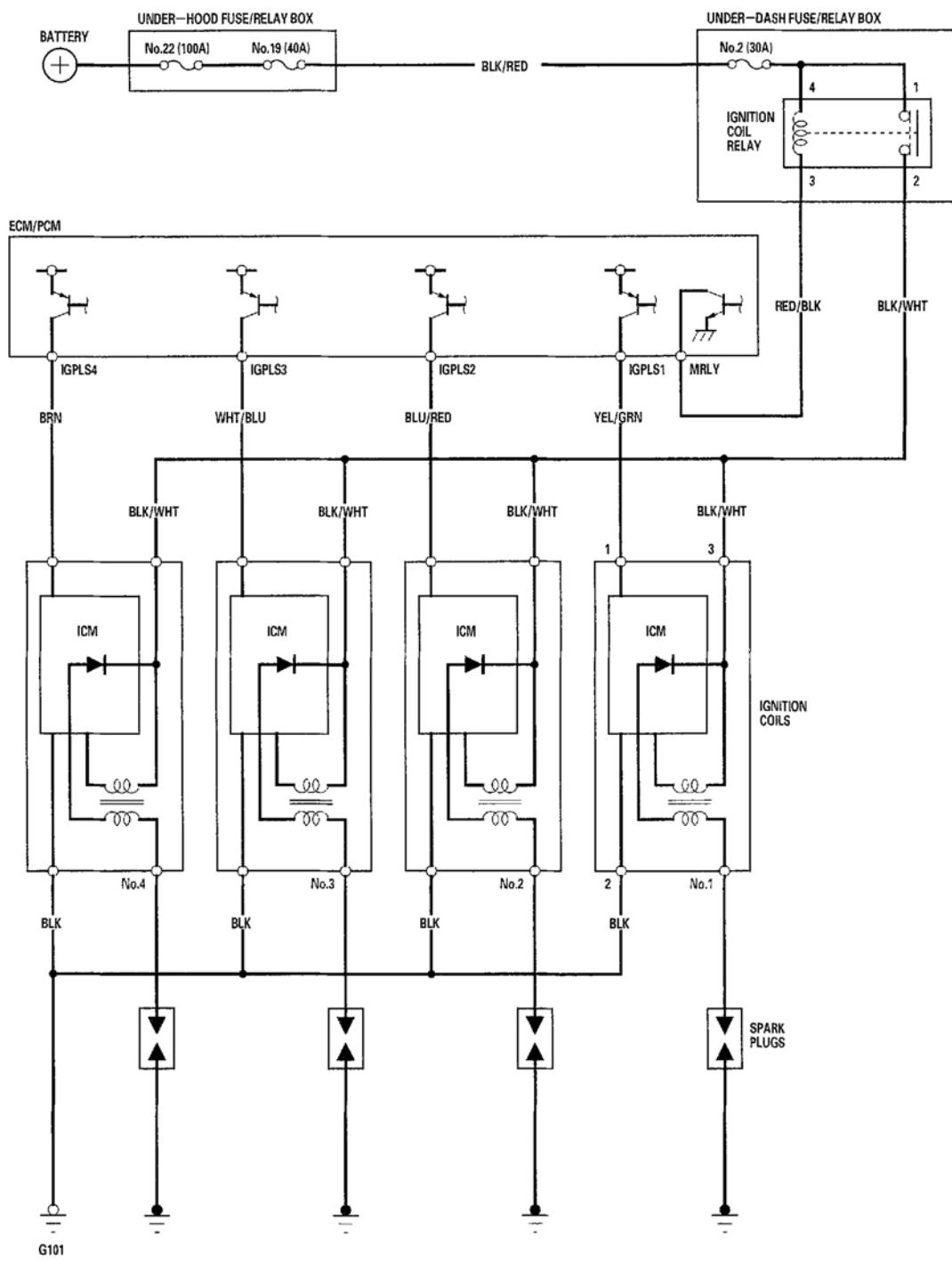
