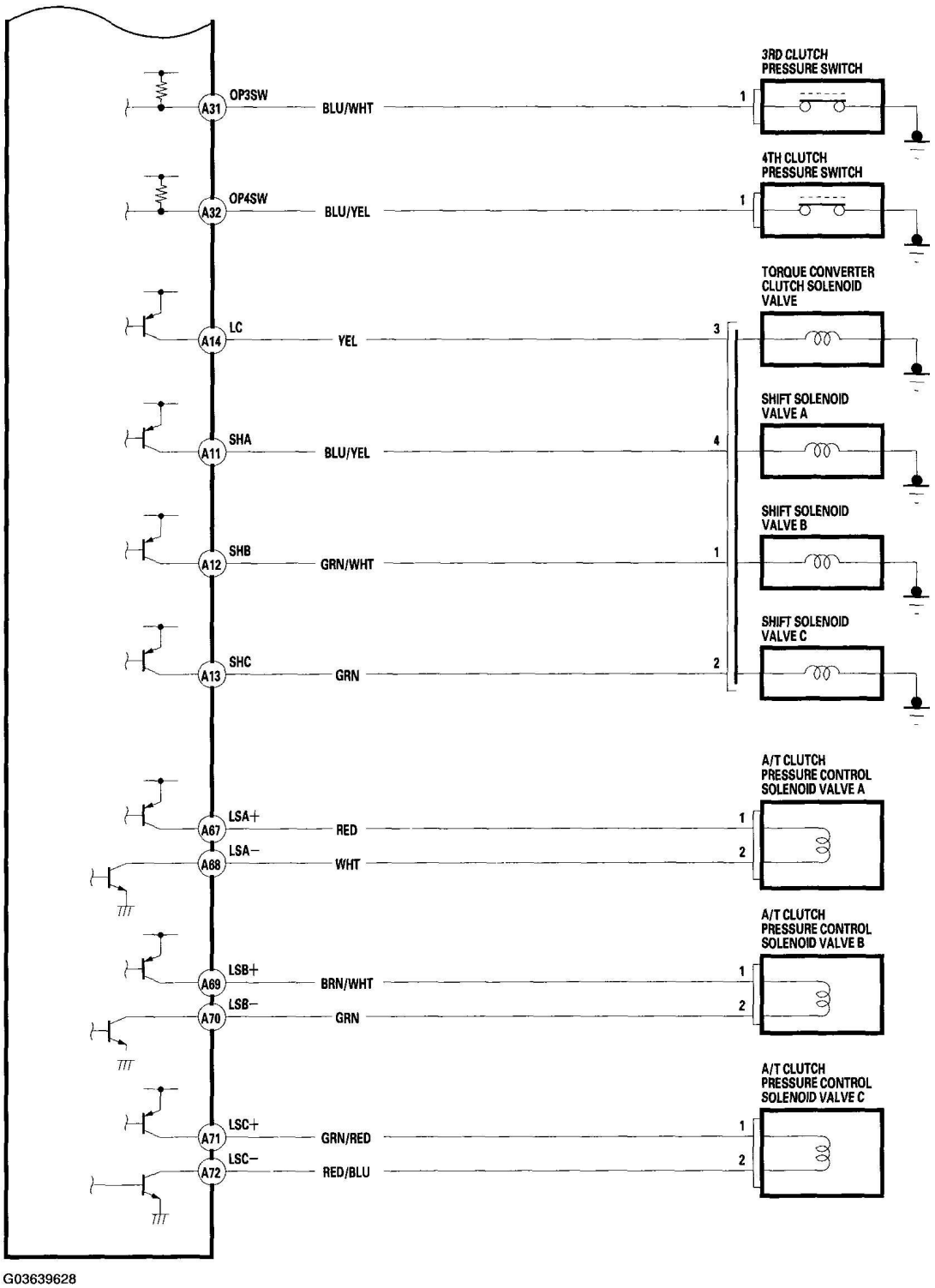

Fig. 65: Identifying PCM Circuit Diagram (2003 Model - 15 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

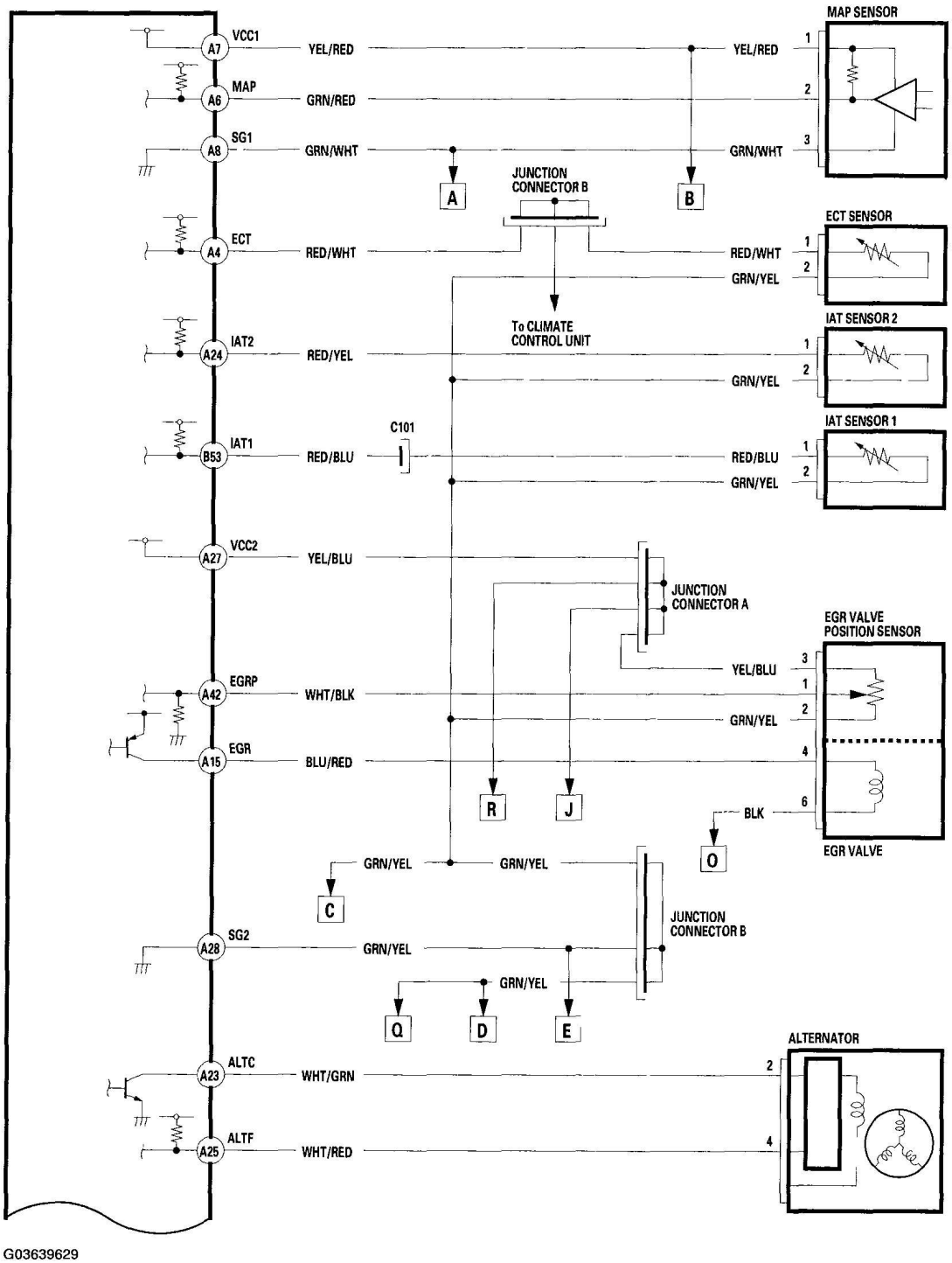

Fig. 66: Identifying PCM Circuit Diagram (2004 Model - 1 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

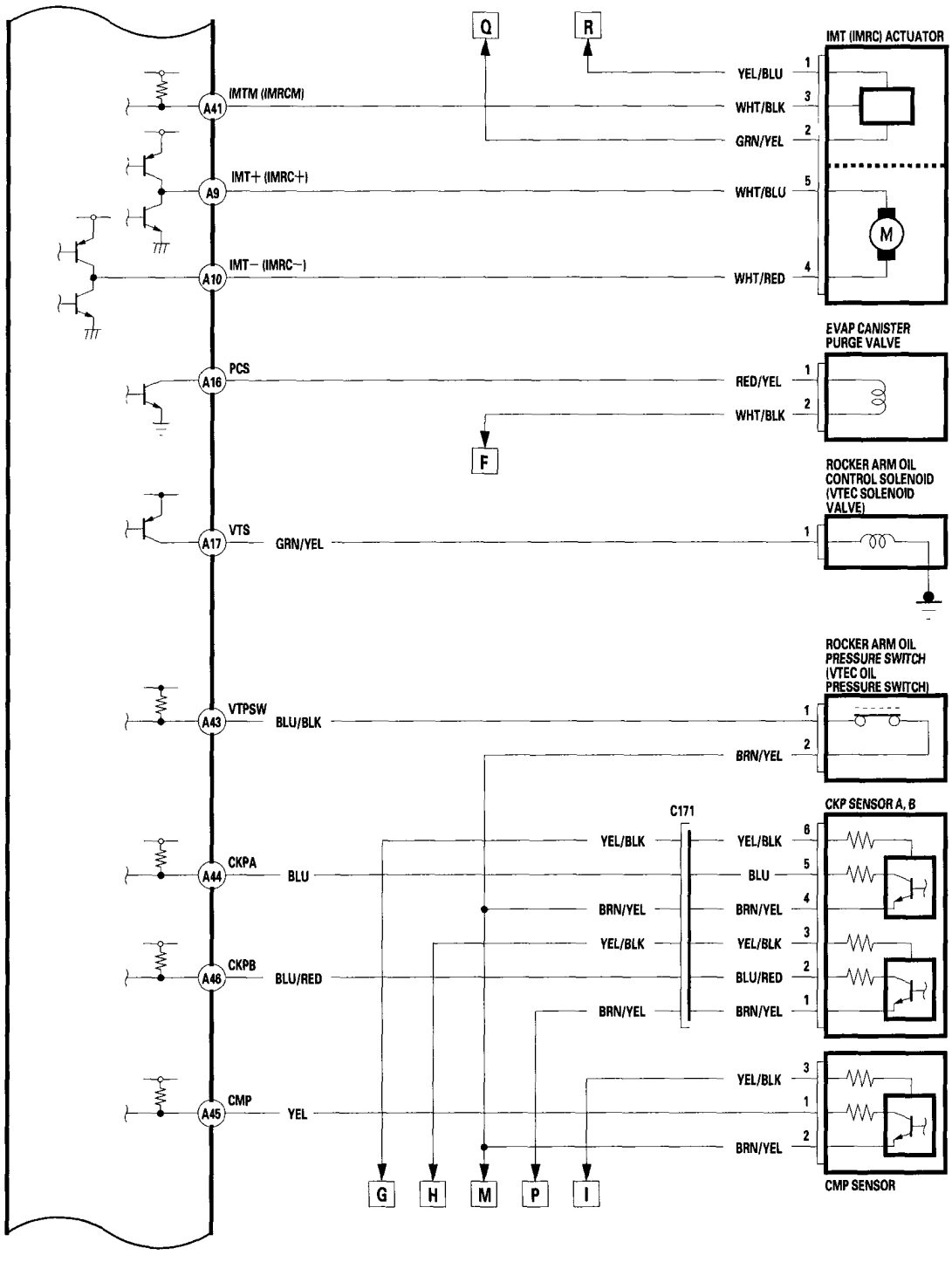

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Fig. 67: Identifying PCM Circuit Diagram (2004 Model - 2 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

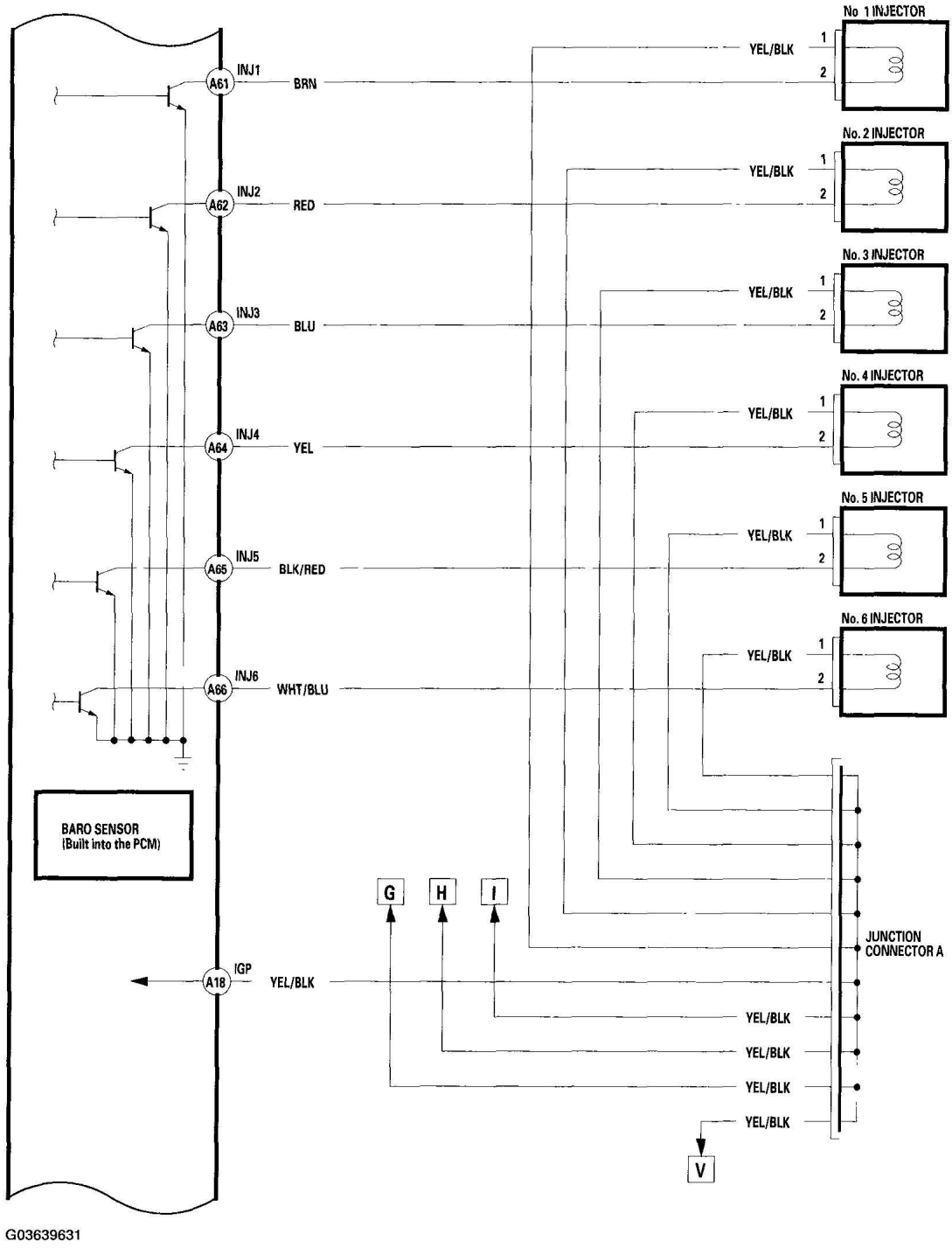

Fig. 68: Identifying PCM Circuit Diagram (2004 Model - 3 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

