2002 ENGINE PERFORMANCE

Basic Diagnostic Procedures

INTRODUCTION

The following diagnostic steps will help prevent overlooking a simple problem. This is also where to begin diagnosis for a no-start condition.

The first step in diagnosing any driveability problem is verifying the customer's complaint with a test drive under the conditions the problem reportedly occurred.

Before entering self-diagnostics, perform a careful and complete visual inspection. Most engine control problems result from mechanical breakdowns, poor electrical connections, or damaged/misrouted vacuum hoses. Before condemning the computerized system, perform each test listed in this article.

NOTE: Perform all voltage tests with a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance, unless stated otherwise in test procedure.

PRELIMINARY INSPECTION & ADJUSTMENTS

VISUAL INSPECTION

Visually inspect all electrical wiring, looking for chafed, stretched, cut, or pinched wires. Ensure electrical connectors fit tightly and are not corroded. Ensure vacuum hoses are properly routed and are not pinched or cut. See VACUUM DIAGRAMS article to verify routing and connections (if necessary). Inspect air induction system for possible vacuum leaks.

MECHANICAL INSPECTION

Compression

Test engine mechanical condition with a compression gauge, vacuum gauge, or an engine analyzer. See engine analyzer manual for specific instructions.

WARNING: DO NOT use ignition switch during compression tests on fuel injected vehicles. Use a remote starter to crank engine. Fuel injectors on many models are triggered by ignition switch during cranking mode, which can create a fire hazard or contaminate the engine's oiling system.

ENGINE COMPRESSION

ENGINE COMPRESSION SPECIFICATIONS (1)

Application	Specification
MDX	

Minimum	(3) 145 psi (10.1kg/cm^2)
RSX (2) , 3.2CL & 3.2TL	
Minimum	(3) 135 psi (9.5 kg/cm^2)
3.5RL	
Minimum	(3) 142 psi (10.0 kg/cm^2)
(1) Maximum variation between cylinders is 28 psi (2 kg/cm^2). (2) Check compression at 250 RPM and WOT. (3) Check compression at 200 RPM and WOT.	

EXHAUST SYSTEM BACKPRESSURE

The exhaust system backpressure can be tested with a vacuum or pressure gauge. If using a pressure gauge, remove HO2S or air injection check valve (if equipped). Connect a 0-5 psi pressure gauge and run engine at 2500 RPM. If exhaust system backpressure is greater than 1.5 psi, exhaust system or catalytic converter is plugged.

If using a vacuum gauge, connect vacuum gauge hose to intake manifold vacuum port. Start engine. Observe vacuum gauge. Open throttle part way and hold steady. If vacuum gauge indication slowly drops after stabilizing, inspect exhaust system for restriction.

FUEL SYSTEM

WARNING: Always relieve fuel pressure before disconnecting any fuel injection-related component. DO NOT allow fuel to contact engine or electrical components.

FUEL SYSTEM PRESSURE RELEASE

MDX, RSX, 3.2CL & 3.2TL

Obtain radio anti-theft code from customer, and make note of selected radio presets. Disconnect negative battery cable. Loosen fuel tank filler cap. Place wrench on fuel pulsation damper at fuel rail, next to throttle cable. Place clean shop rag over fuel pulsation damper. Slowly loosen fuel pulsation damper one complete turn to relieve system pressure. Always replace washer after loosening or removing fuel pulsation damper. Tighten fuel pulsation damper to 16 ft. lbs. (22 N.m). Reprogram radio anti-theft code and radio station presets.

NOTE: On RSX, cover on pulsation damper has drain hole in it. After tightening pulsation damper, position cover so drain hole is facing down.

3.5RL

Obtain radio anti-theft code from customer, and make note of selected radio presets. Disconnect negative

battery cable. Loosen fuel tank filler cap. Place clean shop rag around fuel filter. Slowly loosen service bolt on top of fuel filter one complete turn to relieve system pressure. Always replace washer after loosening service or banjo bolt. Tighten fuel filter service bolt to 106 INCH lbs. (12 N.m). Reprogram radio anti-theft code and radio presets.

FUEL PRESSURE TESTING

Basic diagnosis of fuel system should begin with determining fuel system pressure.

NOTE: Before disconnecting battery cable, obtain activation code to reset anti-theft radio and presets (if equipped).

MDX, 3.2CL & 3.2TL

1. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Remove pulsation damper and connect Fuel Pressure Gauge (07406-004000A) in its place. Reconnect negative battery cable. Disconnect and plug fuel pressure regulator vacuum hose. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If vehicle will not start, listen for fuel flow at fuel rail while an assistant turns ignition switch on. You should hear fuel running through injector rails for about 2 seconds when ignition is turned on. If fuel pump runs, observe fuel pressure on gauge. If fuel pressure is okay and engine is running, go to next step. If fuel pressure is okay and engine is not running, repair cause and go to next step. If fuel pump does not run, check fuel pump.
2. Ensure manifold vacuum is present at fuel pressure regulator vacuum hose. Reconnect fuel pressure regulator vacuum hose with engine at idle. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If fuel pressure is not as specified, go to next step. If fuel pressure is okay, go to step 4 .
3. Disconnect vacuum hose to fuel pressure regulator while watching fuel pressure gauge. See **REGULATED FUEL PRESSURE** table. If fuel pressure did not increase, check vacuum hose for leakage, clogging or loose connections. If okay, replace pressure regulator. If fuel pressure increased within specification and all readings were okay, go to step 4 . If fuel pressure increase was out of specification, check for:
   - If increase was less than specified, check for clogged fuel filter or leaking fuel lines.
   - If fuel pressure was more than specified, check for pinched or clogged fuel return hose or line.

   Repair as necessary and go to next step.
4. Turn ignition off. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Reconnect vacuum hose to fuel pressure regulator. Remove fuel gauge. Reinstall fuel pulsation damper with a NEW washer and tighten to 16 ft. lbs. (22 N.m).

REGULATED FUEL PRESSURE (1)

Application	At Idle W/O Vacuum psi (kg/cm^2)	At Idle W/ Vacuum psi (kg/cm^2)
MDX	48-55 (3.4-3.9)	(2)

RSX	47-54 (3.3-3.8)	(2)
3.2CL	41-48 (2.9-3.4)	32-40 (2.3-2.8)
3.2TL	48-55 (3.4-3.9)	40-46 (2.8-3.3)
3.5RL	43-51 (3.0-3.6)	35-42 (2.5-3.0)

(1) Pressure is measured at fuel filter, with vacuum hose connected or disconnected from fuel pressure regulator.

(2) Information not available w/vacuum applied.

RSX

1. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Connect Fuel Pressure Gauge (07406-0040001). Remove pulsation damper and connect Fuel Pressure Gauge (07406-004000A) in its place. (RSX with K20A2 engine, requires use of Fuel Pressure Gauge Attachment (07VAJ-S5A0100) to install fuel pressure gauge.) See **Fig. 1** . Reconnect negative battery cable. Disconnect and plug fuel pressure regulator vacuum hose. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If vehicle will not start, check fuel pump operation. Remove fuel filler cap and listen for fuel pump operation at fill port while an assistant turns ignition switch on. You should hear fuel pump running for about 2 seconds when ignition is turned on. If fuel pump runs, go to next step. If fuel pump does not run, check fuel pump. See **FUEL PUMP CIRCUIT TESTING** .

