



Engine Removal/Installation

▲ WARNING

- Make sure jacks and safety stands are placed properly and hoist brackets are attached to the correct positions on the engine (see [section 1](#)).
- Make sure the car will not roll off stands and fall while you are working under it.

CAUTION:

- Use front and rear fender covers to avoid damaging painted surfaces.
- Unspecified items are common.
- Unplug the wiring connectors carefully while holding the coupler and the connector portion to avoid damage.
- Mark all wiring and hoses to avoid mis-connection. Also, be sure that they do not contact other wiring or hoses or interfere with other parts.
- If the ground clearance needs to be increased, use a scissors jack and install the rubber spacers to the coil springs (page 1-8).
- Put rubber pads under the jacking points when using jacks or safety stands to avoid damaging the body (page 1-9 to 11).

1. Move the seat bottoms and backs as far forward as they will go.
2. Disconnect the battery negative terminal first, then the positive terminal.

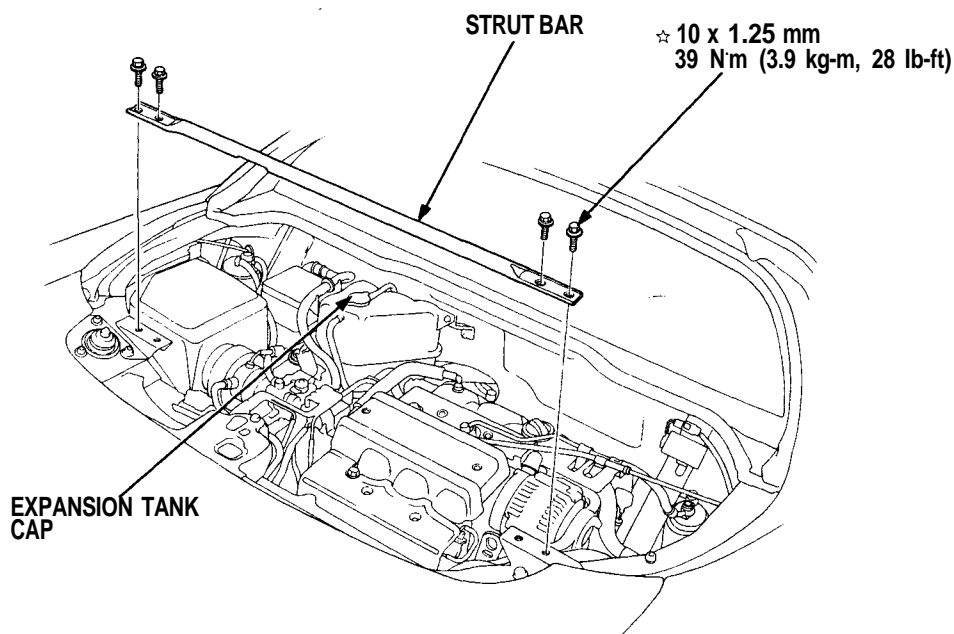
3. Remove the expansion tank cap to speed draining.

▲ WARNING Use care when removing the expansion tank cap to avoid scalding by hot engine coolant or steam.

4. Raise the hoist to full height.
5. Drain the engine coolant (see [section 10](#)).
 - Loosen the drain plug from the radiator lower tank.
 - Remove two drain bolts from the water pipes. Reinstall the drain bolts with new washers.
 - Loosen the front and rear engine drain bolts to drain engine coolant from cylinder heads. Connect rubber hoses to the drain bolts.
6. Drain transmission oil/fluid. Reinstall the drain plug using a new washer.

CAUTION: Do not overtighten the drain plug.

