

3.8L 2007-2011 JK Instructions

Preinstall

- 1) Tuning is required when using a pulley smaller than 2.20". An AFR gauge is recommended when tuning fuel map.
- 2) Fuel
 - a) 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.
- 3) Tools needed
 - a) Normal hand tools: Flat head screwdriver, 10, 12, 13, and 15mm sockets to remove the throttle body and power steering bolts.
 - b) Fuel line disconnect tool to remove the connector on fuel line
 - c) A 3/8" breaker bar to remove the belt on by unloading the dynamic tensioner.
 - d) All the Boosted Technologies parts use stainless Allen head socket cap screws. You will need 4 and 5mm sockets. 'T'-handles are nice.
 - e) Rags to clean gasket surfaces, tape to cover intake manifold inlet from dropped parts.
 - f) Safety glasses to keep fuel out of your eyes when you disconnect the fuel line. It is under 50 PSI!

Stock removal

1. Torque specs for bolts if not listed
 - 1.1. Examples from tables on right
 - 1.1.1. 6mm bolts torque to 12-16 Nm (9-12 ft-lbs)
 - 1.1.2. 3/8" bolts torque to 27 Nm (20 ft-lbs)
 - 1.1.3. Use the 18-8 S/S column for the US recommended bolt torque

Metric Recommended Bolt Torque

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Bolt Diameter (mm)	Recommended Torque (Nm)	
	Class 8.8	Class 10.9
5	7	9
6	12	16
8	30	40
10	55	75
12	100	135
14	160	215
16	245	335
20	480	650

1: <https://www.boltdepot.com/fastener-information/bolts/Metric-Recommended-Torque.aspx>

US Recommended Bolt Torque

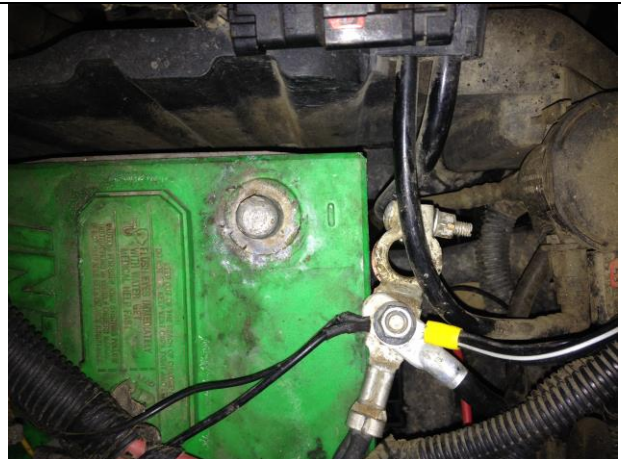
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Size	Recommended Torque											
	Grade 2		Grade 5		Grade 8		18-8 S/S		Bronze		Brass	
	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine
#4"	-	-	-	-	-	-	5.2	-	4.8	-	4.3	-
#6"	-	-	-	-	-	-	9.6	-	8.9	-	7.9	-
#8"	-	-	-	-	-	-	19.8	-	18.4	-	16.2	-
#10"	-	-	-	-	-	-	22.8	31.7	21.2	29.3	18.6	25.9
1/4"	4	4.7	6.3	7.3	9	10	6.3	7.8	5.7	7.3	5.1	6.4
5/16"	8	9	13	14	18	20	11	11.8	10.3	10.9	8.9	9.7
3/8"	15	17	23	26	33	37	20	22	18	20	16	18
7/16"	24	27	37	41	52	58	31	33	29	31	26	27
1/2"	37	41	57	64	80	90	43	45	40	42	35	37
9/16"	53	59	82	91	115	129	57	63	53	58	47	51
5/8"	73	83	112	128	159	180	93	104	86	96	76	85
3/4"	125	138	200	223	282	315	128	124	104	102	118	115
7/8"	129	144	322	355	454	501	194	193	178	178	159	158
1"	188	210	483	541	682	764	287	289	265	240	235	212

* Sizes from #4 to #10 are in lb-in.
 * Sizes from 1/4" up are in lb-ft.
 * Fine thread figures are for 1"-14.
 Grade 2, 5, and 8 values are for slightly lubricated bolts.

