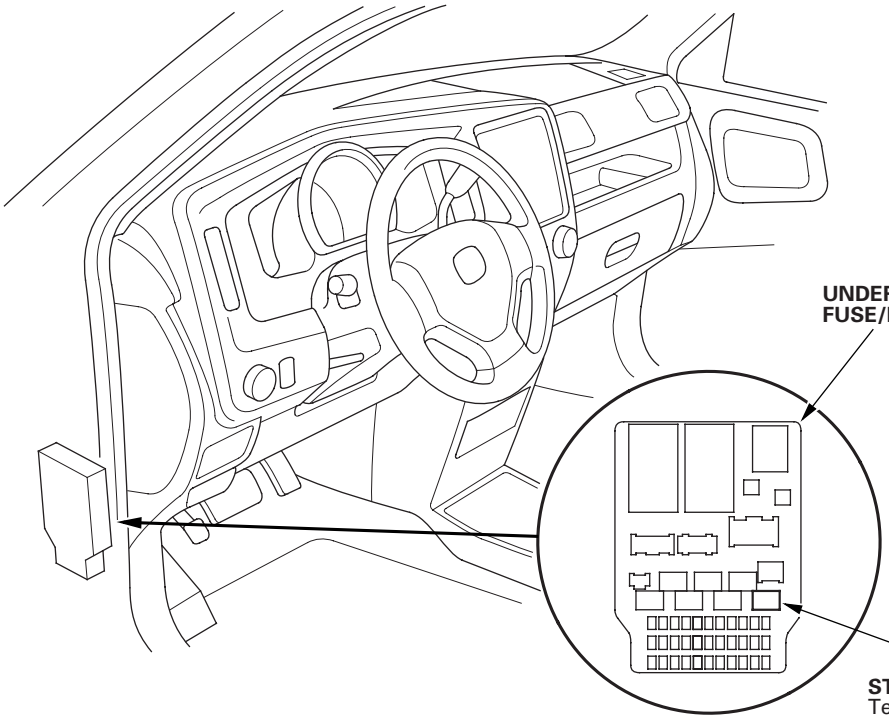
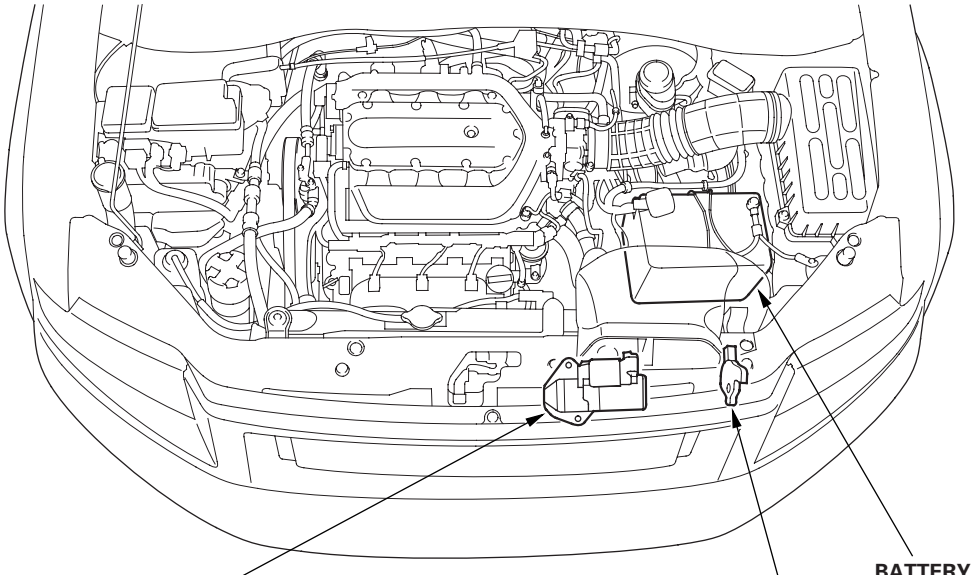
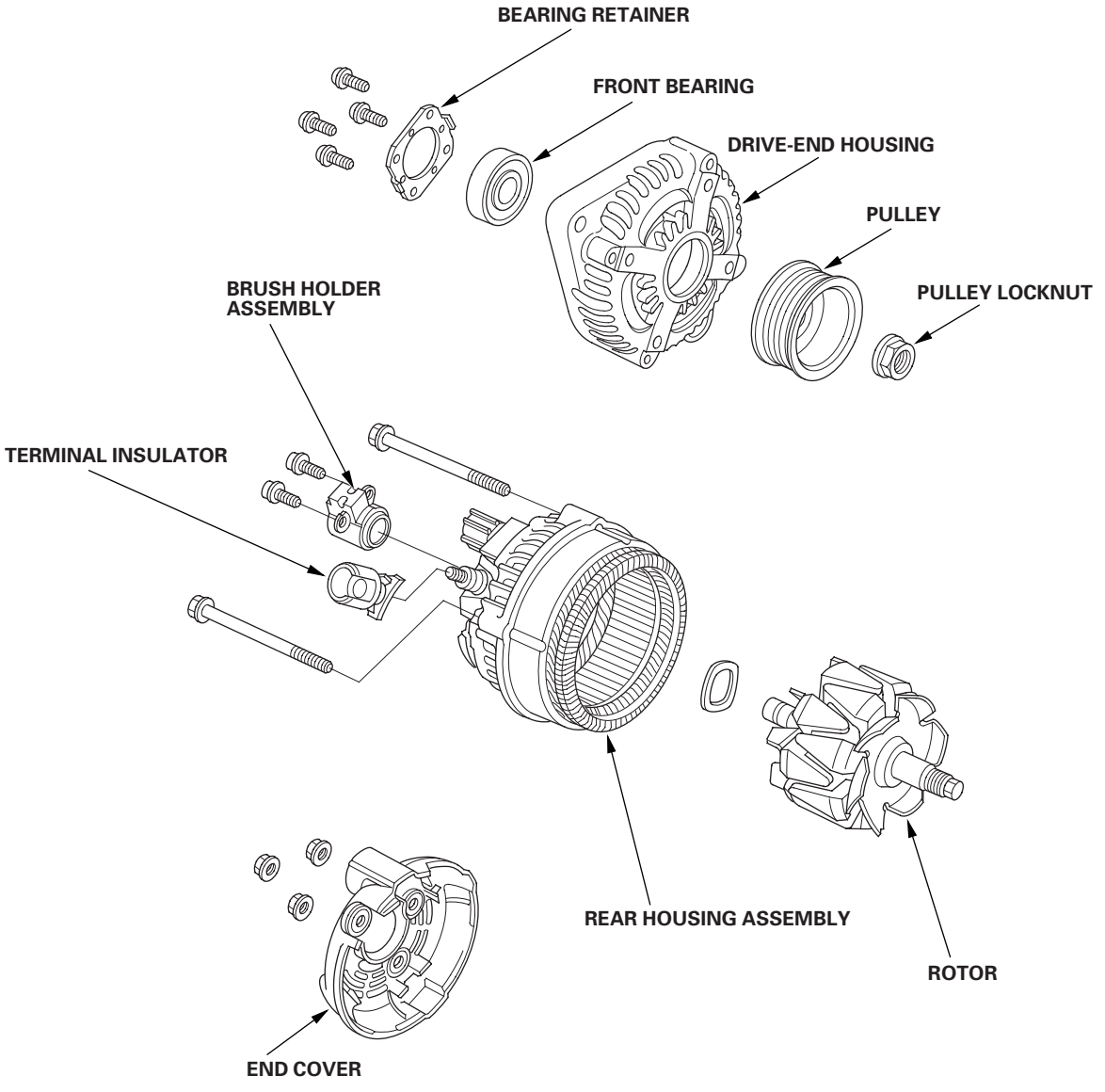
Component Location Index





