



# **3.8L JEEP WRANGLER SUPERCHARGER KIT INSTALLATION MANUAL**



# 2007 3.8 V6 SuperCharger Install

11/12/09

Patent Pending-CARB Registration Pending

## THIS KIT IS DESIGNED FOR STOCK VEHICLE

Read the instructions first and save your self two (2) days labor. It will be best to do this install with cold engine.

LAY OUT ALL SUPERCHARGER and KIT PARTS ON CLEAN FLOOR!  
CHECK PARTS LIST TO MAKE SURE I DID NOT LEAVE  
SOMETHING OUT!

**READ THE INSTRUCTIONS AGAIN! CHECK PARTS AGAIN!**

YOU WILL NEED STANDARD HAND TOOLS AND SOME SPECIAL  
FUEL INJECTION TOOL furnished in this kit.

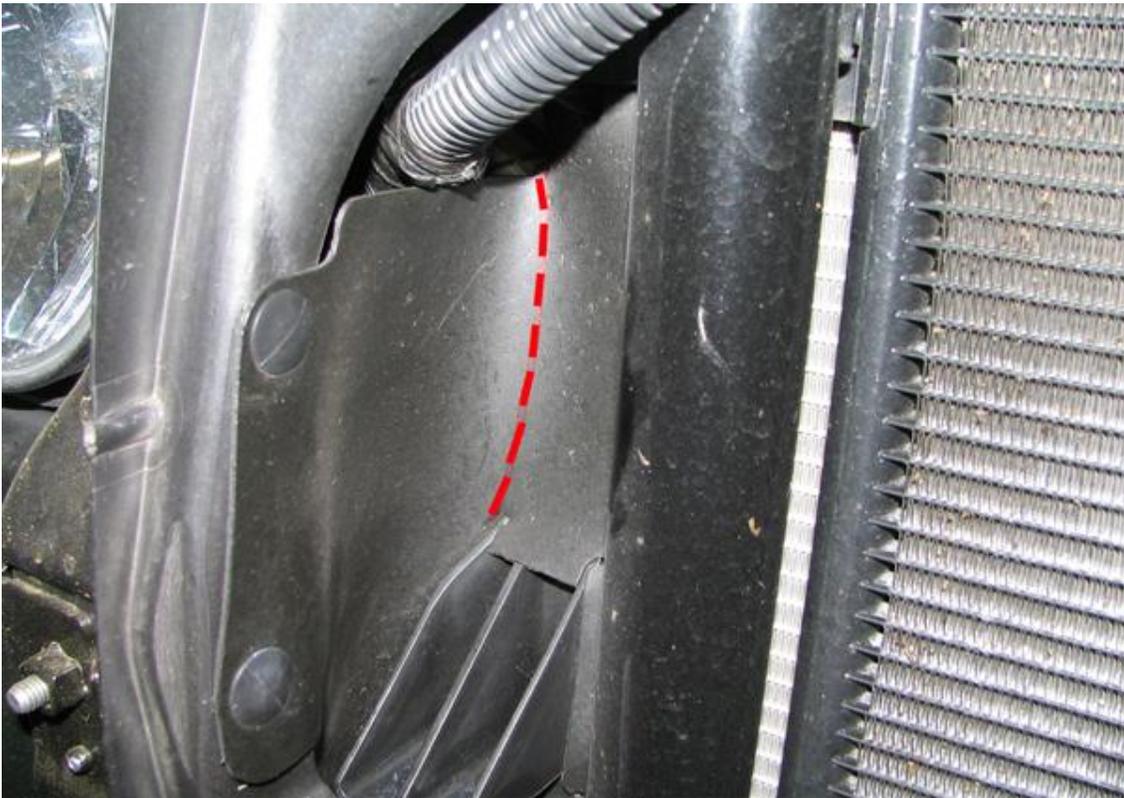
1. Open hood – lay back on windshield frame with padding. To make sure fuel pressure is relieved you will need to REMOVE FUEL PUMP FUSE from fuse box located on right side under hood, look at diagram to locate fuse. Once fuse is removed start engine and let run till it stalls. Turn ignition OFF and reinstall fuse.
2. Disconnect battery negative cable and tape over terminal.
3. Remove Intake Air Temp sensor and connection. SAVE SENSOR!
4. Remove air filter assembly with hose. DISCARD HOSE, SAVE FILTER HOUSING. If you have AFTERMARKET AIR SYSTEM you will have to modify to clear supercharger tubing.
5. Remove belt. SAVE BELT FOR SPARE OR EMERGENCY! It could happen to you!
6. Remove alternator top bracket. SAVE NUT. Install top bracket – tighten to spec. 18 ft. Secure alt. wire in hole. DO NOT install supercharger bracket now!
7. Remove two (2) alternator mounting bolts. SAVE 16MM BOLTS for reuse.
8. Remove radiator overflow jug and save.
9. Remove lower idler pulley. SAVE for reuse.

10. Take oil dip-stick out and with a long ½ extension or rod and Phillip's screw driver, bend oil dip-stick tube to rear of #3 coil tower. BE CAREFUL NOT TO CRIMP. See photos #1. Put dip-stick in tube.
11. Remove six (6) plastic Phillip's head trim screws from top of grill shell. SAVE for reuse.
12. Lean grill forward and disconnect turn-signal lights. Remove grill shell by pulling out wards on clips. Place the grill in SAFE PLACE. (Top of vehicle).
13. Cut the rubber baffles on each side of A/C condenser approx. 2" from condenser. Cut from top to bottom. See photo #2.
14. Connect 3/8 hose furnished in ROTREX kit to oil cooler (both ends) with clamps furnished. Be sure screws don't extend to radiator side! Tie wrap the hoses together to come around and thru the opening on driver's side of condenser. Pull the hoses thru this hole back to rear of engine fire wall. Cut hoses 6" behind rear firewall. See photo #3. Secure with tie wrap to tab on driver side of frame near A/C compressor.
15. Place oil cooler in bottom center of radiator cavity with aluminum bracket to the front. Secure with tie wraps. See photo # 5.
16. Remove radiator cap (COLD ENGINE ONLY). Siphon coolant with furnished 3' clear tube into clean container (there is no radiator drain). See photo # 6. Only a little over a quart is needed to be siphoned.
17. Remove top radiator hose and cut engine end 3 ¼" from end. Cut radiator end 6" from end. DISCARD CENTER, KEEP ENDS. See photo # 7& 28. Note that hose has ID names on each end of the hose. The straight end will attach to the radiator and the curved end to the engine.
18. Put ENGINE end on radiator and install stainless steel pipe furnished with kit. Put RADIATOR end on thermostat housing and secure with clamps furnished. REFILL RADIATOR. Put any fluid left in over flow bottle.
19. Place oil tank at DRIVER side REAR of engine compartment using aluminum 90 degree bracket and ONE tank clamp (furnished in ROTREX kit). You may have to cut the wiring harness tyrap to be able to place tank low enough to clear hood. See photo #4.
20. Run one (1) oil cooler hose that you cut earlier to top (return) of oil tank. Cut to fit and install banjo fitting on end. DO NOT TIGHTEN.

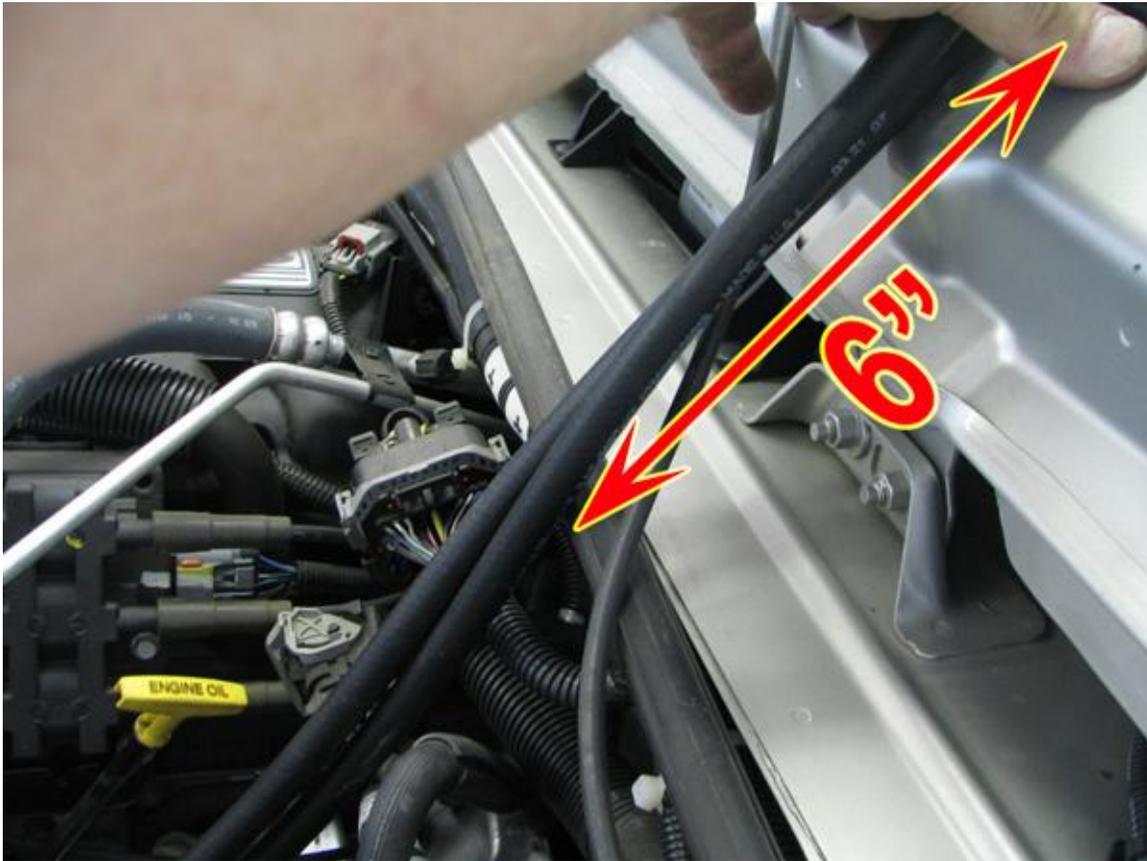
**PHOTO# 1 – Oil dip-stick modification**



