

# 4.0L Top mount 1997-1999 TJ

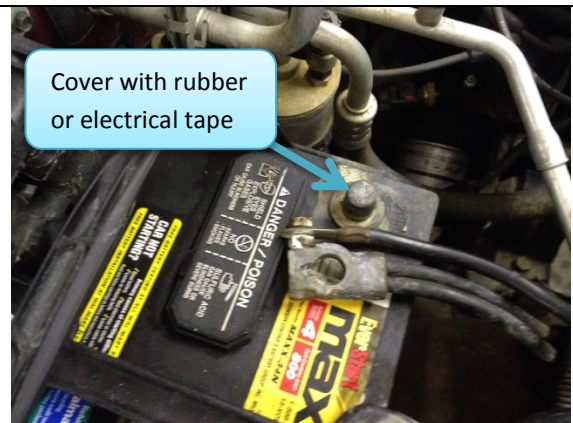
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## Preinstall

1. Fuel
  - 1.1. Be sure to run highest octane available at the pump! This is critical for a forced-induction vehicle. If most of the tank is full of lower octane fuel, postpone install until filled up with high octane fuel.
2. Tools needed
  - 2.1. Normal hand tools: Flat head screwdriver, 10, 12, 13, and 15mm sockets to remove the throttle body and power steering bolts.
  - 2.2. Fuel line disconnect tool to remove the connector on fuel line
  - 2.3. A 15mm wrench and socket to remove the belt on 1997 to 1999 Jeeps with the sliding tensioner. On 2000+, a 3/8" square male ratchet to unload the dynamic tensioner.
  - 2.4. All the Boosted Technologies parts use stainless allen head socket capscrews. You will need 4 and 5mm sockets. 'T'-handles are nice.
  - 2.5. Rags to clean gasket surfaces, tape to cover intake manifold inlet from dropped parts.
  - 2.6. Safety glasses to keep fuel out of your eyes when you disconnect the fuel line. It is under 50 PSI!

## Stock Removal

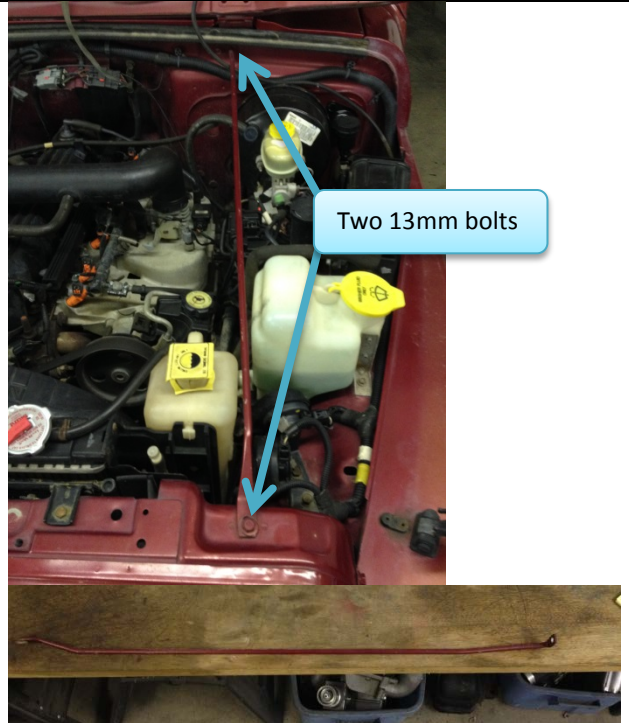
1. Disconnect battery and cover terminal with non-conductive material



2. Remove radiator support rod and coolant and overflow hose

2.1. Remove support rod on driver side

2.1.1. 2 - Two 13mm bolts one on firewall one on radiator

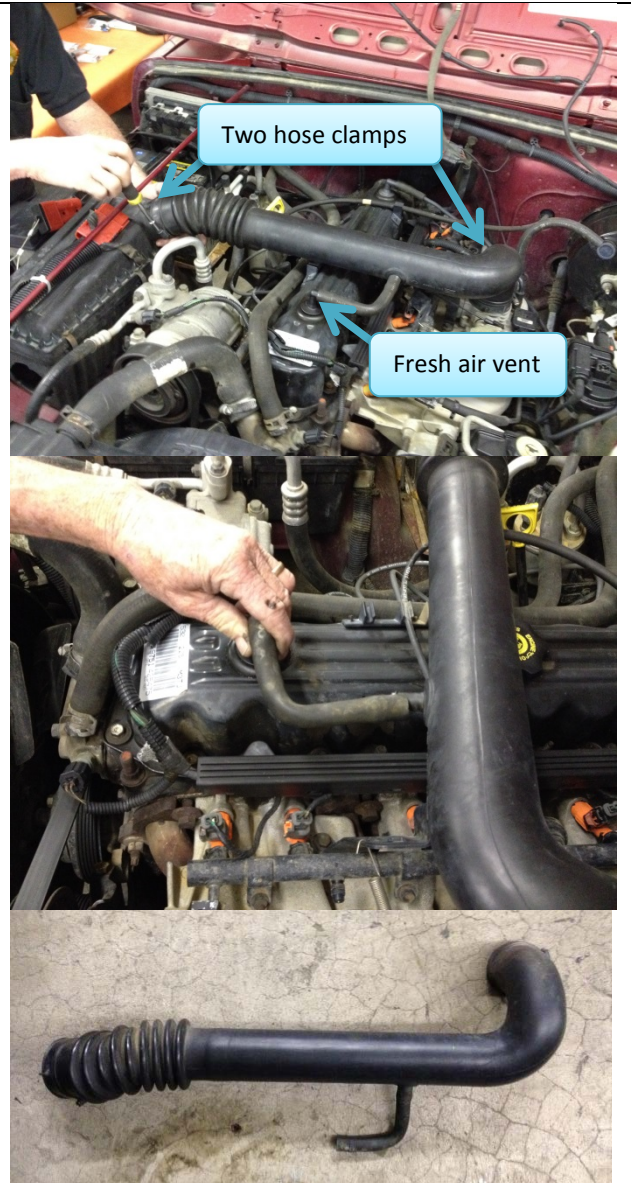


2.2. Remove coolant overflow

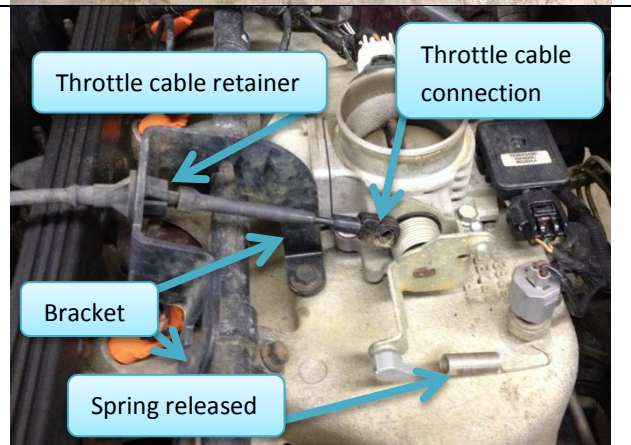
2.2.1. Disconnect overflow hose from driver side of radiator



