

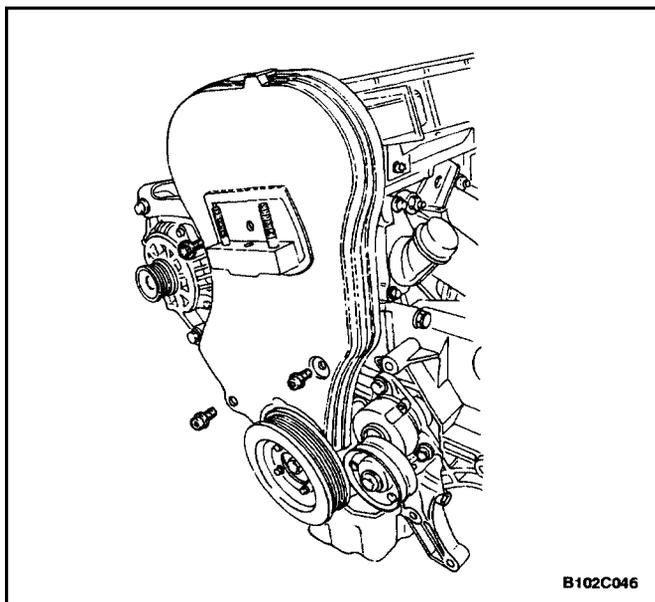
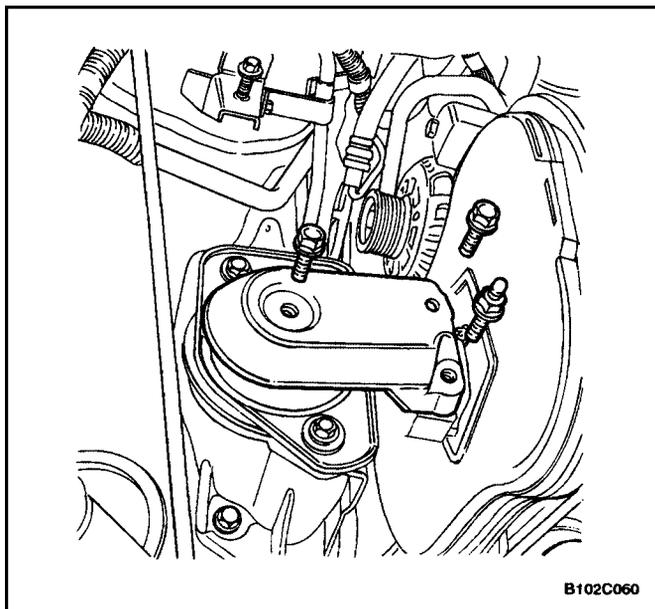
ENGINE MOUNT

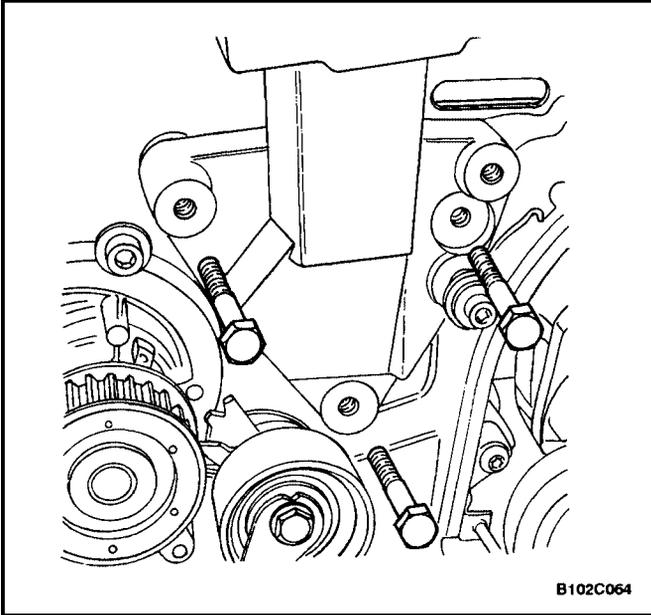
Tools Required

J-28467-B Engine Assembly Lift Support

Removal Procedure

1. Disconnect the negative battery cable.
2. Support the engine assembly using the engine assembly lift support J-28467-B.
3. Remove the right front splash shield.
4. Remove the engine mount bracket retaining bolts.
5. Remove the engine mount bracket.
6. Remove the serpentine accessory drive belt. Refer to *Section 6B, Power Steering Pump*.
7. Remove the front timing belt cover bolts.
8. Align the crankshaft pulley timing mark with the pointer, and the camshaft gears with the timing marks on the rear cover, by turning the crankshaft gear bolt.
9. Loosen the timing belt automatic tensioner bolt.
10. Turn the hex-key tab to relieve belt tension.
11. Remove the timing belt idler pulley bolt and nut.
12. Remove the timing belt idler pulley.
13. Remove the engine mount retaining bolts.
14. Remove the engine mount.



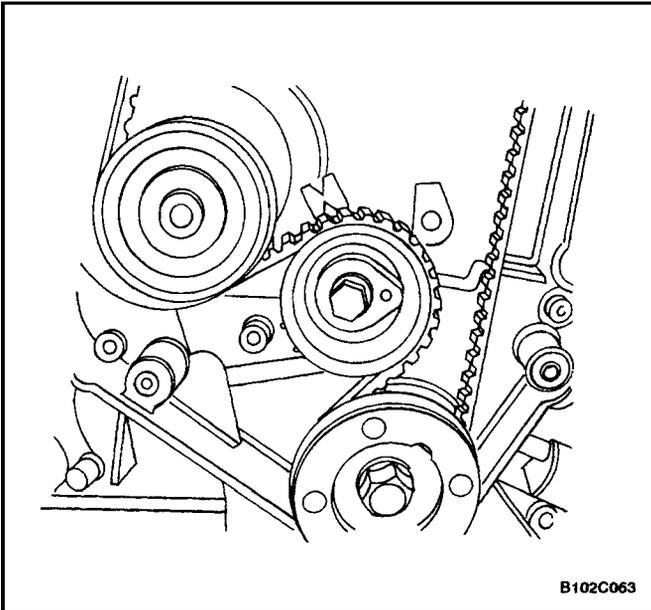


Installation Procedure

1. Install the engine mount.
2. Install the engine mount retaining bolts.

Tighten

Tighten the engine mount retaining bolts to 60 N•m (44 lb–ft).



3. Install the timing belt idler pulleys.
4. Install the timing belt idler pulley bolt and nut.

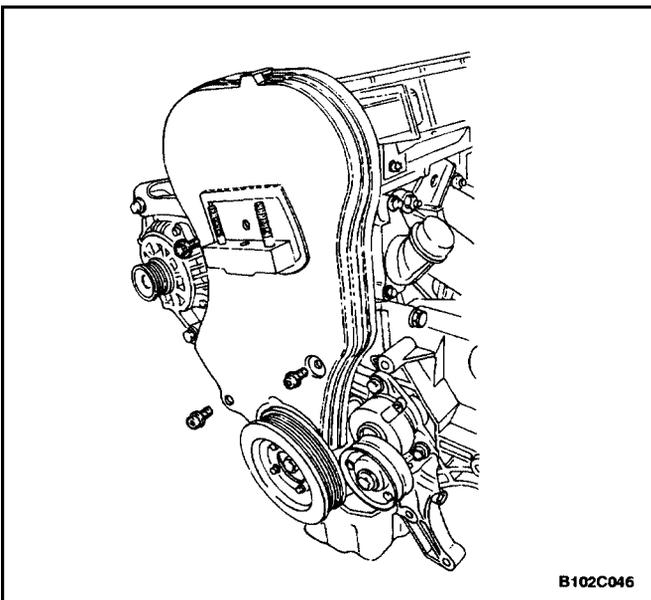
Tighten

Tighten the timing belt idler pulley bolt and nut to 25 N•m (18 lb–ft).

5. Tension the timing belt by turning the timing belt automatic tensioner hex–key tab counterclockwise until the pointer is aligned to the indicator.

Tighten

Tighten the timing belt automatic tensioner bolt to 25 N•m (18 lb–ft).



6. Install the front timing belt cover.
7. Install the front timing belt cover bolts.

Tighten

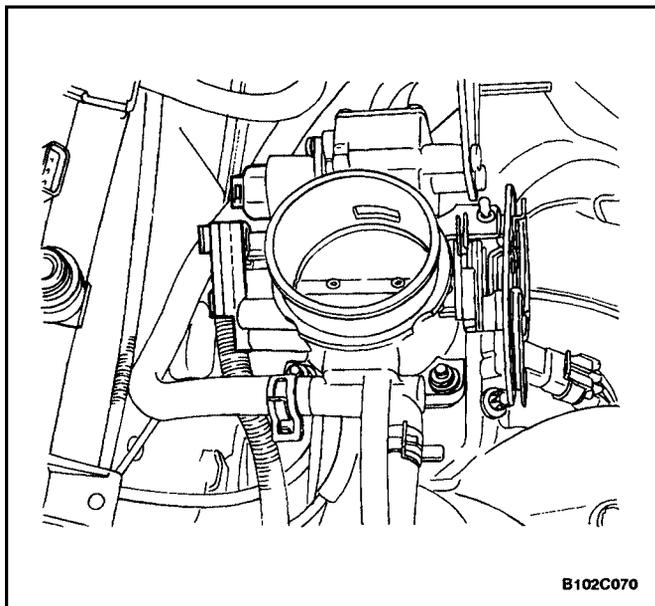
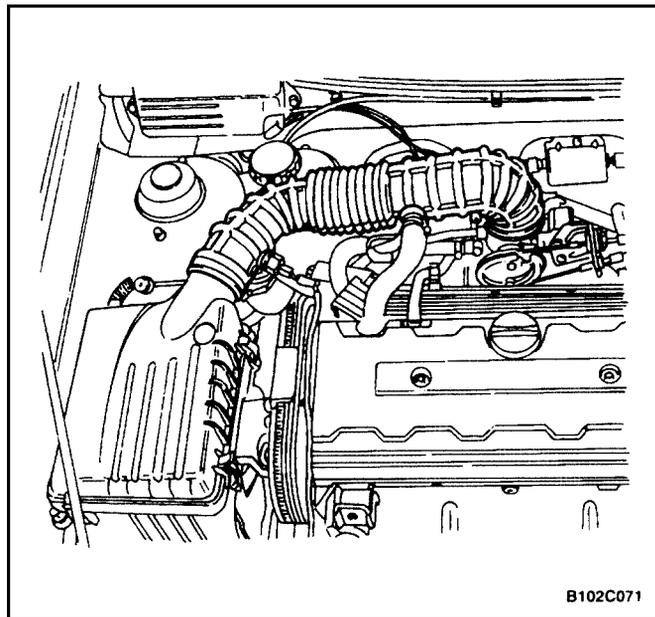
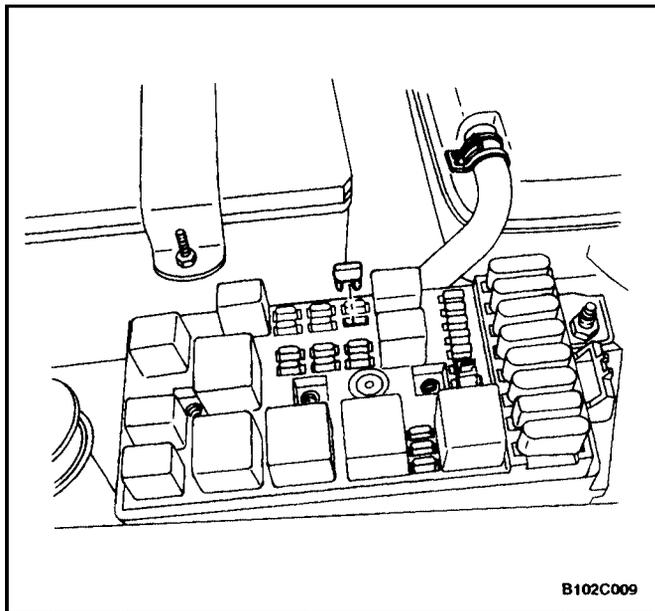
Tighten the front timing belt cover bolts to 6 N•m (53 lb–in).

8. Install the engine mount bracket and retaining bolts.

Tighten

Tighten the engine mount bracket retaining bolts to 60 N•m (44 lb–ft).

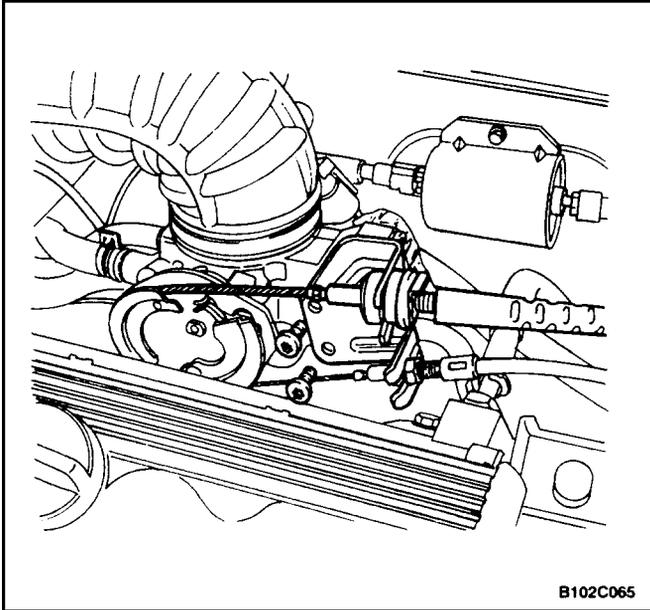
9. Remove engine assembly lift support J–28467–B.
10. Install the serpentine accessory drive belt. Refer to *Section 6B, Power Steering Pump*.
11. Connect the negative battery cable.



