

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.

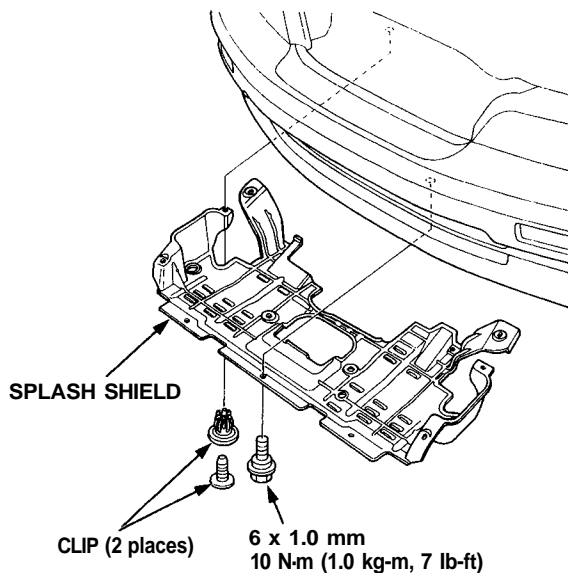
CAUTION:

- Use 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 misconnection. Also, be sure that they do not contact other wiring or hoses or interfere with other parts.

NOTE: Anti-theft radios have a coded theft protection circuit. Be sure to get the customer's code number before

- Disconnecting the battery.
- Removing the No. 56 (7.5 A) fuse in the under-hood fuse/relay box.
- Removing the radio.

After service, reconnect power to the radio and turn it on. When the word "CODE" is displayed, enter the customer's 5-digit code to restore radio operation.

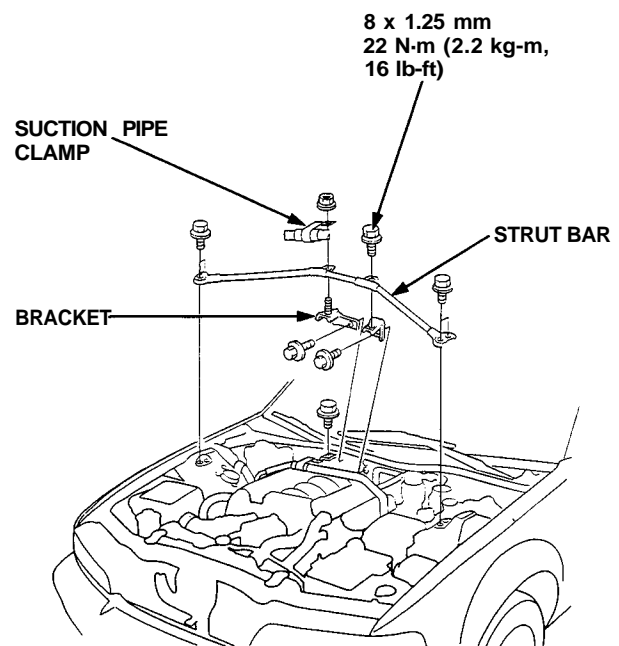


1. Disconnect the battery negative terminal first, then the positive terminal. Remove the battery.
2. Remove the radiator cap.

⚠ WARNING

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

3. Raise the hoist to full height.
 4. Remove the engine splash shield.
 5. Drain the engine coolant (see page [10-5](#)).
 - Loosen the drain plug in the radiator.
 6. Drain transmission and differential oil or fluid. Reinstall the drain plugs using new washers.
 7. Drain the engine oil. Reinstall the drain bolt using a new washer.
- CAUTION: Do not overtighten the drain bolt.**
8. Lower the hoist.
 9. Remove the hood support mount bolts, then fix the engine hood in a vertical position.
 10. Remove the strut bar, bracket and suction pipe clamp.

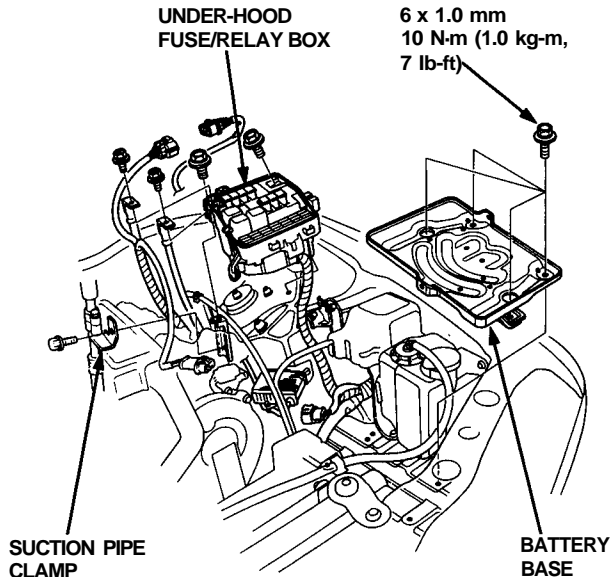


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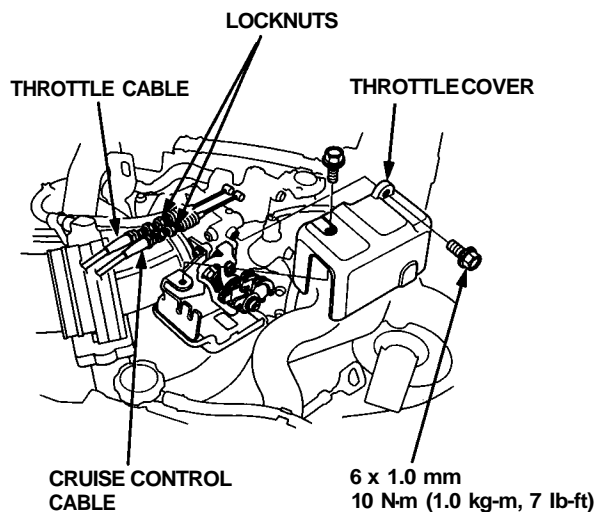
11. Remove the battery base and suction pipe clamp.
12. Disconnect the engine wire harness connectors, then remove the under-hood fuse/relay box.
 - Remove the ground cable from cylinder block.
 - Remove the battery cable from starter motor B terminal.



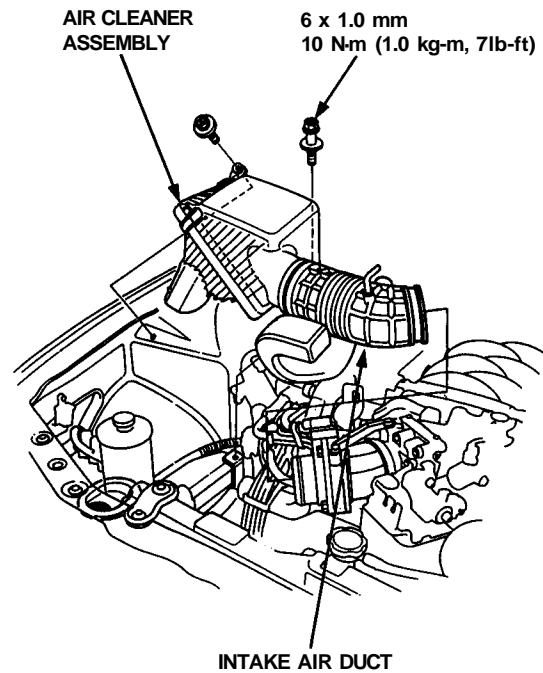
13. Remove the throttle cover.
14. Remove the throttle cable and cruise control cable by loosening the locknuts, then slip the cable ends out of the throttle bracket and throttle linkage.