3. Remove air intake tube
  - 3.1. Loosen two hose clamps
  - 3.2. Disconnect fresh air vent hose on top of engine



4. Disconnect throttle cable and return spring
  - 4.1. Disconnect cable(s) from throttle body
    - 4.1.1. Throttle cable uses a ball connection
    - 4.1.2. Pop off connector
    - 4.1.3. Other cables slide off
  - 4.2. Disconnect spring from bracket
  - 4.3. Remove throttle cable bracket
  - 4.4. Remove cable retainers from bracket
  - 4.5. Lay cables out of way towards passenger side







Throttle cable bracket  
after removal



5. Disconnect wires connectors and hoses from throttle body

5.1. Disconnect crank case vent tube from engine and throttle body



6. Remove throttle body

6.1. Loosen four bolts

6.2. Remove throttle body and gasket

6.3. Clean throttle body mount with brake cleaner

6.4. Tape over hole in mount to prevent debris or bolts falling in







6.5. Disconnect all connectors from throttle body and intake manifold

6.5.1. Three on throttle body

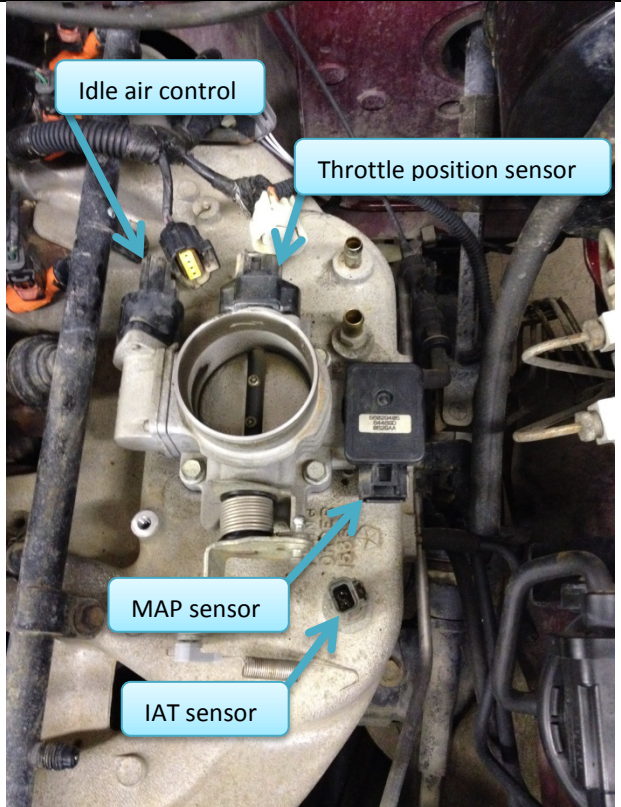
6.5.1.1. Idle air control

6.5.1.2. Throttle position sensor

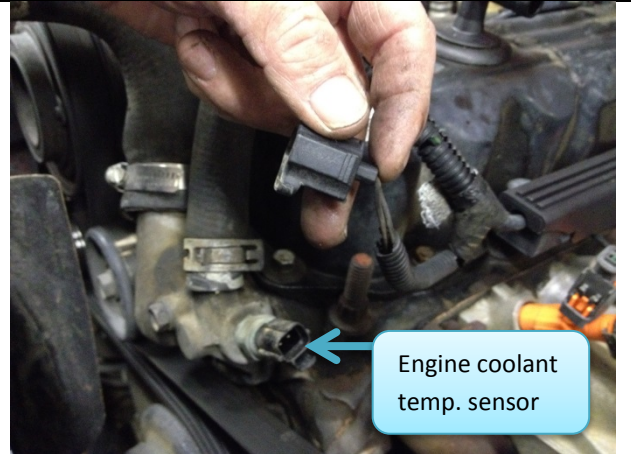
6.5.1.3. Manifold Absolute Pressure (MAP) sensor

6.5.2. One on manifold

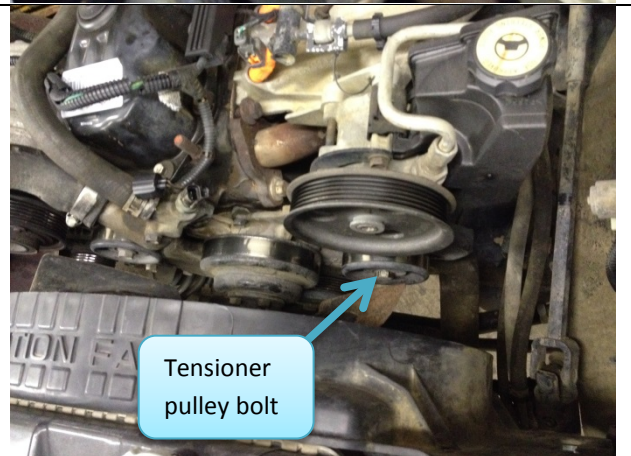
6.5.2.1. Inlet air temperature (IAT) sensor



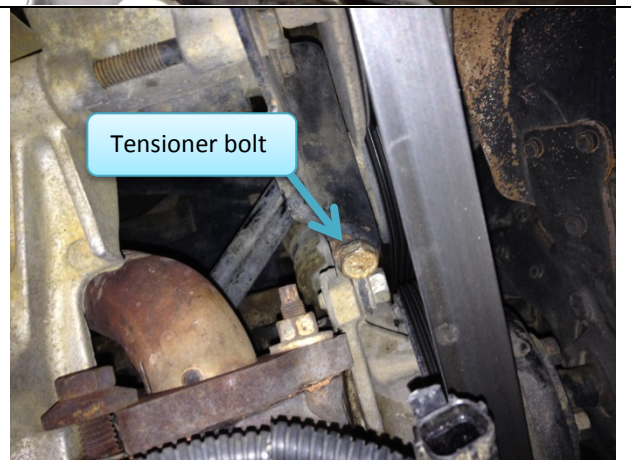
- 7. Remove serpentine belt
  - 7.1. Disconnect engine coolant temperature sensor from front of engine
    - 7.1.1. Prevents accidental damage



- 7.2. Loosen tensioner pulley bolt (1997-1999)