**PHOTO# 2 – Cutting rubber A/C condenser baffles**



**PHOTO# 3 – Oil cooler hoses**



**PHOTO# 5 – Oil Cooler Placement**



**PHOTO# 6 – Coolant Removal**



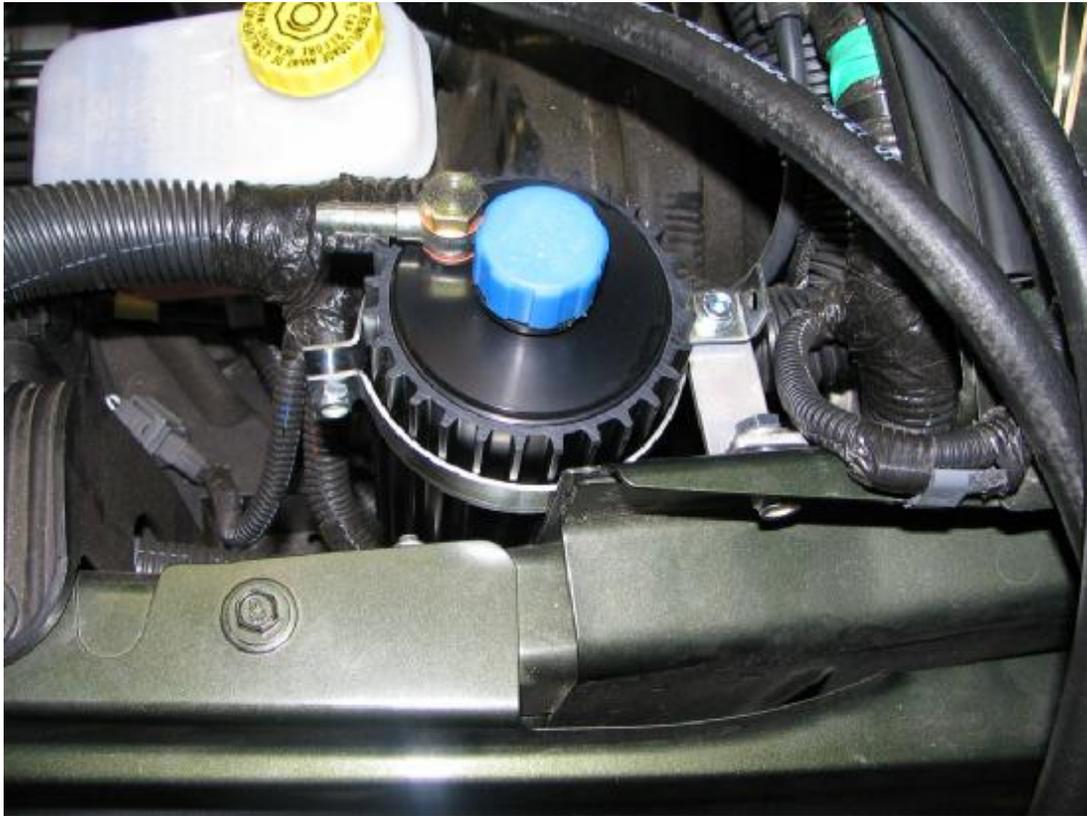
**PHOTO# 7 – Top Radiator Hose**



**PHOTO #28 UPPER HOSE**

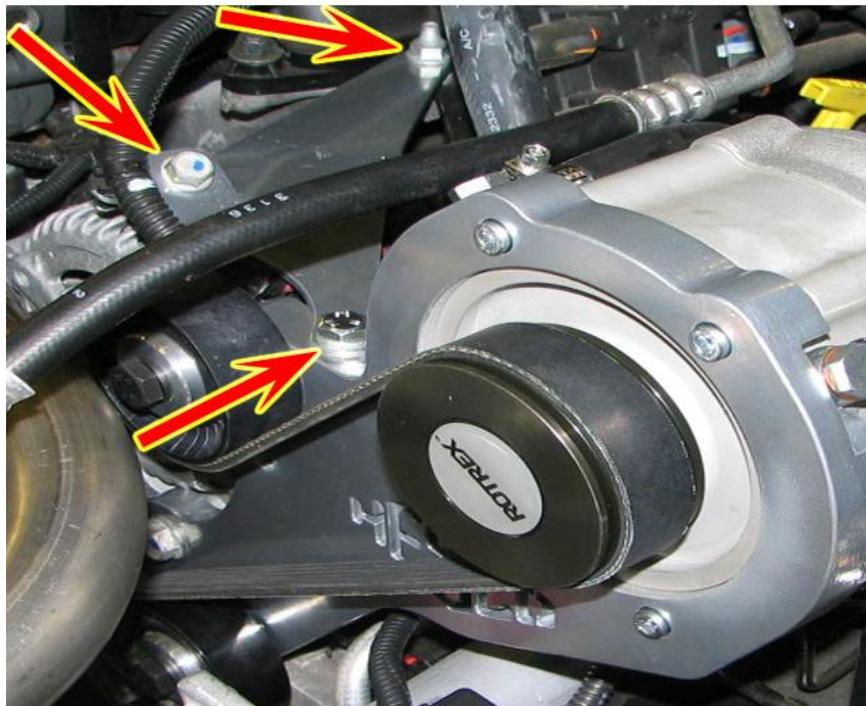
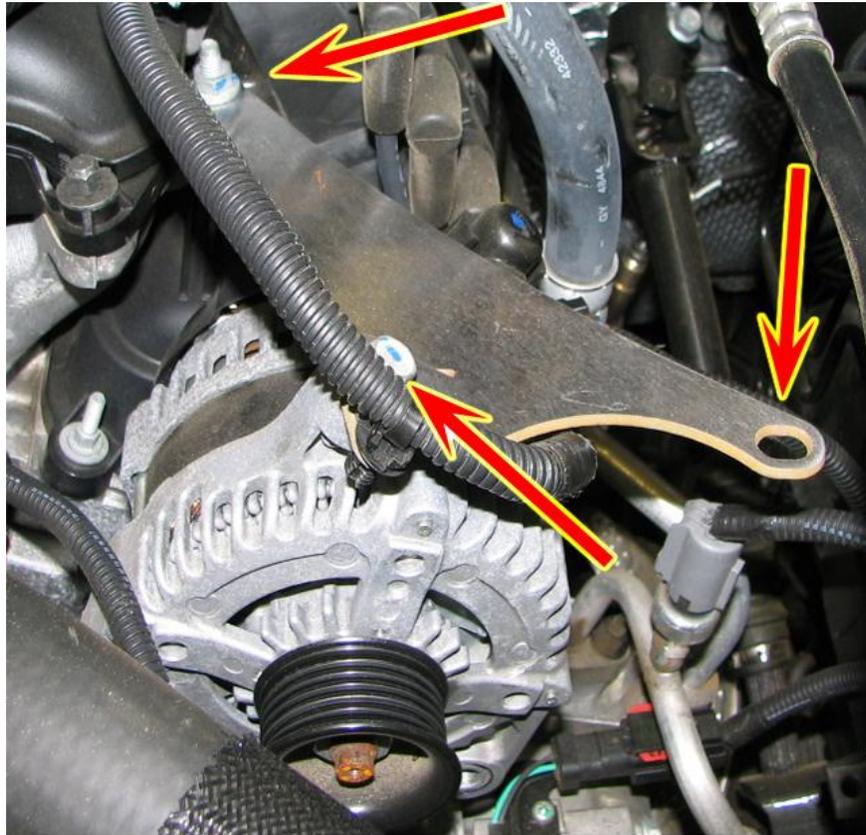


