

2005-08 ENGINE

Ignition System - RL

COMPONENT LOCATION INDEX

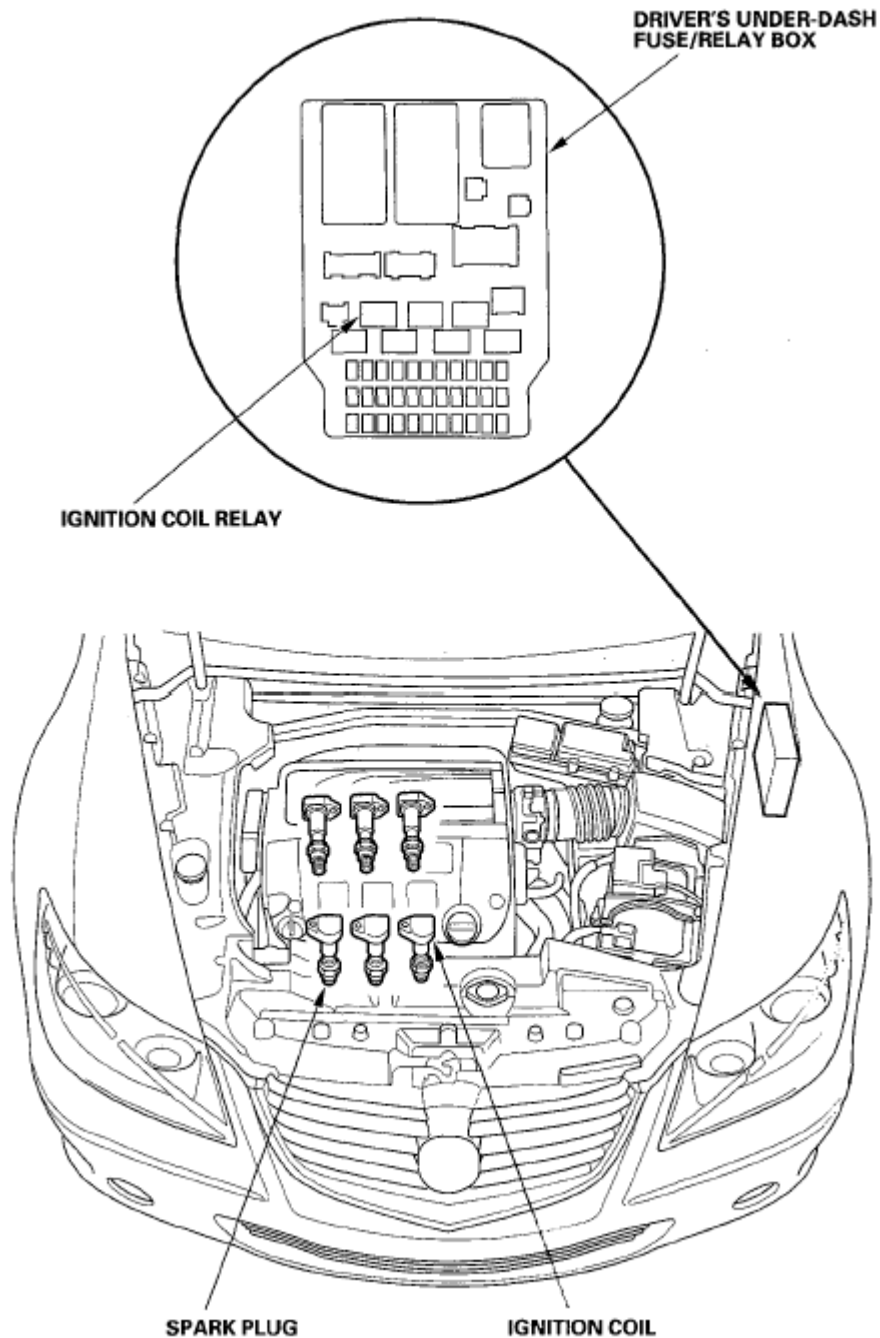


Fig. 1: Identifying Ignition System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