NOTE:

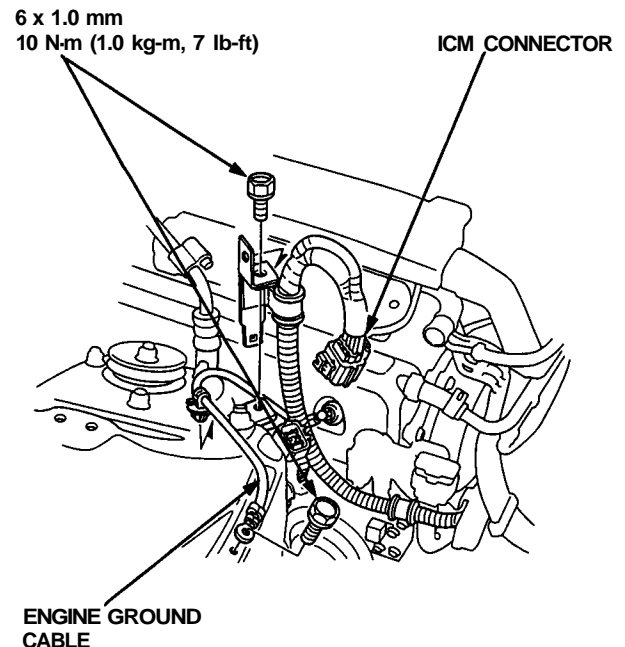
- Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
- Adjust the throttle cable when installing (see [section 11](#)).



15. Remove air cleaner assembly and intake air duct.

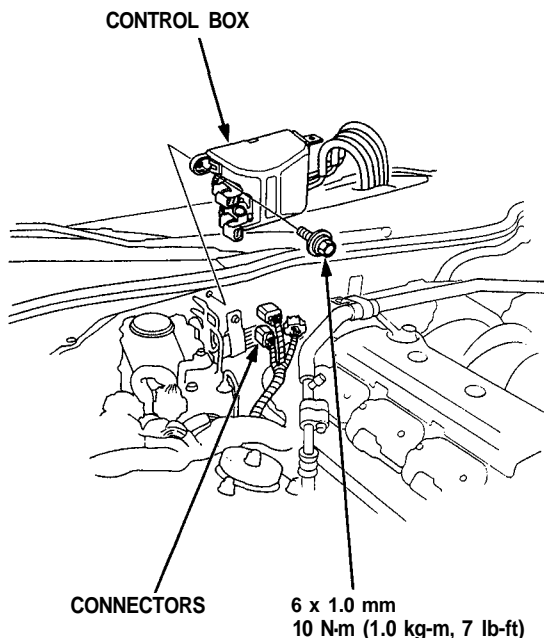


16. Remove the ignition control module (ICM) connector, harness clamp and engine ground cable.

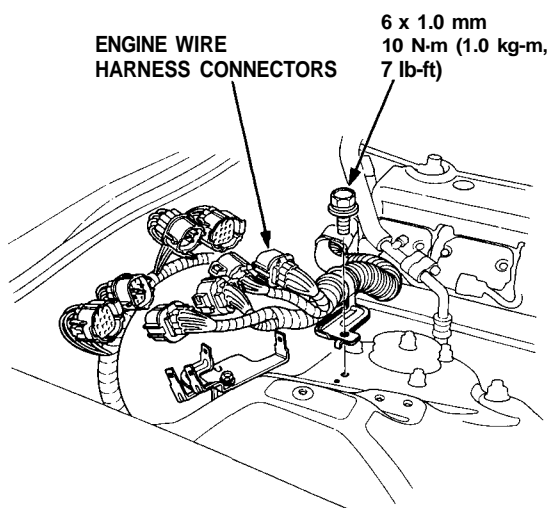




17. Disconnect three connectors, then remove the control box.
- Do not disconnect the vacuum hoses.



18. Disconnect four engine wire harness connectors and clamp.



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

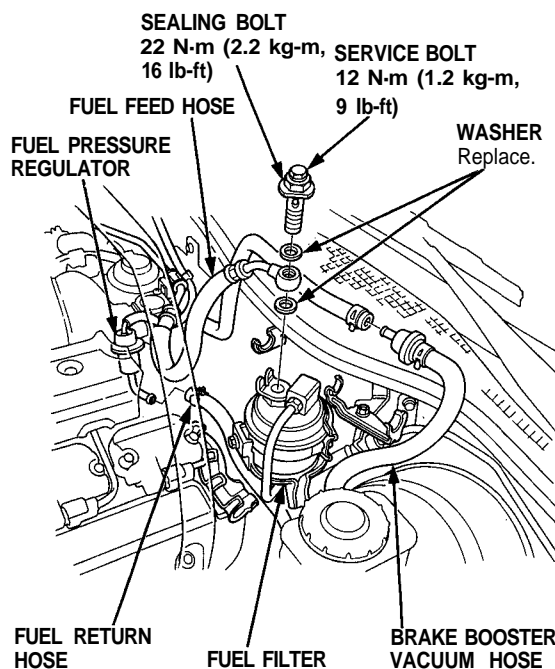
⚠ WARNING Do not smoke while working on the fuel system. Keep open flame away from work area. Drain fuel only into an approved container.

CAUTION:

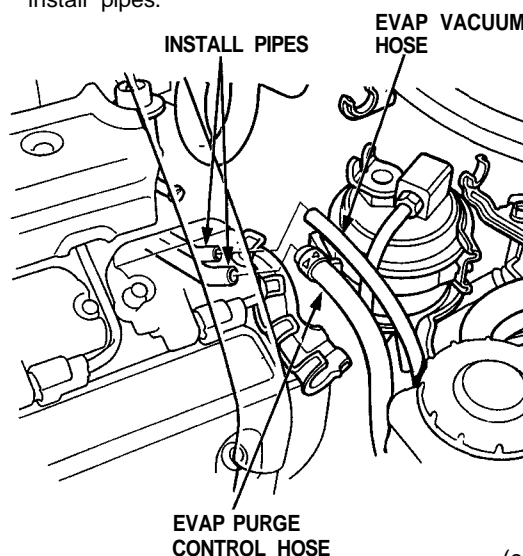
- Before disconnecting any fuel line, the fuel pressure should be relieved as described above.
- Place a shop towel over the fuel filter to prevent pressurized fuel from spraying over the engine.