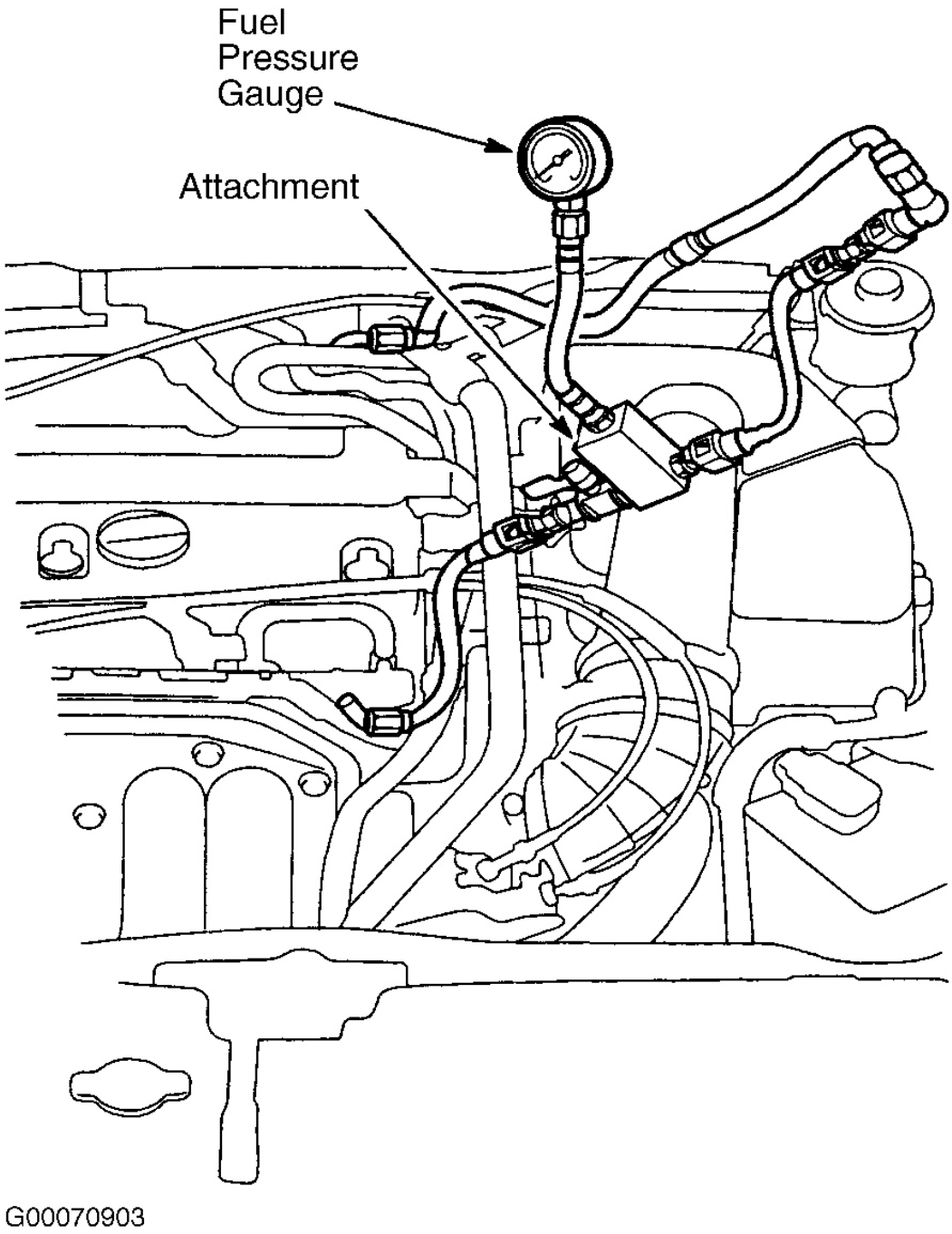

Fig. 1: Identifying Fuel Pressure Gauge Attachment (RSX)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If fuel pressure is okay,

go to next step. If fuel pressure is not within specification, replace pressure regulator and fuel filter. Recheck fuel pressure. If fuel pressure is okay, go to next step.

3. Turn ignition off. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Remove fuel gauge. Reinstall fuel pulsation damper with a NEW washer and tighten to 16 ft. lbs. (22 N.m).

3.5RL

1. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Connect Fuel Pressure Gauge (07406-0040001) at fuel filter service bolt. See **Fig. 2** . Reconnect negative battery cable. Start engine and allow to idle. Disconnect and clamp fuel pressure regulator vacuum hose. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If vehicle will not start, turn ignition switch on, wait 2 seconds, turn ignition off and then back on and observe fuel pressure.