7. Drain the engine oil. Reinstall the drain plug using a new washer.
8. Lower the hoist.
9. Remove the strut bar.



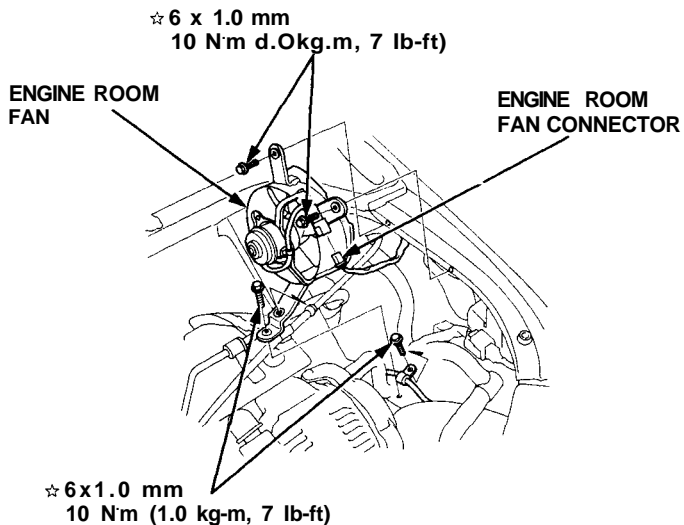
☆ : CORROSION RESISTANT BOLT

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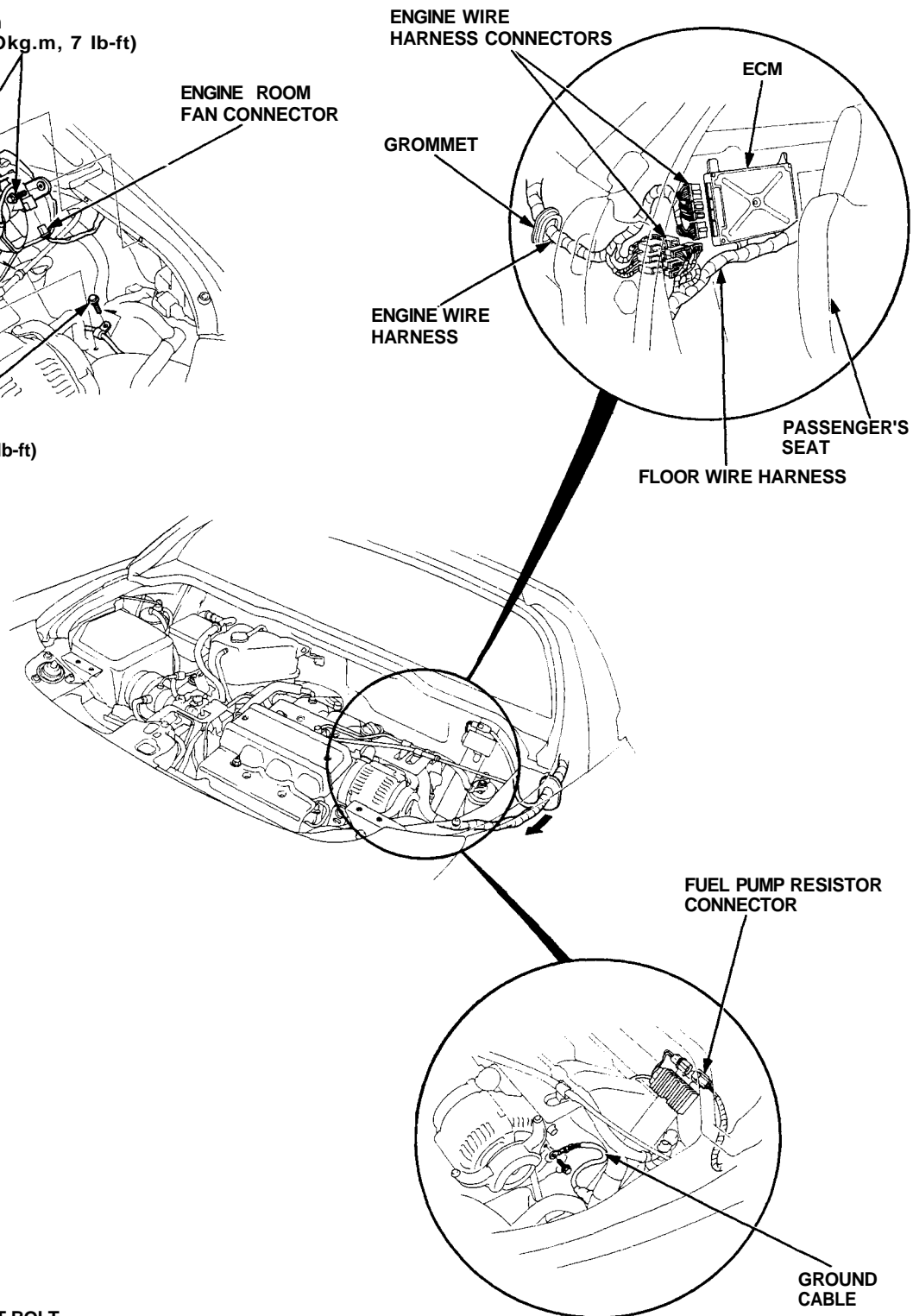
Engine Removal/Installation

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10. Disconnect the resistor connector and fan motor connector, then remove the engine room fan assembly.



11. Remove the rear trim panels behind the passenger's seat, then disconnect four connectors from Engine Control Module (ECM) and five connectors from floor wire harness.



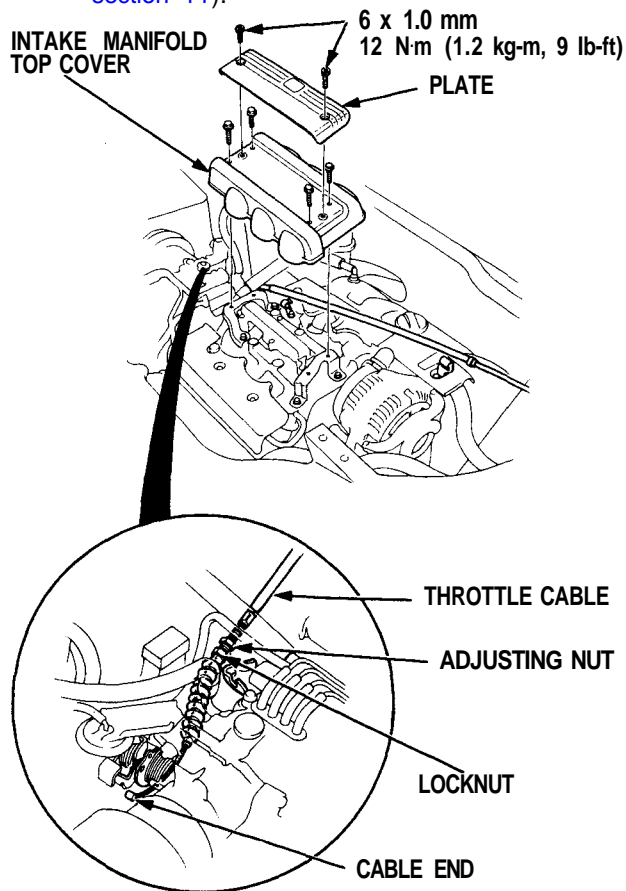
☆: CORROSION RESISTANT BOLT



12. Remove the intake manifold plate and the top cover.
13. Remove the throttle cable by loosening the locknut, then slip the cable end out of the throttle bracket and accelerator linkage.

NOTE:

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



14. Relieve fuel pressure by slowly loosening the service bolt on the fuel filter about one turn (see [section 11](#)).

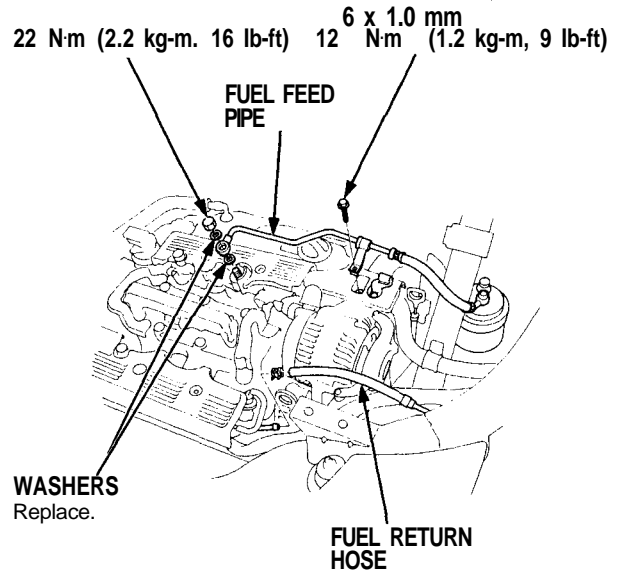
⚠ WARNING Do not smoke while working on the fuel system. Keep open flame away from work area. Drain fuel only into an approved container.