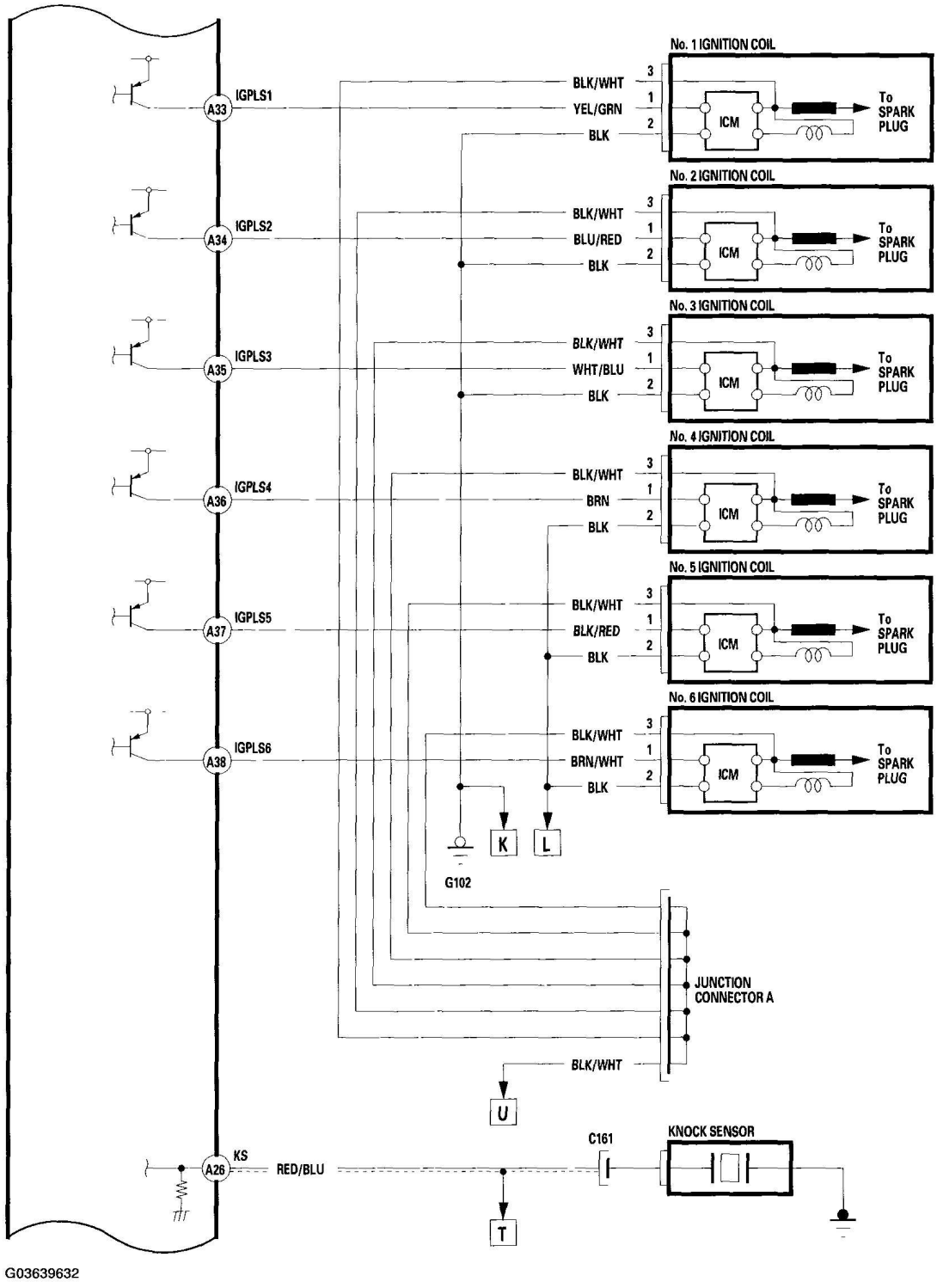

Fig. 69: Identifying PCM Circuit Diagram (2004 Model - 4 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

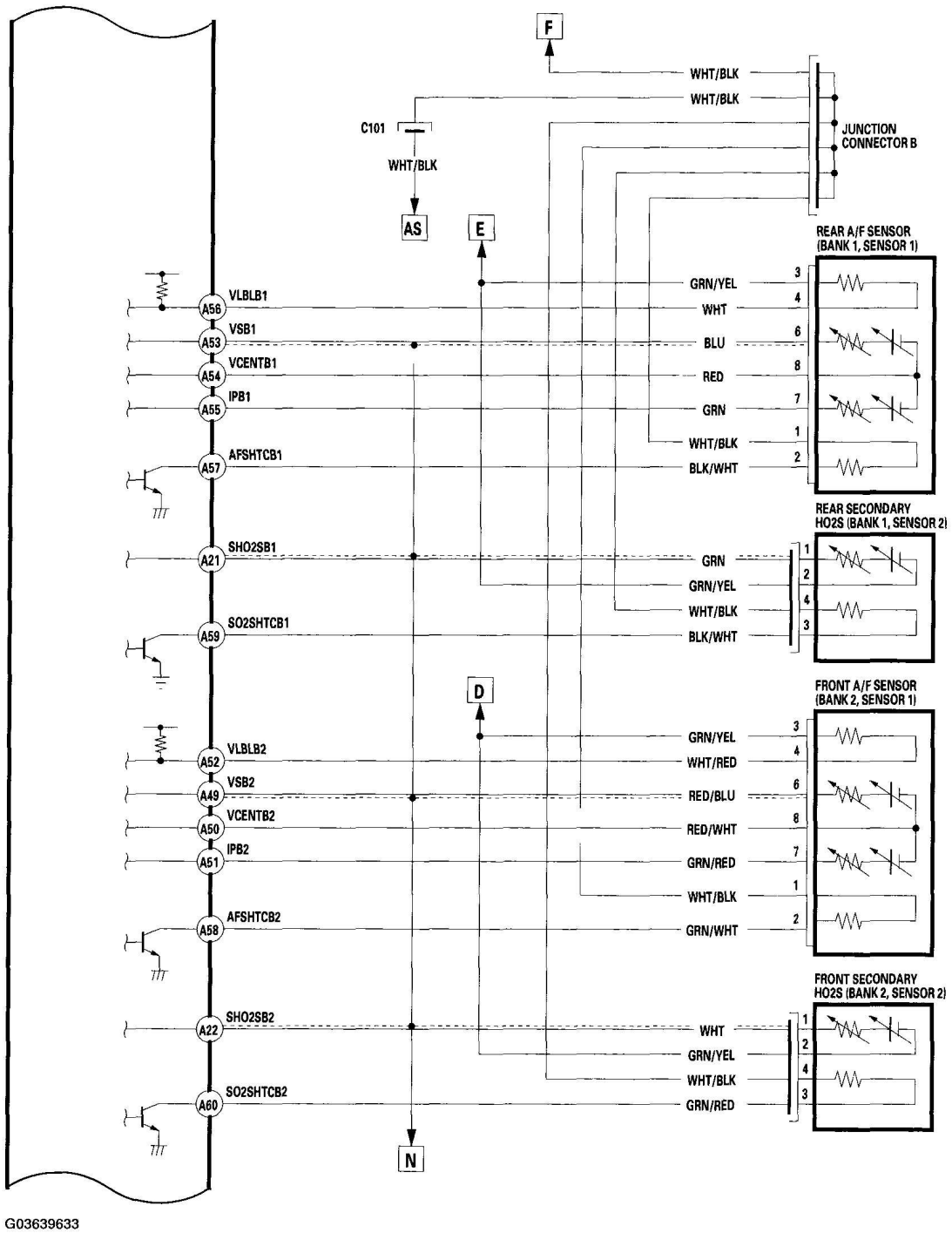

Fig. 70: Identifying PCM Circuit Diagram (2004 Model - 5 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

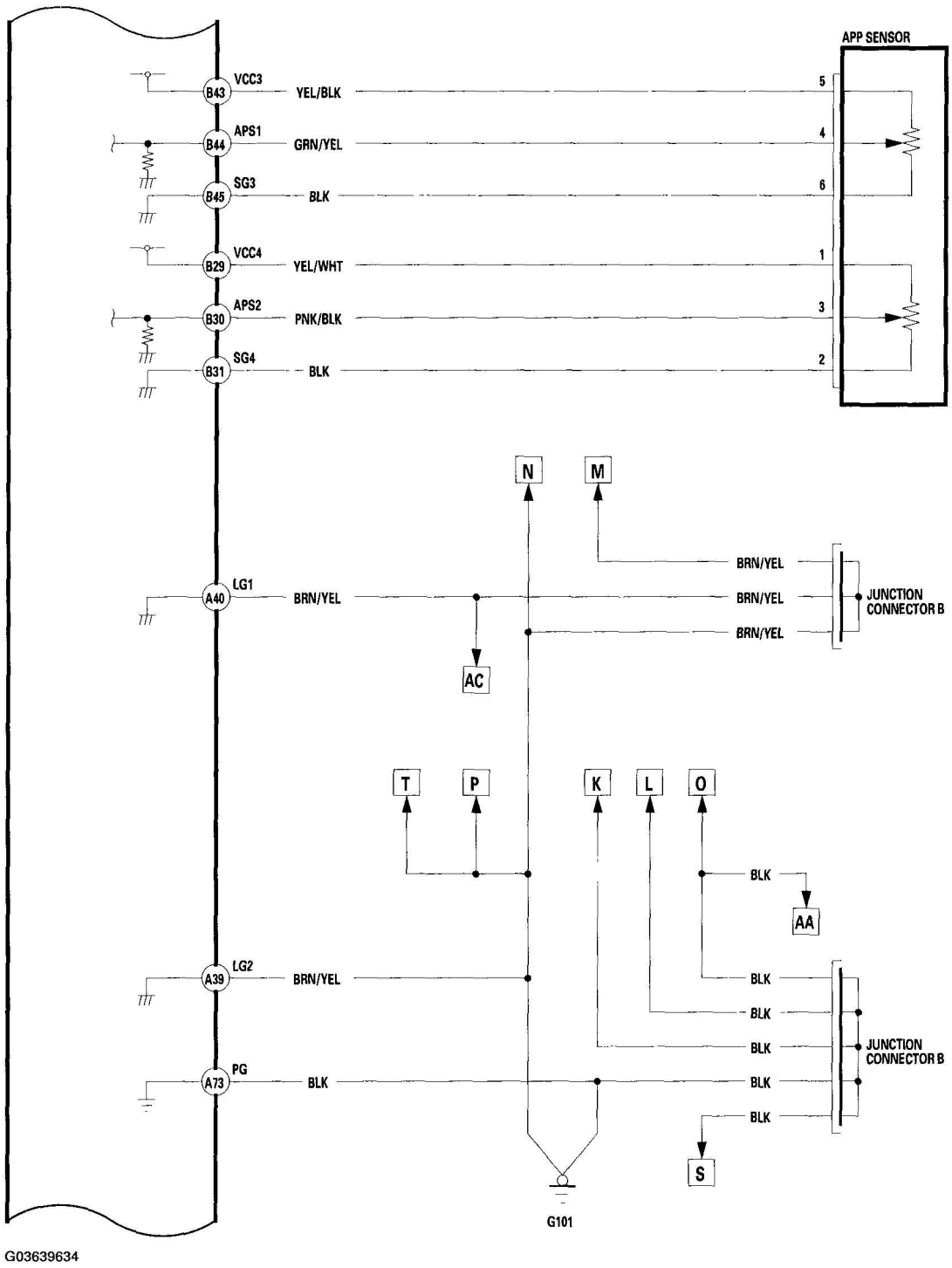

Fig. 71: Identifying PCM Circuit Diagram (2004 Model - 6 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

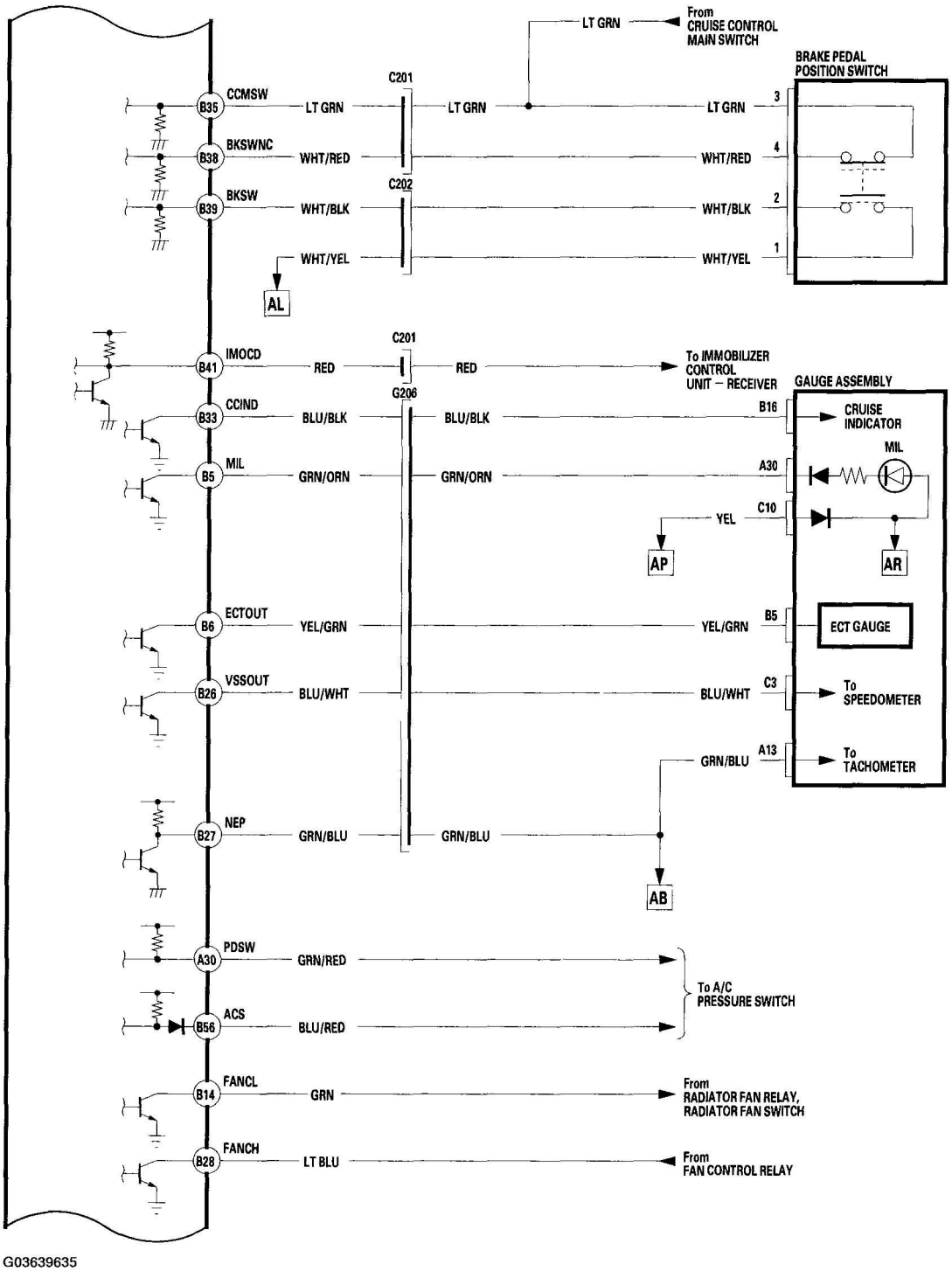

Fig. 72: Identifying PCM Circuit Diagram (2004 Model - 7 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