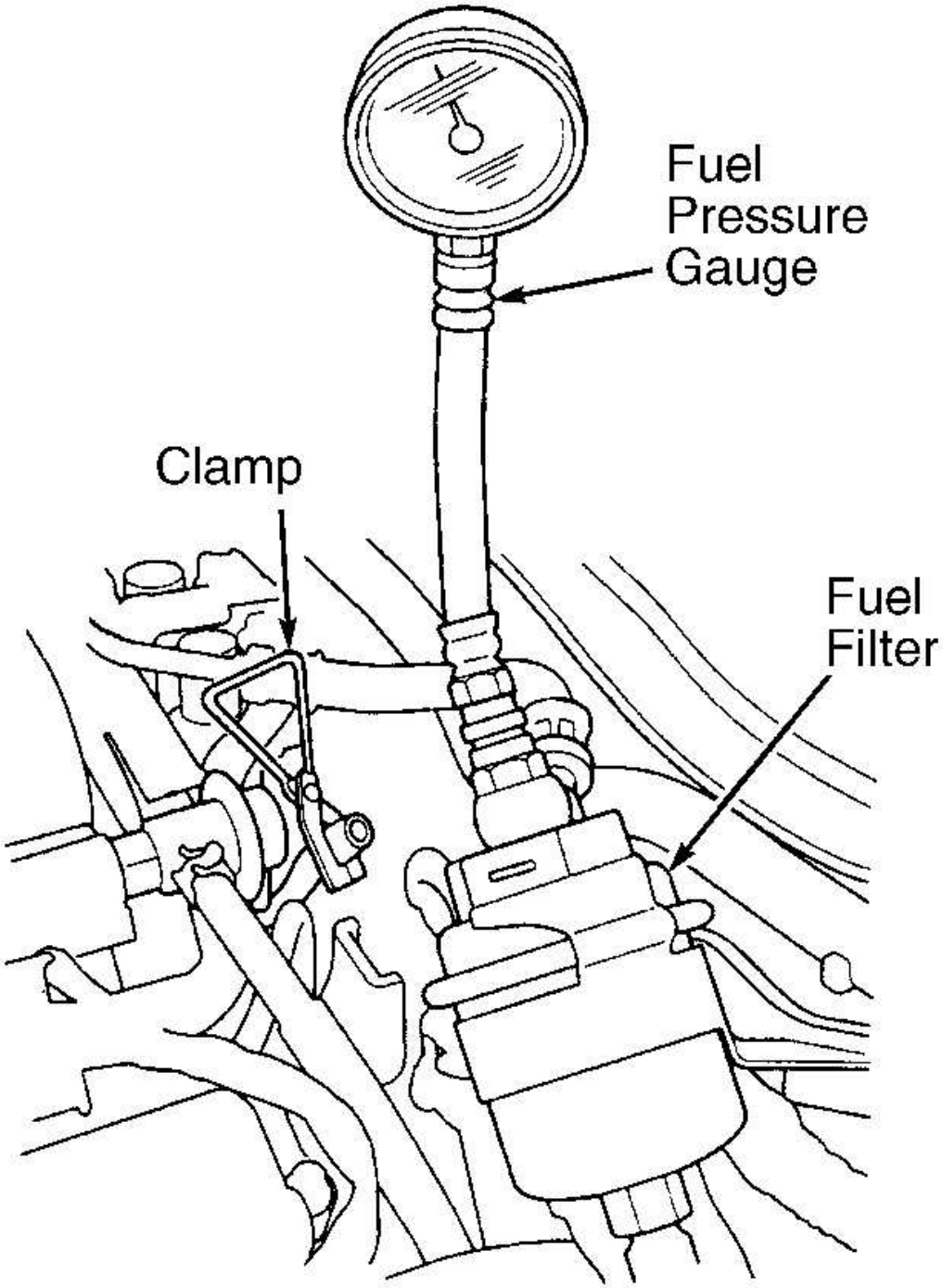

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Fig. 2: Identifying Fuel Gauge Installation (3.5RL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Ensure manifold vacuum is present at fuel pressure regulator vacuum hose. Reconnect fuel pressure regulator vacuum hose with engine at idle. Observe fuel pressure on gauge. See **REGULATED FUEL PRESSURE** table. If fuel pressure is not as specified, check fuel pump. See **FUEL PUMP CIRCUIT TESTING** . If fuel pump is okay, go to next step.
3. If fuel pressure is higher than specified, check for pinched or clogged fuel return hose or line between fuel rail and fuel tank. If fuel pressure is lower than specified, check for plugged fuel filter, faulty fuel pressure regulator or leakage in fuel line. Repair as necessary. Ensure system is operating properly and go to next step.
4. Turn ignition off. Relieve fuel pressure. See **FUEL SYSTEM PRESSURE RELEASE** . Reconnect vacuum hose to fuel pressure regulator. Remove fuel gauge. Reinstall fuel filter service bolt using NEW washers and tighten to 106 INCH lbs. (12 N.m).

FUEL PUMP CIRCUIT TESTING

MDX, 3.2CL & 3.2TL

1. Listen for fuel flow noise at fuel injector rail under intake manifold cover. Fuel pump should operate for 2 seconds after ignition switch is turned on. If fuel pump operates as specified, fuel pump is okay. If fuel pump does not operate as specified, go to next step.
2. Turn ignition switch off. On MDX, remove driver's side second row seat. Cut carpet on dotted line. See **Fig. 3** . Be careful not to cut wire harness under carpet. Remove fuel pump access panel. On 3.2CL and 3.2TL, remove spare tire and fuel pump access panel. On all models, disconnect fuel pump 5-pin harness connector. Disconnect PGM-FI main relay 7-pin connector located under left side of dash, middle of dash on MDX. Connect a fused jumper wire between PGM-FI main relay harness connector terminals No. 4 (Black/Yellow wire, Red/Orange wire on MDX) and 5 (Red/White wire). See **Fig. 4** . Go to next step.

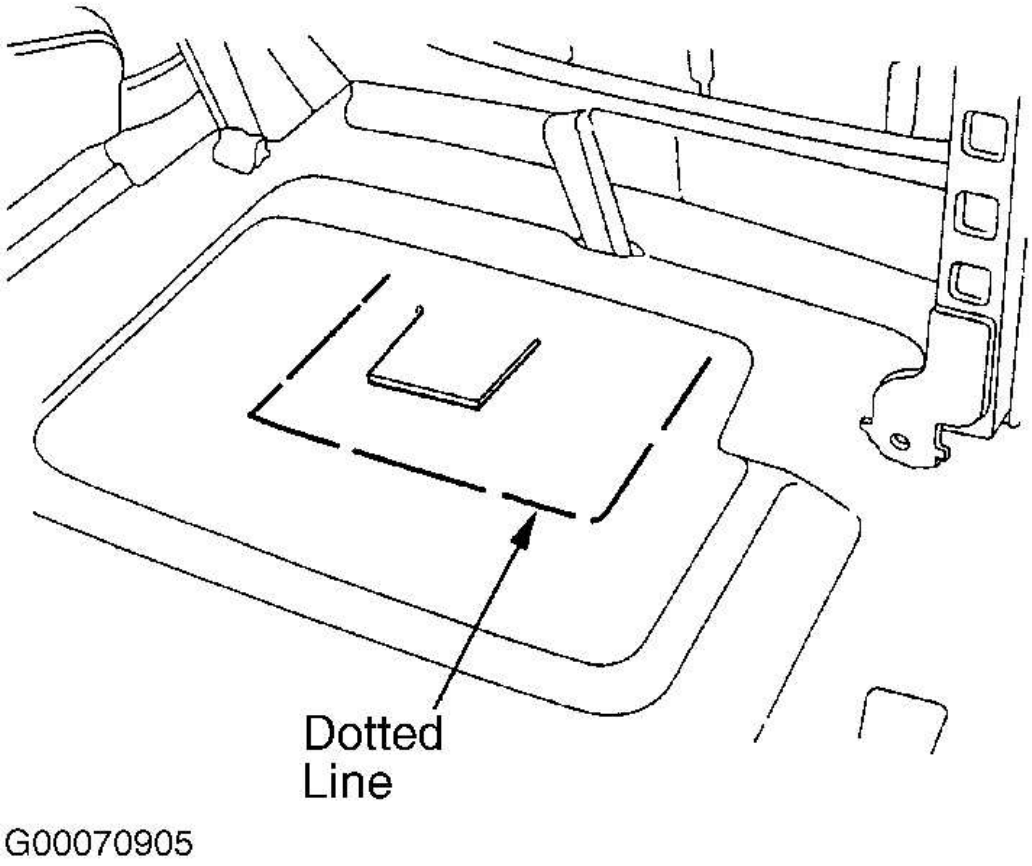

Fig. 3: Identifying Fuel Pump Access Location (MDX)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

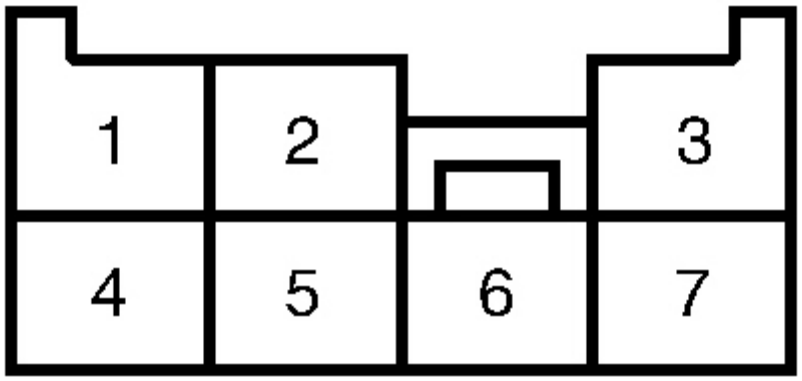

Fig. 4: Identifying PGM-FI Relay Connector Terminals (MDX, 3.2CL & 3.2TL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn ignition on. Using a voltmeter connected to ground, check for battery voltage at fuel pump harness 5-pin connector terminal No. 5 (Black/Yellow wire, Red/Orange wire on MDX). If battery voltage is not present, check for faulty circuit between fuel pump, PGM-FI relay and fuse No. 1 in driver's underdash fuse/relay box. See WIRING DIAGRAMS article. Repair as necessary. If battery voltage is present, check fuel pump ground (Black wire). Repair as necessary. If ground is okay, replace fuel pump.