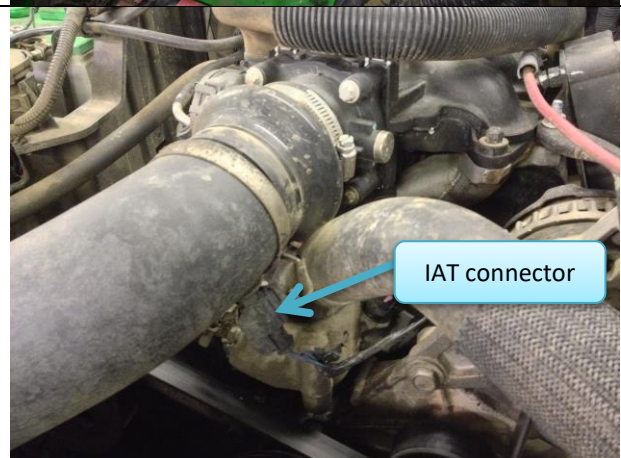
2: <https://www.boltdepot.com/fastener-information/bolts/US-Recommended-Torque.aspx>

1. Disconnect battery cable

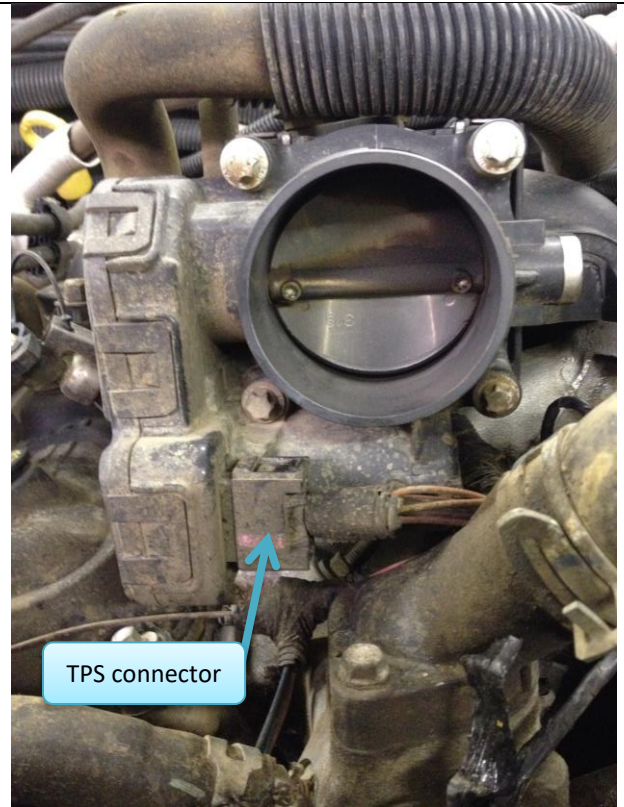


2. Remove stock air intake tube

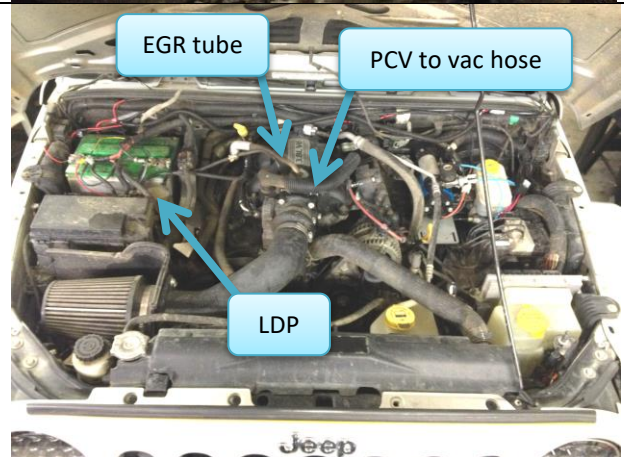
- 2.1. Disconnect IAT connector
- 2.2. Remove bolts and hose clamps
- 2.3. Remove intake tube

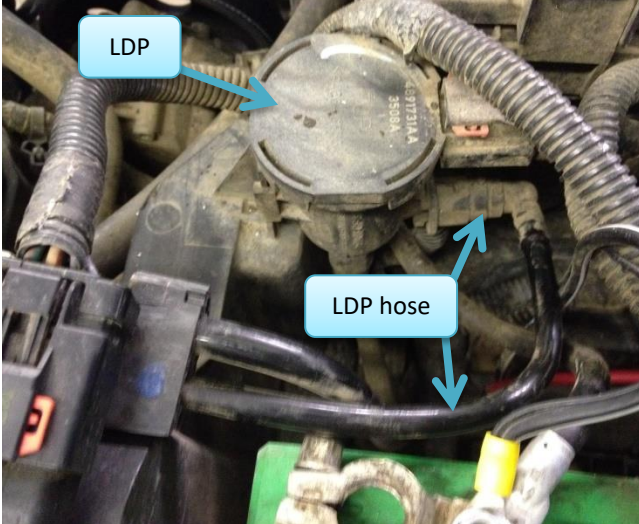
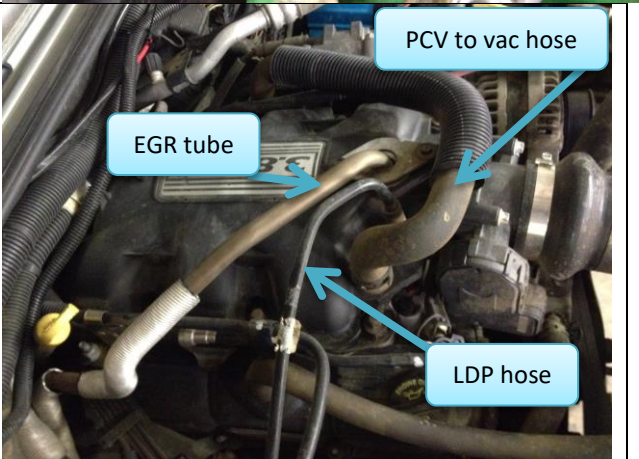
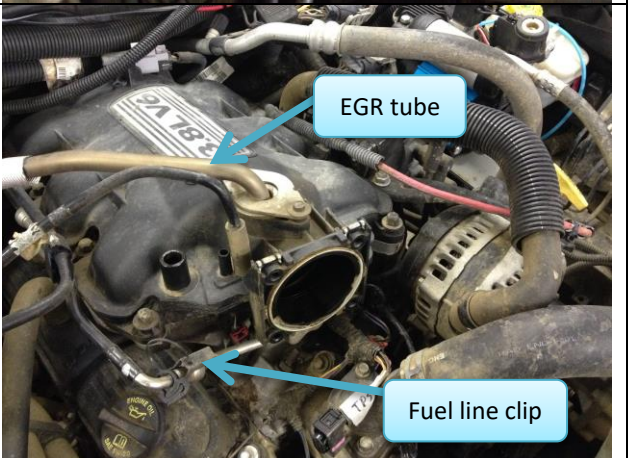