INTAKE MANIFOLD

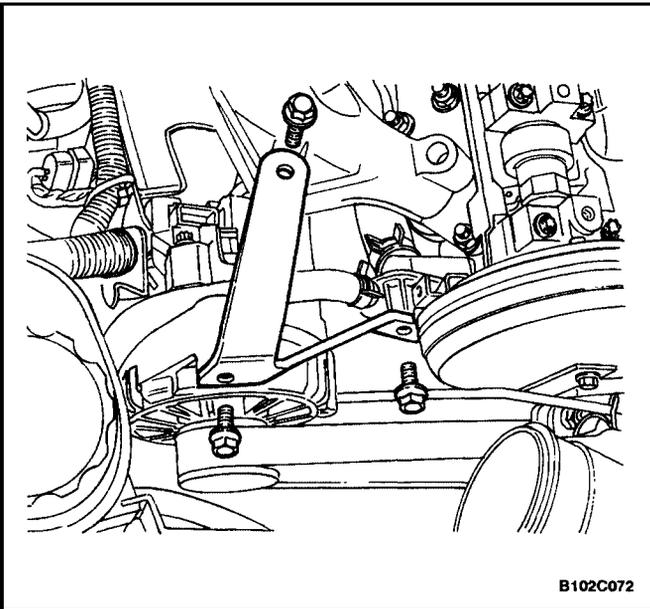
Removal Procedure

1. Remove the fuel pump fuse.
2. Start the engine. After it stalls, crank the engine for 10 seconds to rid the fuel system of fuel pressure.
3. Disconnect the negative battery cable.
4. Disconnect the evaporative emission canister purge solenoid from the intake manifold and loosen the bracket bolt.
5. Drain the engine coolant. Refer to *Section 1D, Engine Cooling*.
6. Disconnect the intake air temperature sensor connector.
7. Disconnect the air intake tube from the throttle body.
8. Disconnect the idle air control valve connector.
9. Disconnect the throttle position sensor connector.
10. Disconnect the manifold absolute pressure (MAP) sensor connector.
11. Disconnect the coolant hoses at the throttle body.



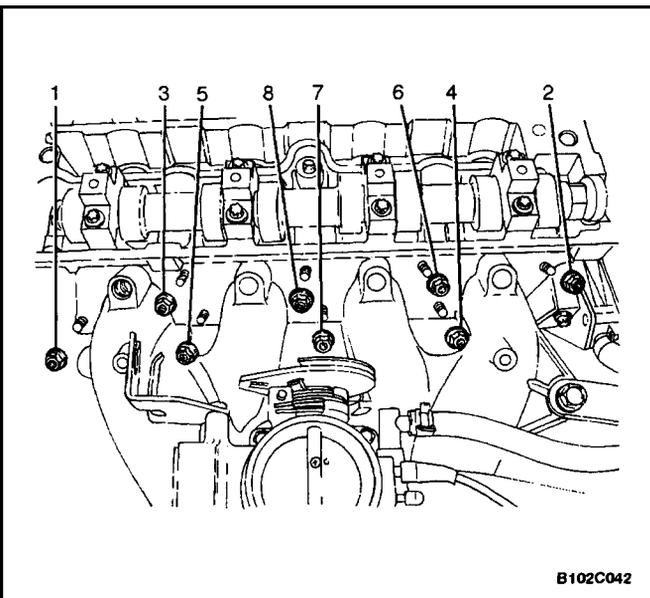
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12. Disconnect all of the necessary vacuum hoses, including the vacuum hose at the fuel pressure regulator and the brake booster vacuum hose at the intake manifold.
13. Disconnect the throttle cable from the throttle body and the intake manifold.
14. Remove the throttle cable bracket bolts from the intake manifold.
15. Remove the throttle cable bracket.
16. Remove the generator-to-intake manifold strap bracket bolts and strap.



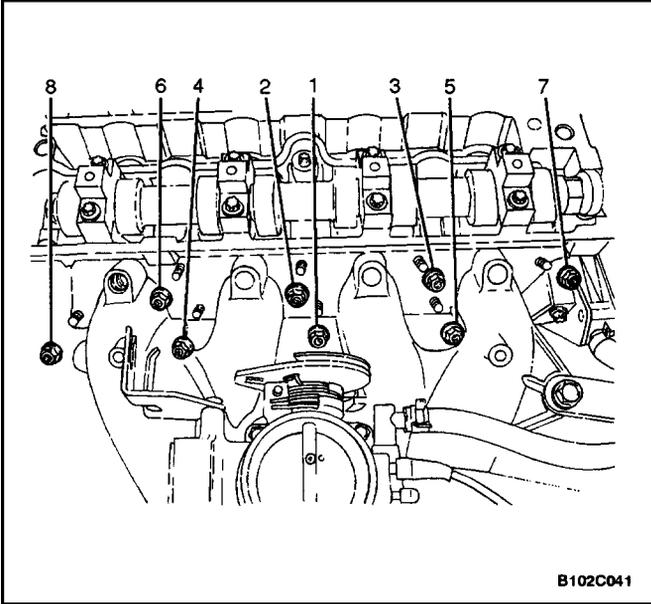
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17. Remove the fuel rail and injector cover as an assembly. Refer to *Section 1F, Engine Controls (DOHC)*.
18. Remove the generator-to-intake manifold support bracket bolts.
19. Remove the generator-to-intake manifold support bracket.
20. Remove the intake manifold support bracket bolt at the engine block and the intake manifold.
21. Remove the intake manifold support bracket.

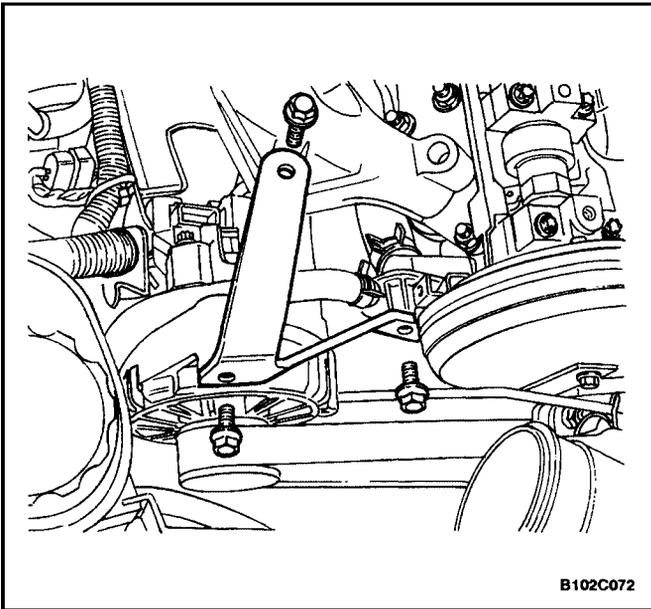


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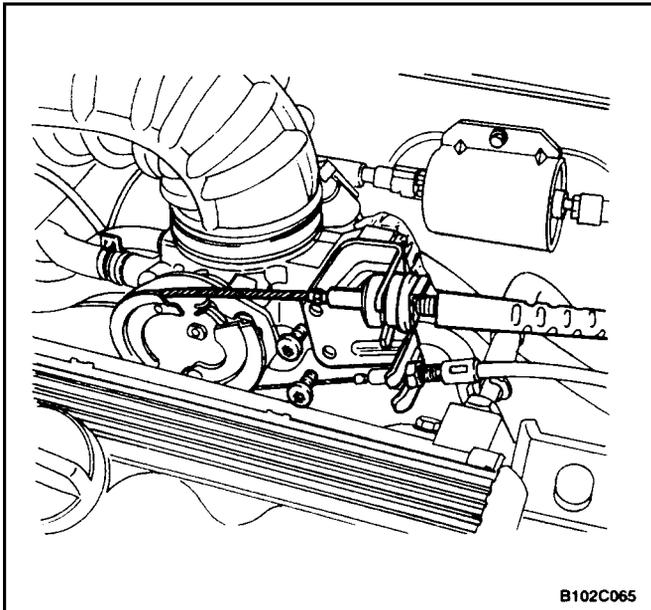
22. Remove the intake manifold retaining bolt and nuts in the sequence shown.
23. Remove the intake manifold.
24. Remove the intake manifold gasket.
25. Clean the sealing surfaces of the intake manifold and the cylinder head.



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Installation Procedure

1. Install the intake manifold gasket.
2. Install the intake manifold.
3. Install the intake manifold retaining bolt and nuts in the sequence shown.

Tighten

Tighten the intake manifold retaining bolt and nuts to 22 N•m (16 lb–ft).

4. Install the generator-to-intake manifold strap bracket and bolts.

Tighten

Tighten the generator-to-intake manifold strap bracket bolts to 20 N•m (15 lb–ft).

5. Install the intake manifold support bracket.
6. Install the intake manifold support bracket upper bolts to the intake manifold.

Tighten

Tighten the intake manifold support bracket upper bolts to the intake manifold to 20 N•m (15 lb–ft).

7. Install the intake manifold support bracket lower bolt to the engine block.

Tighten

Tighten the intake manifold support bracket lower bolt to the engine block to 20 N•m (15 lb–ft).

8. Install the generator-to-intake manifold support bracket and bolts.

Tighten

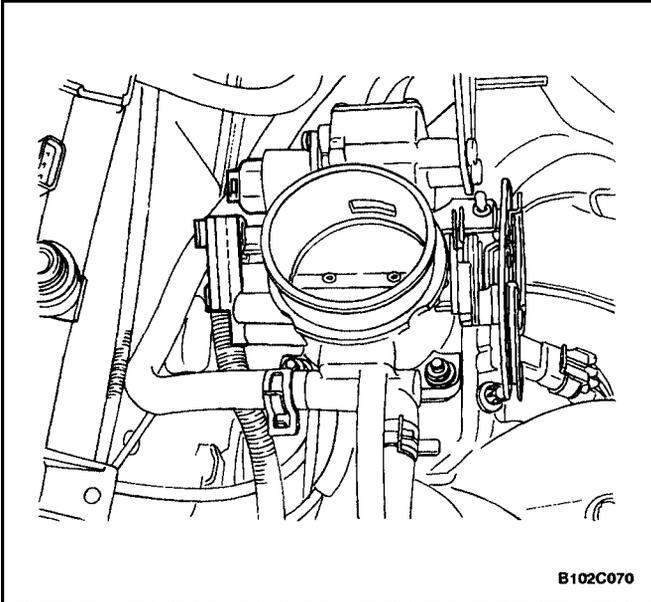
Tighten the generator-to-intake manifold support bracket bolts to 35 N•m (26 lb–ft).

9. Install the fuel rail and injector cover as an assembly. Refer to *Section 1F, Engine Controls (DOHC)*.
10. Install the throttle cable bracket.
11. Install the throttle cable bracket bolts.

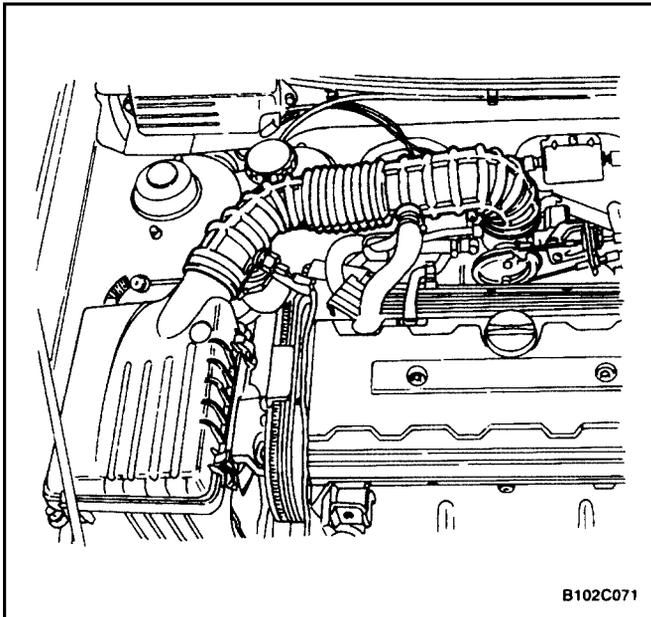
Tighten

Tighten the throttle cable bracket bolts to 8 N•m (71 lb–in).

12. Connect the throttle cable to the intake manifold and the throttle body.
13. Connect all of the necessary vacuum lines that were previously disconnected.



14. Connect the MAP sensor connector.
15. Connect the coolant hoses to the throttle body.
16. Connect the idle air control valve connector.
17. Connect the throttle position sensor connector.

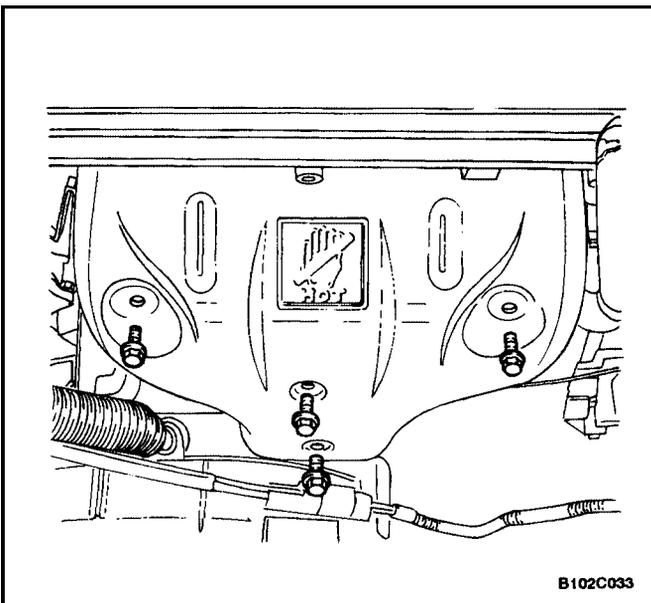


18. Connect the air intake tube to the throttle body.
19. Connect the intake air temperature sensor connector.
20. Connect the evaporative emission canister purge solenoid at the intake manifold and tighten the bracket bolt.

Tighten

Tighten the evaporative emission canister purge solenoid bracket bolt to 5 N•m (44 lb-in).

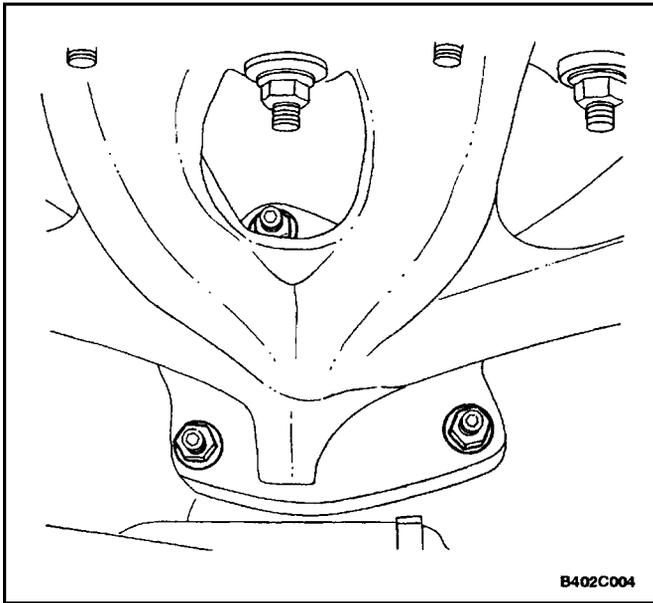
21. Install the fuel pump fuse.
22. Connect the negative battery cable.
23. Refill the engine cooling system. Refer to *Section 1D, Engine Cooling*.