RSX

Fuel pump circuit testing is included in PGM-FI main relay circuit testing. See **PGM-FI MAIN RELAY CIRCUIT TESTING** .

3.5RL

1. Remove fuel tank filler cap. Listen for fuel pump operation at fuel tank fill port while an assistant turns ignition switch on. Fuel pump should operate for 2 seconds after ignition switch is turned on. If fuel pump operates as specified, fuel pump is okay. If fuel pump does not operate as specified, go to next step.
2. Turn ignition switch off. Remove rear seat cushion to gain access to fuel pump. Disconnect fuel pump 10-pin harness connector. Disconnect PGM-FI main relay 4-pin and 8-pin harness connectors located to right of steering column. Connect a fused jumper wire between PGM-FI main relay 4-pin harness connector terminal No. 2 (Yellow wire) and 8-pin harness connector terminal No. 5 (Red/White wire). See **Fig. 5** . Go to next step.
3. Turn ignition on. Using a voltmeter connected to ground, check for battery voltage at fuel pump harness connector terminal No. 7 (Yellow wire). If battery voltage is not present, check for faulty circuit between

fuel pump, fuel pump relay, PGM-FI relay and fuse No. 22 located in underdash fuse/relay block. See WIRING DIAGRAMS article. Repair as necessary. If battery voltage is present, check fuel pump ground (Black wire). Repair as necessary. If ground is okay, replace fuel pump.

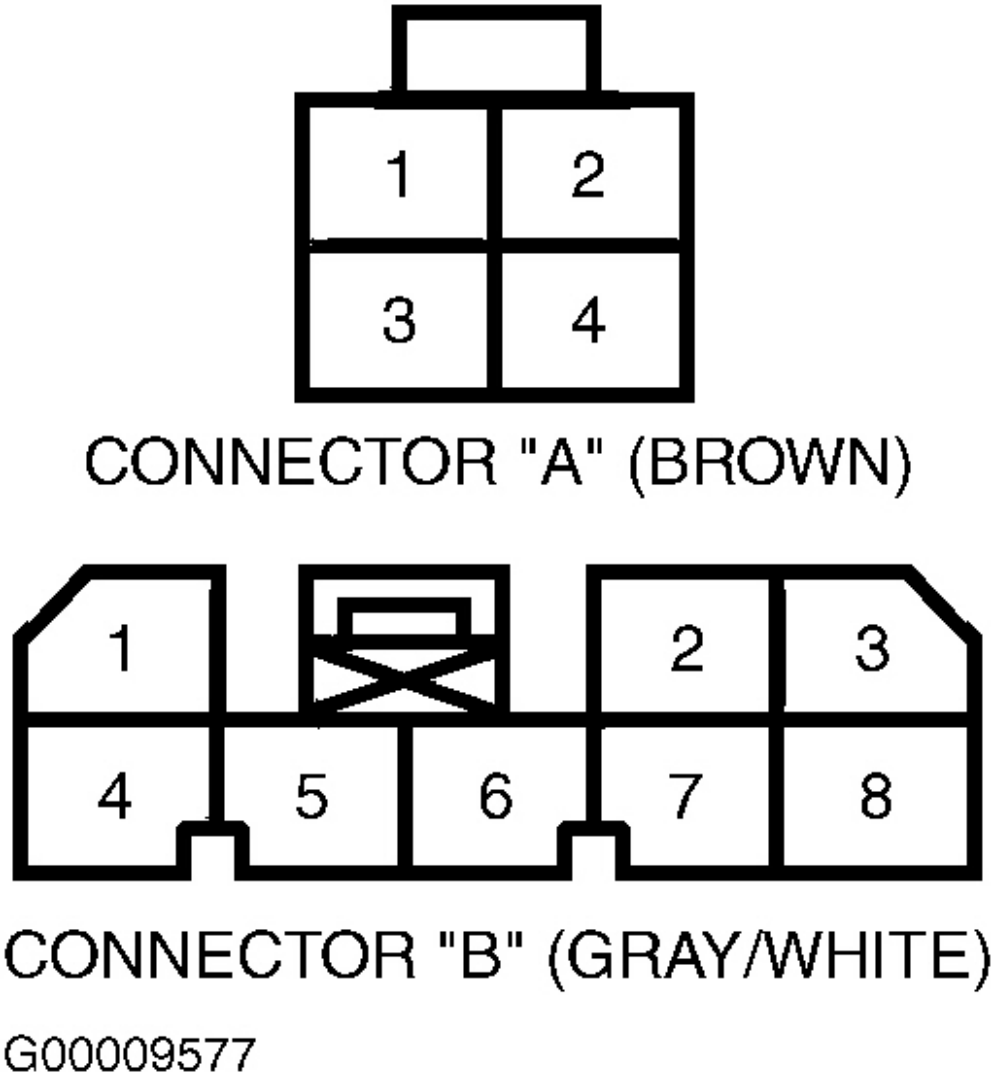

Fig. 5: Identifying PGM-FI Relay Terminals (3.5RL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PGM-FI MAIN RELAY CIRCUIT TESTING

NOTE: If engine starts and continues to operate, PGM-FI main relay is okay.

MDX, 3.2CL & 3.2TL

1. Remove PGM-FI relay located under left side of instrument panel. Disconnect 7-pin PGM-FI main relay connector. See **Fig. 4** .
2. Test for continuity between ground PGM-FI main relay terminal No. 3. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire between PGM-FI relay terminal No. 3 and ground terminal G101. See WIRING DIAGRAMS article.
3. Using voltmeter connected to ground, measure voltage at PGM-FI main relay terminal No. 7. If battery voltage exists, go to step 5 . If battery voltage does not exist, go to next step.
4. Check for blown No. 46 ACG S (15-amp) fuse in under-hood fuse/relay box. If fuse is blown, repair short in White/Green wire between No. 46 ACG S (15-amp) fuse and PGM-FI main relay terminal No. 7. If fuse is not blown, repair open in White/Green wire between No. 46 ACG S (15-amp) fuse and PGM-FI main relay terminal No. 7.
5. Turn ignition switch on. Using voltmeter connected to ground, measure voltage at PGM-FI main relay terminal No. 5. If battery voltage exists, go to step 7 . If battery voltage does not exist, go to next step.
6. Check for blown No. 1 FUEL PUMP (15-amp) fuse in driver's under-dash fuse/relay box. If fuse is blown, repair short in Red/White wire between No. 1 FUEL PUMP (15-amp) fuse and PGM-FI main relay terminal No. 5. See WIRING DIAGRAMS article. If fuse is not blown, repair open Red/White wire between No. 1 FUEL PUMP (15-amp) fuse and PGM-FI main relay terminal No. 5.
7. Push clutch pedal in or shift to park. Turn ignition switch to START position. Using voltmeter connected to ground, measure voltage at PGM-FI main relay terminal No. 2. If battery voltage exists, go to step 9 . If battery voltage does not exist, go to next step.
8. Check for blown No. 13 STARTER SIGNAL (7.5-amp) fuse in driver's under-dash fuse/relay box. If fuse is blown, repair short in Blue/Orange wire between No. 13 STARTER SIGNAL (7.5-amp) fuse and PGM-FI main relay terminal No. 2. If fuse is not blown, repair open Blue/Orange wire between No. 13 STARTER SIGNAL (7.5-amp) fuse and PGM-FI main relay terminal No. 2.
9. Turn ignition switch off. Disconnect ECM/PCM 32-pin harness connector "A". See **Fig. 6** . Go to next step.