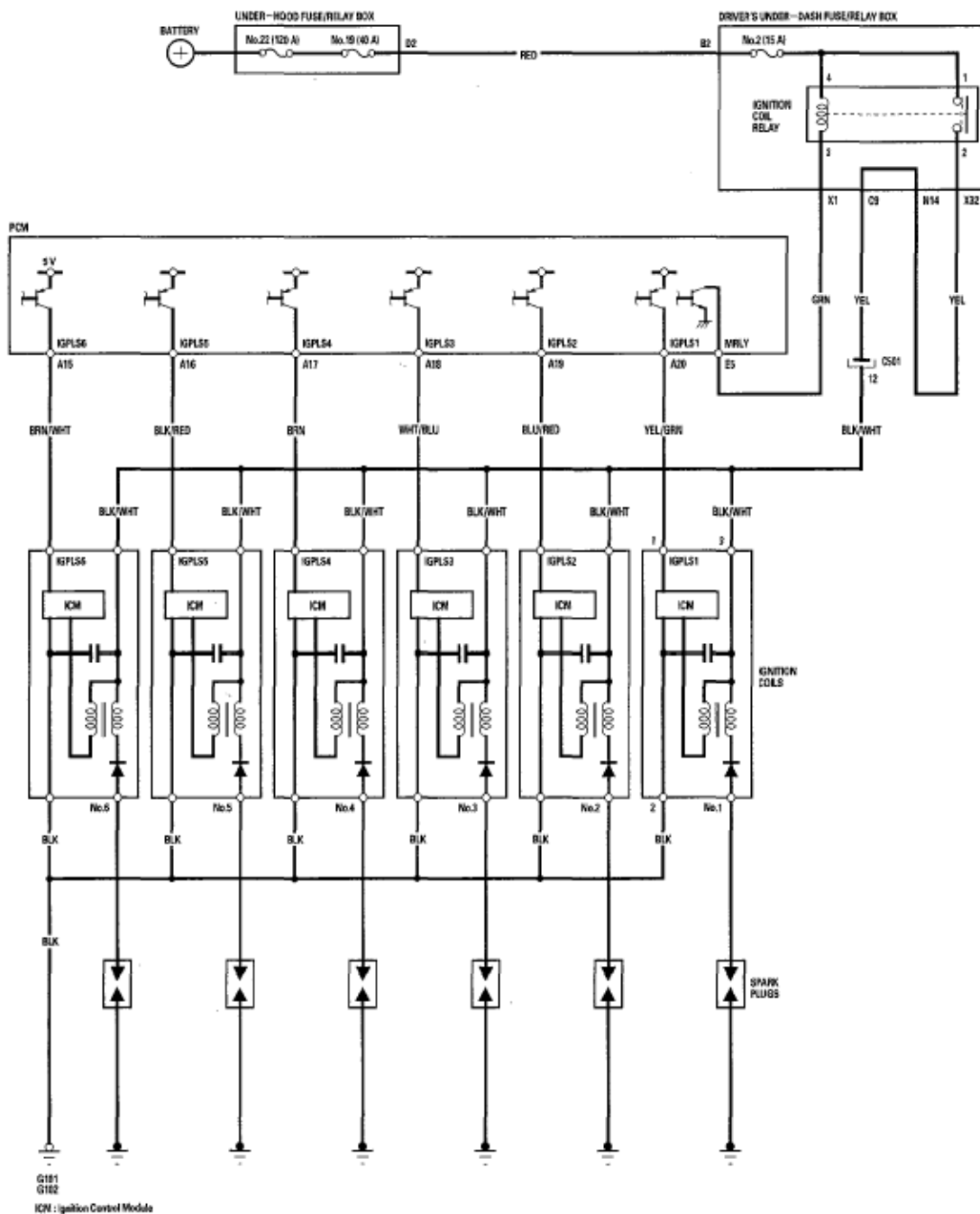


Fig. 2: Ignition System Circuit Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

IGNITION TIMING INSPECTION

1. Connect the HDS to the data link connector (DLC) (see step 2 under **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**), and check for DTCs. If a DTC is present, diagnose and repair the cause before inspecting the ignition timing.
2. Start the engine. Hold the engine speed at 3,000 RPM with no load (in N or P position) until the radiator fan comes on, then let it idle.
3. Check the idle speed (see **IDLE SPEED INSPECTION**).

