

Engine

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Engine Removal/Installation

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Engine Removal/Installation

Removal

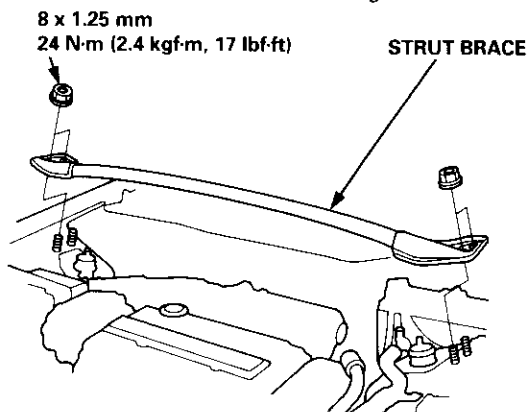
⚠ WARNING

- Make sure jacks and safety stands are placed properly and hoist brackets are attached to the correct positions on the engine.
- Make sure the vehicle will not roll off stands and fall while you are working under it.

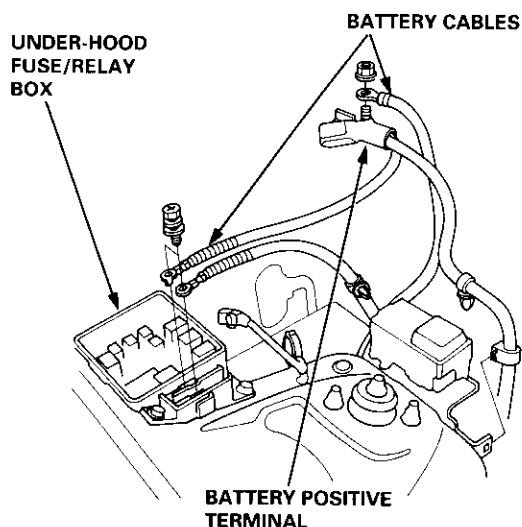
CAUTION:

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

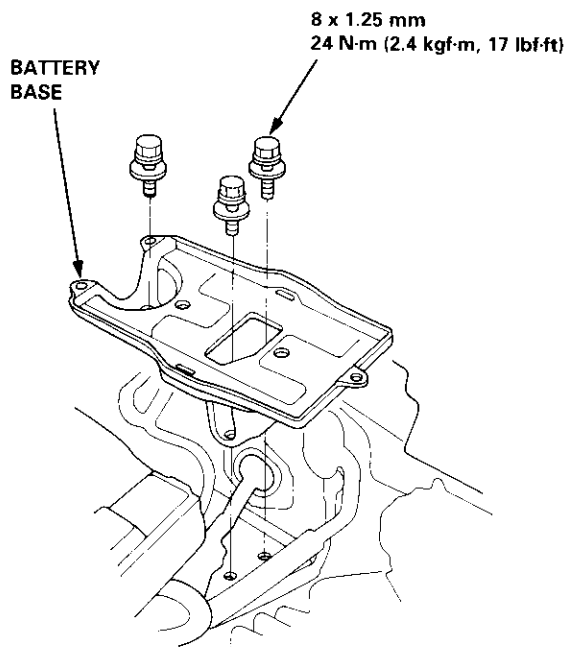
1. Secure the hood as open as possible.
2. Disconnect the battery negative terminal first, then the positive terminal. Remove the battery.
3. Remove the strut brace (B16A2 engine).



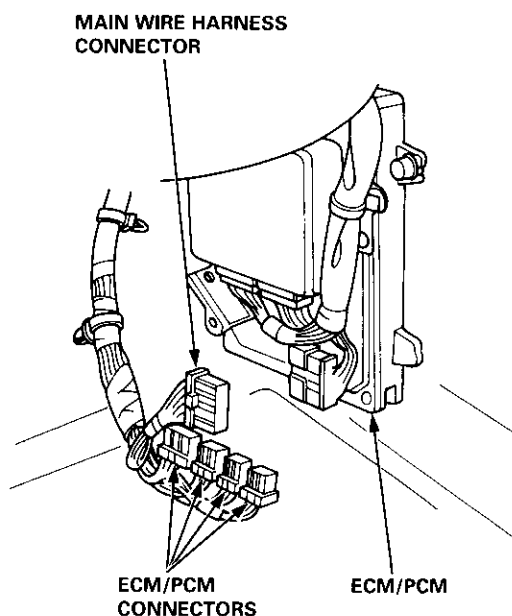
4. Disconnect the battery cables from the under-hood fuse/relay box and battery positive terminal.



5. Remove the battery and battery base.



6. Disconnect the connectors from the ECM/PCM.
7. Disconnect the main wire harness connector.

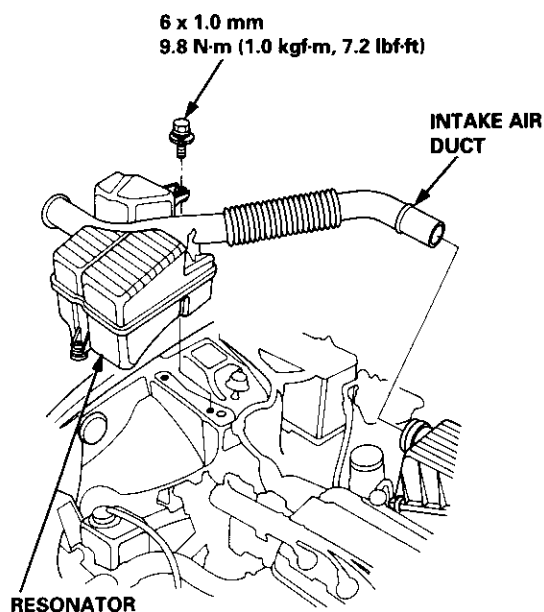




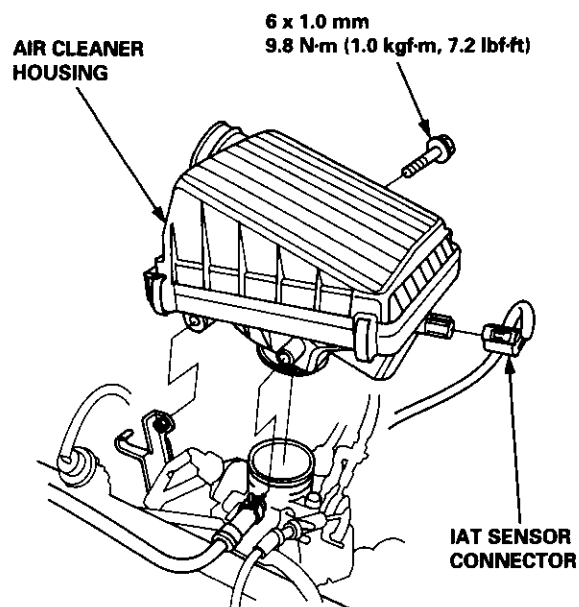
8. Remove the intake air duct and air cleaner housing.

D16Y7 engine:

- a. Remove the resonator and intake air duct.

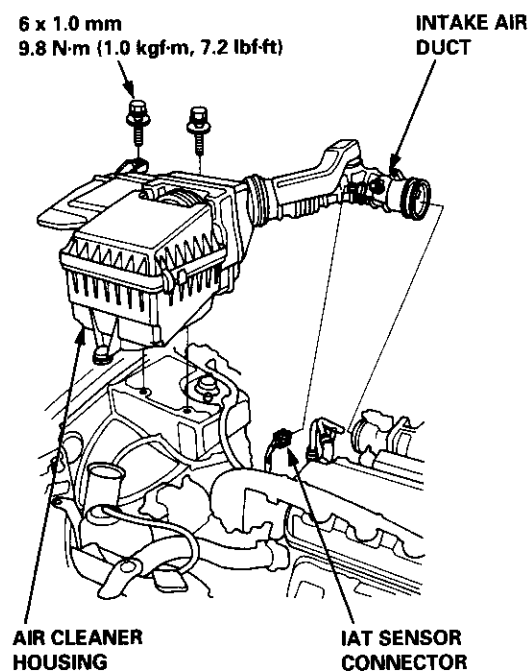


- b. Disconnect the intake air temperature (IAT) sensor connector, then remove the air cleaner housing.