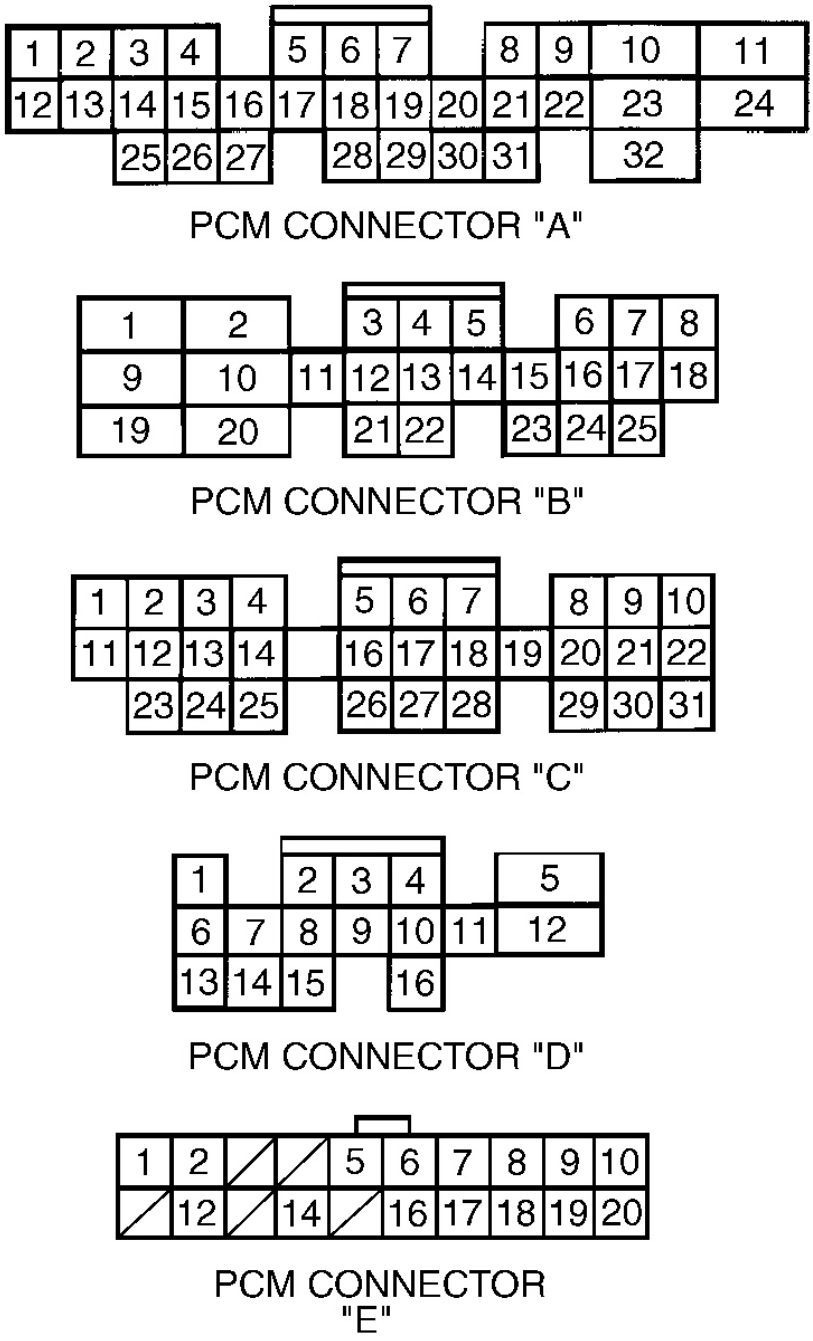

Fig. 6: Identifying PCM Harness Connector Terminals (MDX, 3.2CL & 3.2TL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between PGM-FI main relay terminal No. 1 and ECM/PCM terminal No. 15

(Green/Yellow wire). See WIRING DIAGRAMS article. If continuity is present, go to next step. If continuity is not present, repair open in Green/Yellow wire between PGM-FI main relay terminal No. 1 and ECM/PCM terminal No. 15.

11. Reconnect ECM/PCM 32-pin harness connector "A" and PGM-FI main relay 7-pin harness connector. Go to next step.
12. Turn ignition switch in. Measure voltage between ECM/PCM 25-pin harness connector terminals No. 1 (Yellow /Black wire) and 2 (Black wire), and between terminals No 9 (Yellow/Black wire) and 2 (Black wire). See **Fig. 6** . If battery voltage exists, go to next step. I battery voltage does not exist, check for an open in Yellow/Black wires between PGM-FI main relay terminal No. 6 and ECM/PCM terminals No. 1 and 9. If wires are okay, replace PGM-FI main relay.
13. Turn ignition switch off, then on again and measure voltage within the first 2 seconds, between ECM/PCM 32-pin harness connector terminal No. 15 and ECM/PCM 25-pin harness connector terminal No. 2. If less than one volt exists, PGM-FI main relay may be faulty. Go to next step. If less than one volt does not exist, substitute a known-good ECM/PCM and recheck. If voltage is as specified, replace original ECM/PCM.
14. Remove PGM-FI main relay.
15. Connect power to PGM-FI main relay 7-pin harness connector terminal No. 2 and connect ground to PGM-FI main relay 7-pin harness connector terminal No. 1. Check for continuity between PGM-FI main relay terminals No. 5 (Red/White wire) and 4 (Black/Yellow wire). See **Fig. 4** . If continuity is present, go to next step. If continuity is not present, replace PGM-FI main relay and retest.

NOTE: Do not use terminal numbers molded into relay.

16. Connect battery power to PGM-FI main relay 7-pin harness connector terminal No. 5 and connect ground to PGM-FI main relay 7-pin harness connector terminal No. 1. Check for continuity between PGM-FI main relay terminals No. 5 (Red/White wire) and 4 (Black/Yellow wire). See WIRING DIAGRAMS article. If continuity is present, PGM-FI main relay is okay. If continuity is not present, replace PGM-FI main relay and retest.

RSX

1. Remove fuel tank filler cap. Listen for fuel pump operation at fuel tank fill port. Fuel pump should operate for 2 seconds after ignition switch is turned on. If fuel pump operates as specified, fuel pump is okay. If fuel pump does not operate as specified, go to next step.
2. Turn ignition switch off. Remove glove box, then remove PGM-FI main relay No. 2. See **Fig. 7** . Turn ignition switch on, measure voltage in Yellow/Black wire between PGM-FI No. 2, 4-pin harness connector and body ground. If voltage is present, go to next step. If voltage is not present, repair open in Black/Yellow wire between PGM-FI main relay No. 1 and PGM-FI main relay No. 2.