CAUTION:

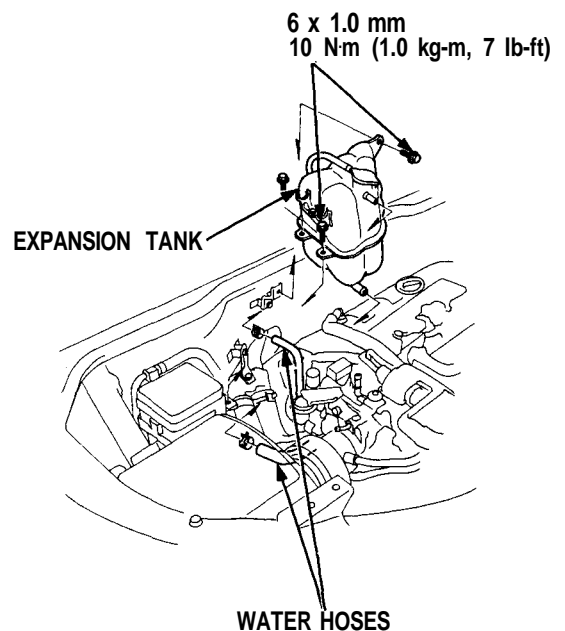
- Before disconnecting any fuel line, relieve the fuel pressure as described above.
- Place a shop towel over the fuel filter to prevent pressurized fuel from spraying over the engine.

15. Remove the fuel feed pipe.

16. Remove the fuel return hose from the pressure control valve.



17. Disconnect two hoses, then remove the expansion tank.



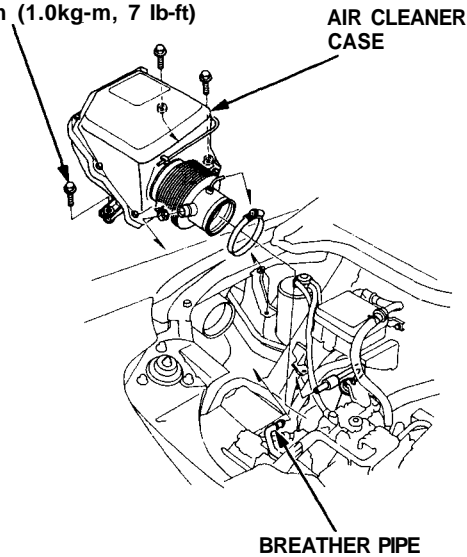
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Engine Removal/Installation

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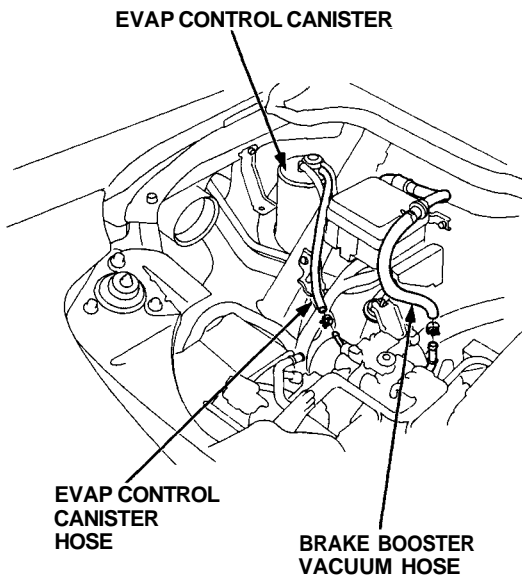
18. Remove the breather pipe, then remove the air intake duct and the air cleaner case.

☆ 6 x 1.0 mm
10 N·m (1.0kg-m, 7 lb-ft)



19. Disconnect the evaporative emission (EVAP) control canister hose from throttle body.

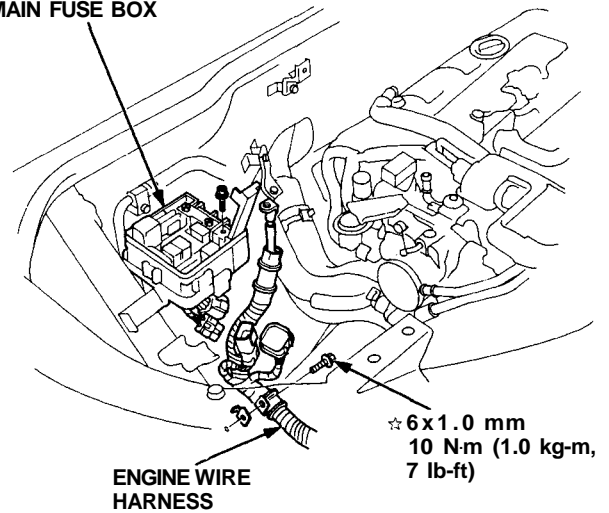
20. Disconnect the brake booster vacuum hose from the intake manifold.



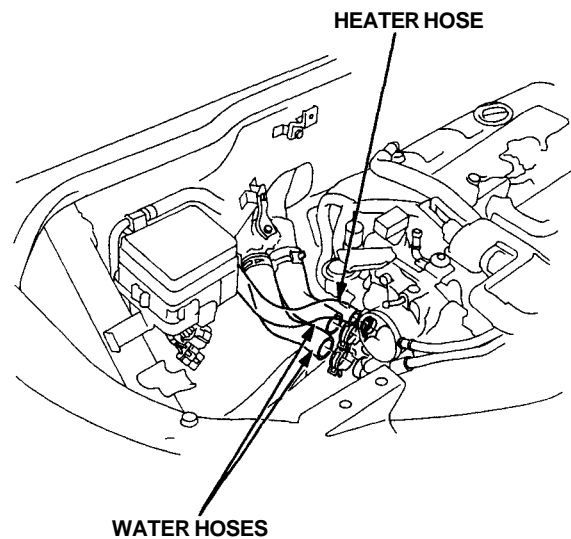
21. Disconnect the two engine wire harness connectors from the side wire harness at left side of engine compartment, and remove the engine wire harness terminal and the starter cable terminal from the main fuse box and clamps.