- 7.3. Loosen belt tensioner till belt can slide off tensioner pulley

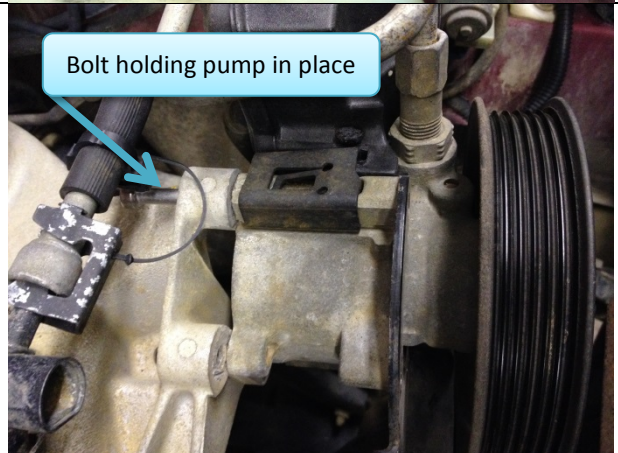




8. Remove power steering pump
  - 8.1. Remove three bolts from pump
  - 8.2. Keep pump lines attached
  - 8.3. Put pump in place and hold with one bolt to hold it out of the way
  - 8.4. Clean and lubricate bolts with pb blaster or a wire brush



- 8.5. Use a bolt (stainless steel on left side of photo) inserted in the reverse direction to hold pump in place

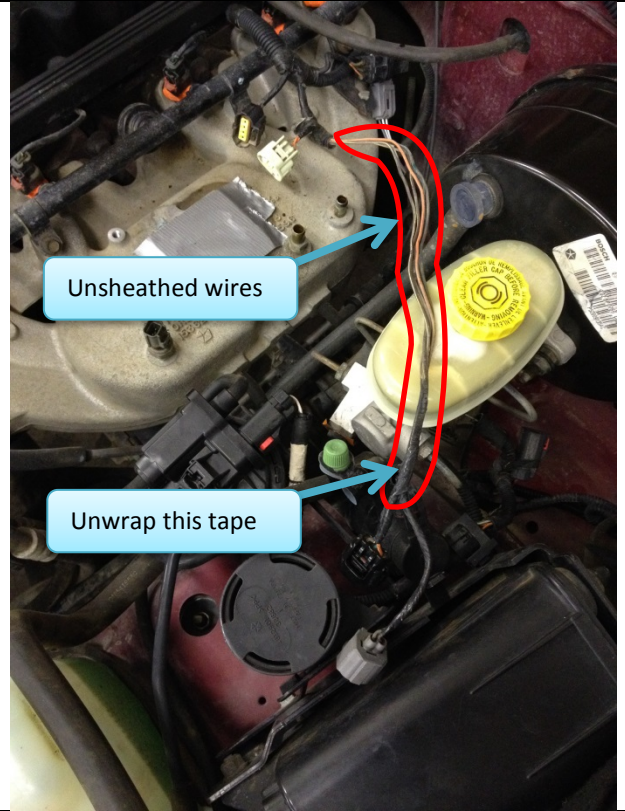


9. Unbundle loom containing IAT sensor wires and MAP sensor wires to allow relocation (2000-2004)
  - 9.1. Peel back sheathing from wires
  - 9.2. Peel off electrical tape from wires





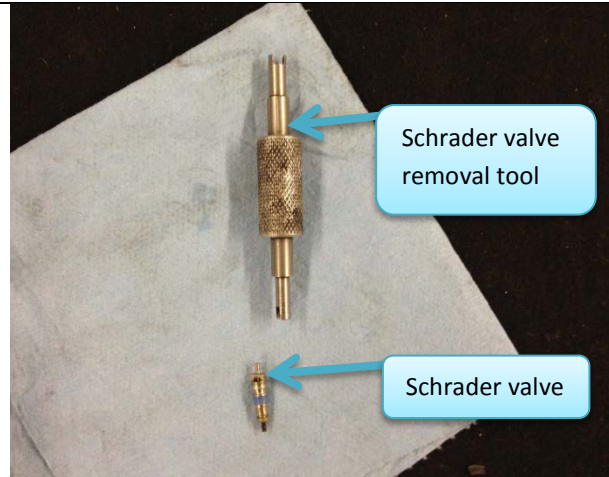
9.3. The wires will be re-taped and sheathed in step 25 (2000-2004)



10. Remove Schrader valve from fuel rail port  
10.1. Remove cap from rail (1997-1999)



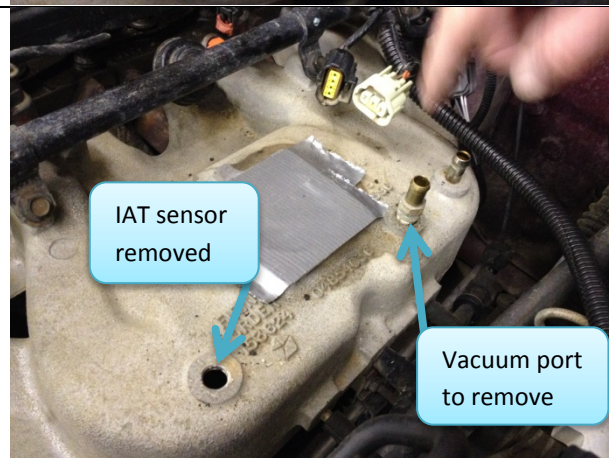
- 10.2. Remove valve with Schrader valve removal tool
- 10.3. This is very important, if this step is missed fuel will not reach 7<sup>th</sup> fuel injector



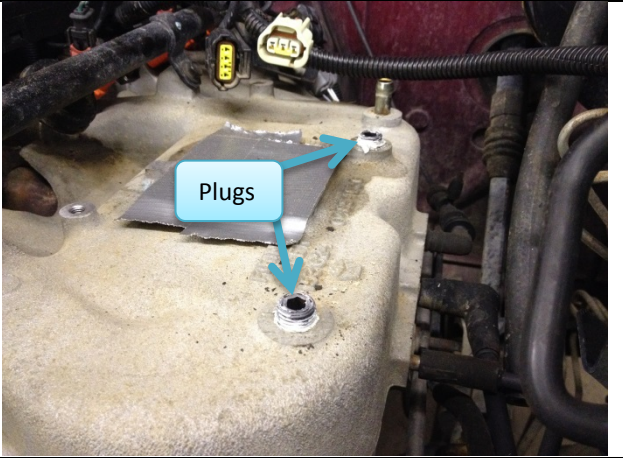
- 11. Remove IAT sensor and vacuum port from intake manifold (2000-2004)
  - 11.1. Unscrew sensor from manifold
    - 11.1.1. Screw in plug with teflon tape or pipe dope