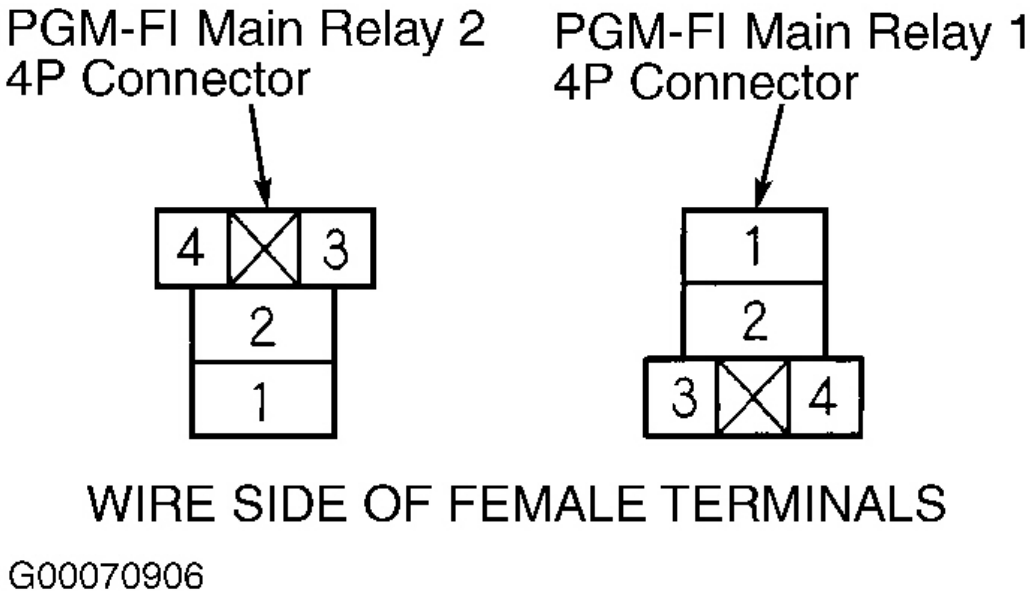

Fig. 7: Identifying PGM-FI Main Relays 1 & 2 (RSX)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a voltmeter connected to ground, check for battery voltage at PGM-FI relay No. 2 4-pin harness connector terminal No. 1. With ignition switch still on, if battery voltage is present, go to next step. If battery voltage is not present, repair open in Black/Yellow wire between under-dash fuse/relay box fuse No. 17 and PGM-FI main relay No. 2, 4-pin harness connector. See WIRING DIAGRAMS article. Repair as necessary. Repair as necessary.
4. Turn ignition switch off. Disconnect White ECM/PCM 31-pin harness connector "E". Using ohmmeter check for continuity in Green/Yellow between PGM-FI main relay No. 2, 4-pin harness connector and White ECM/PCM 31-pin harness connector terminal No. 1. If continuity is present, go to next step. If continuity is not present, repair open in Green/Yellow wire between PGM-FI main relay No. 2, 4-pin harness connector and White ECM/PCM 31-pin harness connector terminal No. 1.
5. Reinstall PGM-FI main relay No. 2. Turn ignition switch on. Using voltmeter connected to ground, measure voltage at White ECM/PCM 31-pin harness connector terminal No. 1 (Green/Yellow wire). If battery voltage is present, go to next step. If battery voltage is not present, replace PGM-FI main relay No. 2
6. Turn ignition switch off. Reconnect White ECM/PCM 31-pin harness connector. Turn ignition switch on. Using voltmeter connected to ground, measure voltage at White ECM/PCM 31-pin harness connector terminal No. 1. If battery voltage was present within the first 2 seconds after the ignition key was turned on, update ECM/PCM (if it does not latest software) or replace with known-good ECM/PCM, then recheck. If symptom goes away, replace original ECM/PCM. If battery voltage was not present, go to next step.
7. Turn ignition switch off. Remove rear seat cushion. Remove access panel from floor. Using voltmeter

connected to ground, measure voltage at fuel pump 5-pin connector terminal No. 5 within the first 2 seconds of turning the ignition switch on. If battery voltage was present, go to step 9 . If battery voltage was not present, go to next step.

8. Turn ignition switch off. Remove PGM-FI main relay No. 2. Connect fused jumper wire between PGM-FI 4-pin harness connector terminals No. 1 (Black/Yellow wire) and 2 (Yellow/ Black wire). See WIRING DIAGRAMS article. Turn ignition switch on. Using voltmeter connected to ground, measure voltage at fuel pump 5-pin harness connector terminal No. 5 within first 2 seconds after ignition is turned on. If battery voltage was present, replace PGM-FI main relay No. 2. If battery voltage was not present, repair open in Yellow/Blue wire between PGM-FI main relay No. 2 and fuel pump 5-pin harness connector.
9. Turn ignition switch off. Using ohmmeter connected to ground, check for continuity at fuel pump 5-pin harness connector terminal No. 4. If continuity is present, replace fuel pump. If continuity is not present, repair open in Black wire between fuel pump 5-pin harness connector terminal No. 4 and ground terminal G501.

3.5RL

1. Remove PGM-FI main relay located under left side of instrument panel. Connect battery voltage to relayconnector "B" terminal No. 3 (Blue/Red wire). Connect connector "B" terminal No. 2 (Yellow/Green wire) to ground. See **Fig. 5** .
2. Test for continuity between relay connector "B" terminal No. 5 (Red/White wire) and connector "A" terminal No. 2 (Yellow wire). See WIRING DIAGRAMS article. If continuity exists, go to next step. If continuity does not exist, replace relay.
3. Connect battery voltage to relay connector "A" terminal No. 4 (Black/Yellow wire). Connect connector "B" terminal No. 7 (Black wire) to ground. Test for continuity between relay connector "A" terminals No. 1 and 3 (both Yellow/Black wires). If continuity exists, go to next step. If continuity does not exist, replace relay and retest.
4. Connect battery voltage to relay connector "A" terminal No. 1 (Yellow/Black wire). Connect connector "B" terminal No. 2 (Yellow/Green wire) to ground. Test for continuity between relay connector "B" terminal No. 5 (Red/White wire) and connector "A" terminal No. 2 (Yellow wire). If continuity exists, relay is okay. If continuity does not exist, replace relay.

FUEL PUMP RELAY (3.5RL)

1. Fuel pump relay is located in the front of the trunk. Turn ignition switch to START position. If engine starts, go to next step. If engine does not start, go to **FUEL PUMP RESISTOR (3.5RL)** .
2. Turn engine off and ignition switch on. Measure voltage between ground and PCM 12-pin connector terminal No. 4 (Green wire). If battery voltage is present, go to next step. If battery voltage is not present, go to step 4 .
3. Start engine and run at 3000 RPM, with no loads and transmission in Park or Neutral, until radiator fan comes on. Allow engine to idle for at least one minute. Turn engine off. Disconnect vacuum hose No. 21 from vacuum manifold. Apply 8-12 in. Hg vacuum to Manifold Absolute Pressure (MAP) sensor. Start engine and run at 6500 RPM with no loads and transmission in Park or Neutral. Measure voltage between ground and PCM 12-pin connector terminal No. 4 (Green wire). See WIRING DIAGRAMS article. If less than one volt is present, fuel pump relay circuit is okay. If less than one volt is not present, substitute a known-good PCM, then recheck. If symptom or indication goes away, replace original PCM.

CAUTION: In the next step, PCM will be damaged if PCM 12-pin connector "C" is not disconnected.

4. Turn ignition off. Disconnect PCM 12-pin connector "C". Disconnect fuel pump relay 4-pin connector. Using a fused jumper wire, connect fuel pump relay connector terminals No. 2 (Red/White wire) and No. 4 (Green wire). Turn ignition on. Measure voltage between ground and PCM 12-pin connector "C" terminal No. 4 (Green wire). If battery voltage is not present, go to next step. If battery voltage is present, replace fuel pump relay.
5. Remove jumper wire. Measure voltage between ground and fuel pump relay 4-pin connector terminal No. 2 (Red/White wire). If battery voltage is present, repair open or short in Green wire between PCM and fuel pump relay. If battery voltage is not present, repair open in Red/White wire between fuel pump relay and No. 22 FUEL PUMP (20-amp) fuse located in underdash fuse/relay box.