20. Remove the fuel feed hose from the fuel filter and the fuel return hose from the fuel pressure regulator.

21. Disconnect the brake booster vacuum hose.



22. Remove the evaporative emission (EVAP) purge control hose and EVAP vacuum hose from the install pipes.

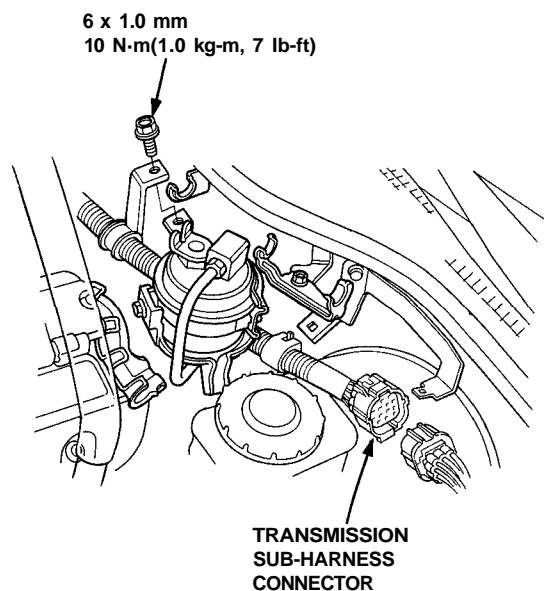


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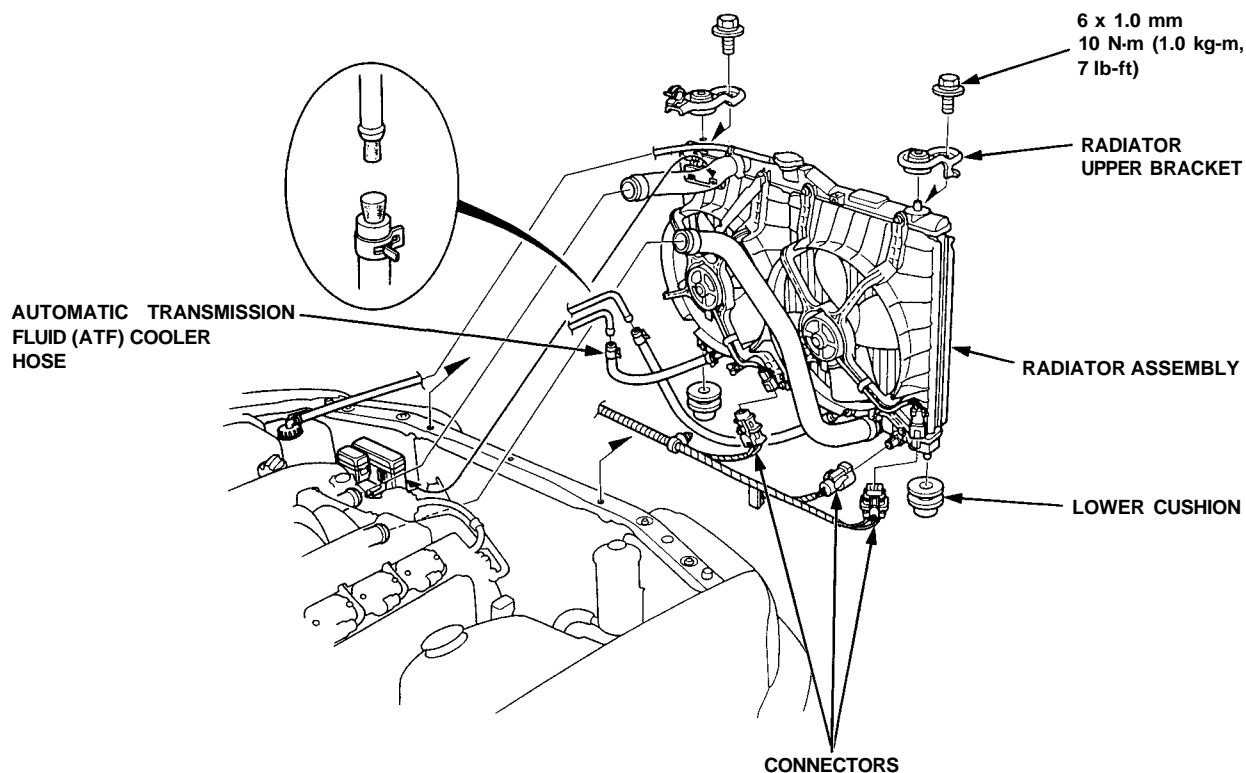
Engine Removal/Installation

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23. Disconnect the transmission sub-harness connector at the left rear of the engine compartment, then remove the harness clamp.

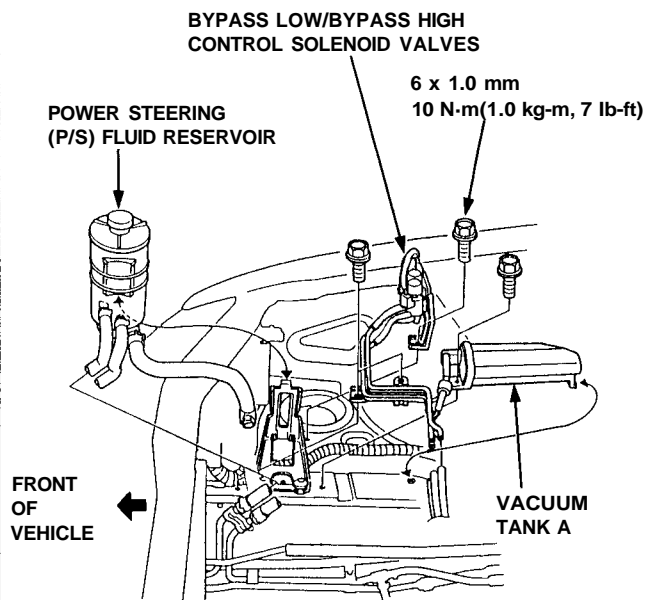


24. Disconnect the radiator hoses, the radiator fan control sensor connector and the radiator fan motor connectors. Disconnect and plug the ATF cooler hoses (A/T). Remove the radiator assembly.



25. Remove vacuum pipe, bypass low/bypass high control solenoid valves, vacuum tank A.

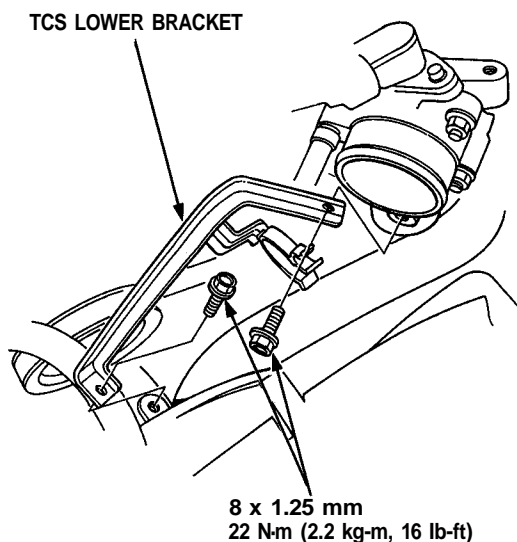
NOTE: Do not disconnect the P/S hoses.





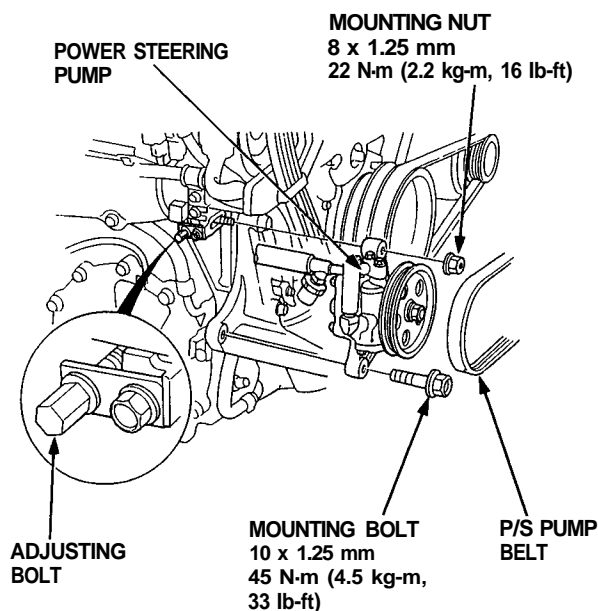
26. Remove the TCS lower bracket from the power steering bracket and the TCS control valve assembly.

NOTE: Refer to [section 19](#) when installing the bracket.



27. Loosen the adjusting bolt and remove the mounting bolt/nut, then remove the power steering (P/S) pump belt and pump.

NOTE: Do not disconnect P/S hoses.

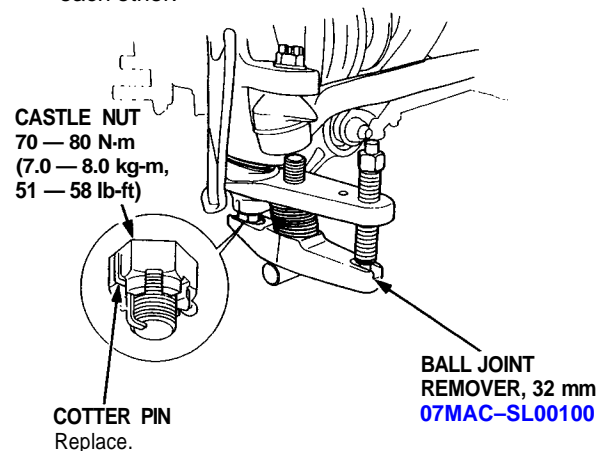


28. Remove the front tires/wheels.

29. Remove the damper forks (see [section 18](#)).

30. Disconnect the suspension lower arm ball joints with the special tool. Refer to [section 18](#) for the proper procedure.

NOTE: Adjust the tool so the jaws are parallel to each other.

