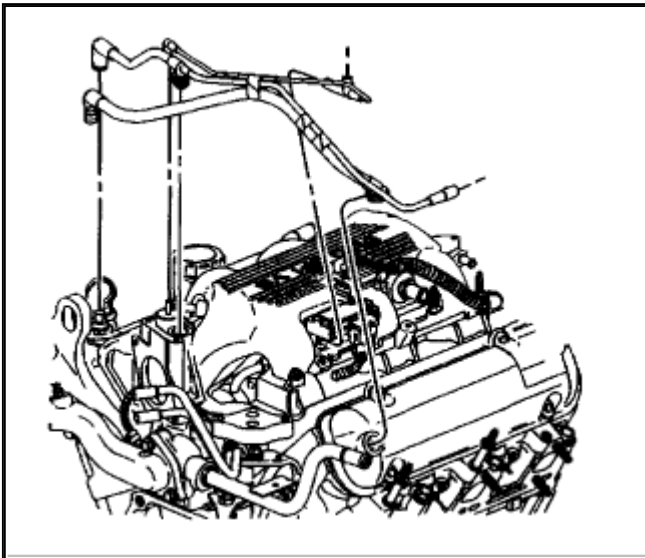


**2002 Chevrolet Impala V6-3.4L VIN E**

[Vehicle Level](#) → [Engine, Cooling and Exhaust](#) → [Engine](#) → [Intake Manifold](#) → [Service and Repair](#) → [Intake Manifold Replacement \(Upper\)](#) ←

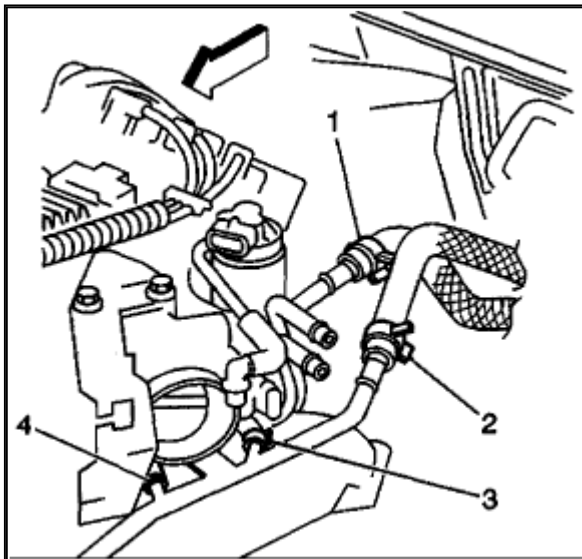
**Intake Manifold Replacement (Upper)**[Notes](#)**Intake Manifold Replacement - Upper****Removal Procedure**

1. Disconnect the negative battery cable.



2. Remove the vacuum hoses from the following:
  - Fuel pressure regulator
  - Evaporative Emissions (**EVAP**) canister purge valve
  - Manifold vacuum source
  - Brake booster
  - Heater and air conditioning source
3. Disconnect the electrical connectors from the following:
  - Exhaust gas recirculation (EGR) valve
  - Mass Air Flow (**MAP**) sensor

- Intake Air Temperature **(IAT)** sensor
  - Idle Air Control **(IAC)** valve
  - Throttle Position **(T/P)** sensor
  - Evaporative Emission **(EVAP)** canister purge valve
4. Remove the air cleaner intake duct.
  5. Drain the [cooling system](#).
  6. Remove the accelerator control and cruise control cables with bracket from the throttle body.
  7. Remove the left side spark plug wires from the [spark plugs](#).
  8. Remove the following wiring harnesses from the retainers:
    - [Camshaft](#) Position **(CMP)** sensor wiring harness
    - Left side spark plug wire harness
    - Engine wiring harness

