



*Performance Spoken Fluently*

## Instruction Manual



### 3.6Liter V6 Pentastar Intercooled



**INSTALLER: Read and understand entire instruction manual before starting installation of system.**

**Take note of the following before proceeding:**

1. Proper installation of this supercharger kit requires general automotive and mechanic knowledge as well as experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please contact your RIPP or Vortech dealer for possible installers in your area.
2. This product was designed for use on stock (un-modified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock (unless kits have been designed otherwise such as Jeep Wrangler kits). If the vehicle or engine has been modified in any way, check with RIPP or Vortech prior to installation and use of this product.
3. **Use only premium grade fuel with a minimum of 91 octane (R+M/2).**
4. Always listen for any sign of detonation (knocking/pinging) and discontinue hard use (no boost) until the problem is resolved.
5. RIPP is not responsible for any clutch, transmission and/or drive-line/engine damage. RIPP will not take responsibility for any installer related issues once the system is out of our hands.

**Exclusions from RIPP/Vortech warranty coverage consideration includes, but not limited to:**

1. Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
2. Continued operation with an impaired vehicle or sub-system.
3. The combined use of RIPP components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

**Transmission (Auto/6spd)**

- **6SPD:** Extreme care must be taken when driving a supercharged vehicle with the stock clutch. If clutch slippage is detected, discontinue hard use. RIPP recommends replacing the stock clutch with a higher capacity unit if slippage occurs.
- **Automatic transmission:** Auto transmissions may not up shift at full throttle when driving in "D" (drive) mode, THIS IS a Direct product of OEM programming and not the provided tuning. In order to shift at full throttle, end users may either "lift to shift" by raising the accelerator slightly (partially). RIPP makes no claims as to the reliability of the transmission with the supercharger installed.

**Cruise Control:**

Please take note - the factory Cruise Control cannot be programmed with any custom mapping. It is a normal condition to feel a slight surge during some CC functions. It's best to manually clear and reset when this happens.

**Water in Air filter and/or Supercharger:**

Please note, water from an open hood venting system can and will spill directly into the supercharger inlet and/or the supercharger's crank case vent plug. Please take proper precautions to properly protect your supercharger from this condition. If water goes directly into the supercharger it can and will damage the compressor and oil contaminate the lubrication system, this condition immediately voids warranty.

**INSTALLER: Read and understand entire instruction manual before starting installation of system.**

All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, or translated into another language in any form, by any means without written permission of RIPP Superchargers.

**INSTALLER: Read and understand entire instruction manual before starting installation of system.**

# Introduction:

Congratulations on your investment into the RIPP *Supercharger Drive System* (SDS) designed for the 2012-2013 JEEP Wrangler equipped with the 3.6L Pentastar V6 engine. With proper installation, use and maintenance you will enjoy many happy trouble-free miles. The following instructions will include steps for both six speed manual and automatic Jeeps.

RIPP Supercharger Systems are a simple but effective way of increase your engine's total output, without compromising its integrity. Intended for off road use only, but designed to be daily driven, its superior ingenuity is what makes it all worth it. These instructions are a necessary guide to the proper installation and maintenance of your RIPP Supercharger system.

The SDS is intended to be installed by a professional technician and should not be attempted by the hobbyist. We feel its best to source out a local performance oriented shop before attempting to install your system. Without proper knowledge of fuel and ignition mapping, permanent damage can and will occur.

Whenever adding more power to any vehicle, the steering, braking and handling of the vehicle will differ from standard passenger vehicle's and trucks. Avoid unnecessary abrupt maneuvers, sudden stops, or over sharp turns. If larger tires are installed your speedometer will read lower than the vehicles actual speed, we highly recommend a speedometer calibrator (included in some kits).

**BE LAWFUL, TREAD-LIGHTLY, DRIVE WITH CARE,  
REDUCE SPEED AND WEAR SEAT BELTS AT ALL TIMES.**

**INSTALLER: Read and understand entire instruction manual before starting installation of system.**

## Index

<u>Step</u>	<u>Page</u>	<u>Motion</u>
-------------	-------------	---------------

	1	Special Notes
	2	Introduction
	3	Index
	4	Tools & Recommendations
1	5	Disconnect Battery
2	5	Remove Air Box
3	5	Remove Shroud
3a	5	Coolant Tank Removable
4	5	Install Injector
4a	6-7	Removal of Upper Intake Plenum
4b	8	Gap and reinstall Factory Sparkplugs
4c	8	Modify Factory Upper Plenum
5	9	Remove Factory Fan Shroud
6	9	Remove Serpentine Belt from Pulleys (WILL BE REUSED)
7	9	Remove Factory Belt Tensioning System
7a	9	Remove Factory Belt Tensioner Cover Plate
8	10	Remove Power Steering Pump from Engine Block
9	10	Install Power Steering Pump Spacer
9a	10	Installed lower power steering pump spacer
9b	10	Reinstalled power steering pump
10	11	Drain engine coolant
10a	11	Remove and modify lower coolant hose
11	11	Modify small coolant hose
11a	11	Twist small coolant hose
12	12	Install supplied belt tensioner
13	12	Modify radiator supports
14	13	Alternator bolts
14a	13	Modify aluminum heater hose
15	14	Prepare supercharger for installation
16	14	Installed supercharger assembly
17	15	Reinstalling serpentine belt
18	15	Modify Power Steering Pump hard Line
19	16	Remove Factory automatic transmission cooler (automatic transmission only)
20	17	Installing Supplied Automatic Transmission Cooler (Automatic Transmission Only)
21	18	Modifying Factory Fan Shroud
22	19-22	Preparing and Installing Front Mounted Air to Air Intercooler <ul style="list-style-type: none"> <li>• Installing Piping</li> </ul>
23	22	Installing Inlet Hat
24	23	Coolant Overflow Tank Bracket
25	24	Install PCV Valve
26	24	Vacuum Line Installation
27	24	Wrapping it up

Diagrams

15	Belt Diagram
22	Intercooler Piping Diagram
25	Coolant Over-flow Drill Template
25	Intercooler Cut Template


RIPP Supercharger kits feature products from these manufactures; we also recommend using them for routine service thereafter.

The image displays a collection of logos for various automotive brands. At the top left is the RIPP logo with 'MODIFICATIONS, Inc.' underneath. To its right is the VORTECH logo. Further right is the NGK SPARK PLUGS logo. Below these is the WURTH logo. At the bottom row, from left to right, are the Castrol logo, the Gatorback logo with the tagline 'THE QUIET BELT', the Gates logo with the tagline 'THE QUIET BELT', and a yellow bottle of PTECH.