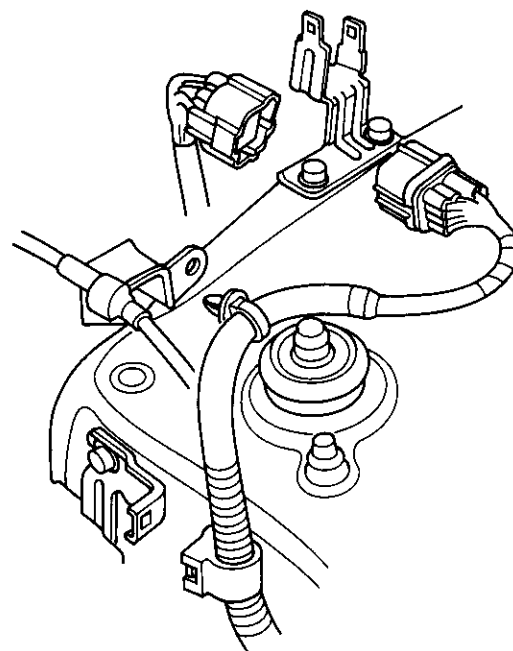


D16Y5, D16Y8, B16A2 engines:

- a. Disconnect the IAT sensor connector, then remove the intake air duct and air cleaner housing.



9. Disconnect the engine wire harness connector on the left side of the engine compartment.



(cont'd)

Engine Removal/Installation

Removal (cont'd)

10. Relieve fuel pressure (see section 11).

⚠ WARNING Do not smoke while working on the fuel system. Keep open flame or spark away from the work area. Drain fuel only into an approved container.

11. Remove the evaporative emission (EVAP) control canister hose and fuel feed hose.

D16Y7 engine:

BANJO BOLT
33 N·m (3.4 kgf-m, 25 lbf-ft)

WASHERS
Replace.

**EVAP CONTROL
CANISTER HOSE**

FUEL FEED HOSE

D16Y5, D16Y8, B16A2 engines:

BANJO BOLT
33 N·m (3.4 kgf-m,
25 lbf-ft)

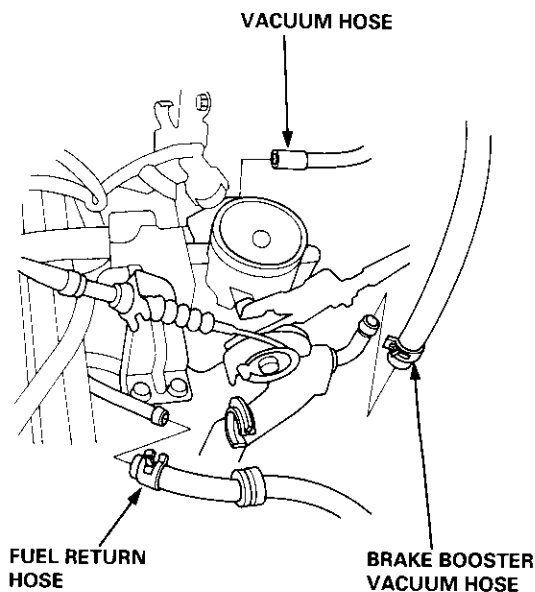
WASHERS
Replace.

**EVAP CONTROL
CANISTER HOSE**

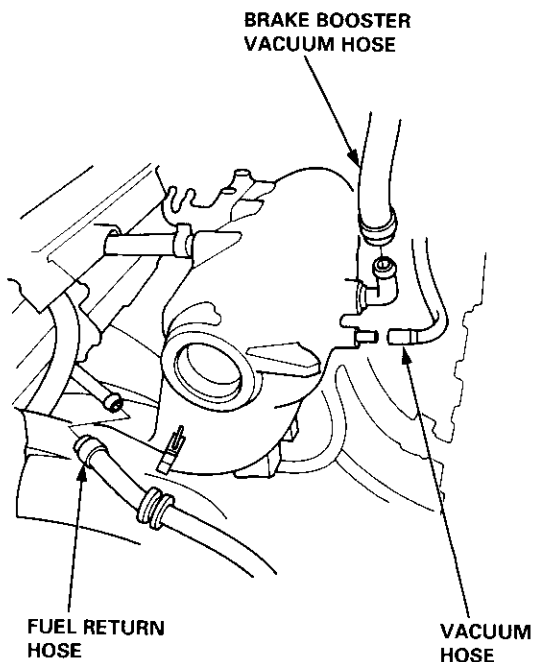
**FUEL FEED
HOSE**

12. Remove the brake booster vacuum hose, fuel return hose and vacuum hose.

D16Y7 engine:



D16Y5, D16Y8, B16A2 engines:



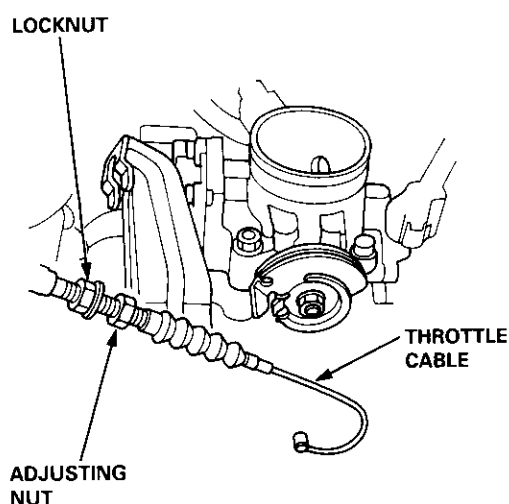


13. Remove the throttle cable by loosening the locknut, then slip the cable end out of the accelerator linkage.

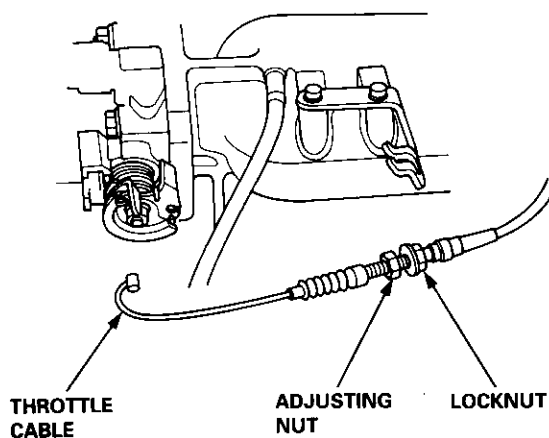
NOTE:

- Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
- Adjust the throttle cable when installing (see section 11).

D16Y7 engine:

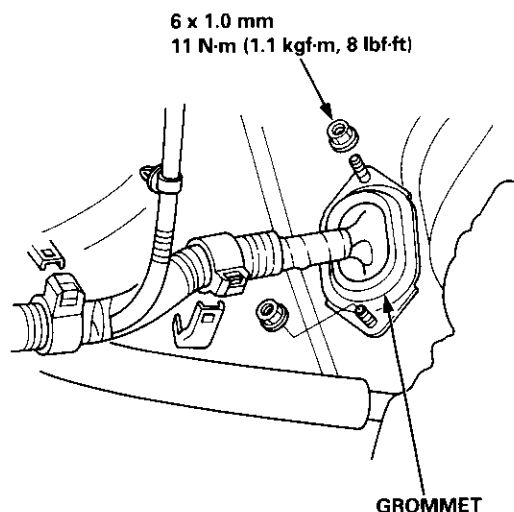


D16Y5, D16Y8, B16A2 engines:



14. Disconnect the connectors from the PCM.

15. Remove the grommet and wire harness clamps, then pull out the ECM/PCM connectors.

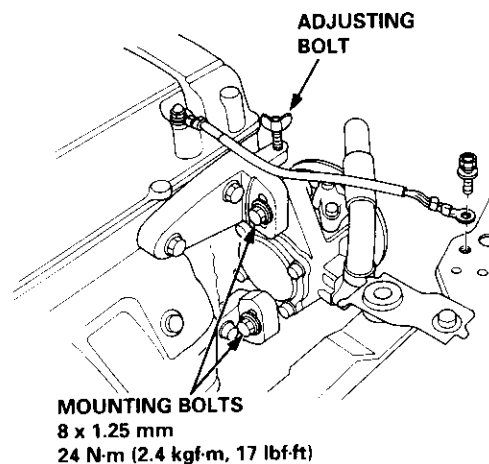


16. Remove the mounting bolt and lock bolt, then remove the power steering (P/S) pump belt and pump.

NOTE: Do not disconnect the P/S hoses.