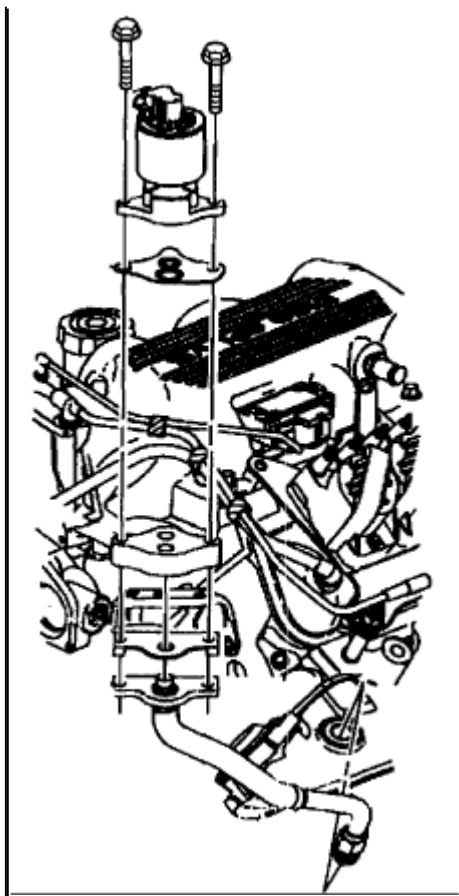


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9. Remove the [thermostat](#) bypass pipe coolant hoses (3,4) from the throttle body.
10. Remove the ignition coil bracket with the coils.
11. Remove the EVAP canister purge valve.
12. Remove the Manifold Absolute Pressure **(MAP)** sensor and the bracket.

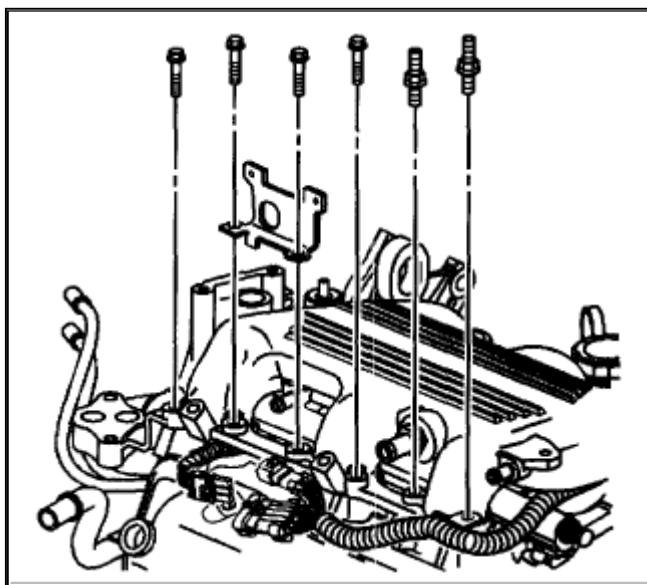




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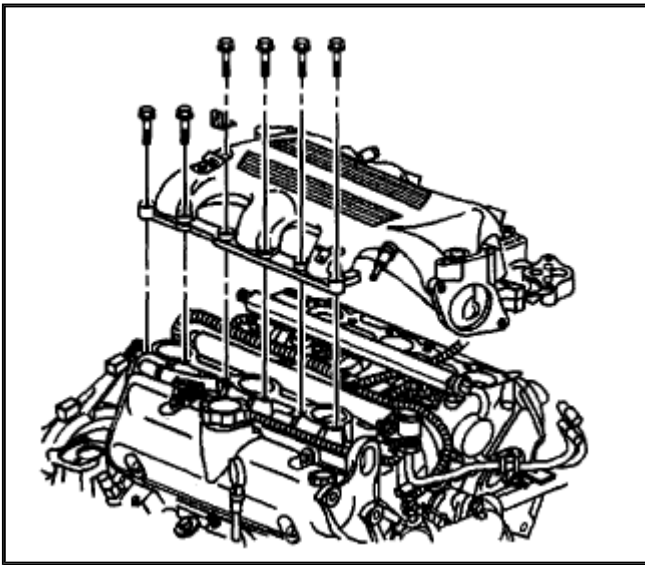
13. Remove the Exhaust Gas Recirculation (**EGR**) valve.