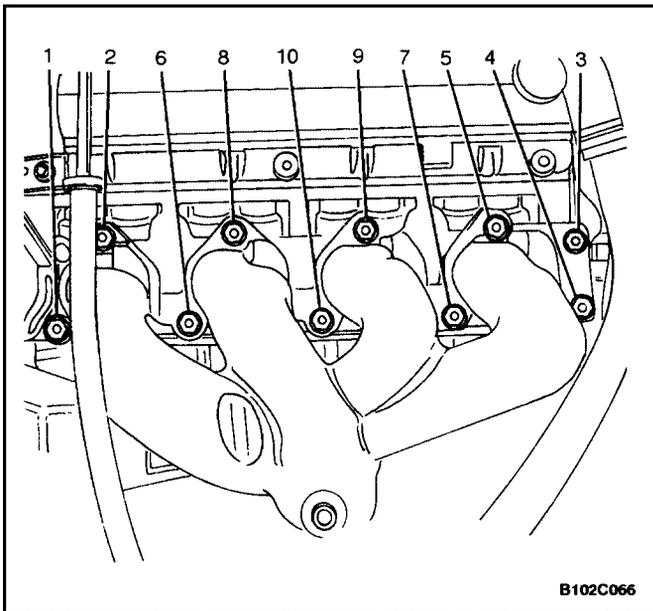
EXHAUST MANIFOLD

Removal Procedure

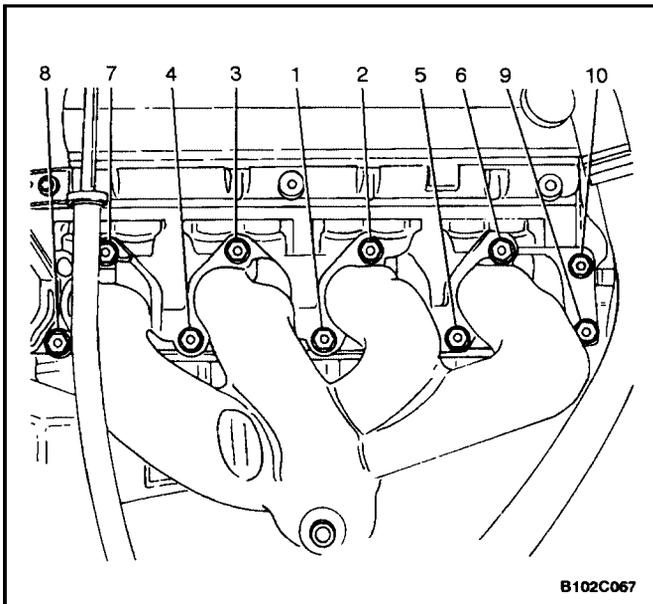
1. Disconnect the negative battery cable.
2. Disconnect the pre-converter oxygen sensor connector.
3. Remove the exhaust manifold heat shield bolts.
4. Remove the exhaust manifold heat shield.



5. Remove the auxiliary catalytic converter upper flange nuts from the exhaust manifold.



6. Remove the exhaust manifold retaining nuts in the sequence shown.
7. Remove the exhaust manifold.
8. Remove the exhaust manifold gasket.
9. Clean the sealing surfaces of the exhaust manifold and the cylinder head.

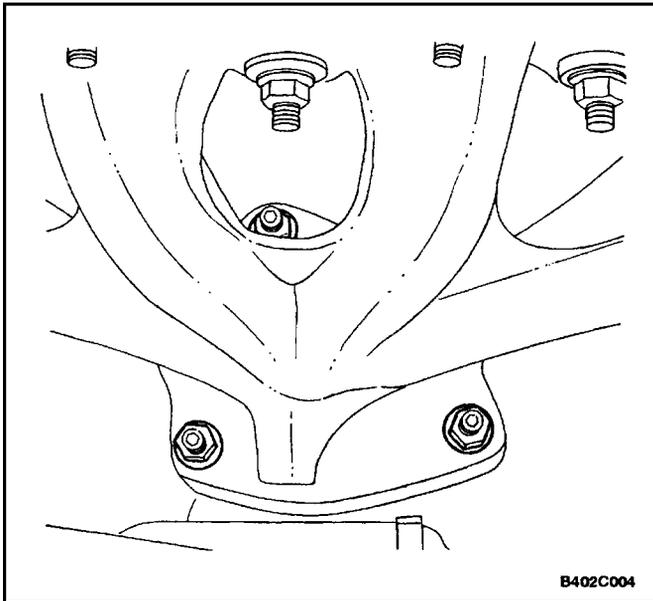


Installation Procedure

1. Install the exhaust manifold gasket.
2. Install the exhaust manifold.
3. Install the exhaust manifold retaining nuts and tighten in the sequence shown.

Tighten

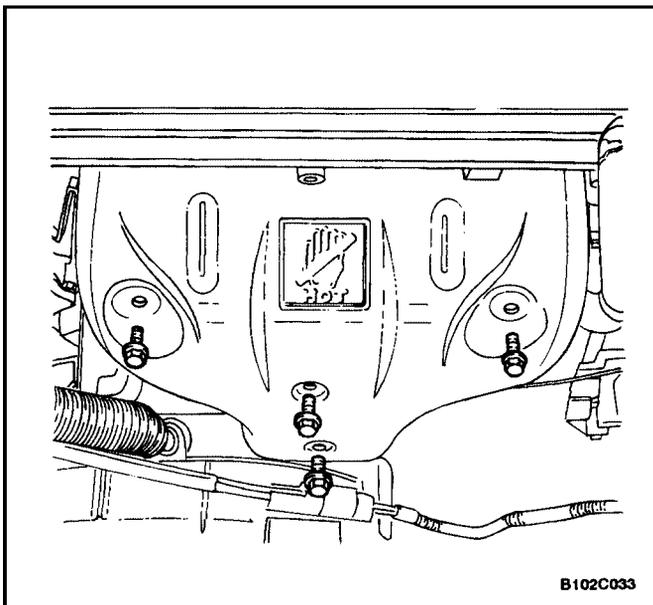
Tighten the exhaust manifold retaining nuts 15 N•m (11 lb-ft).



4. Install the auxiliary catalytic converter upper flange nuts to the exhaust manifold.

Tighten

Tighten the auxiliary catalytic converter-to-exhaust manifold nuts to 40 N•m (30 lb-ft).

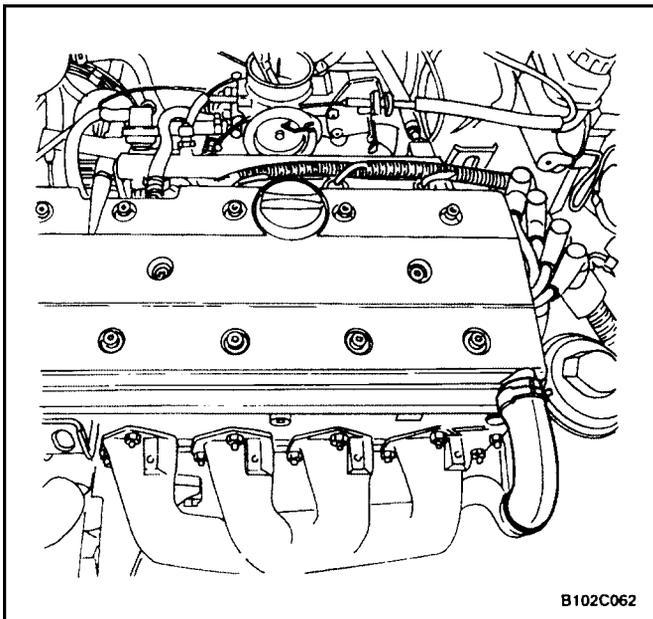


5. Install the exhaust manifold heat shield.
6. Install the exhaust manifold heat shield bolts.

Tighten

Tighten the exhaust manifold heat shield bolts to 8 N•m (71 lb-in).

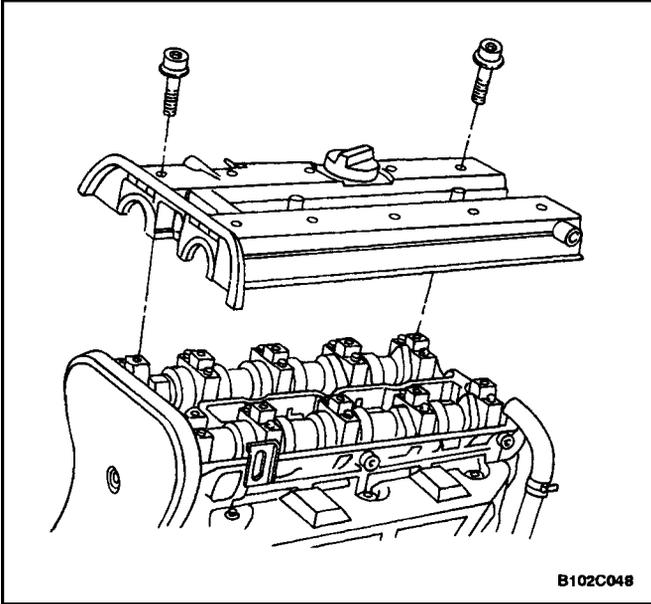
7. Connect the pre-converter oxygen sensor connector.
8. Connect the negative battery.



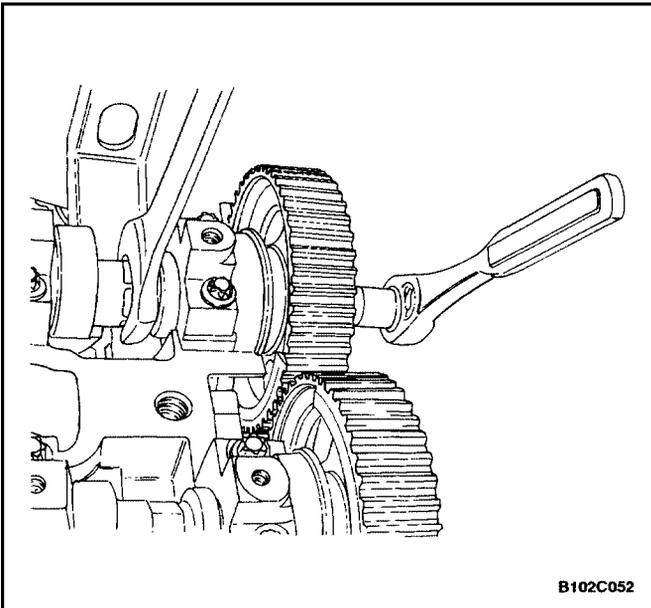
CAMSHAFT GEARS

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the timing belt. Refer to "Timing Belt" in this section.
3. Remove the spark plug cover bolts.
4. Remove the spark plug cover.
5. Disconnect the ignition wires from the spark plugs.
6. Disconnect the crankcase breather tubes from the valve cover.
7. Disconnect the camshaft position sensor.

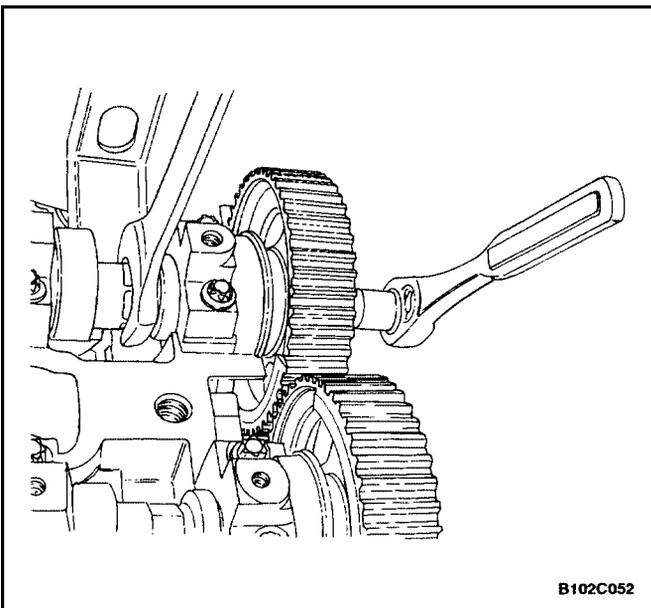


8. Remove the valve cover bolts.
9. Remove the valve cover washers.
10. Remove the valve cover and the valve cover gasket.



Notice : Take extreme care to prevent any scratches, nicks or damage to the camshafts.

11. While holding the intake camshaft firmly in place, remove the intake camshaft gear bolt.
12. Remove the intake camshaft gear.
13. While holding the exhaust camshaft firmly in place, remove the exhaust camshaft gear bolt.
14. Remove the exhaust camshaft gear.



Installation Procedure

Notice : Take extreme care to prevent any scratches, nicks or damage to the camshafts.

1. Install the intake camshaft gear.
2. While holding the intake camshaft firmly in place, install the intake camshaft gear bolt.

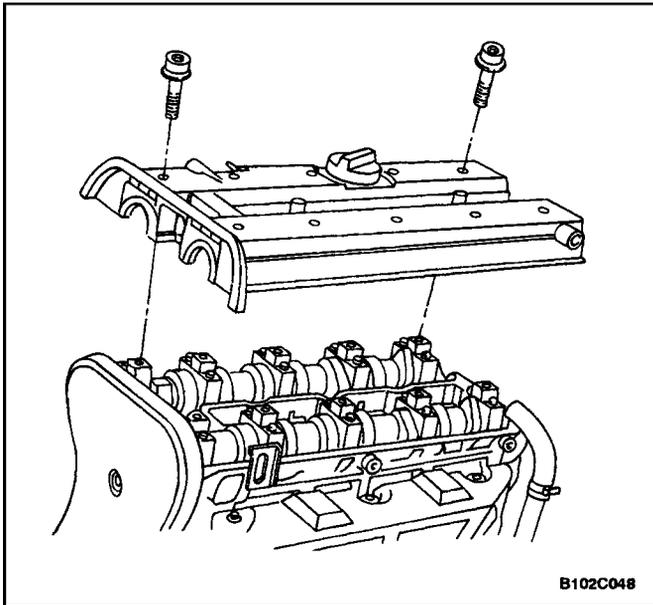
Tighten

Tighten the intake camshaft gear bolt to 50 N•m (37 lb–ft).