PHOTO# 4 – Oil Tank



21. Cut 13" of cooler hose that was cut from hose from oil cooler hose and install banjo on both ends. Connect this hose to bottom of oil tank pointing forward (in-line with return hole on top). Secure tank to body TIGHTLY now.
22. Install supercharger bracket to alternator using original bolts and top bracket using furnished bolt. Torque to spec (35 ft/lb) two (2) bolts (19 ft/lb top bracket). START all bolts before you tighten any bolts! See photo # 8.
23. Install the original idler pulley in the same location as removed. Install the one idler pulley and spacer set over the A/C compressor and the other idler pulley and spacer set in the top hole to YOUR right of alternator pulley. The bolt hole is offset and will aid in belt installation and tension. Other holes are for belt adjustment as the belt wears use top hole for new belt and lower holes as belt wears.
24. Install intercooler in grill opening. Put a 2" BLACK "HTS" hose on the 90 degree end with the clamp #32 to the outside of the cooler. See photo #9.
25. Place the supercharger discharge pipe to intercooler in the chassis along side the left frame rail and inserting into intercooler hose and secure with #32 clamps, put a 2" BLACK "HTS" hose on the supercharger end with the clamp #32 nuts facing the rear. DO NOT TIGHTEN HOSE TO INTERCOOLER NOW! See photo # 10. INSTALL THIS BEFORE you put SUPERCHARGER IS IN PLACE!
26. Install supercharger by putting the discharge port into the "HTS" hose and swing the supercharger into bracket. Secure with Allen screws, be sure to LOCTITE, Torque to 10 ft/lb. On automatic transmission vehicle you will need to unplug transmission plug (green) from PCM to be able to install lower screw. TIGHTEN BOTH ENDS OF DISCHARGE TUBE NOW! REMOVE RED CAPS FROM SUPERCHARGER BEFORE YOU INSTALL!
27. Install belt. See photo #11. Make sure the belt tensioner is in the WORK RANGE. See photo # 13. You can adjust this with top idler pulley hole selection, top hole normal with new belt. See photo #12. THE SUPERCHARGER BELT WILL BE INSTALLED WITH ONE GROOVE OF PULLY SHOWING ON FRONT OF PULLY. The supercharger pulley is a 8 rib pulley and the Jeep has a 6 rib belt.
28. Install intercooler to throttle body tube using the 2.75" X 45 degree "HTS hose furnished using the #48 clamps. Make sure the hose is ON THE INTERCOOLER end before you do this. TIGHTEN NOW.
29. Install Air Temp Sensor in GROMENT near throttle body. See photo # 14. Silicon spray will aid this operation. Use with care!

**PHOTO# 8- Supercharger / Alternator bracket**



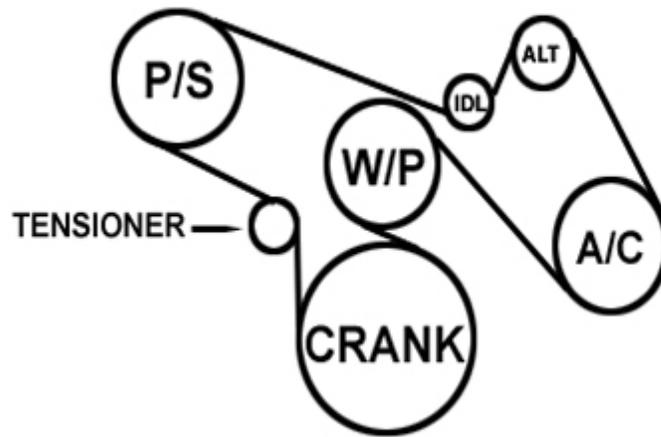
**PHOTO# 9 – Intercooler Placement**



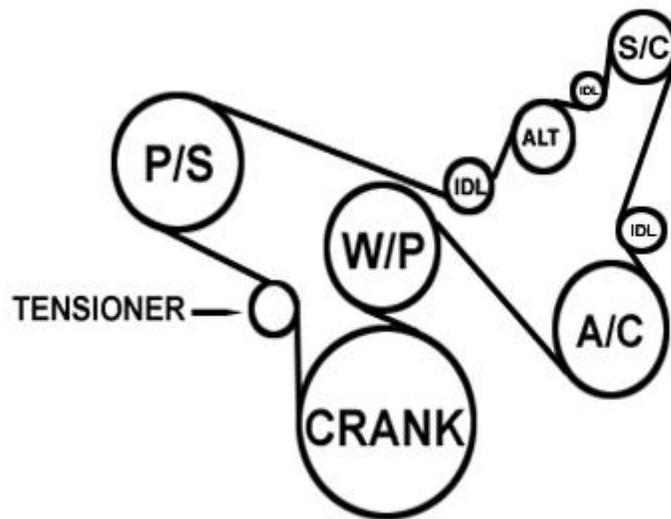
**PHOTO# 10 – Supercharger Discharge Tube Installation**



PHOTO# 11 – Belt Routing



**STOCK ROUTING**

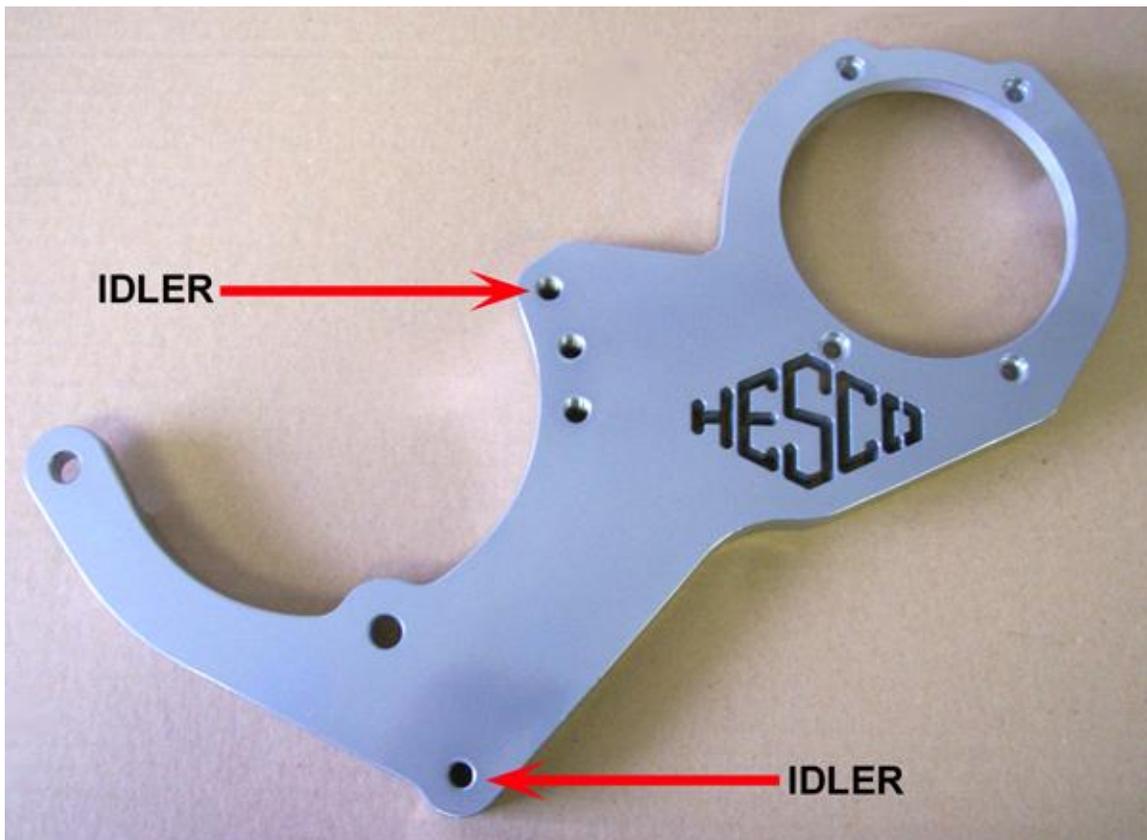


**SUPERCHARGER ROUTING**

**PHOTO# 13 – Tensioner Range**



**PHOTO# 12 – Belt Adjustment Holes**



PHOTO# 14 – Intercooler to throttle body tube



30. Install the bypass valve (BLACK) with vacuum hose port opposite throttle body tube. Connect the vacuum hose furnished to run under the throttle body and connect to the "TEE" described in line #41. **See photo #15.**
31. Disconnect the fuel line at the 90 degree bend near throttle body using the BLUE tool furnished and rotate it 180 degrees. **See photo # 17.** YOU WILL NEED A TOOL FURNISHED (BLUE PLASTIC) TO DISCONNECT THIS LINE!!!! Make sure fuel pressure is relieved before you disconnect this line.
32. Mount the FUEL MANAGEMENT UNIT (FMU) relay to rear battery hole-down bolt. Nut and washer furnished. **See photo # 18.**
33. Run the wires around and under plastic bracket. **See photo # 18.**
34. Tilt the fuse box forward by unclipping the lower clips (**use caution as some models may require unclipping 4 clips**) and uncover the wires to find a BLUE wire with ORANGE tracer. This wire will be in the center of fuse box (brown connector on some). **See photo # 19 & 20.** Cut the tape with a razor blade and pull blue w/orange tracer 14ga. wire out enough to put a SCOTCH LOCK connector (blue) on the BLUE wire with ORANGE tracer. Connect the brown wire from the FMU relay to this (blue w/orange wire). TILT BACK AND SECURE
35. Connect GREEN wire to (+) side of pump. **See photo # 22.**
36. Place the FUEL MANAGEMENT UNIT (FMU) in front of the battery running the hoses under all the wires. Use the battery hole-down bolt to secure. **See photo #16.**
37. Connect hose from FMU to fuel lines; they will only go one way! Use original fitting lock on FUEL IN to FMU. **See photo # 17.**

YOU HAVE JUST COMPLETED THE HARDEST PART OF THIS INSTALLATION!