FUEL PUMP RESISTOR (3.5RL)

1. Fuel pump resistor is located in the left corner of the trunk. Disconnect fuel pump resistor 2-pin connector. Turn ignition on and within 2 seconds, measure voltage between ground and fuel pump resistor connector terminal No. 2 (Yellow wire). See WIRING DIAGRAMS article. If battery voltage is present for 2 seconds after ignition is turned on, go to next step. If battery voltage is not present as specified, check PGM-FI relay. See **PGM-FI MAIN RELAY CIRCUIT TESTING** .
2. Turn ignition switch off. Using a fused jumper wire, connect fuel pump resistor connector terminals No. 1 (Black/Yellow wire) and No. 2 (Yellow wire). Turn ignition switch to START position. If engine does not start, go to next step. If engine starts, replace fuel pump resistor.
3. Turn ignition off. Disconnect fuel unit sub-harness Gray, 10-pin connector located in front of trunk, above fuel pump access panel, next to Gray, 20-pin connector. Turn ignition on and within 2 seconds, measure voltage between ground and sub-harness connector terminal No. 7 (Black/Yellow wire). If battery voltage is present for 2 seconds after ignition is turned on, check fuel pump. If battery voltage is present as specified, repair open in wire between fuel pump resistor terminal No. 2 and fuel pump sub-harness connector terminal No. 7.

IGNITION CHECKS

NOTE: Before proceeding with ignition system testing, check for DTCs stored in PCM memory. Ensure there are no bent, loose or corroded connector terminals. Recheck system if repairs are necessary.

IGNITION COIL CIRCUIT TESTING

MDX, 3.2CL & 3.2TL

1. Remove ignition coil cover. Disconnect 6 ignition coil 3-pin connectors. Turn ignition on. Measure voltage between ground and each ignition coil connector terminal No. 3 (Black/Yellow wire). See WIRING DIAGRAMS article. If battery voltage is present, go to next step. If battery voltage is not present, repair open circuit in Black/Yellow wire between ignition coil and No. 11 (15-amp) fuse located in underdash fuse/relay box.

2. Turn ignition off. Measure continuity between ignition coil 3-pin connector terminal No. 2 (Black wire) and ground. If continuity is present, go to next step. If continuity is present, repair open circuit in Black wire between ignition coil and ground.
3. Disconnect PCM 31-pin connector. Measure continuity between PCM 31-pin connector terminals and ground. See **PCM 31-PIN CONNECTOR TERMINAL IDENTIFICATION (MDX, 3.2CL & 3.2TL)** table. If continuity is present between designated PCM connector terminal and ground, repair short circuit in appropriate wire between ignition coil and PCM. If continuity is not present, go to next step.

PCM 31-PIN CONNECTOR TERMINAL IDENTIFICATION (MDX, 3.2CL & 3.2TL)

Connector Terminal	Wire Color
No. 3	White/Blue
No. 4	Yellow/Green
No. 12	Black/Red
No. 13	Brown
No. 14	Blue/Red
No. 23	Brown/White

4. Reconnect PCM 31-pin connector. Turn ignition switch to START position. Measure voltage between ignition coil 3-pin connectors terminal No. 1 and ground. See **IGNITION COIL 3-PIN CONNECTOR TERMINAL NO. 1 IDENTIFICATION (MDX, 3.2CL & 3.2TL)** table. If about .5 volt is present, replace ignition coil. If about .5 volt is not present, repair open circuit in appropriate wire between ignition coil connector terminal No. 1 and PCM.

IGNITION COIL 3-PIN CONNECTOR TERMINAL NO. 1 IDENTIFICATION (MDX, 3.2CL & 3.2TL)

Ignition Coil	Wire Color
No. 1	Yellow/Green
No. 2	Blue/Red
No. 3	White/Blue
No. 4	Brown
No. 5	Black/Red
No. 6	Brown/White

RSX

1. Remove ignition coil cover. Disconnect 4 ignition coil 3-pin connectors. Turn ignition on. Measure voltage between ground and each ignition coil connector terminal No. 3 (Black/Yellow wire). See WIRING DIAGRAMS article. If battery voltage is present, go to next step. If battery voltage is not present, repair open circuit in Black/Yellow wire between ignition coil and No. 1 IGN COIL (15-amp) fuse located in underdash fuse/relay box.
2. Turn ignition off. Measure continuity between ignition coil 3-pin connector terminal No. 2 (Black wire) and ground. If continuity is present, go to next step. If continuity is present, repair open circuit in Black wire between ignition coil and ground.
3. Disconnect ECM/PCM 31-pin connector. Measure continuity between appropriate ECM/PCM 31-pin

connector terminal and ground. See **PCM 31-PIN CONNECTOR TERMINAL IDENTIFICATION (RSX)** table. If continuity is present between designated PCM connector terminal and ground, repair short circuit in wire between ignition coil and ECM/PCM. If continuity is not present, go to next step.

PCM 31-PIN CONNECTOR TERMINAL IDENTIFICATION (RSX)

Connector Terminal No.	Wire Color
27	Brown
28	White/Blue
29	Blue/Red
30	Yellow/Green

4. Reconnect PCM 31-pin connector. Turn ignition switch to START position. Measure voltage between appropriate ignition coil 3-pin connector terminal No. 1 and ground. See **IGNITION COIL 3-PIN CONNECTOR TERMINAL NO. 1 IDENTIFICATION (RSX)** table. If about .5 volt is present, replace ignition coil. If about .5 volt is not present, repair open circuit in appropriate wire between ignition coil connector terminal No. 1 and ECM/PCM.

IGNITION COIL 3-PIN CONNECTOR TERMINAL NO. 1 IDENTIFICATION (RSX)

Ignition Coil	Wire Color
No. 1	Yellow/Green
No. 2	Blue/Red
No. 3	White/Blue
No. 4	Brown

IGNITION COIL TEST (3.5RL)

Turn ignition off. Measure primary winding resistance between ignition coil connector terminals No. 1 and 2. See **Fig. 8** . Resistance should be .9-1.1 ohms at 77°F (25°C). Replace coil if resistance is not within specification. Resistance specification for secondary winding is not available.