**The following is a list of tools recommended by RIPP Modifications for proper installation of your.**

- Air or electric impact tools
- Air saw or metal saw
- Basic mechanics tools (Metric tools will be required)
  - Long Extension will be required
- Catch Pan for Coolant
- Catch Pan for Transmission fluid (Auto Transmission Only)
- Grease or Oil

**Recommendations:**

- It is essential to start with a cold vehicle.
- Secure any radio or alarm codes beforehand.
- Disconnect any large audio systems until AFTER fuel/ignition computers have calibrated.
- Confirm the end user's oil grade and type (synthetic or conventional) and change oil and filter at this time. We recommend  Castrol GTX and a premium oil filter.
- New oil filter

**INSTALLER: Read and understand entire instruction manual before starting installation of system.**

**Reverse out any and all performance tuners**

**FROM Vehicle before disconnecting battery. Including speedometer correction deviser, gear correction or performance tuners.**

## 2012 Jeep Wrangler JK RIPP Supercharger install

**Step 1:** Secure any alarm or radio codes before disconnecting the battery; disconnect battery.

**Step2:** Remove Air filter and air temp sensor note position of air temp sensor when removing. When reinstalling the sensor you will need to point it in the same direction. The air temp sensor should be facing the air stream with the support face the throttle-body – be careful not to damage it when it is being removed.



**Step 3:** Remove upper shroud and set aside

**Step3a:** Remove coolant over-flow tank set aside, this will not be reused

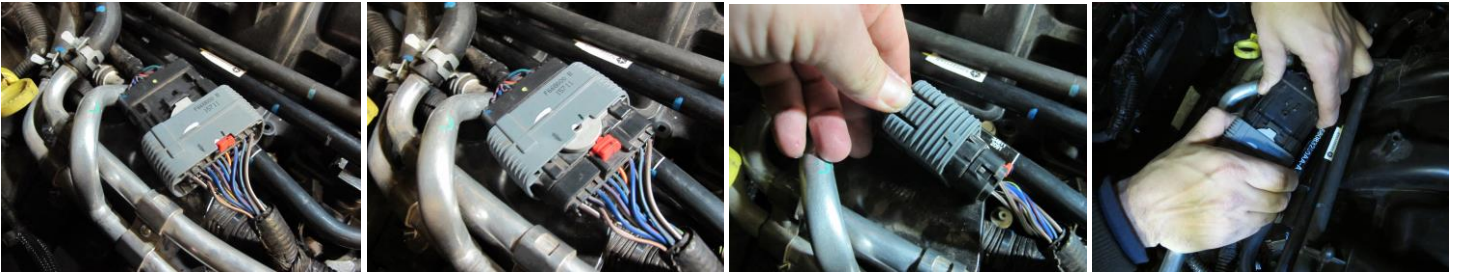


**Step 4: Install Supplied Injectors:** Prepare to remove the intake manifold with the following steps

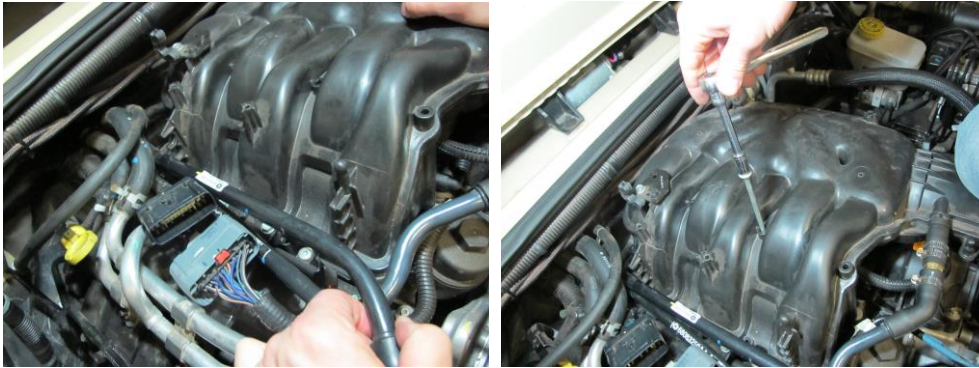
- Unplug Vacuum lines behind throttle body
- Unplug and remove MAP sensor
- Unplug Throttle Body



**Step4a: Remove Intake Manifold**



- Unplug large data-plug located on the passenger side of the intake manifold
- Pull red tab towards front of vehicle, squeeze grey tabs on side, pull towards front



- Remove Harness from Manifold pulling up on plastic clip
- Remove seven, 8mm bolts holding manifold down (leave in manifold)
- Remove two 10mm Bolts on passenger side manifold



- Remove four nuts on drivers side of the manifold, two front and two back
- Remove 2 Nuts holding aluminum heater tubes/ hose down. Follow bracket down next to passenger side valve cover removed two 10 mm nuts.



- Lift bracket connected to heater hoses off intake manifold to clear removal of it
- Once intake manifold is removed, cover intake ports with tape or rags to avoid getting debris in intake runner

**NOTE: Vacuum any sand or debris around injectors before removing injectors**



- Unplug injector by pulling back on the red safety latch, then unplug injector, do this for all six
- Using T-27 Torx-Head socket removed four bolts holding the fuel rail onto the lower Plenum (note fuel will spill out of injector rail be prepared).

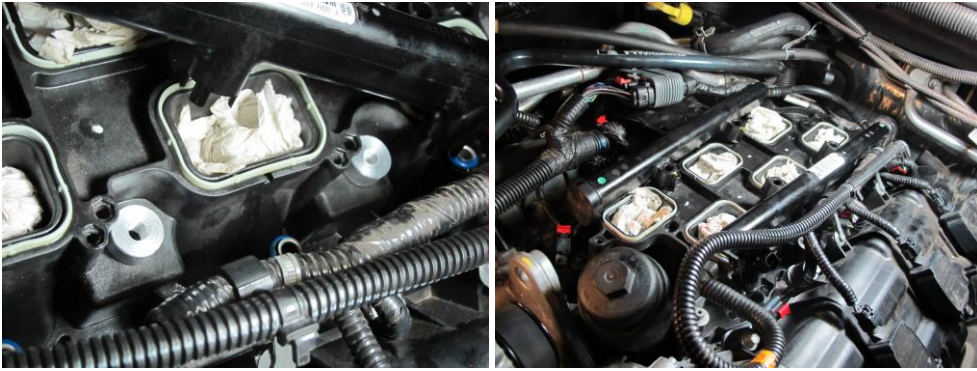


- Leave fuel rail in vehicle; flip over to driver's side. Remove stock injectors from rail – make sure stock O-rings are all accounted for
- The supplied injectors are taller than the stock ones, shims are provided to compensate in later steps.
- Please note the color of the bottom grommet on the new injectors as pictured, you will need to install the supplied Black/grey grommet. If you choose you can also use the factory bottom injector grommet.



- Once injectors are ready to be installed us a slight amount of grease to help seat them into the fuel rail.