B16A2 engine:

- 1. Remove the adjusting bolt and mounting bolts, then remove the P/S pump belt and pump.



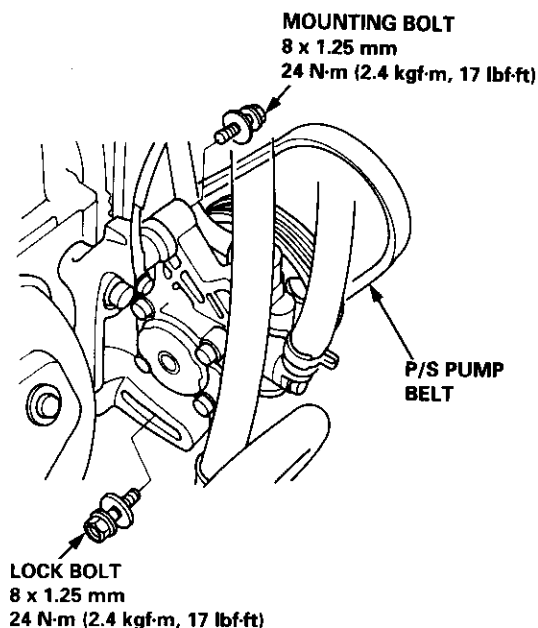
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Engine Removal/Installation

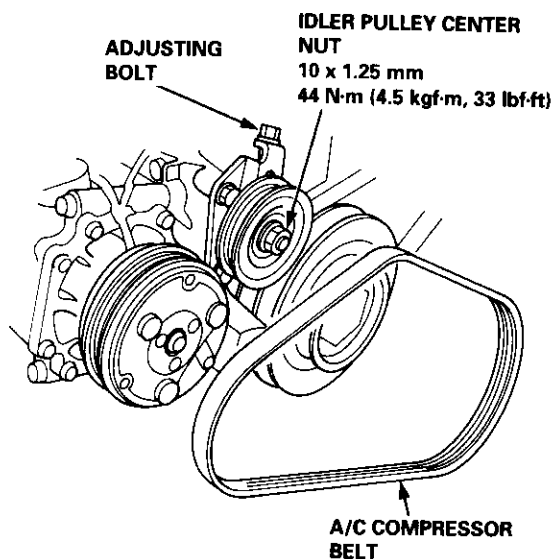
Removal (cont'd)

D16Y5, D16Y7, D16Y8 engines:

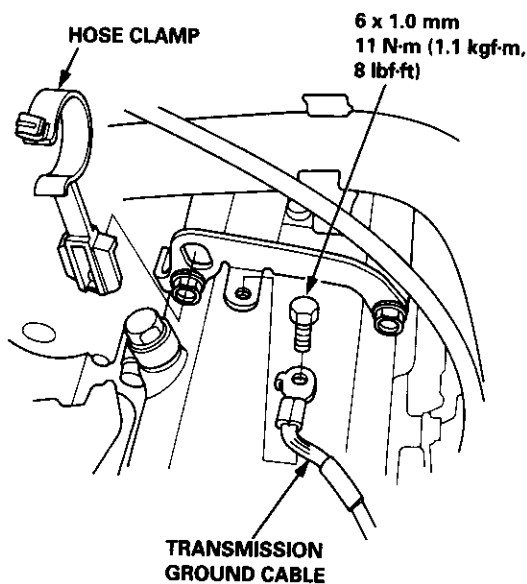
- 1. Remove the mounting bolt and lock bolt, then remove the P/S pump belt and pump.



17. Loosen the idler pulley center nut and adjusting bolt, then remove the air conditioning (A/C) compressor belt.



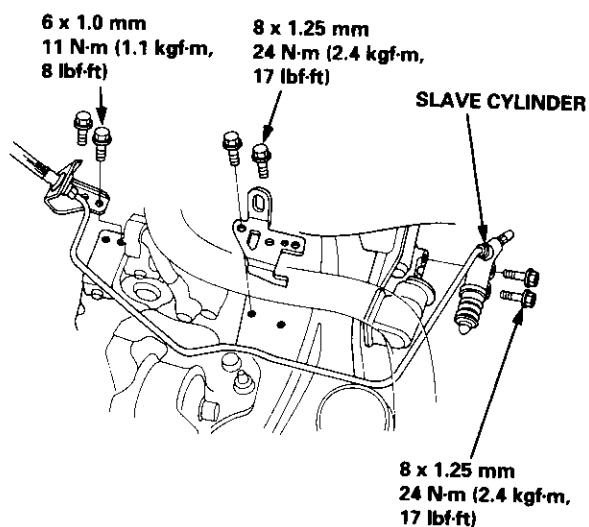
18. Remove the transmission ground cable and hose clamp.



19. Remove the clutch slave cylinder and line/hose assembly (M/T).

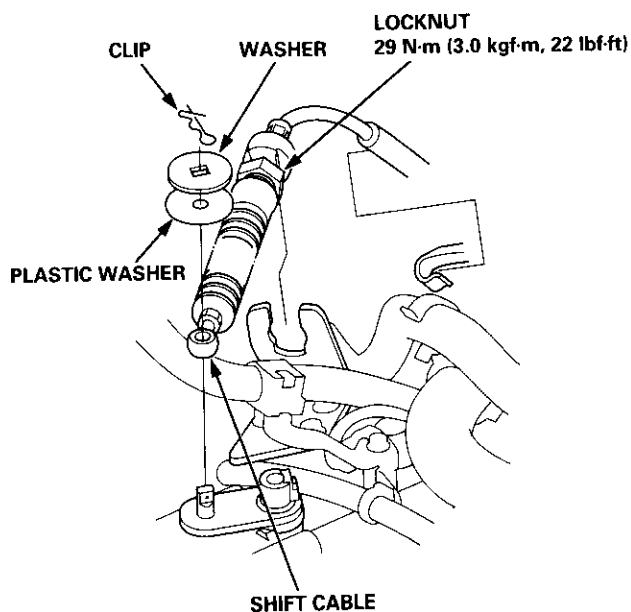
NOTE:

- Do not disconnect the pipe/hose assembly.
- Do not operate the clutch pedal once the slave cylinder has been removed.
- Take care not to bend the line.