22. Remove the ground cable from the transmission.

MAIN FUSE BOX



23. Remove the water hoses and the heater hose from the water passage.

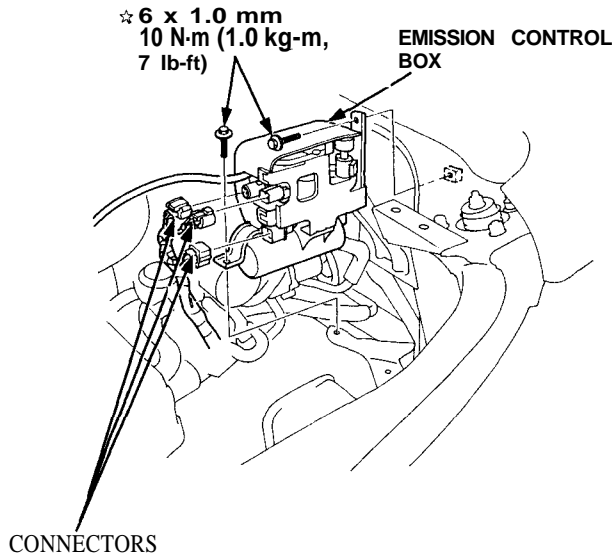


☆ : CORROSION RESISTANT BOLT



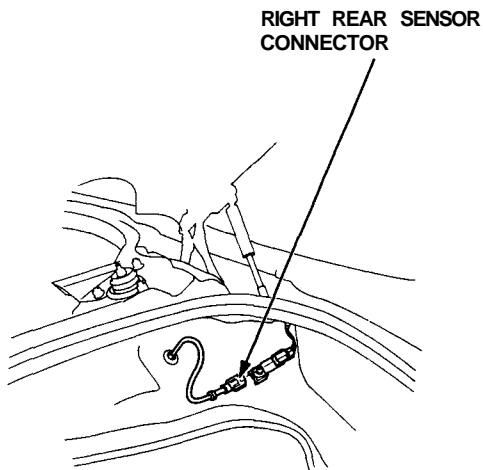
24. Disconnect the three connectors from the emission control box.

- Do not disconnect the vacuum hoses.



25. Move the trunk carpet and disconnect the right rear sensor connector. Push the wire and connector through the body hole into the engine compartment.

26. Remove the front engine mounting bolt (page 5-29).



27. Raise hoist to full height.

28. Remove the clutch slave cylinder from the transmission case (M/T see section 12).

- Do not disconnect the clutch hose.

29. Remove the lower cover, then remove the shift cable and select cable with cable bracket (M/T see section 13).

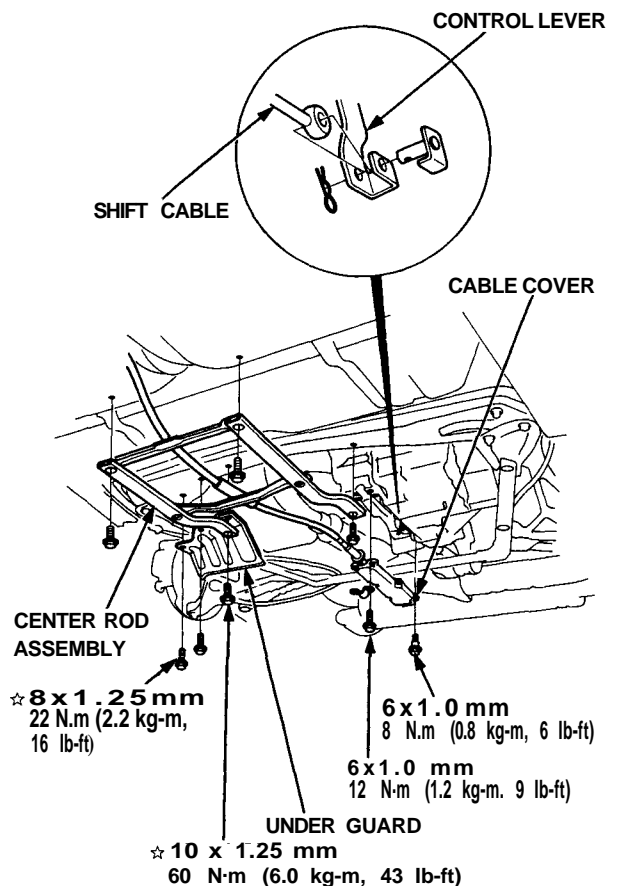
30. Remove the cover, then remove the shift cable (A/T see section 14).

NOTE:

- Take care not to bend the cable when removing it. Always replace a kinked cable with a new one.
- Adjust the cables when installing.

31. Remove the engine under guard and the center rod assembly.

A/T:



☆ : CORROSION RESISTANT BOLT/NUT

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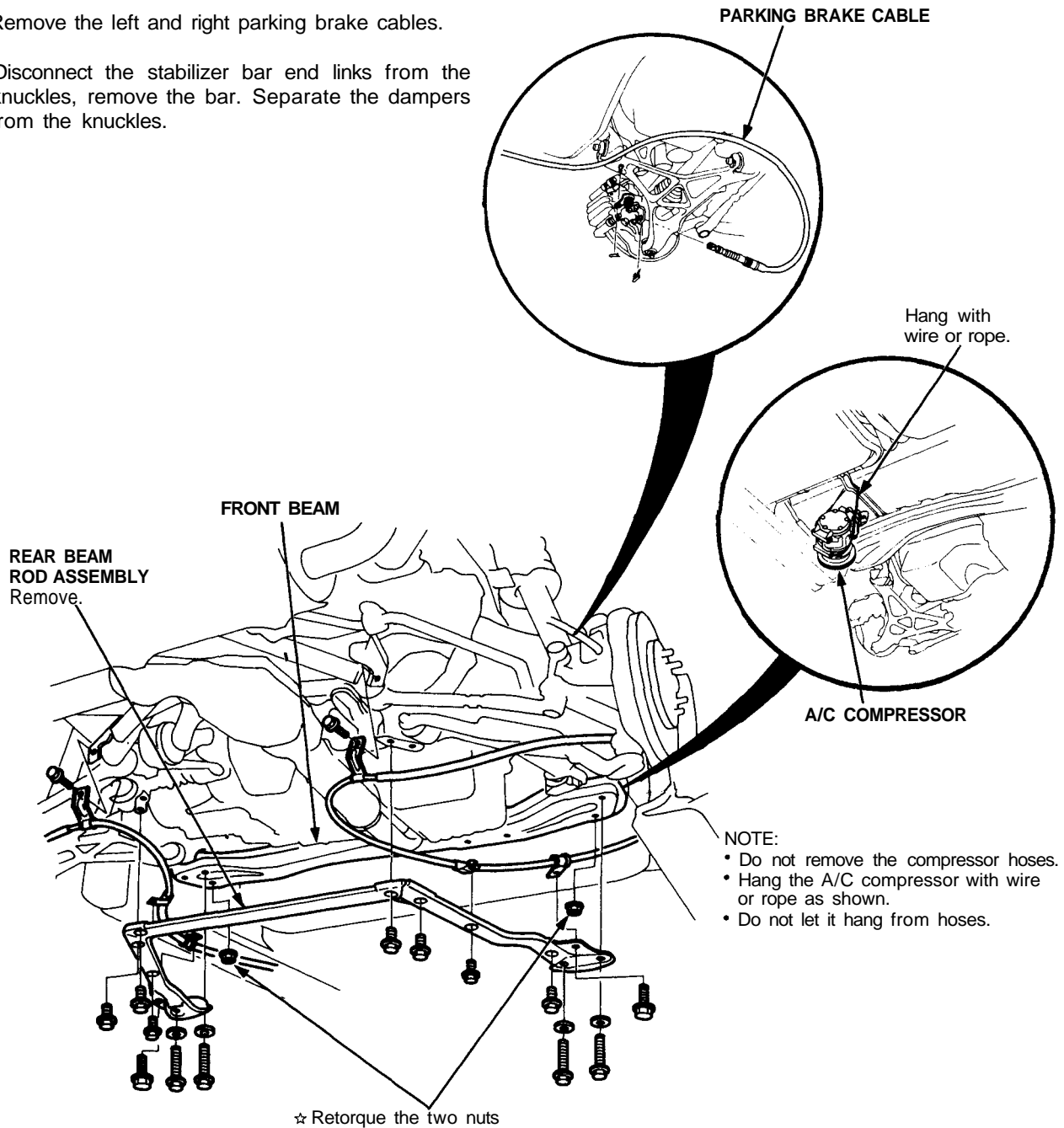
Engine Removal/Installation (cont'd)