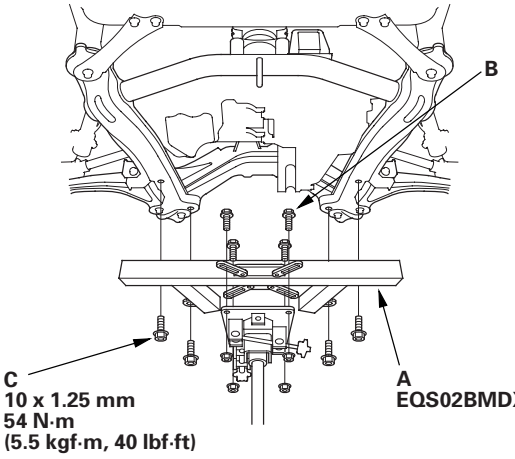
Alternator Overhaul

Exploded View



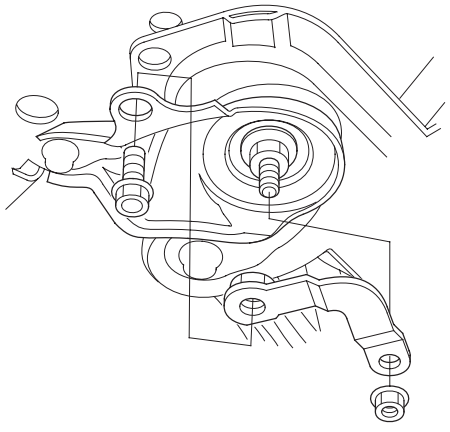
Engine Removal (cont'd)

62. Line up the slots in the arms with the bolt holes on the corner of the jack base, then attach the front subframe adapter (A) to the jack base with the bolts (B) that came with the jack. Tighten all bolts securely.

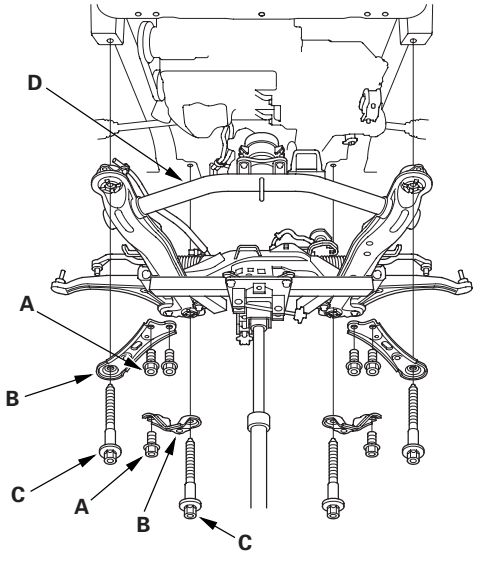


63. Raise the jack to vehicle height, then attach the front subframe adapter to the front subframe using the subframe stiffener mounting bolts (C) and bolt holes.

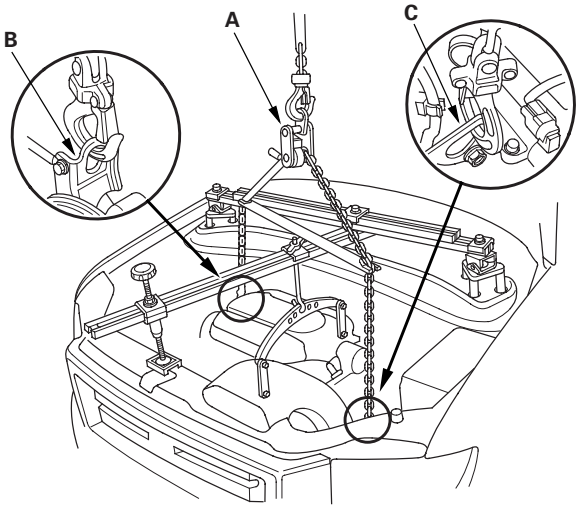
64. Remove the bolt retainers from both ends of the subframe.



65. Remove the six 12 x 1.25 mm bolts (A) securing the subframe stiffeners (B), the four subframe mounting bolts (C), and the stiffeners, then lower the front subframe (D).

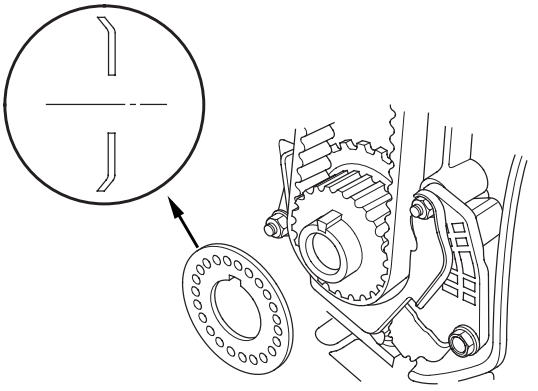


66. Lower the vehicle and attach a chain hoist (A) to the engine hook (B) and transmission hook (C). Lift up on the engine/transmission assembly until it's securely supported by the chain hoist, then remove the engine support hanger and the engine hanger balance bar from the engine and vehicle.

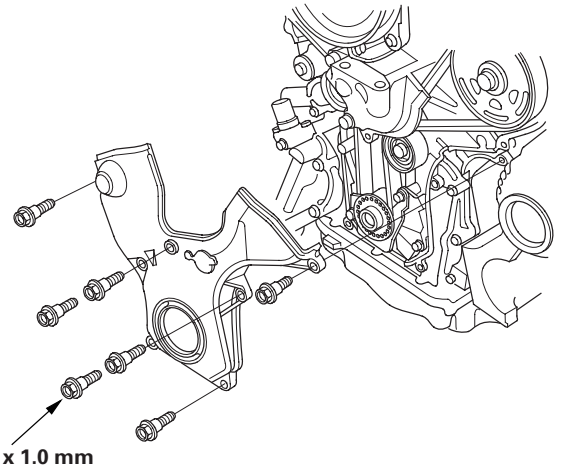


Timing Belt Installation (cont'd)

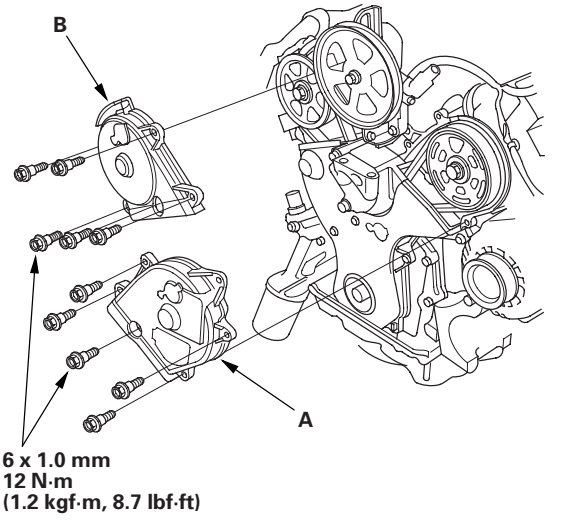
10. Install the timing belt guide plate as shown.