3. Remove throttle body
 - 3.1. Disconnect TPS connector
 - 3.1.1. Push in on clips on top and bottom
 - 3.1.2. Pull off
 - 3.2. Loosen four bolts on throttle body
 - 3.3. Remove throttle body
 - 3.4. Clean inside throttle body with carb/throttle body cleaner



4. Disconnect vacuum lines
 - 4.1. Disconnect leak detection pump (LDP) vacuum hose on passenger side of engine (top near EGR) (LDP marked PA66-GF-33 pressure control valve)
 - 4.1.1.
 - 4.2. Disconnect PCV to vacuum on top passenger side of upper intake

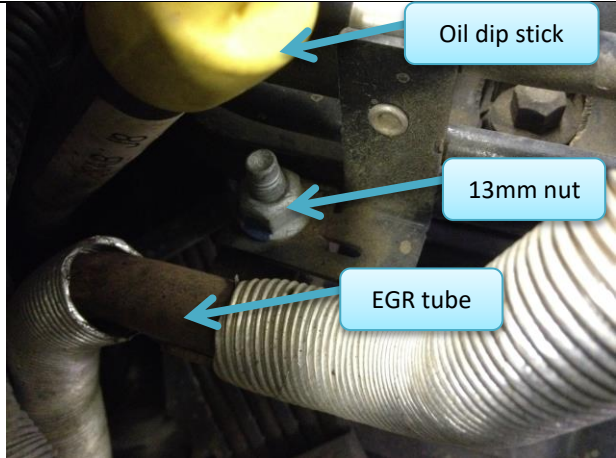


	 <p>LDP</p> <p>LDP hose</p>
	 <p>PCV to vac hose</p> <p>EGR tube</p> <p>LDP hose</p>
<p>5. Remove EGR tube</p> <p>5.1. 8mm bolts top front and on rear passenger side</p> <p>5.1.1. The lower EGR connection can be accessed through the wheel well</p>	 <p>EGR tube</p> <p>Fuel line clip</p>

5.1.2. Lower EGR fitting seen through
passenger side wheel well



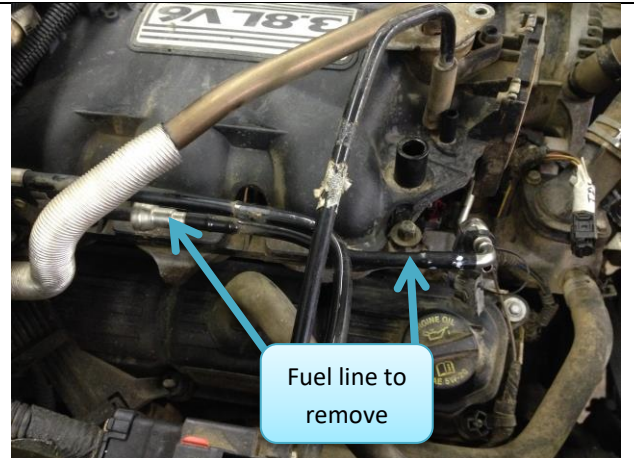
5.2. 13 mm nut holding down fuel line & EGR
tube
5.2.1. 13mm stud under nut