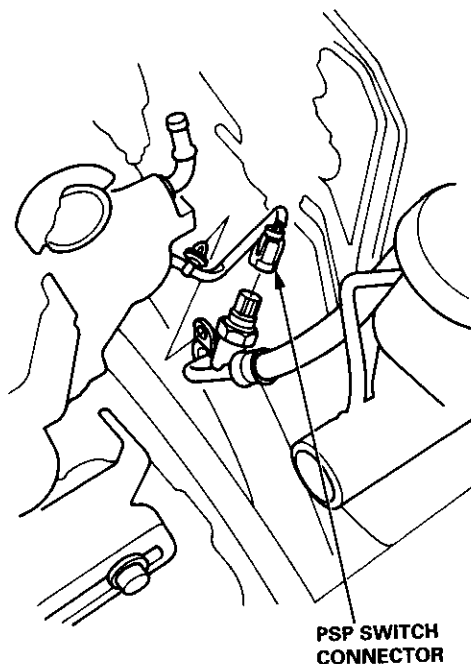




20. Remove the shift cable (CVT).



21. Disconnect the power steering pressure (PSP) switch connector, and remove the wire harness clamp.

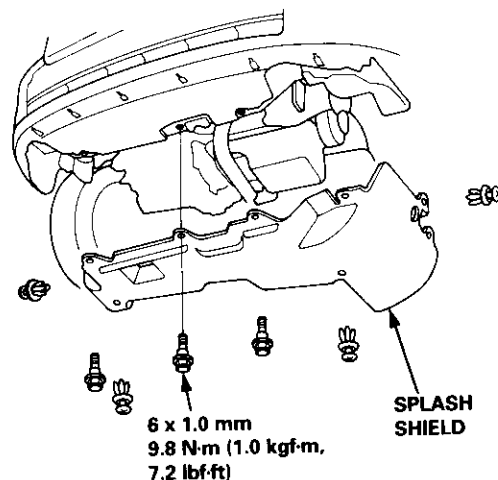


22. Remove the radiator cap.

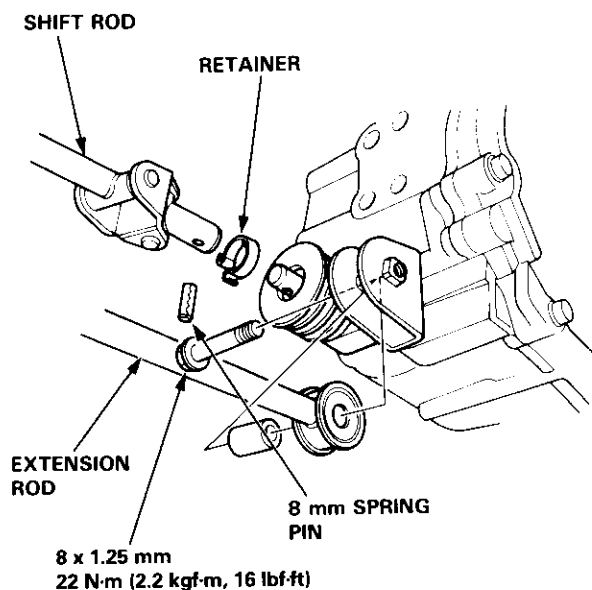
⚠ WARNING Use care when removing the radiator cap to avoid scalding by hot coolant or steam.

23. Raise the hoist to full height.

24. Remove the front tires/wheels and splash shield.



25. Drain the engine coolant (see page 10-7). Loosen the drain plug in the radiator.
26. Drain the transmission fluid. Reinstall the drain plug using a new washer (see section 13, 14).
27. Drain the engine oil. Reinstall the drain bolt using a new washer (see page 8-6).
28. Remove the shift rod and extension rod (M/T).



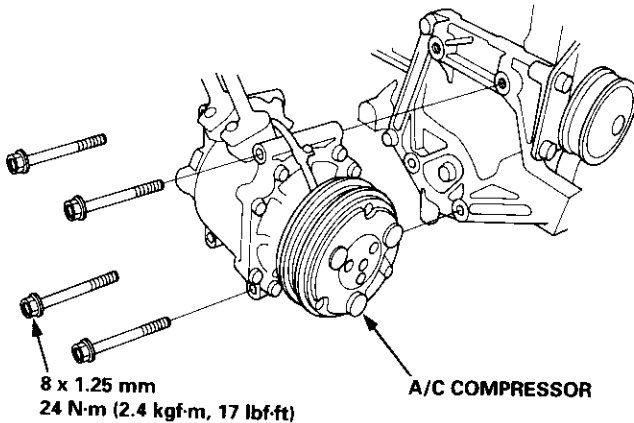
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Engine Removal/Installation

Removal (cont'd)

29. Remove the A/C compressor.

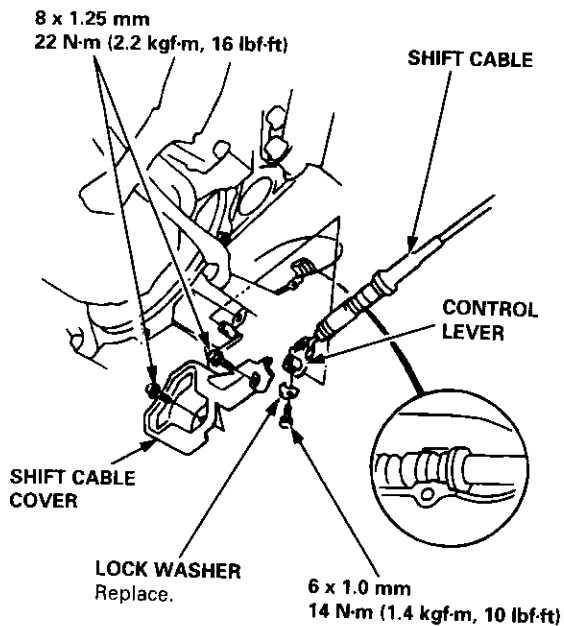
NOTE: Do not disconnect the A/C hoses.



30. Remove the shift cable (A/T).

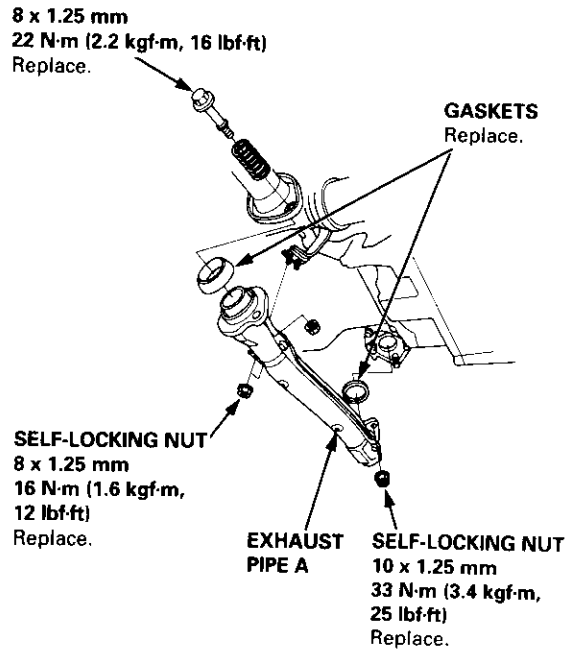
NOTE:

- Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
- Adjust the shift cable when installing (see section 14).

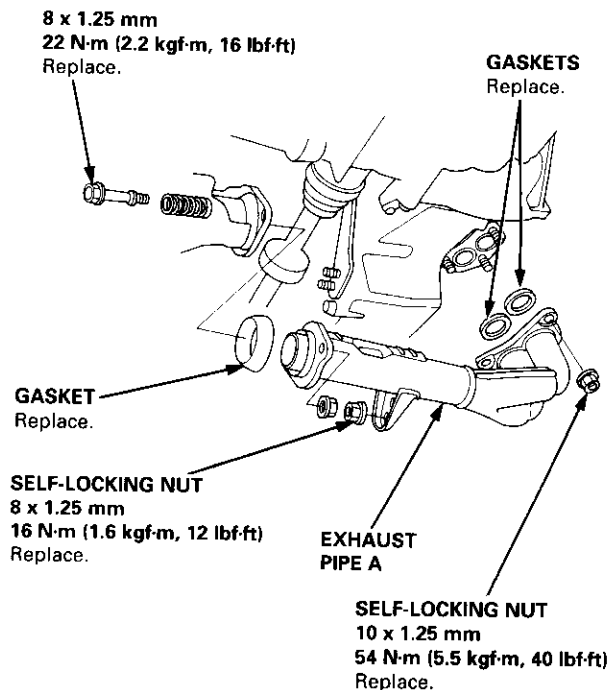


31. Remove exhaust pipe A.

D16Y5, D16Y7 engines:

