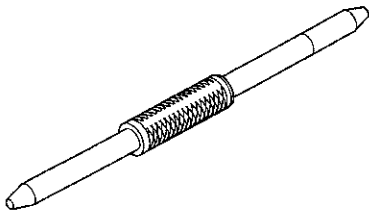


# Engine Assembly

## Special Tools

| Ref. No. | Tool Number   | Description            | Qty |
|----------|---------------|------------------------|-----|
| ①        | 070AG-SJAA10S | Subframe Alignment Pin | 1   |



①



## Engine Removal

### Special Tools Required

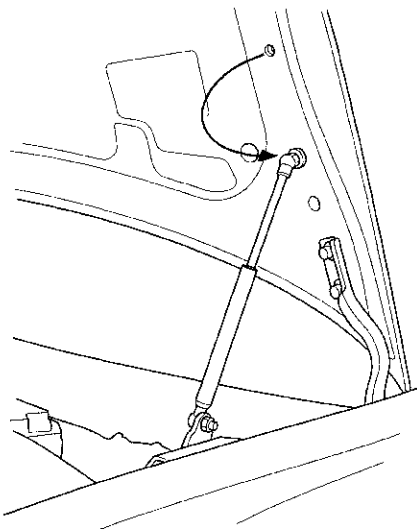
- 2008 V6 Attachment arm SIL02C000033 \*
  - Front subframe adapter VSB02C000016 \*
  - Engine support hanger, A and Reds AAR-T1256 \*
  - Engine hanger balance bar VSB02C000019 \*
- \* : Available through the Acura Tool and Equipment program, 888-424-6857.

### NOTE:

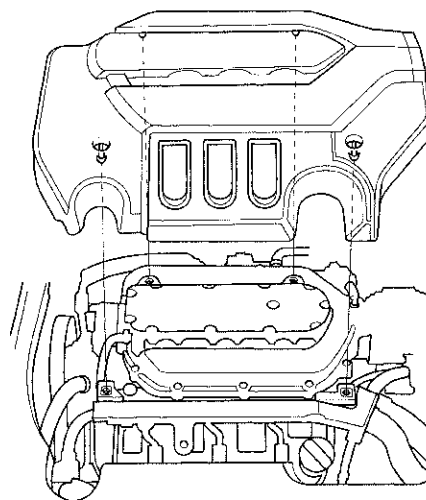
- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring, hoses, or interfere with other parts.

1. Disconnect the support struts from both sides of the pivot ball (bolted to the hood). Secure the hood in a vertical position. Remove the right side pivot ball and install it into the lower threaded hole, then reattach the support strut.

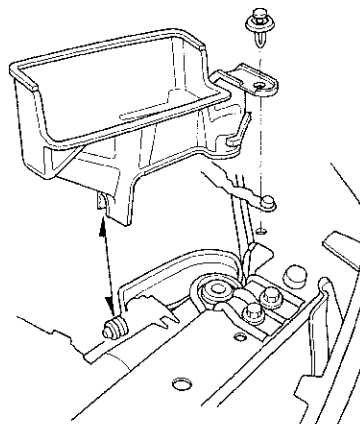
NOTE: Do not attempt to close the hood with the support strut in the vertical position, as it will damage the support strut and hood.



2. Relieve the fuel pressure (see page 11-332).
3. Drain the power steering system fluid, then plug the fluid reservoir and return hose (see page 17-13).
4. Do the battery removal procedure (see page 22-92).
5. Remove the engine cover.



6. Remove the right upper fender trim, the battery trim, the left upper fender trim, the upper grille cover (see page 20-163), and the cowl cover (see page 20-164).
7. Remove the air cleaner (see page 11-366).
8. Remove the air intake duct cover.

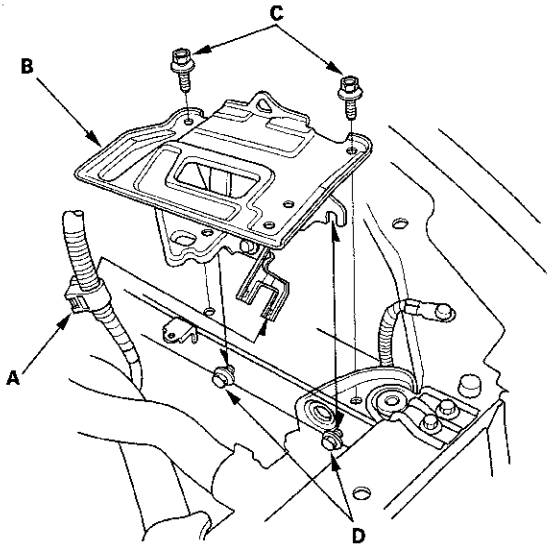


(cont'd)

# Engine Assembly

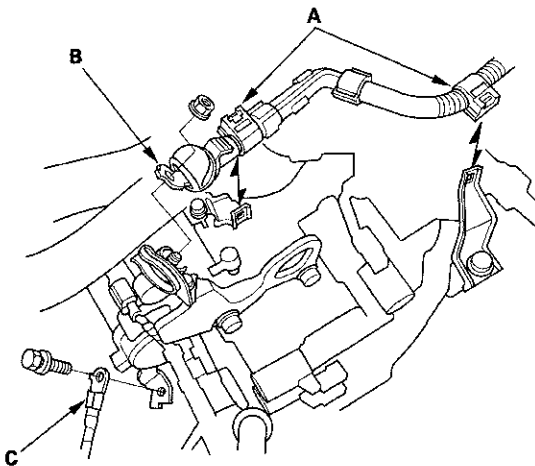
## Engine Removal (cont'd)

9. Remove the harness clamp (A) from the battery base (B).

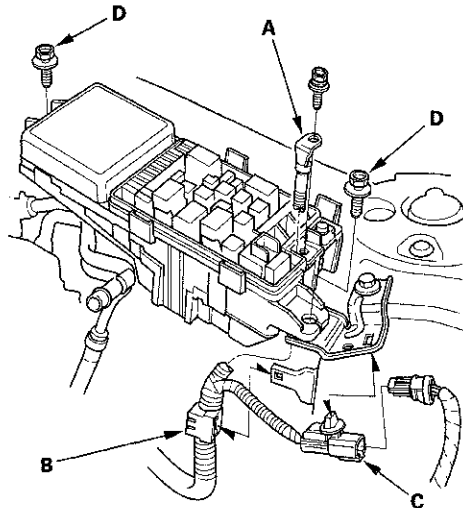


10. Remove the two upper bolts (C), and loosen the two lower bolts (D), then remove the battery base.

11. Remove the harness clamps (A), the starter cable (B), and the ground cable (C).



12. Remove the battery cable (A) from the under-hood fuse/relay box.

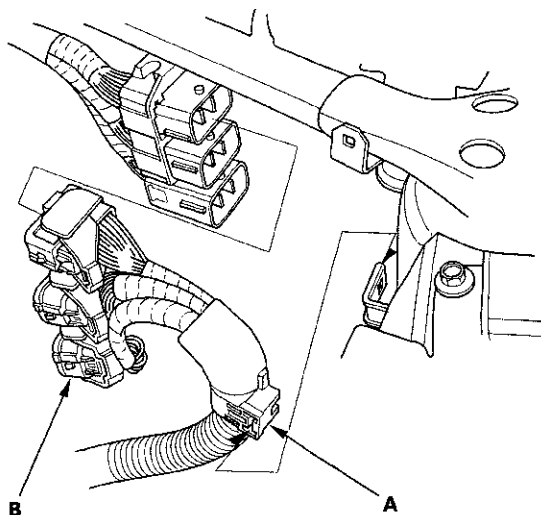


13. Remove the harness clamp (B), then disconnect the harness connector (C).

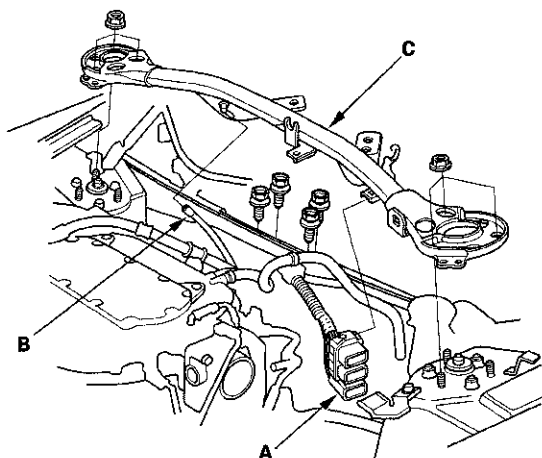
14. Remove the two bolts (D) securing the under-hood fuse/relay box, then remove the under-hood fuse/relay box.