11. Install the lower cover.



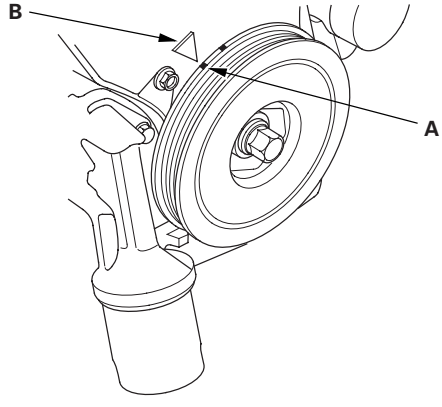
12. Install the front upper cover (A) and rear upper cover (B).



13. Install the crankshaft pulley (see page 6-12).

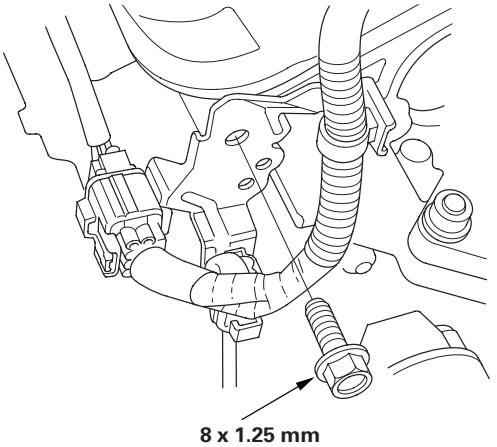
14. Rotate the crankshaft pulley six turns clockwise so the timing belt positions itself on the pulleys.

15. Turn the crankshaft pulley so the white mark (A) lines up with the pointer (B).

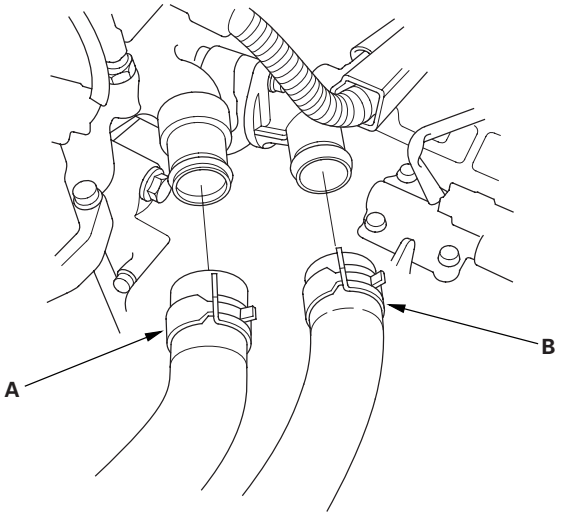


Cylinder Head Installation (cont'd)

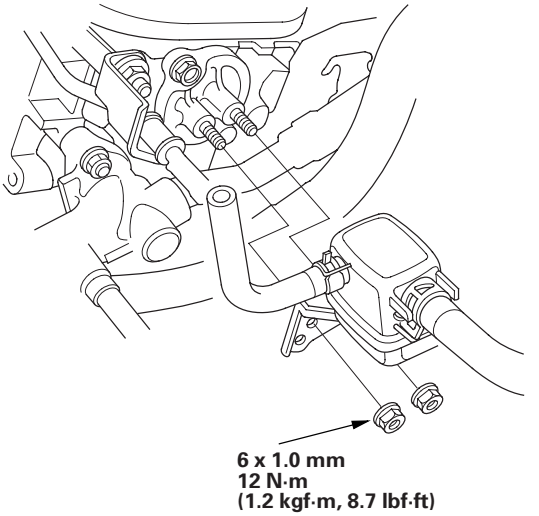
23. Install the harness clamp bracket to the rear cylinder head.



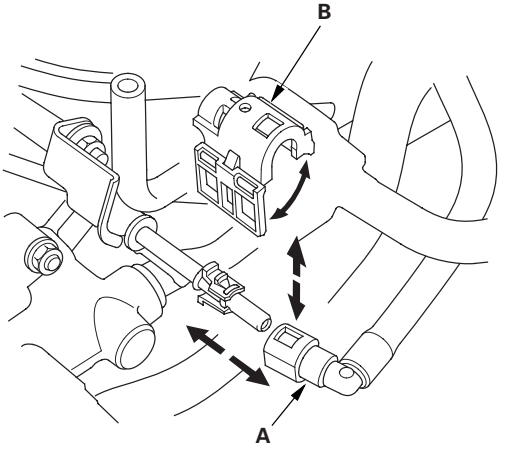
24. Install the upper radiator hose (A) and lower radiator hose (B).



25. Install the purge joint.



26. Connect the fuel feed hose (A) (see page 11-295), then install the quick-connect fitting cover (B).



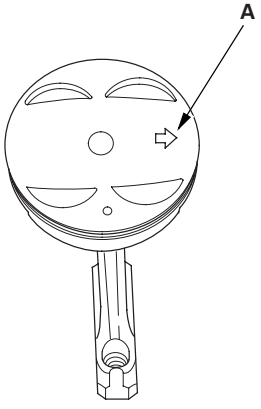
Crankshaft and Piston Installation (cont'd)

9. Set the crankshaft to bottom dead center (BDC) for the cylinder you are installing the piston in.

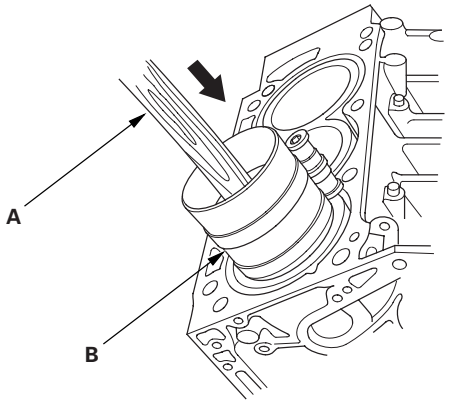
10. Apply new engine oil to the piston, inside of the ring compressor, and the cylinder bore.