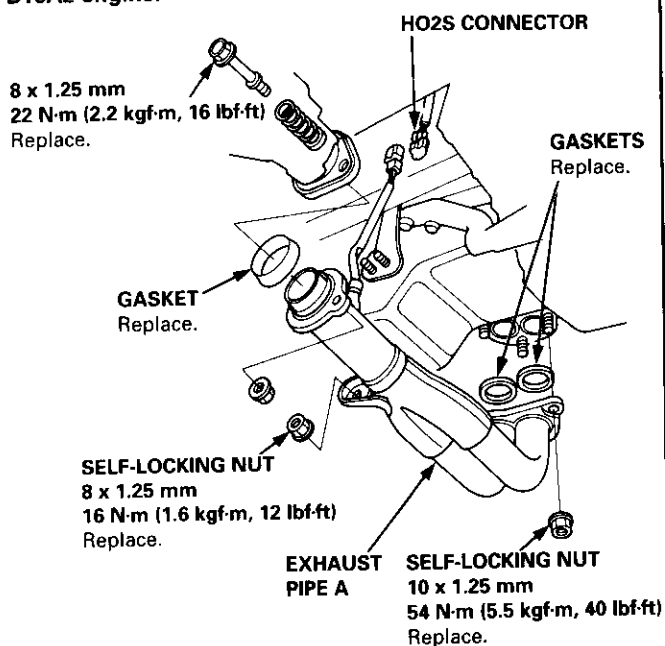


D16Y8 engine:





B16A2 engine:



32. Remove the damper forks (see section 18).

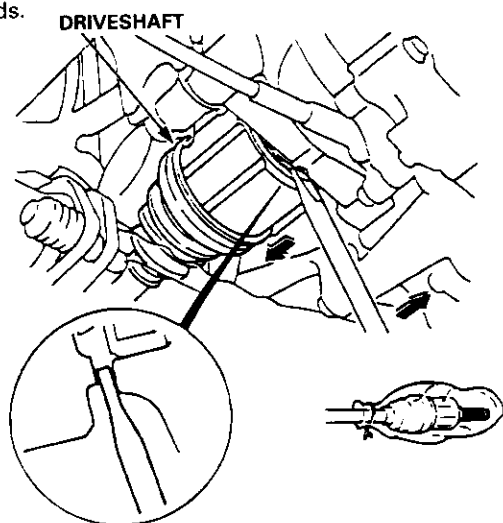
33. Disconnect the suspension lower arm ball joints (see section 18).

34. Remove the driveshafts.

CAUTION:

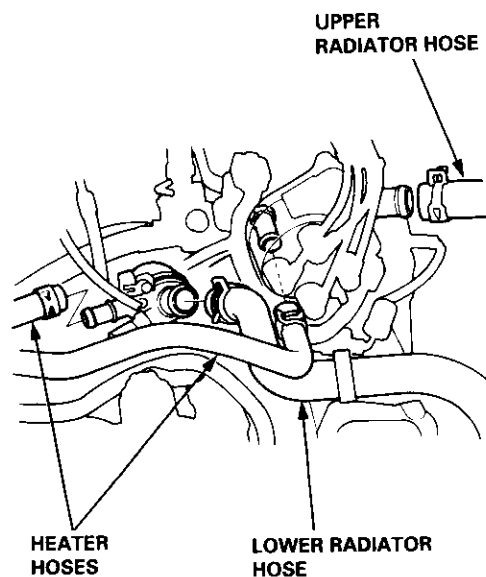
- Do not pull on the driveshaft, the CV joint may come apart.
- Use care when prying out the assembly. Pull it straight to avoid damaging the differential oil seal or intermediate shaft dust seal.

NOTE: Coat all precision-finished surfaces with clean engine oil. Tie plastic bags over the driveshaft ends.

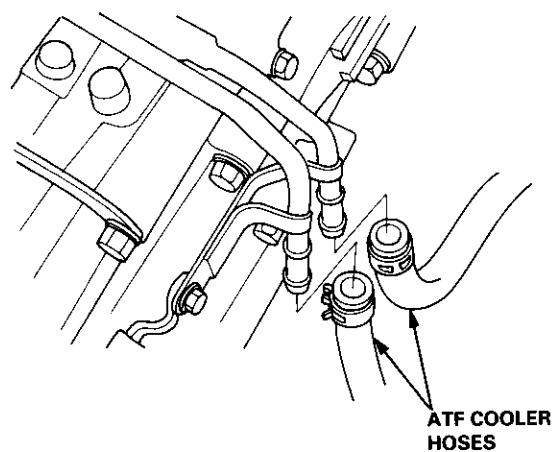


35. Lower the hoist.

36. Remove the upper and lower radiator hoses and heater hoses.



37. Remove the ATF cooler hoses, then plug the ATF cooler hoses and pipes (A/T).



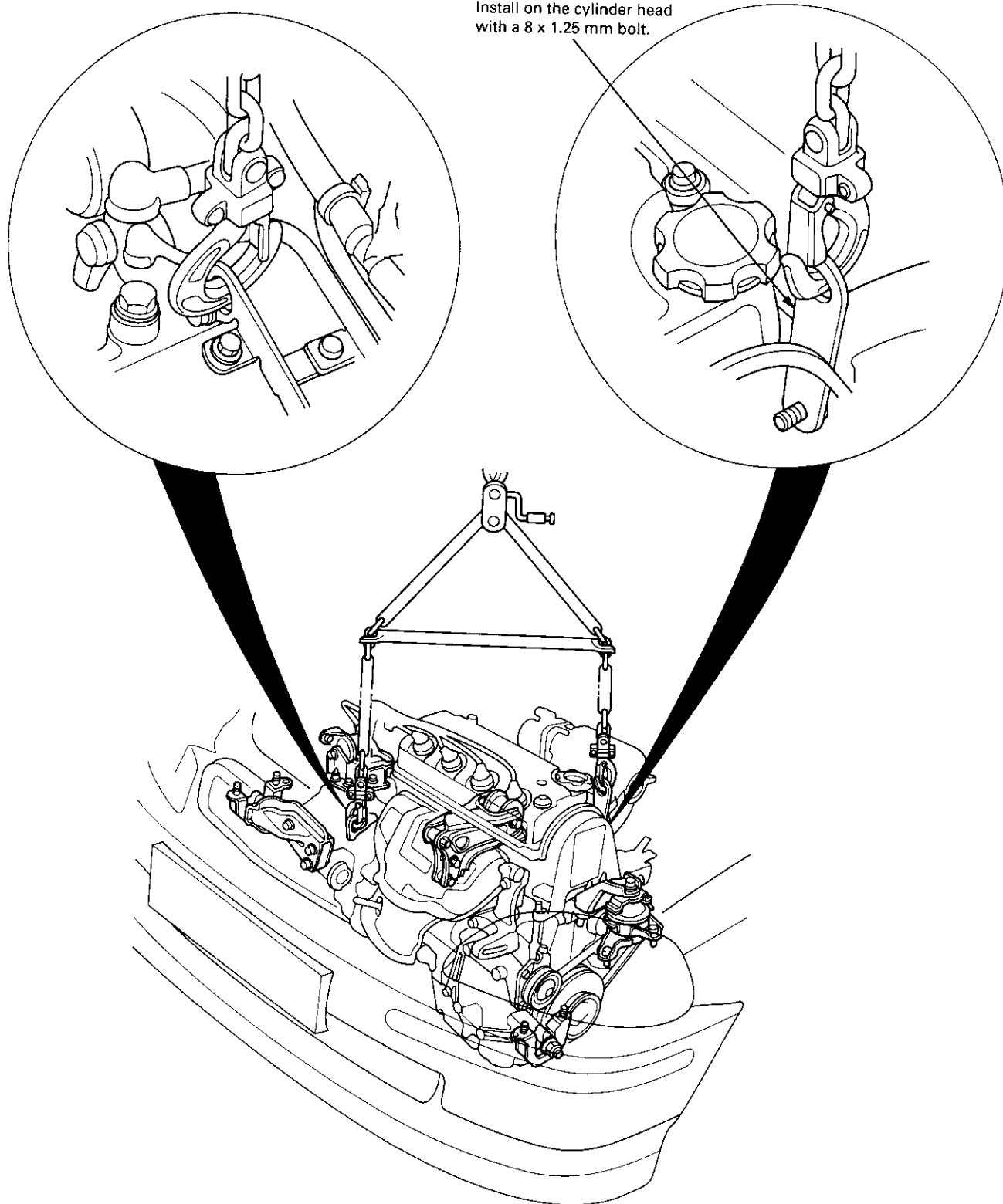
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Engine Removal/Installation