32. Remove the rear beam rod assembly.
33. Remove the front beam. Lower and suspend the air conditioning (A/C) compressor. Reinstall the front beam.

NOTE:

- Do not remove the compressor hoses.
- Do not let the compressor hang from hoses.

34. Remove the left and right parking brake cables.
35. Disconnect the stabilizer bar end links from the knuckles, remove the bar. Separate the dampers from the knuckles.





36. Remove the rear brake hoses. Plug the brake pipes with rubber caps.

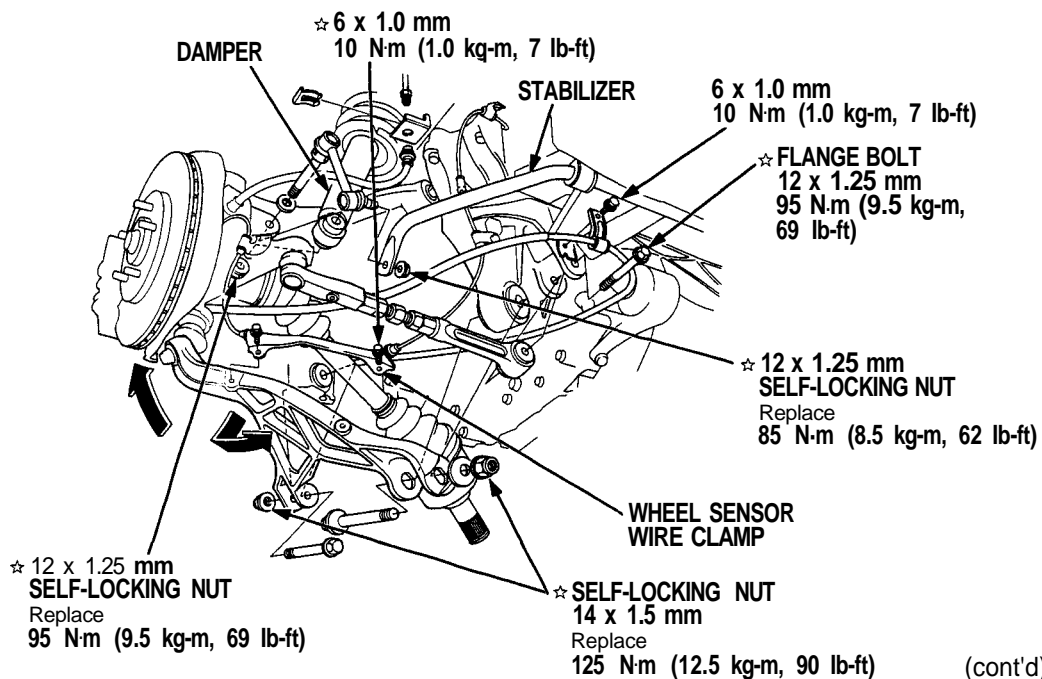
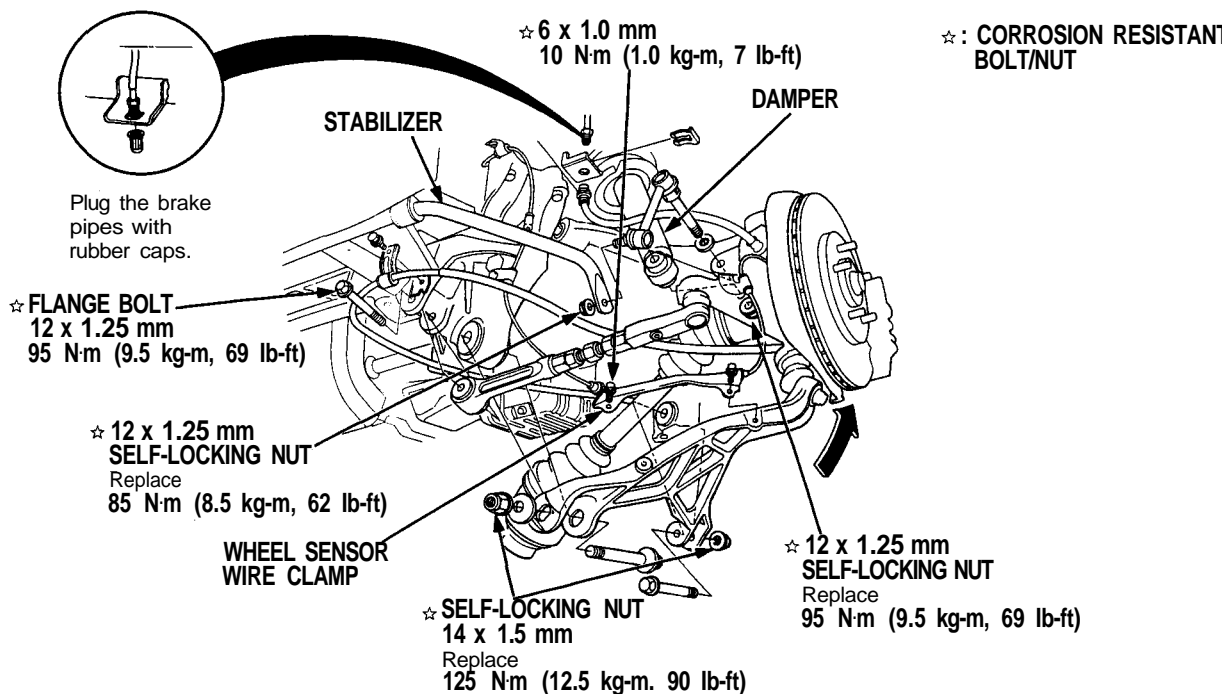
37. Remove the wheel sensor wire clamps.