38. Open top of fuse box and connect the RED wire to battery 12V terminal. **See photo # 21.**
39. Connect BLACK wires from the pump and FMU relay to ground terminal next to fuse box. **See photo # 23.**
40. Cut the black plastic vacuum hose that goes to the evaporator valve. Cut it near where it bends. Cut 3 ¼" out of the plastic hose. **See photo # 24 & 30.**

**PHOTO# 15 – Bypass Valve**



**Install the orange flexible scat hose in the right position instead of the orange stick hose.**

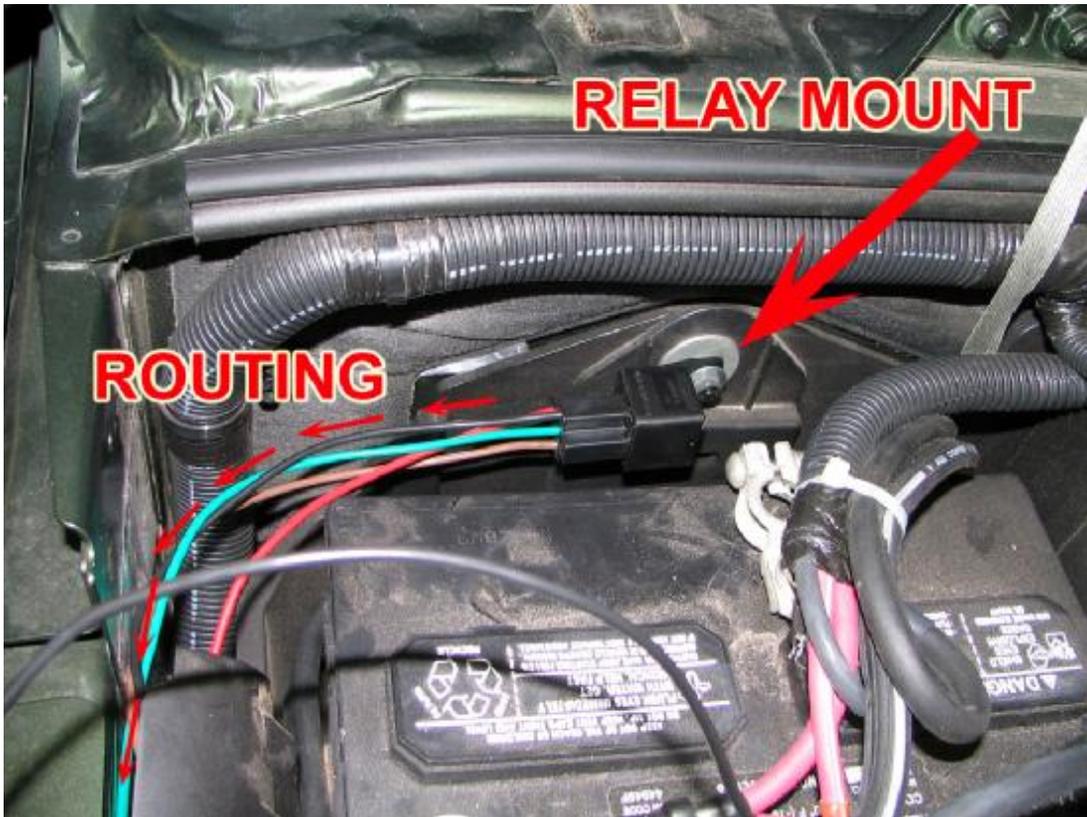
**PHOTO# 17 – Fuel Hose Routing & Connections (5 photos)**