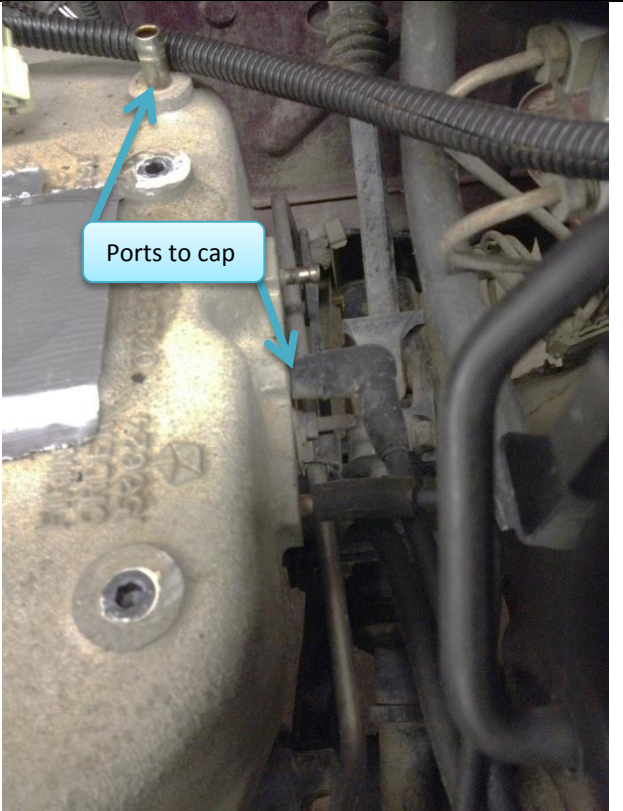
- 11.2. Unscrew large vacuum port next to throttle body port on manifold



11.2.1. Screw in plugs with teflon tape or pipe dope on threads



12. Disconnect vacuum lines and cap ports on intake manifold  
12.1. Slip off hoses and lines from ports  
12.1.1. Brake booster, heater AC and EVAP  
12.2. Place caps with clamps over specific ports  
12.2.1. These ports experience boost and need clamps to remain capped  
12.2.2. Cap large port in middle side of manifold



12.2.3. Cap large port on rear top of manifold (2000-2004)



13. Check spark plugs and gaps  
13.1. Check spark plugs condition and replace if needed  
13.2. Spark plugs should be gapped at 0.030 in.

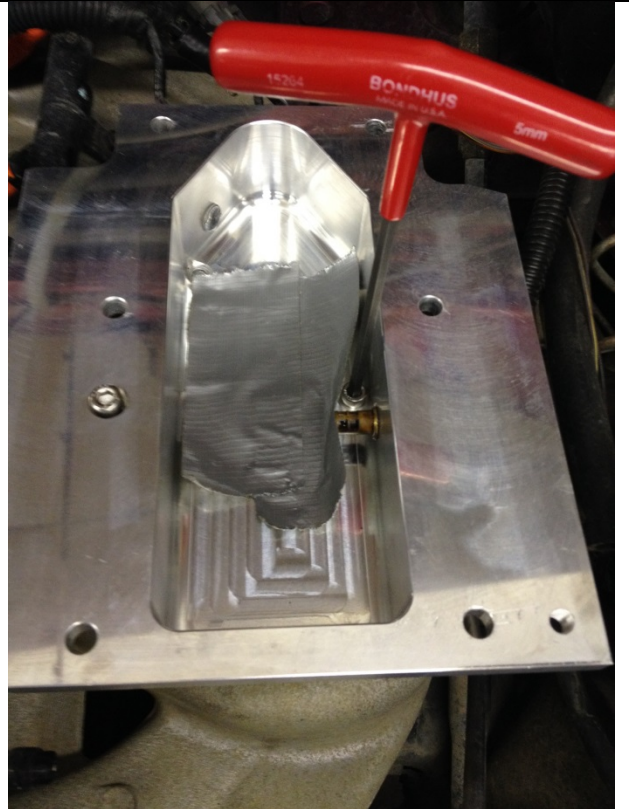




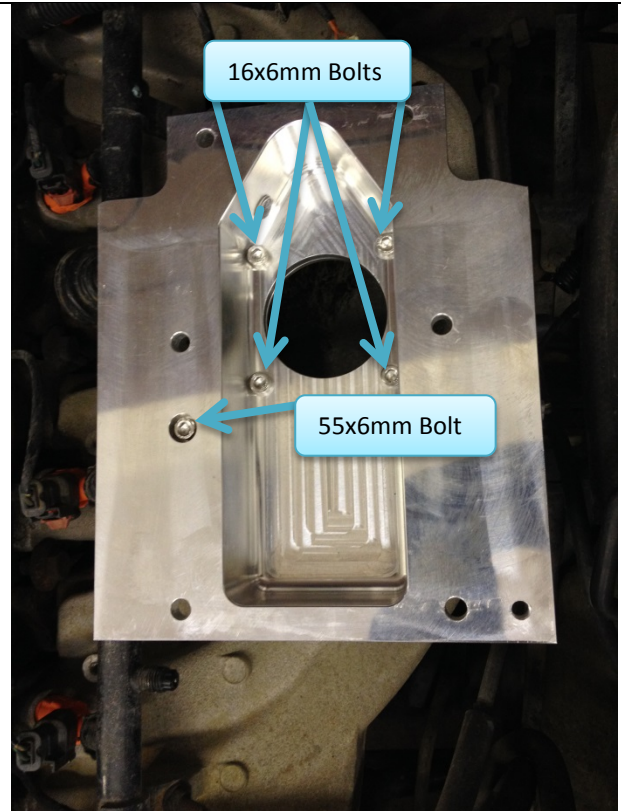
## Installation

### 14. Install intake tub

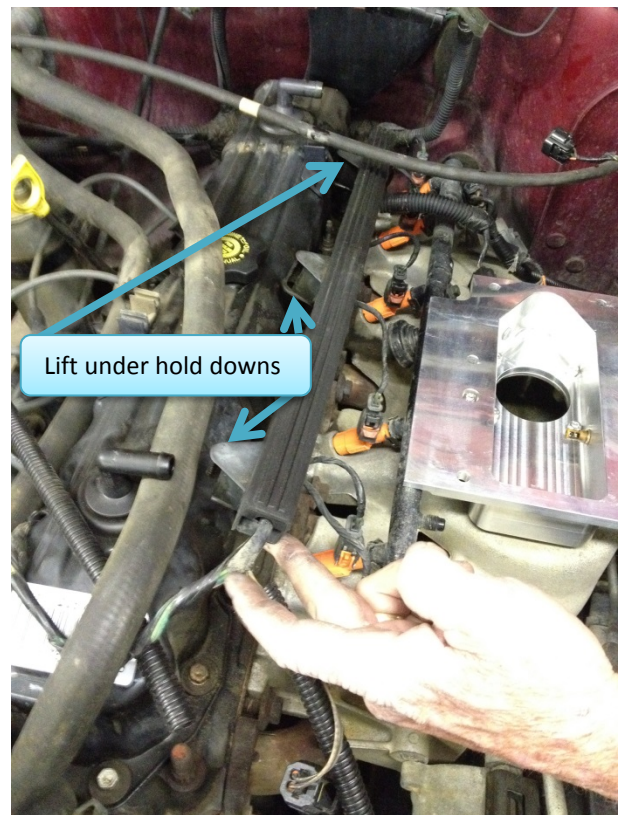
- 14.1. Remove tape over intake manifold hole
- 14.2. Place intake tub over intake adapter hole
- 14.3. Put tape over hole in tub to prevent bolts falling in
- 14.4. Tighten in a crisscross pattern four 16x6mm bolts into bottom of tub
  - 14.4.1. Torque to 10N-m/90in. Lbs.
- 14.5. Tighten one 55x6mm bolt through top of plate
  - 14.5.1. Torque to 10N-m/90in. Lbs.