- Install provided shims
- Reinstall fuel rail
- Use supplied longer hardware
- Tighten

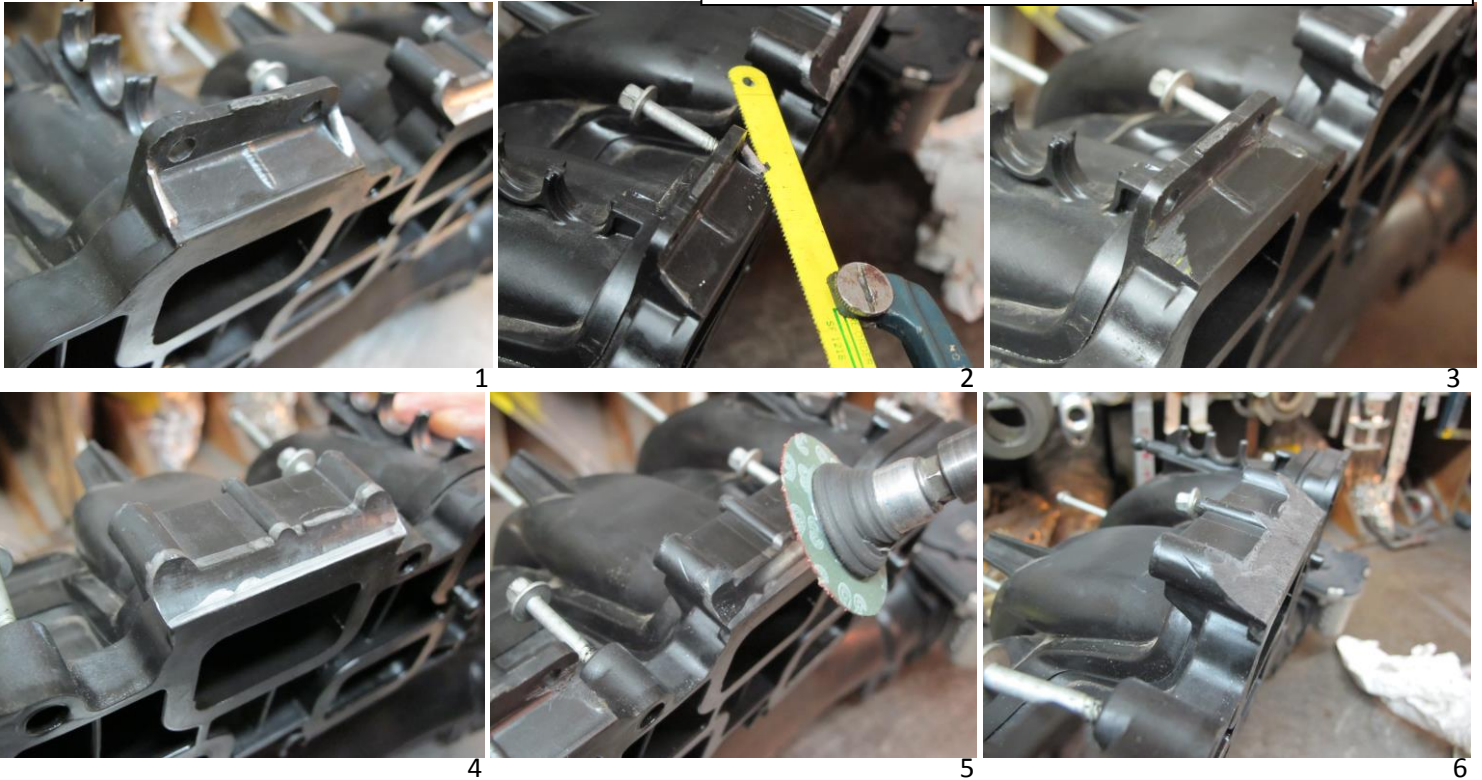
**Step4b: GAP Factory Sparkplugs**



- Unplug all coils and unbolt from valve cover
- Remove coils
- Take out spark plugs and gap down to .032in
- Reinstall – reverse previous steps.

**Note:** Spark-Plug boots can get stuck inside the head. Pulling on them with a pliers or poking at them with a screwdriver will break them. Please spray a small some lubricant in the inner and out walls and work gently until loose.

**Step 4c: Grind Intake Manifold and Reinstall**





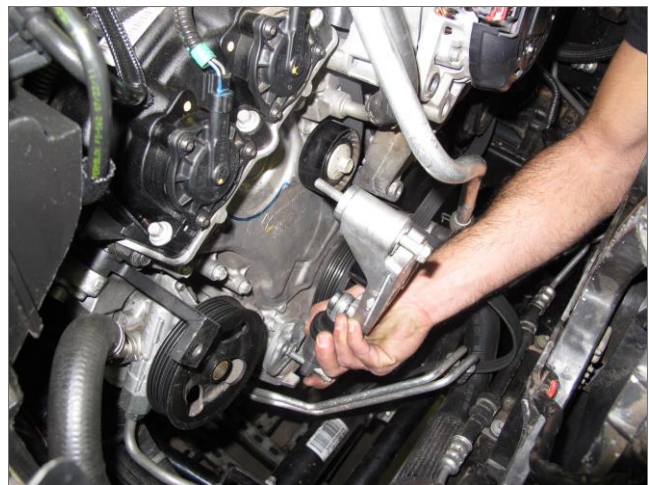
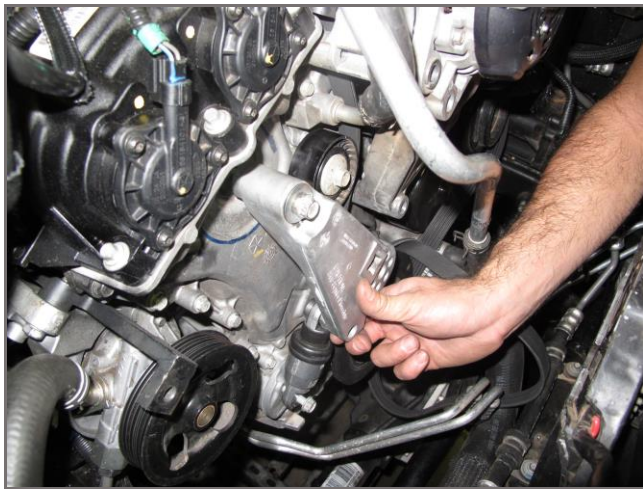
- Pictures 1-6 show the parts of the passenger-side (US) intake manifold that require trimming.
- Make sure to clean shavings from inlet runners
- The last picture is the finished and trimmed product reinstalled.
- Reinstall intake manifold and plug in all connectors. Do not use the Factory MAP sensor, install the RIPP supplied MAP sensor with the word RIPP on top.