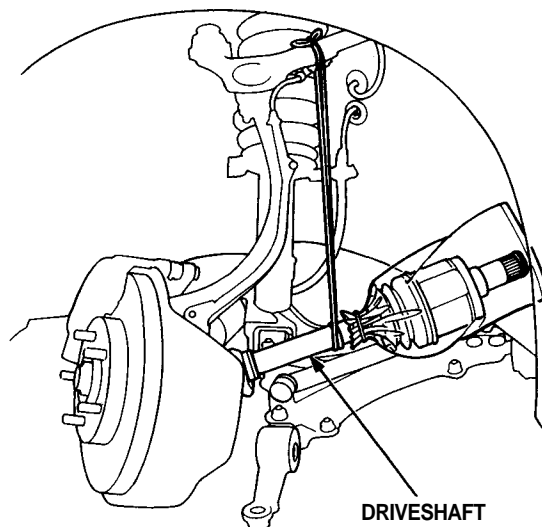


31. Remove the driveshafts. Suspend them with a rope as shown.

CAUTION:

- Do not pull on the driveshaft, as the CV joint may come apart.
- Use care when prying out the assembly and 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 or grease. Tie plastic bags over the driveshaft ends.



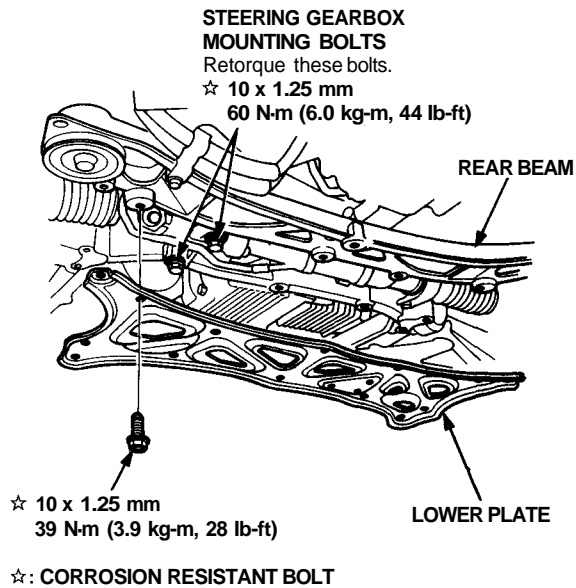
32. Raise the hoist to full height.

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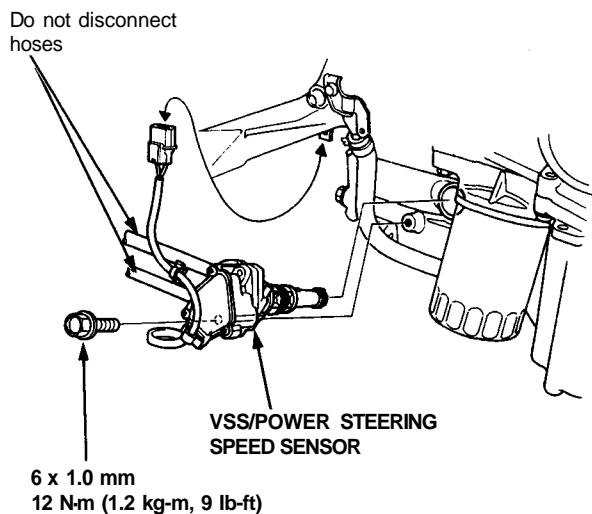
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33. Remove the lower plate from the rear beam, then retighten the steering gearbox mounting bolts (see [section 17](#)).

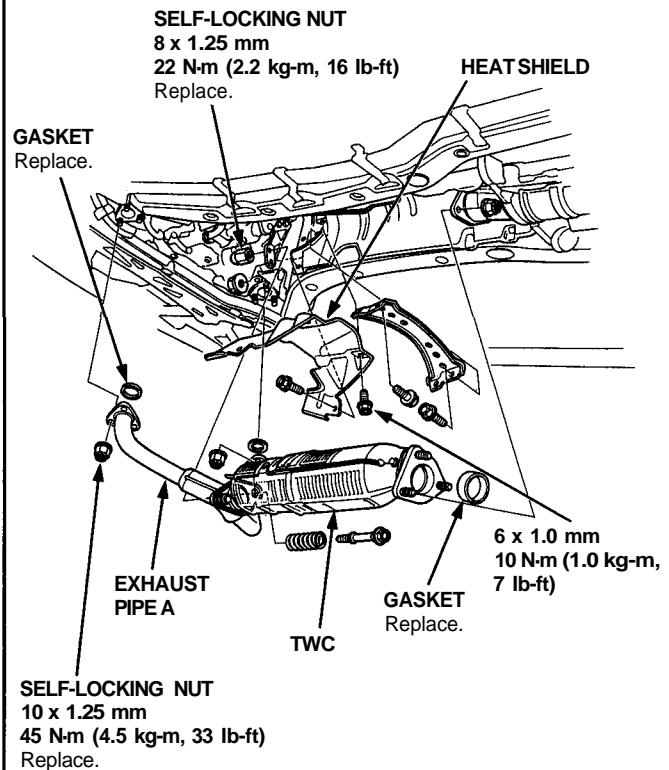


34. Remove the vehicle speed sensor (VSS)/power steering speed sensor.

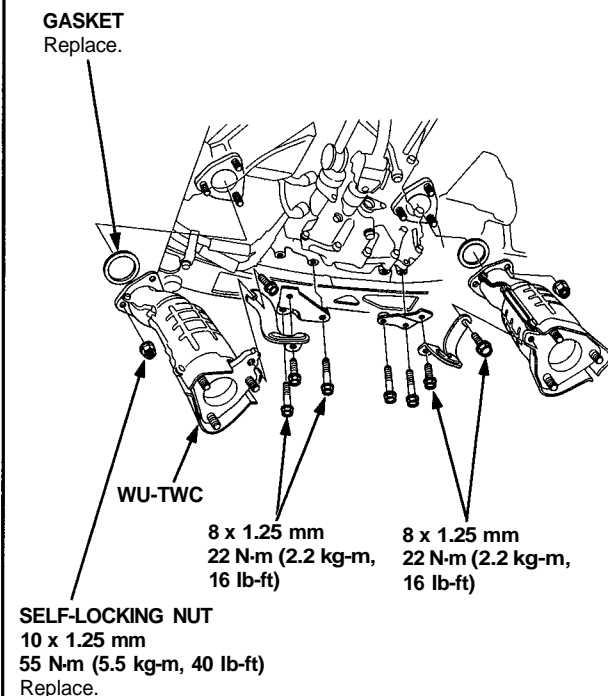
NOTE: Do not disconnect the hoses.



35. Remove the three way catalytic converter (TWC), exhaust pipe A and heat shield.



36. Remove the brackets and the warm up TWC (WU-TWC).





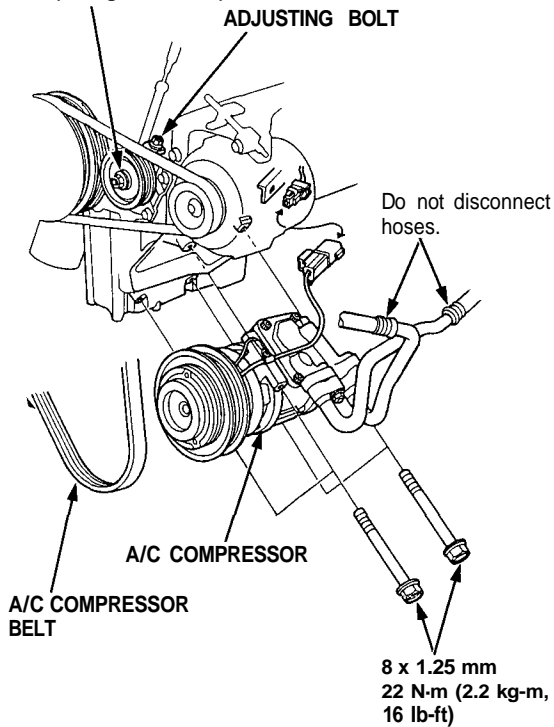
37. Loosen the idler pulley center nut and adjusting bolt, then remove the air conditioning (A/C) compressor belt and compressor.