3. Install the exhaust camshaft gear.
4. While holding the exhaust camshaft firmly in place, install the exhaust camshaft gear bolt.

Tighten

Tighten the exhaust camshaft gear bolt to 50 N•m (37 lb–ft). Using the angular torque gauge KM–470–B, tighten both the intake and the exhaust camshaft gear bolts another 60 degrees plus 15 degrees.

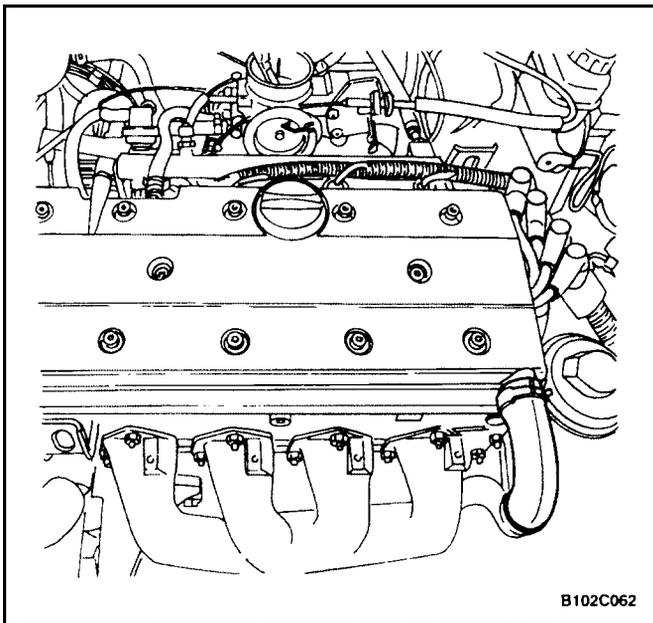


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5. Apply a small amount of gasket sealant to the corners of the front camshaft caps and to the top of the rear valve cover-to-cylinder head seal.
6. Install the valve cover and the valve cover gasket.
7. Install the valve cover washers.
8. Install the valve cover bolts.

Tighten

Tighten the valve cover bolts to 8 N•m (71 lb-in).



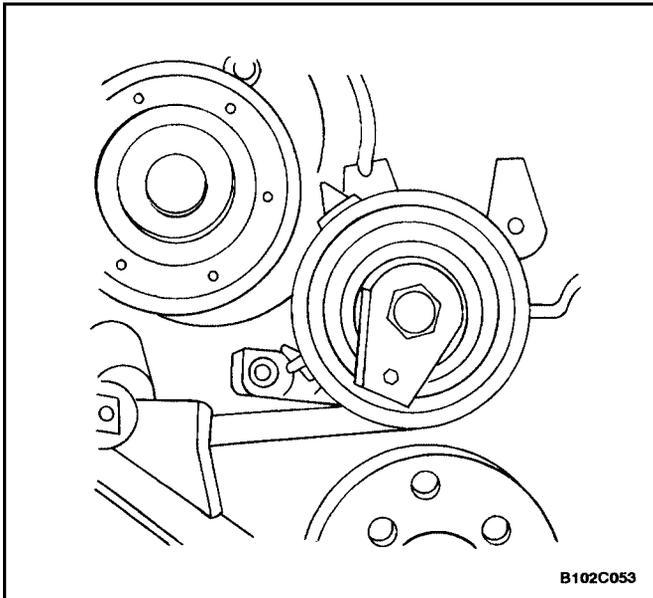
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9. Connect the crankcase breather tubes to the valve cover.
10. Connect the ignition wires to the spark plugs.
11. Install the spark plug cover.
12. Install the spark plug cover bolts.

Tighten

Tighten the spark plug cover bolts to 3 N•m (27 lb-in).

13. Connect the camshaft position sensor.
14. Install the timing belt. Refer to "Timing Belt" in this section.
15. Connect the negative battery cable.



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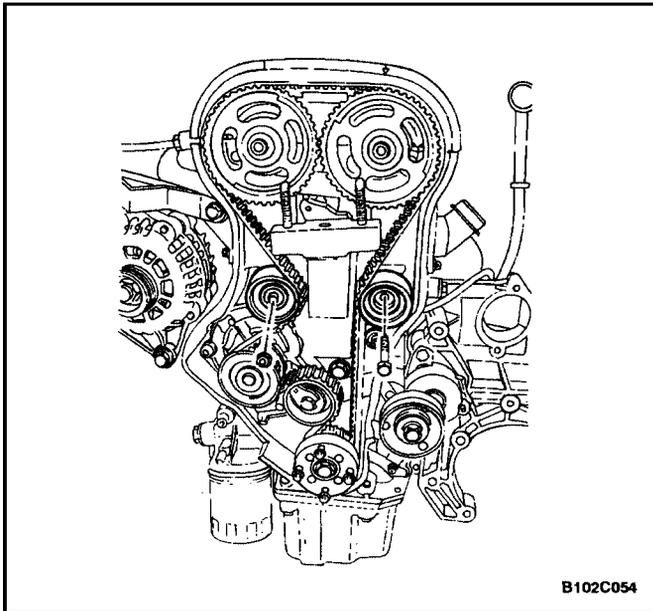
REAR TIMING BELT COVER

Tools Required

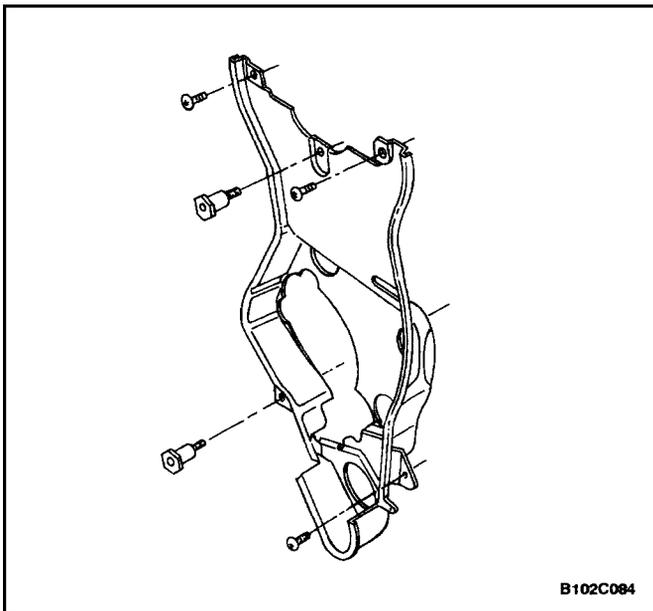
KM-470-B Torque Angular Gauge

Removal Procedure

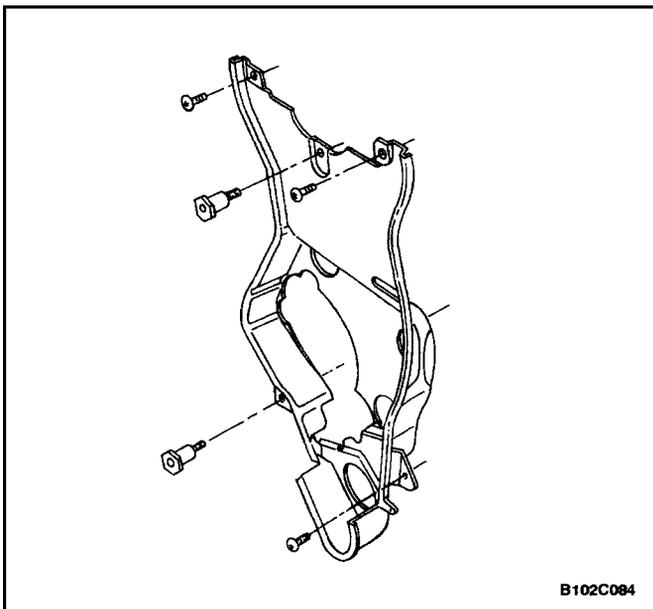
1. Disconnect the negative battery cable.
2. Remove the timing belt. Refer to "Timing Belt" in this section.
3. Remove the camshaft gears. Refer to "Camshaft Gears" in this section.
4. Remove the timing belt automatic tensioner bolt.
5. Remove the timing belt automatic tensioner.



6. Remove the timing belt idler pulley bolt and nut.
7. Remove the timing belt idler pulleys.
8. Remove the engine mount retaining bolts.
9. Remove the engine mount.
10. Remove the crankshaft gear bolt.
11. Remove the crankshaft gear.



12. Remove the rear timing belt cover bolts.
13. Remove the rear timing belt cover.



Installation Procedure

1. Install the rear timing belt cover.
2. Install the rear timing belt cover bolts.

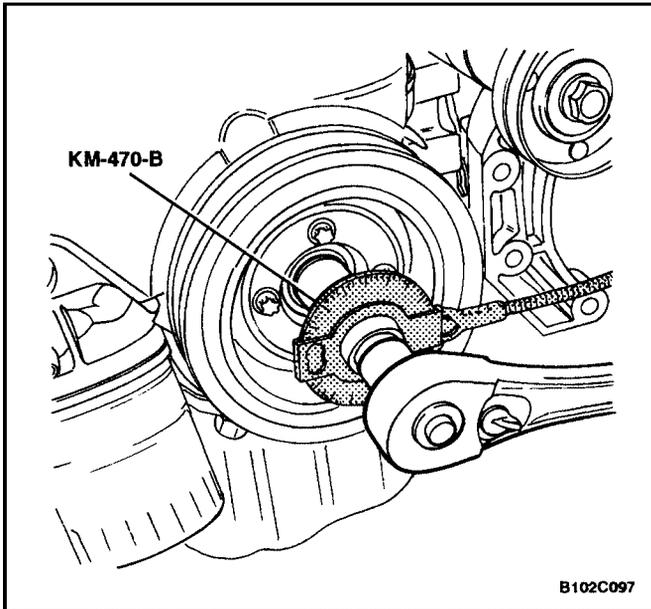
Tighten

Tighten the rear timing belt cover bolts to 6 N•m (53 lb-in).

3. Install the engine mount and the retaining bolts.

Tighten

Tighten the engine mount retaining bolts to 60 N•m (44 lb-ft).



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4. Install the timing belt idler pulleys.
5. Install the timing belt idler pulley bolt and nut.

Tighten

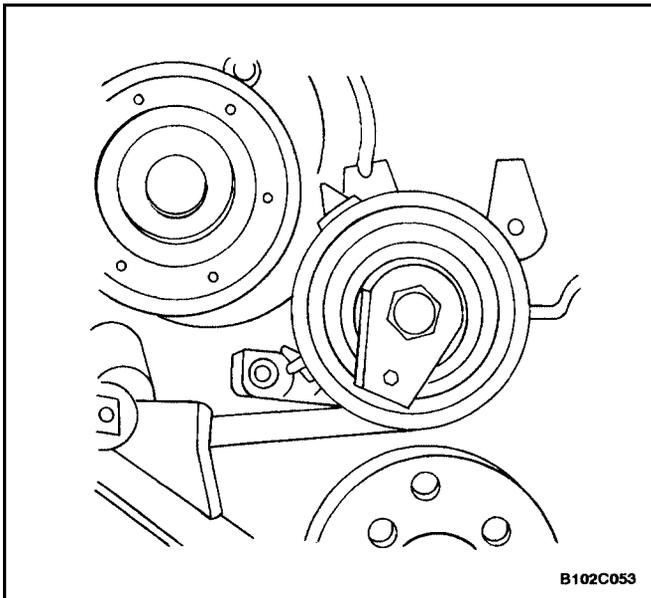
Tighten the timing belt idler pulley bolt to 25 N•m (18 lb–ft).

Tighten the timing belt idler pulley nut to 25 N•m (18 lb–ft).

6. Install the crankshaft timing belt drive gear and bolt.

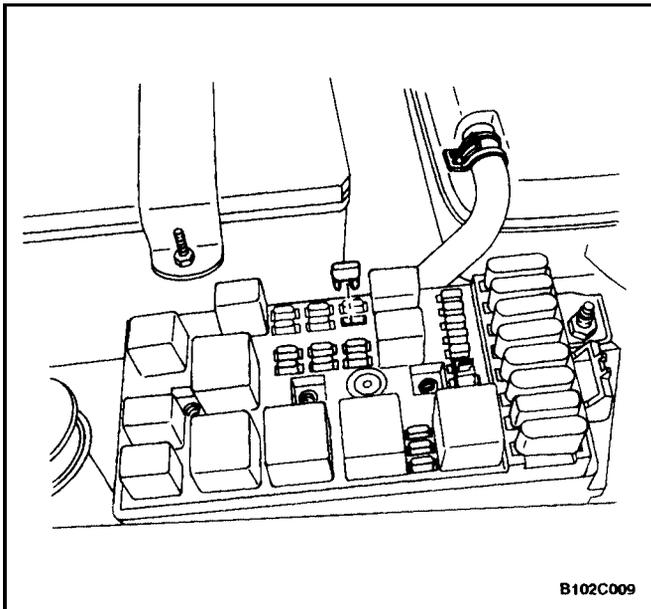
Tighten

Tighten the crankshaft timing belt drive gear bolt to 130 N•m (96 lb–ft) plus 30° to 10° using the torque angular gauge KM–470–B.



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7. Install the timing belt automatic tensioner and bolt.
8. Install the camshaft gears. Refer to "Camshaft Gears" in this section.
9. Install the timing belt and timing belt cover. Refer to "Timing Belt" in this section.
10. Connect the negative battery cable.