4. Jump the SCS line with the HDS.
5. Remove the right upper fender trim (see step 1 under **DRIVE BELT INSPECTION**).
6. Connect the timing light to the No. 1 ignition coil harness.

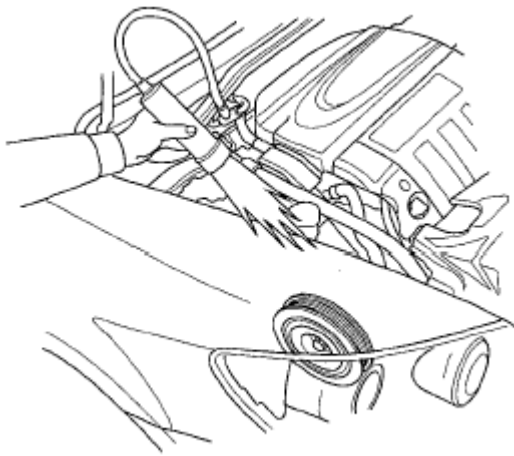


Fig. 3: Checking Ignition Timing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Aim the light toward the pointer (A) on the timing belt cover. Check the ignition timing under a no load condition (headlights, blower fan, rear window defogger, and air conditioner are turned off).

Ignition Timing

10° 2° BTDC (RED mark (B)) at idle in P or N position

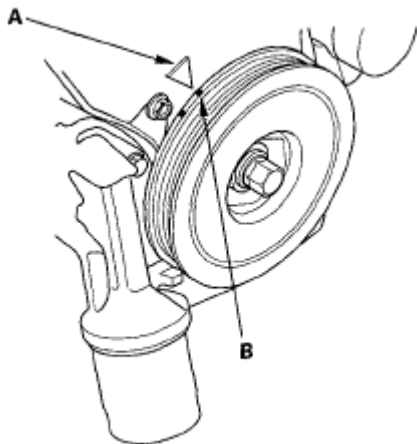


Fig. 4: Identifying Pointer On Timing Belt Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the ignition timing differs from the specification, check the cam timing. If the cam timing is OK, update the powertrain control module (PCM) if it does not have the latest software (see **UPDATING THE PCM**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the system works properly, and the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**).
9. Disconnect the HDS and the timing light.

IGNITION COIL REMOVAL/INSTALLATION

1. Remove the engine cover (A), right upper fender trim (B), battery trim (C), left upper fender trim (D), then remove the grille cover (E).

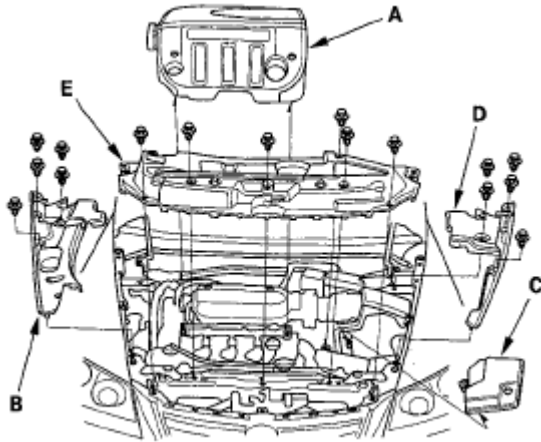


Fig. 5: Identifying Engine Cover, Right/Left Upper Fender Trim, Battery Trim And Grille Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the ignition coil connectors (A), then remove the front bank ignition coils (B).

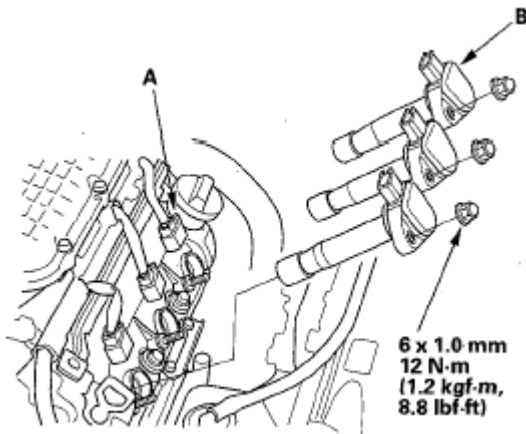


Fig. 6: Identifying Ignition Coil Connectors And Front Bank Ignition Coils

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the ignition coil connectors (A), then remove the rear bank ignition coils (B).