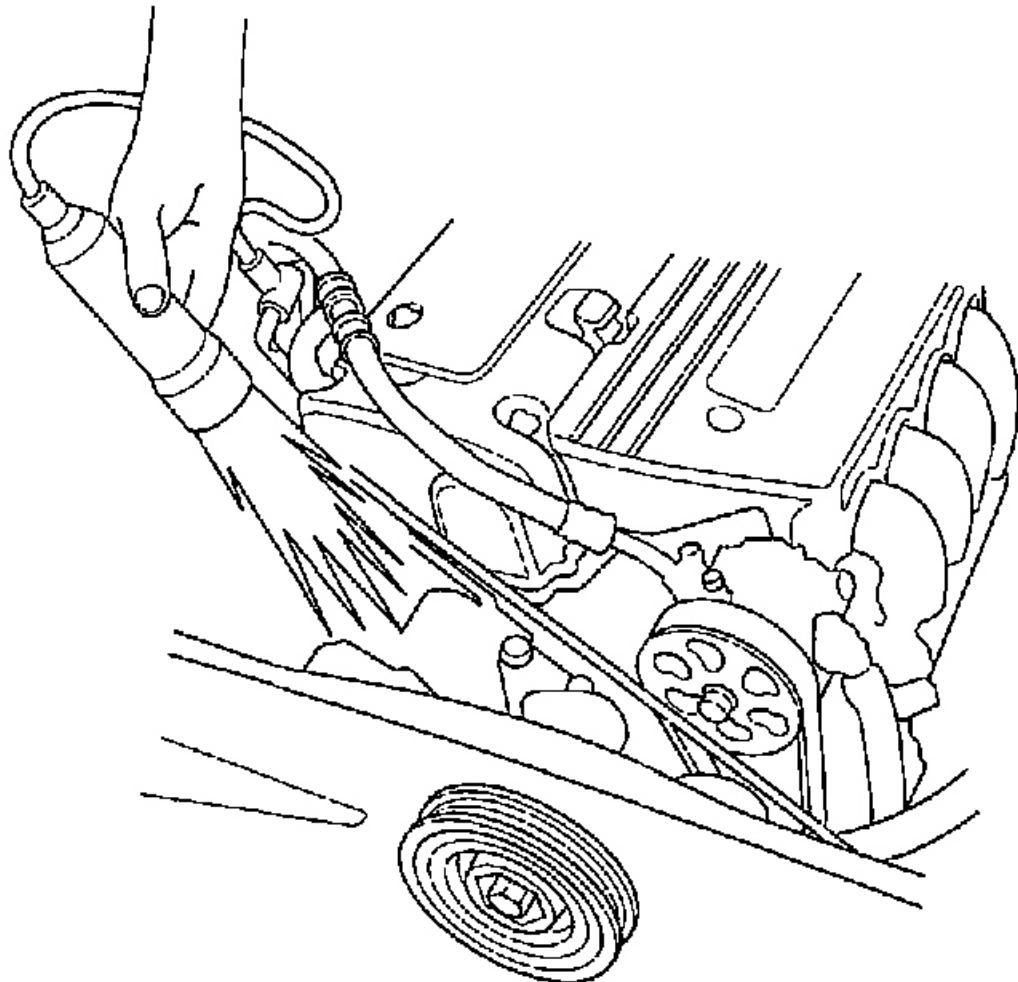