NOTE: Perform steps 38 and 39 only if the engine/transaxle assembly is to be removed from the subframe.

38. Remove the adjust bolt and flange bolt, then separate the lower control arm from the subframe.

39. Remove the flange bolt, then separate the toe control arm from the subframe.

CAUTION: Make sure that the reference marks on the control arm are aligned.



Engine Removal/Installation

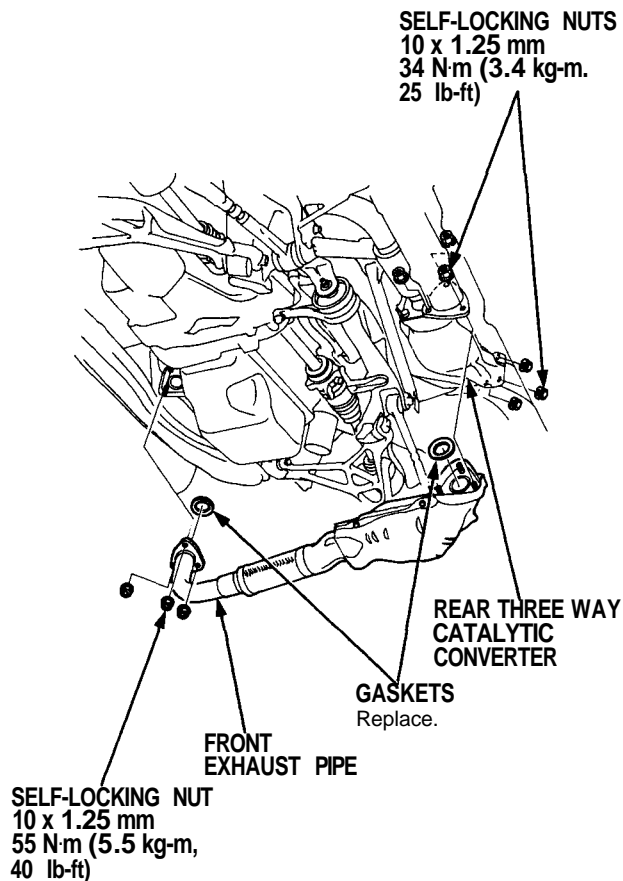
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40. Remove the heated oxygen sensor (HO2S) connectors.
41. Remove the self-locking nuts, then remove front exhaust pipe and the front three way catalytic converter.
42. Remove the self-locking nuts, then separate the rear three way catalytic converter from rear exhaust pipe and the muffler.

CAUTION: Do not use an air wrench or hammer to remove or install the exhaust system unless you first remove the heated oxygen sensors.

NOTE: Use new gaskets and self-locking nuts when reassembling.

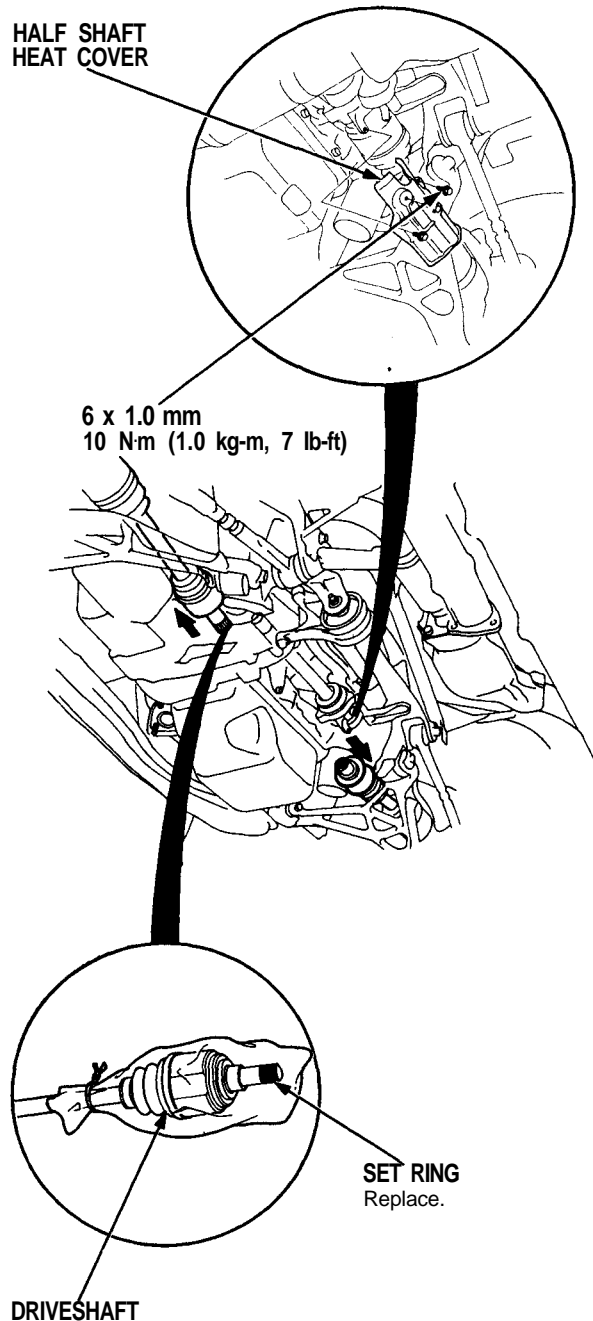
NOTE: Perform steps 43 and 44 only if the engine/transaxle assembly is to be removed from the subframe.