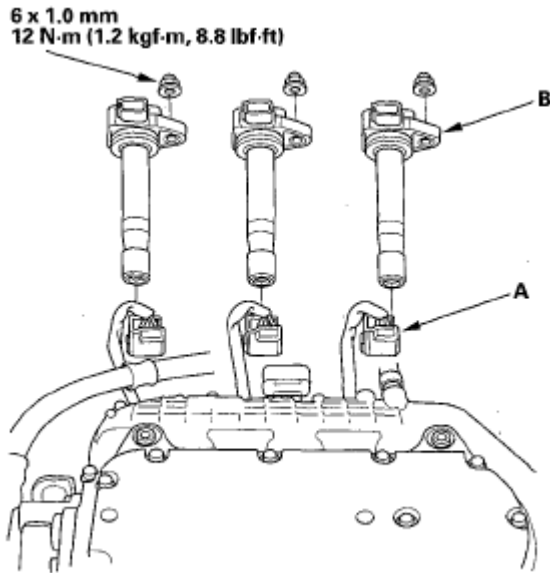


Fig. 7: Identifying Ignition Coil Connectors And Rear Bank Ignition Coils
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the ignition coils in the reverse order of removal.

IGNITION COIL RELAY CIRCUIT TROUBLESHOOTING

1. Check the No. 2 (15A) fuse in the driver's under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 2.

NO - Replace the fuse. If the fuse continues to blow, locate and repair the short in the circuit between the under-dash fuse/relay box and the ignition coils.

2. Remove the ignition coil relay from the driver's under-dash fuse/relay box, and test it (see **POWER RELAY TEST**).

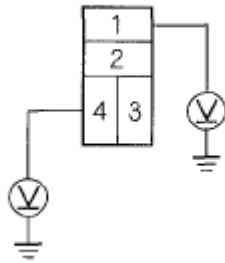
Is the relay OK?

YES - Go to step 3.

NO - Replace the ignition coil relay.

3. Measure the voltage between ignition coil relay 4P socket terminal No. 1 and body ground, then terminal No. 4 and body ground.

IGNITION COIL RELAY 4P SOCKET



Terminal side of female terminals

Fig. 8: Measuring Voltage Between Ignition Coil Relay 4P Socket Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

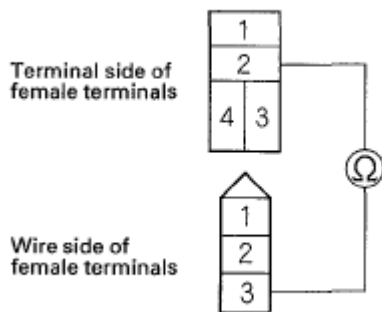
Is there battery voltage?

YES - Go to step 4.

NO - Replace the driver's under-dash fuse/relay box.

4. Check for continuity between ignition coil relay 4P socket terminal No. 2 and the No. 1 ignition coil 3P connector terminal No. 3.

IGNITION COIL RELAY 4P SOCKET



No. 1 IGNITION COIL 3P CONNECTOR

Fig. 9: Checking Continuity Between Ignition Coil Relay Socket Terminal 2 And Ignition Coil Terminal 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 5.

NO - Repair open in the wire between ignition coil relay 4P socket terminal No. 2 and No. 1 ignition coil 3P connector terminal No. 3.

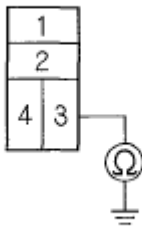
5. Connect the HDS to the data link connector (DLC) (see step 2 under **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**). Turn the ignition switch ON (II), and jump the SCS line with the HDS, then turn the ignition switch OFF.

NOTE: This step must be done to protect the powertrain control module (PCM)

from damage.

6. Disconnect PCM connector E (31P).
7. Check for continuity between ignition coil relay 4P socket terminal No. 3 and body ground.

IGNITION COIL RELAY 4P SOCKET



Terminal side of female terminals

Fig. 10: Checking Continuity Between Ignition Coil Relay 4P Socket Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between ignition coil relay 4P socket terminal No. 3 and the PCM (E5).