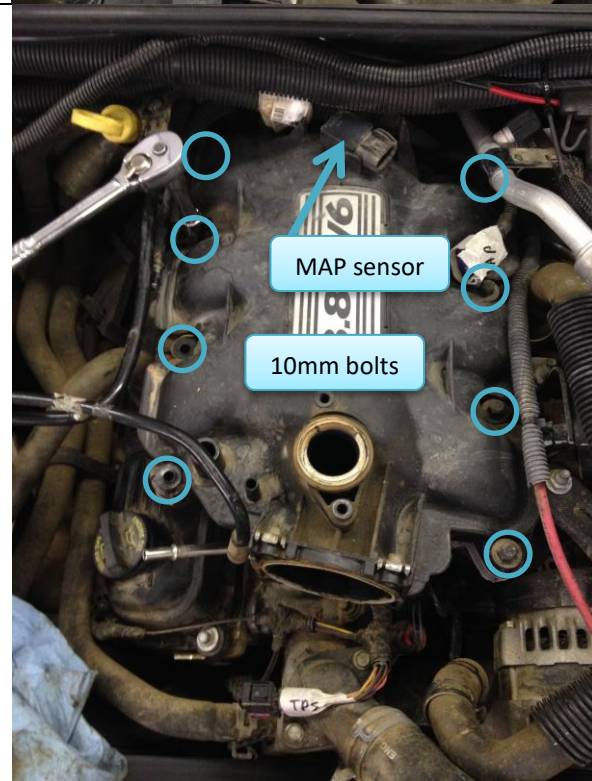
5.3. Remove fuel line/vacuum tube clips
5.3.1. Small flat head screw driver behind &
under lower clip



6. Remove fuel line short plastic section from fuel rail to fuel line near firewall
- 6.1. Use a 5/16" fuel line disconnect tool to release



7. Remove upper intake
- 7.1. 8 bolts 10mm
- 7.2. Rear side (vacuum hose brake cleaner)
- 7.3. Cover holes with tape or stuff with lint free cloths to prevent debris falling in

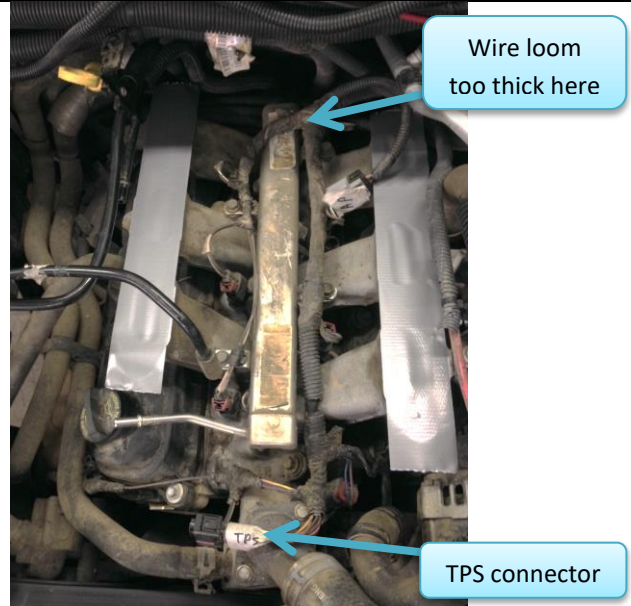


8. Remove MAP sensor from top rear of upper intake
- 8.1. Disconnect clip
- 8.2. Carefully twist MAP sensor to release

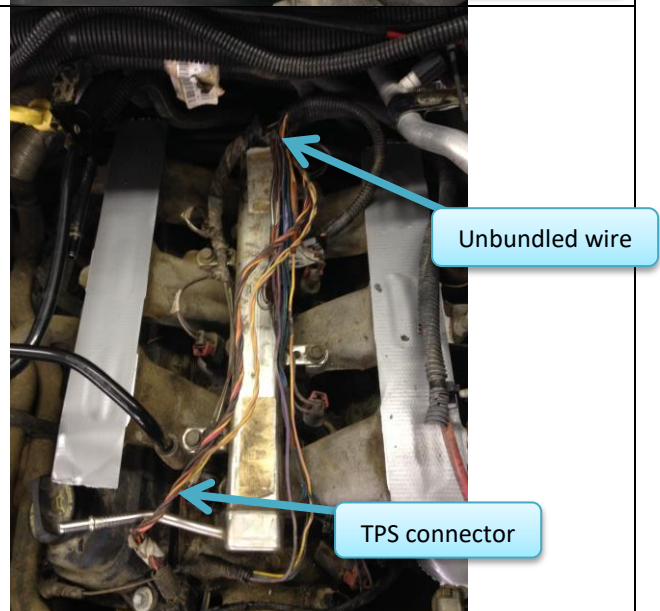


9. Unbundle wires

- 9.1. TPS needs to be towards back of engine
- 9.2. Wire loom is in the way above the fuel rail



9.3. Unbundle wire all the way back to tee



- 9.4. Wire loom should fit below the intake ports on the lower intake manifold as shown in Figure 3
- 9.5. Cover wires with sheathing
- 9.6. Route TPS under rear passenger intake area/ports