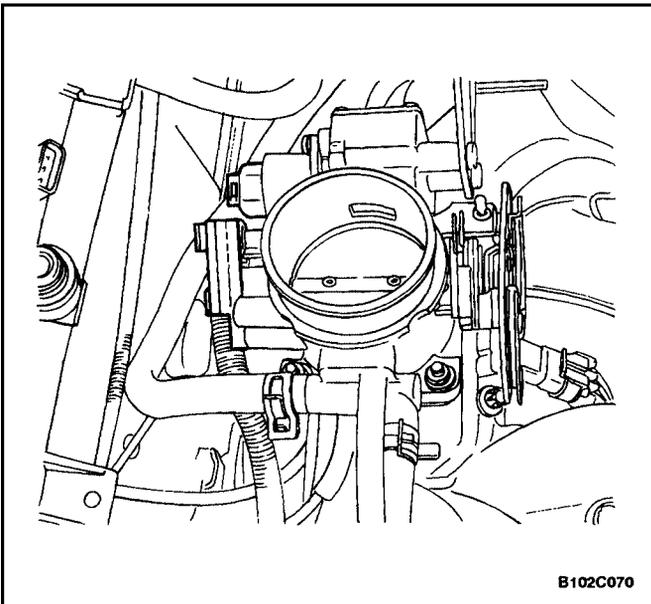
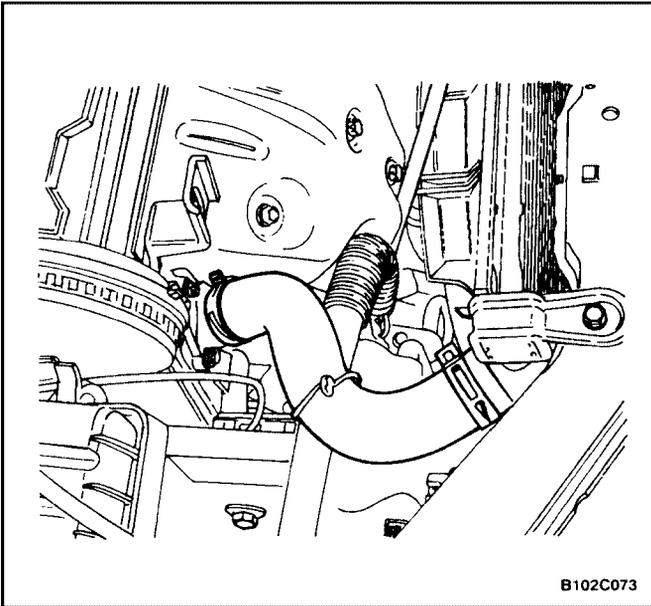
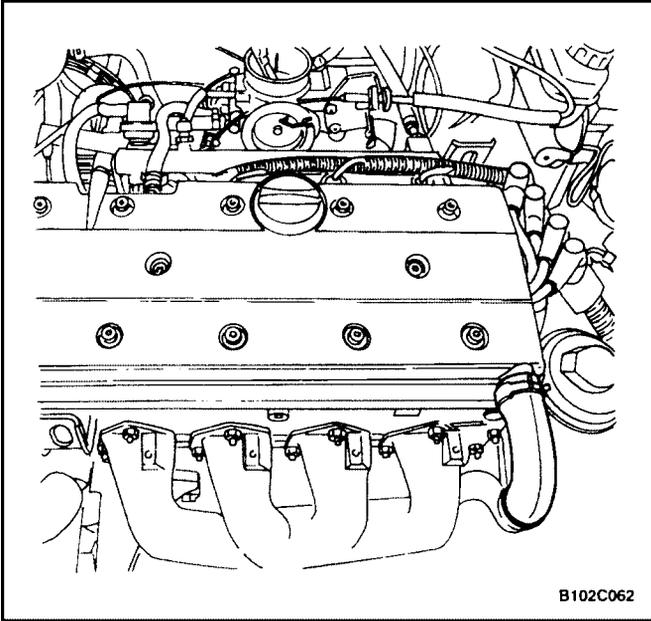


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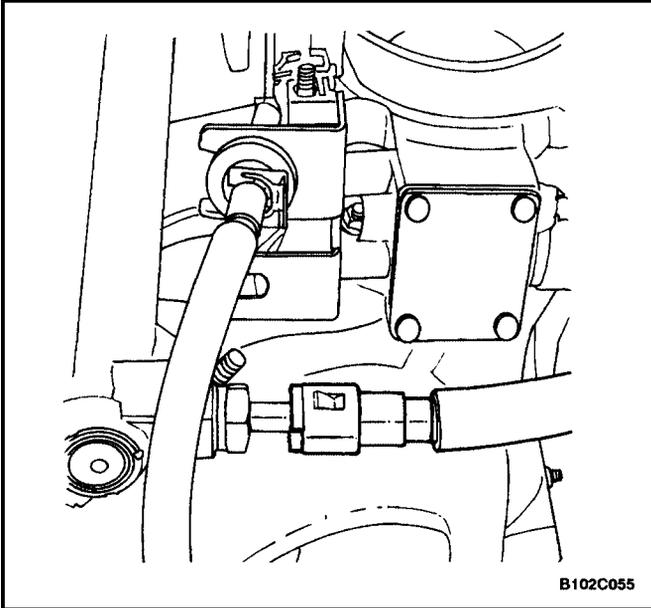
ENGINE

Removal Procedure

1. Remove the fuel pump fuse.
2. Start the engine. After it stalls, crank the engine for 10 seconds to rid the fuel system of fuel pressure.
3. Remove the hood. Refer to *Section 9R, Body Front End*.
4. Drain the engine oil.
5. Disconnect the negative battery cable.

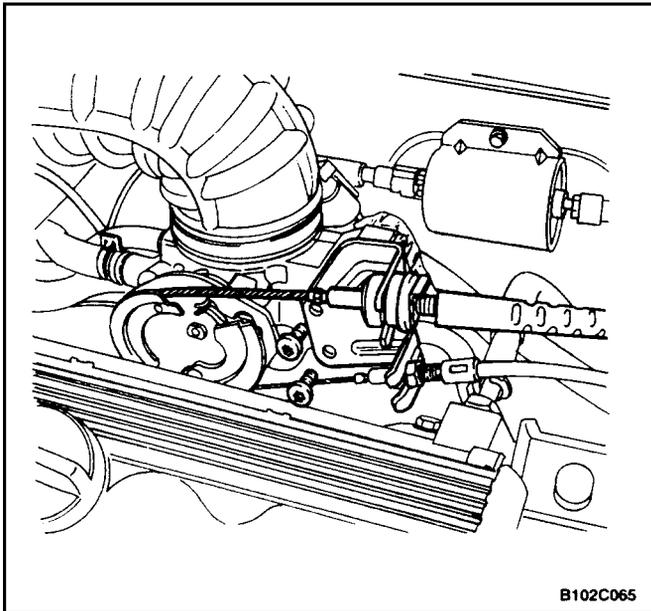


6. Discharge the air conditioning system, if equipped. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System*.
7. Disconnect the intake air temperature sensor connector.
8. Remove the air intake tube from the throttle body and air filter housing.
9. Disconnect the breather tubes from the valve cover.
10. Remove the right front wheel. Refer to *Section 2E, Tires and Wheels*.
11. Remove the right front splash shield.
12. Remove the serpentine accessory drive belt. Refer to *Section 6B, Power Steering Pump*.
13. Drain the engine coolant. Refer to *Section 1D, Engine Cooling*.
14. Remove the cooling system radiator and the engine cooling fans. Refer to *Section 1D, Engine Cooling*.
15. Disconnect the upper radiator hose from the thermostat housing.
16. Disconnect the power steering return hose from the power steering pump.
17. Disconnect the power steering pressure hose from the power steering pump.
18. Disconnect the electrical connector at the electronic ignition system (EI System) ignition coil and the powertrain control module (PCM)/engine control module (ECM) ground terminal and at the starter motor.
19. Disconnect the pre-converter oxygen sensor connector.
20. Disconnect the idle air control valve connector.
21. Disconnect the throttle position sensor connector.
22. Disconnect the engine coolant temperature sensor connector.
23. Disconnect the coolant temperature sensor connector.
24. Disconnect the generator voltage regulator connector and power lead.



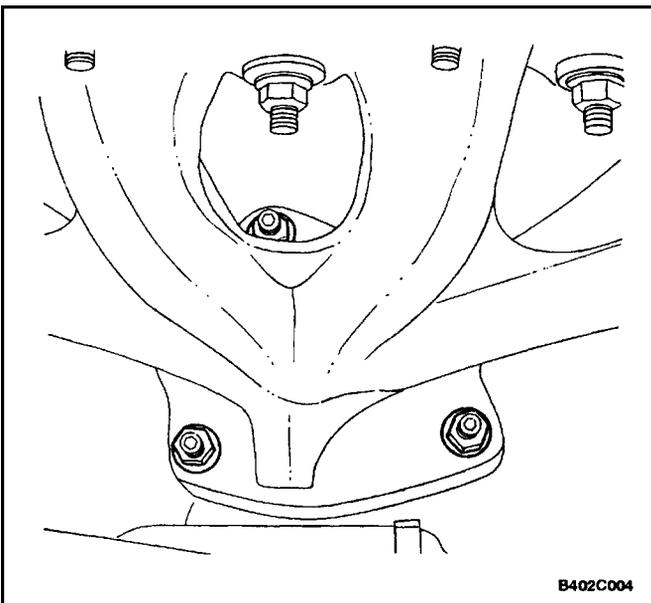
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25. Disconnect all of the necessary vacuum lines including the brake booster vacuum hose.
26. Disconnect the fuel return line at the fuel pressure regulator.
27. Disconnect the fuel feed line at the fuel rail.
28. Remove the fuel rail and the injector channel cover as an assembly. Refer to *Section 1F, Engine Controls (DOHC)*.



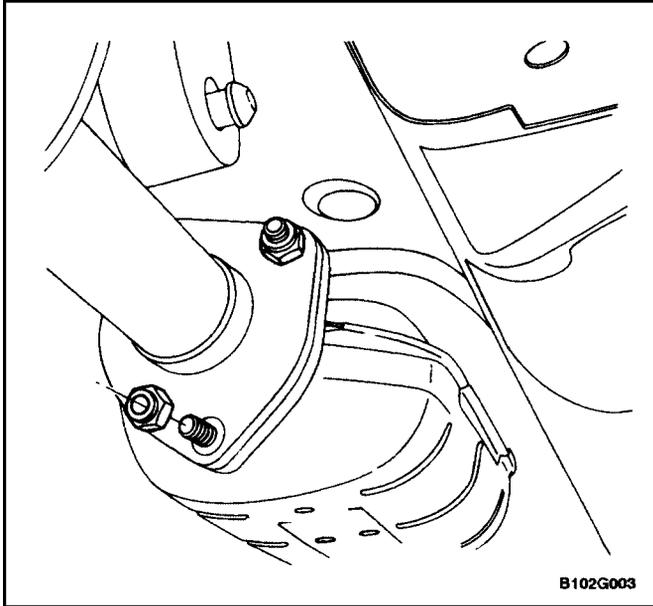
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29. Disconnect the throttle cable from the throttle body and the intake manifold bracket.
30. Disconnect the coolant hose at the throttle body.
31. Disconnect the heater outlet hose at the coolant pipe.
32. Disconnect the coolant bypass hose from the cylinder head.
33. Disconnect the surge tank coolant hose from the coolant pipe.
34. Disconnect the lower radiator hose from the coolant pipe.
35. Disconnect the starter solenoid "S" terminal wire and power lead.
36. Remove the A/C compressor. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System*.

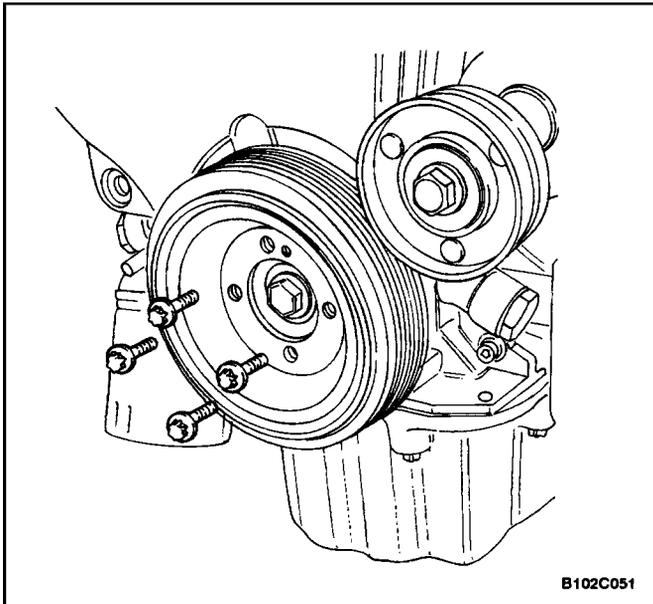


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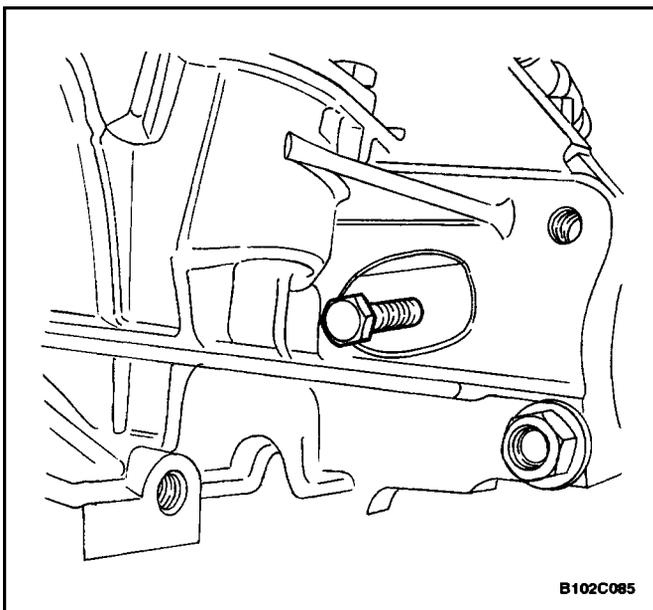
37. Remove the auxiliary catalytic converter upper flange nuts from the exhaust manifold and the bolts from the support bracket.



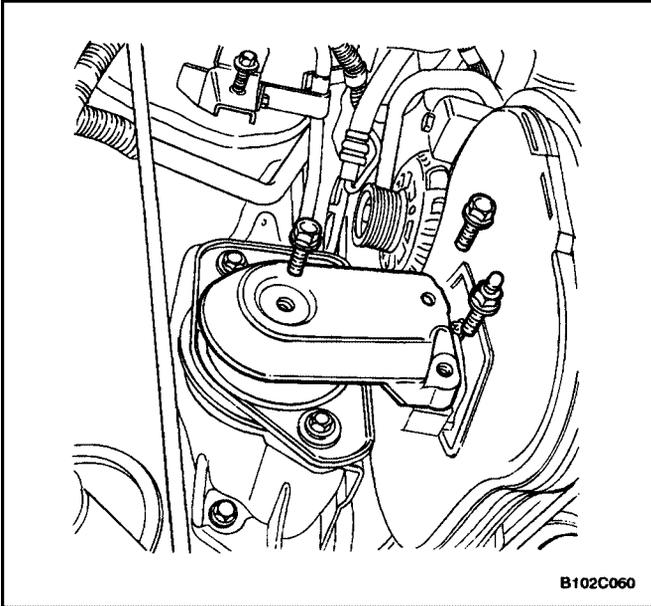
38. Remove the front muffler pipe retaining nuts from the main catalytic converter.
39. Remove both catalytic converters.