NO - Go to step 8.

8. Check for continuity between ignition coil relay 4P socket terminal No. 3 and PCM connector terminal E5.

IGNITION COIL RELAY 4P SOCKET

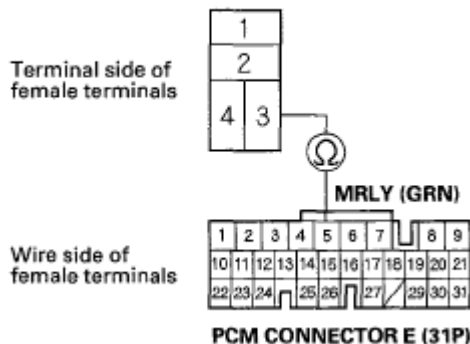


Fig. 11: Checking Continuity Between Ignition Coil Relay Socket Terminal 3 And PCM Connector Terminal E5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - The system is OK at this time. Check for loose or poor connections at the ignition coil relay and the PCM (E5).

NO - Repair open in the wire between ignition coil relay 4P socket terminal No. 3 and the PCM (E5).

SPARK PLUG INSPECTION

1. Remove the spark plugs and inspect the electrodes and the ceramic insulator.
 - Burned or worn electrodes may be caused by:
 - Advanced ignition timing
 - Loose spark plug
 - Plug heat range too hot
 - Insufficient cooling
 - Fouled plugs may be caused by:
 - Retarded ignition timing
 - Oil in combustion chamber
 - Incorrect spark plug gap
 - Plug heat range too cold
 - Excessive idling/low speed running
 - Clogged air cleaner element
 - Deteriorated ignition coils

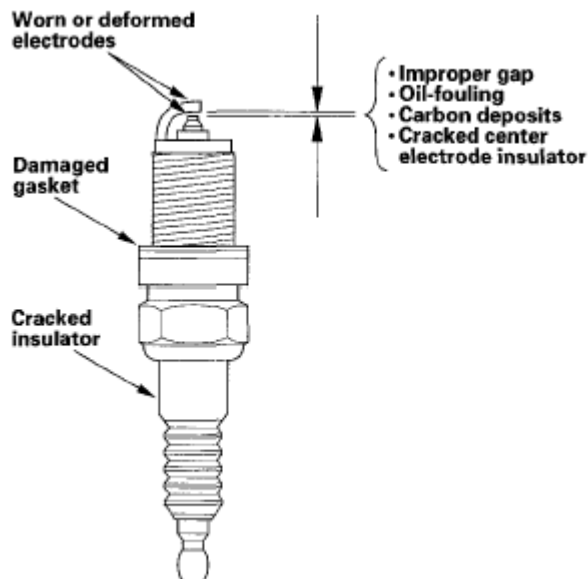


Fig. 12: Identifying Electrodes And Ceramic Insulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the spark plug electrode is dirty or contaminated, clean the electrode with a plug cleaner.

NOTE:

- Do not use a wire brush or scrape the iridium electrode since this will damage the electrode.
- When using a sand blaster spark plug cleaner, do not clean for more than 20 seconds to avoid damaging the electrode.

3. Do not adjust the gap (A) of iridium tip plugs; replace the spark plug if the gap is out of specification.

Electrode Gap:

Standard (New): 1.0-1.1 mm (0.039-0.043 in.)

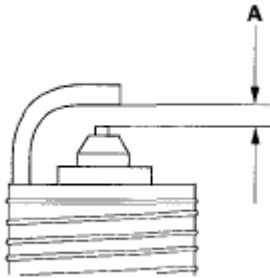


Fig. 13: Identifying Electrode Gap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Replace the plug at the specified interval, or when the center electrode is rounded (A). Use only the listed spark plugs.

Spark Plugs:

NGK: IZFR6K11

DENSO: SKJ20DR-M11

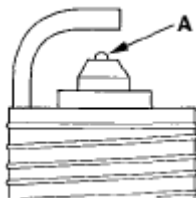


Fig. 14: Identifying Sparkplug Center Electrode

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply a small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger-tight. Torque them to 18 N.m (1.8 kgf.m, 13 lbf.ft).