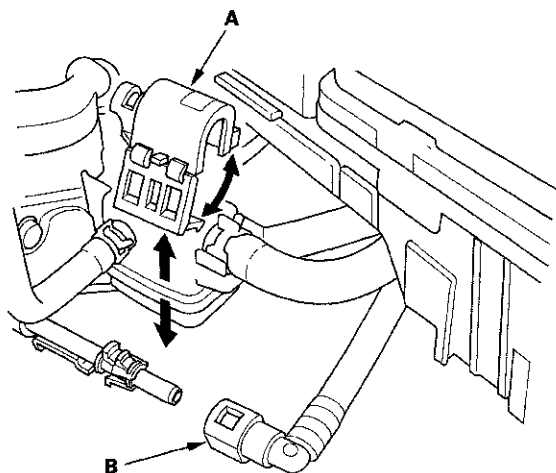
15. Remove the harness clamp (A), and disconnect the engine wire harness connectors (B) on the left side of the engine compartment.



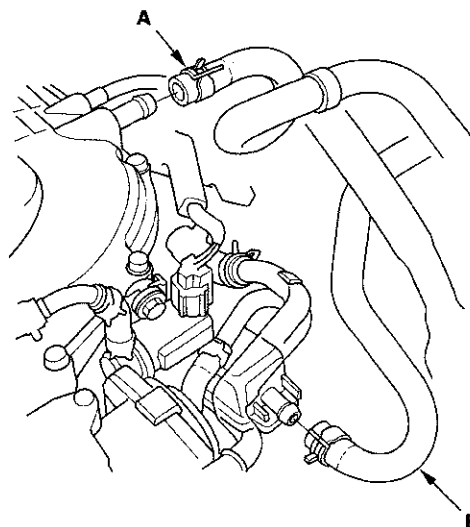
16. Remove the connector (A) and the transfer breather hose (B), then remove the strut brace (C).



17. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see page 11-341).



18. Disconnect the brake booster vacuum hose (A) and the evaporative emission (EVAP) canister hose (B).



19. Remove the shift cable (see page 14-235).

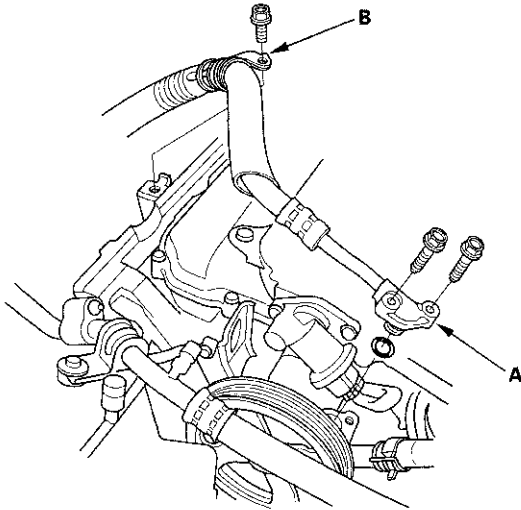
20. Remove the drive belt (see page 4-33).

(cont'd)

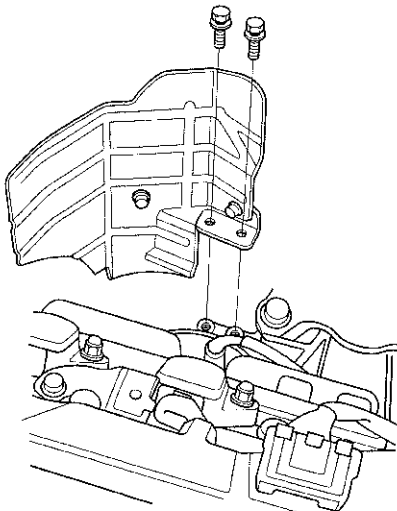
# Engine Assembly

## Engine Removal (cont'd)

21. Remove the power steering (P/S) pump outlet line (A) from the P/S pump, then plug the outlet line and the P/S pump.

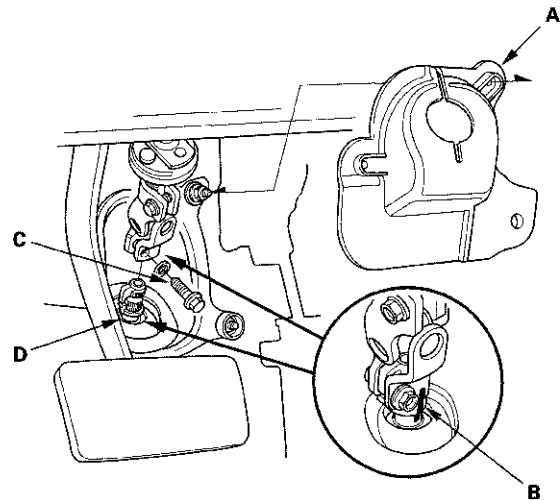


22. Remove the P/S hose clamp (B).
23. Remove the power steering system fluid reservoir from the clamp.
24. Remove the heat shield.



25. Remove the steering wheel (see page 17-22).

26. Remove the steering joint cover (A).



27. Make a reference mark (B) across the steering joint and the steering gearbox pinion shaft. Remove the steering joint bolt (C), and disconnect the steering joint from the steering gearbox pinion shaft (D).

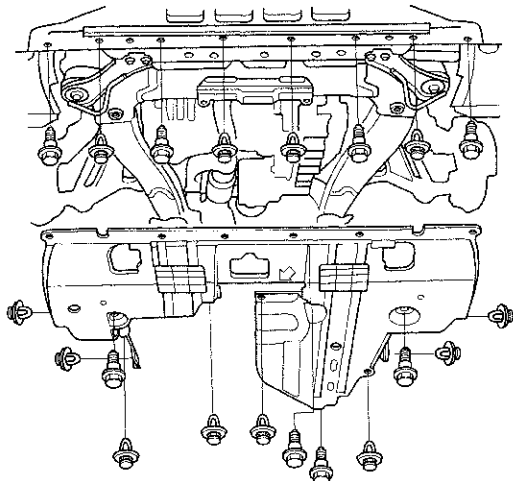
28. Remove the radiator cap.

29. Raise the vehicle on the lift to full height.

30. Remove the front wheels.



31. Remove the splash shield.



32. Loosen the drain plug in the radiator, and drain the engine coolant (see page 10-6).

33. Drain the automatic transmission fluid (ATF) (see page 14-196).

34. Drain the engine oil (see page 8-11).

35. Disconnect the stabilizer links from the stabilizer bar (see page 18-19).

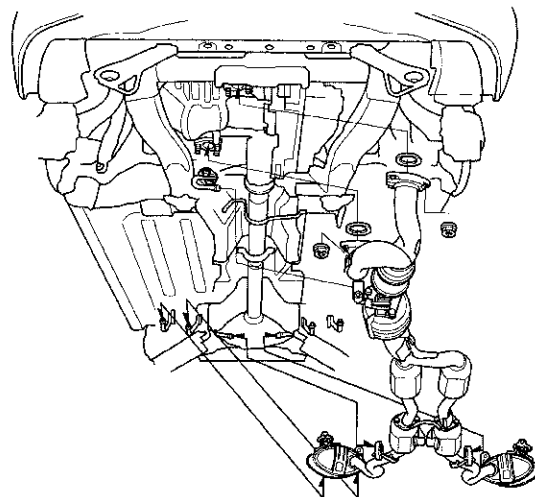
36. Remove the damper fork (see page 18-21).

37. Separate the tie-rod end ball joints from the knuckles (see step 14 on page 17-36).

38. Separate the knuckles from the lower arms (see page 18-17).

39. Remove the driveshafts (see step 10 on page 16-6). Coat all precision-finished surfaces with clean engine oil. Tie plastic bags over the driveshaft ends.