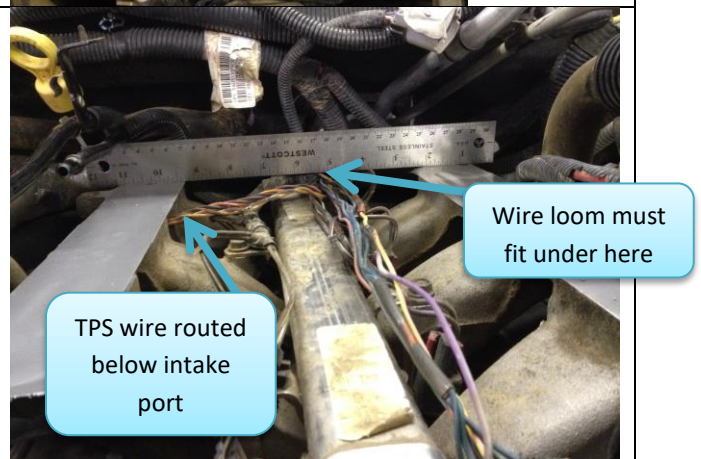


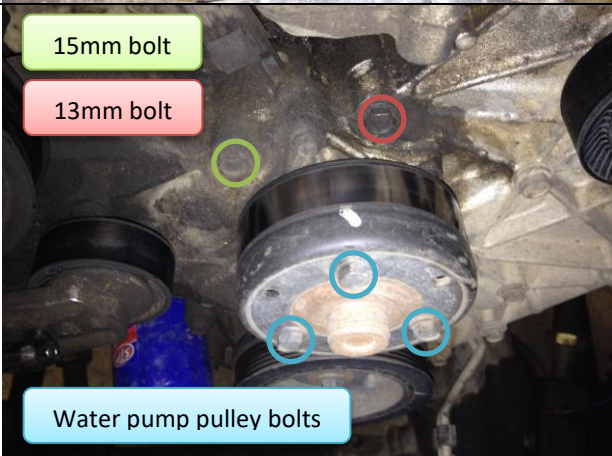




Figure 3: Wire loom unbundled and will fit under

<p>10. Attach EGR adapter with fitting to passenger side lower port</p> <p>10.1. Reuse gasket from stock EGR tube</p>	<p>supercharger intake assembly.</p>  <p>EGR adapter & fitting</p>
<p>11. Remove serpentine belt</p> <p>11.1. 3/8" breaker bar in dynamic tensioner slot</p> <p>11.2. Rotate counter clock wise to release tension on belt</p>	 <p>Breaker bar in tensioner</p>
<p>12. Install idler pulley & plate</p> <p>12.1. Remove water pump pulley to access bolts above water pump</p> <p>12.2. Remove two bolts above water pump</p> <p>12.2.1. 15mm passenger side</p> <p>12.2.2. 13mm driver side</p>	 <p>15mm bolt</p> <p>13mm bolt</p> <p>Water pump pulley bolts</p>

<p>12.3. Engine should look similar to Figure 4 after removal</p>	 <p>Figure 4: Engine after removing water pump pulley and bolts above pump.</p>
<p>12.4. Install plate & pulley 12.5. Pulley 76mm & spacer 12.6. Reinstall bolts</p>	
<p>13. Change/gap spark plugs 13.1. We recommend using a plug one step colder and gapped to 0.030"</p>	
<p>14. Reroute brake booster line to be in-front of wire loom and above connectors</p>	
<p>15. Bend oil dip stick out of way towards passenger side 15.1. Use a screwdriver inside it or a similar object</p>	
<p>16. Remove PCV (very large) hose from driver side of engine</p>	

Supercharger installation

17. Attach EGR hose to connector on supercharger tub

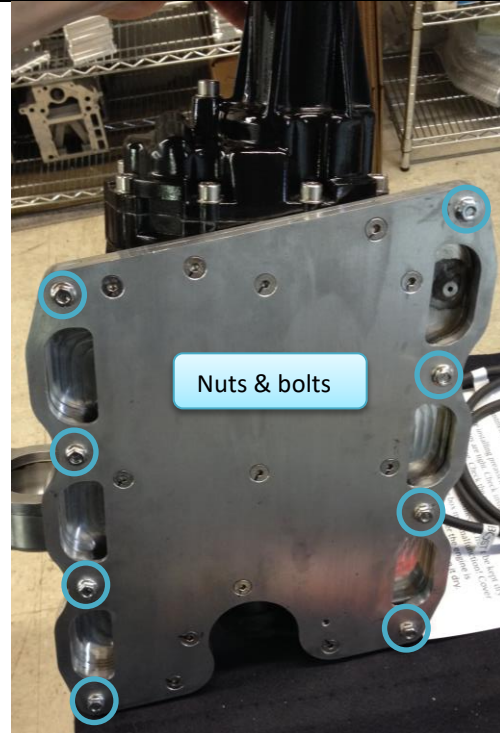


Figure 5: EGR fitting on rear intake tub.