11. Attach the ring compressor to the piston/connecting rod assembly, and check that the bearing is securely in place.

12. Position the piston/connecting rod assembly with the arrow (A) facing the timing belt side of the engine.

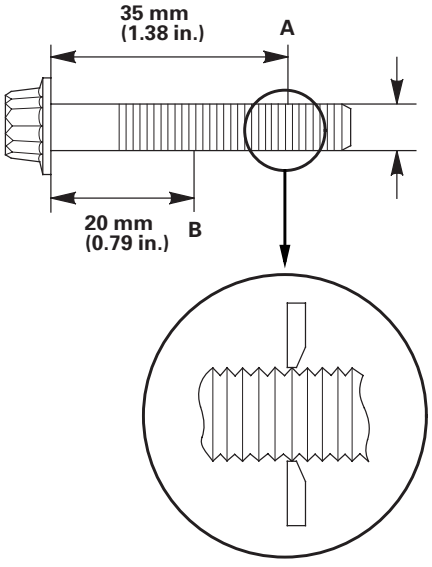


13. Position the piston/connecting rod assembly in the cylinder, and tap it in using the wooden handle of a hammer (A). Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.



14. Stop after the ring compressor pops free, and check the connecting rod-to-crank journal alignment before pushing the piston into place.

15. Measure the diameter of each connecting rod bolt at point A and point B.



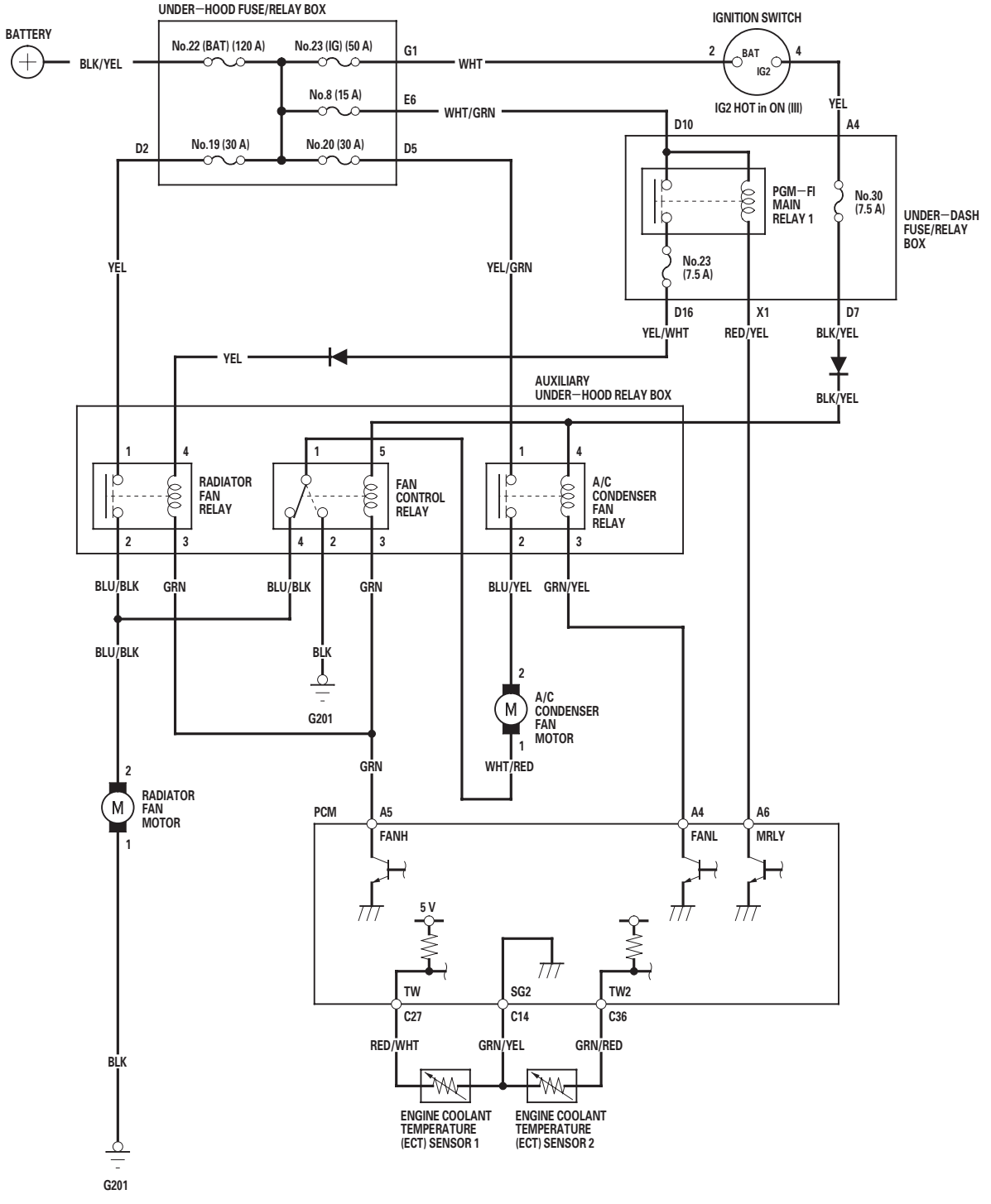
16. Calculate the difference in diameter between point A and point B.

    Point A—Point B = Difference in Diameter

    Difference in Diameter
    Specification: 0—0.1 mm (0—0.004 in.)