40. Remove the exhaust pipe assembly.

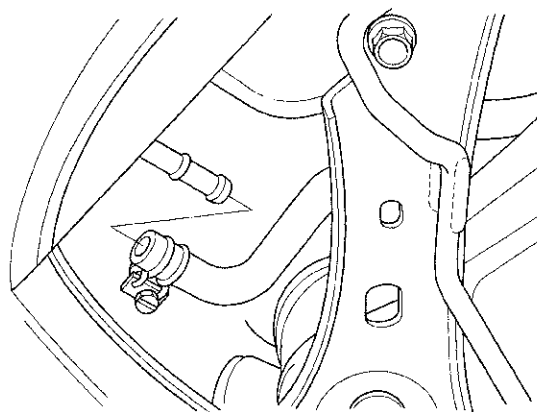


41. Remove the propeller shaft (see page 16-44).

42. Remove the transfer assembly (see page 14-199).

43. Disconnect the ATF cooler hoses from the transmission (see step 35 on page 14-205).

44. Disconnect the P/S hose, then plug the line and the hose.

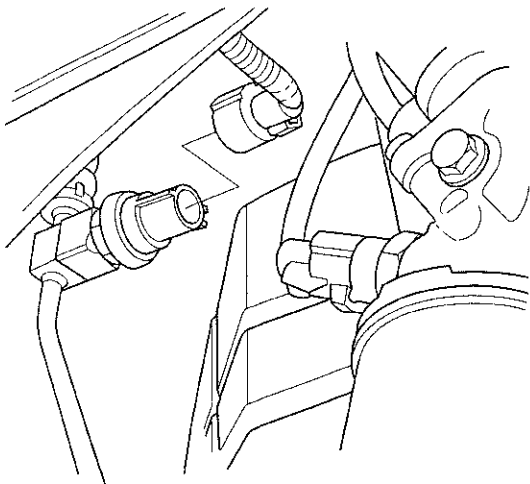


(cont'd)

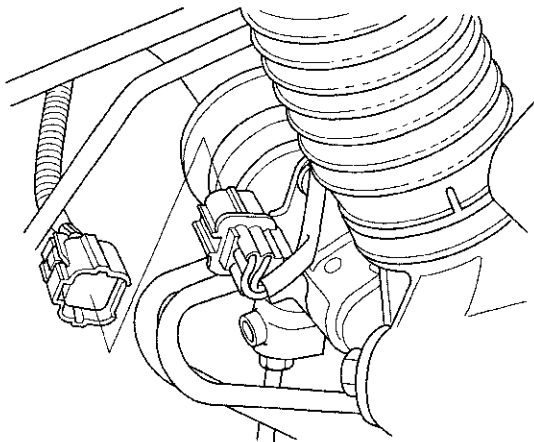
# Engine Assembly

## Engine Removal (cont'd)

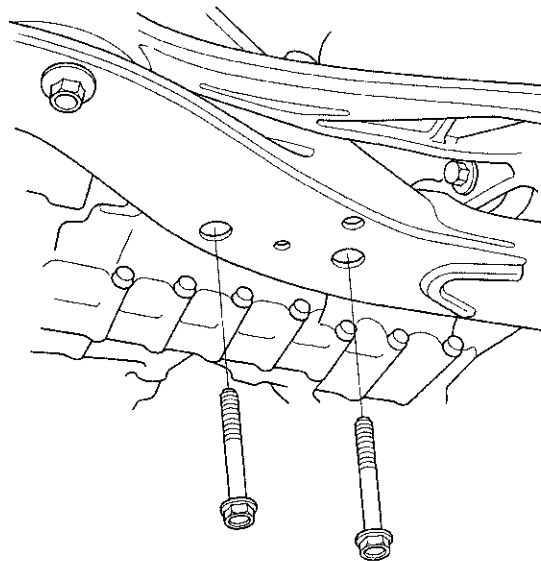
45. Disconnect the power steering pressure switch connector.



46. Disconnect the connector from the steering gearbox.

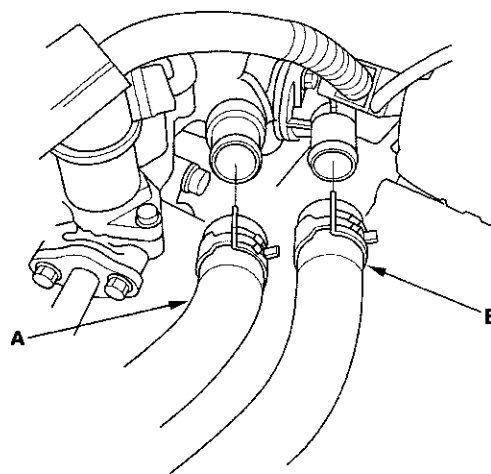


47. Remove the bolts securing the transmission lower mount.



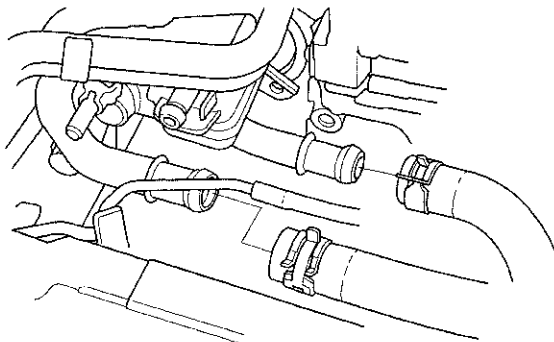
48. Lower the vehicle on the lift.

49. Disconnect the upper radiator hose (A) and the lower radiator hose (B).



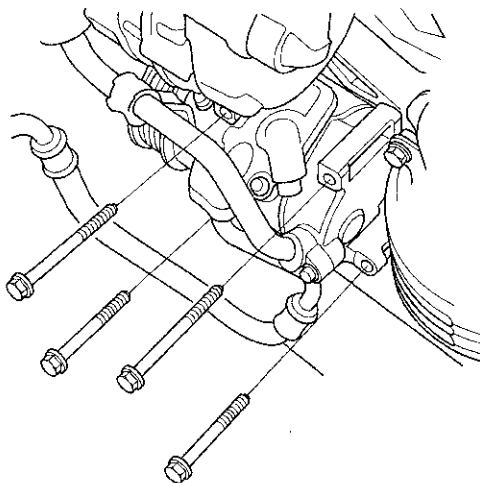


50. Disconnect the heater hoses.

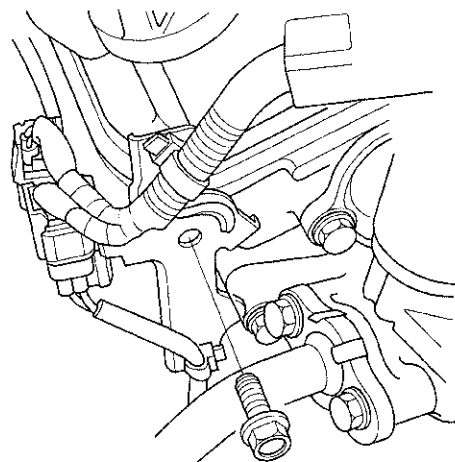


51. Remove the radiator (see page 10-14).

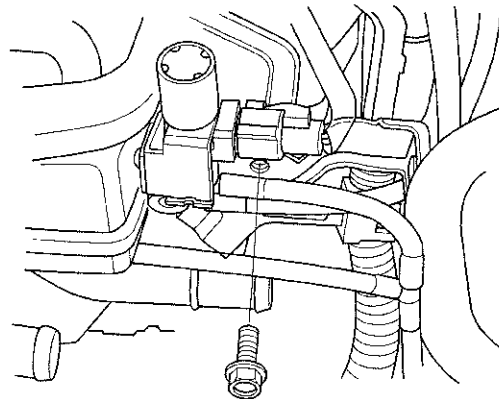
52. Remove the four bolts securing the A/C compressor.



53. Remove the connector bracket from the front cylinder head; use the bracket bolt hole to attach the engine balance bar front arm.



54. Remove the engine mount control solenoid valve bracket from the rear cylinder head; use the bracket bolt hole to attach the 2008 V6 attachment arm (SIL02C000033).

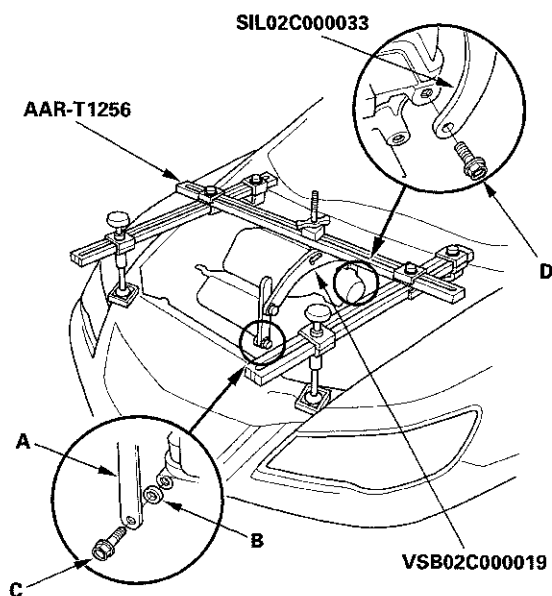


(cont'd)

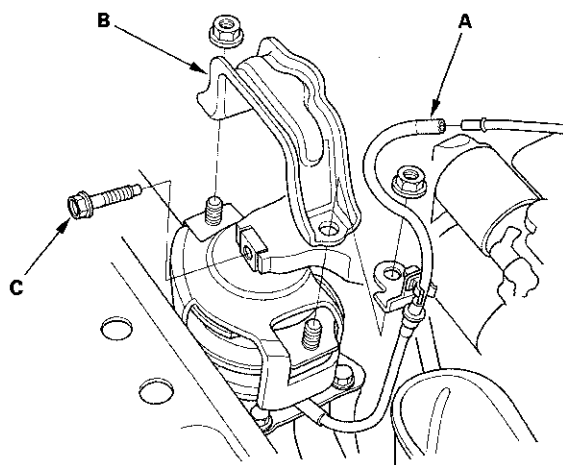
# Engine Assembly

## Engine Removal (cont'd)

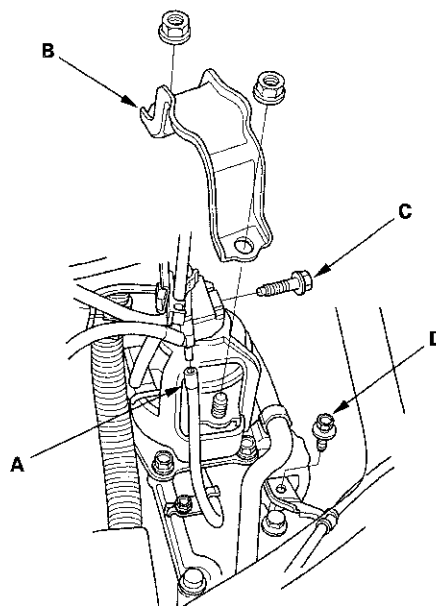
55. Lift and support the engine with the engine support hanger (AAR-T1256) and engine balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a spacer (B) and the 10 x 1.25 mm bolt (C). Remove the rear arm from the balance bar, and install the 2008 V6 attachment arm (SIL02C000033), then attach the 2008 V6 attachment arm to the rear cylinder head with the 8 x 1.25 mm bolt (D).