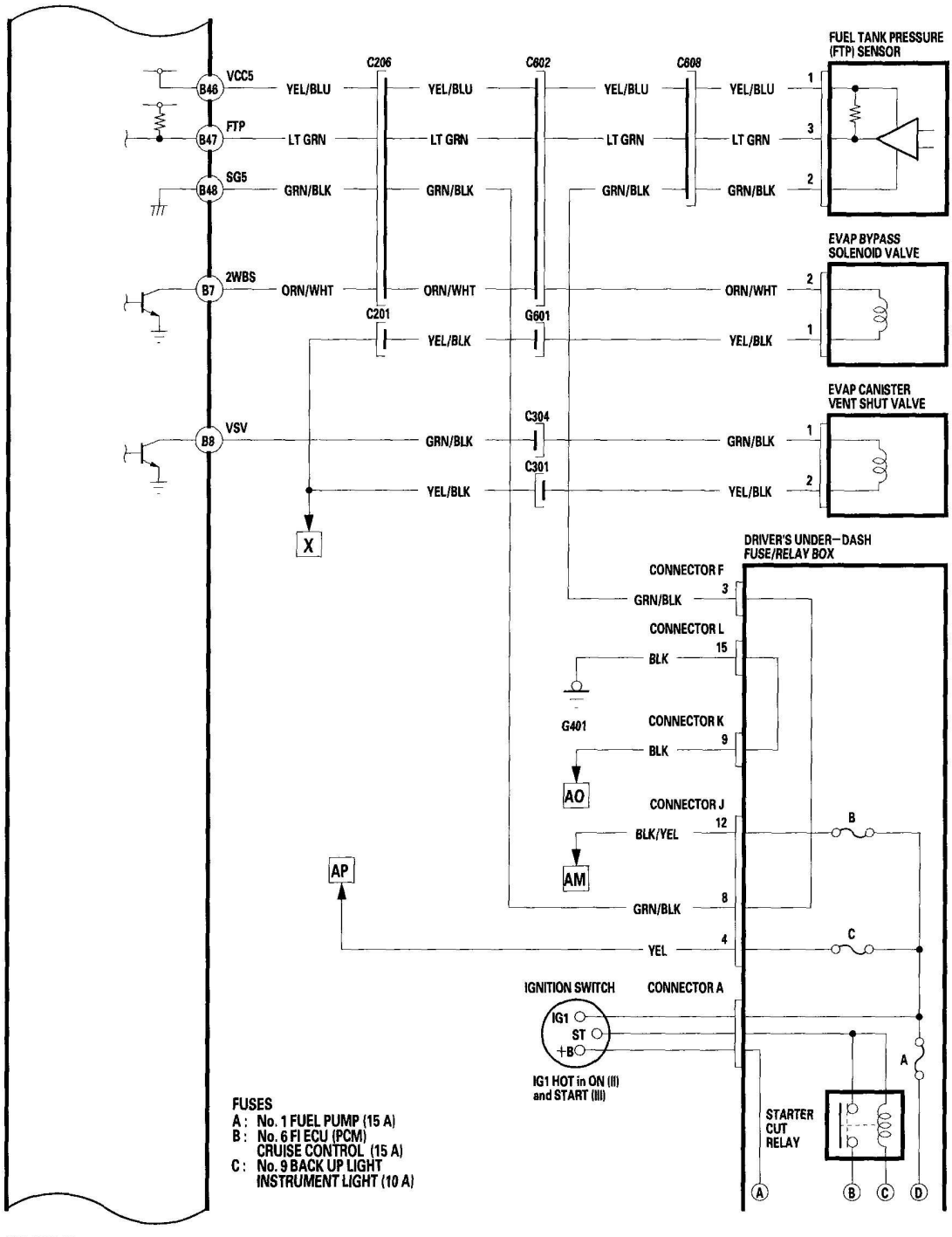

Fig. 73: Identifying PCM Circuit Diagram (2004 Model - 8 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

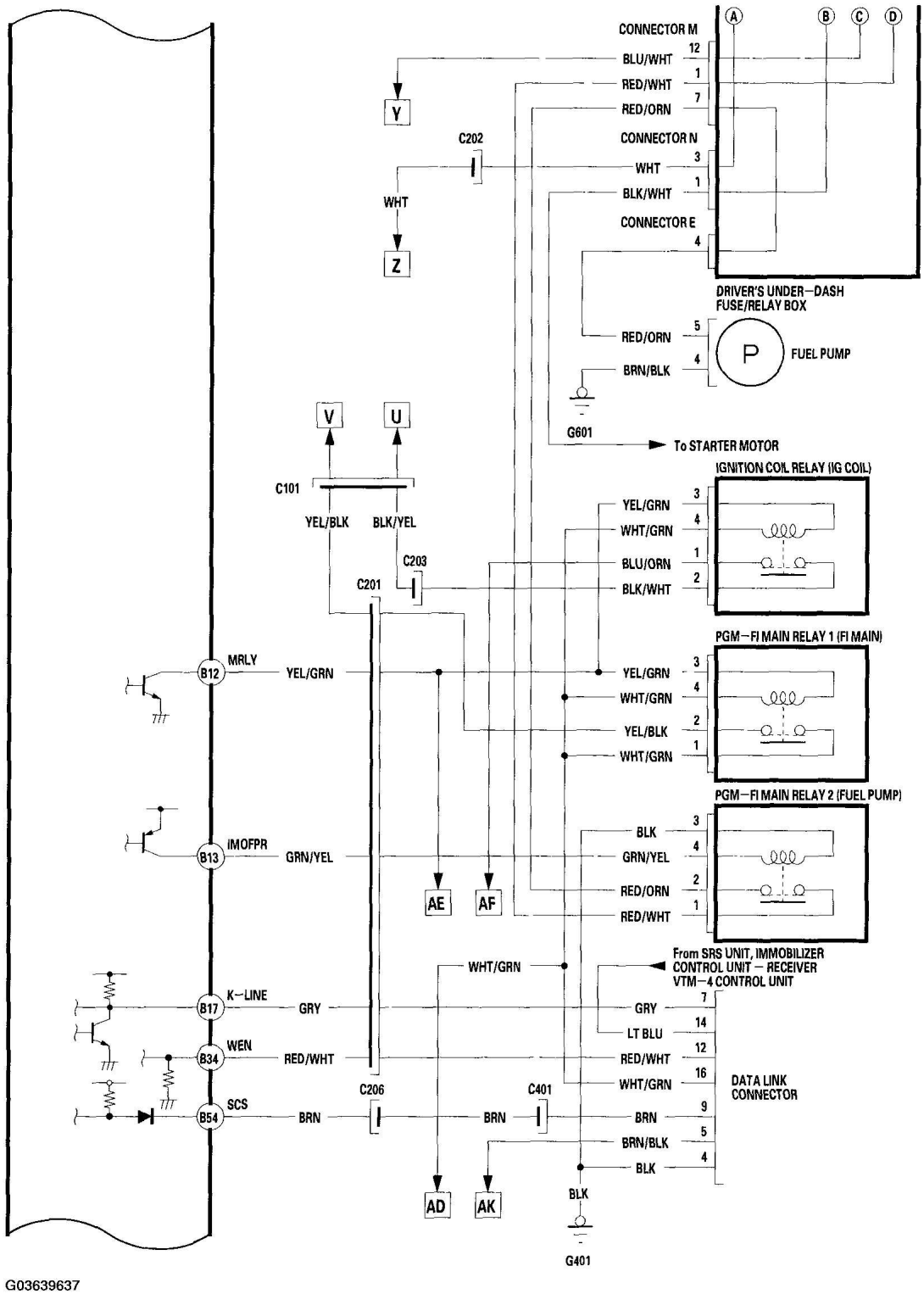

Fig. 74: Identifying PCM Circuit Diagram (2004 Model - 9 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

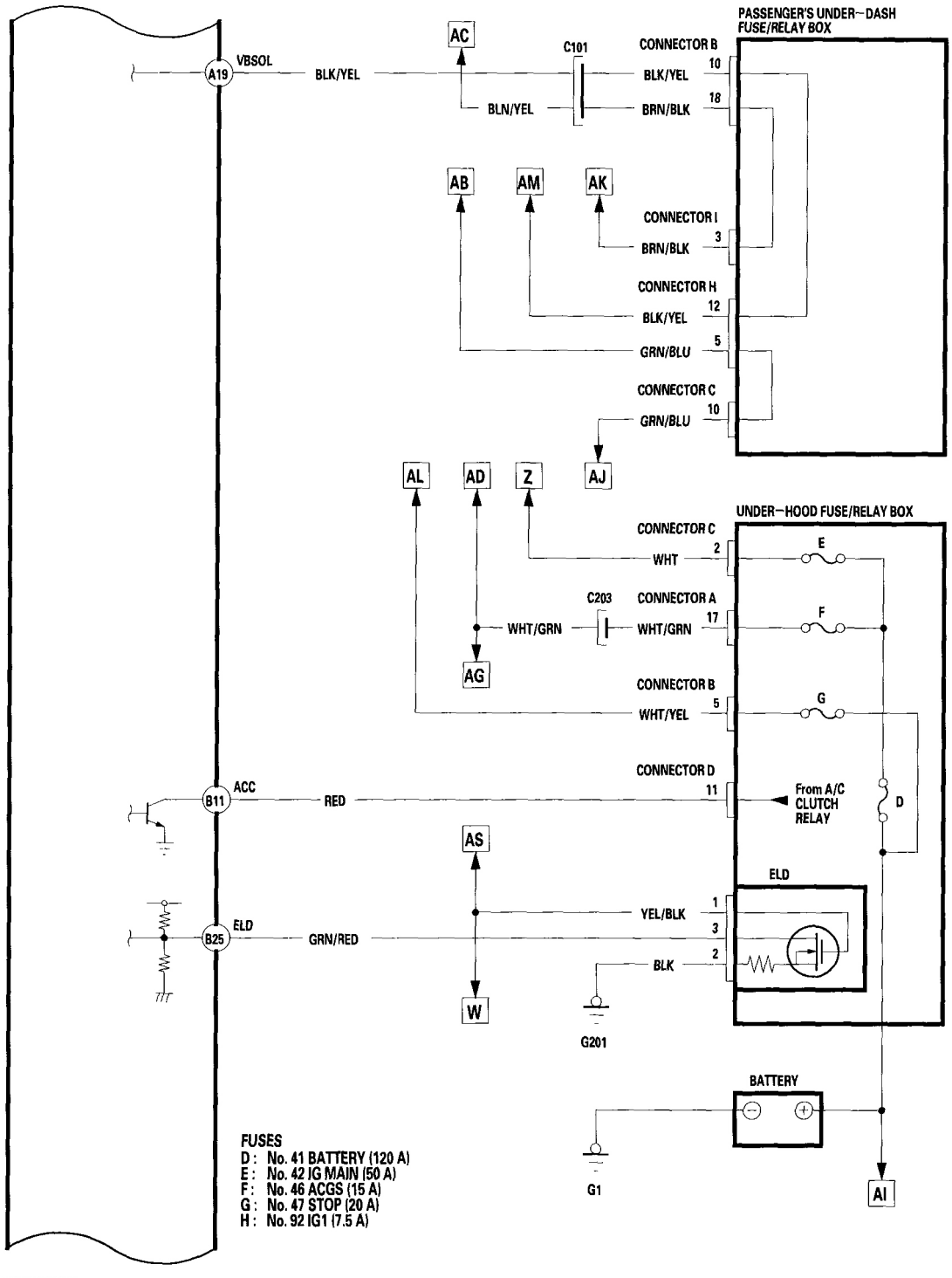

Fig. 75: Identifying PCM Circuit Diagram (2004 Model - 10 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

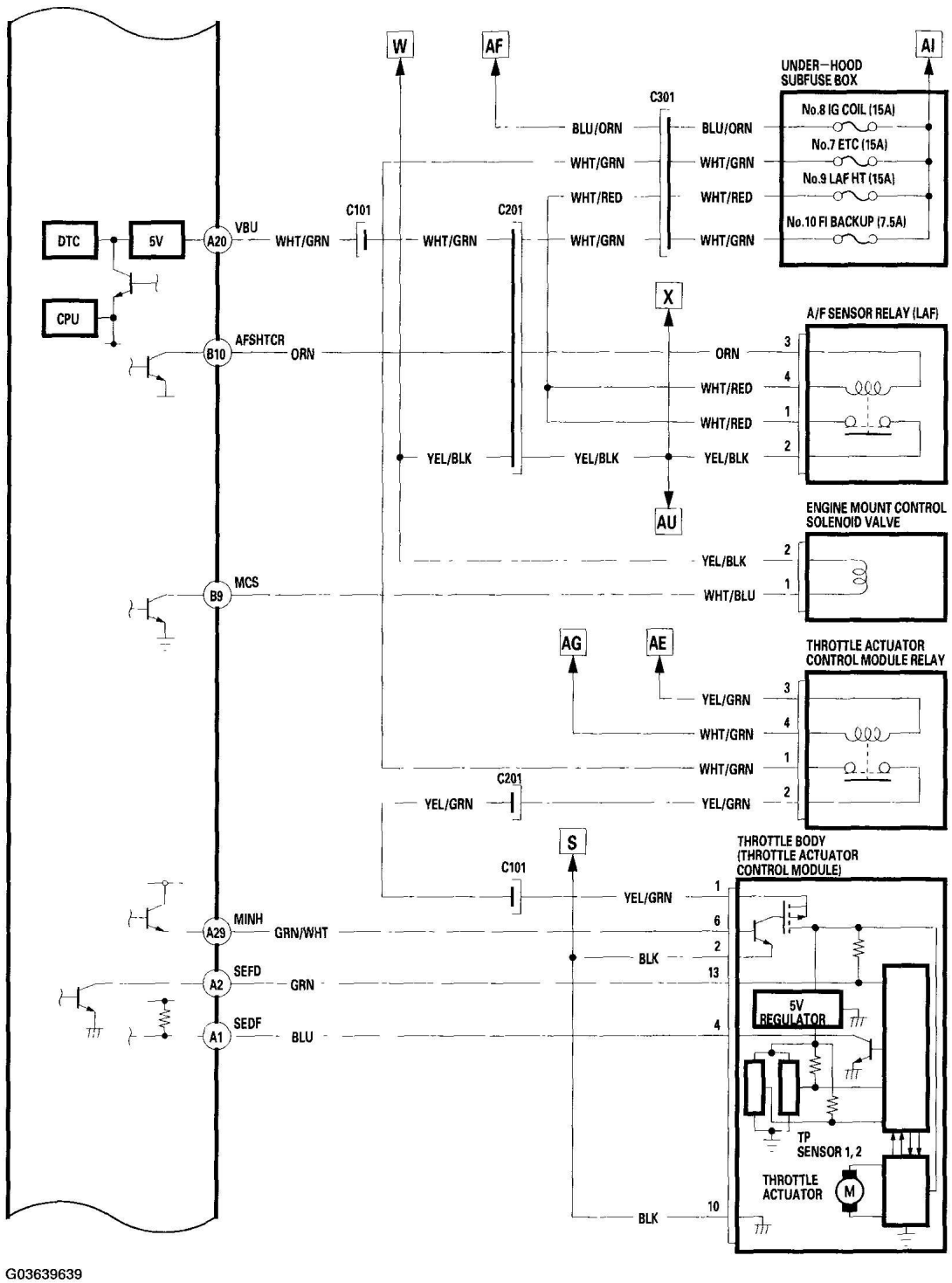

Fig. 76: Identifying PCM Circuit Diagram (2004 Model - 11 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