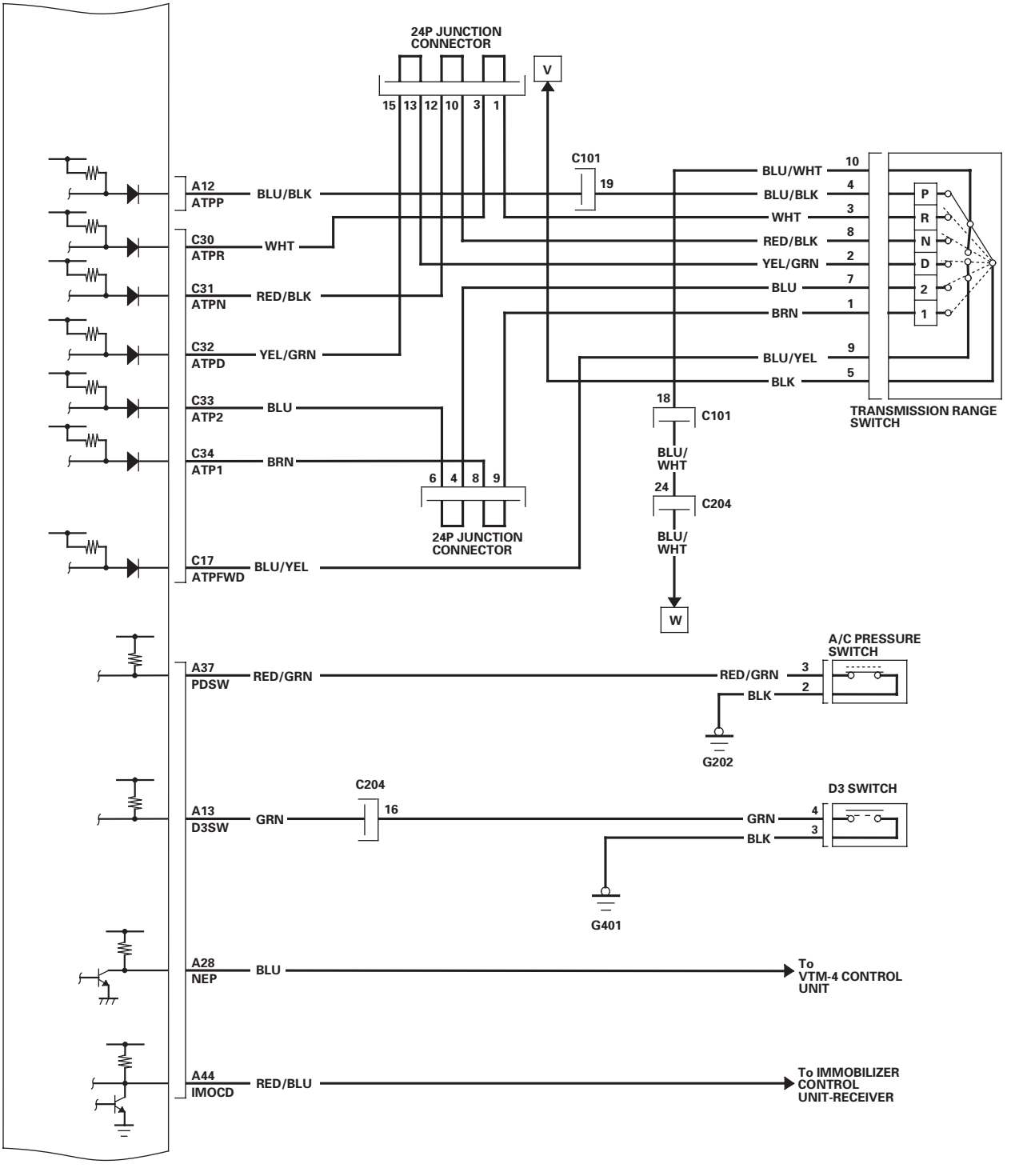
17. If the difference in diameter is out of tolerance, replace the connecting rod bolt.

Circuit Diagram



System Description (cont'd)

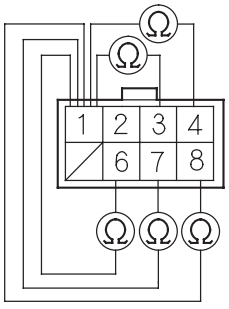
PCM Circuit Diagram (cont'd)



DTC Troubleshooting (cont'd)

10. At the sensor side, check for continuity between A/F sensor (Sensor 1) 8P connector terminals No. 1 and No. 3, No. 1 and No. 4, No. 1 and No. 6, No. 1 and No. 7, and No. 1 and No. 8 individually.

A/F SENSOR (SENSOR 1) 8P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES—Go to step 23.

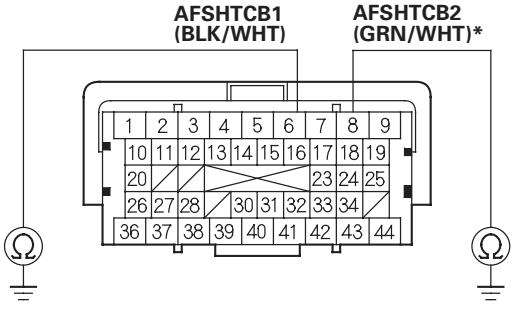
NO—Go to step 11.

11. Jump the SCS line with the HDS.

12. Disconnect PCM connector C (44P).

13. Check for continuity between PCM connector terminal C6 (C8)* and body ground.

PCM CONNECTOR C (44P)



Terminal side of female terminals

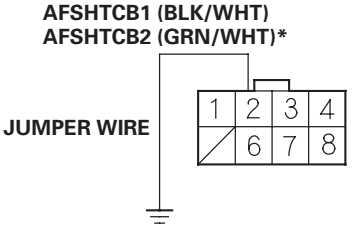
Is there continuity?

YES—Repair short in the wire between the PCM (C6 (C8)*) and the A/F sensor (Sensor 1), then go to step 24.

NO—Go to step 14.

14. Connect A/F sensor (Sensor 1) 8P connector terminal No. 2 to body ground with a jumper wire.

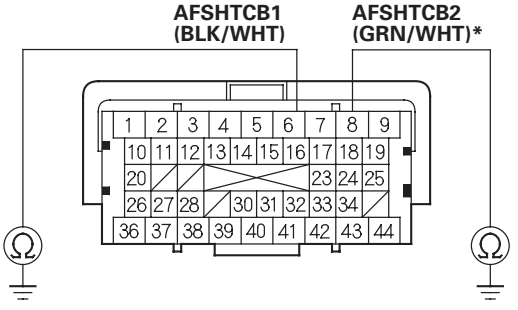
A/F SENSOR (SENSOR 1) 8P CONNECTOR



Wire side of female terminals

15. Check for continuity between PCM connector terminal C6 (C8)* and body ground.

PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES—Go to step 16.

NO—Repair open in the wire between the PCM (C6 (C8)*) and the A/F sensor (Sensor 1), then go to step 24.

DTC Troubleshooting (cont'd)

DTC P1297: ELD Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch ON (II).
2. Check the ELD in the DATA LIST with the HDS.

   Is 72 A or more indicated?

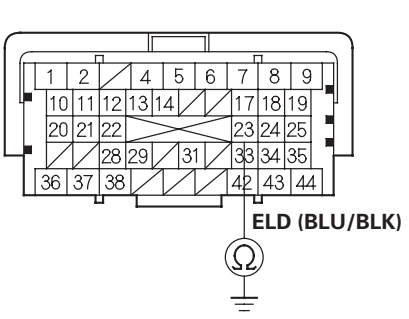
   YES—Go to step 3.

   NO—Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the PCM. ■
3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch ON (II).
6. Check the ELD in the DATA LIST with the HDS.

   Is 72 A or more indicated?

   YES—Go to step 7.

   NO—Go to step 11.
7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (44P).
10. Check for continuity between PCM connector terminal A23 and body ground.