**Fig. 1: Locating Ignition System Components**

## CIRCUIT DIAGRAM

**Fig. 2: Ignition System Wiring Diagram****IGNITION TIMING INSPECTION**

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 of **GENERAL TROUBLESHOOTING INFORMATION** ), and check for DTC's. If a DTC is present, diagnose and repair the cause before inspecting the ignition timing.
2. Start the engine. Hold the engine at 3,000 RPM with no load (in Neutral) until the radiator fan comes on, then let it idle.
3. Check the idle speed (see **IDLE SPEED INSPECTION** ).
4. Follow the tester's prompts to get the tester in the "SCS" mode (see the operator's manual).
5. Free the service loop from the wire harness, then connect the timing light to the service loop.



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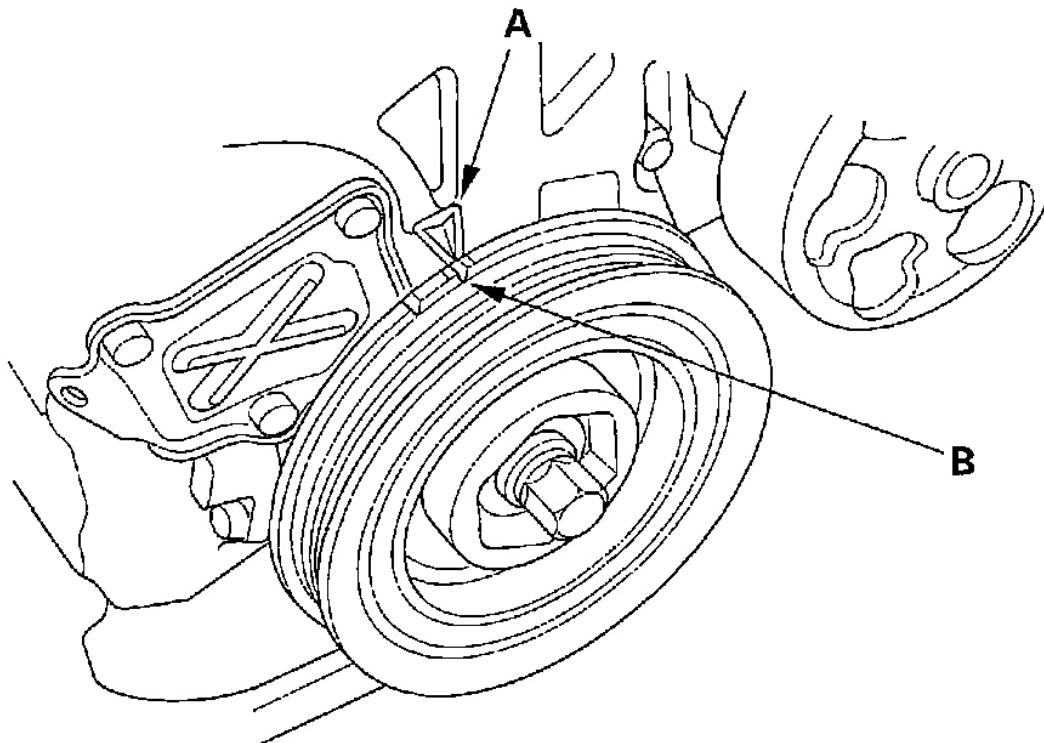
**Fig. 3: Aiming The Timing Light Toward The Pointer On The Cam Chain Case**

6. Aim the light toward the pointer (A) on the cam chain case. Check the ignition timing under no load condition: headlights, blower fan, rear window defogger, and air conditioner are not operating.

**Ignition Timing:**

**M/T:**  $8^\circ \pm 2^\circ$  BTDC (RED mark (B)) at idle in Neutral

**A/T:**  $8^\circ \pm 2^\circ$  BTDC (RED mark (B)) at idle in Park or Neutral



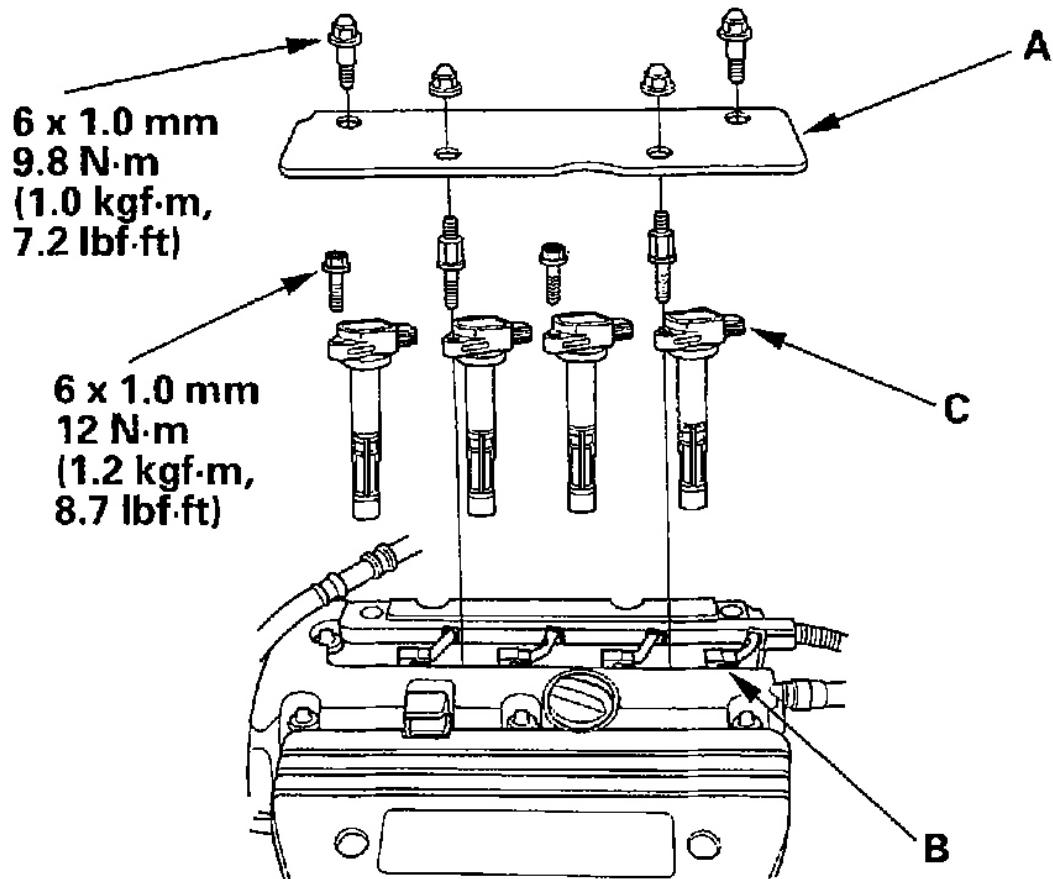
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**Fig. 4: Identifying Timing Marks**