40. Remove the crankshaft pulley bolts.
41. Remove the crankshaft pulley.
42. Disconnect the vacuum lines at the evaporative emission canister purge solenoid.
43. Disconnect the electrical connector at the evaporative emission canister purge solenoid.
44. Disconnect the electrical connector at the oil pressure switch.
45. Disconnect the crankshaft and camshaft position sensor connectors.
46. Disconnect the knock sensor.

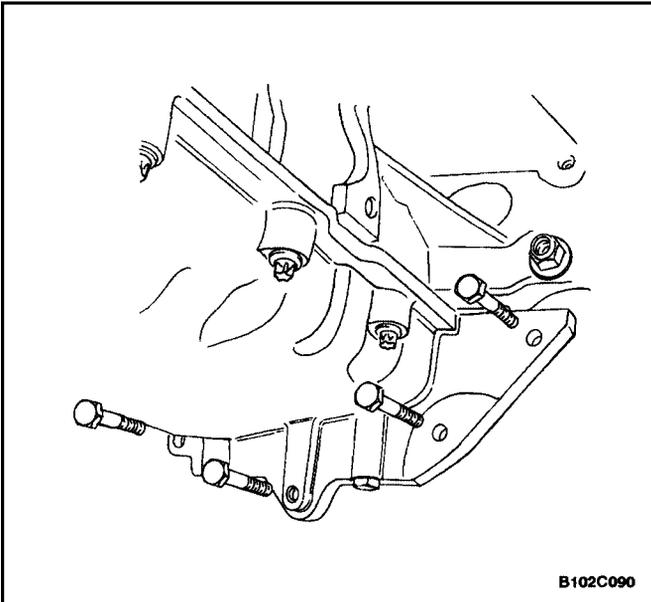


47. Remove the transaxle torque converter bolts, if automatic transaxle equipped.
48. Remove the transmission/transaxle bell housing bolts and the oil pan flange bolts.
49. Support the transmission with a floor jack.
50. Install the engine lifting device.



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51. Disconnect the right engine mount bracket from the engine mount by removing the retaining bolt.
52. Remove the right engine mount bracket from the engine block and frame mount.
53. Separate the engine block from the transmission. Remove the engine.



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Installation Procedure

1. Install the engine into the engine compartment.
2. Align the engine alignment pins to the transmission.
3. Install the transmission/transaxle bell housing bolts.

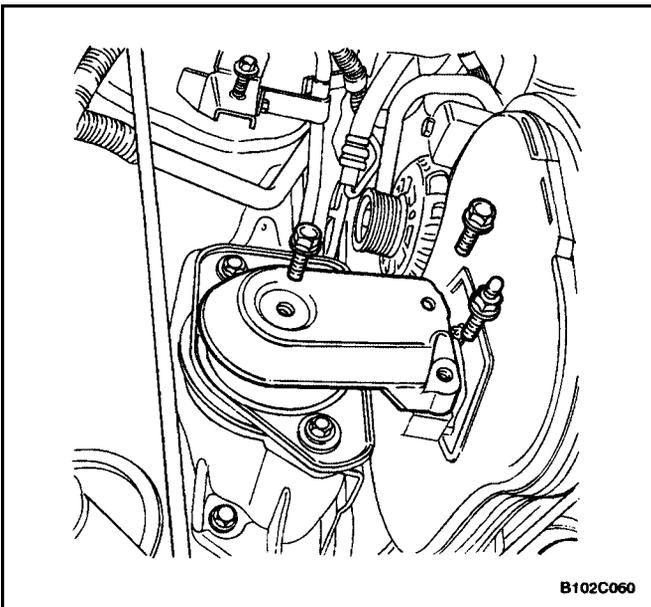
Tighten

Tighten the transmission/transaxle bell housing bolts to 75 N•m (55 lb–ft).

4. Install the oil pan flange-to-transaxle bolts.

Tighten

Tighten the oil pan flange-to-transaxle bolts to 40 N•m (30 lb–ft).

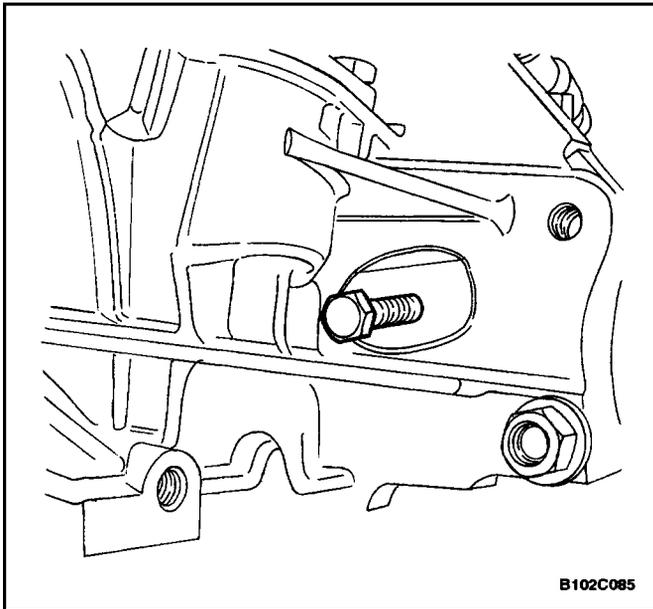


B102C060

5. Install the right engine mount to the engine block mount and the frame mount.
6. Install the right engine mount bracket retaining bolts and nuts.

Tighten

Tighten the right engine mount bracket retaining bolts and nuts to 60 N•m (44 lb–ft).

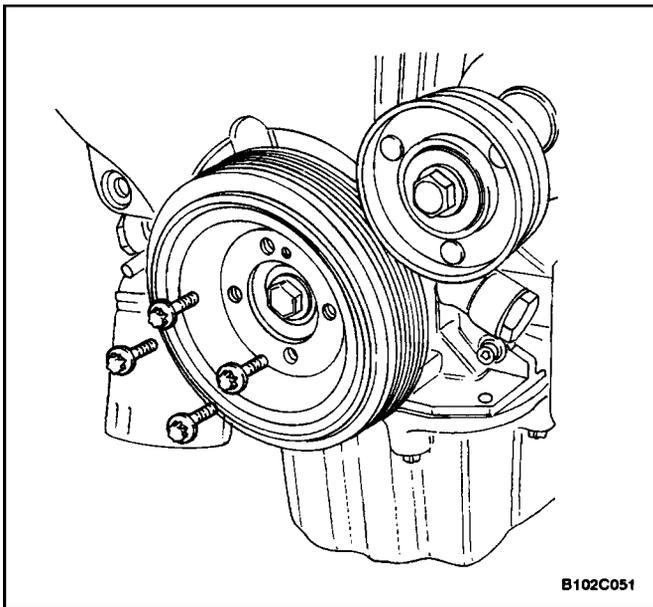


B102C085

7. Remove the floor jack used for support of the transmission.
8. Remove the engine lifting device.
9. Install the transaxle torque converter bolts, if automatic transaxle equipped.

Tighten

Tighten the transaxle torque converter bolts to 60 N•m (44 lb–ft).

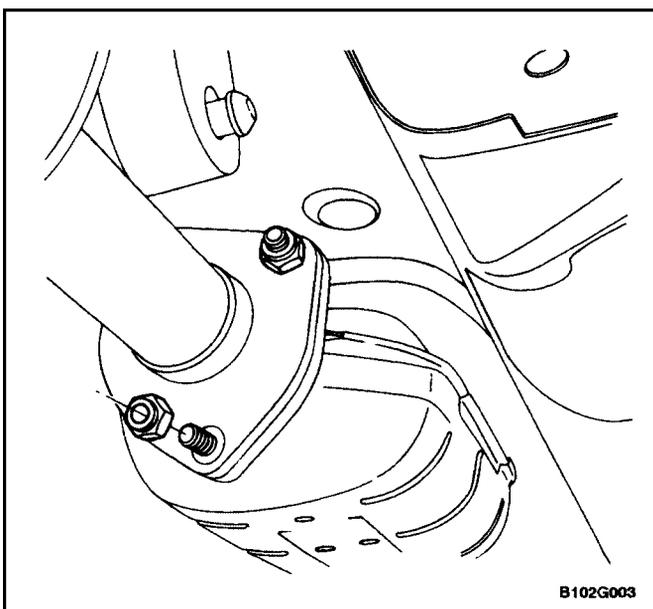


B102C051

10. Connect the vacuum lines at the evaporative emission canister purge solenoid.
11. Connect the electrical connector to the evaporative emission canister purge solenoid.
12. Connect the oil pressure switch connector.
13. Install the crankshaft pulley.
14. Install the crankshaft pulley bolts.

Tighten

Tighten the crankshaft pulley bolts to 20 N•m (15 lbft) using a torque wrench.



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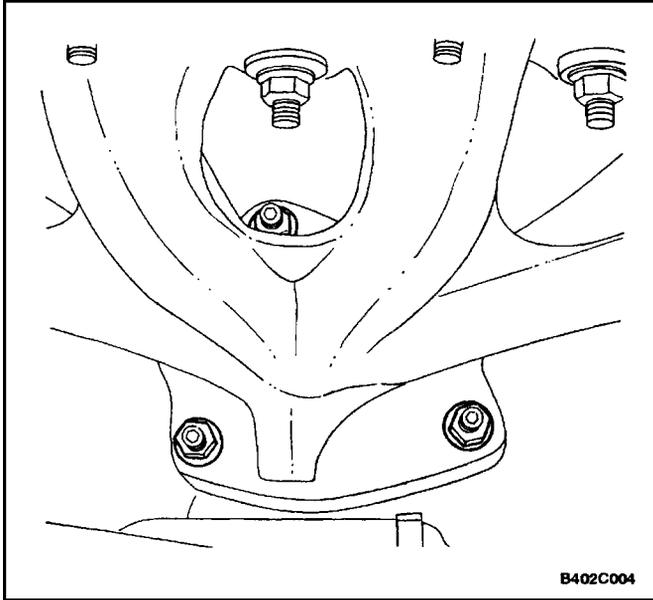
15. Connect the crankshaft and camshaft position sensor connectors.
16. Install the catalytic converters.

Tighten

Tighten the front muffler pipe-to-main catalytic converter nuts to 30 N•m (22 lb–ft).

Tighten

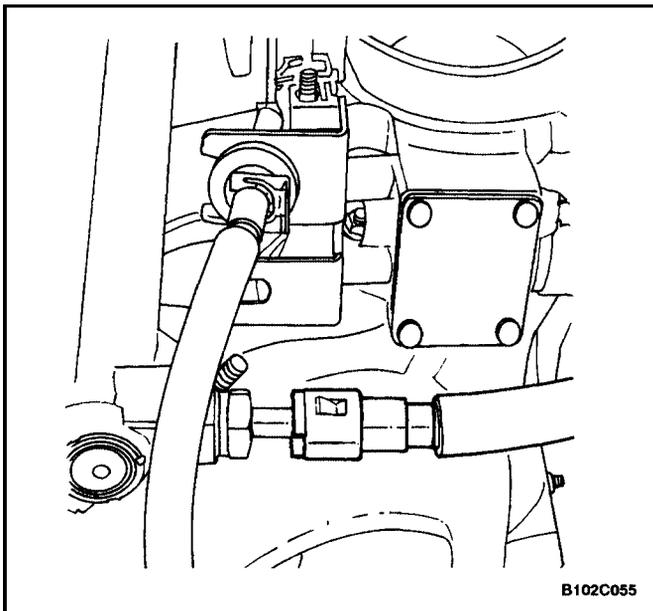
Tighten the support bracket bolts to 40 N•m (30 lb–ft).



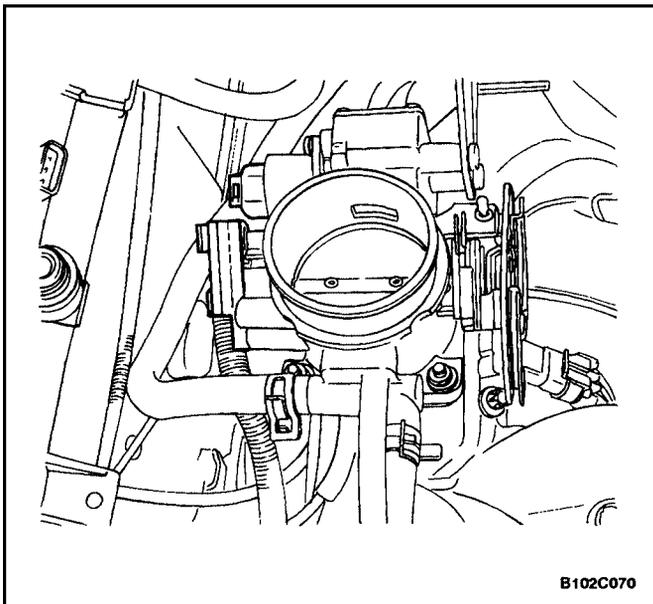
Tighten

Tighten the auxiliary catalytic converter-to-exhaust manifold nuts to the catalytic converter to 40 N•m (30 lb-ft).