56. Disconnect the vacuum hose (A), then remove the front mount stop (B) and the front mount bolt (C).



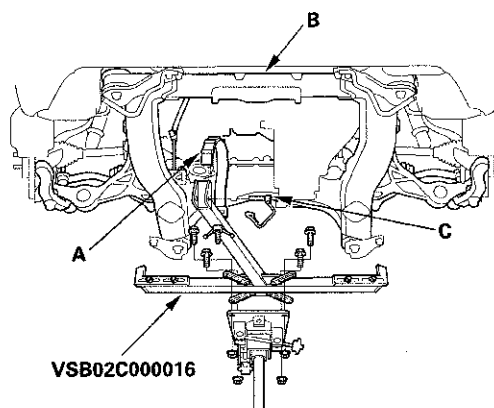
57. Disconnect the vacuum hose (A), then remove the rear mount stop (B) and the rear mount bolt (C).



58. Remove the bolt (D) securing the shift cable bracket.

59. Raise the vehicle on the lift to full height.

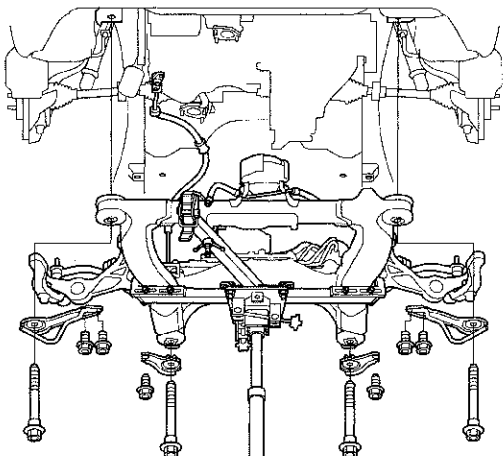
60. Attach the front subframe adapter to the subframe by hanging the belt (A) over the front of the subframe (B), then secure the belt with its stop (C).



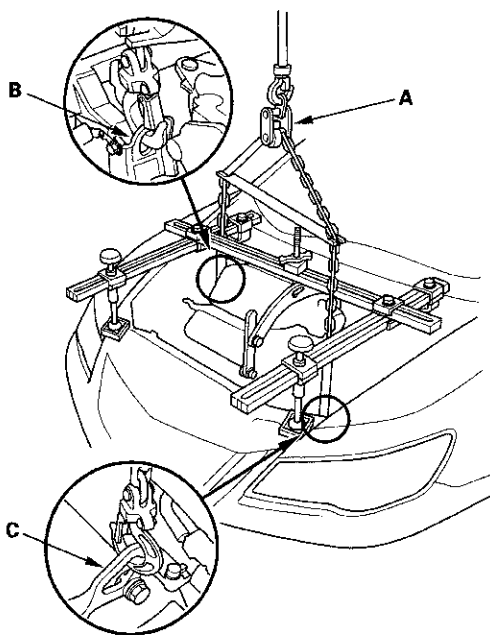
61. Raise the jack and line up the slots in the special tool arms with the bolt holes on the jack base, then securely attach them with four bolts.



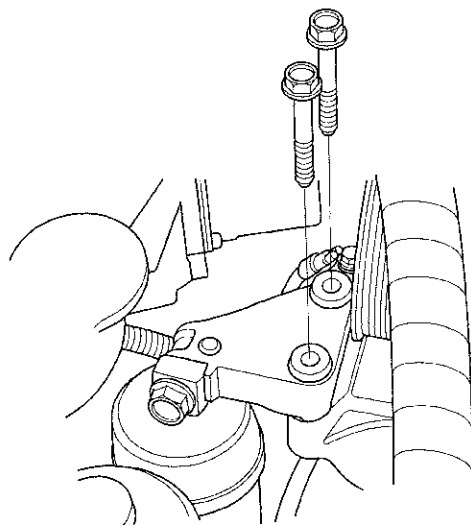
62. Remove the subframe.



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



64. Remove the two bolts securing the upper engine mount bracket.



65. Check that the engine/transmission is completely free of vacuum hoses, fuel hoses, coolant hoses, and electrical wiring.

66. Slowly lower the engine/transmission assembly about 150 mm (6 in). Check once again that all hoses and electrical wiring are disconnected and free from the engine/transmission, then lower it all the way.

67. Disconnect the chain hoist from the engine/transmission assembly.

68. Raise the vehicle all the way, then remove the engine/transmission assembly from under the vehicle.

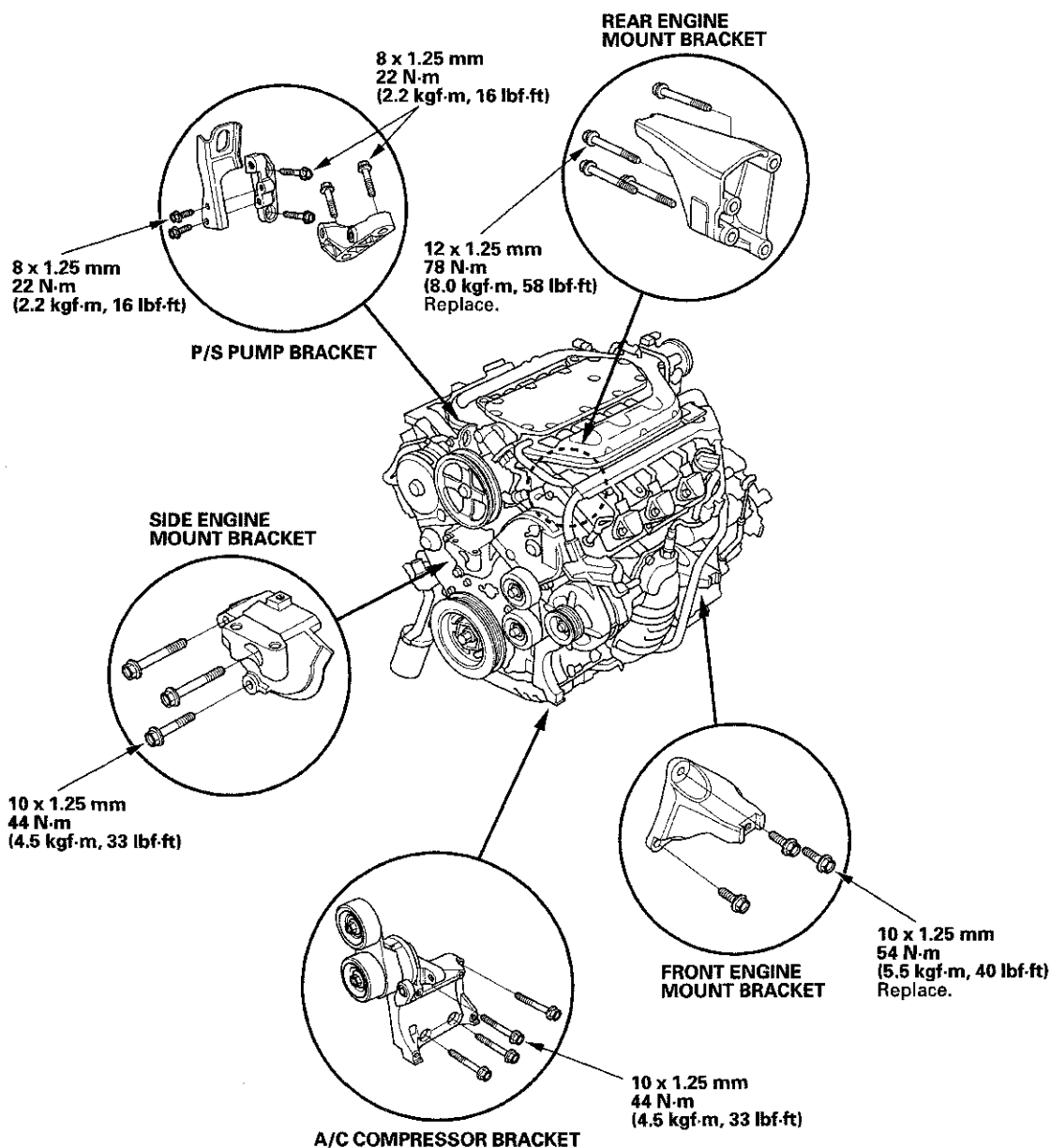
# Engine Assembly

## Engine Installation

### Special Tools Required

- Subframe alignment pin 070AG-SJAA10S
  - 2008 V6 Attachment arm SIL02C000033 \*
  - Front subframe adapter VSB02C000016 \*
  - Engine support hanger, A and Reds AAR-T1256 \*
  - Engine hanger balance bar VSB02C000019 \*
- \* : Available through the Acura Tool and Equipment program, 888-424-6857.