IDLER PULLEY CENTER NUT

10 x 1.25 mm

45 N·m (4.5 kg-m, 33 lb-ft)

ADJUSTING BOLT



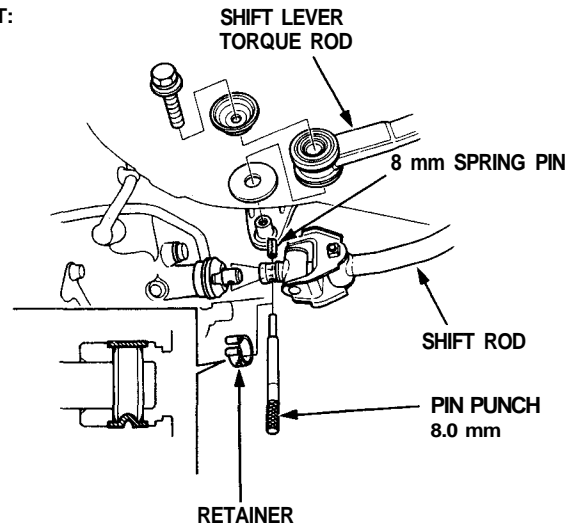
Manual transmission (M/T) equipped cars:

38. Remove the slave cylinder from transmission housing (see [section 12](#)).

NOTE: Do not disconnect the clutch hose.

39. Disconnect the shift rod and shift lever torque rod as shown.

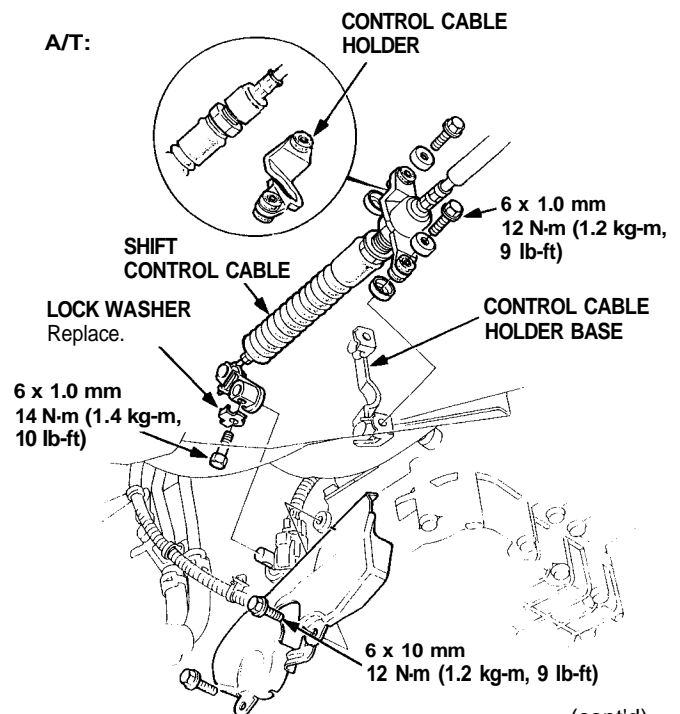
M/T:



Automatic transmission (A/T) equipped cars:

40. Disconnect the shift control cable.

A/T:



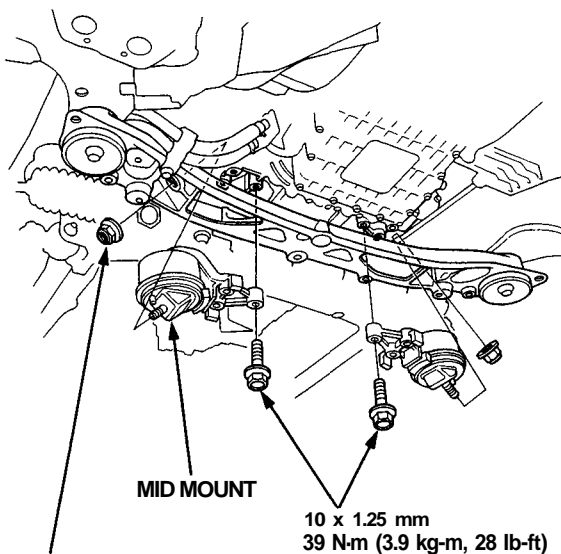
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41. Remove the engine mid mount nuts and bolts.

CAUTION: After loosening the special nuts, be sure to replace them with new ones.

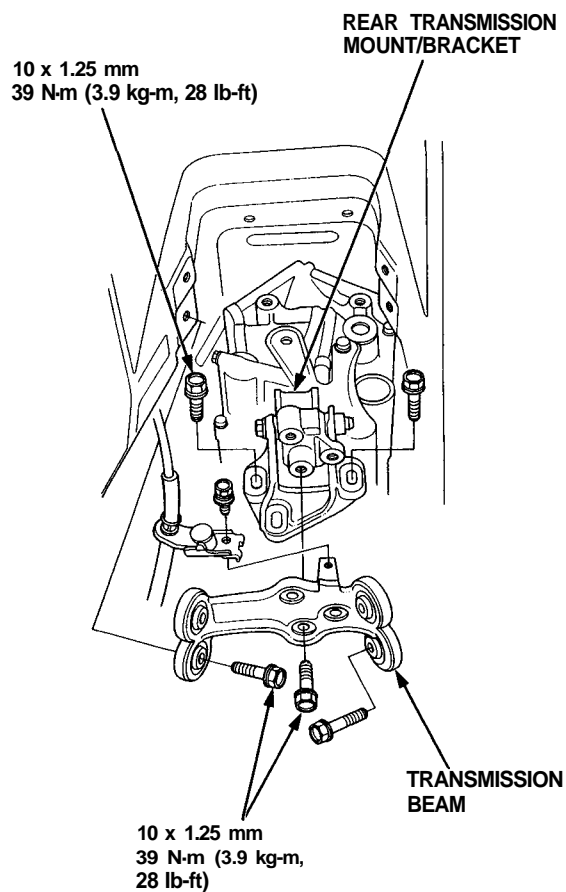


SPECIAL NUT
☆ 10 x 1.25 mm
49 N-m (4.9 kg-m,
35 lb-ft)
Replace.

☆ : CORROSION RESISTANT BOLT

42. Remove rear transmission mount/bracket.

A/T:





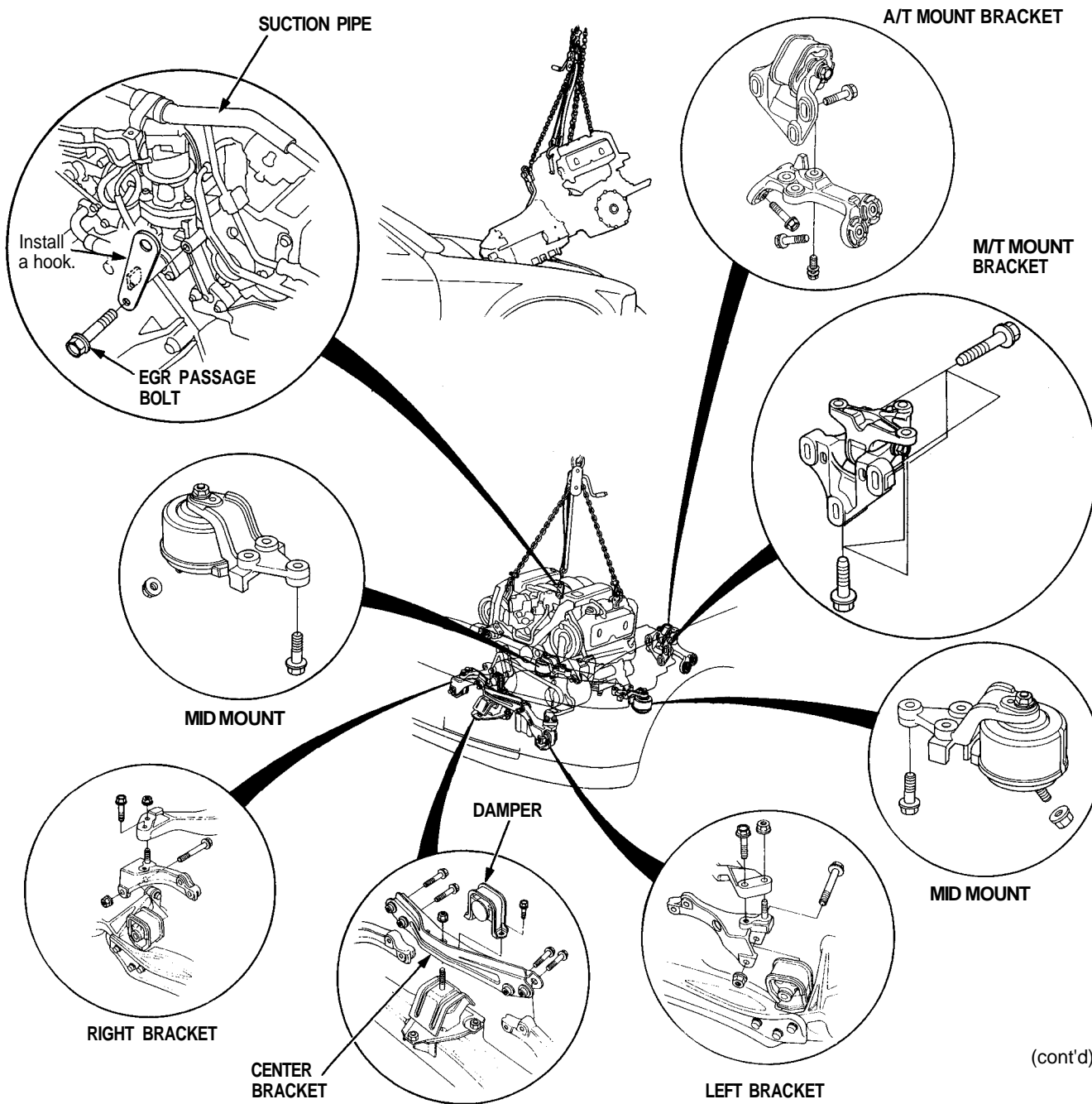
43. Lower the hoist.
44. Remove the right and left brackets.
45. Remove the damper and center bracket.
46. Remove the exhaust gas recirculation (EGR) passage bolt, then install a hook.
47. Attach a chain hoist to the engine. Raise the hoist to remove all slack from the chain.

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

49. Slowly raise the engine approximately 150 mm (6 in). Check once again that all hoses and wires have been disconnected from the engine/transmission assembly.

CAUTION: Take care not to bend the suction pipe.

50. Raise the engine/transmission assembly all the way and remove it from the car.



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Engine Removal/Installation

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CAUTION: Take care not to bend the suction pipe.

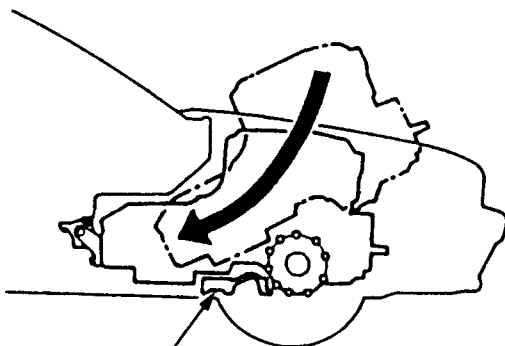
51. Install the engine in the reverse order of removal. After the engine is in place:
- Torque the engine mount bolts/nuts in sequence shown below.

CAUTION: Failure to tighten the bolts in the proper sequence can cause excessive noise and vibration, and reduce bushing life: check that the bushings are not twisted or offset.

- Check that the spring clip on the end of each driveshaft clicks into place.

CAUTION: Use new spring clips.

- Bleed air from the cooling system at the bleed bolt with the heater valve open (see page 10-5).
- Adjust the throttle cable (see section 11).
- Check the clutch pedal free play (see section 12).
- Check that the transmission shifts into gear smoothly.
- Adjust the tension of the following drive belts.
 - Alternator belt (see section 23).
 - P/S pump belt (see section 17).
 - A/C compressor belt (see section 22).
- Clean battery posts and cable terminals with sandpaper, assemble, then apply grease to prevent corrosion.
- Inspect for fuel leakage (see section 11).
 - After assembling fuel line parts, turn on the ignition switch (do not operate the starter) so that the fuel pump operates for approximately two seconds and the fuel line pressurizes. Repeat this operation two or three times and check for fuel leakage at any point in the fuel line.



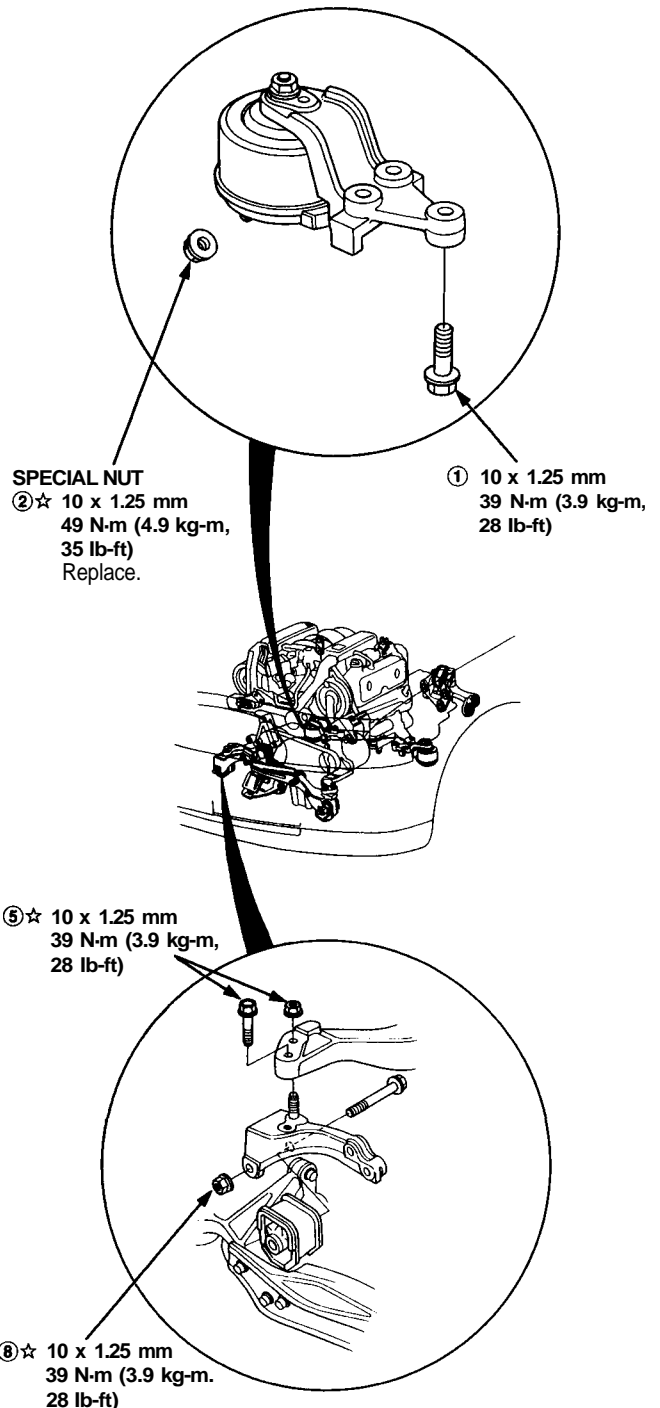
REAR BEAM

- Mount the engine so that the rear beam does not hit the transmission.