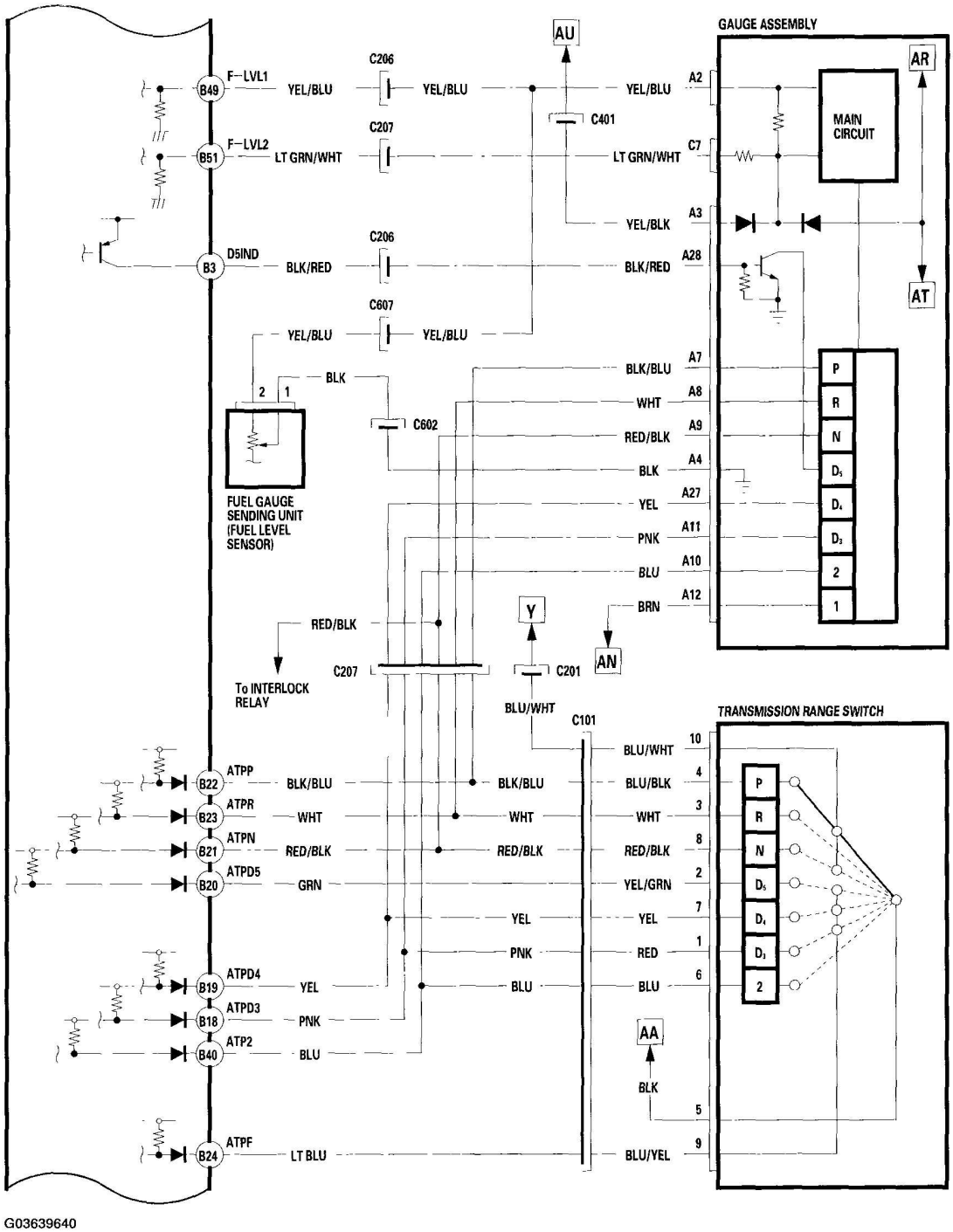

Fig. 77: Identifying PCM Circuit Diagram (2004 Model - 12 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

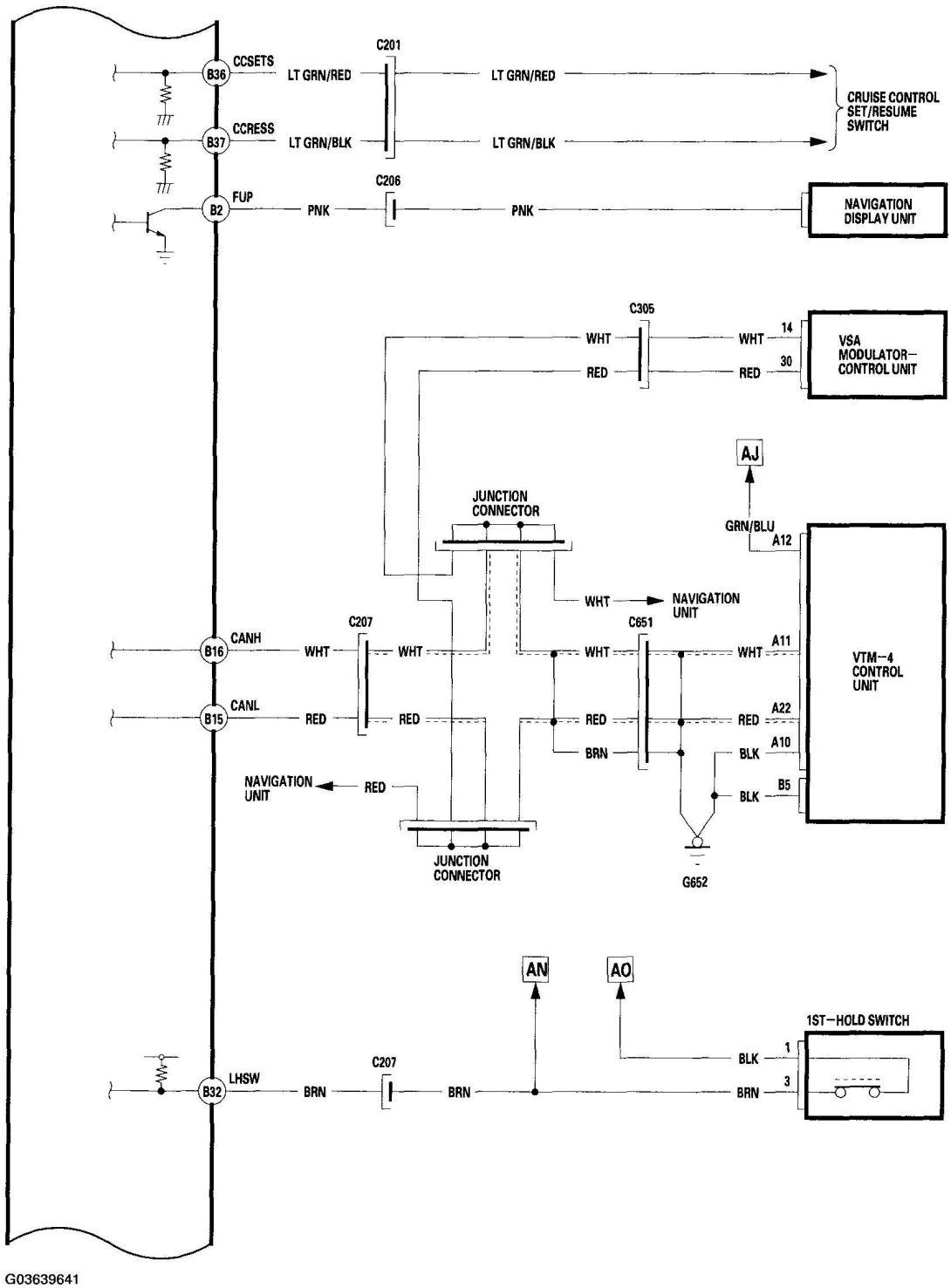

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Fig. 78: Identifying PCM Circuit Diagram (2004 Model - 13 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

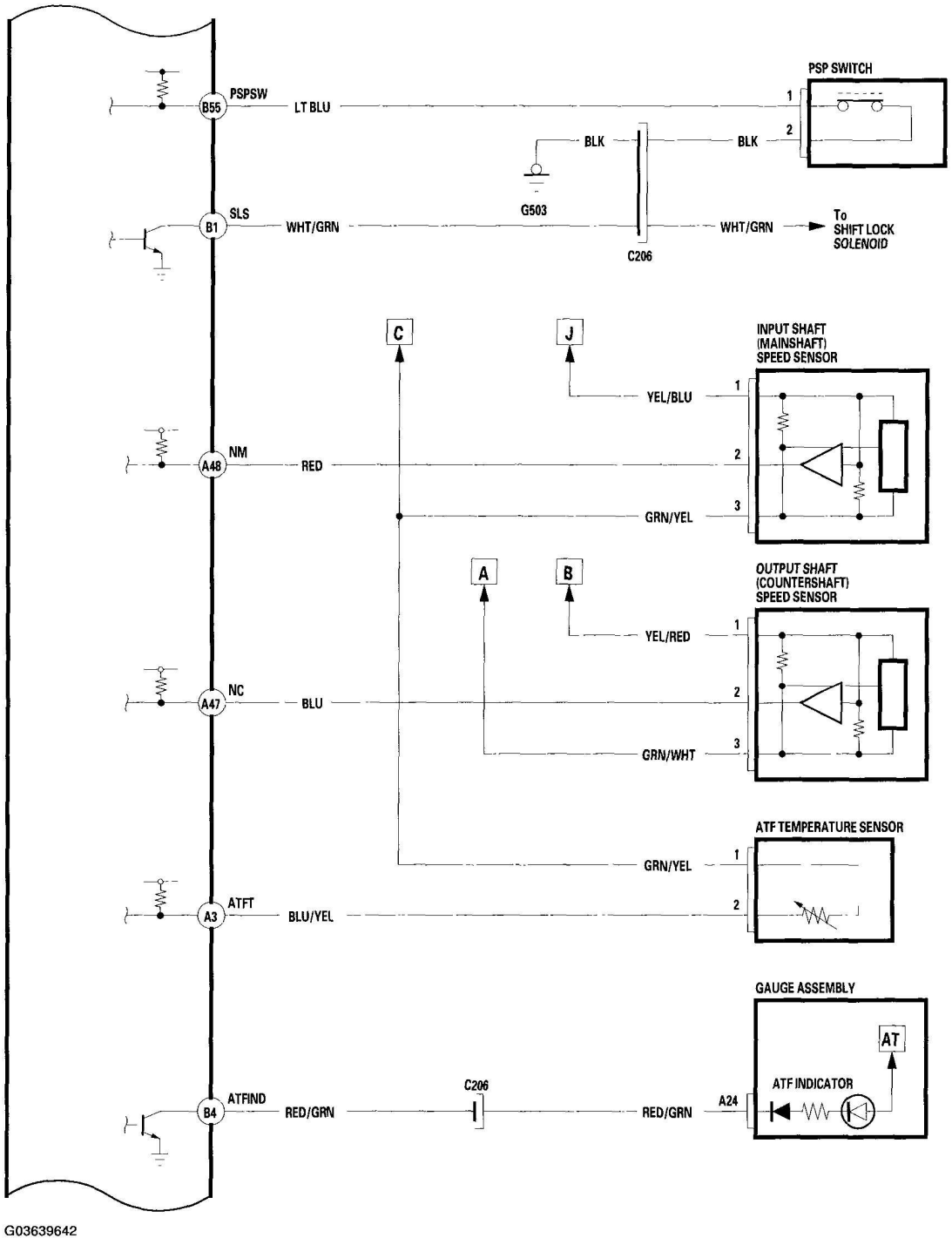

Fig. 79: Identifying PCM Circuit Diagram (2004 Model - 14 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

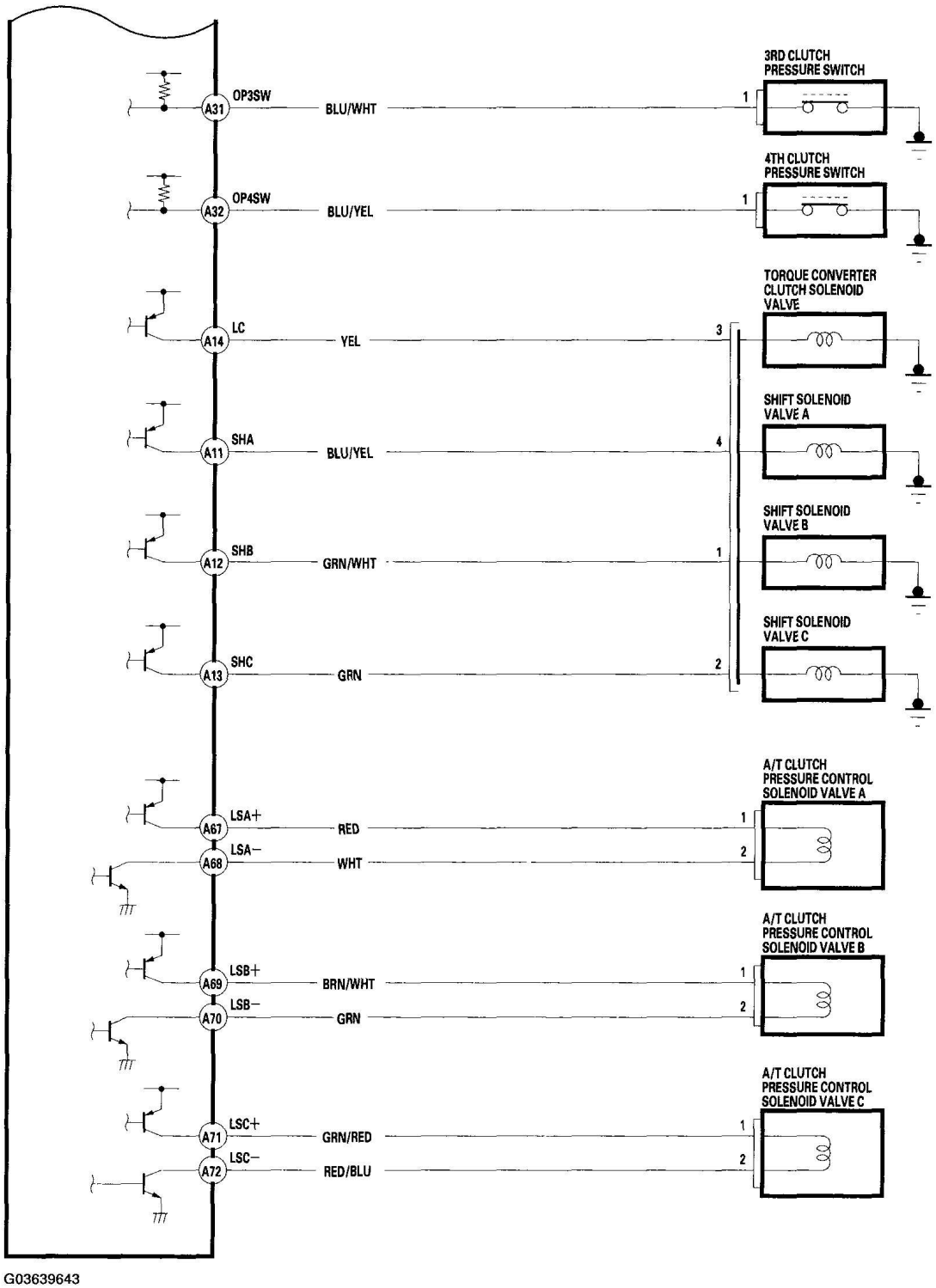

Fig. 80: Identifying PCM Circuit Diagram (2004 Model - 15 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