**Step 5:** Remove electric cooling fan via two 8mm bolts, unplug connector and then pull upwards to remove from vehicle

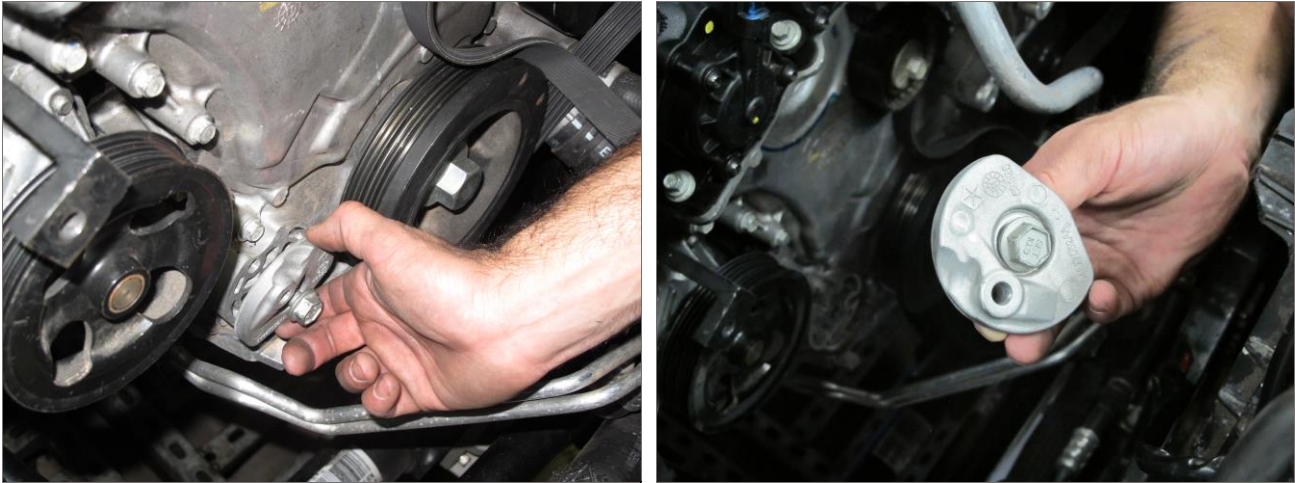


**Step 6:** Remove belt from Power steering pump, via the factory tensioning system. Using a 1/2in breaker-bar loosen tension on serpentine belt and remove belt from power steering pump. **NOTE:** Belt will remain in vehicle and **will be reused with supercharger system.** **Note:** Unless it has more than 40000 miles on it a new factory belt is recommended.

**Step 7:** Remove factory belt tensioning system from vehicle via two 13mm bolts affixing it to engine block. Set aside, this will not be used in later steps. This will also expose a cover plate that will need to be removed in step 7a



**Step 7a:** Remove cover plate via one 16mm bolt



**Step 8:** Remove Power Steering pump. Remove two upper and one lower 13mm bolts holding pump in place (do not remove hoses) let the pump hang to side.

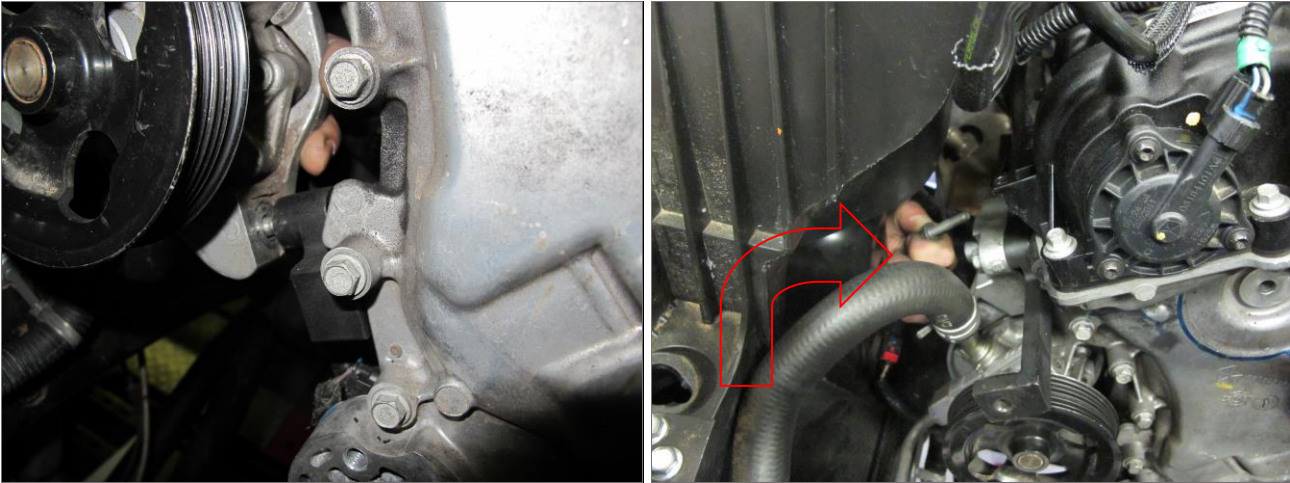


**Step9:** Install supplied Power Steering pump spacer/relocation bracket. The spacer will be mounted directly to the engine block where the power steering pump was located with supplied 5/16<sup>TH</sup> Allen-head bolts and they should sit flush into the supplied and installed bracket. (Torque to approximately 18lbs)

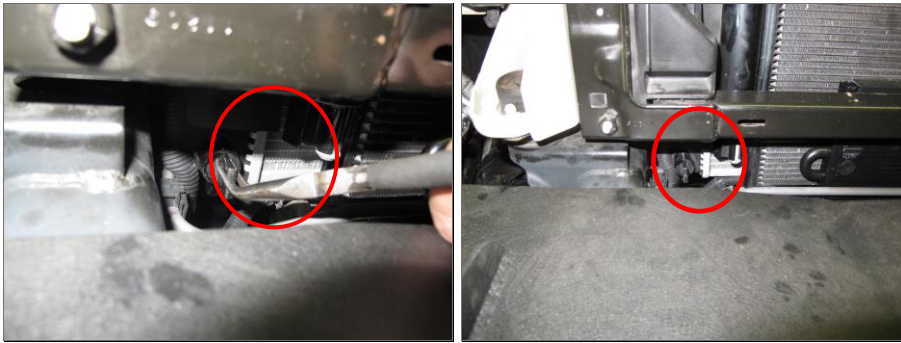
**Step9a:** Install lower power steering pump spacer/relocation bracket with stud in place, into the remaining lower power steering pump hole using the stock (OEM) lower pump hardware. **SNUG DO NOT TIGHTEN YET**



**Step9b:** Reinstall power steering pump into newly installed spacer/relocation brackets. To do this slip lower pump mount onto stud of lower spacer and thread nut on lightly to keep it in place and help align upper holes. Holding the lower metal (pressure) power steering pump hose use it as your alignment guide and thread upper mounting points, using previously removed factory hardware. **NOTE:** Once all bolts are threaded and you are ready to do final tightening step. Apply light upwards pressure via the metal pressure tube to help seat pump. Tighten all hardware.



**Step10:** Drain Coolant from radiator via Petcock located on the lower passenger-side of the radiator. Drain coolant into a clean pail it will be reused.