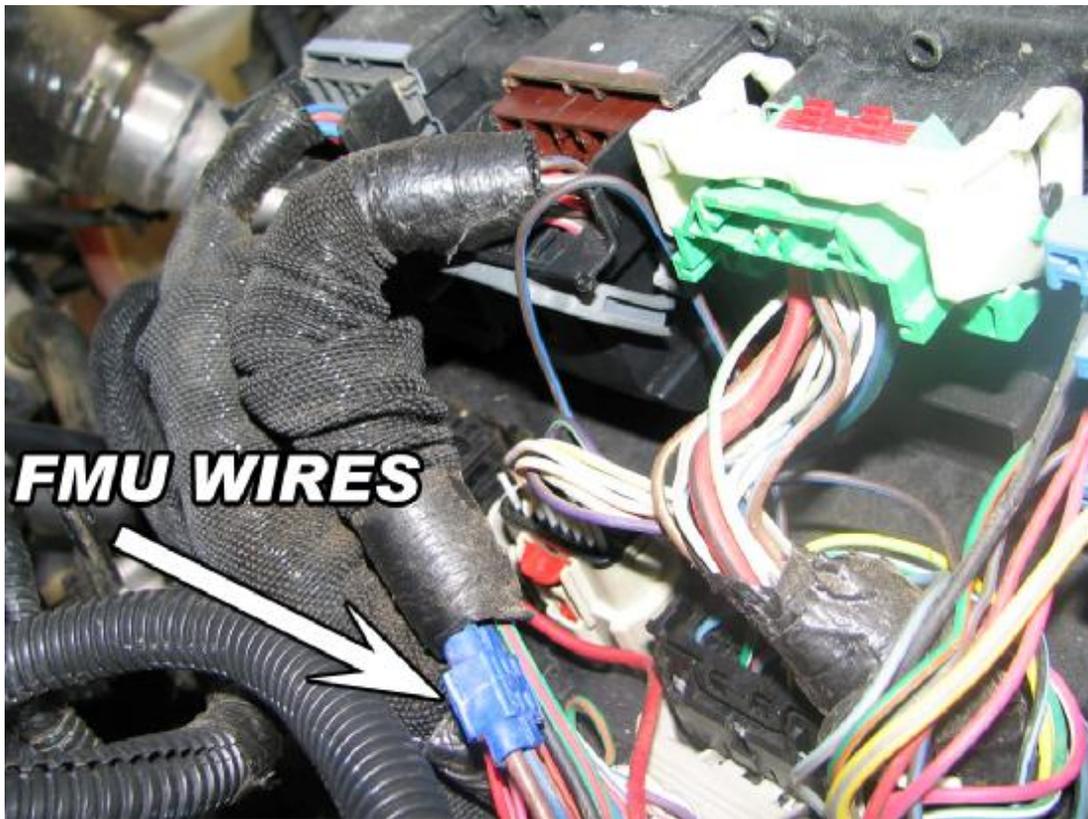




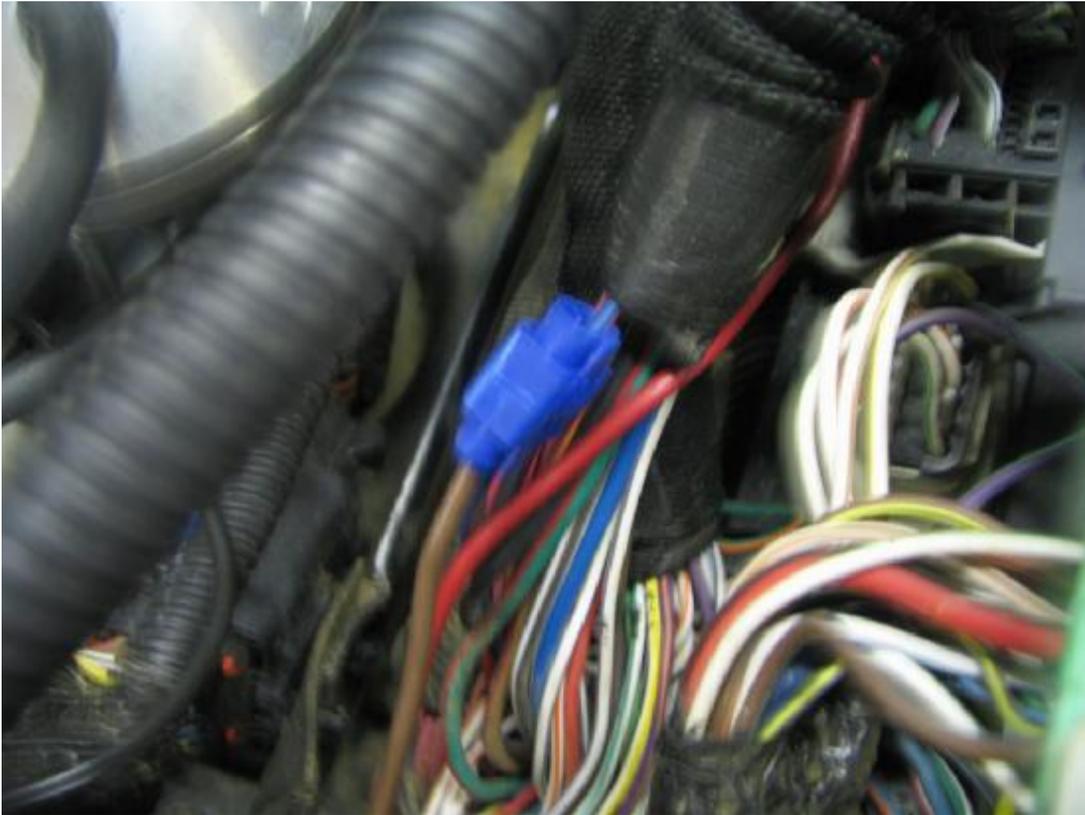
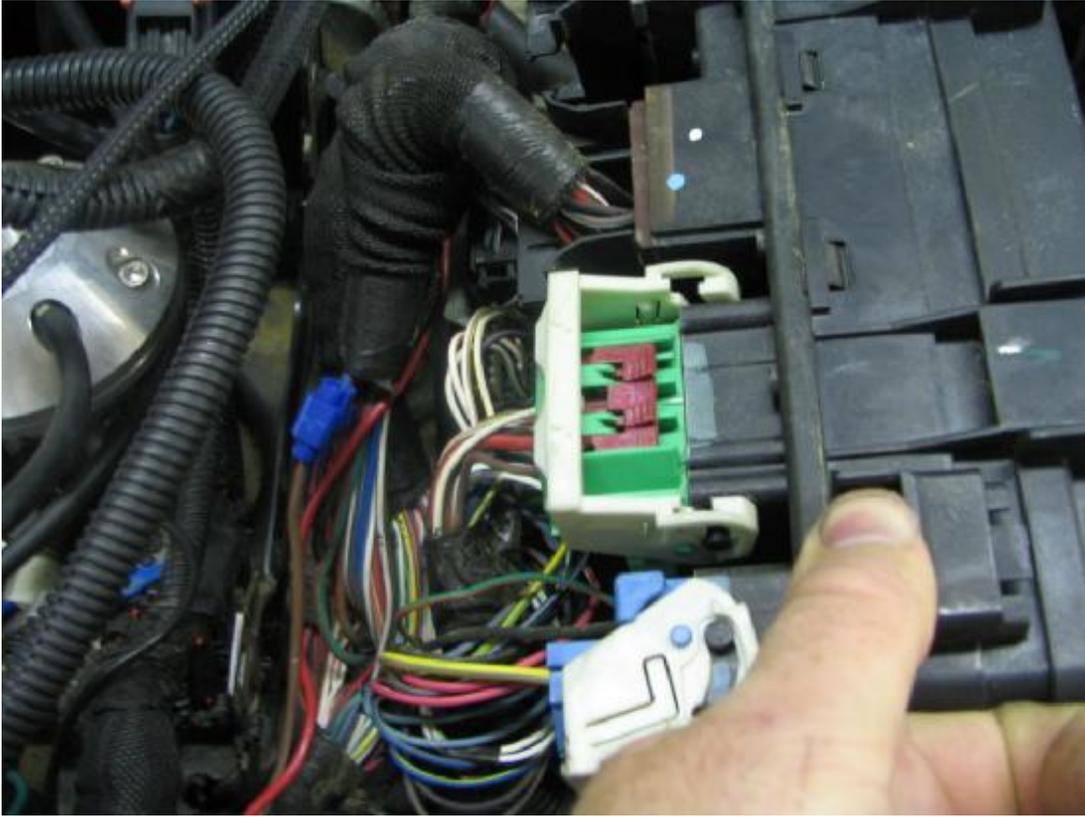
PHOTO# 18 – FMU Relay Mounting