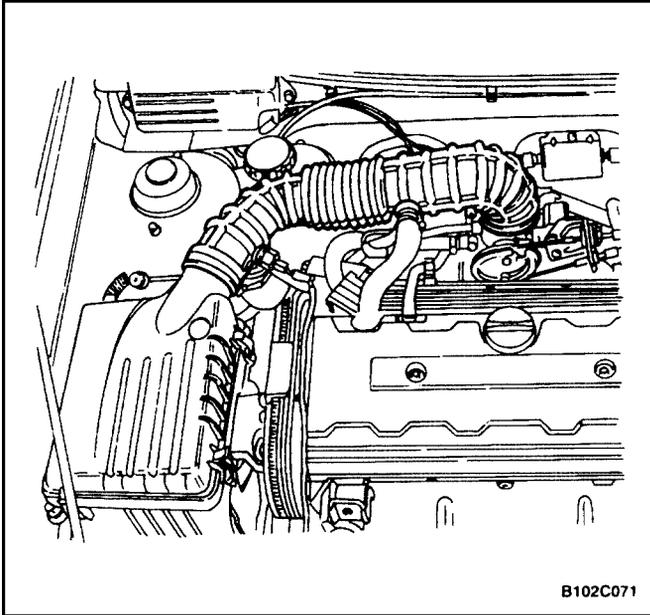
17. Connect the power steering pressure hose.
18. Connect the power steering return hose.
19. Install the A/C compressor, if equipped. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System.*



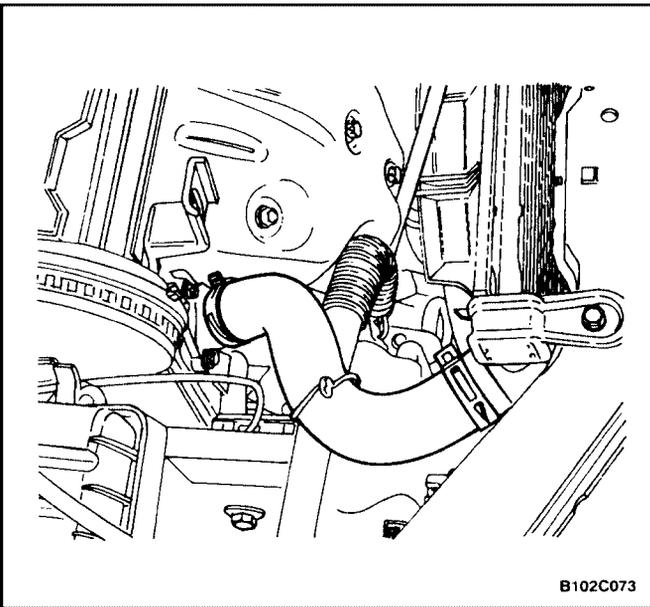
20. Install the accessory drive belt.
21. Install the right front splash shield.
22. Install the right front wheel. Refer to *Section 2E, Tires and Wheels.*
23. Connect the fuel feed line to the fuel rail.
24. Connect the fuel return line to the fuel pressure regulator.
25. Install the fuel rail and injector channel cover as an assembly. Refer to *Section 1F, Engine Controls (DOHC).*



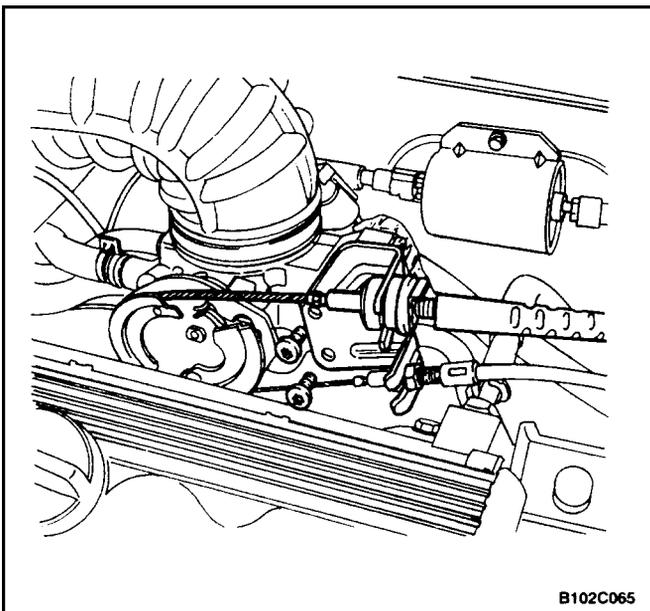
26. Connect all of the necessary vacuum lines including the brake booster vacuum hose.
27. Connect the pre-converter oxygen sensor connector.
28. Connect the starter solenoid "S" terminal wire and power lead.
29. Connect the generator voltage regulator connector.
30. Connect the coolant temperature sensor connector.
31. Connect the engine coolant temperature sensor connector.
32. Connect the throttle position sensor connector.
33. Connect the idle air control valve connector.
34. Connect the MAP sensor connector.
35. Connect the knock sensor.



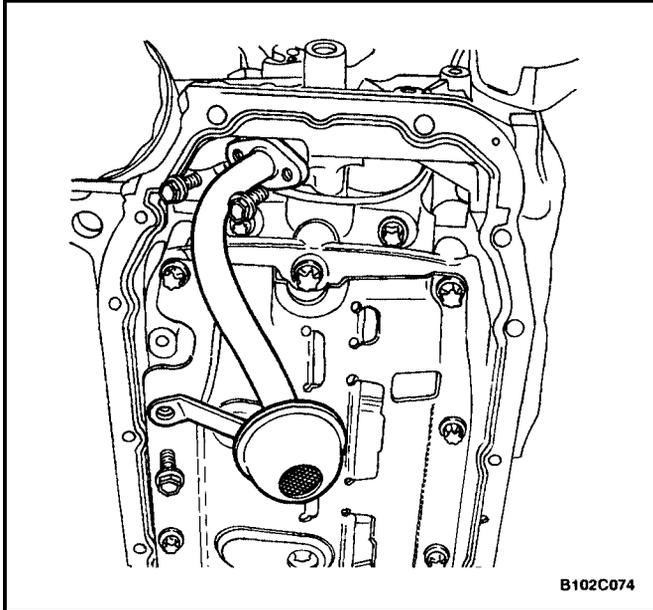
36. Connect the electrical connector at the EI system ignition coil and the PCM/ECM ground terminal and at the starter motor.
37. Install the air intake tube between the throttle body and the air filter housing.
38. Connect the breather tubes to the valve cover.
39. Connect the intake air temperature sensor connector.
40. Install the cooling system radiator and the engine cooling fans. Refer to *Section 1D, Engine Cooling*.



41. Connect the lower radiator hose to the coolant pipe.
42. Connect the upper radiator hose to the thermostat housing.
43. Connect the heater inlet hose to the cylinder head.
44. Connect the heater outlet hose to the coolant pipe.
45. Connect the coolant surge tank hose to the coolant pipe.
46. Connect the coolant hose to the throttle body.



47. Connect the throttle cable to the throttle body and the intake manifold bracket.
48. Install the fuel pump fuse.
49. Connect the negative battery cable.
50. Refill the engine crankcase with engine oil.
51. Refill the engine coolant system. Refer to *Section 1D, Engine Cooling*.
52. Bleed the power steering system. Refer to *Section 6A, Power Steering System*.
53. Refill the A/C refrigerant system, if equipped. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System*.
54. Install the hood. Refer to *Section 9R, Body Front End*.



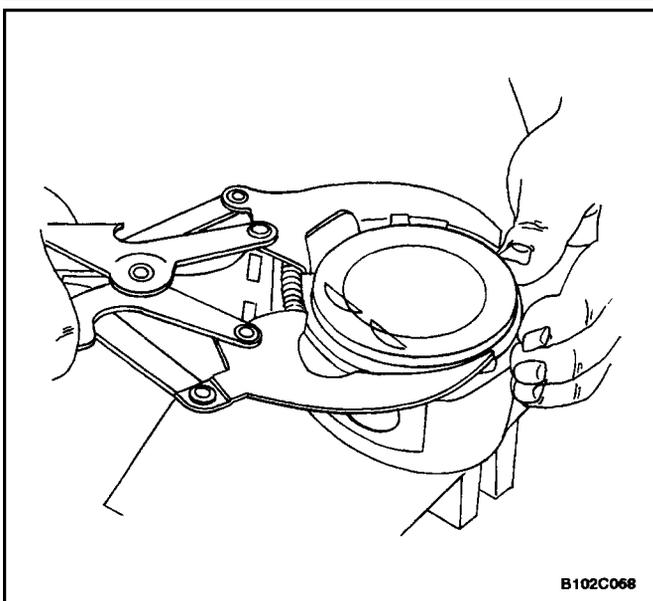
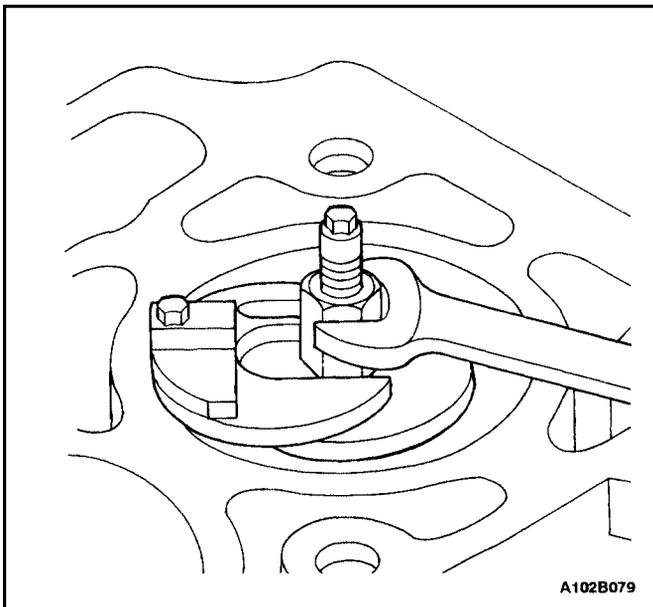
PISTONS AND RODS

Tools Required

KM-427 Piston Pin Service Set
KM-470-B Angular Torque Gauge

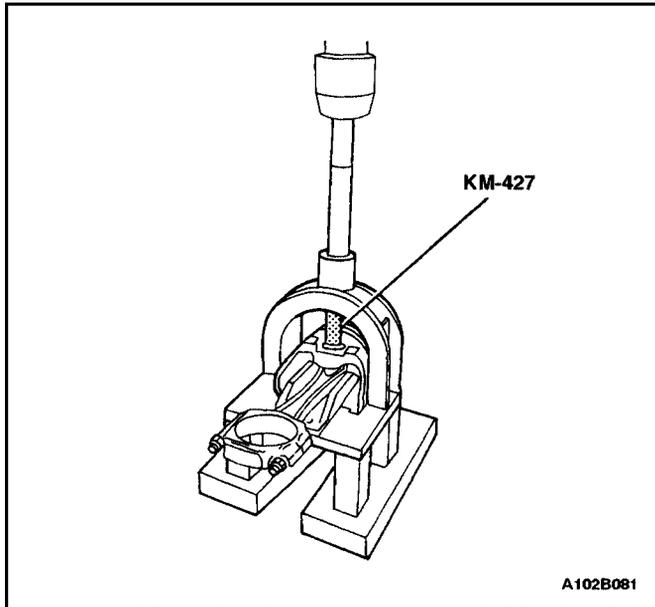
Removal Procedure

1. Remove the cylinder head with the intake manifold and exhaust manifold attached. Refer to "Cylinder Head and Gasket" in this section.
2. Remove the oil pan. Refer to "Oil Pan" in this section.
3. Remove the oil pump/pickup tube bolts.
4. Remove the oil pump/pickup tube.
5. Remove the engine block lower support and the splash shield bolts.
6. Remove the engine block lower support and the splash shield.
7. Move the piston to the bottom of the piston stroke.
8. Mark the connecting rod cap for position.
9. Remove the connecting rod cap bolts.
10. Remove the connecting rod cap and the lower connecting rod bearing.
11. Remove the upper piston connecting rod bearing.
12. Ridge ream the cylinder wall.

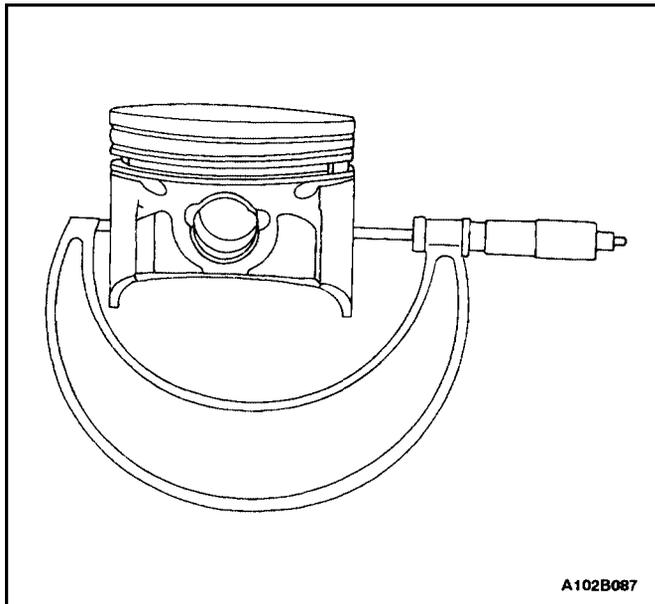


CAUTION : Use care when handling the piston. Worn piston rings are sharp and may cause injury.

13. Remove the piston.
14. Use a piston ring expander tool to expand the piston rings.
15. Remove the piston rings.

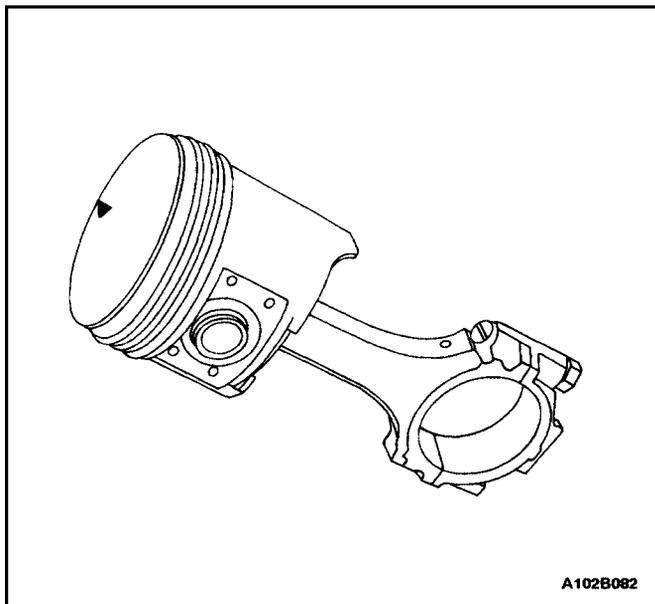


16. Remove the piston pin from the piston and connecting rod assembly using the piston pin service set KM-427.
17. Separate the piston from the connecting rod.