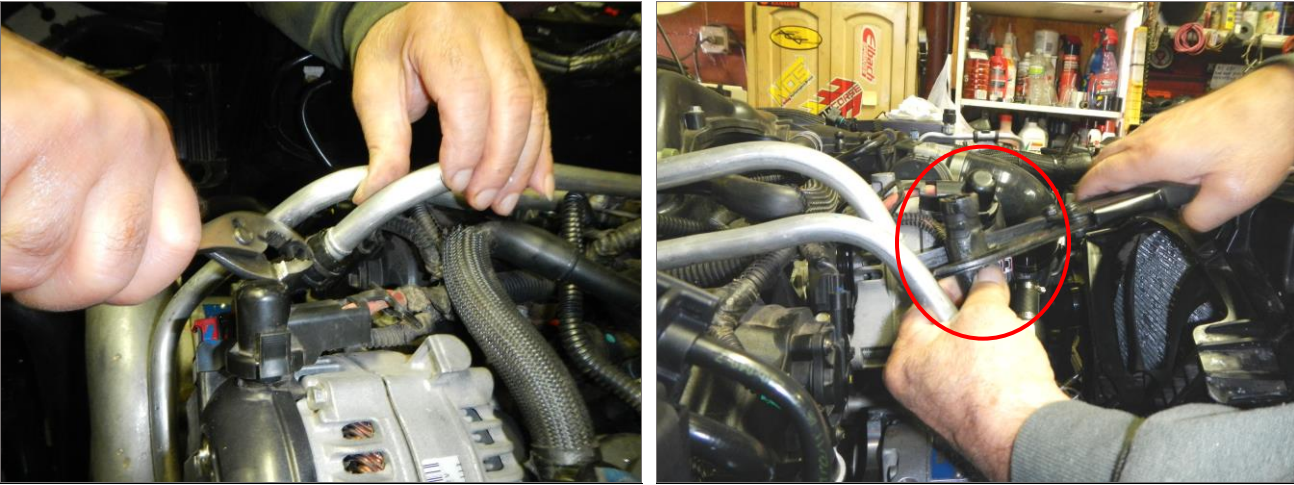


**ATTENTION:** The petcock on this radiator is very hard to open; there is no easy way to access it. If you cannot access it with the tools you have, use the lower coolant hose to drain fluid. It will be a bit messier but will avoid breaking something.

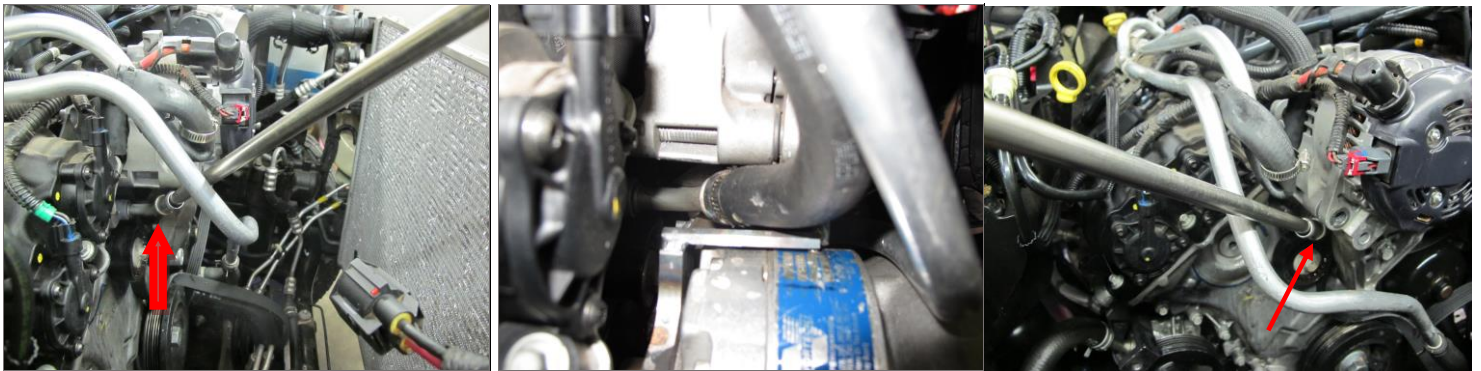
**Step10a:** Remove lower coolant hose from radiator side and cut approximately 3-4in off the radiator side of the hose or to the first bend. This will make room for the supercharger installed in later steps. Reuse factory clamp and reinstall to lower radiator. Point the clamps ears towards 11 o'clock direction, to avoid contact with pipe one of the intercooling system installed in later steps.



**Step 11:** Remove heater hose directly behind the alternator from engine block. Cut approximately 1.5in from engine side of the hose.



**Step11a:** Twist heater tube clockwise (upwards) towards alternator leaving just enough room to reinstall heater hose and clamp. Using a 3/8<sup>th</sup> socket extension, insert into tube and using controlled steady force, pull upwards until it is in the proper position (approximately 1/4in away from alternator). This makes room for the supercharger bracket installed in later steps. Reinstall heater hose and clamp to and, tighten.



**Step12:** Install supplied belt tensioner to engine block using the supplied 10mm bolt. Be sure to align the alignment pin on back side of tensioner to slot already in black. When properly installed the tensioner sitting neutral will be sitting at the 1 o'clock area (-/+).



**Step13:** Remove the upper radiator supports to move radiator forward making more room for the supercharger installed in later steps. To do this, remove the power steering reservoir (fig1) and let hang to expose mounting point. Loosen bolt

holding bushing (L/R), slip them out of the radiator and then mount the radiator directly to the upper radiator frame and insert the bushing behind the radiator tabs (fig2). Reinstall hardware and power steering reservoir.

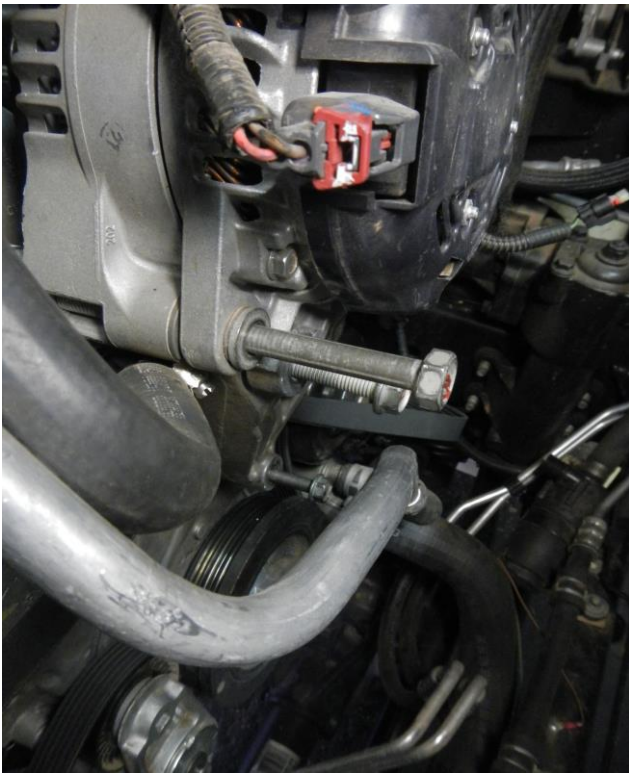


1



2

**Step14:** Remove the three bolts holding the left side of the alternator in place (upper most bolt is very long). This will prep you for the installation of the supercharger assembly.



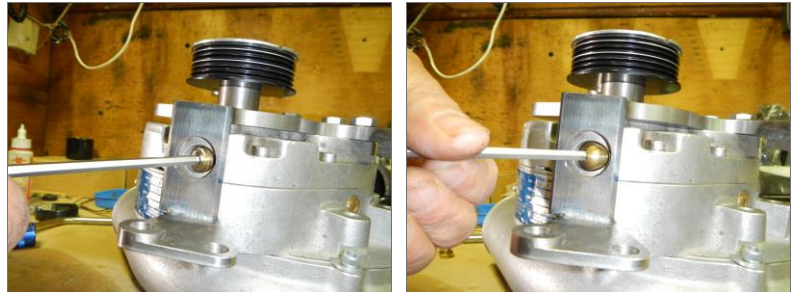
1

**Step14a:** the lower aluminum heater hose will need to be bent up approximately 2-3in upwards, gently pull upwards until it looks like Fig2 Note: when installing supercharger this may need more tweaking.