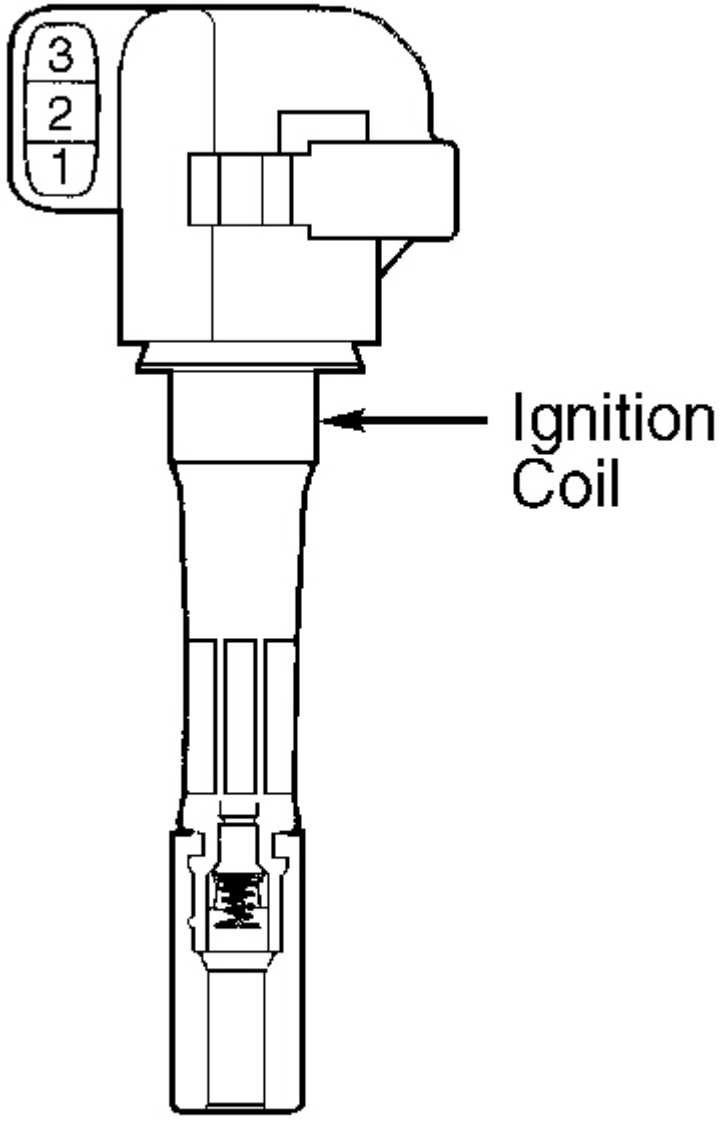

Fig. 8: Identifying Ignition Coil Terminals (3.5RL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IGNITION CONTROL MODULE INPUT TEST (3.5RL)

1. Turn ignition off. Disconnect Ignition Control Module (ICM) 8-pin harness connector. Check for continuity between ground and ICM harness connector terminals No. 2 (Black wire) and No. 7 (Black wire). See **Fig. 9** . If continuity exists, go to next step. If continuity does not exist, repair open in Black wire between ICM and ground.
2. Turn ignition on. Measure voltage between ground and ICM harness connector terminals No. 1 (White/Black wire), No. 3 (White/Green wire), No. 4 (White wire), No. 5 (White/Red wire), No. 6 (Red/Green wire), and No. 8 (White/Blue wire). See WIRING DIAGRAMS article.
3. If battery voltage exists at all indicated terminals, replace ICM. If battery voltage does not exist at all terminals, check for a blown No. 25 IG-COIL (30-amp) fuse located in underdash fuse/relay box.
4. If battery voltage does not exist at a specific terminal, check for open or shorted circuit between ignition coil and ICM harness connector. If circuit is okay, substitute suspect ignition coil with known-good coil.

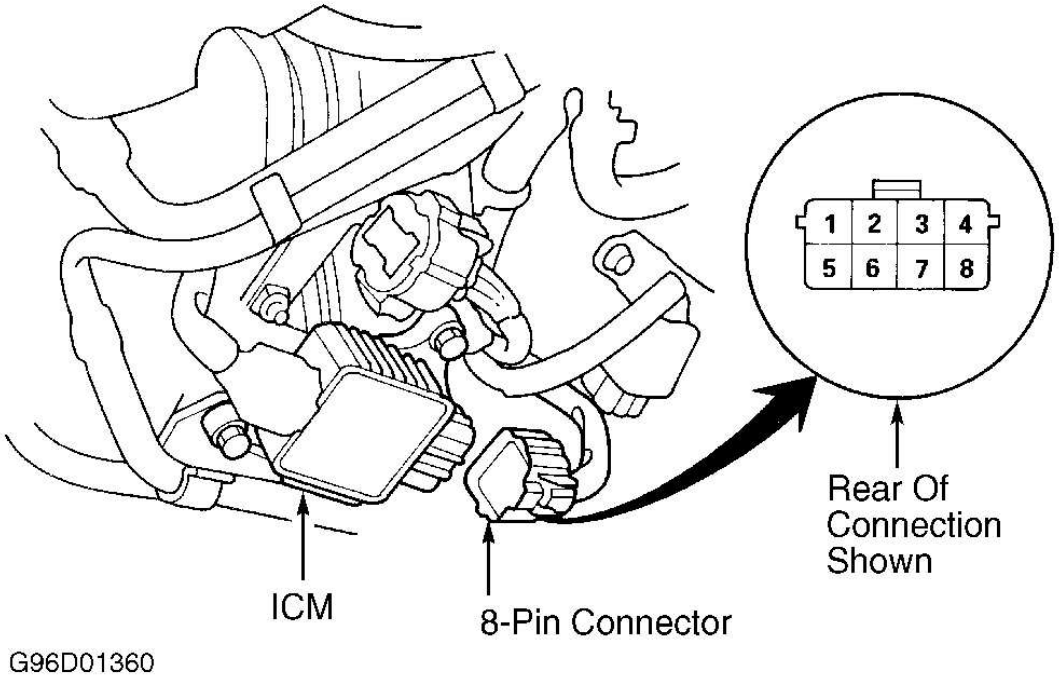

Fig. 9: Identifying ICM Harness Connector Terminals (3.5RL)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLE SPEED & IGNITION TIMING

IDLE SPEED

Ensure idle speed is set to specification. See **IDLE SPEED SPECIFICATIONS** table. For adjustment procedures, see ON-VEHICLE ADJUSTMENTS article.

IDLE SPEED SPECIFICATIONS

Application	(1) Curb Idle RPM
MDX	680-780
RSX	
K20A2	650-750
K20A3 (A/T & M/T)	600-700
3.2CL & 3.2TL	700-800
3.5RL	600-700
(1) With A/T in Neutral or Park, or M/T in neutral with no accessory loads.	

FAST IDLE SPEED

FAST IDLE SPEED SPECIFICATIONS

Application	(1) RPM
MDX, 3.2CL & 3.2TL	(2)
RSX	
K20A2	1300-2300
K20A3 A/T Or M/T	1100-2100
3.5RL	1100-1500
(1) With A/T in Neutral or Park, or M/T in neutral with no accessory loads.	
(2) Information is not available from manufacturer.	

IGNITION TIMING

Ensure idle speed and ignition timing are set to specification. See **IGNITION TIMING (DEGREES BTDC - RED MARK @ RPM)** table. For adjustment procedures, see ON-VEHICLE ADJUSTMENTS article.

IGNITION TIMING (Degrees BTDC - RED MARK @ RPM) (1) (2)

Application	Specification
MDX	8-12 @ 680-780
RSX	
A/T	6-10 @ 600-700
M/T	6-10 @ 650-750
3.2CL & 3.2TL	8-12 @ 630-730
3.5RL	13-17 @ 600-700
(1) Install Service Check Connector Tool (07PAZ-0010100) to service check connector before checking timing.	
(2) With automatic transmission in Neutral or Park, manual transmission in Neutral.	

SUMMARY

If no faults were found while performing BASIC DIAGNOSTIC PROCEDURES, proceed to appropriate SELF-DIAGNOSTICS article. If no hard codes are found in self-diagnostics, proceed to TROUBLE SHOOTING - NO CODES article for diagnosis by symptom (i.e., ROUGH IDLE, NO START, etc.) or intermittent diagnostic procedures.