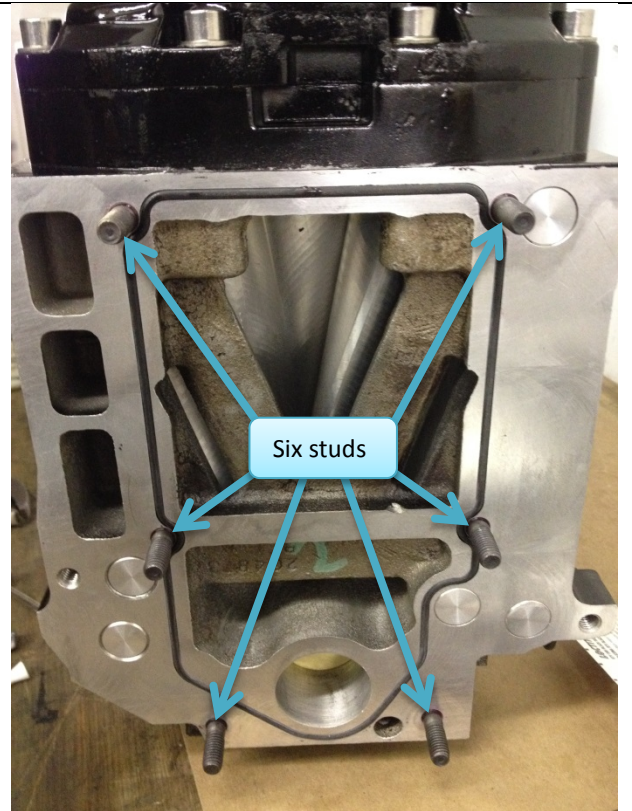
14.6. Remove tape over hole



- 15. Lift up plastic wire loom chase
  - 15.1. From front of vehicle use pry bar under hold downs to lift up
  - 15.2. This eases supercharger installation in step 18



16. Install studs on bottom of supercharger
  - 16.1. Put a dab of Loctite on short side of stud threads
  - 16.2. Thread short side of studs into supercharger until they stop turning
  - 16.3. Wipe off excess Loctite around studs



17. Install bypass valve on supercharger before installation
  - 17.1. Insert actuator rod into slotted bypass valve shaft
    - 17.1.1. Angle bypass valve forward to insert then rotate 90° clock wise to align with two bolt holes
  - 17.2. Loosely tighten two bolts and washers
    - 17.2.1. two 8x20mm bolts
  - 17.3. Position bypass valve so that it is as far back and upright as possible while maintaining pressure on flipper
    - 17.3.1. Ensure pressure is exerted on bypass valve butterfly shaft holding it down on bump stop
    - 17.3.2. Tighten two bolts tightly

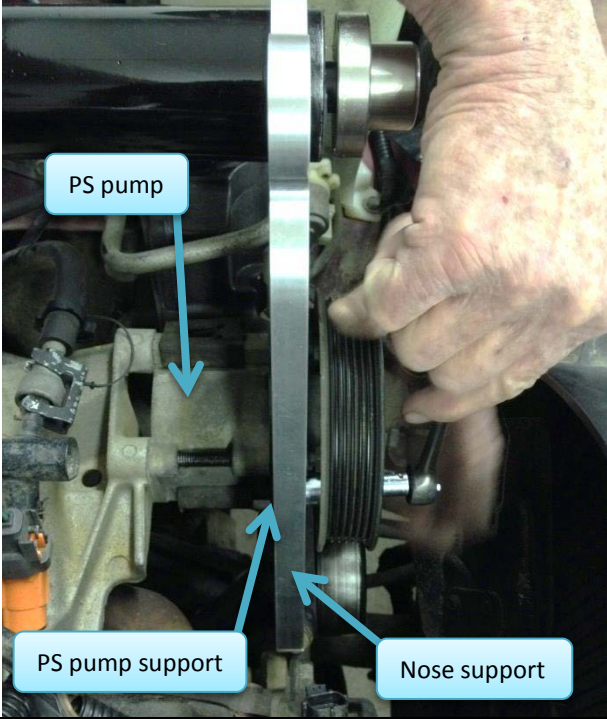


18. Install supercharger over intake tub  
18.1. Carefully align studs over holes and set down



- 18.2. Install nuts over studs from bottom loosely  
18.2.1. These will be tightened later to allow movement when installing nose support  
18.2.2. Use a small ratchet with 13mm socket for easiest access



<p>19. Install supercharger nose support</p> <p>19.1. Put vaseline on nose support O-ring</p> <p>19.2. Slide nose support over supercharger nose</p> <p>19.3. Slide one power steering pump bolt through nose support -&gt; power steering pump support -&gt; power steering pump while aligning all holes in parts and tighten loosely</p> <p>19.4. Remove bolt inserted into rear of power steering pump in step 8.5</p> <p>19.5. Slide last two power steering pump bolts in and tighten lightly</p> <p>19.6. Shift supercharger and nose support around until all parts are square and aligned with no binding</p>	
<p>20. Tighten nuts and bolts on supercharger and nose support well</p> <p>20.1. Tighten nuts under supercharger in a crisscross pattern snugly then tightly</p> <p>20.2. Tighten bolts on power steering pump tightly</p>	
<p>21. Install supercharger pulley</p> <p>21.1. Tighten four bolts tightly in a crisscross pattern</p>	
<p>22. Prepare throttle body for reinstallation</p> <p>22.1. Clean inside throttle body with brake cleaner and a lint free cloth</p> <p>22.2. Remove MAP sensor from throttle body</p> <p>22.2.1. Remove two bolts and remove 1/8 in. 90° vacuum hose connecting throttle body and MAP sensor</p> <p>22.2.2. Place provided 1/8in. plug over newly exposed port on throttle body</p> <p>22.2.3. Slide provided MAP sensor hose onto port under sensor (other end attached in step 28.6)</p> <p>22.2.4. Reattach MAP sensor to throttle body in original orientation</p>	