2

**Step15:** Prep blower for install. Remove the shipping plug from the blower and install the vent plug supplied with the system. This step must be done at this time; it will be inaccessible once the blower assembly is on the vehicle. The shipping plug is flat topped; the vent plug is domed top.

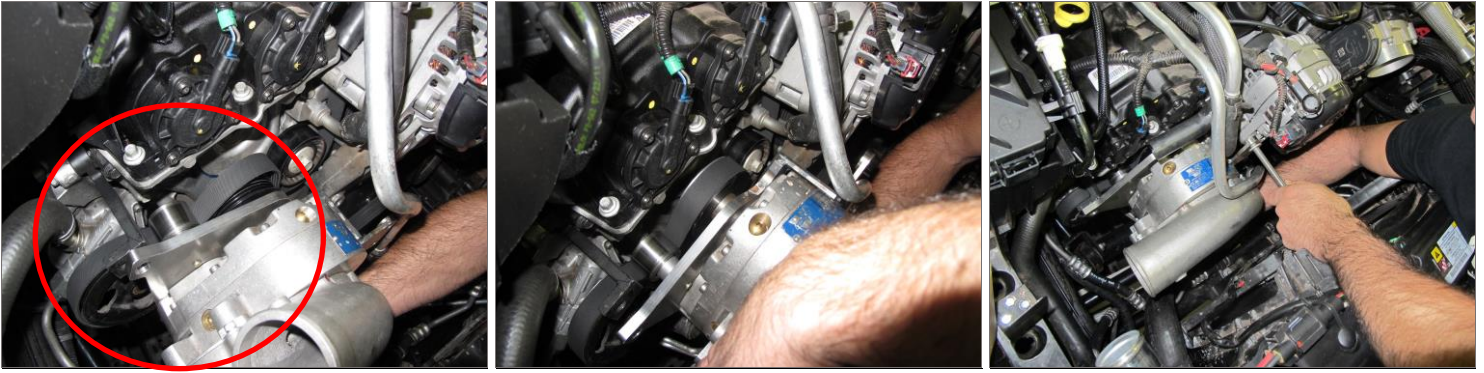


**Step16:** Install Blower assembly.

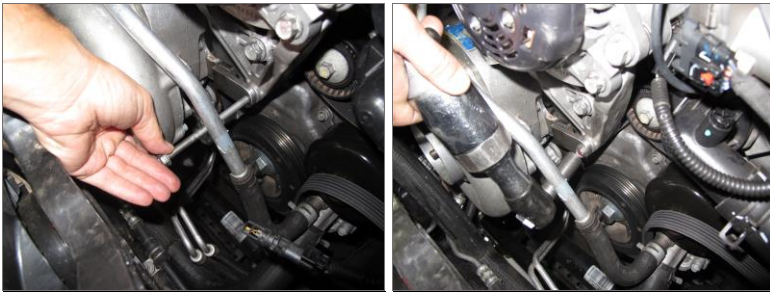
- Start by facing the pulleys towards the engine; thread the serpentine belt upwards between the power steering and factory idler.



- Slip the belt over the supercharger pulley holding the blower slightly off center clockwise. Align the serpentine belt onto the power steering pump also leaving slack on the driver's side of the engine for later steps.



- Once the belt is on the pulley and idler, turn it counter clockwise and thread the first bolt of the supercharger bracket which should align itself with the top most alternator mounting point, in the previously removed bolts. The longest bolt will be the easiest to thread and hold all in place. **Do not tighten anything yet.**
- The second bolt which holds the blower assembly in place will be the lowest most alternator bolt previously removed. Simply rotate the assembly until the hole is aligned and thread loosely.



**ATTENTION:** When threading alternator bolts back into the block, to hold the supercharger assembly, it is easy to cross thread. Please be sure to hold weight off bolts and insure the bolt goes in smoothly.

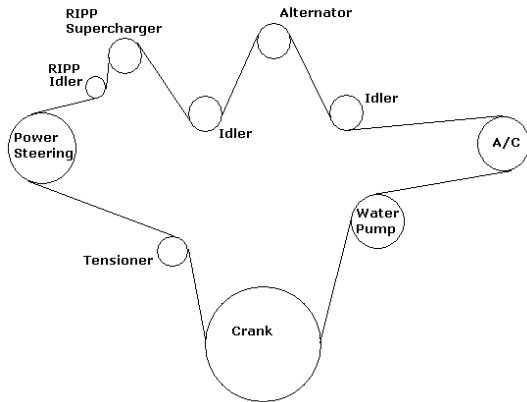
- .The third and fourth bolts are 1) remaining on the alternator, thread and leave loose and 2) the one aligned with the previously installed power steering spacer/relocation bracket, thread and tighten



**Step 17:** Thread belt onto all pulleys – starting with the crank pulley and working your way to the water pump pulley as the last pulley. Apply pressure to tensioner and thread belt onto all accessories as per our belt diagram leaving the water pump as your last thread point. Make sure the belt is properly seated now because once the system is installed; it's hard to get to the belts and revisit these steps. .

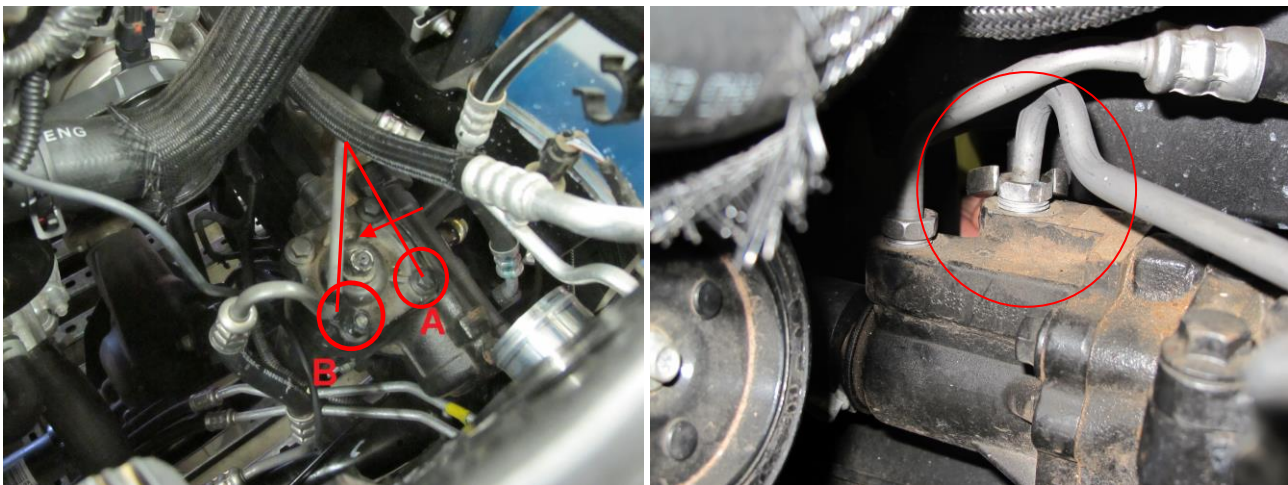


## 2012 Jeep Wrangler 3.6I V6 Belt Dio RIPP Supercharger



**Step18:** Reposition power steering hose located on power steering box. In this step you will need to simply loosen the 18mm flair nut holding the outlined aluminum hose in picture below. It will need to be repositioned to make room for the intercooler piping in later steps.