7. If the ignition timing differs from the specification, check cam timing. If cam timing is OK, update the engine control module (ECM)/powertrain control module (PCM) if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING** ), then recheck. If the system work properly, and the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING** ).
8. Disconnect the HDS and the timing light.
9. Secure the service loop to the wire harness with wire ties.

**IGNITION COIL REMOVAL/INSTALLATION**

1. Remove the ignition coil cover (A), disconnect the ignition coil connectors (B), then remove the ignition coils (C).



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**Fig. 5: Removing The Ignition Coil Cover, Disconnecting The Ignition Coil Connectors, & Removing The Ignition Coils**

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

**IGNITION COIL RELAY CIRCUIT TROUBLESHOOTING**

1. Check the No. 2 (30A) fuse in the under-dash fuse/relay box.

**Is the fuse OK?**

**YES:** Go to step 2.

**NO:** Replace the fuse.

2. Remove the ignition coil relay from the 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.

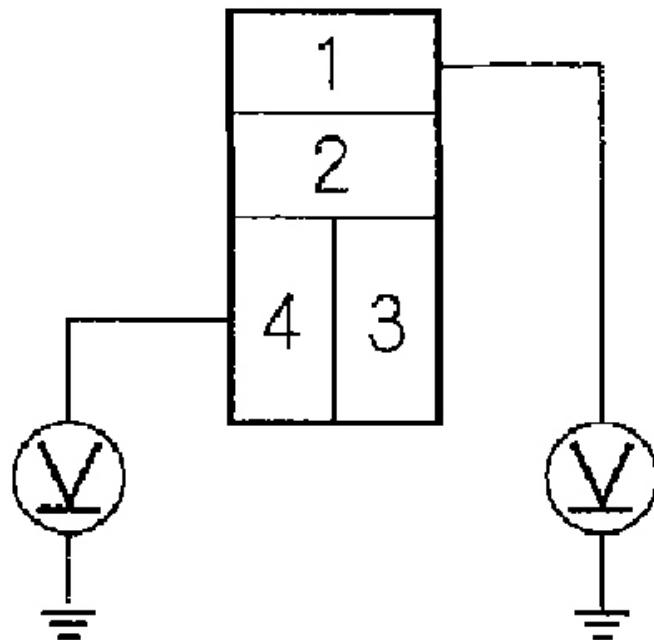
3. Measure the voltage between ignition coil relay 4P socket terminal No. 1 and body ground, then terminal No. 4 and body ground.

**Is there battery voltage?**

**YES:** Go to step 4.

**NO:** Replace the under-dash fuse/relay box.

## IGNITION COIL RELAY 4P SOCKET



**Terminal side of female terminals**

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**Fig. 6: Measuring Voltage Between Ignition Coil Relay 4P Socket Terminals And Body Ground**

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

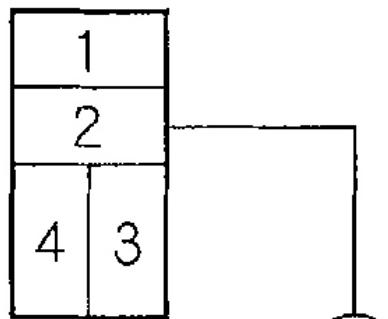
**Is there continuity?**

**YES:** Go to step 5.

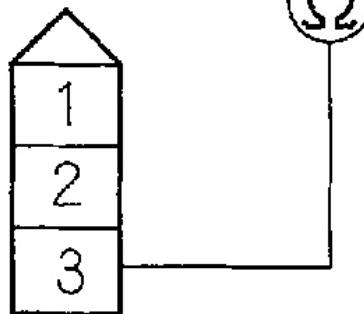
**NO:** Repair an open in the wire between ignition coil relay 4P socket terminal No. 2 and ignition coil 3P connector terminal No. 3.