Removal (cont'd)

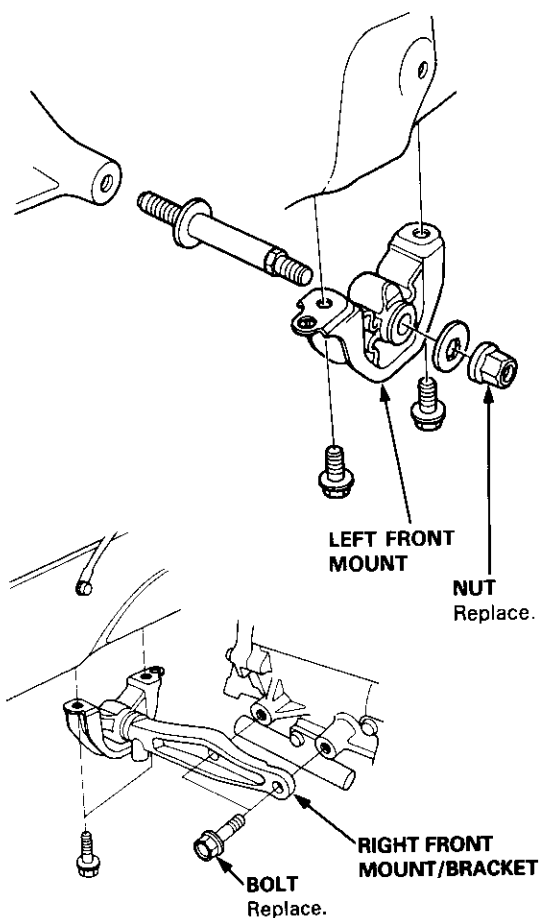
38. Attach the chain hoist to the engine.

HOISTING BRACKET
Install on the cylinder head
with a 8 x 1.25 mm bolt.

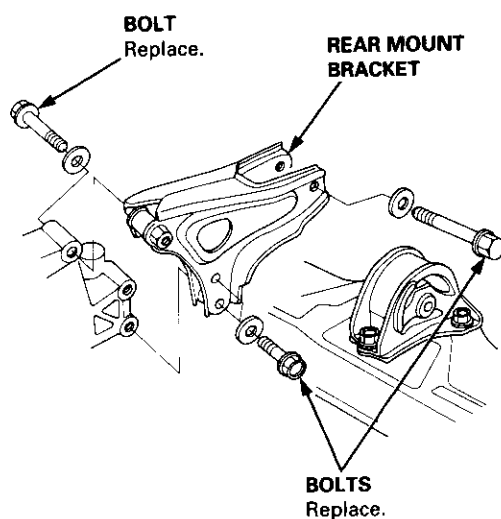




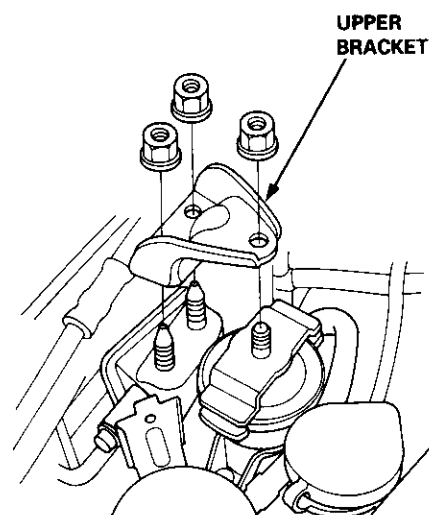
39. Remove the left and right front mount and bracket.



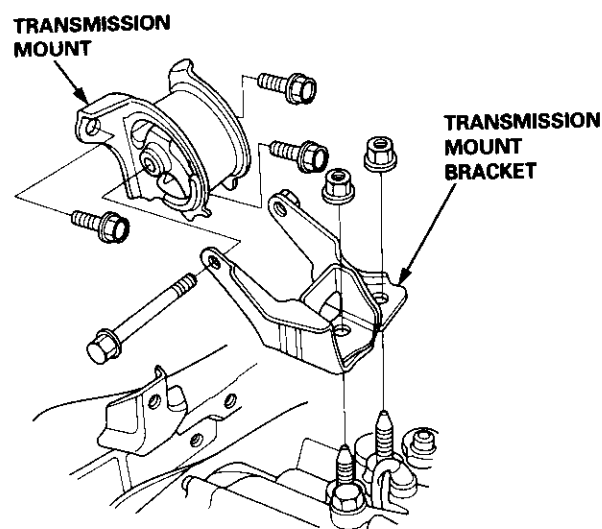
40. Remove the rear mount bracket.



41. Remove the upper bracket.



42. Remove the transmission mount bracket, then remove the transmission mount.



43. Check that the engine/transmission is completely free of vacuum hoses, fuel and coolant hoses and electrical wiring.
44. Slowly raise the engine approximately 150 mm (6 in). Check once again that all hoses and wires are disconnected from the engine/transmission.
45. Raise the engine all the way, and remove it from the car.

Engine Removal/Installation

Installation

Bracket Bolts Torque Specifications:

D16Y5, D16Y7, D16Y8 engines

D16Y5, D16Y8 engines (M/T):

REAR STIFFENER

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

8 x 1.25 mm
24 N·m (2.4 kgf·m, 17 lbf·ft)

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

P/S PUMP
BRACKET

ENGINE SIDE
MOUNT BRACKET

10 x 1.25 mm
54 N·m (5.5 kgf·m,
40 lbf·ft)

ALTERNATOR
BRACKET

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

EXCEPT D16Y5, D16Y8 engines (M/T):

STIFFENER

Tighten the bolts on the stiffener
in the numbered sequence as shown
(① - ④).

② 8 x 1.25 mm
24 N·m (2.4 kgf·m,
17 lbf·ft)

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

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

① 8 x 1.25 mm
24 N·m (2.4 kgf·m,
17 lbf·ft)

D16Y5, D16Y8
engines (M/T):
FRONT
STIFFENER

8 x 1.25 mm
24 N·m (2.4 kgf·m,
17 lbf·ft)