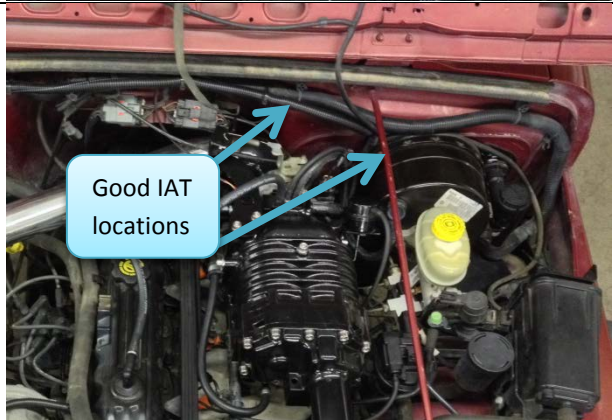
23. Install throttle body

- 23.1. Reconnect wire connectors to throttle body
  - 23.1.1. Throttle position sensor, Idle air control and MAP sensor connectors
- 23.2. Install throttle body and gasket to rear of supercharger with throttle cable bracket facing up
- 23.3. Tighten loosely four stock bolts
- 23.4. Tighten bolts tightly



24. Install IAT sensor

- 24.1. Insert the IAT into a piece of rubber hose the diameter of the threads which is about 3 in. long
  - 24.1.1. Make sure the threads are fully covered by the hose
- 24.2. The IAT is ideally located where:
  - 24.2.1. The wire connector reaches
  - 24.2.2. The sensor will not get too hot while the engine is running (<math><100^{\circ}\text{F}</math>)
  - 24.2.3. Water and dirt will not get on the sensor or inside the rubber hose covering the sensor
  - 24.2.4. Use two zip ties to secure the IAT sensor
  - 24.2.5. Two good location are the bottom of the wire loom behind the throttle body or on the support rod with the tube facing the firewall



25. Rewrap IAT and MAP wires separately

- 25.1. Determine length of wires that reach IAT sensor and MAP sensor on throttle body without tension
- 25.2. Wrap electrical tape around area where wires intersect creating a "V"
- 25.3. Disconnect wires from connectors
- 25.4. Wrap sheathing around wires and electrical tape at ends of sheathing
- 25.5. Use zip ties over ends of sheathing to keep sheathing on wires
- 25.6. Reconnect wires to IAT and MAP sensors





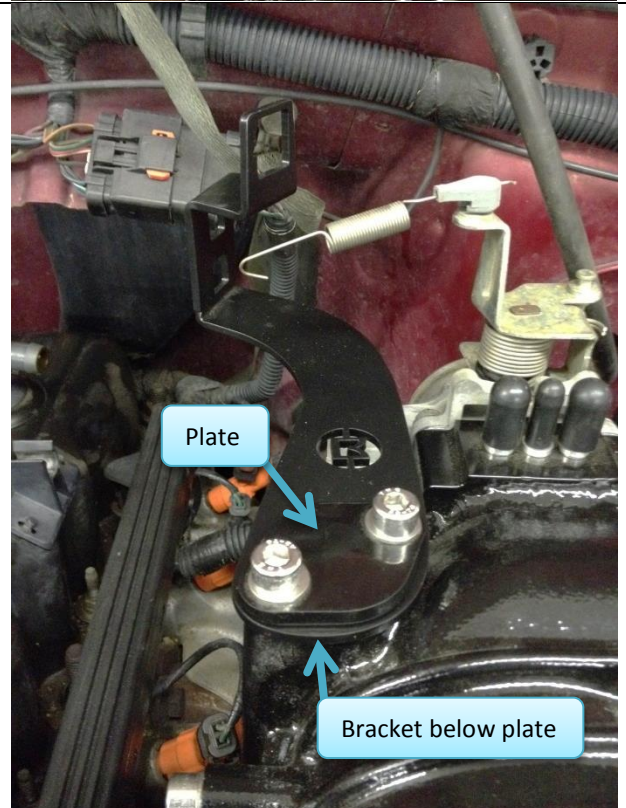
26. Install throttle cable bracket

26.1. Remove bolts, washers and plate from top of supercharger on passenger side

26.2. Apply RTV to opening



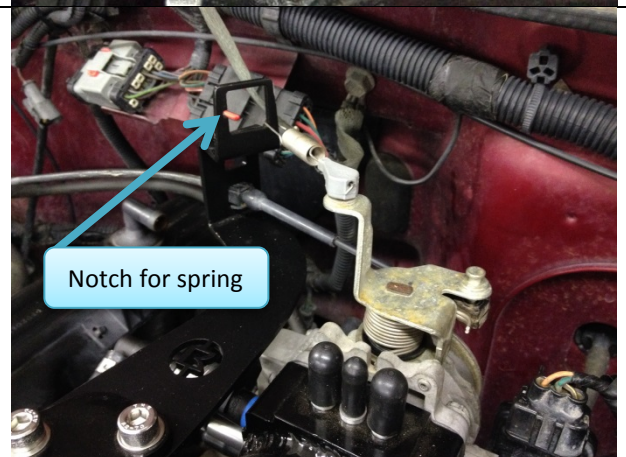
26.3. Install throttle bracket on bottom with plate then washers and bolts above