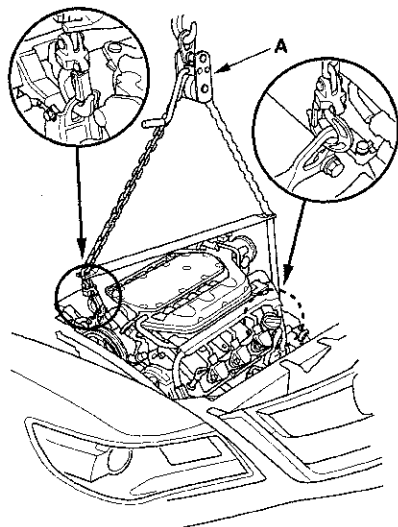
1. Install the accessory brackets and tighten their bolts to the specified torque.



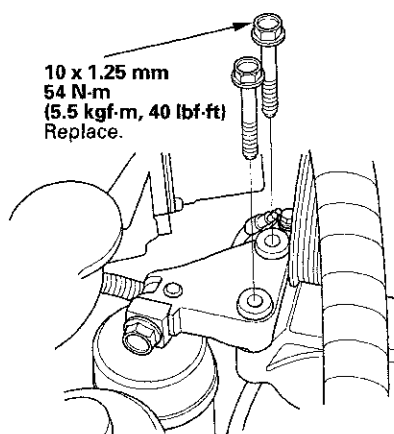


2. Position the engine/transmission assembly under the vehicle. Be sure that they are properly aligned. Carefully lower the vehicle until the engine and transmission are properly positioned in the engine compartment. Make sure the vehicle is not resting on any part of the engine or transmission. Lift and support the engine with a chain hoist (A) and carefully raise the engine/transmission assembly into place.

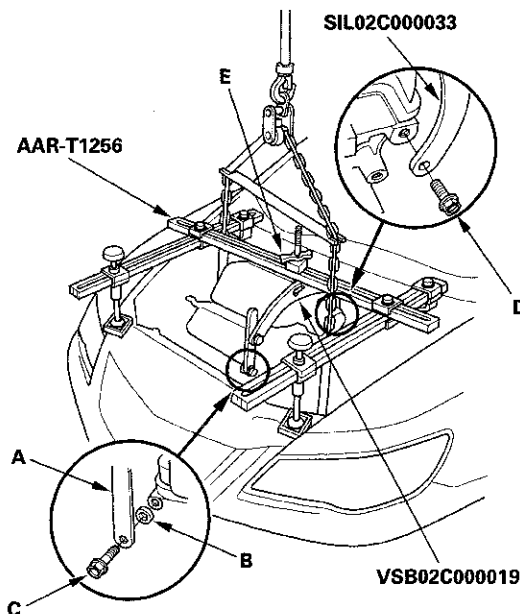
**NOTE:** Reinstall the mounting bolts/support nuts in the sequence given in the following steps. Failure to follow this sequence may cause excessive noise and vibration, and reduce engine mount life.



3. Install two new bolts securing the upper engine mount bracket. Tighten the bolts to the specified torque.



4. Install the engine balance bar (VSB02C000019); attach the front arm (A) to the front cylinder head with a spacer (B) and 10 x 1.25 mm bolt (C), remove the rear arm from the balance bar, and install the 2008 V6 attach arm (SIL02C000033), then attach the 2008 V6 attachment arm to the rear cylinder head with the 8 x 1.25 mm bolt (D).



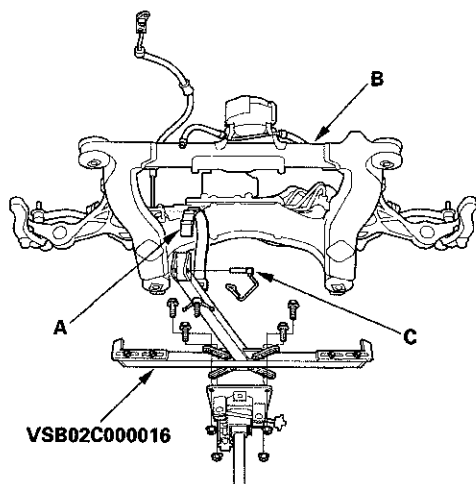
5. Install the engine support hanger (AAR-T1256) to the vehicle, and attach the hook to the slotted hole in the engine balance bar. Tighten the wing nut (E) by hand to lift and support the engine/transmission assembly.
6. Remove the chain hoist, then raise the vehicle on the lift to full height.

(cont'd)

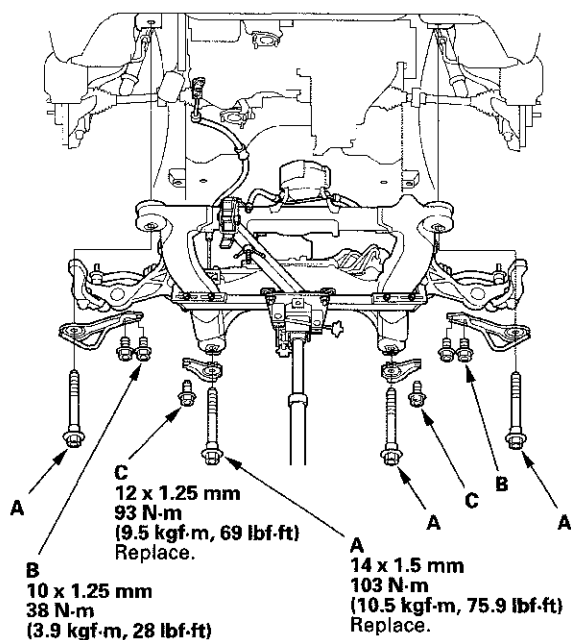
# Engine Assembly

## Engine Installation (cont'd)

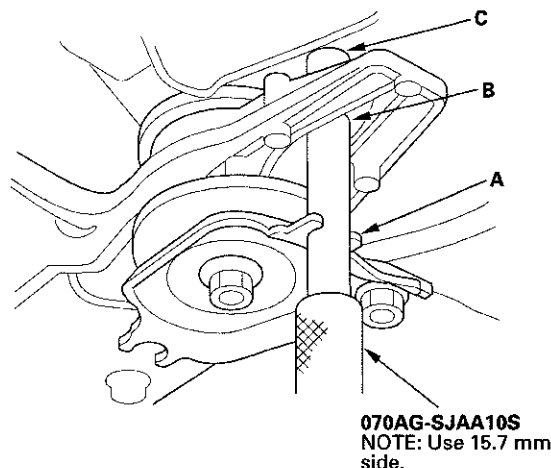
7. Attach the front subframe adapter to the subframe by hanging the belt (A) over the front of the subframe (B), then secure the belt with its stop (C). Raise the subframe up to the body with a jack.



8. Loosely install the four subframe mounting bolts (A), four 10 x 1.25 mm bolts (B), and two 12 x 1.25 mm bolts (C) with the stiffeners.



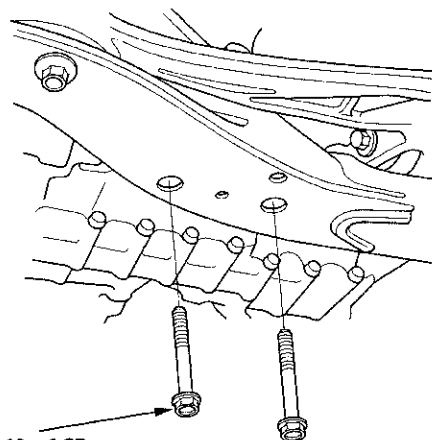
9. Insert the subframe alignment pin through the positioning slot (A) on the right rear stiffener, through the positioning hole (B) on the subframe, and into the positioning hole (C) on the body, then loosely tighten the subframe right rear mounting bolt.