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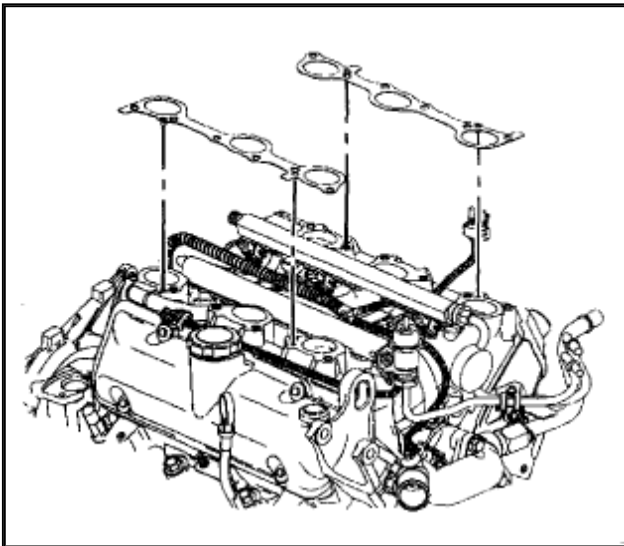
14. Remove the right upper intake manifold bolts and the studs.



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15. Remove the left upper intake manifold bolts.
16. Remove the upper intake manifold.

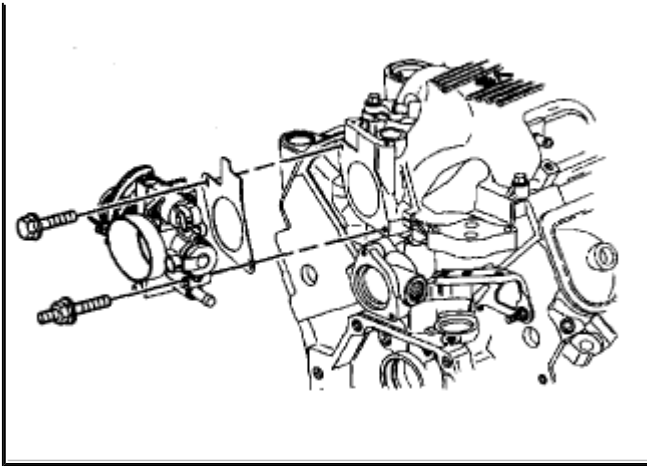


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17. Remove the upper intake manifold gasket.



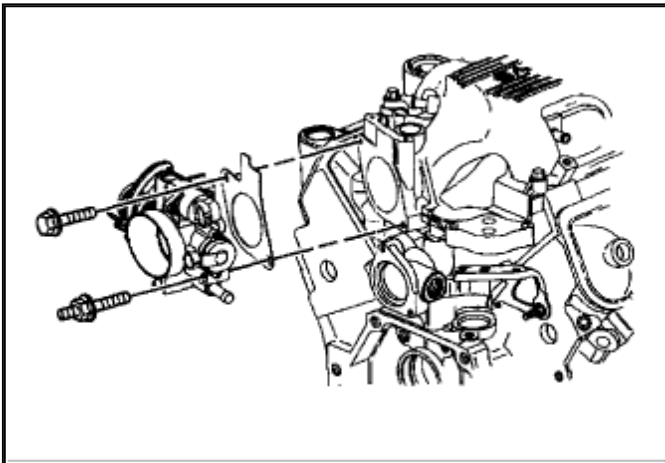


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18. If replacing the upper intake manifold, remove the throttle body.
19. Clean the upper intake gasket mating surfaces.

### Installation Procedure

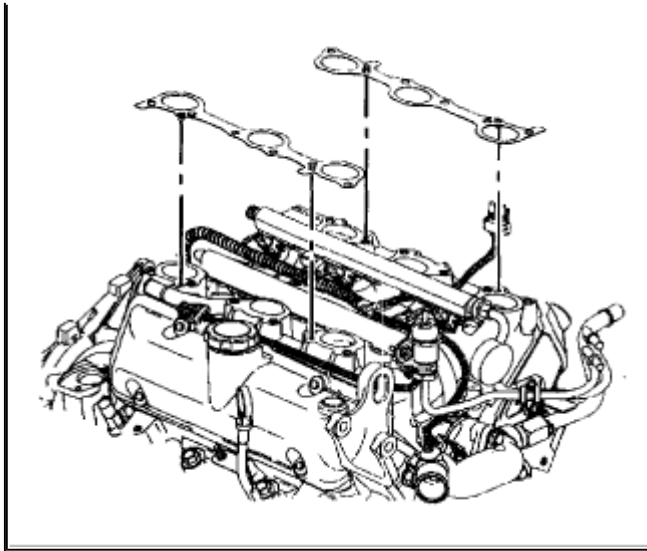


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1. If removed, install the throttle body.