## IGNITION COIL RELAY 4P SOCKET

Terminal side of female terminals



Wire side of female terminals



## No.1 IGNITION COIL 3P CONNECTOR

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**Fig. 7: Checking For Continuity Between Ignition Coil Relay 4P Socket Terminal No. 2 And The No. 1 Ignition Coil 3P Connector Terminal No. 3**

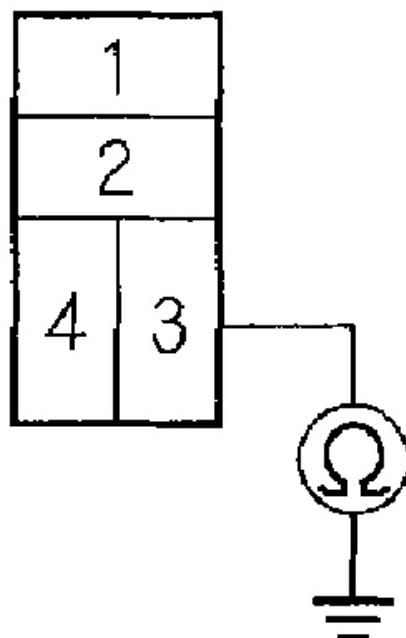
5. Check for continuity between ignition coil relay 4P socket terminal No. 3 and body ground.

**Is there continuity?**

**YES:** Repair a short in the wire between ignition coil relay 4P socket terminal No. 3 and ECM/PCM.

**NO:** Repair an open in the wire between ignition coil relay 4P socket terminal No. 3 and ECM/PCM.

## IGNITION COIL RELAY 4P SOCKET



Terminal side of female terminals

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**Fig. 8: Checking For Continuity Between Ignition Coil Relay 4P Socket Terminal No. 3 And Body Ground**

### SPARK PLUG INSPECTION

1. Inspect the electrodes and ceramic insulator.

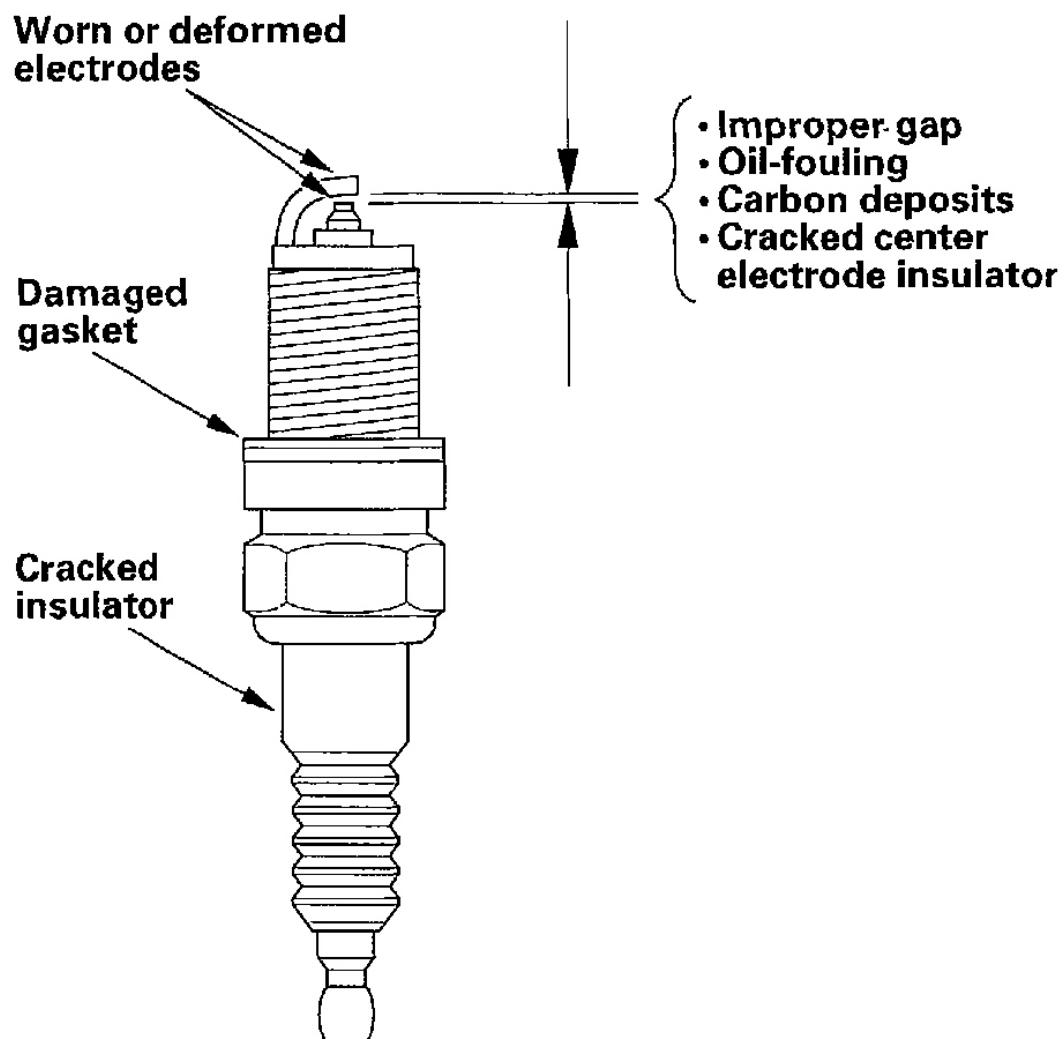
**Burned or worn electrodes may be caused by:**