10. Insert the subframe alignment pin through the positioning slot on the left rear stiffener, through the positioning hole on the subframe, and into the positioning hole on the body, then loosely tighten the subframe left rear mounting bolt.
11. Loosely tighten the subframe right/left front mounting bolts.
12. Loosen the subframe right rear mounting bolt, then retighten the subframe right rear mounting bolt to the specified torque.
13. Tighten the subframe left rear mounting bolt to the specified torque.
14. Tighten the subframe right/left front mounting bolts to the specified torque.
15. Check that the positioning slots on the right/left rear stiffener, the positioning holes on the subframe, and the positioning holes on the body are aligned using the special tool.
16. Tighten the stiffener mounting bolts to the specified torque.
17. Remove the jack and front subframe adapter.



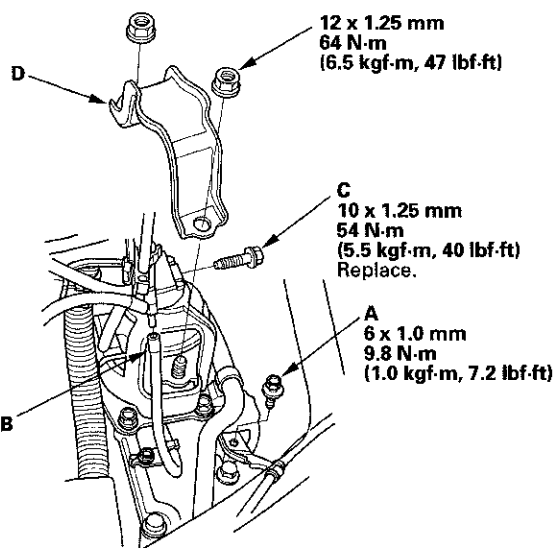
18. Tighten the bolts securing the transmission lower mount.



10 x 1.25 mm  
44 N·m  
(4.5 kgf-m, 33 lbf-ft)  
Replace.

19. Lower the vehicle on the lift, then remove the engine hanger and balance bar.

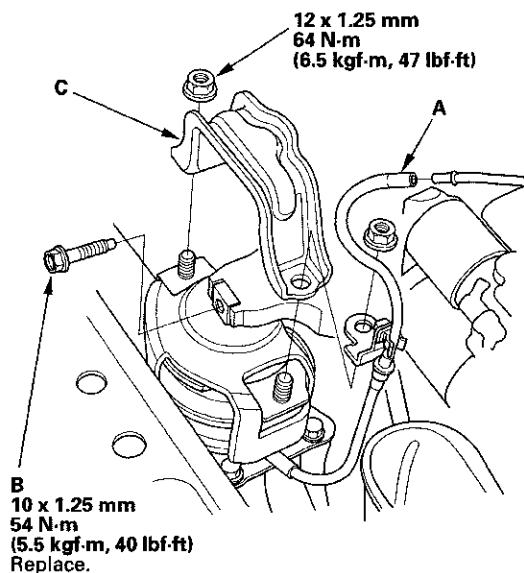
20. Install the shift cable and tighten the bolt (A) securing the shift cable bracket.



21. Install the vacuum hose (B).

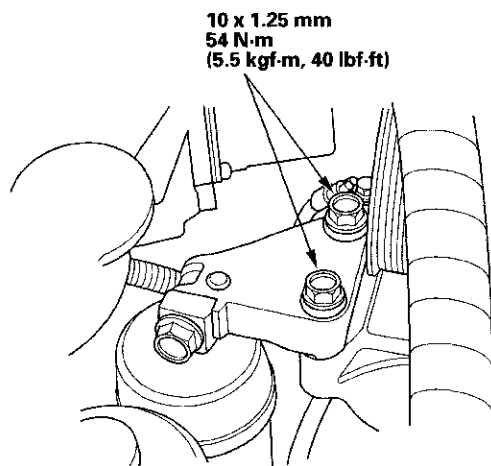
22. Tighten the rear mount bolt (C), then install the rear mount stop (D).

23. Install the vacuum hose (A).



24. Tighten the front mount bolt (B), then install the front mount stop (C).

25. Loosen the mounting bolts for the upper engine mount bracket, then retighten them to the specified torque.

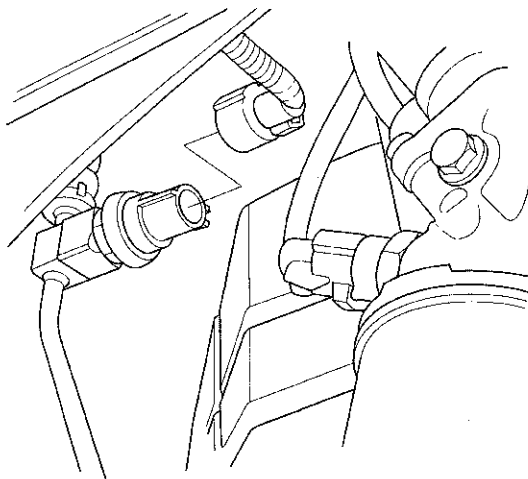


(cont'd)

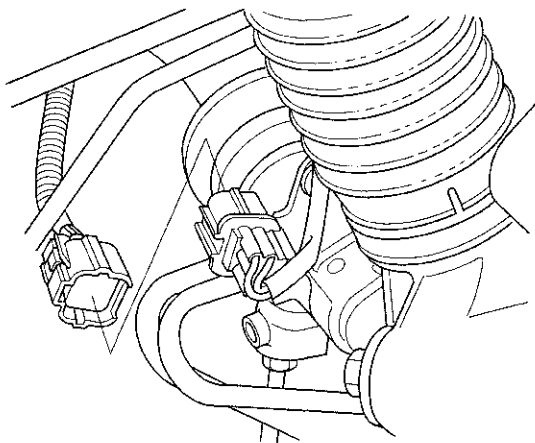
# Engine Assembly

## Engine Installation (cont'd)

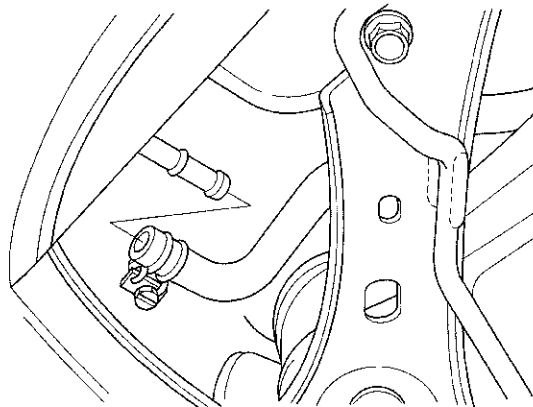
26. Raise the vehicle on the lift to full height.
27. Connect the power steering pressure switch connector.



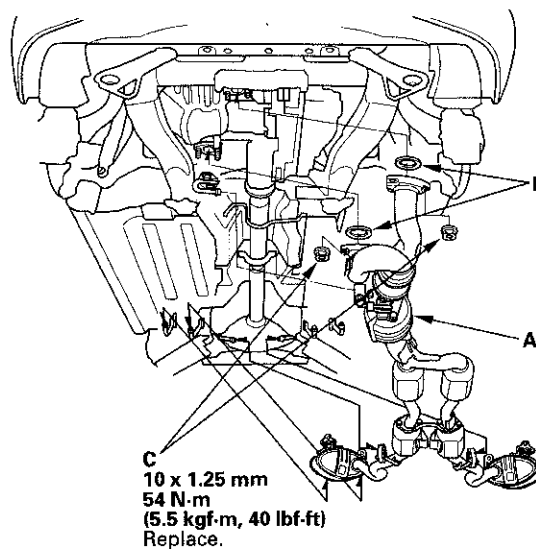
28. Connect the connector to the steering gearbox.



29. Install the power steering (P/S) hose.

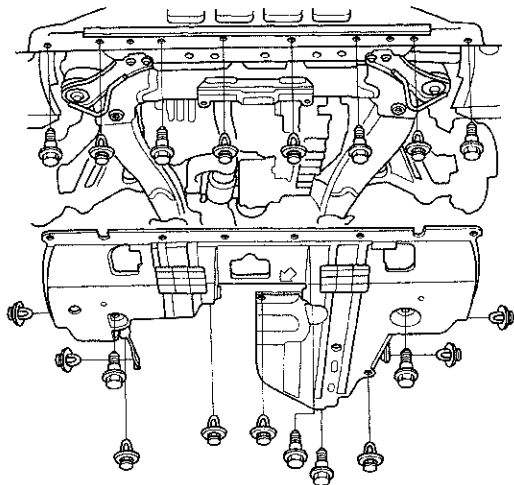


30. Install the transfer assembly (see page 14-200).
31. Install the propeller shaft (see page 16-45).
32. Install the ATF cooler hoses to the transmission (see page 14-229).
33. Install the exhaust pipe assembly (A) using new gaskets (B) and new self-locking nuts (C).