43. Remove the half shaft heat cover.
44. Remove the driveshafts.

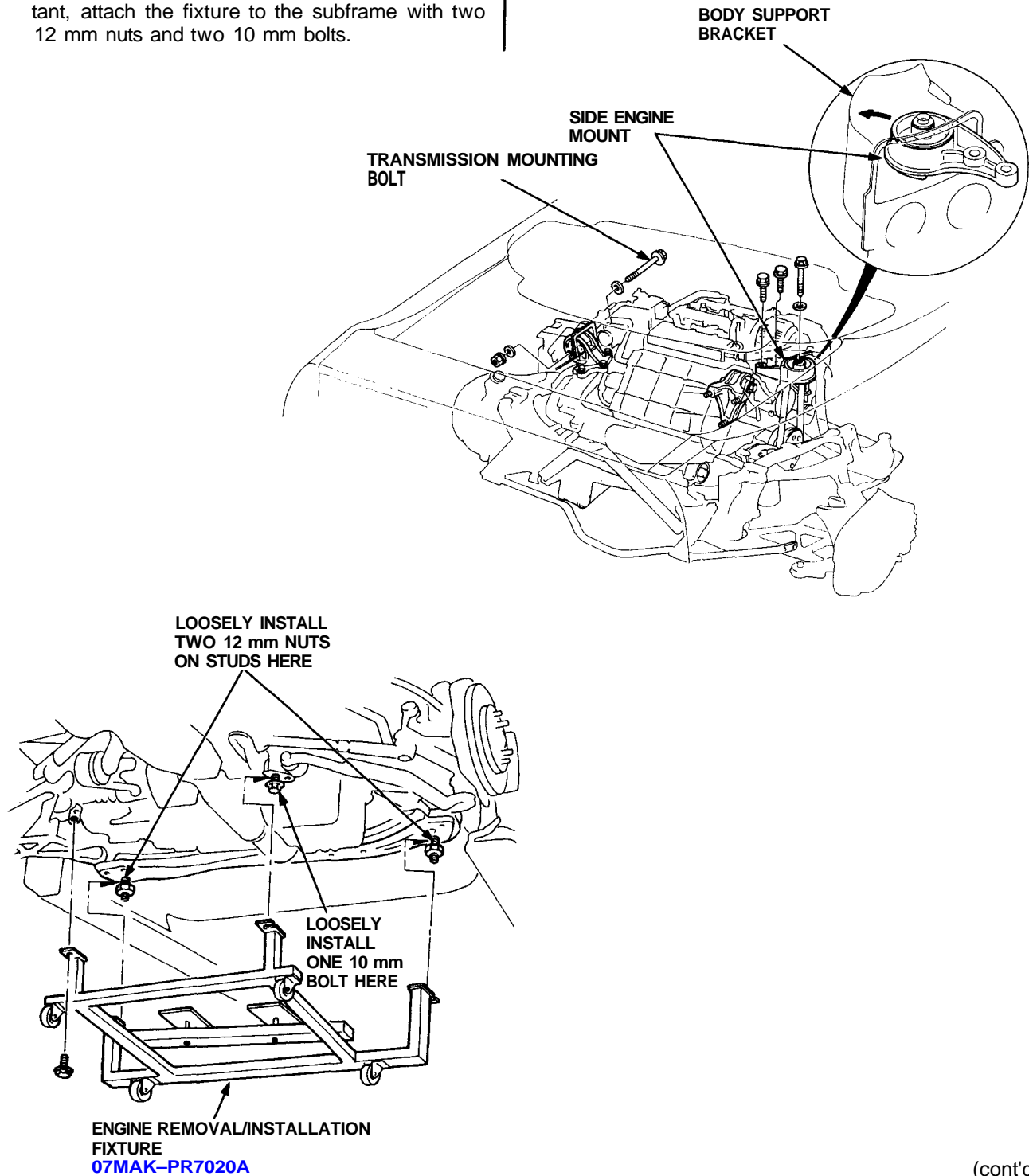
NOTE:

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





45. Install the front engine mounting bolt, torque the nut temporarily.
46. Position the Engine Removal/Installation Fixture (07MAK-PR7020A) under the car. Lower the car just above the fixture. With the help of an assistant, attach the fixture to the subframe with two 12 mm nuts and two 10 mm bolts.
47. Adjust the pads on the fixture to support the oil pan and transmission housing.
48. Lower the car so the fixture is resting on its casters (or appropriate platform).