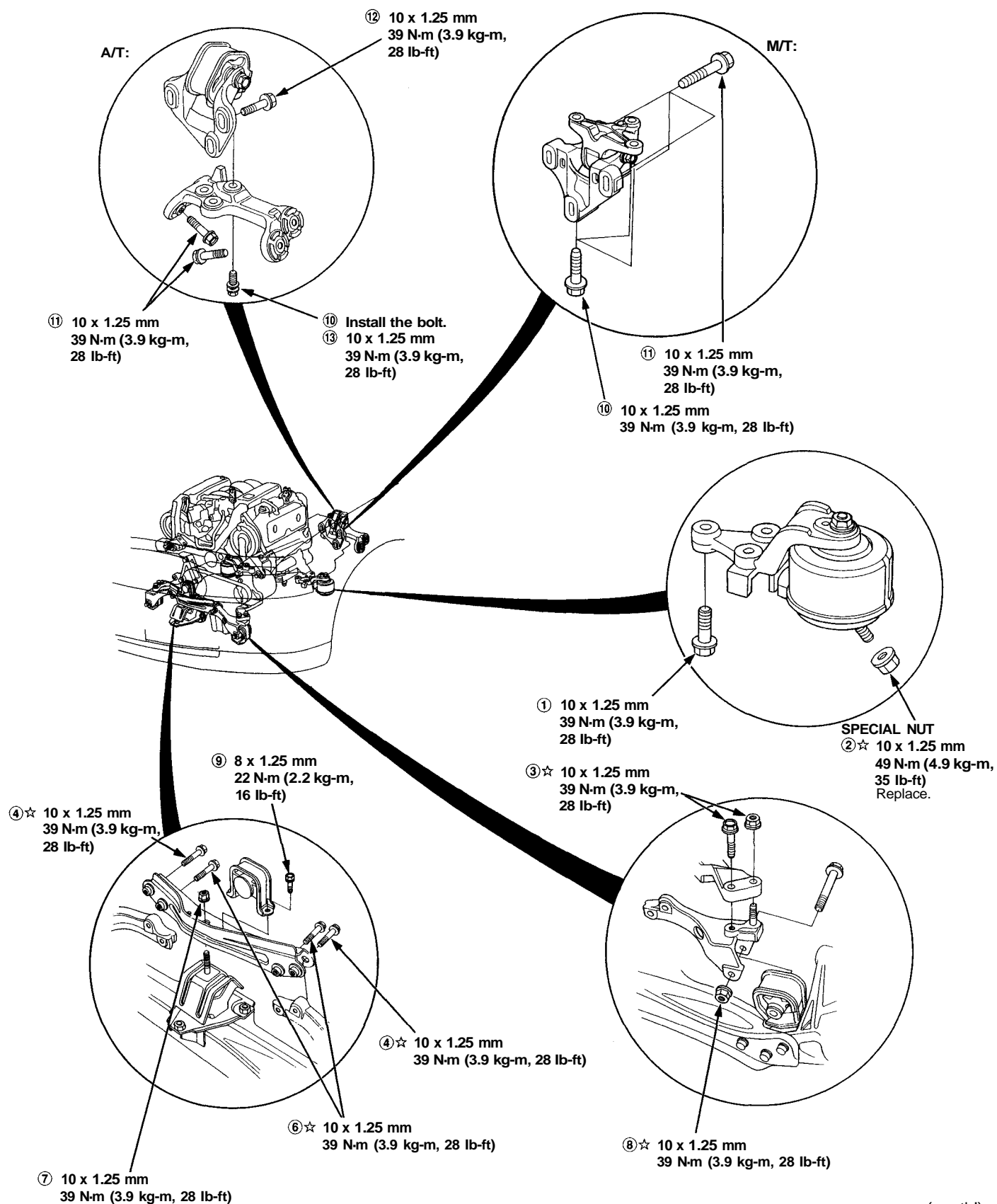
Engine Mount Bolts and Nuts Tightening Sequence:

CAUTION: After loosening the special nuts, be sure to replace them with new ones.

NOTE: Tighten the mounting bolts/nuts in the numbered sequence as shown (① — ⑬).



☆ : CORROSION RESISTANT BOLT



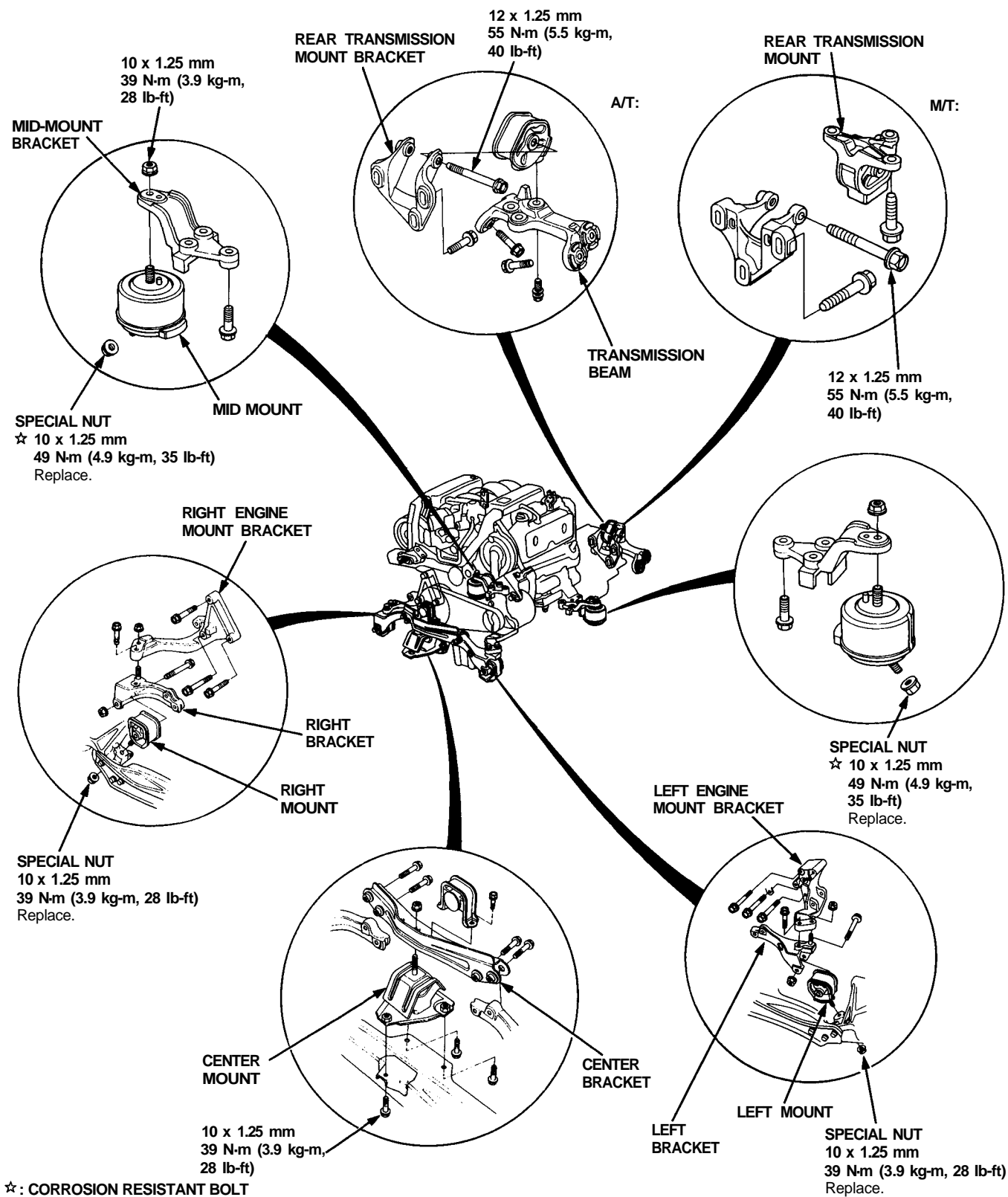
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Mount and Bracket Bolts/Nuts Torque Value Specifications:

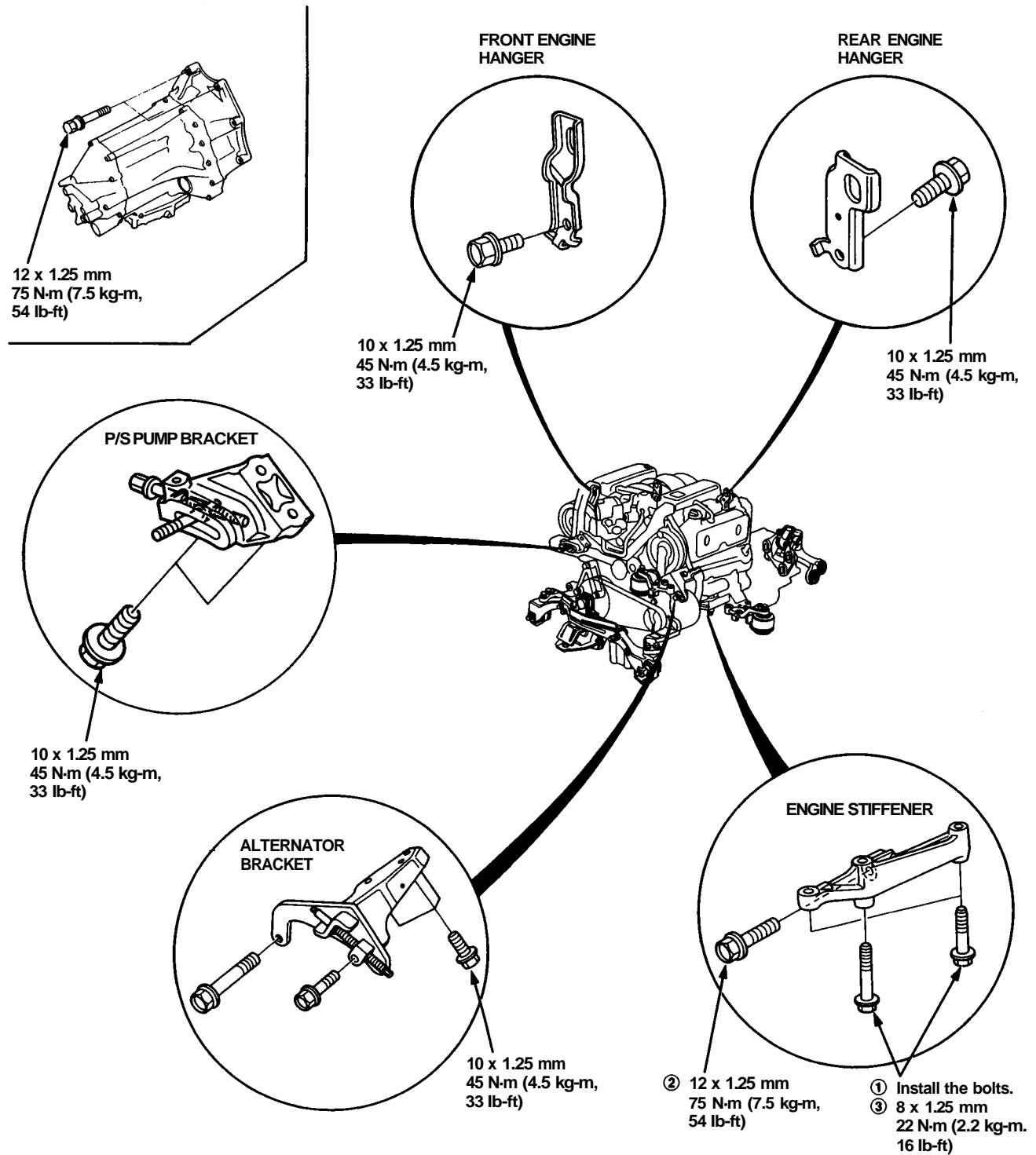
CAUTION: After loosening the special nut, be sure to replace them with new ones.





Additional Mount Bolts Torque Value Specifications:

NOTE: For manifold replacement, refer to [section 9](#).



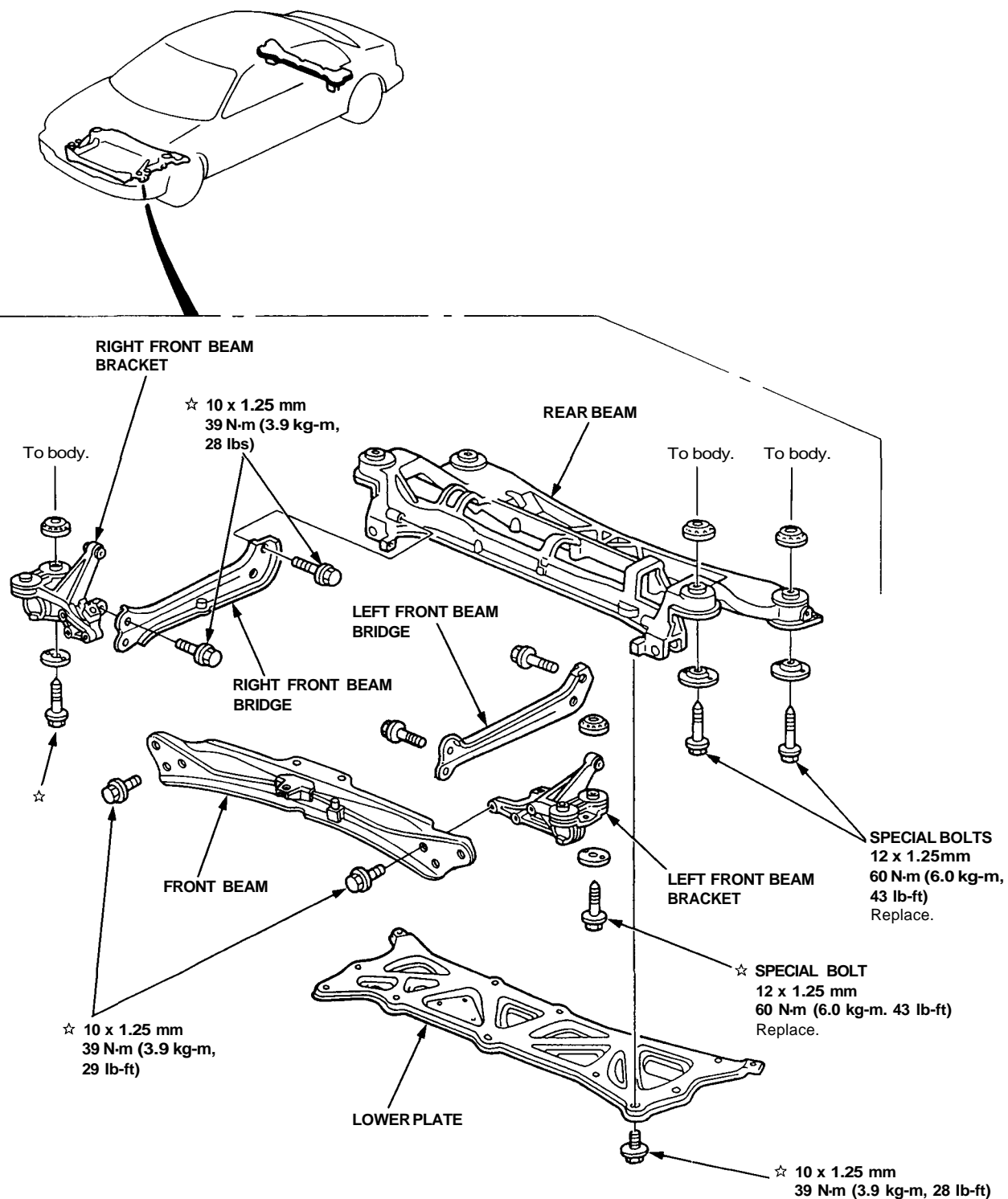
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Engine Removal/Installation

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Sub Frame Mount Bolts Torque Value Specifications:

CAUTION: After loosening the special bolts, be sure to replace them with new ones.



\star : CORROSION RESISTANT BOLT