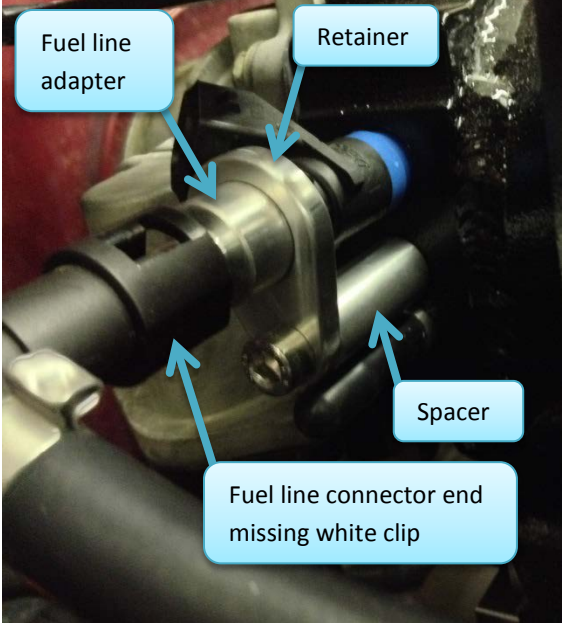


26.4. Install throttle cable(s) and return spring

26.4.1. Return spring goes in notch towards front of vehicle on throttle bracket

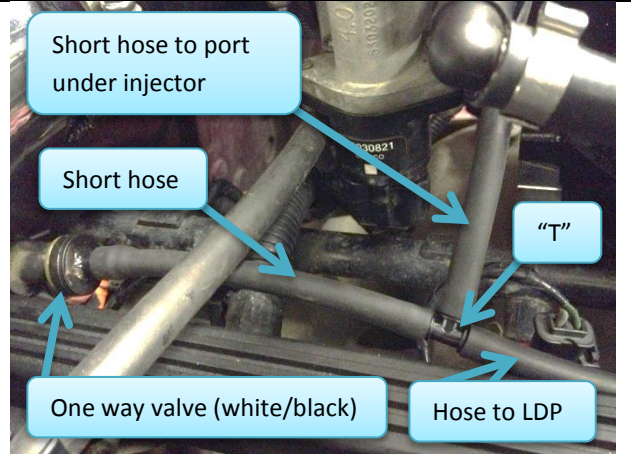
26.4.2. You may have to adjust the transmission cable for the correct shift points.



<p>27. Install 7<sup>th</sup> fuel injector on passenger side of supercharger</p> <p>27.1. Lubricate O-rings on injector with vaseline</p> <p>27.2. Place fuel line adapter over top of fuel injector</p> <p>27.3. Insert fuel injector into port on supercharger with wire connection angled back and up towards firewall</p> <p>27.4. Slide retainer with bolt and spacer over adapter</p> <p>27.5. Tighten bolt tightly while ensuring injector and retainer remain parallel and are not tweaked</p>	 <p>Fuel line adapter</p> <p>Retainer</p> <p>Spacer</p> <p>Fuel line connector end missing white clip</p>
<p>28. Install 7<sup>th</sup> fuel injector fuel line</p> <p>28.1. Attach end with clip over adapter on fuel injector until both side of clip click</p> <p>28.1.1. Ensure white clip is inserted in fuel line connector end</p> <p>28.1.2. Gently pull on line to ensure it is securely attached and snapped on</p> <p>28.2. Attach end with nut over threaded port at front of fuel rail and tighten well</p> <p>28.2.1. Line should not rotate when nut is properly tightened</p>	
<p>29. Install vacuum lines</p> <p>29.1. Brake booster</p> <p>29.1.1. Attach provided brake booster hose to large port on side of supercharger flange and brake booster swivel port</p> <p>29.2. Boost out to SS box</p> <p>29.2.1. Attach provided boost out to SS box hose to bare port on rear of intake manifold</p> <p>29.2.2. Lay excess in area under brake booster for later connection to SS box</p>	

29.3. Heater AC and Leak Detection Pump(LDP)

- 29.3.1. Remove stock end keeping one way valve white/black valve attached
- 29.3.2. Attach short side of provided "T" hose to end
- 29.3.3. Attach 2<sup>nd</sup> short side to port under 7<sup>th</sup> fuel injector

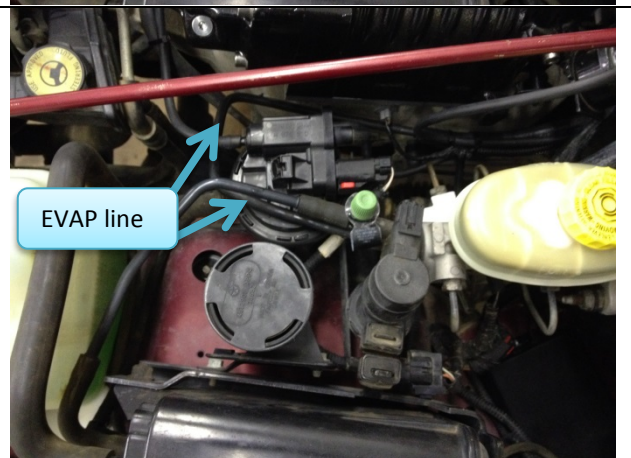


- 29.3.4. Attach long end to LDP
- 29.3.4.1. Remove line on front of LDP
- 29.3.4.2. Attach hose to port



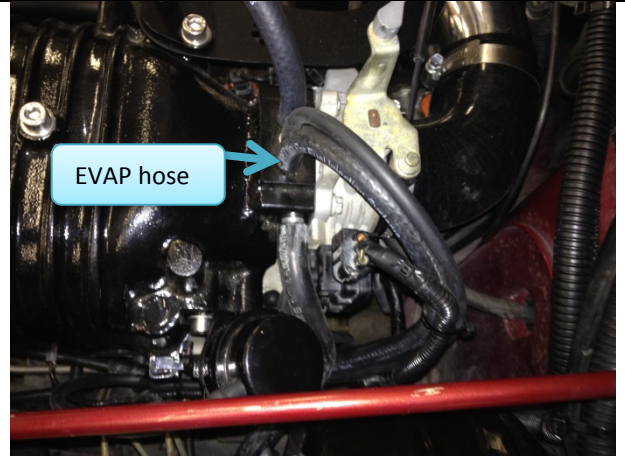
29.4. EVAP

- 29.4.1. Remove stock end from plastic line
- 29.4.2. Attach provided hose to plastic tube





29.4.3. Attach other end to large port on top driver side of supercharger



29.5. Bypass valve

29.5.1. Attach hose to front (upper) port of bypass valve

29.5.2. Attach other end of hose to port on driver side of intake tub



29.6. MAP sensor

29.6.1. Attach end to port on front side of intake manifold

29.6.2. MAP sensor must see boost(post supercharger) for proper engine function

29.6.3. MAP sensor needs a dedicated line to boost port

30. Install intake elbow and tube

30.1. Install elbow

30.1.1. Check fit see if elbow clears firewall

30.1.2. If elbow hits firewall cut off some of straight section

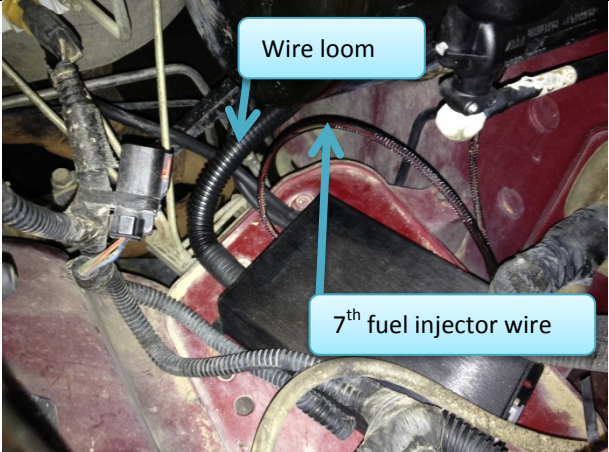
30.1.2.1. Determine how much needs to be cut off to fit