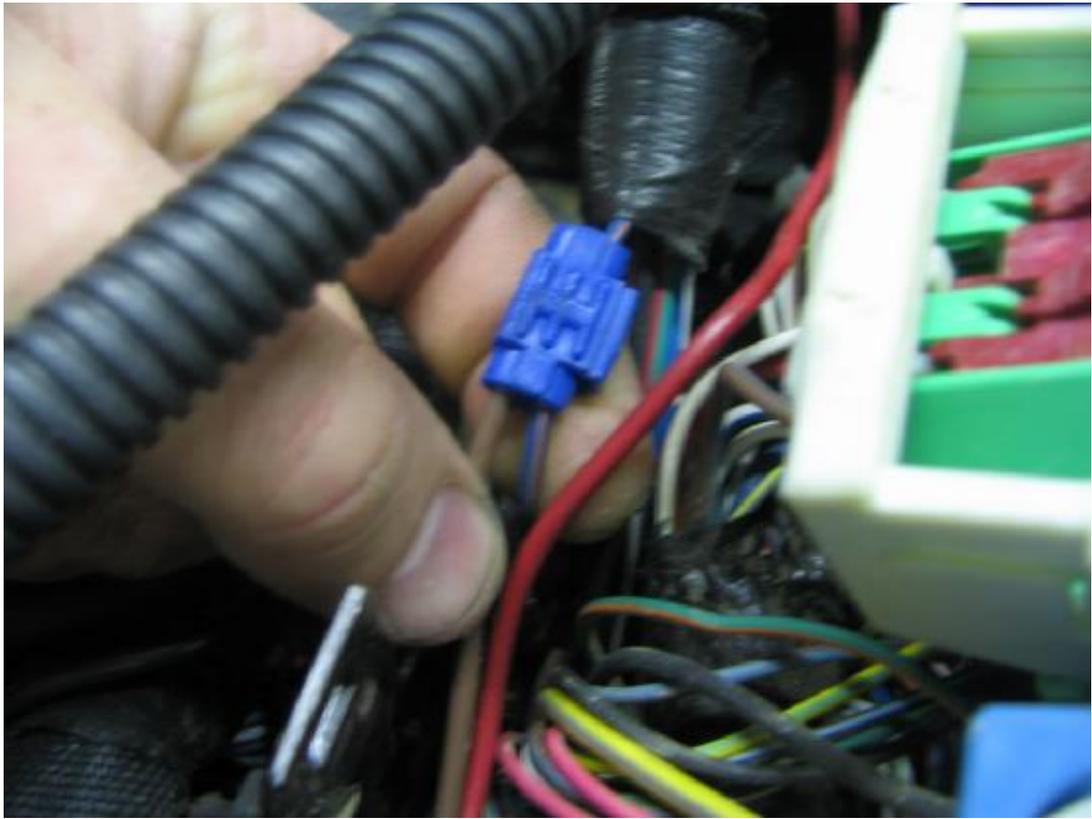


PHOTO# 19 – FMU Wires

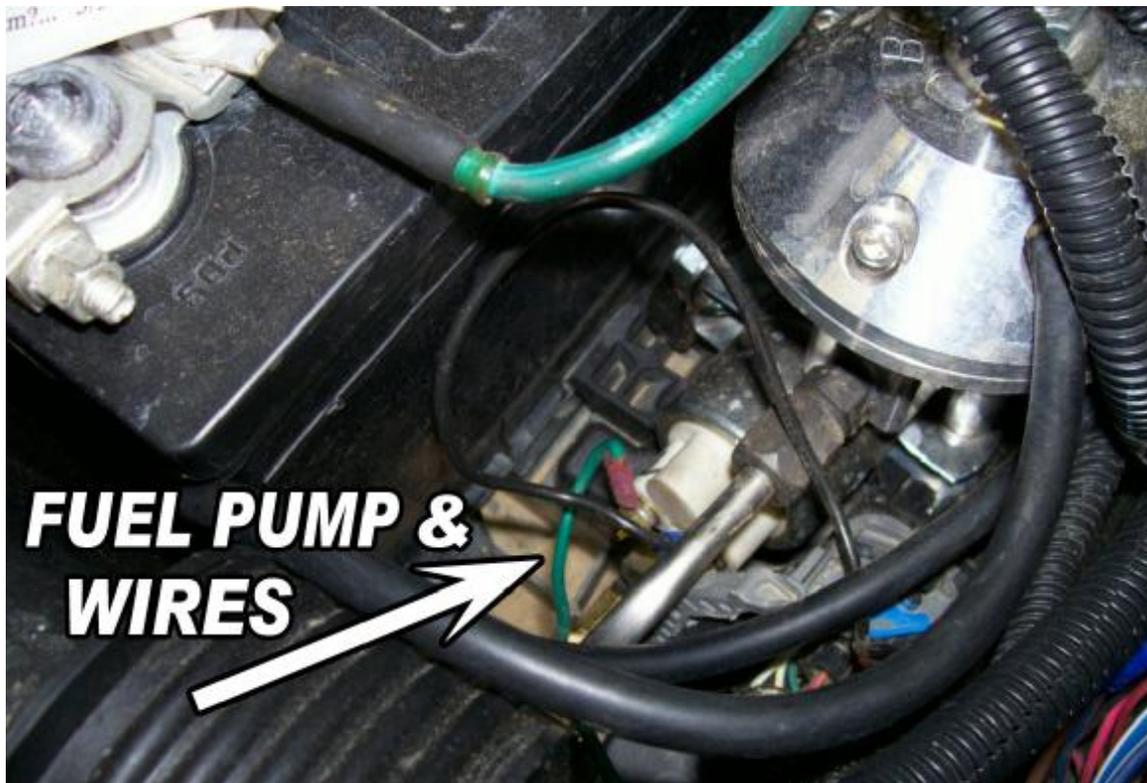
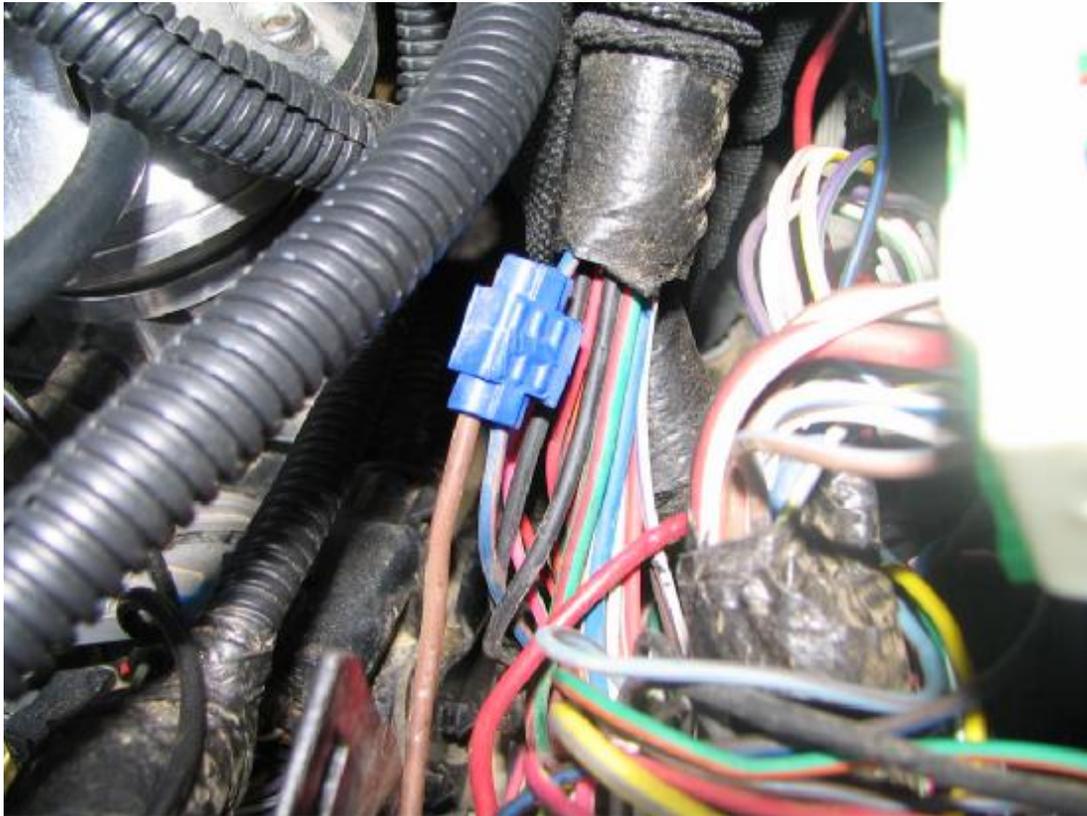


PHOTO# 20 – Fuse Box Wires (3 photos)

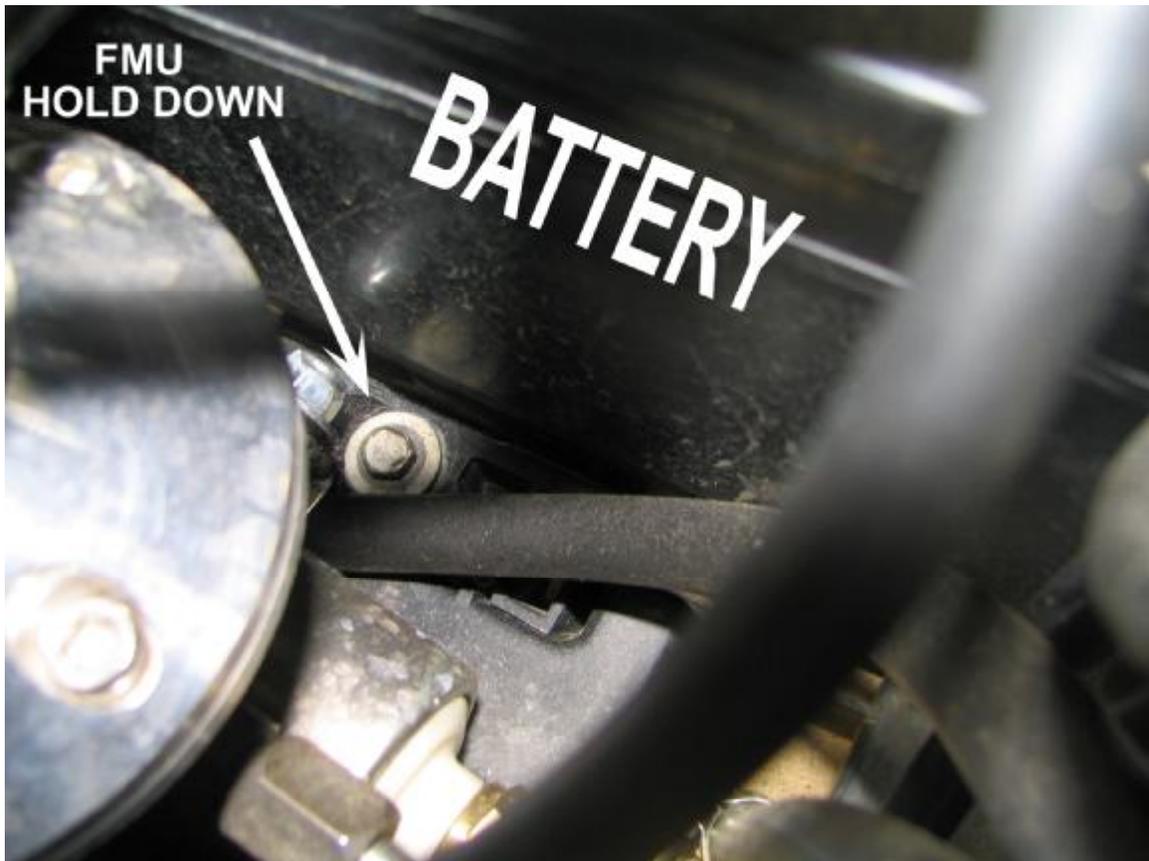




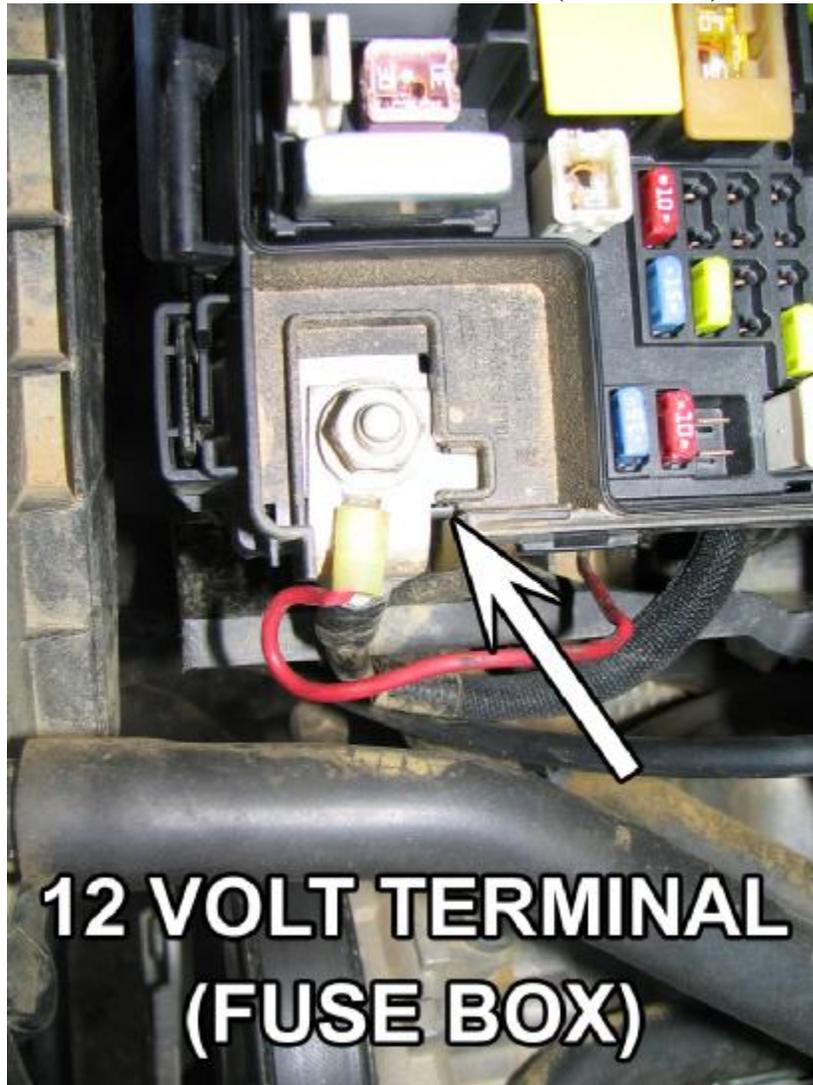
PHOTO# 22 – Fuel Pump Wires (2 PHOTOS)