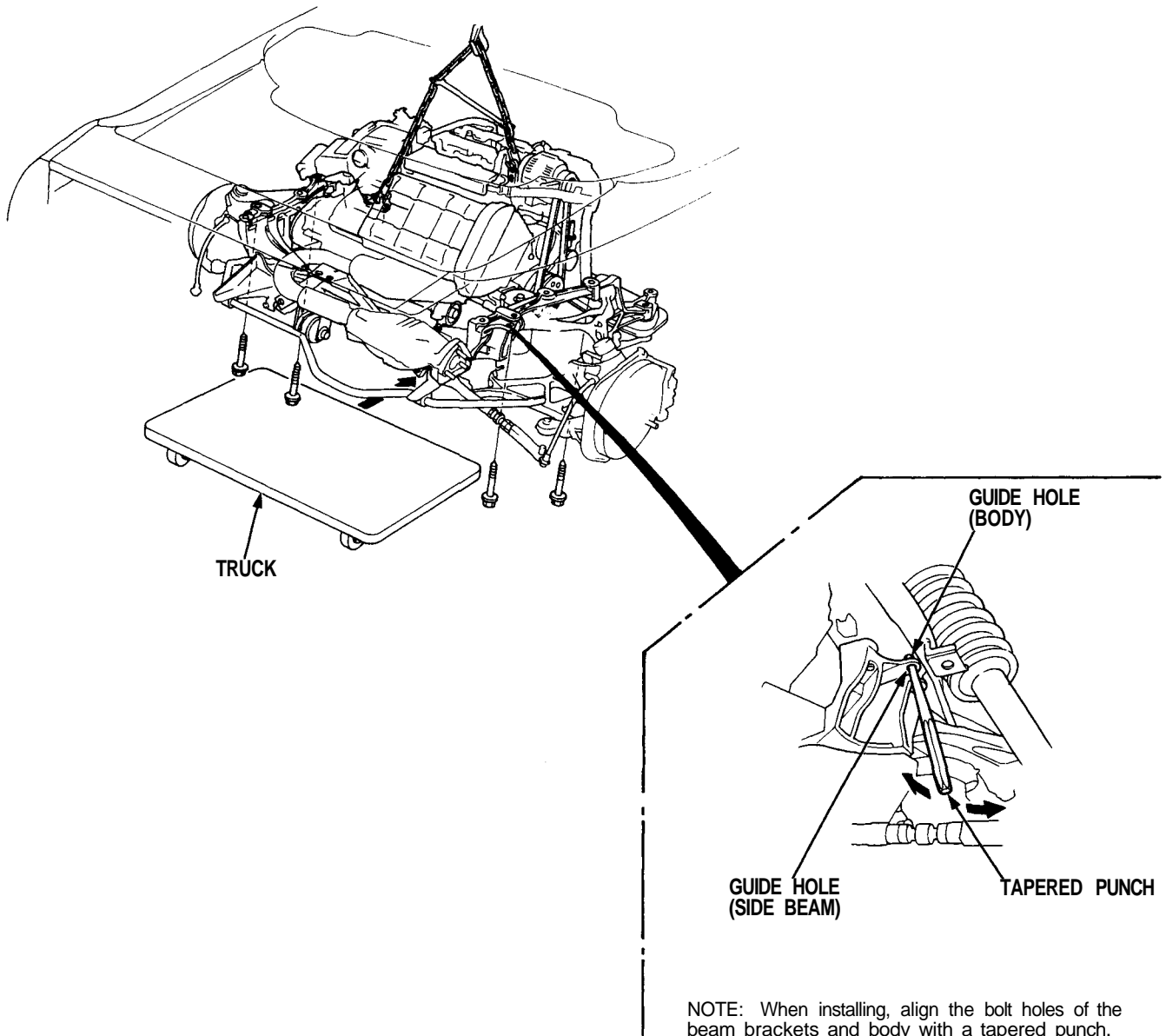


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Engine Removal/Installation

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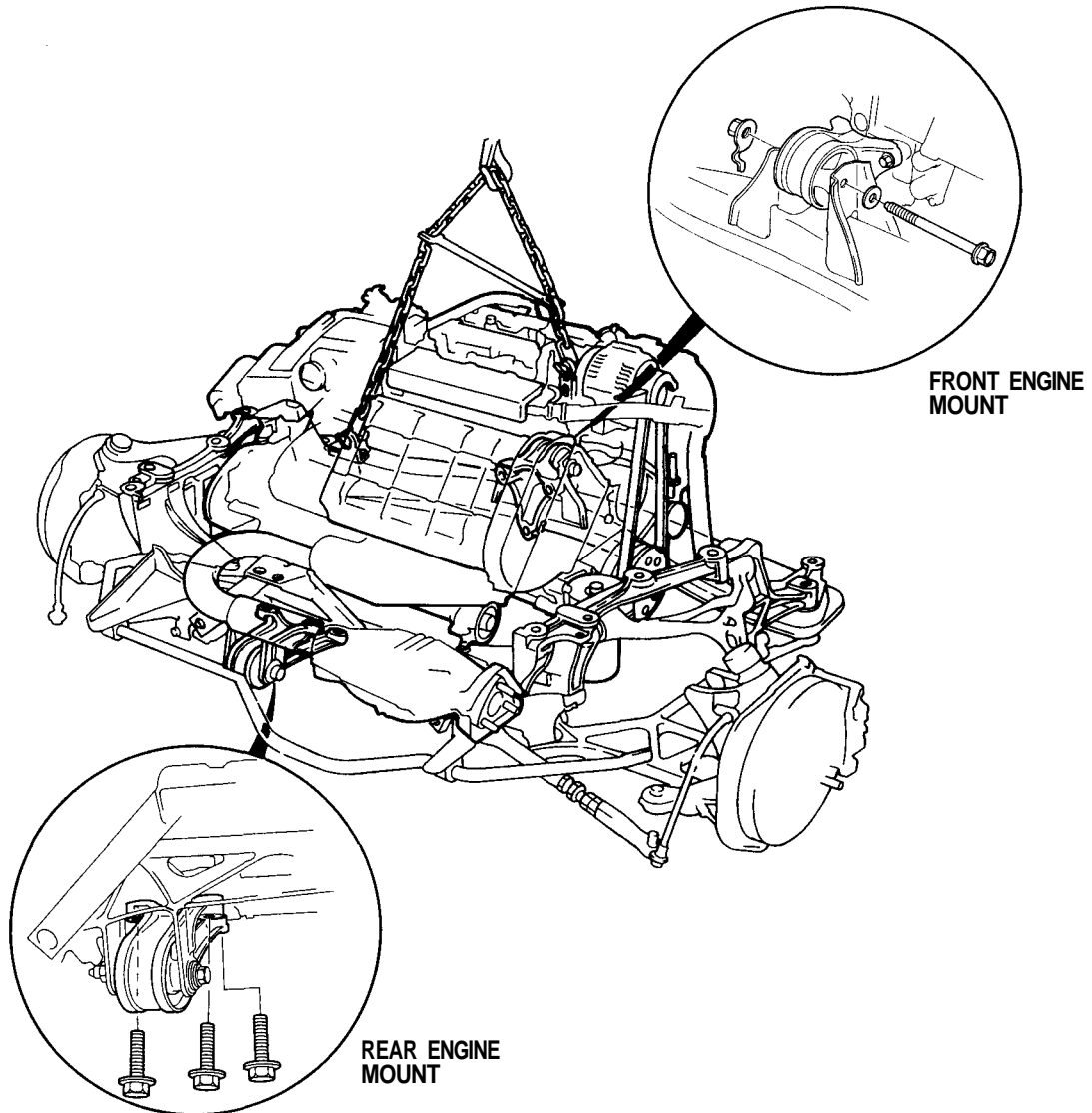
49. Remove the two bolts from the side engine mount near the alternator. Pivot the mounting bracket into the housing of the body.
50. Remove the transmission mounting bolt.
51. Remove the twelve subframe-to-body mounting bolts.
52. Raise the car a few inches.
53. Check that all wires and hoses are disconnected from the engine assembly.
54. Raise the car completely off the engine/suspension assembly. Roll the assembly from under the car.





55. Attach a chain hoist to the engine. Remove the front and rear mounting bolts, then separate the engine from the suspension and the beam assembly.

CAUTION: Do not hit the engine oil cooler on the rear right beam bracket.



56. Install the engine in the reverse order of removal:

NOTE:

- Align the bolt holes of the beam brackets and body with a tapered punch (page 5-28).
- Temporarily torque the two front beam nuts and front engine mounting bolt when installing the A/C compressor.

- Combine the front beam and the rear beam rod assembly, then torque the four mounting bolts.
- Check that the set ring on the end of each driveshaft clicks into place.

CAUTION: Use new set rings.

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