30.1.2.2. Tighten provided hose clamp around elbow to create a straight edge exposing length to remove

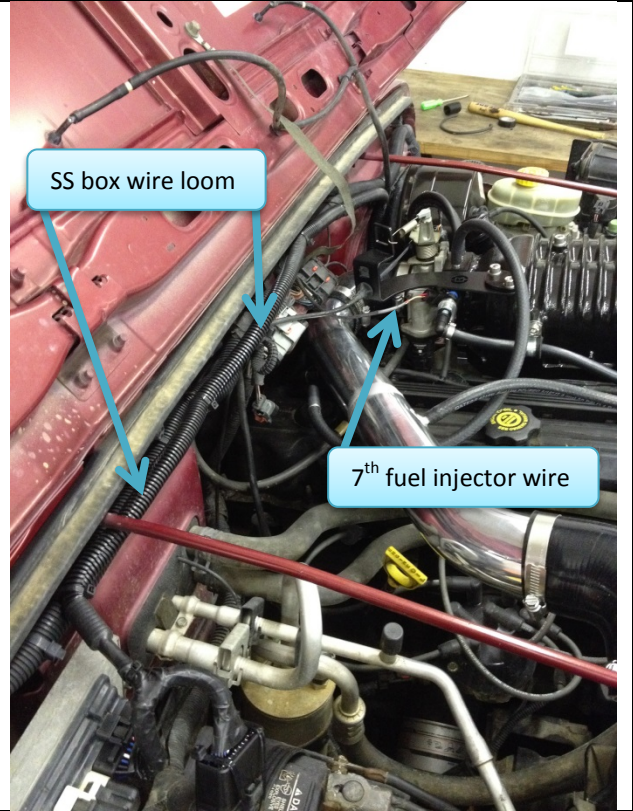
30.1.2.3. Use box cutter to cut around hose clamp

30.1.2.4. Slide two hose clamps over elbow and slide over

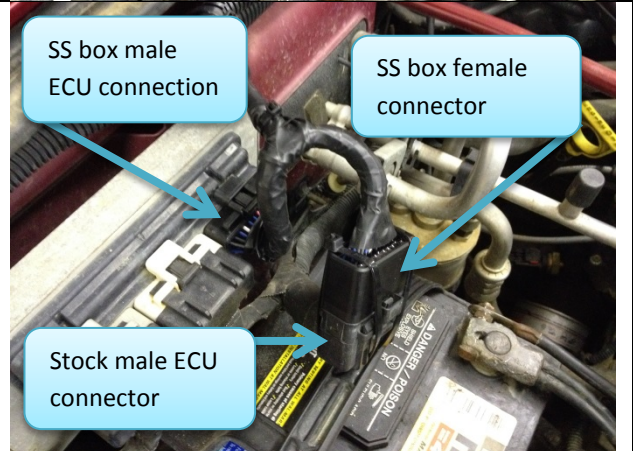


<p style="text-align: center;">throttle body</p>	
<p>30.2. Install intake tube</p> <p>30.2.1. Slide one end of tube into elbow on throttle body</p> <p>30.2.2. Attach 2<sup>nd</sup> elbow with two hose clamps over end of intake tube and air box port</p> <p>30.2.3. Tighten all four hose clamps well</p>	
<p>31. Install crankcase hoses</p> <p>31.1. The aluminum plugs and O-Rings are different for each hose and are not interchangeable</p> <p>31.2. Install PCV hose</p> <p>31.2.1. Insert hose end with aluminum plug into plastic vent on top rear of engine</p> <p>31.2.2. Attach other end of hose to large port on top rear of supercharger</p> <p>31.3. Install fresh air vent hose</p> <p>31.3.1. Attach hose end with aluminum plug into plastic vent on top front of engine</p> <p>31.3.2. Attach other end of hose to port in middle of intake tube</p>	
<p>32. Install Split Second box</p> <p>32.1. Place SS box on shelf under brake booster</p> <p>32.2. Orient SS box with wire loom facing engine</p> <p>32.3. Attach SS box wires</p> <p>32.3.1. Large wire loom connects to stock ECU</p> <p>32.3.2. Small wire connects to 7<sup>th</sup> fuel injector</p>	

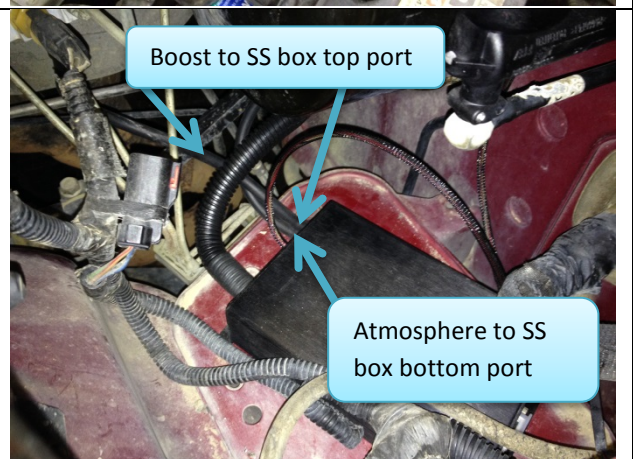
- 32.3.3. Route loom and fuel injector wire across rear firewall
- 32.3.4. Attach fuel injector wire to 7<sup>th</sup> fuel injector




- 32.3.5. Release stock connector on driver side of ECU
- 32.3.6. Attach SS box male connector to ECU
- 32.3.7. Attach SS box female connector to stock male ECU connector
- 32.3.8. Ensure both SS box wire and loom are away from steering column
- 32.3.9. Secure wire and loom with zip ties to stock loom



- 32.4. Screw down SS box to tray
  - 32.4.1. Need at least one screw on the front and one on the rear of box
  - 32.4.2. Use all three if possible
- 32.5. Attach vacuum hoses to box
  - 32.5.1. Check SS box instructions to ensure proper port connections
  - 32.5.2. Top port should connect to boost hose already attached to intake manifold
    - 32.5.2.1. Determine length of hose needed to go from intake





<p>manifold to SS box and add two to three inches then cut</p> <p>32.5.3. For bottom port (atmosphere) attach provided hose to port and hang over brake booster ensuring end faces down preventing water from entering</p> <p>32.5.3.1. Secure hose with zip ties</p>	
<p>33. Attach any loose wire connectors</p> <p>34. Check all bolts and steps</p> <p>35. Reconnect battery</p> <p>36. Check for fuel leaks</p> <p>36.1. Turn key to on without starting engine</p> <p>36.2. Check fuel rail, 7<sup>th</sup> fuel injector and 7<sup>th</sup> fuel injector line for leaks</p> <p>36.3. Do this multiple times</p>	

Note:

If any part of the instructions are not clear or are missing any information you would find helpful please let us know so we can update them.

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