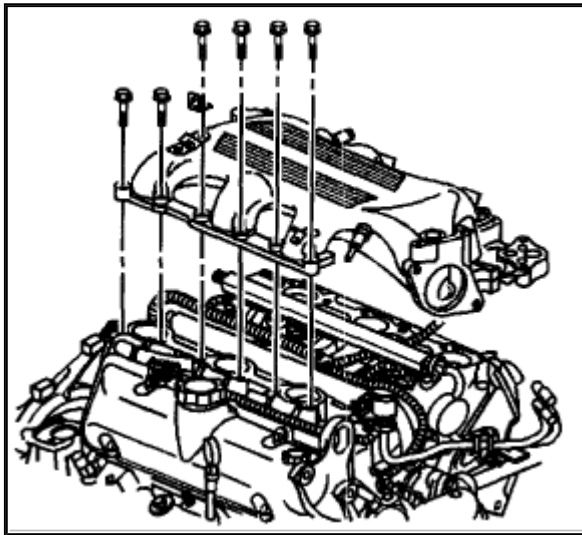




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2. Install the upper intake manifold gasket.

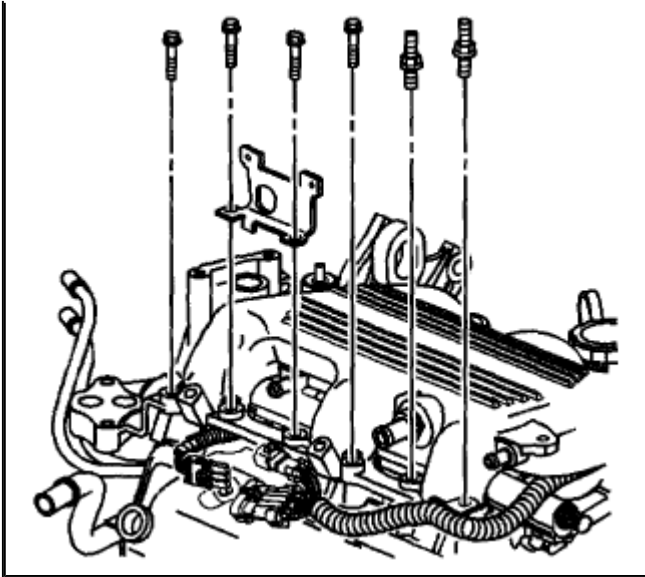


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- 3. Install the upper intake manifold.
- 4. Install the left upper intake manifold bolts. **Notice:** Refer to Fastener Notice in Service Precautions. [See: Service Precautions](#)

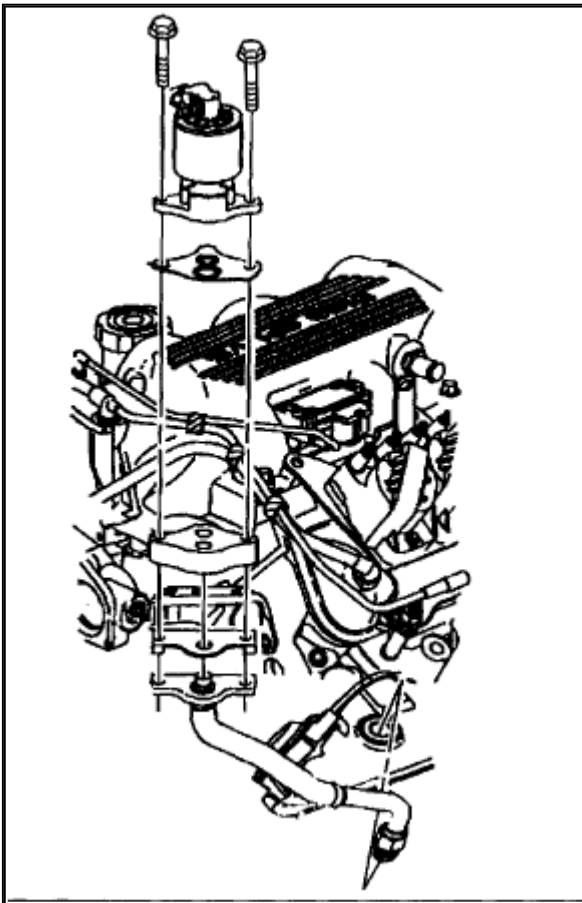




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5. Install the right upper intake manifold bolts and the studs. Tighten the bolts and the studs to **25 Nm (18ft. lbs.)**.