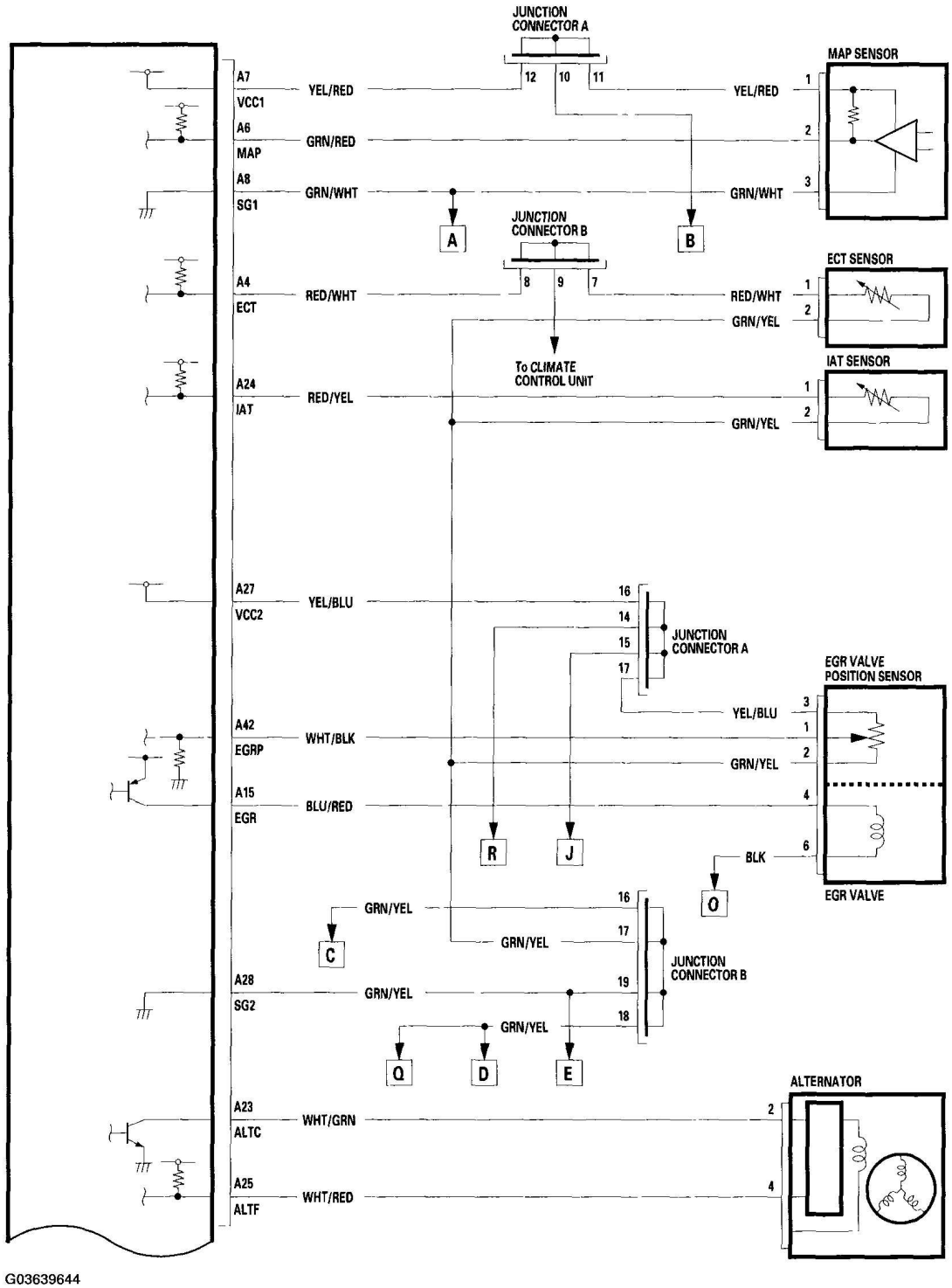

Fig. 81: Identifying PCM Circuit Diagram (2005-06 Models - 1 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

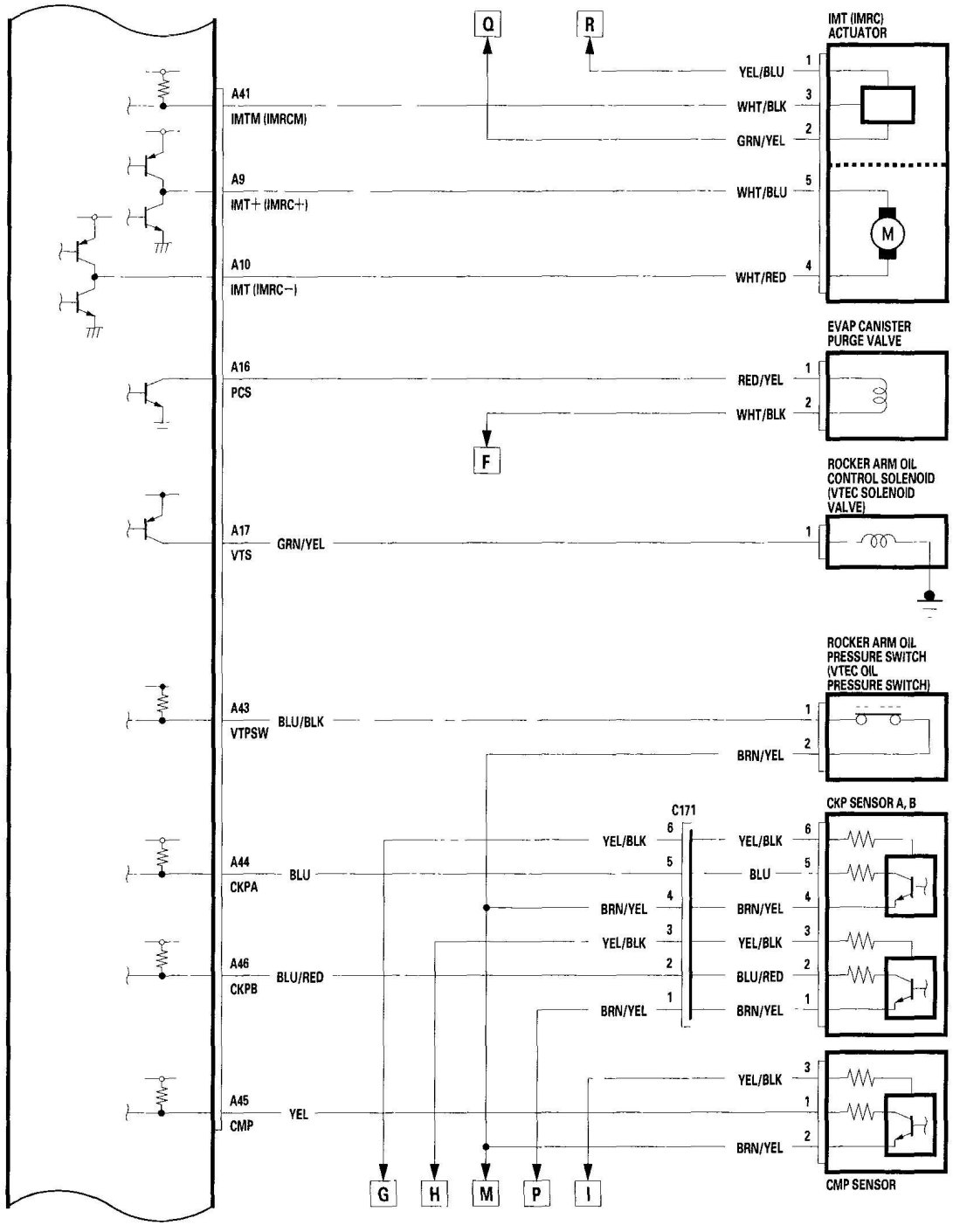

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Fig. 82: Identifying PCM Circuit Diagram (2005-06 Models - 2 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

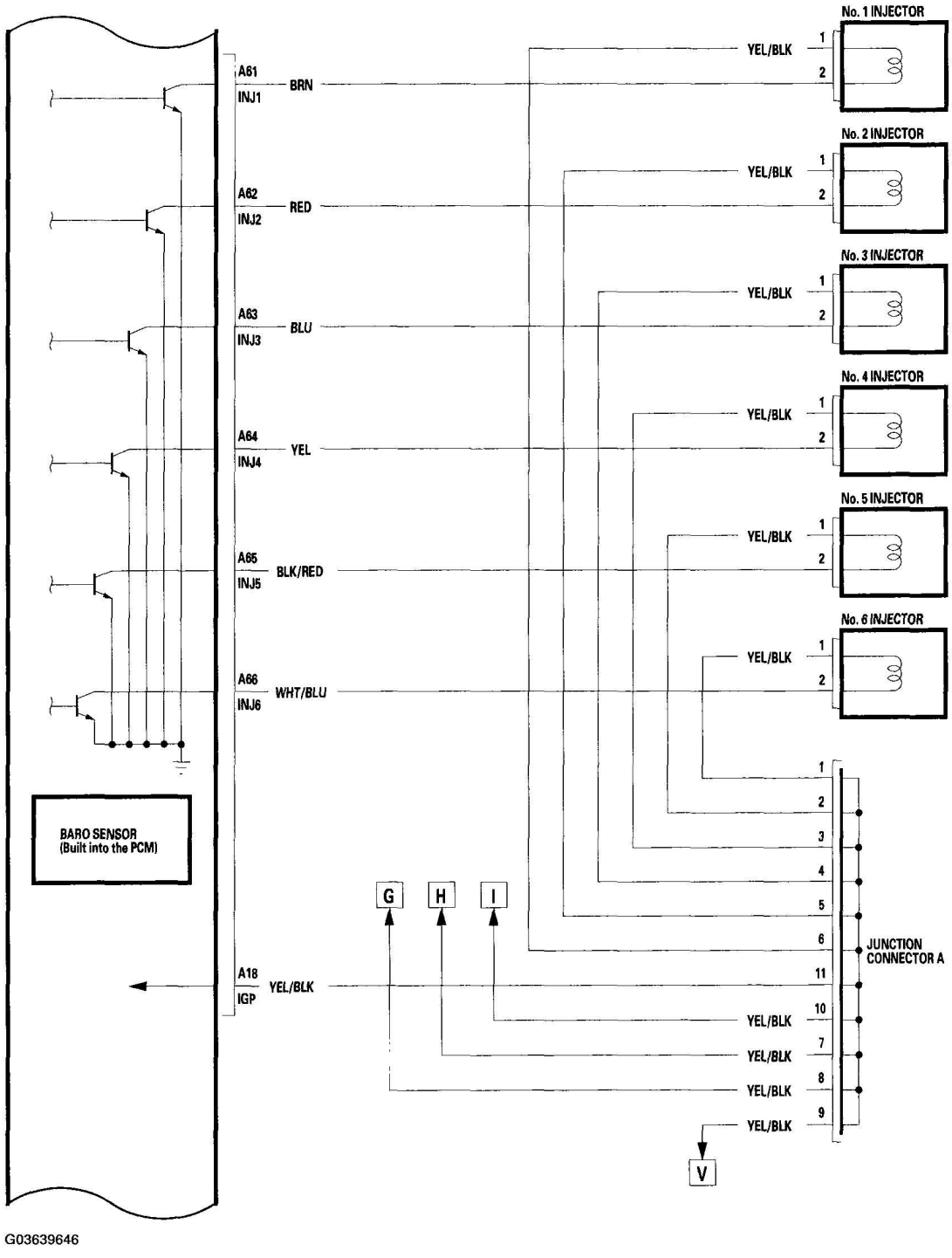

Fig. 83: Identifying PCM Circuit Diagram (2005-06 Models - 3 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

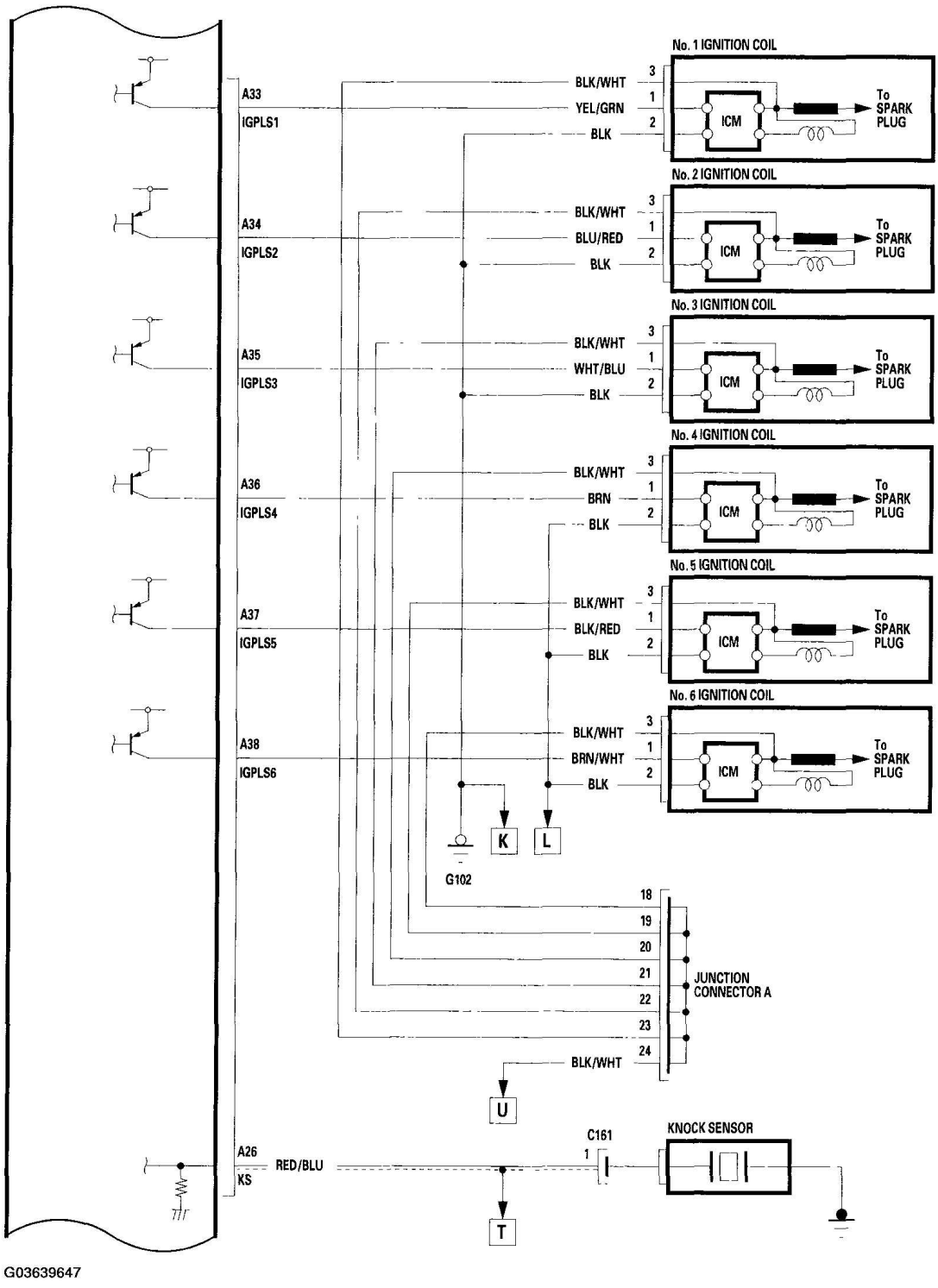

Fig. 84: Identifying PCM Circuit Diagram (2005-06 Models - 4 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