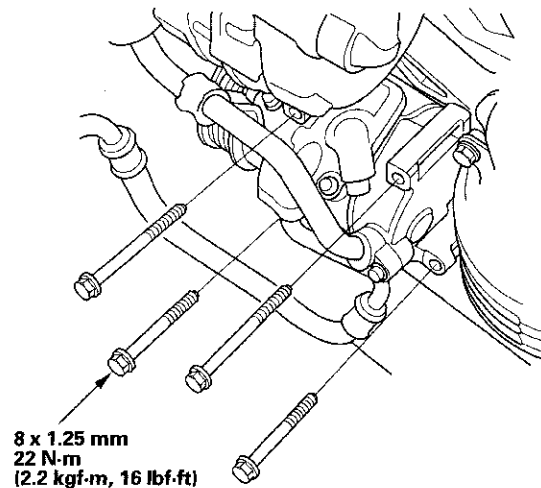


34. Install a new set ring on the end of each driveshaft, then install the driveshafts. Make sure each ring "clicks" into place in the differential and intermediate shaft.
35. Connect the suspension lower arm to the knuckles (see page 18-17).
36. Connect the tie-rod end ball joints to the knuckles (see step 23 on page 17-61).
37. Install the damper fork (see page 18-22).
38. Connect the stabilizer links to the stabilizer bar (see page 18-19).
39. Install the splash shield.

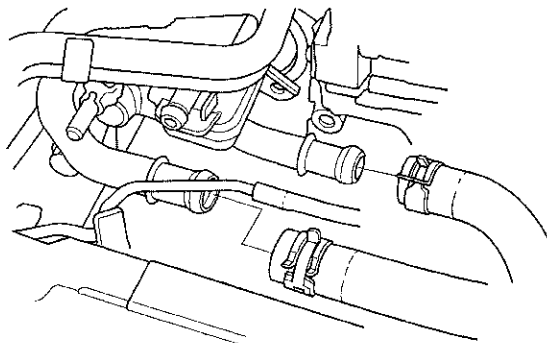


40. Install the front wheels.
41. Lower the vehicle on the lift.

42. Install the A/C compressor.



43. Install the radiator (see page 10-14).
44. Install the heater hoses.

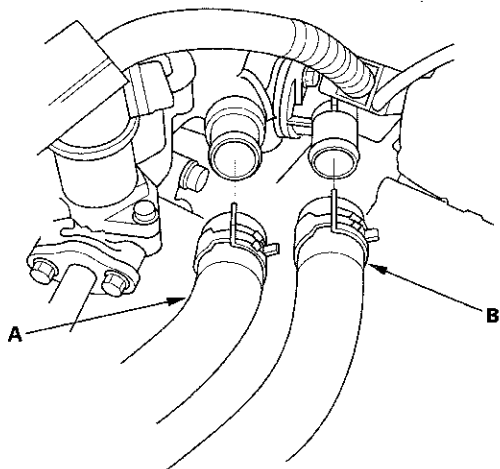


(cont'd)

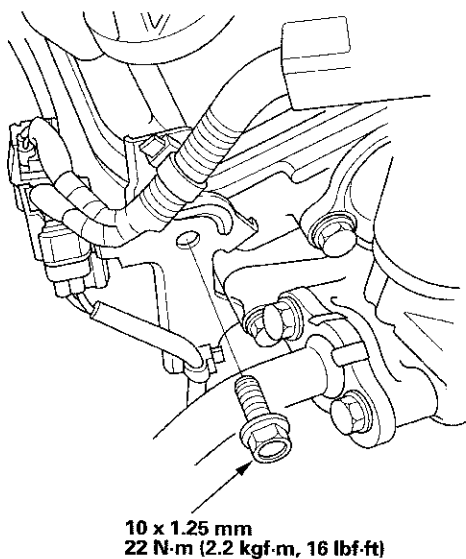
# Engine Assembly

## Engine Installation (cont'd)

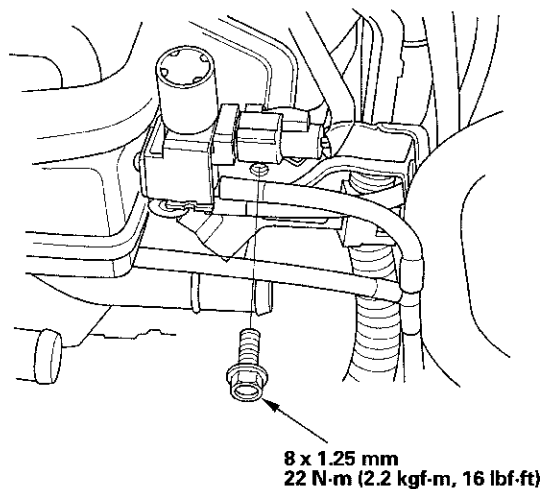
45. Install the upper radiator hose (A) and the lower radiator hose (B).



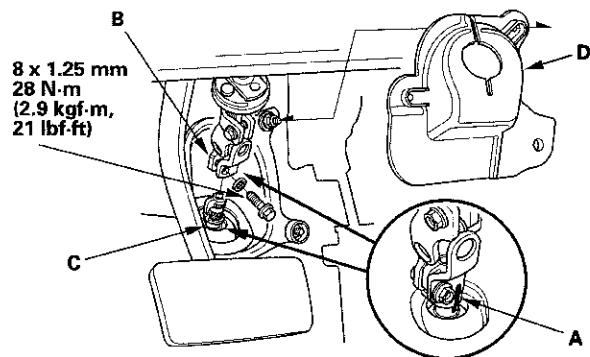
46. Install the connector bracket to the front cylinder head.



47. Install the engine mount control solenoid valve bracket to the rear cylinder head.



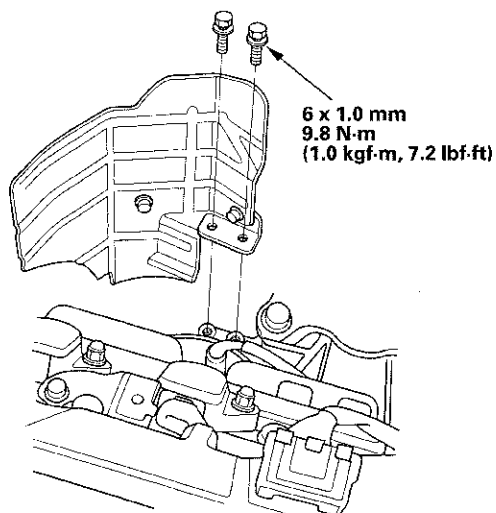
48. Align the reference mark (A) on the steering joint and steering gearbox pinion shaft. Connect the steering joint (B) to the steering gearbox pinion shaft (C). Tighten the steering joint bolt.



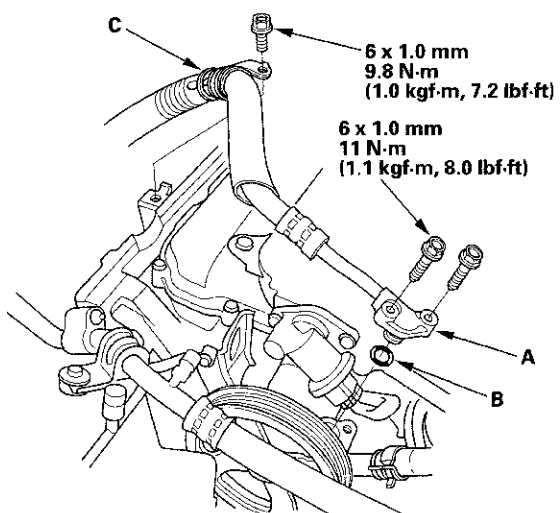
49. Install the steering joint cover (D).
50. Install the steering wheel (see page 17-24).



51. Install the heat shield.



52. Install the P/S pump outlet line (A) with a new O-ring (B).



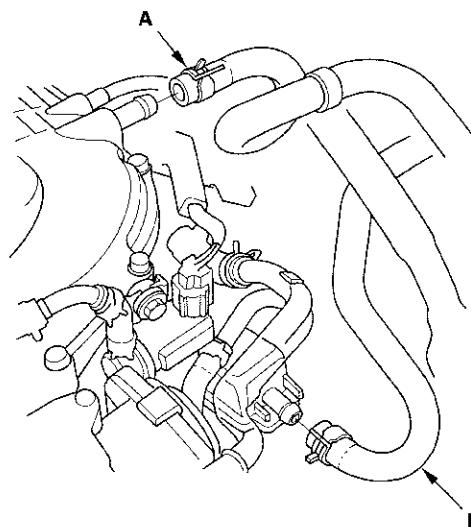
53. Install the P/S hose clamp (C).