- Advanced ignition timing
- Loose spark plug
- Plug heat range too hot

- Insufficient cooling

**Fouled plug 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



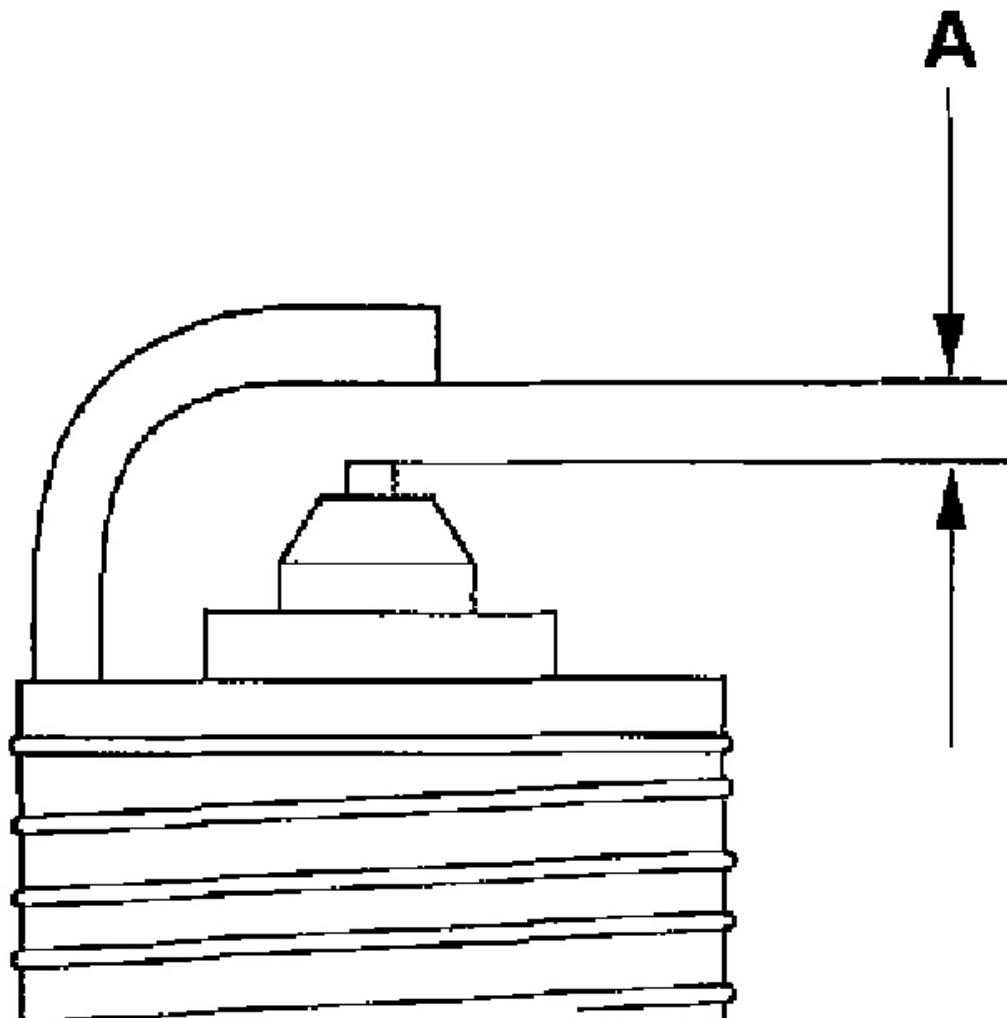
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**Fig. 9: Inspecting Spark Plug**