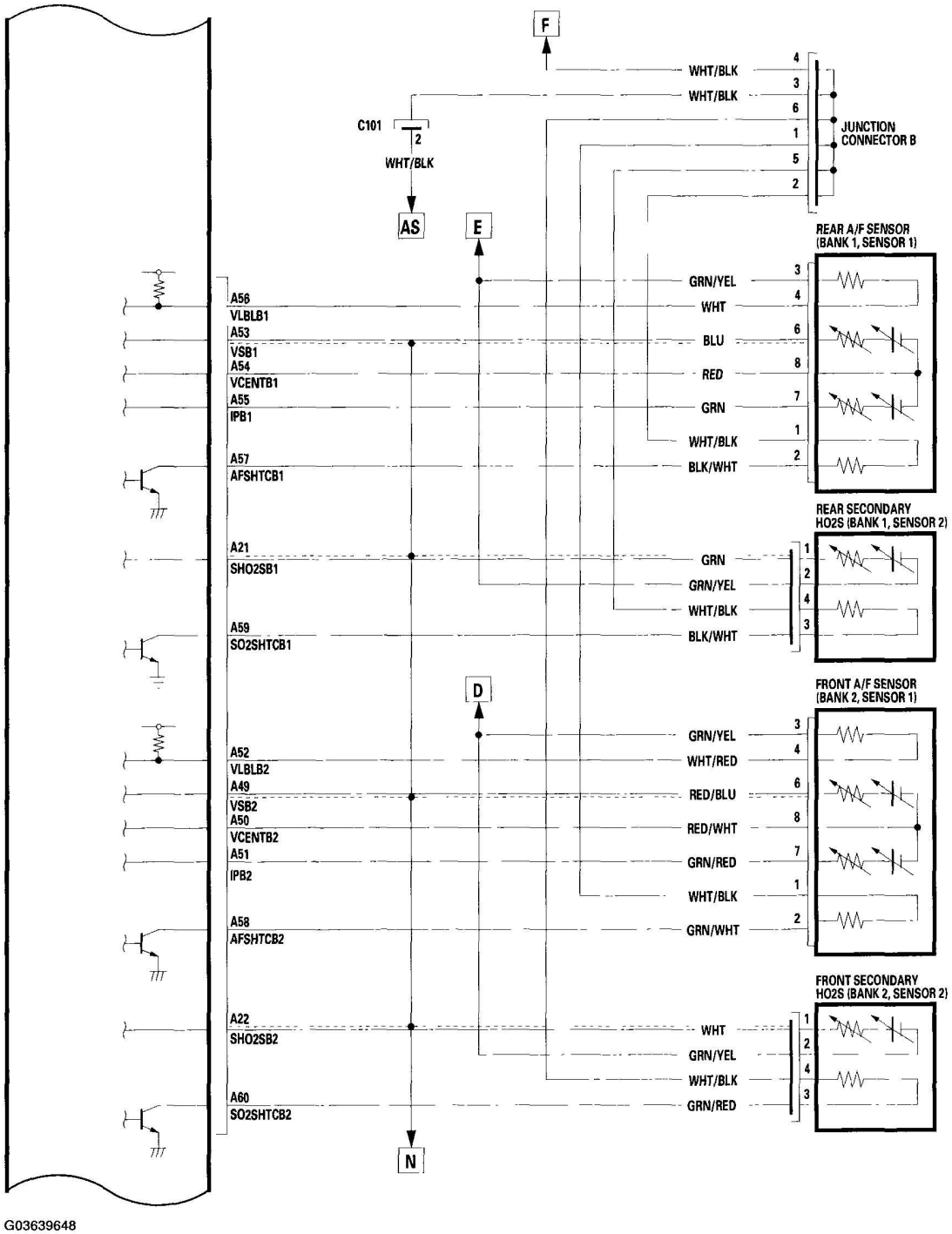

Fig. 85: Identifying PCM Circuit Diagram (2005-06 Models - 5 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

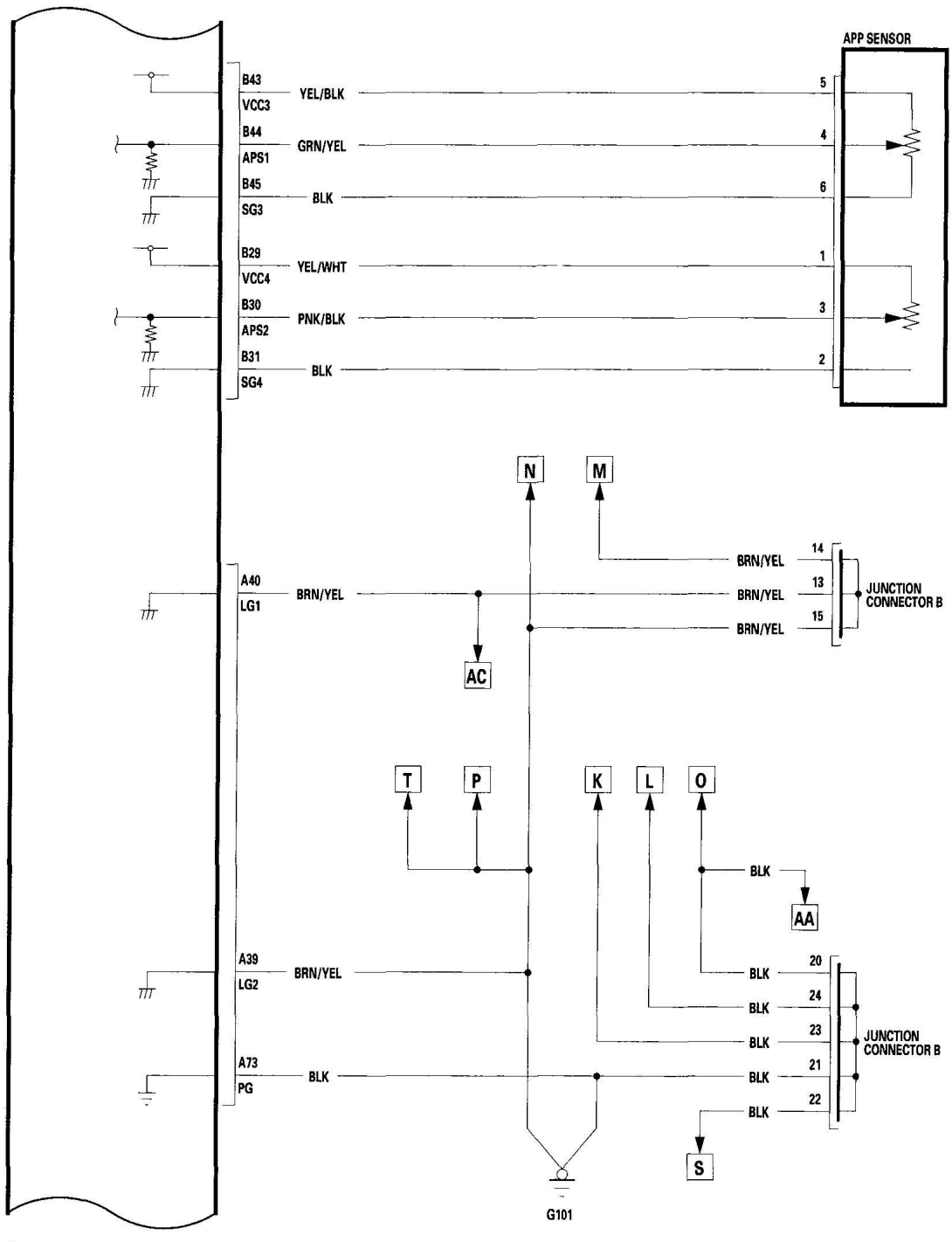

Fig. 86: Identifying PCM Circuit Diagram (2005-06 Models - 6 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

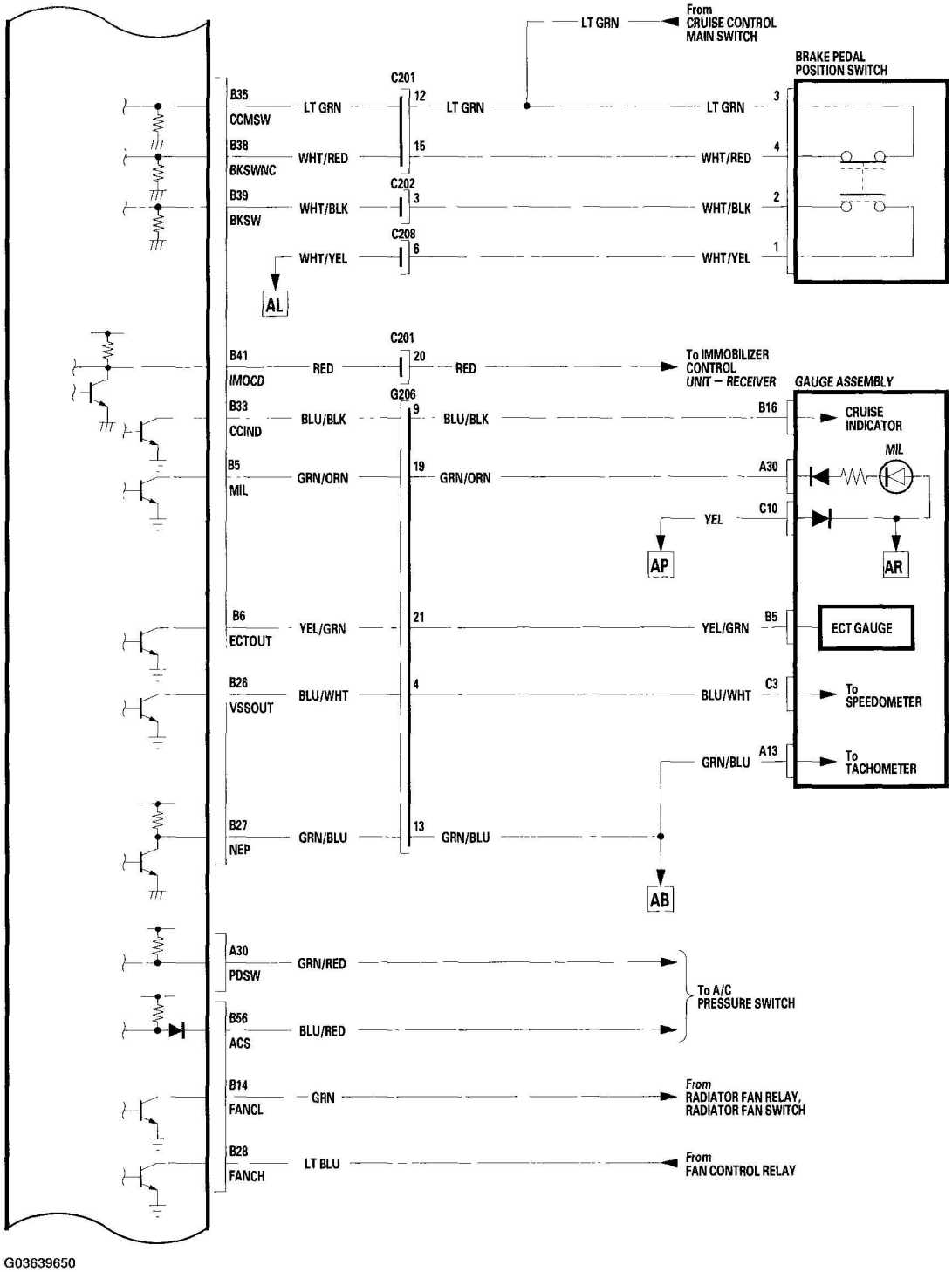

Fig. 87: Identifying PCM Circuit Diagram (2005-06 Models - 7 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

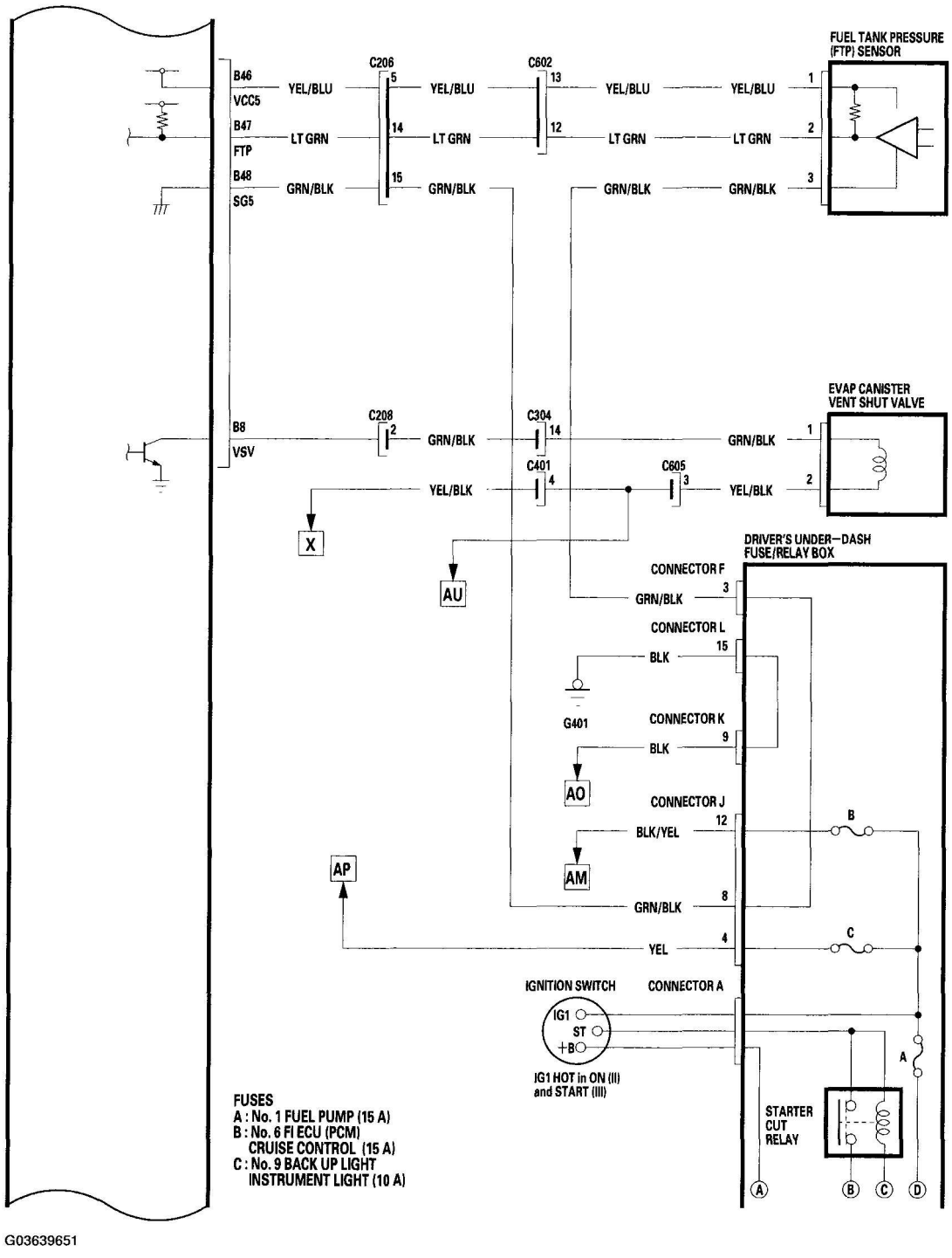

Fig. 88: Identifying PCM Circuit Diagram (2005-06 Models - 8 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