54. Install the power steering system fluid reservoir to the clamp.

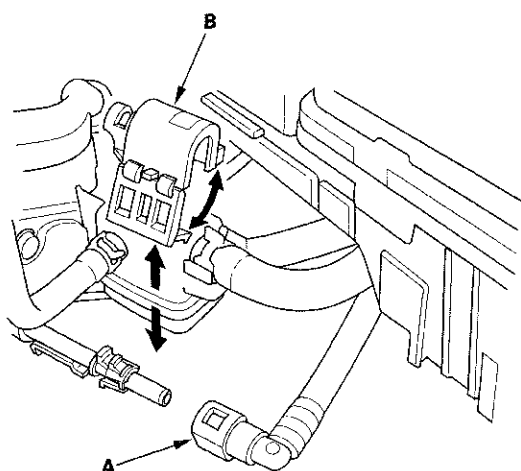
55. Install the drive belt (see page 4-33).

56. Install the shift cable (see page 14-235).

57. Install the brake booster vacuum hose (A) and the evaporative emission (EVAP) canister hose (B).



58. Connect the fuel feed hose (A) (see page 11-344), then install the quick-connect fitting cover (B).

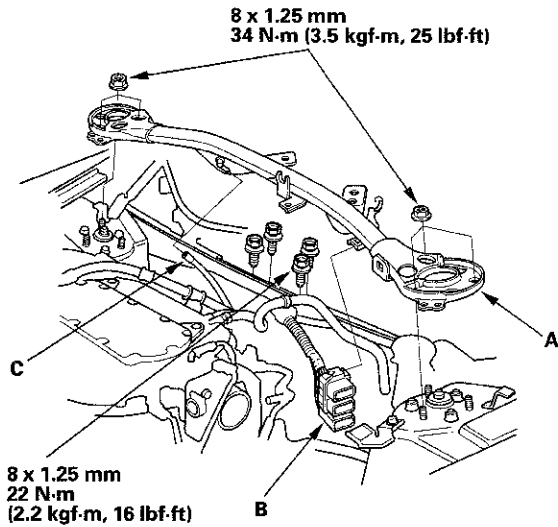


(cont'd)

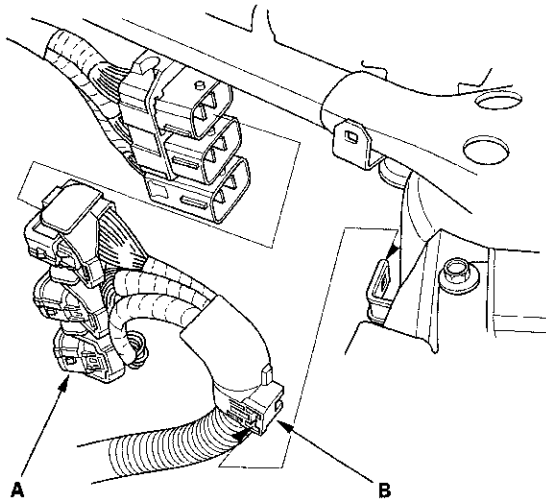
# Engine Assembly

## Engine Installation (cont'd)

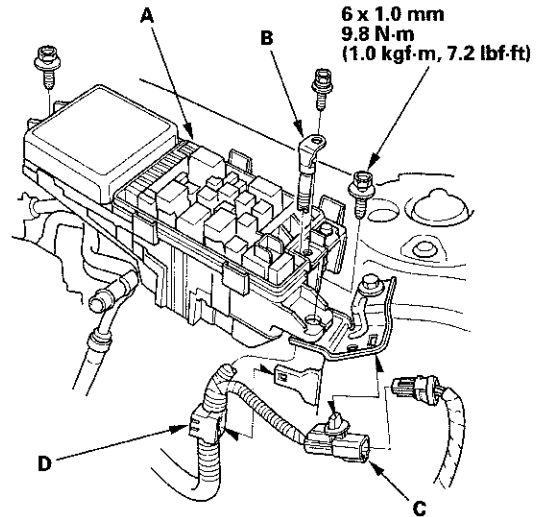
59. Install the strut brace (A), then install the connector (B) and the transfer breather hose (C).



60. Connect the engine wire harness connectors (A), then install the harness clamp (B).



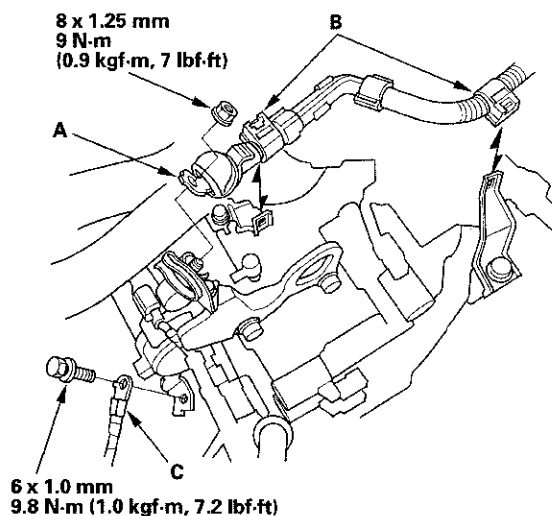
61. Install the under-hood fuse/relay box (A), then install the battery cable (B).



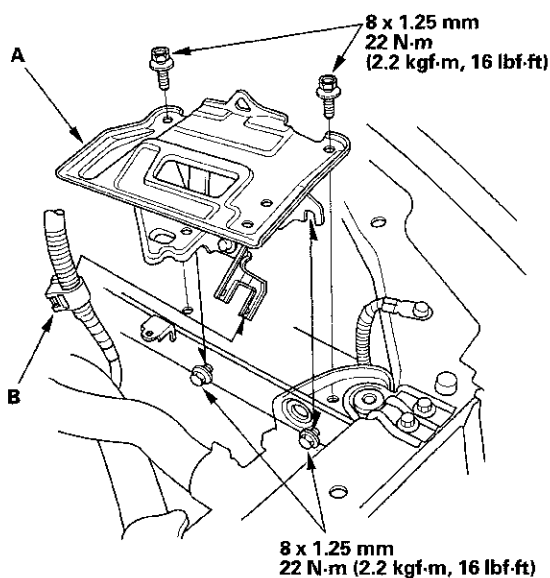
62. Connect the harness connector (C), then install the harness clamp (D).



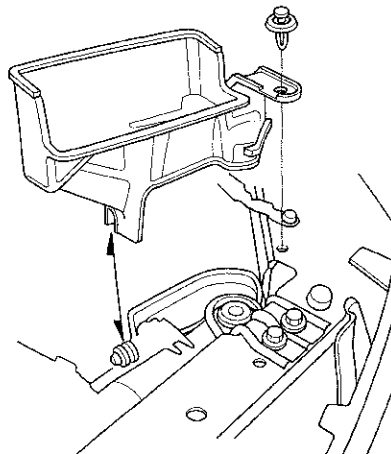
63. Install the starter cable (A), the harness clamps (B), and the ground cable (C).



64. Install the battery base (A), then install the harness clamp (B).



65. Install the air intake duct cover.



66. Install the air cleaner (see page 11-366).

67. Do the battery installation procedure (see page 22-92).

68. Move the shift lever to each gear, and verify that the A/T gear position indicator follows the transmission range switch.

69. Inspect for fuel leaks. Turn the ignition switch to ON (II) (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation two or three times, then check for fuel leaks at any point in the fuel line.

70. Refill the engine with engine oil (see step 4 on page 8-11).

71. Refill the transmission with ATF (see page 14-196).

72. Refill the radiator with engine coolant, and bleed air from the cooling system with the heater valve open (see step 8 on page 10-7).

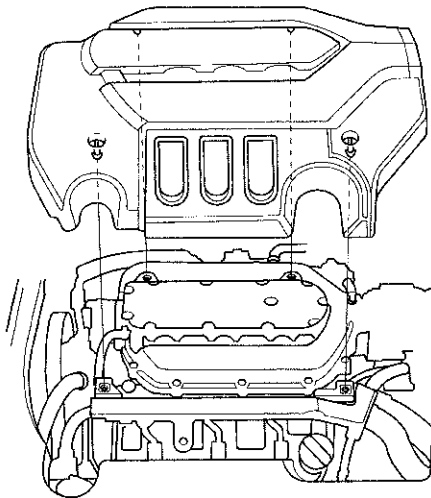
(cont'd)

# Engine Assembly

---

## Engine Installation (cont'd)

73. Install the return hose to the power steering fluid reservoir. Refill the power steering system fluid (see page 17-13).
74. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see page 11-5).
75. Inspect the idle speed (see page 11-312).
76. Inspect the ignition timing (see page 4-20).
77. Install the cowl cover (see page 20-164), the upper grille cover (see page 20-163), the left upper fender trim, the battery trim, and the right upper fender trim (see page 20-162).
78. Install the engine cover.





## Engine Mount Replacement