18. Remove 8 bolts and nuts

18.1. The bolts will be used to attach assembly to manifold

18.2. The nuts are not used again



19. Loosen or remove bolt holding coil to bracket to ease installation of supercharger assembly

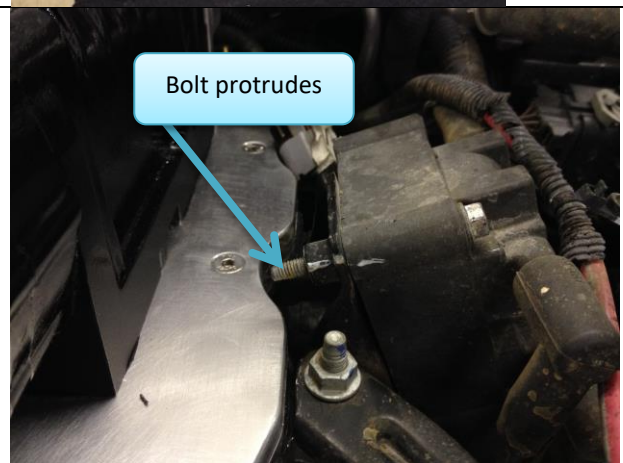


Figure 6: Bolt that interferes with install.

20. Remove tape/rags from intake ports

21. Apply RTV to ports (liberal amount)

22. Insert two provided 6mm studs

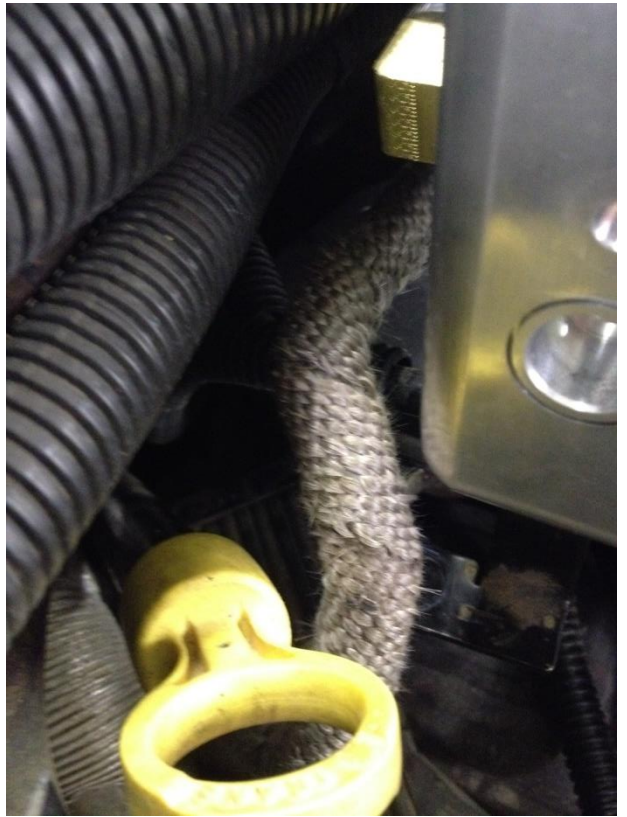
22.1. Place one on each side in the holes
2nd from front

23. Place 2x2x12" board over fuel rail
23.1. This is used to prop up the supercharger while laying it down over the intake ports