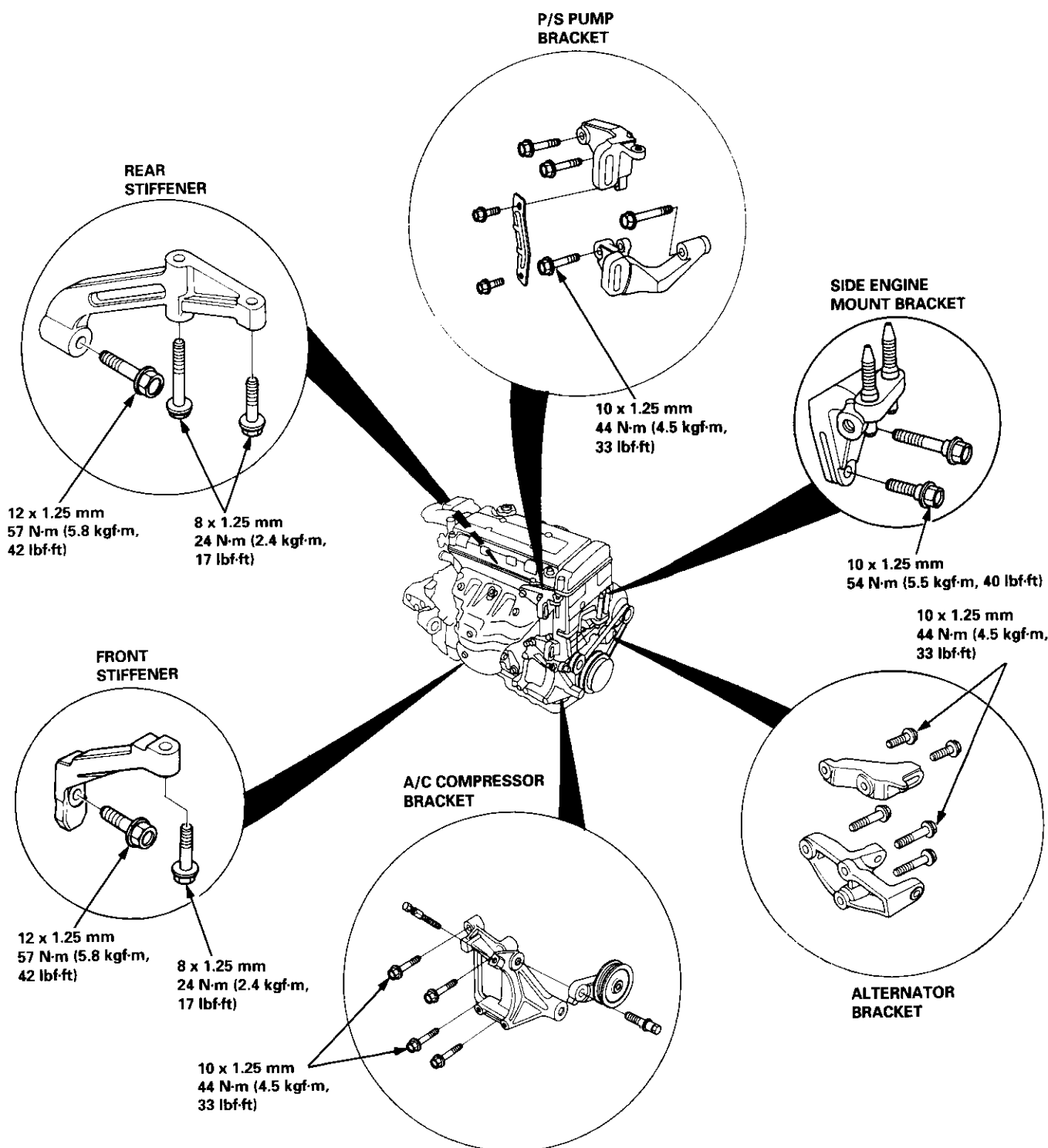
10 x 1.25 mm
44 N·m (4.5 kgf·m,
33 lbf·ft)

A/C COMPRESSOR
BRACKET

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



B16A2 engine



(cont'd)

Engine Removal/Installation

Installation (cont'd)

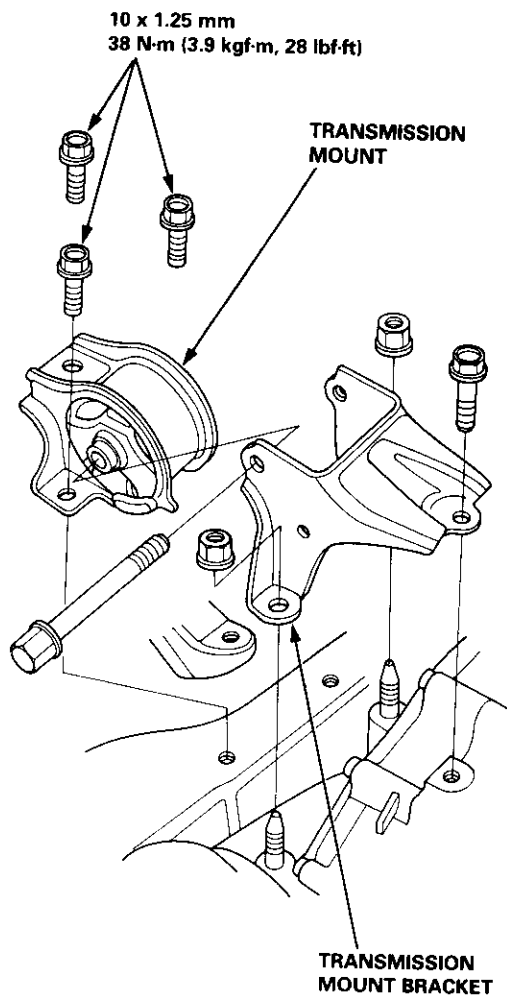
Engine Installation:

Install the engine in the reverse order of removal. Reinstall the mount bolts/nuts in the following sequence. Failure to follow these procedures may cause excessive noise and vibration, and reduce bushing life.

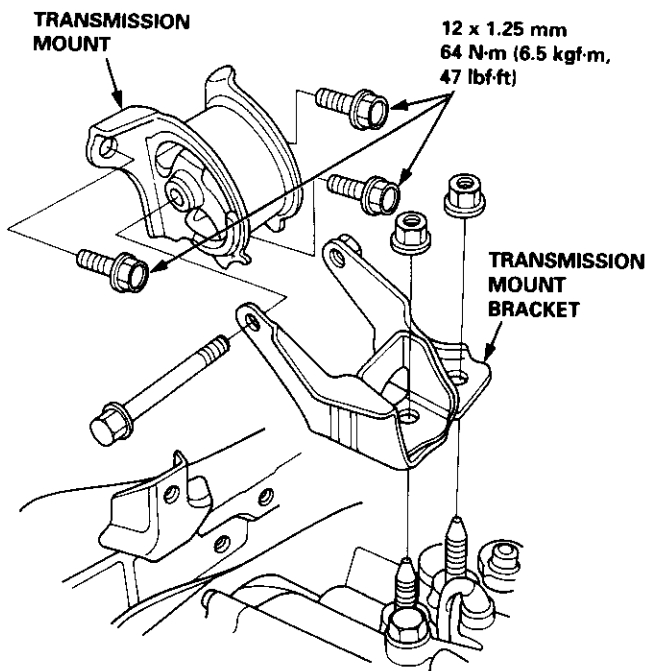
1. Install the transmission mount and bracket, then tighten the bolts on the frame side.

NOTE: Do not tighten the bolts/nuts on the transmission side.

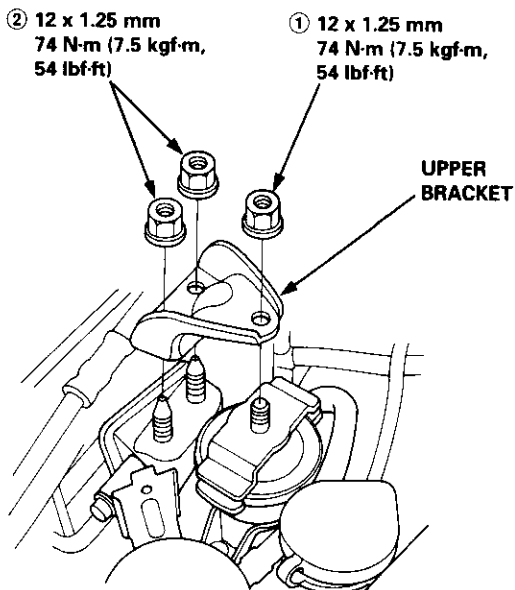
CVT:



Except CVT:



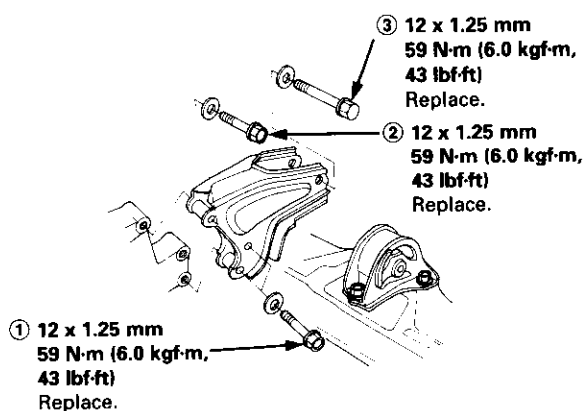
2. Install the upper bracket, then tighten the nuts in the numbered sequence shown (① - ②).