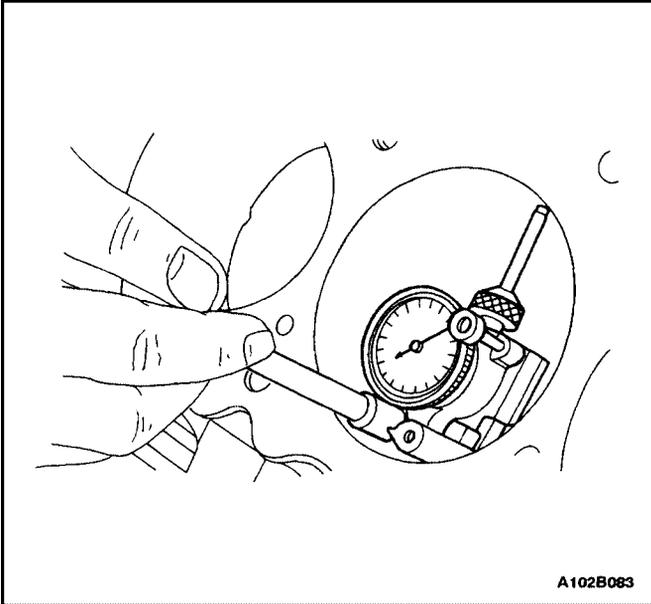


Inspection Procedure

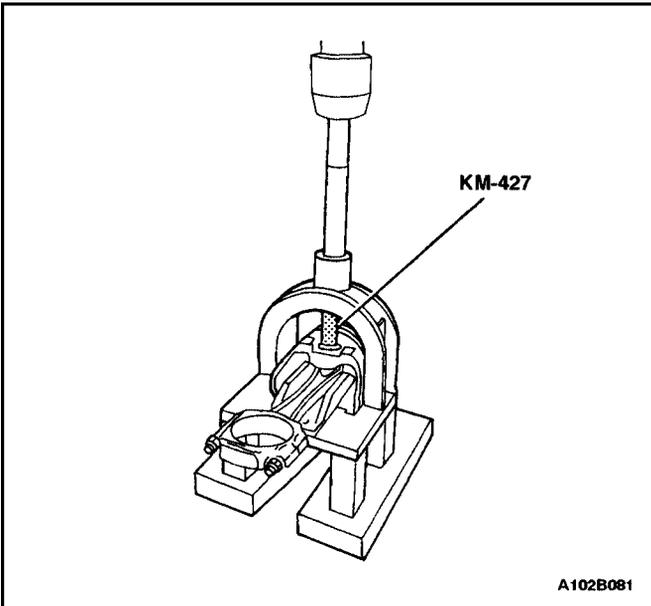
1. Inspect the connecting rod for bending or twisting. If the connecting rod is bent or twisted, replace the connecting rod.
2. Inspect the connecting rod bearings.
3. Inspect the connecting rod lower end for wear.
4. Inspect the connecting rod upper end for scoring.
5. Inspect the crankshaft rod bearing journal for wear. Refer to "Engine Specifications" in this section.
6. Inspect the piston for scoring, cracks, and wear.
7. Inspect the piston for taper using a micrometer.



8. Inspect the piston for fit to the connecting rod.

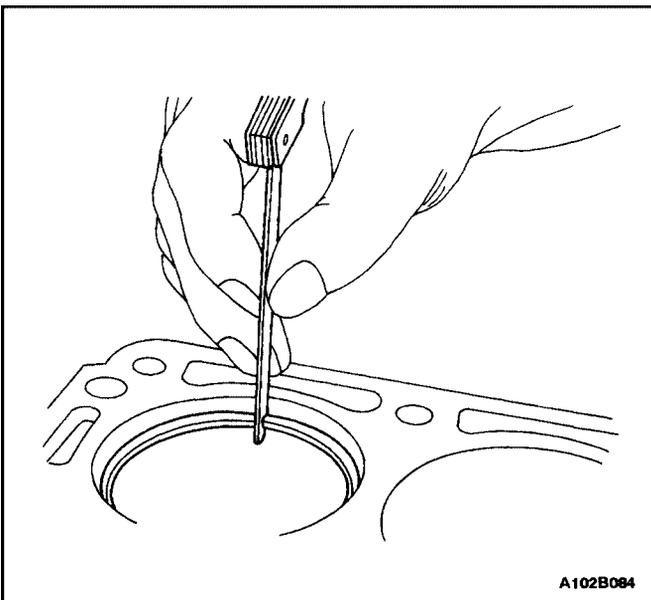


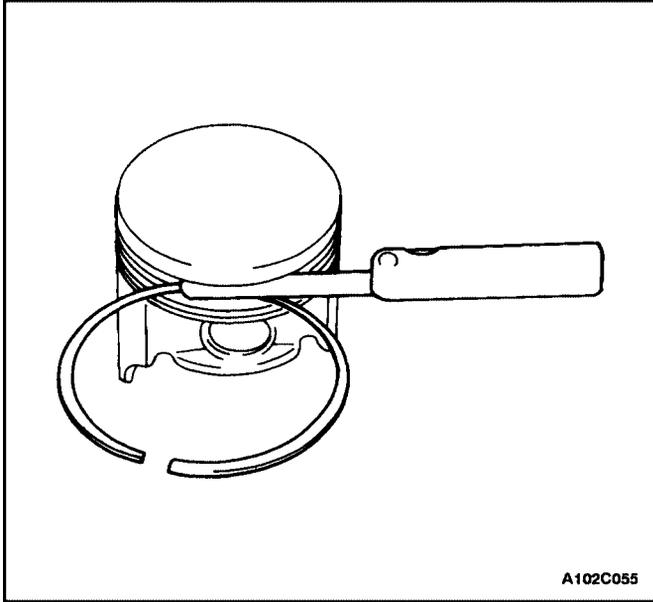
9. Inspect the engine block deck surface for flatness using a straight edge and a feeler gauge. Refer to "Engine Specifications" in this section.
10. Inspect the bearing bore for concentricity and alignment using a bore gauge. Refer to "Engine Specifications" in this section. If the bearing bore is beyond specifications, replace the engine block.
11. Inspect the engine block cylinder bore for wear, runout, ridging and taper using a bore gauge. Refer to "Engine Specifications" in this section.
12. Inspect the engine block cylinder bore for glazing. Lightly hone the cylinder bore as necessary.



Installation Procedure

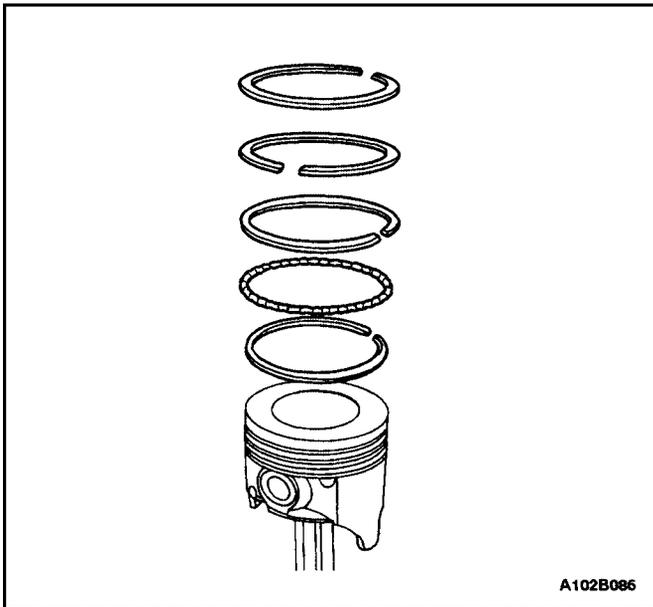
1. Align the notch on the piston and connecting rod so that the proper sides will be facing the front of the engine.
2. Install the piston pin guide through the piston and the connecting rod.
3. Coat the piston pin with clean oil.
4. Install the piston pin into the opposite side of the piston.
5. Install the piston pin into the piston and connecting rod assembly using the piston pin service set KM-427.
6. Select a set of new piston rings.
7. Measure the piston ring gap using a feeler gauge. Refer to "Engine Specifications" in this section.
8. Increase the piston ring gap by carefully filing off excess material if the piston ring gap is below specifications.





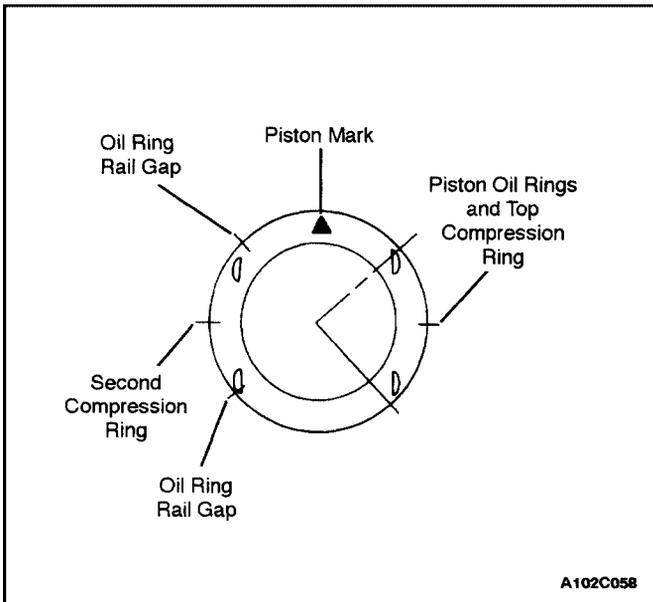
A102C055

9. Measure the piston ring side clearance using a feeler gauge. Refer to "Engine Specifications" in this section.
10. If the piston ring is too thick, try another piston ring.
11. If no piston ring can be found that fits to specifications, the piston ring may be ground to size with emery paper placed on a sheet of glass.



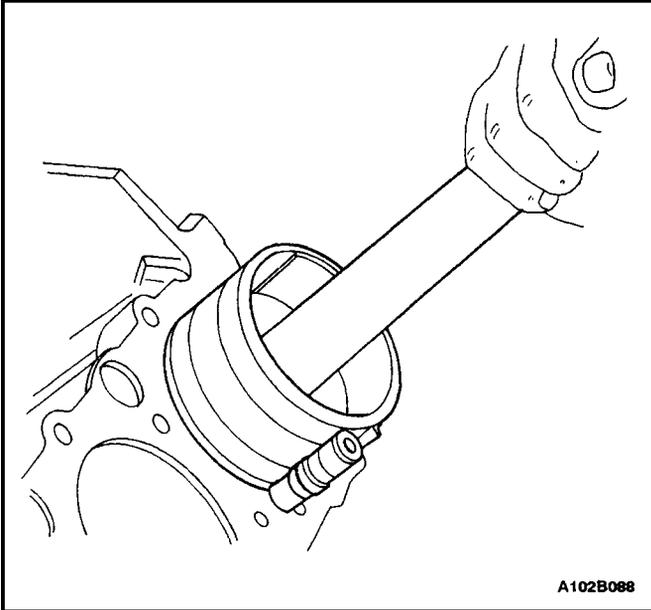
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12. Install a piston oil ring, the expander, and the second piston oil ring to the bottom ring groove of the piston.
13. Install the second compression ring to the middle ring groove of the piston.
14. Install the top compression ring to the top ring groove of the piston.

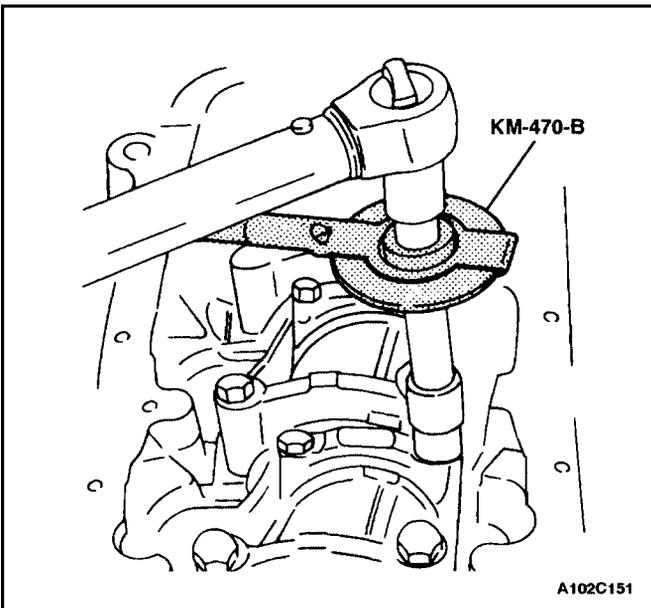


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15. Use a piston ring expander to install the piston rings. Do not expand the piston rings beyond the expansion necessary for installation.
16. Stagger the piston oil rings, the oil ring rail gaps, the second compression ring, and the top compression ring in relation to the notch on the top of the piston.



17. Lubricate the cylinder wall and the piston rings with clean engine oil.
18. Install the piston using a ring compressor and a wood handle. Guide the lower connecting rod end to prevent damaging the crankshaft journal.
19. Install the connecting rod cap and bearings. Refer to "Crankshaft Bearings and Connecting Rod Bearings – Gauging Plastic" in this section.



20. Install the connecting rod cap bolts.

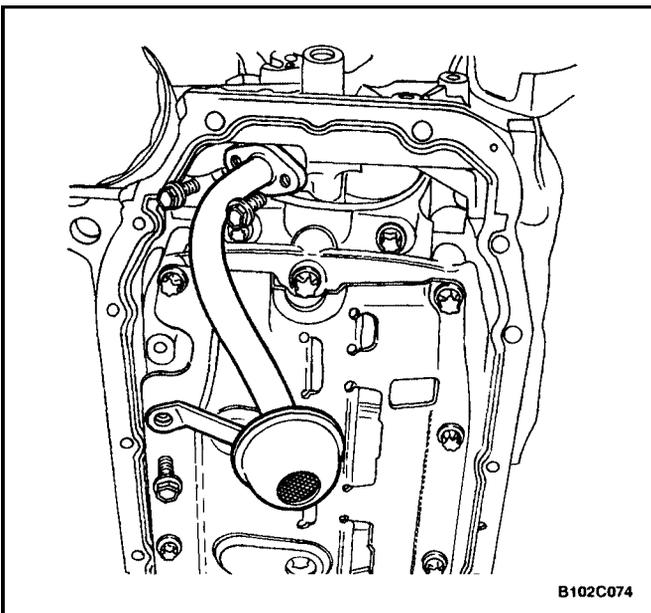
Tighten

Tighten the connecting rod cap bolts to 35 N•m (26 lb-ft). Using the angular torque gauge KM-470-B, tighten the bolts one turn of 45 degrees plus one turn of 15 degrees.

21. Install the engine block lower support bracket/splash shield bolts.

Tighten

Tighten the engine block lower support bracket/splash shield bolts to 35 N•m (26 lb-ft).



22. Install the oil pump/pick-up tube.
23. Install the oil pump/pick-up tube bolts.

Tighten

Tighten the oil pump/pick-up tube bolts to 10 N•m (89 lb-in).

24. Install the oil pan. Refer to "Oil Pan" in this section.
25. Install the cylinder head with the intake manifold and exhaust manifold attached. Refer to "Cylinder Head and Gasket" in this section.