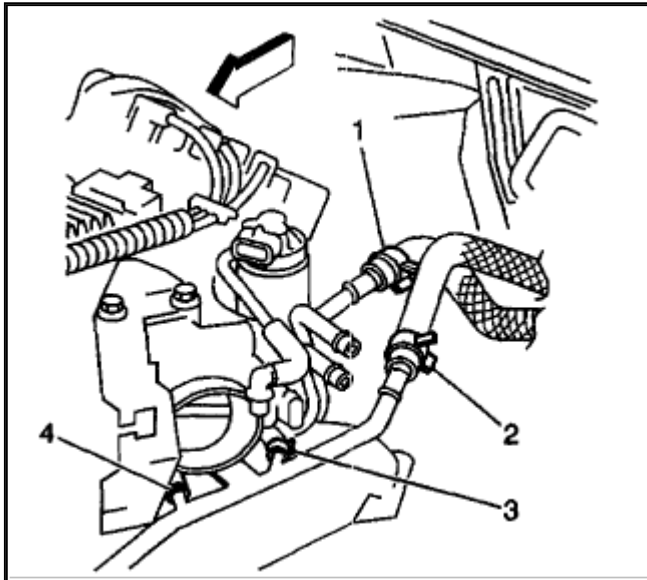


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6. Install the Exhaust Gas Recirculation (**EGR**) valve.
7. Install the Manifold Absolute Pressure (**MAP**) sensor bracket and the sensor.
8. Install the EVAP canister purge valve.
9. Install the ignition coil bracket with the coils.



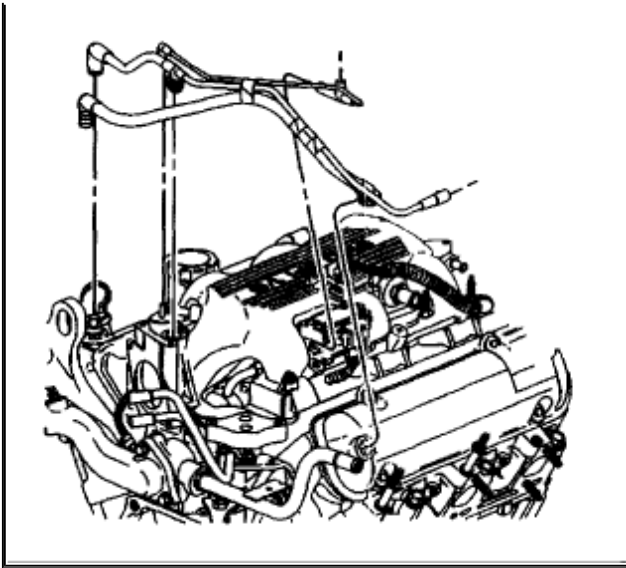
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10. Install the [thermostat](#) bypass pipe coolant hoses (3,4) to the throttle body.
11. Install the following wiring harnesses to the retainers:
  - Engine wiring harness
  - Left side spark plug wire harness
  - [Camshaft](#) Position (**CMP**) sensor wiring harness
12. Install the left side spark plug wires to the [spark plugs](#).
13. Install the accelerator control and cruise control cables with bracket to the throttle body.
14. Install the air cleaner intake duct.
15. Connect the electrical connectors to the following:
  - Evaporative Emission (**EVAP**) canister purge valve
  - Throttle Position (**T/P**) sensor
  - Idle Air Control (**IAC**) valve
  - Intake Air Temperature (**IAT**) sensor
  - Mass Air Flow (**MAF**) sensor
  - Exhaust Gas Recirculation (**EGR**) valve







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16. Install the vacuum hoses to the following:

- Heater and air conditioning source
- Brake booster
- Manifold vacuum source
- Evaporative Emissions (**EVAP**) canister purge valve
- Fuel pressure regulator

17. Connect the negative battery cable.

18. Fill the [cooling system](#).