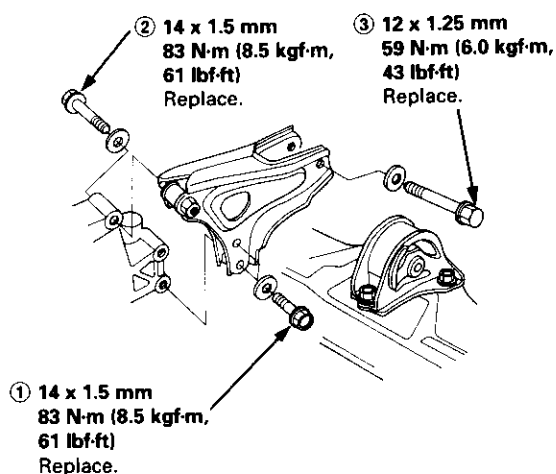


3. Install the rear mount bracket, then tighten the bolts in the numbered sequence shown (① - ③).

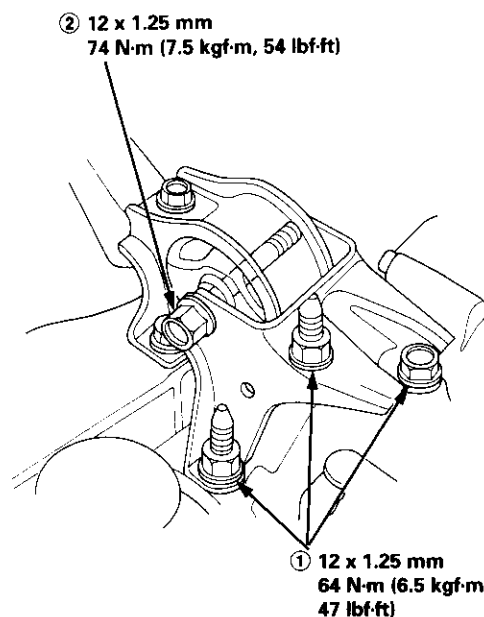
CVT:



Except CVT:

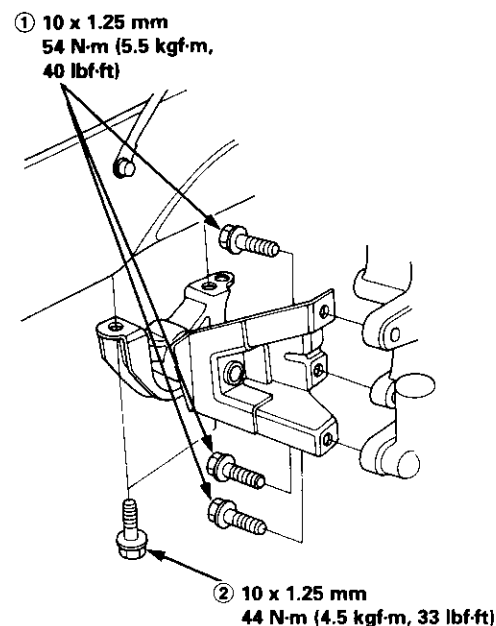


4. Tighten the bolt/nuts on the transmission mount bracket in the numbered sequence shown (① - ②).



5. Tighten the bolts on the right front mount/bracket in the numbered sequence shown (① - ②).

CVT:

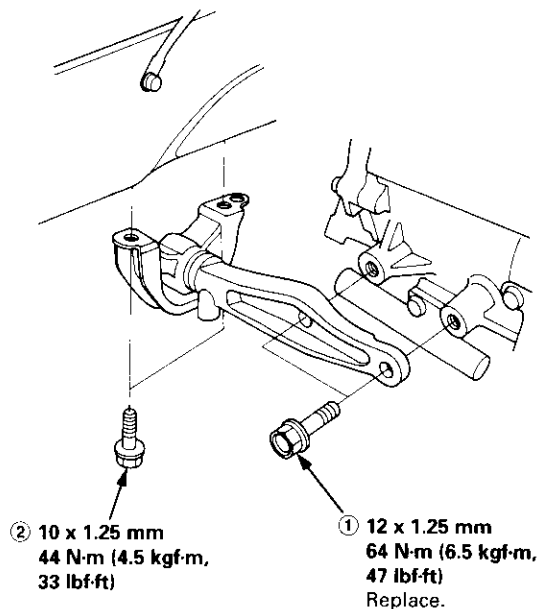


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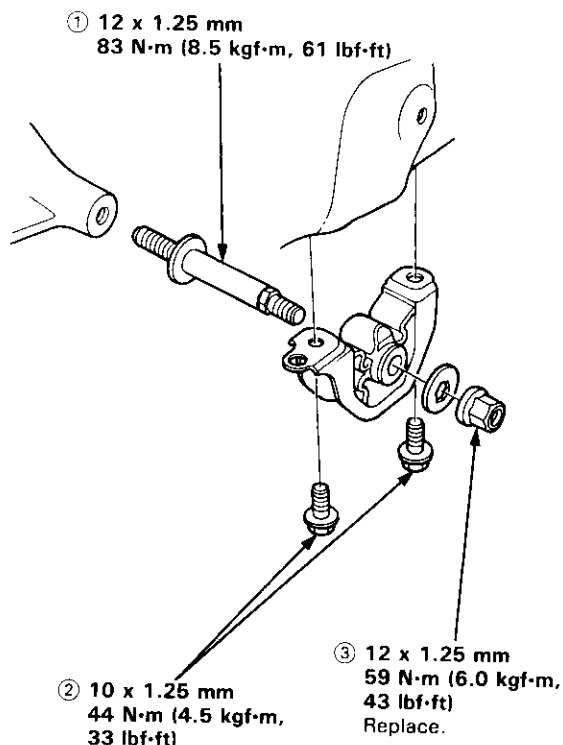
Engine Removal/Installation

Installation (cont'd)

Except CVT:



6. Tighten the bolts/nut on the left front mount in the numbered sequence shown (① - ③).



7. Perform the following:

- Clean the areas where the driveshaft(s) and the intermediate shaft contact the transmission (differential) thoroughly with solvent or carburetor cleaner, and dry with compressed air.
- Check that the set rings on the ends of the driveshaft and intermediate shaft click into place.

CAUTION: Use new set rings.

- Adjust the shift cable (see section 14).
- Adjust the throttle cable (see section 11).
- Adjust the cruise control cable (see section 23).
- Refill the engine with engine oil (see page 8-6).
- Refill the transmission with fluid (see section 13, 14).
- Refill the radiator with engine coolant (see page 10-7).
- Bleed air from the cooling system with the heater valve open (see page 10-7).
- Clean the battery posts and cable terminals with sandpaper, assemble them, then apply grease to prevent corrosion.
- Inspect for fuel leakage (see section 11).

After assembling the fuel line, turn on (II) the ignition switch (do not operate the starter) so that the fuel pump runs for approximately two seconds and the fuel line pressurizes. Repeat this operation two or three times, then check for fuel leakage at any point in the fuel line.



Mount and Bracket Bolts/Nuts Torque Value Specifications:

- A: 10 x 1.25 mm
64 N·m (6.5 kgf·m, 47 lbf·ft)
- B: 10 x 1.25 mm
44 N·m (4.5 kgf·m, 33 lbf·ft)
- C: 12 x 1.25 mm
83 N·m (8.5 kgf·m, 61 lbf·ft)
- D: 12 x 1.25 mm
59 N·m (6.0 kgf·m, 43 lbf·ft)
Replace.