2. 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.)



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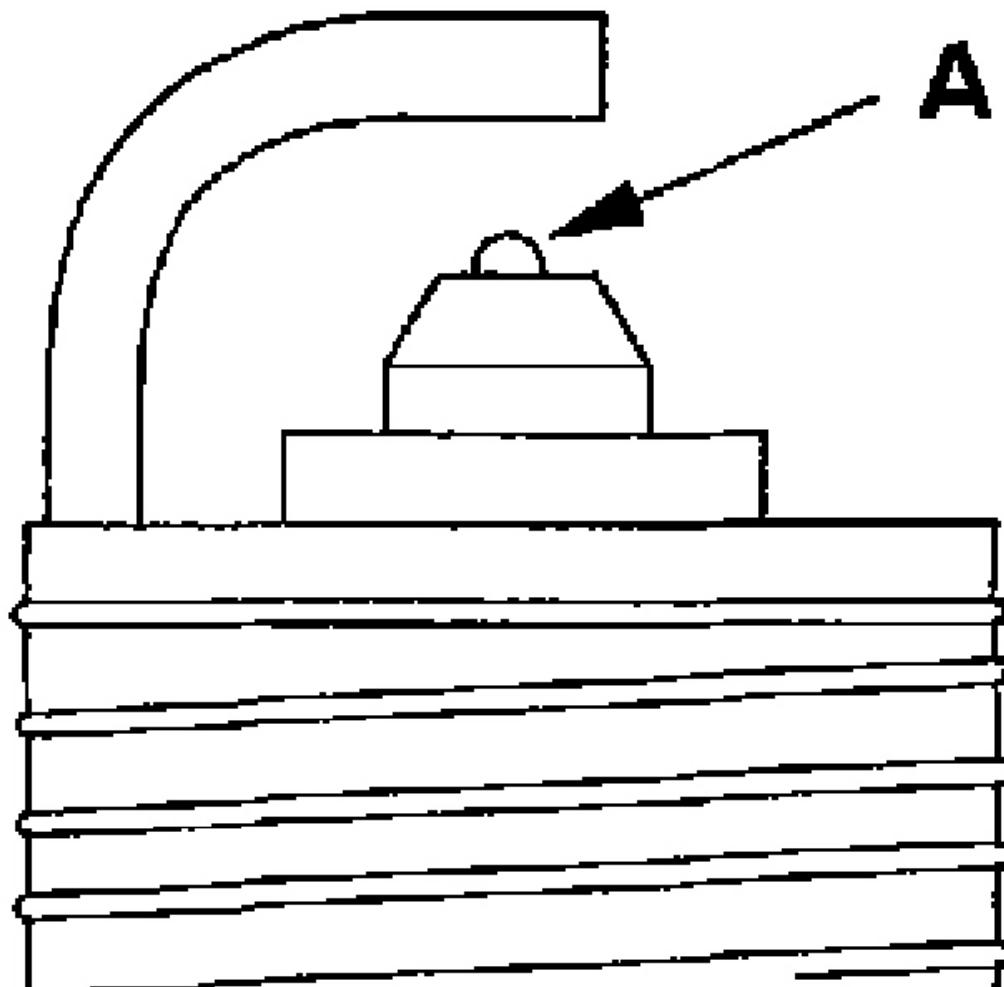
**Fig. 10: Checking Gap**

3. Replace the plug at the specified interval or if the center electrode is rounded (A). Use only the spark plugs listed below.

**Spark Plugs:**

**NGK: IZFR6K11**

**DENSO: SKJ20DR-M11**



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**Fig. 11: Identifying Rounded Center Electrode**

## 2004 Acura TSX

### 2004 Engines Ignition System - TSX

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