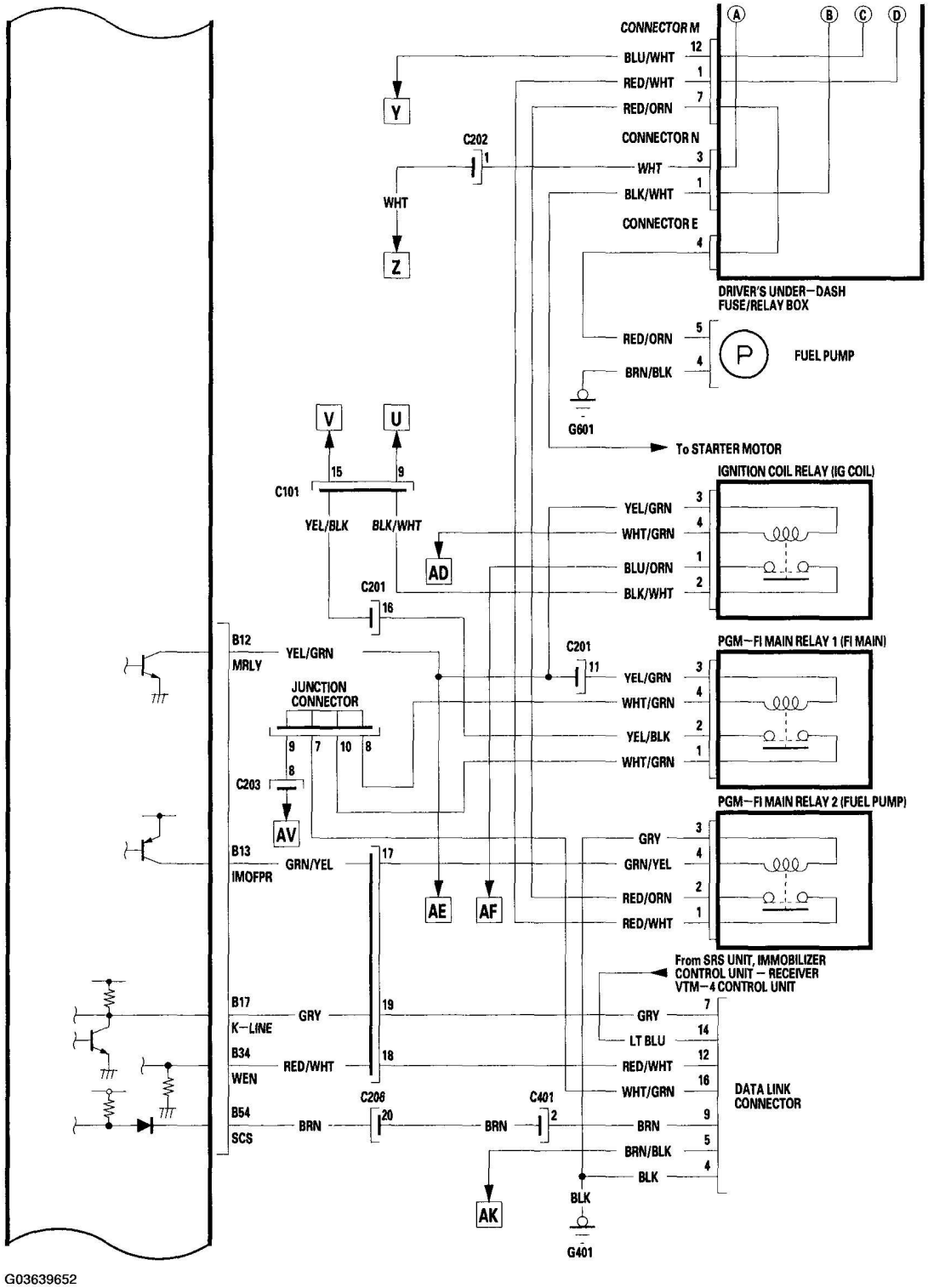

Fig. 89: Identifying PCM Circuit Diagram (2005-06 Models - 9 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

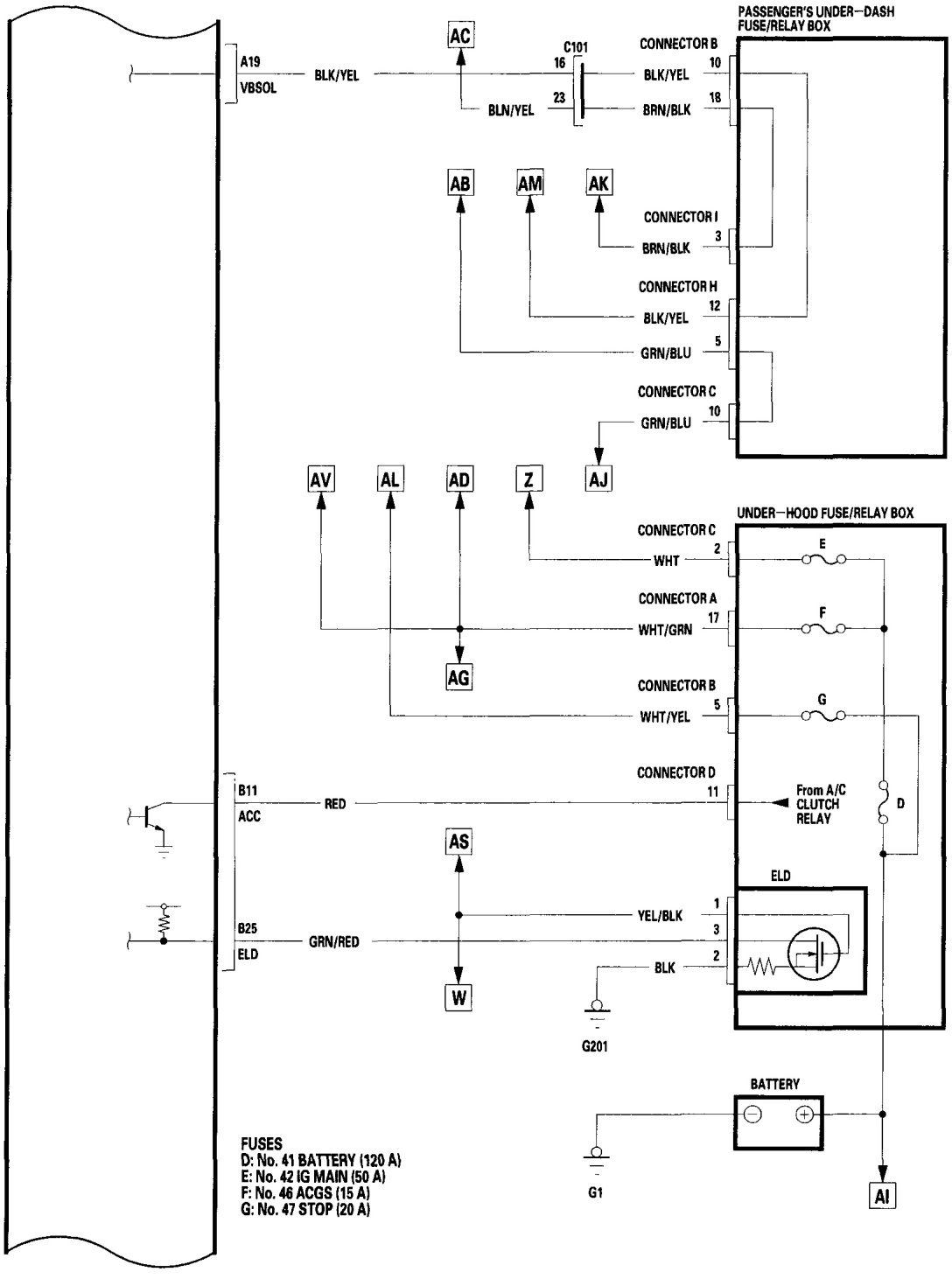

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Fig. 90: Identifying PCM Circuit Diagram (2005-06 Models - 10 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

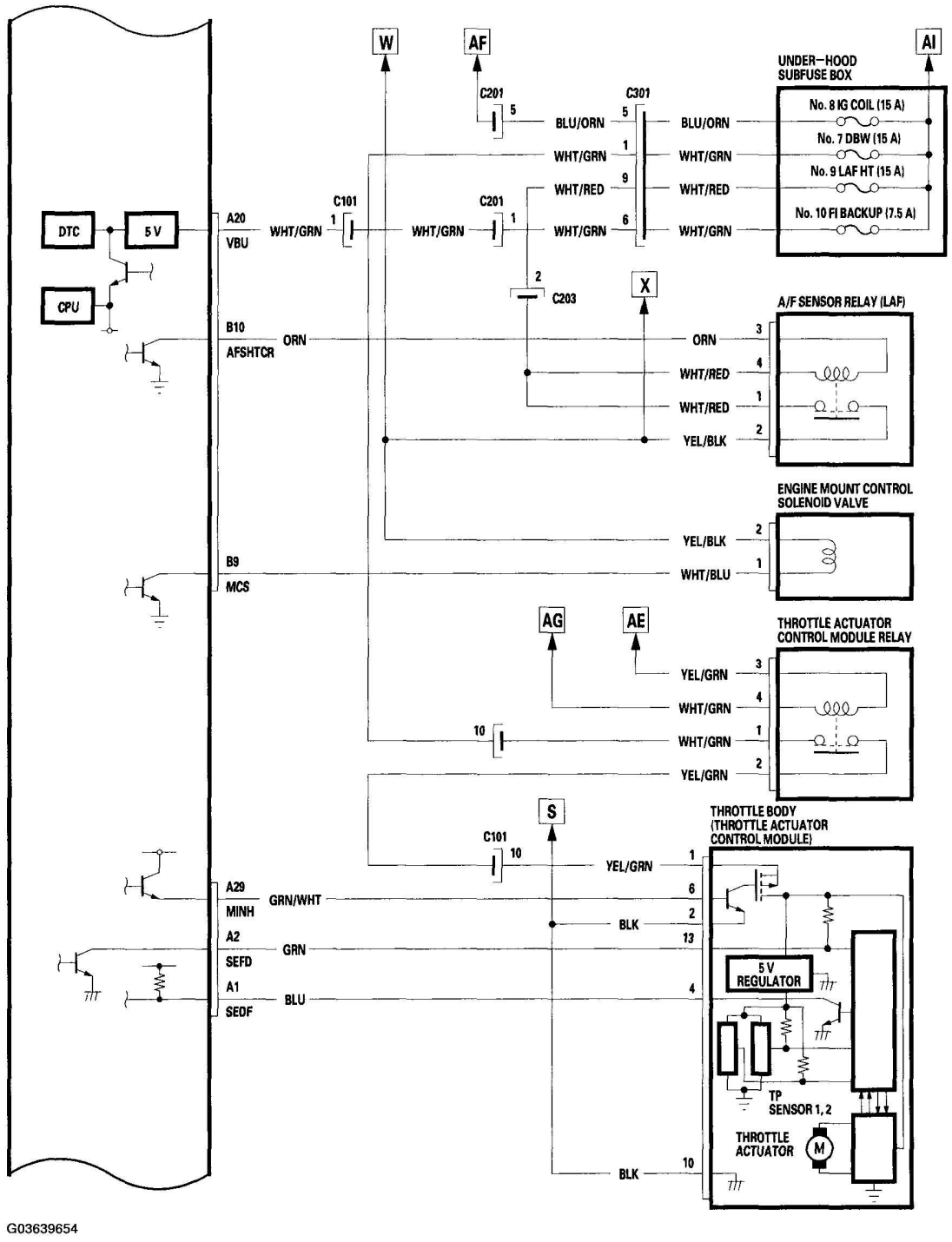
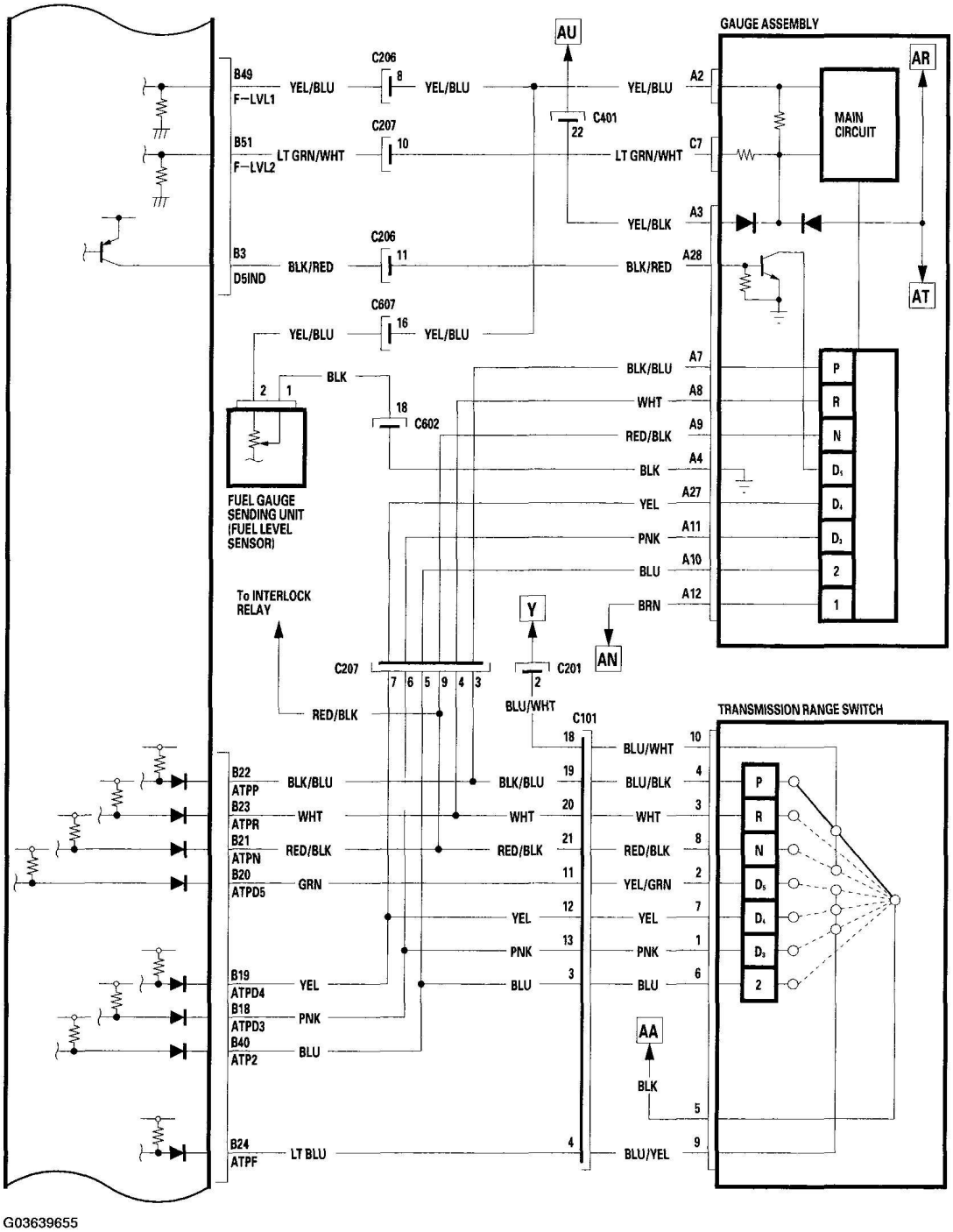


Fig. 91: Identifying PCM Circuit Diagram (2005-06 Models - 11 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.