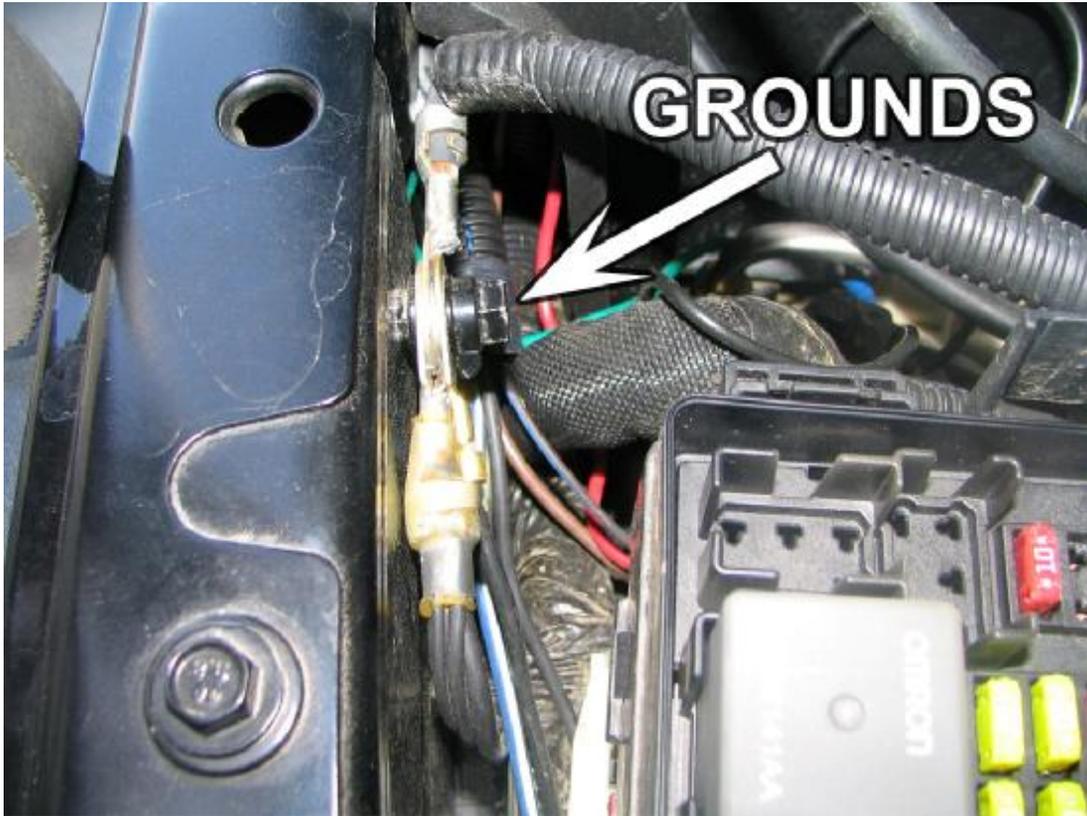
**PHOTO# 16 – Fuel Management Unit (FMU) hold down**



**PHOTO# 21 – 12 Volt Terminal (in fuse box)**



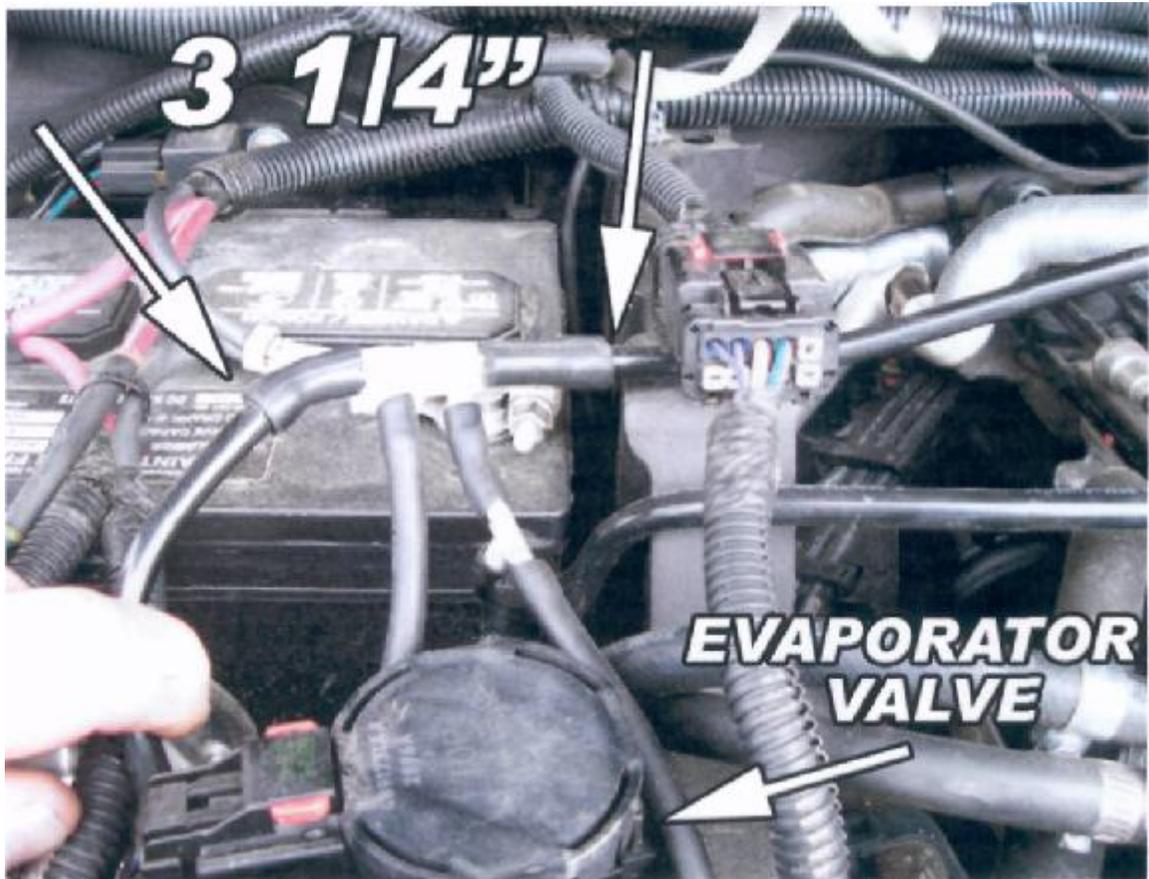
**PHOTO# 23 – Grounds**



**PHOTO# 24 – 3" Intake Tube**



**PHOTO #30 Vacuum tube & Tee to evaporator valve**



41. Install vacuum Tee with the furnished hoses and ty-wraps.
42. Connect the FMU vacuum hose and BY-PASS valve hose to the Tee.  
**See photo #24.**
43. Install air filter to the supercharger tube (3"). Run the tube under the small A/C line. CHECK CLEARANCE TO PULLEY! SOME VEHICLES WITH UNDER HOOD PADDING WILL PUSH THIS PIPE DOWN AND RUB IDLER PULLEY! **See photo #24.**
44. Connect 3" tube to blow-off valve with the orange silicone hose furnished. Use the 2" piece to connect to the intercooler pipe and the scat hose to connect to the 3" air pipe.
45. Install air filter box and connect to 3" tube with black scat hose and two #48 clamps (furnished)
46. Connect the oil cooler line to OUT of the supercharger using the banjo fittings, copper washers and clamps furnished, cut to fit. **See photo #25.** Install a copper washer on each side of the banjo fitting.
47. Install the oil filter in the 13" hose that is connected to the bottom of the oil tank. Cut the hose 3 1/2" from supercharger "IN" to locate the filter to the rear of the supercharger. **See photo #26.**
48. Connect the oil filter line to the "IN" fitting of the supercharger with the flow going to the supercharger. TIGHTEN CLAMPS but not BANJO FITTING. **See photo # 27.**
49. Fill oil tank to top with supercharger oil furnished with the kit. **DO NOT WASTE AS THIS IS VERY EXPENSIVE OIL!**
50. With the "IN" banjo fitting loosened, apply pressure to the top of oil tank with squeeze bulb furnished until oil comes out of "IN" banjo fitting. NOW TIGHTEN THE FITTING. DON'T WASTE THE OIL!!!

**PHOTO# 24 – 3” Intake Tube**



**PHOTO# 25 – Oil Cooler Hoses (at Supercharger)**



In the Photo brass fittings were used to attach the oil lines.  
Your kit contains banjo bolts and fittings for this step.