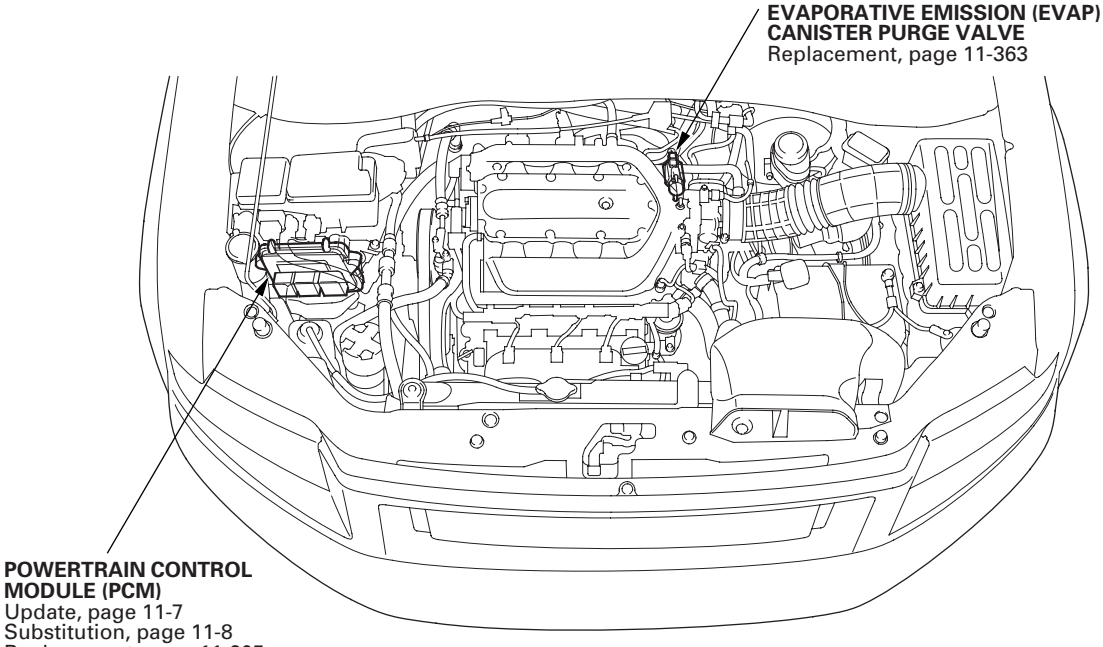
Terminal side of female terminals

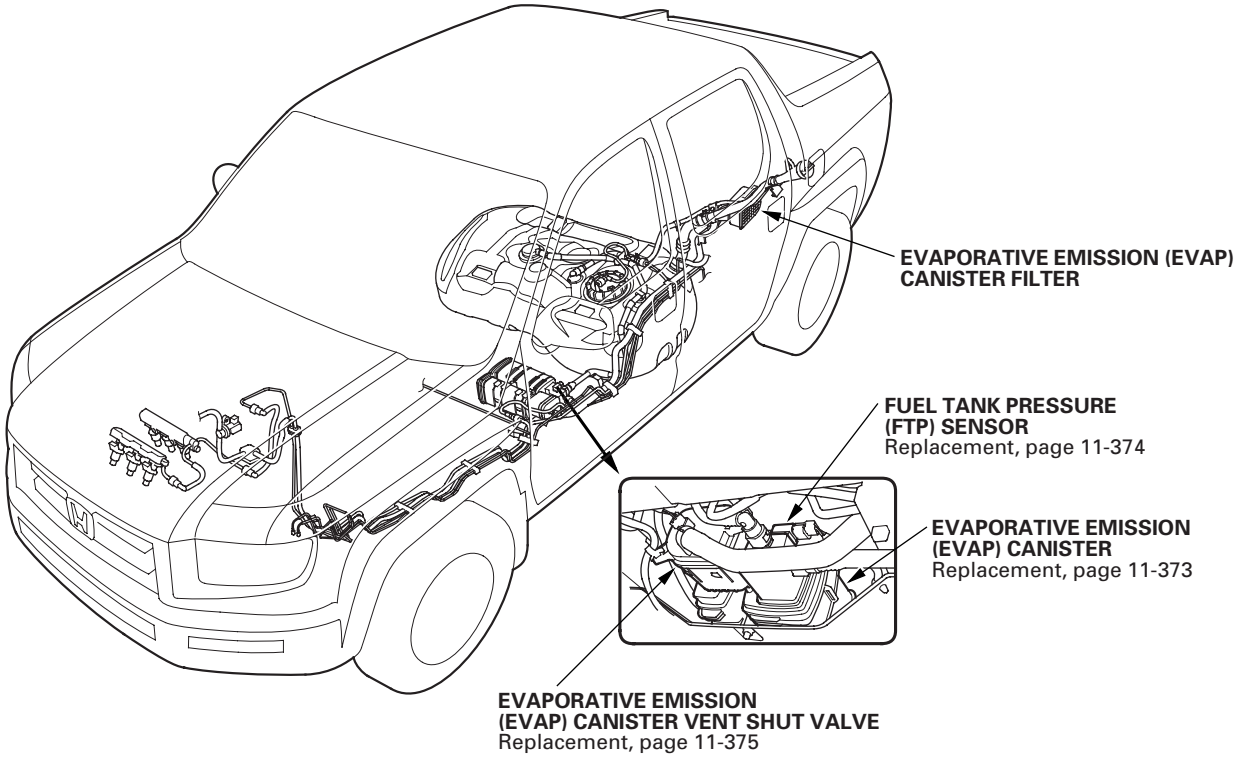
   Is there continuity?

   YES—Repair short in the wire between the PCM (A23) and the ELD, then go to step 13.

   NO—Go to step 19.
11. Turn the ignition switch OFF.
12. Replace the under-hood fuse/relay box (see page 22-72).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see page 11-273).
17. Start the engine.
18. Turn on the headlights.