- Move factory stud from position A in the picture below to position B retaining plastic holding clip..
- Loosen 18mm flair nut from Drives Side (US) fender well as pictured, swing to new position and tighten

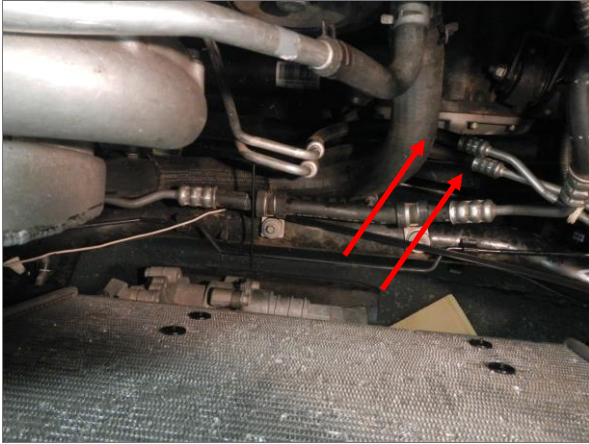


**Step19:** Removing factory Transmission Cooler (**Automatic Trans only, 6spd skip to Step21**)

- Remove factory radiator grill via the locking clips
  - Unplug left and right signal lights
- Once all clips are out pull firmly on the grill, there are a series of press is clips located along the bottom of the grill, they should all come loose easily.
- Located on the driver's side of the trans cooler, remove the trans cooler line block. (Slight oil will spill).



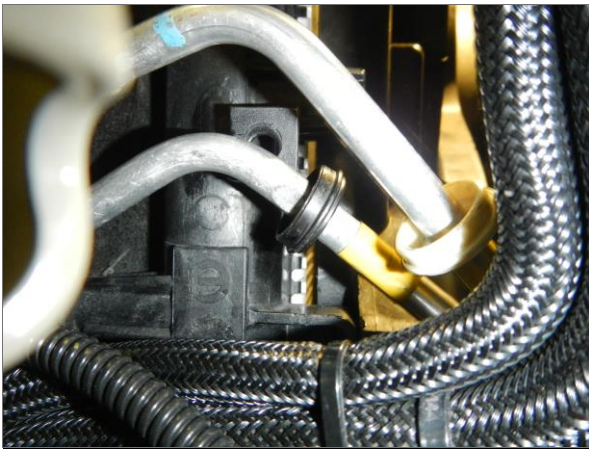
- Remove three mounting bolts from trans cooler and remove trans cooler from vehicle, this will not be reused. **NOTE:** do not tip the trans cooler on its side, trans cooler holds approximately 1/2quart of oil
- Following the trans lines to the driver's side of the radiator (US) there are two metal high pressure connections (Fig1), which connect the trans lines to the trans cooler. There are two Spring Clips (Fig2) holding the junction together. Using a Pick-Tool you can separate the lines easily. Remove these lines (Fig3&4) from vehicle; they will no longer be used. **NOTE:** (this clip will pop off SUDDENLY, and it will be hard to find should you need it in the future).



1



2

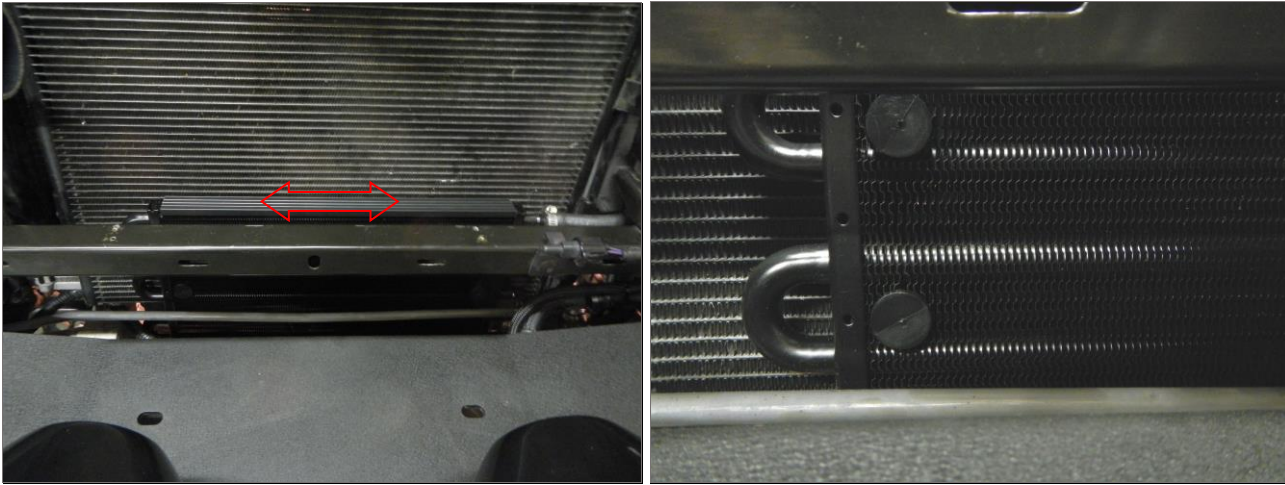


3



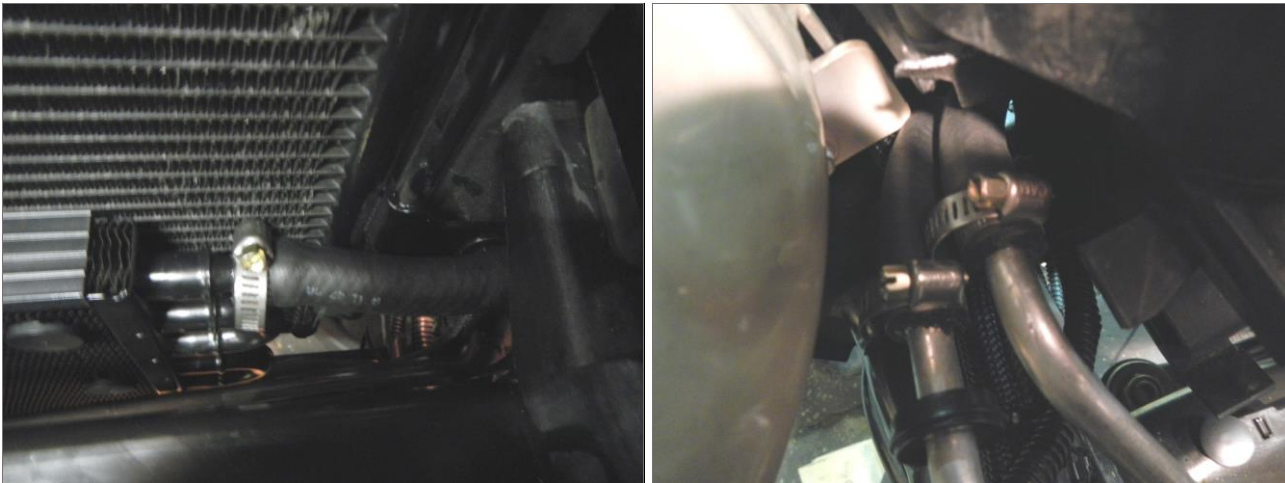
4

**Step20:** Installing the supplied trans cooler. Once the two metal trans cooler lines are out of the vehicle (fig4 previous page), you will be left with the aluminum lines leading towards the transmission. These points will be pick-up points for the RIPP supplied trans cooler.