G03639655

Fig. 92: Identifying PCM Circuit Diagram (2005-06 Models - 12 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

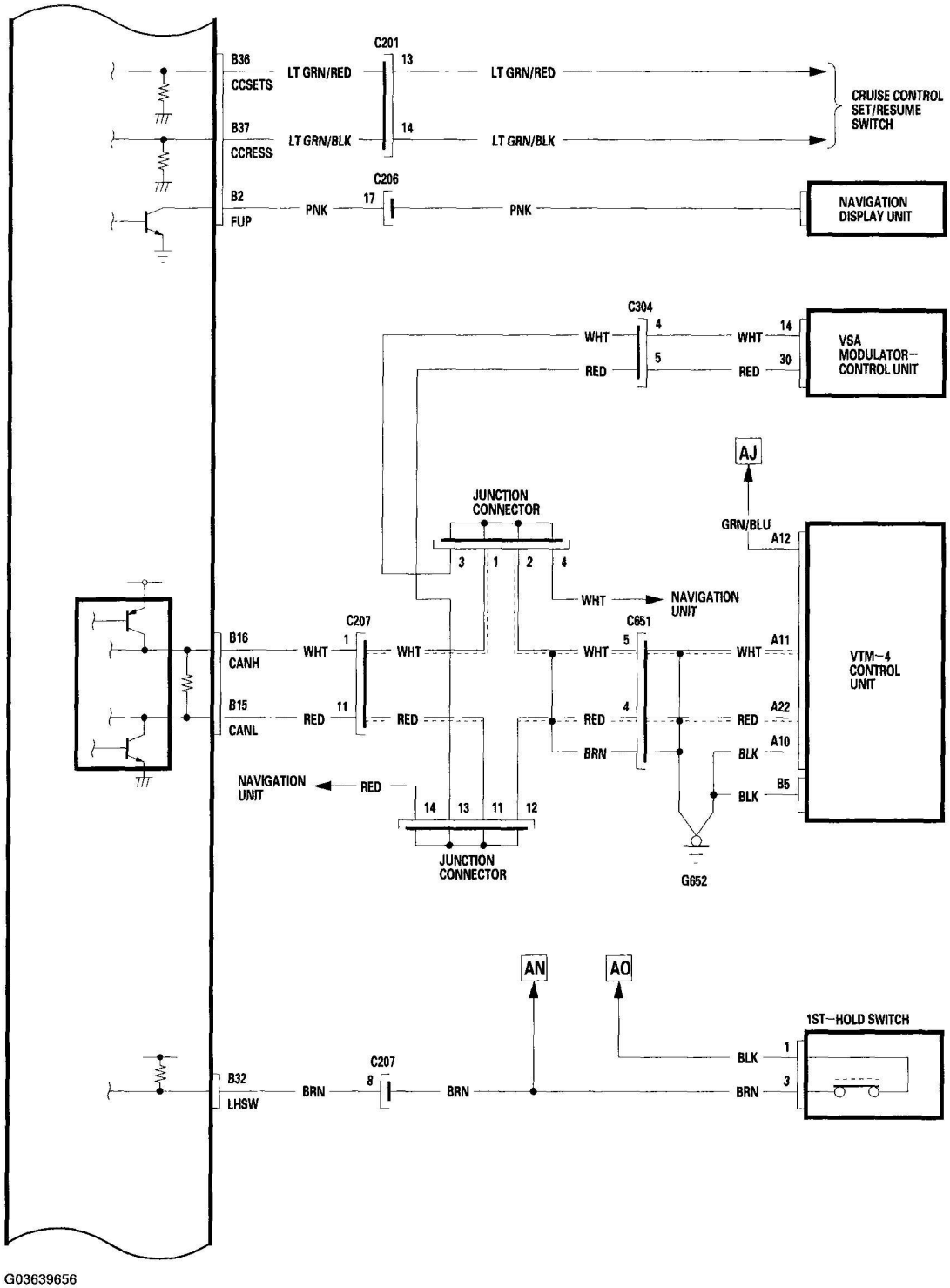


Fig. 93: Identifying PCM Circuit Diagram (2005-06 Models - 13 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

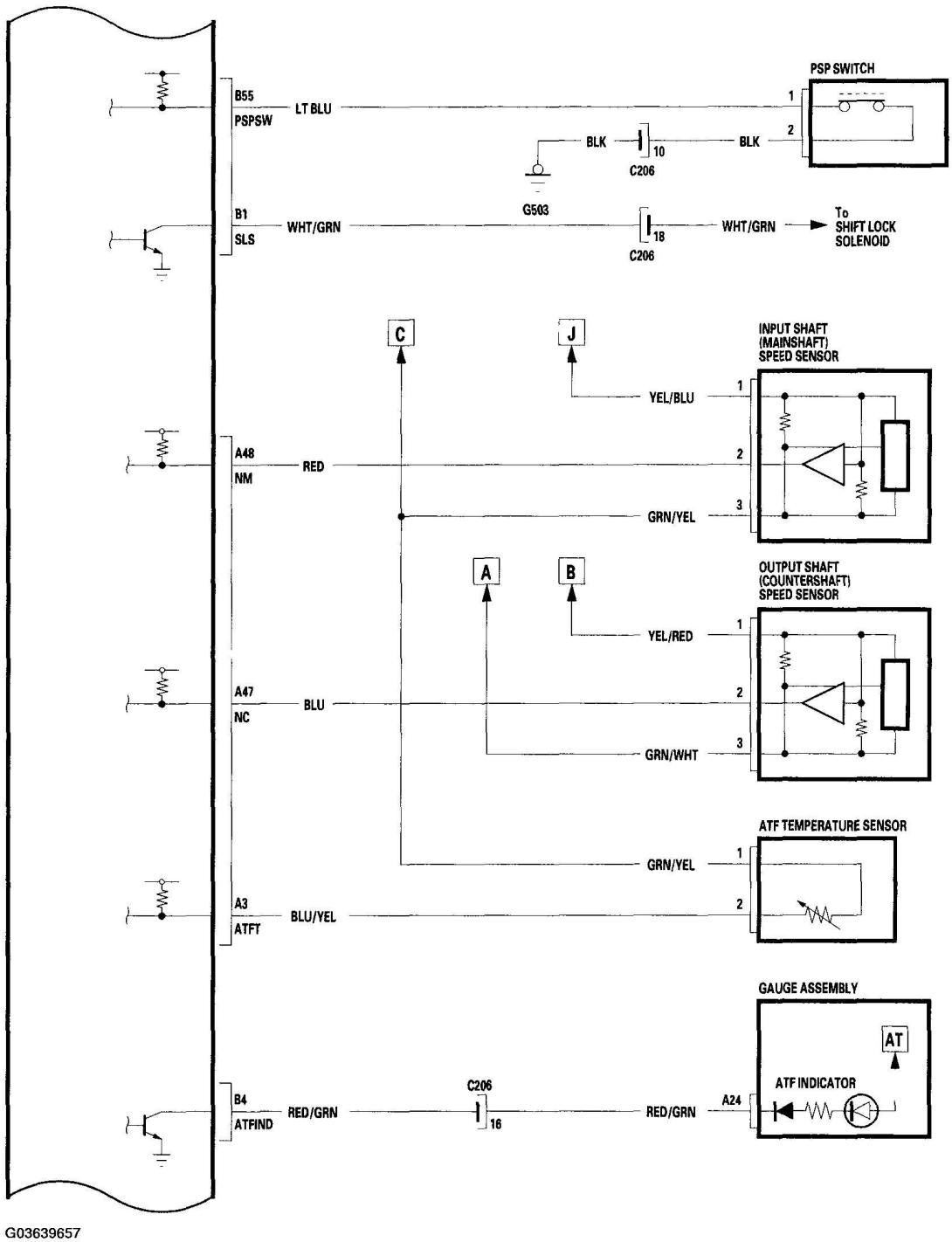


Fig. 94: Identifying PCM Circuit Diagram (2005-06 Models - 14 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

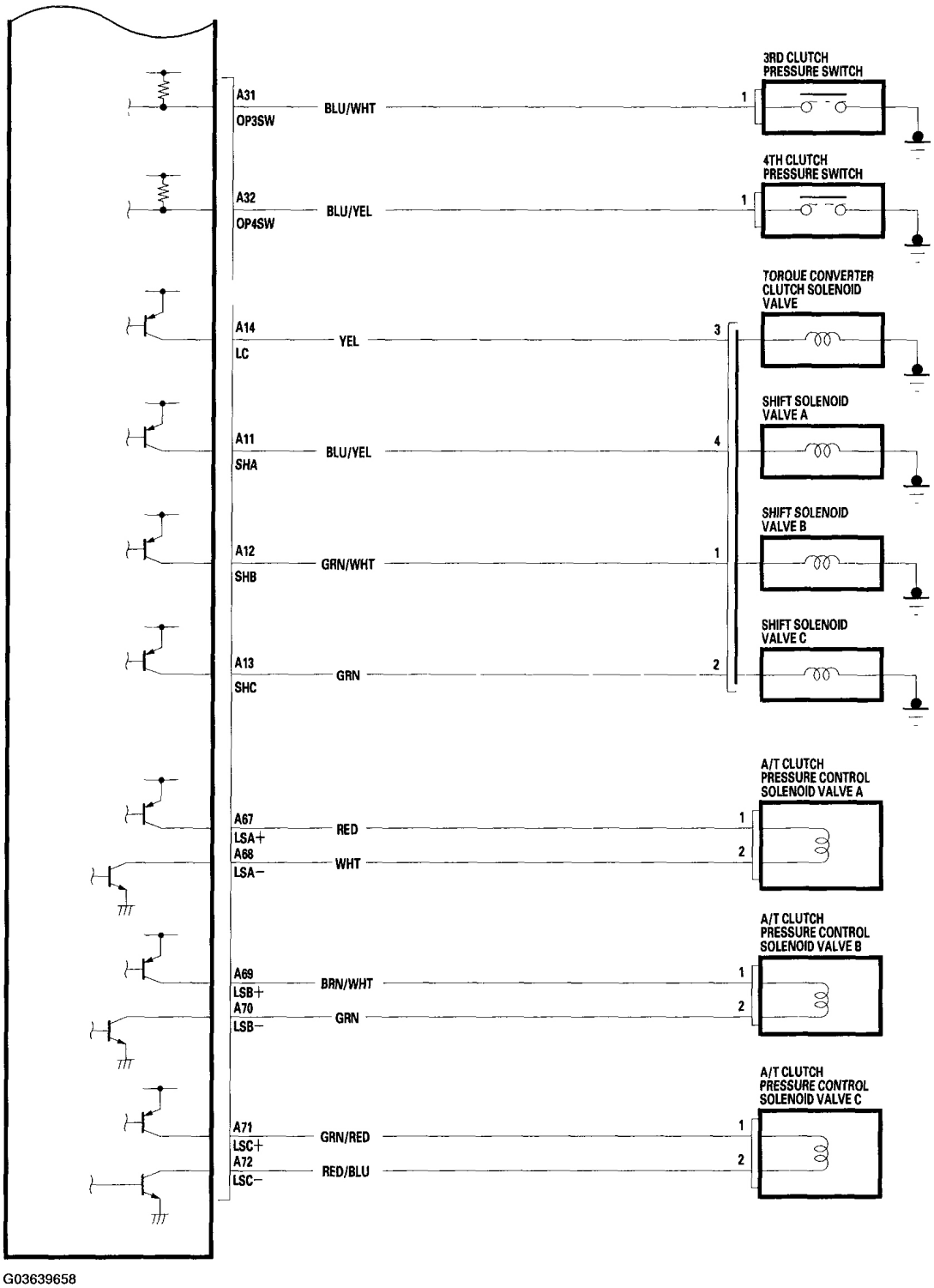


Fig. 95: Identifying PCM Circuit Diagram (2005-06 Models - 15 Of 15)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO SET READINESS CODES

MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the PCM has been reset, these codes are reset. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the emission test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are complete. If it blinks five times, one or more readiness codes are not set to complete. To set readiness codes from incomplete to complete, do the procedure for the appropriate code.

To check the status of a specific DTC system, check the OBD status in the DTC MENU with the HDS (see **OBD STATUS**). This screen displays the code, the current data list of the enable criteria, and the status of the readiness testing.

CATALYTIC CONVERTER MONITOR AND READINESS CODE

NOTE:

- **Do not turn the ignition switch off during the procedure.**
- **All readiness codes are cleared when the battery is disconnected or when the PCM is cleared with the HDS.**
- **Low ambient temperatures or excessive stop-and-go traffic may increase the drive time needed to switch the readiness code from incomplete to complete.**
- **The readiness code will not switch to complete until all the enable criteria are met.**
- **If a fault in the secondary HO2S system caused the MIL to come on, the readiness code cannot be set to complete until you correct the fault.**

Enable Criteria

- ECT at 158°F (70°C) or higher.
- Intake air temperature (IAT) at 20°F (-7°C) or higher.
- Vehicle speed sensor (VSS) reads more then 25 mph (40 km/h).

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC), and bring up the OBD status screen for DTC P0420 in the DTC MENU.
2. Start the engine.

3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. After about 5 miles (8 km), the readiness code should switch to passed.
4. If the readiness code is still set to not complete, check for a Temporary DTC with the HDS. If there is no DTC, one or more of the enable criteria were probably not met. Repeat the procedure.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM MONITOR AND READINESS CODE

NOTE: All readiness code are cleared when the battery is disconnected or when the PCM is cleared with the HDS.

Enable Criteria

- Battery voltage is higher than 10.5 V.
- The A/T in N or P position, and the engine stopped.

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC).
2. Start the engine.
3. Select EVAP TEST in the INSPECTION MENU with the HDS, then select the FUNCTION TEST.
4. Check the OBD status screen for EVAP DTCs P0456, and P0457 in the DTCs MENU with the HDS.
    - If they are passed, readiness code is set.
    - If they are not passed, go to the next step.
5. If the readiness code is still set to not completed, check for a Temporary DTC. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR MONITOR AND READINESS CODE

NOTE:

- **Do not turn the ignition switch off during the procedure.**
- **All readiness codes are cleared when the battery is disconnected or when the PCM is cleared with the HDS.**

Enable Criteria

ECT at 140°F (60°C) or higher.

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC).
2. Start the engine.
3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. During the drive, decelerate (with the throttle fully closed) for 5 seconds. After about 3.5 miles (5.6 km), the readiness code should switch from not completed to complete.

4. Check the OBD status screen for Air Fuel Ratio (A/F) Sensor DTCs P0133 or P2A00 in the DTCs MENU with the HDS.
   - If they are passed, readiness is set.
   - If they are not passed, go to the next step.
5. If the readiness code is still set to not completed, check for a Temporary DTC. If there is no DTC, the enable criteria was probably not met. Select the DATA LIST Menu. Check the ECT in the ALL DATA LIST with the HDS. If the coolant temperature is lower than 140°F (60°C), let the engine warm up, then repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR HEATER MONITOR READINESS CODE

NOTE: All readiness codes are cleared when the battery is disconnected or when the PCM is cleared with the HDS.

Procedure

1. Start the engine, and let it idle for 1 minute. The readiness code should switch from not completed to complete.
2. If the readiness code is still set to incomplete, check for a Temporary DTC. If there is no DTC, repeat the procedure.

MISFIRE MONITOR AND READINESS CODE

- This readiness code is always set to available because misfiring is continuously monitored.
- Monitoring pauses, and the misfire counter resets, if the vehicle is driven over a rough road.
- Monitoring also pauses, and the misfire counter holds at its current value, if the throttle position changes more than a predetermined value, or if driving conditions fall outside the range of any related enable criteria.

FUEL SYSTEM MONITOR AND READINESS CODE

- This readiness code is always set to available because the fuel system is continuously monitored during closed loop operation.
- Monitoring pauses when the catalytic converter, EVAP control system, and A/F sensor monitors are active.
- Monitoring also pauses when any related enable criteria are not being met. Monitoring resumes when the enable criteria is again being met.

COMPREHENSIVE COMPONENT MONITOR AND READINESS CODE

This readiness code is always set to available because the comprehensive component monitor is continuously running whenever the engine is cranking or running.

EGR MONITOR AND READINESS CODE

NOTE:

- **Do not turn the ignition switch off during the procedure.**
- **All readiness codes are cleared when the battery is disconnected or when the PCM is cleared with the HDS.**

Enable Criteria

ECT at 176°F (80°C) or higher

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC).
2. Start the engine.
3. Drive at a steady speed with the A/T in D5 position 50-62 mph (80-100 km/h) or above for more than 10 seconds.
4. With the A/T in D5 position decelerate from 62 mph (100 km/h) or above by completely releasing the throttle for at least 5 seconds. If the engine is stopped during this procedure, go to step 3 and do the procedure again.
5. Check the OBD status screen for DTC P0401 in the DTC's MENU with the HDS.
    - If it is passed, readiness is complete.
    - If it is not passed, go to step 3 and retest.