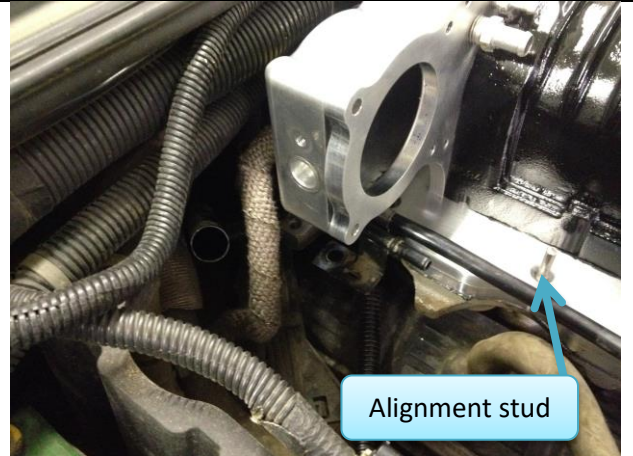


24. Place supercharger over board and slide back

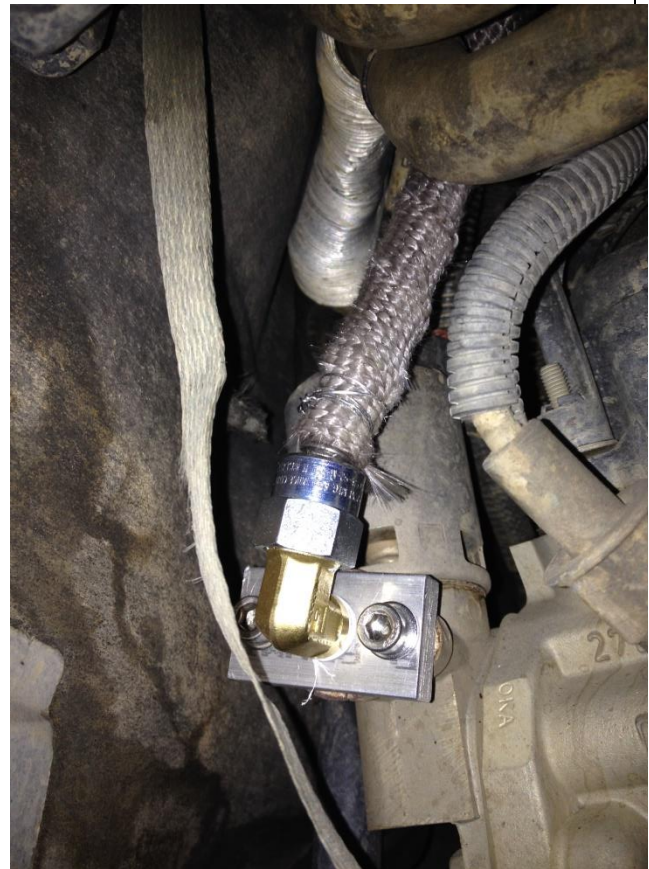
25. Attach brake booster hose to rear supercharger port & zip tie
25.1. Ensure the EGR tube does not touch the brake booster hose or anything that might melt





26. Remove board under supercharger assembly while guiding plate over studs
- 26.1. Supercharger should be resting on intake manifold
- 26.2. Install 8 bolts through plate to intake manifold by hand
- 26.3. Torque bolts in a crisscross pattern



27. Route EGR line down to port on engine (route so not touching plastic or rubber objects)
- 27.1. Install EGR line onto previously installed fitting



<p>28. Install 7th fuel injector</p> <p>28.1. Torque bolt for 7th injector</p>	 <p>Figure 7: Seventh Fuel injector installed. Replacement fuel line installed.</p>
<p>29. Install replacement fuel hose</p> <p>29.1. Attach as shown in Figure 7</p> <p>29.2. Ensure all ends are securely installed on connections</p>	
<p>30. Check for fuel leaks</p> <p>30.1. Clean battery terminals, reconnect positive terminal and tighten nut</p> <p>30.2. Switching key to on for several seconds to pressurize fuel system</p> <p>30.2.1. Do this several times</p> <p>30.2.2. Do not start engine</p> <p>30.3. Check for fuel smell or liquid at all fuel line connections and the 7th injector</p> <p>30.4. Disconnect battery cable again</p>	
<p>31. Reinstall bolt hold down stud that was holding fuel line & vacuum down passenger side</p> <p>31.1. Leave vacuum line free and out of hold down clip</p> <p>31.2. Zip tie vacuum line down to clear throttle body</p>	

32. Install throttle body

- 32.1. Apply RTV to bottom of throttle body before installing
- 32.2. Ensure throttle body does not move during install by using the included studs



33. Pull off coolant hose from front port

- 33.1. Have a small container ready to catch any coolant when removing hose
- 33.2. Grind off hose stop to allow hose to push down more to clear belt



33.3.

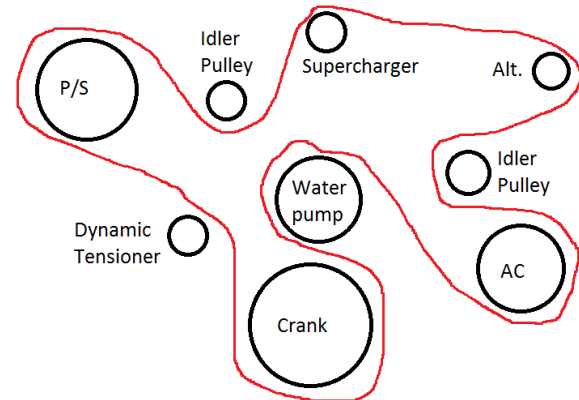


33.4. Lay belt over supercharger pulley
and alternator
33.4.1. Ensure the coolant hose will go
through the center of the belt