**PHOTO# 26 – Oil Filter Installation**



**PHOTO# 27 – Oil Filter Line Location**



51. Check all hoses and secure with tyrap supplied.
52. Reconnect the battery. The horn might blow for a second. This is normal.
53. You are ready to do **FIRST RUN AFTER YOU CHECK EVERY THING YOU HAVE INSTALLED! DOUBLE CHECK! TRIPLE CHECK! ARE YOU READY? Check again!**
54. Turn on key. **DO NOT START.** Check for fuel leaks. Pump will run one (1) second for each on key times. Do this 3 to 4 times!
55. Start engine. **LET IDLE.** Check belt to ensure it is in the grooves. Check the FMU and the fuel pump for leaks while the motor is running. **MAKE SURE FMU IS RUNNING BY TOUCHING THE ADJUSTER SCREW WHILE ENGINE IS RUNNING!** You should feel some vibration!
56. After engine has run, check fluid in oil tank. Fill to  $\frac{3}{4}$  full mark with engine running. **ALWAYS CHECK OIL LEVEL IN TANK WITH ENGINE RUNNING.**
57. **Check for leaks!! AGAIN!! AGAIN!!**
58. Reinstall grill cover with push pins that you took out AND LOST. Be sure to reconnect the turn signal lights before you secure in place.
59. Your FMU is preset to a safe fuel pressure. You do not need to adjust it unless you have a dyno or a wide band O2. If you **MAKE ANY ADJUSTMENTS TO IT, IT'S YOURS,** and you can damage the engine if you do not have the **CORRECT EQUIPMENT. IT'S YOURS ANYWAY!**
60. Road test (short trip). **RECHECK ALL FUEL FITTINGS & HOSES.**

**You should have spent less than 3 hours to install this kit.  
UNLESS YOU ARE A SLOW READER!**

For Tech support or HELP call 205-251-1472 & ask for supercharger tech support.

If for any reason you hear "ANY PING"- BACK OFF and CALL support.

This kit is designed for **PREMIUM FUEL ONLY**, 91 OCTANE OR BETTER. REMEMBER IT TAKES 10 GALLONS OF 91 OCTANE FUEL TO DILUTE 1 GALLON OF 87 OCTANE.

TIPS:

Read the instructions **FIRST! SECOND! THIRD! FOURTH! FIFTH!**

If your road test sets a check engine light you will need to read the codes and call TECH Support.

I have found that if you stab the throttle and lift it quickly the PCM will set an ESC code. This is not a failure. The PCM thinks the engine has spun the rear tires and sets a code. A **KEY OFF AND BACK ON** will reset this without any problems.

If your vehicle has over 50,000 miles you might want to install new set of spark plugs. I have a performance plug for it in stock. **STOCK PLUGS WILL WORK!**

I also have a **SMALL SCAN TOOL** that can be mounted on the dash to let you look at the engine operations and clear the codes if necessary. **SEE HESCO WEB. [www.hesco.us](http://www.hesco.us)**

The ends you cut from your original radiator hose are marked from the factory as to radiator or thermostat end. Install them opposite of how they are marked. Straight end to the radiator, curved to the thermostat housing.

If you have a full tank of low octane fuel it may be necessary to drain and fill the tank with Premium fuel before you can safely subject the vehicle to hard acceleration.

The drive belt is a tight fit. Leave the top idler off and have someone move the tensioner into the un-tensioned position. Install the belt and the top idler at the same time. Once installed the tensioner can be relaxed.

Do not adjust the FMU fuel pressure. If you have detonation call Tech Support.

Give us your feed back.

**THERE ARE NO WARRANTIES IMPLIED OR INTENDED,  
BECAUSE THIS IS A PERFORMANCE KIT!**

## **Picture list for the 3.8l Supercharger kit:**

- 1. Oil stick modification**
- 2. Radiator baffles.**
- 3. Oil cooler hoses off vehicle.**
- 4. Oil tank.**
- 5. Oil cooler placement.**
- 6. Radiator fluid removal.**
- 7. Radiator hose modification.**
- 8. Supercharger bracket mounting.**
- 9. Intercooler hose & installation**
- 10. Supercharger discharge tube installation**
- 11. New belt wrap.**
- 12. Belt adjustment holes**
- 13. Tensioner range**
- 14. Intercooler to throttle body tube**
- 15. By-Pass valve**
- 16. FMU hold down**
- 17. Fuel hose routing and connections**
- 18. FMU relay mounting**
- 19. FMU wires**
- 20. Fuse box wires**
- 21. 12 volt terminal in fuse box**
- 22. Fuel pump wires**
- 23. Grounds**
- 24. Intake tube 3"**
- 25. Oil cooler hoses at supercharger**
- 26. Oil filter installation**
- 27. Oil filter line location.**
- 28. Upper radiator hose**
- 29. Upper radiator hose tube**
- 30. Evaporator valve**

# Parts list for 3.8L Supercharger Kit:

## Packing list

ROTREX Supercharger Kit Serial# \_\_\_\_\_ Date: \_\_\_\_\_

**PLEASE READ and check your parts before you start.**

Kit has supercharger, supercharger oil tank, bracket, bolts, clamps, 3/8" hose, filter, fittings, copper washers and special supercharger oil.

1. ROTREX supercharger \_\_\_\_\_
2. Supercharger Pulley (installed on compressor) Size \_\_\_\_\_
3. Intercooler 18X6X3 \_\_\_\_\_
4. Oil cooler with bracket \_\_\_\_\_
5. Oil cooler filter \_\_\_\_\_
6. Oil tank \_\_\_\_\_
7. Supercharger discharge tube (2"x 90degree x 16" long) \_\_\_\_\_
8. Intercooler to Throttle body tube (2"x90degree,45degree,45 degree) \_\_\_\_\_
9. Air Filter to Supercharger (3" w/90degree, 180 degree bend) \_\_\_\_\_
10. FMU (fuel management unit) complete w/hose, relay and wires \_\_\_\_\_
11. 1- 6mm nut (relay mounting) \_\_\_\_\_
12. 1- 6mm flat washer (relay mounting) \_\_\_\_\_
13. Serpentine Belt # 6K1099 \_\_\_\_\_
14. 1-12X3.25" CAT hose \_\_\_\_\_
15. By-Pass Valve(0 280 142 108) \_\_\_\_\_
16. 1- 1"silicone hose 2"long \_\_\_\_\_
17. 1- 1"silicone scat hose 6" long \_\_\_\_\_
18. 2- Idler Pulleys (MD129355) \_\_\_\_\_
19. 2 pair Idler spacers \_\_\_\_\_
20. 2- 10X1.5X50mm bolts (idler bolts) \_\_\_\_\_
21. 2- 10mm lock washers (idler washers) \_\_\_\_\_
22. Supercharger Bracket (chrome) \_\_\_\_\_
23. 1- 8MMX14 USS cap screw
24. 1- 8MM flat washer \_\_\_\_\_
25. 1- 8MM lock washer \_\_\_\_\_
26. Alternator bracket (chrome) \_\_\_\_\_
27. 1.5" dia. Stainless Steel top radiator hose tube (black powder coat) \_\_\_\_\_
28. 6-ea # 32 hose clamps \_\_\_\_\_
29. 6-ea # 48 hose clamps \_\_\_\_\_
30. 4-ea # 12 hose clamps \_\_\_\_\_
31. 2-ea # 24 hose clamps \_\_\_\_\_
32. 36" ¼ vacuum hose \_\_\_\_\_
33. 3-ea 2"HTS hose 3"long \_\_\_\_\_
34. 1-ea 3"HTS hose 2"long \_\_\_\_\_
35. 1-ea 2.75" HTS 45 degree hose (might need to be cut to length) \_\_\_\_\_
36. 4way vacuum tee \_\_\_\_\_
37. 4- 4" tie wraps \_\_\_\_\_
40. 4" 5/16" vac. hose (2" on ea. end of vac. Tee) \_\_\_\_\_

- 41 6- 1/4 X 14”L tie wraps \_\_\_\_\_
- 42. 12” X 5/8 loom (black plastic) \_\_\_\_\_
- 43. 1/2x3/4 grommet (Intake air sensor) \_\_\_\_\_
- 44 Fuel line disconnect tool (BLUE tool) \_\_\_\_\_
- 45. Pressure bulb for oil tank prime (white rubber) \_\_\_\_\_
- 46. 1-coolant suction tool (not w/ all kits) \_\_\_\_\_
- 47. 1-ea. 5/16X3/4 USS cap screw (FMU bracket) \_\_\_\_\_
- 48. 2-ea. 5/16 flat washers (FMU bracket) \_\_\_\_\_
- 49. 1-ea. 5/16 lock nut (FMU bracket) \_\_\_\_\_
- 50. 1- alum. “L” bracket (oil tank mounting bracket) \_\_\_\_\_
- 51. 1- 1/4X3/4 USS cap screw (tank bracket) \_\_\_\_\_
- 52. 2- 1/4” flat washers (tank bracket) \_\_\_\_\_
- 53. 1- 1/4” USS nyloc nut (tank bracket) \_\_\_\_\_
- 54. 36” 1/4” clear tubing \_\_\_\_\_
- 55. 15ft. 3/8”oil cooler hose \_\_\_\_\_
- 56. Super charger oil \_\_\_\_\_
- 57. Instruction manual w/pictures. \_\_\_\_\_

**Special Notes:**

**Kit Packaged By:** \_\_\_\_\_

11/12/09