Component Location Index





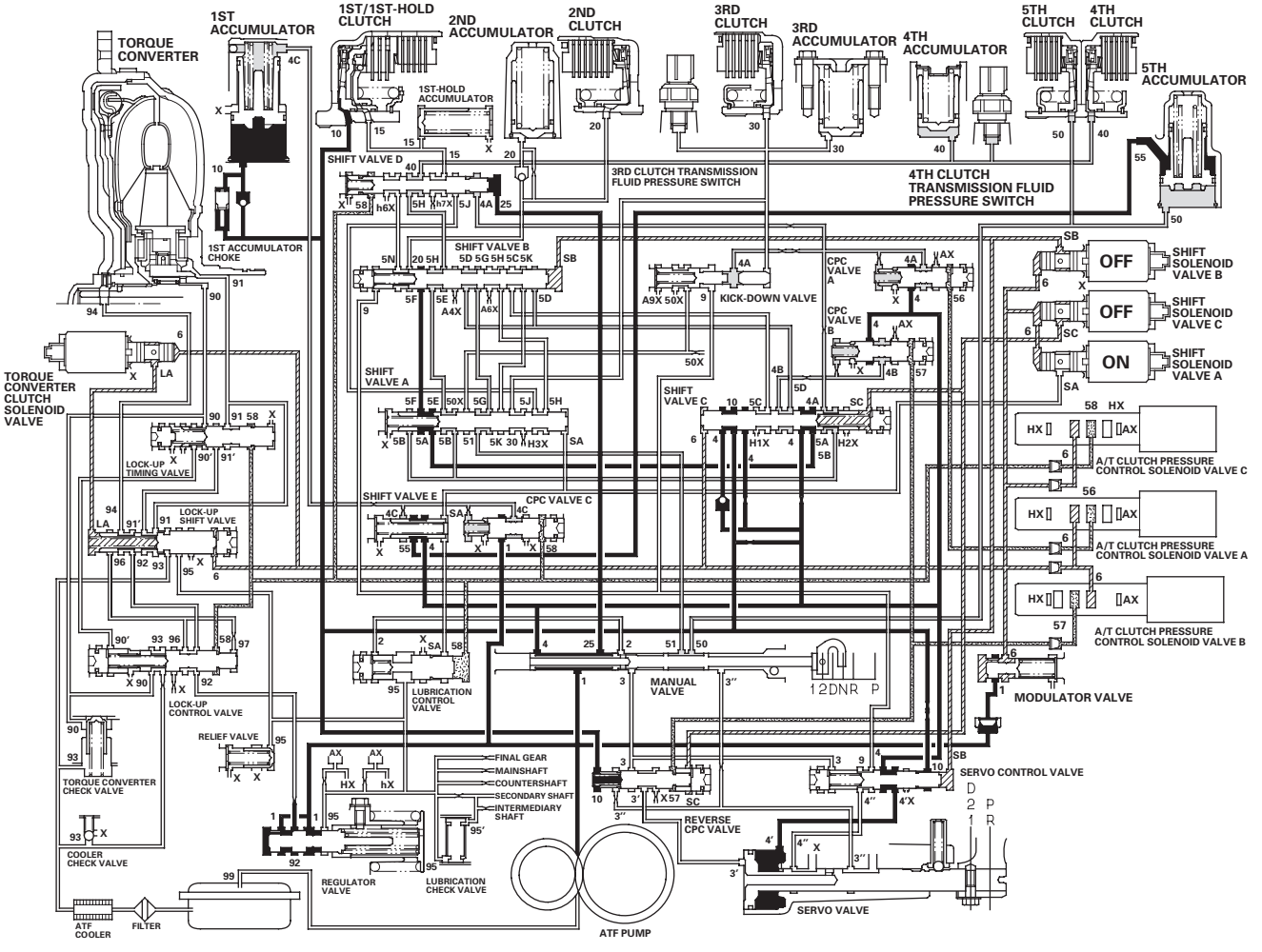
System Description (cont'd)

Hydraulic Flow (cont'd)

D Position: Shifting between 4th gear and 5th gear

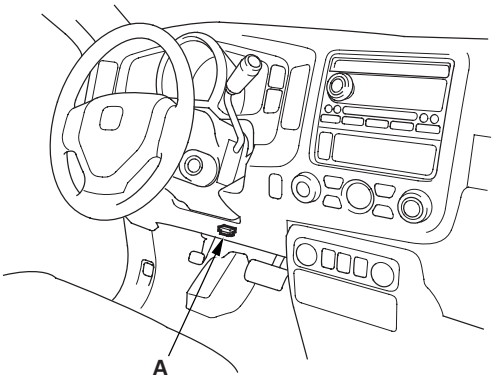
As the speed of the vehicle reaches the prescribed value, the PCM turns shift solenoid valve A ON. The PCM also controls A/T clutch pressure control solenoid valve B to apply LS B pressure (57) to CPC valve B. Shift solenoid valves B and C remain OFF. Shift solenoid valve A is turn ON, and SH A pressure (SA) in the right side of shift valves A and E is released. Then shift valves A and E are moved to the left side to switch the port of line pressure and CPC pressure. Line pressure (4) becomes CPC A pressure (4A) at CPC valve A, and becomes CPC B pressure (4B) at CPC valve B. CPC B pressure (4B) becomes 5th clutch pressure (50) at shift valve C, and flows to the 5th clutch via shift valves B and A and the manual valve. The 4th clutch pressure is changed to CPC pressure mode by switching the position of shift valve A. The 1st clutch is also engaged. No power is transmitted because of the one-way clutch.

NOTE: When used, ''left'' or ''right'' indicates direction on the hydraulic circuit.



A/T Clutch Pressure Control Solenoid Valve A Test

1. Connect the HDS to the DLC (A).



2. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu on the HDS.

3. Test A/T clutch pressure control solenoid valve A with the HDS.

   - If the valve tests OK, the test is complete. Disconnect the HDS.
   - If the valve does not test OK, follow the instructions on the HDS.
   - If the valve does not test OK, and the HDS does not determine the cause, go to step 4.

4. Make sure you have the anti-theft codes for the audio system and the navigation system (if equipped).

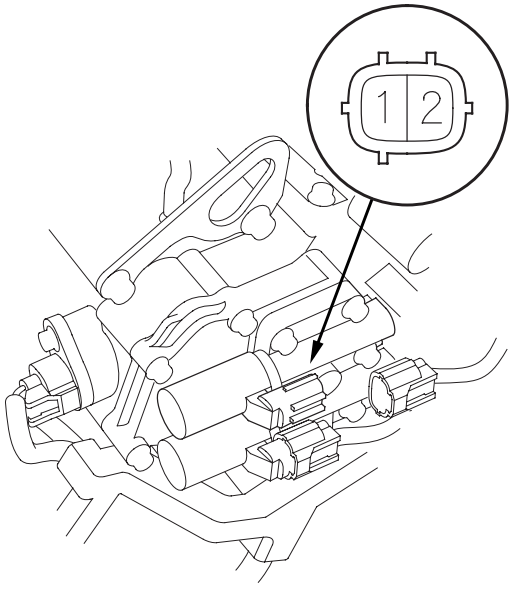
5. Disconnect the negative cable from the battery, then disconnect the positive cable.

6. Remove the battery hold-down bracket, and remove the battery and the battery tray.

7. Remove the intake manifold cover, the intake air duct, the resonator, and the air cleaner housing.

8. Remove the battery base and the battery base bracket.

9. Disconnect the A/T clutch pressure control solenoid valve A connector.



10. Measure A/T clutch pressure control solenoid valve A resistance at the connector terminals.

    Standard: 3—10 Ω

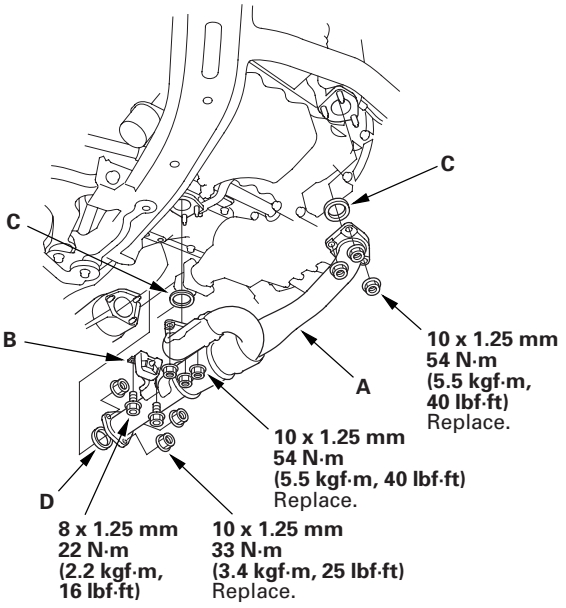
    - If the resistance is out of standard, replace A/T clutch pressure control solenoid valve A (see page 14-198).
    - If the resistance is within the standard, go to step 11.