33.5. Reinstall coolant hose through center of belt and clamp hose



34. Route serpentine belt



35. Install MAP sensor at side of rear tub

35.1. Slide ½" hose marked MAP over
MAP sensor port

35.2. Connect MAP sensor connector



35.3. Attach short hose marked boost to
boost port on tub below supercharger



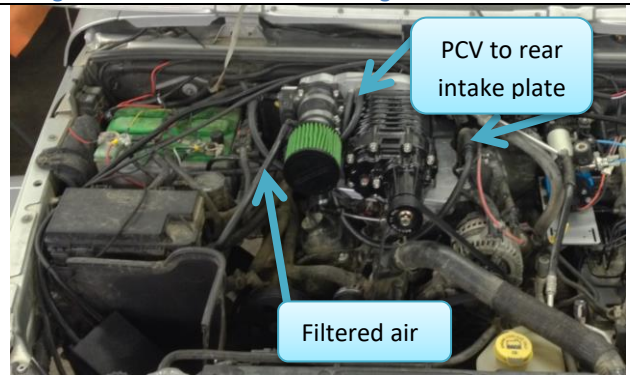
36. Modify PCV hose

- 36.1. Cut about 3.5" from inside edge
- 36.2. Insert 5/8" side of adapter
- 36.3. Reinstall PCV hose to port and clamp



Figure 8: PCV hose cut and reducing connector installed.

- 36.4. Attach other side of provided hose to large port on supercharger rear intake plate



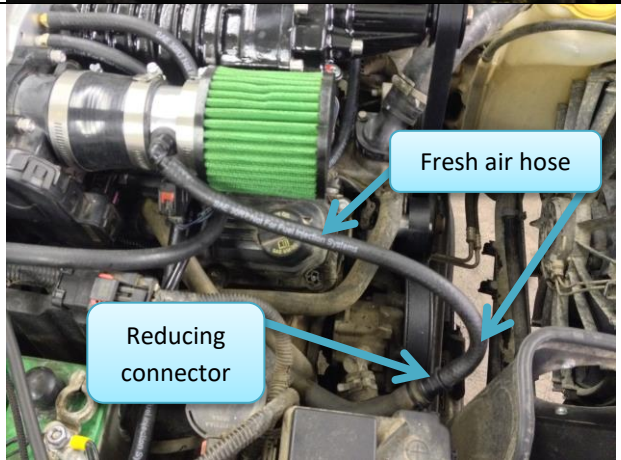
37. Insert IAT into aluminum tube next to air filter
37.1. Connect wire connector



38. Install Air filter, reducing hose and aluminum pipe on throttle body



39. Install fresh air hose adapter hose with fitting
39.1. Install provided reducing connector inside stock hose



- 39.2. Attach provided LDP hose with quick connect to LDP connection
- 39.3. Attach other end to small vacuum port on supercharger rear intake plate



40. Install Split Second box

40.1. Instructions are included with the box

40.2. ***Ensure Split Second box and connectors are kept away from heat and water***

40.2.1. If the split second box is exposed to excess heat or water it may malfunction

40.3. Attach vacuum hose marked SS box to port on box

40.4. Attach wire to 7th injector

40.4.1.



40.5. Attach split second box wire loom between ECM and existing connectors

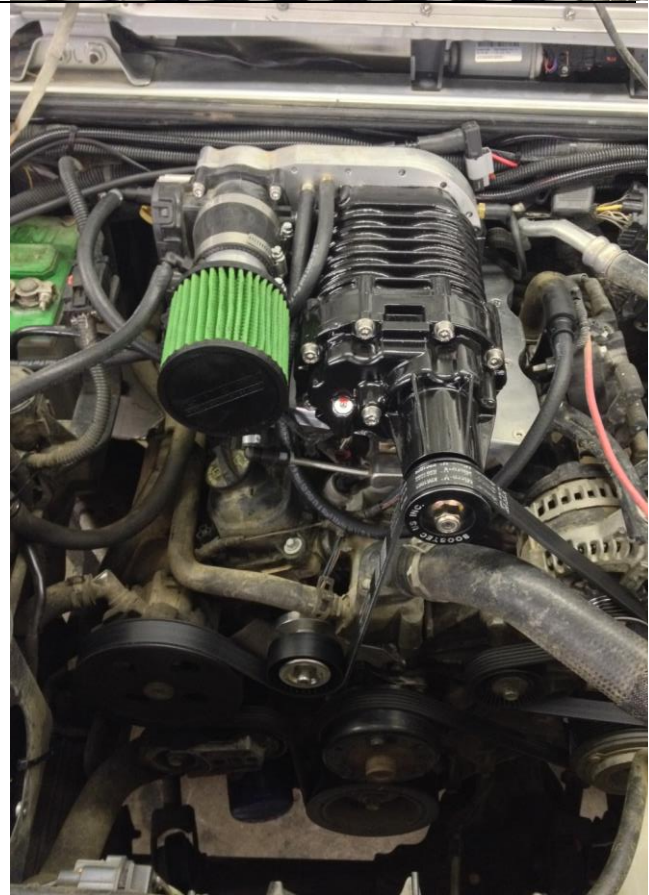
40.5.1. The plastic on the male sides are color coded



41.



42.



43.



44.

45.