11. Connect the negative battery terminal to solenoid valve A connector terminal No. 2, and connect the positive battery terminal to connector terminal No. 1.

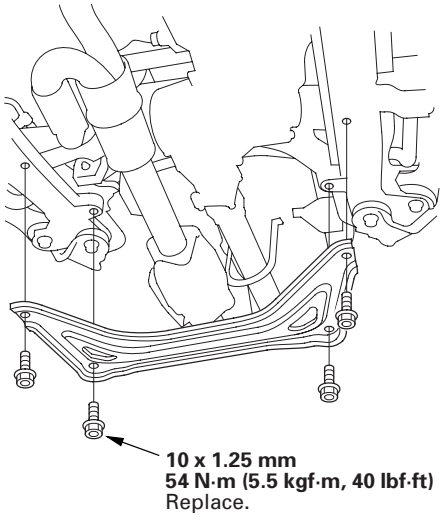
    - If a clicking sound is heard, the valve is OK. Reconnect the connector, and install all removed parts.
    - If no clicking sound is heard, go to step 12.

Transmission Installation (cont'd)

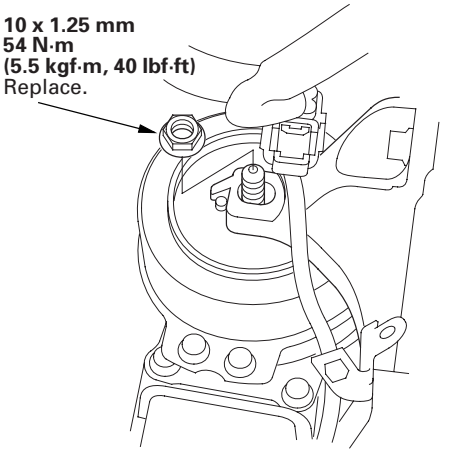
33. Install exhaust pipe A with the new self-locking nuts, its mount (B), and new gaskets (C) (D).



34. Install the front subframe stiffener with new mounting bolts.

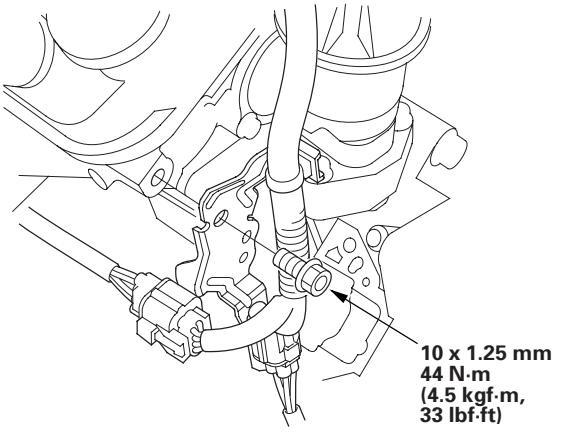


35. Install a new front mount nut, and tighten it.



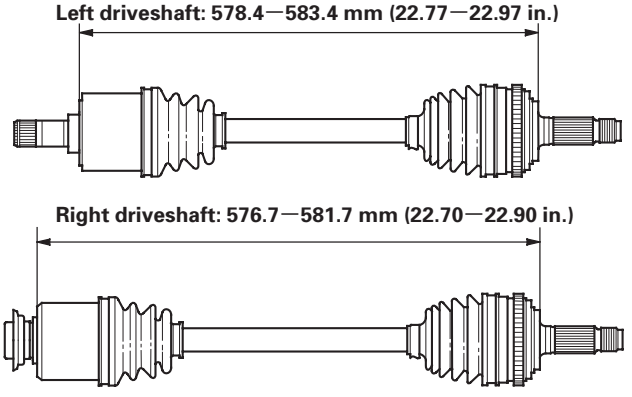
36. Remove the engine support hanger, the engine hanger adapters, and the engine balance bar.

37. Install the connector bracket on the engine front cylinder head.

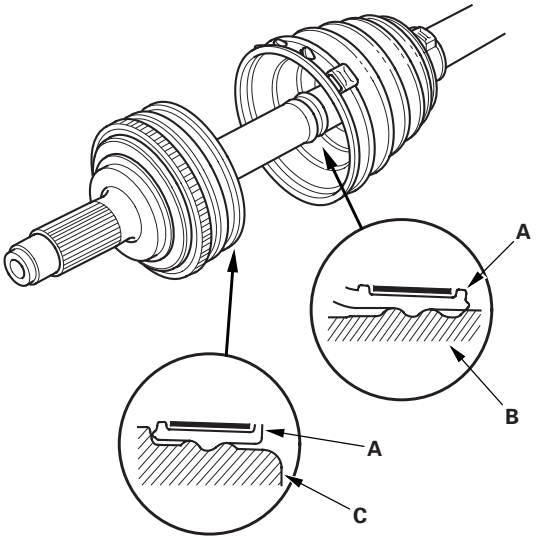


Front Driveshaft Reassembly (cont'd)

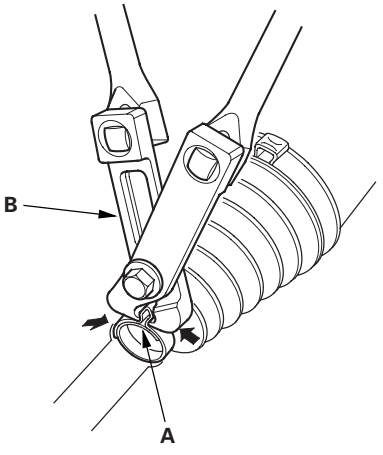
8. Adjust the length of the driveshafts to these measurements, then adjust the boots to halfway between full compression and full extension. Make sure the ends of the boots seat in the grooves of the driveshaft and joint. This prevents a vacuum or too much air in the boot, preventing it from compressing or extending property.



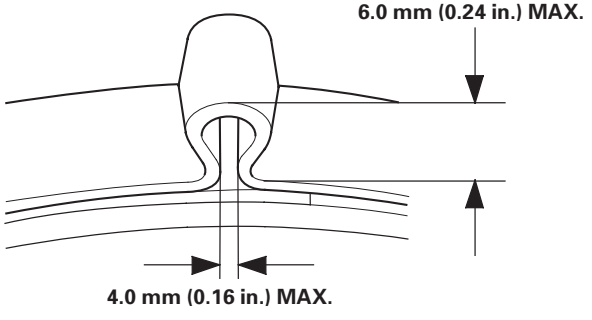
9. Fit the boot (A) ends onto the driveshaft (B) and the outboard joint (C).



10. Close the ear portion (A) of the band with commercially available boot band pliers Kent-Moore J-35910 or equivalent (B).



11. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.



12. Repeat steps 10 and 11 for the band on the other end of the boot.