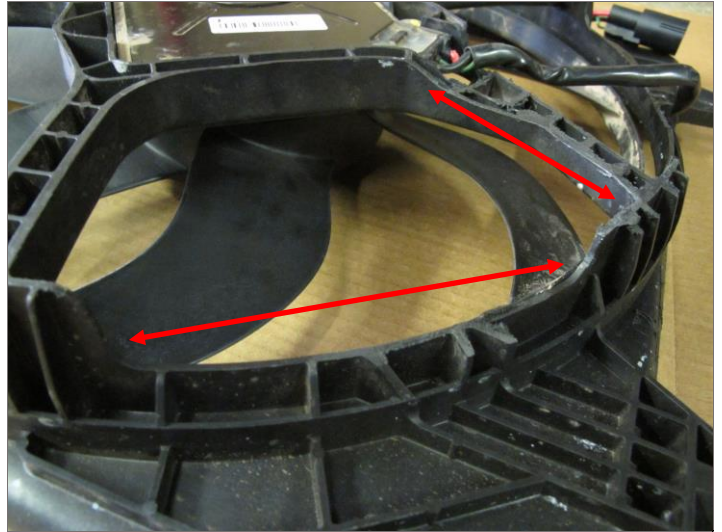
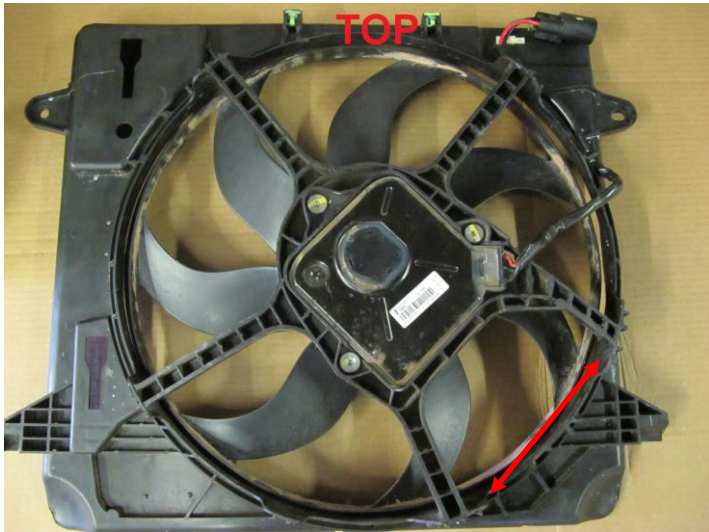
Mount the supplied trans cooler centered to the condenser using the supplied plastic fasteners. As pictured with the majority of the **unit below lower cross member, the cooler should sit flush so it will not interfere with the intercooler.**

- Using the 4 plastic mounting rods 4 mounting clips and 4 1x1 foam pads
- One by one installed 4 mounting rods through the transmission cooler
- Take the 1x1 foam pad supplied peel off the paper lining and slide them into the mounting rods sticking them against the transmission cooler
- Install the 4 mounting rods through the radiator/condenser and hold in the desired location
  - **Warning** do not use excessive force when pushing the mounting rods through the radiator/condenser excessive force could cause damage to the fins and possibly puncture tube
- Take the supplied mounting clips making sure they are in the correct direction with writing facing out install onto the mounting rods and cinch them until the one by one foam pads are slightly compressed.
- Cut off any excess mounting rod



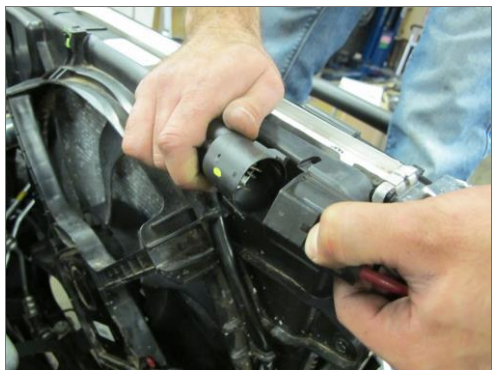
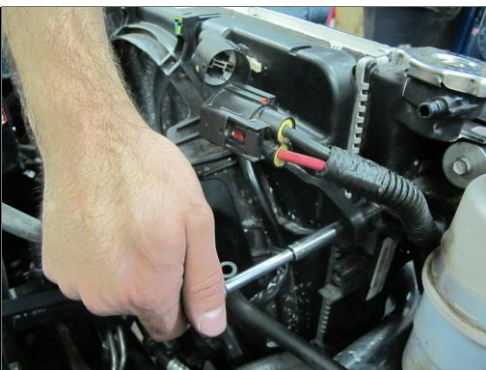
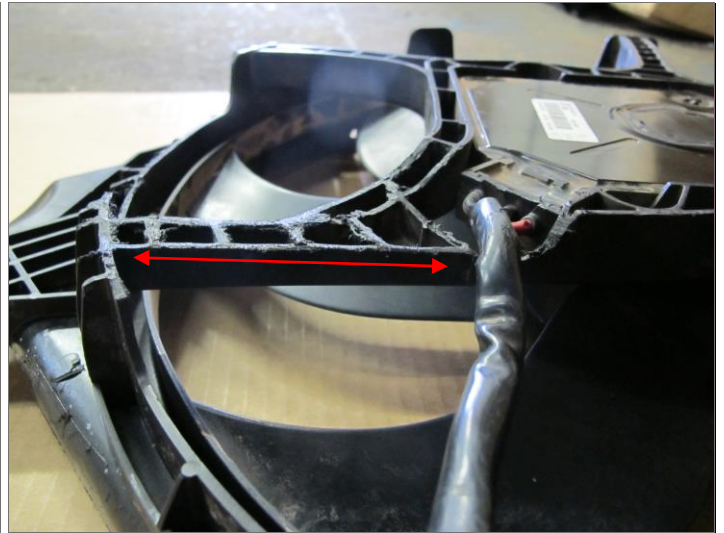
Run supplied hose to and from the aluminum pick up points to the freshly mounted trans cooler tighten clamps.

**Step 21:** prepping the fan: The fan will need to be modified to fit the supercharger air inlet duct in later steps.



- Using an air or electric saw trim the fan shroud (chassis) and route the power as pictured. You are basically cutting the one leg approximately in half depth from its stock form. (Structural integrity is not affected).

**NOTE: Make sure not to damage fan motor wires – once finished ZIP-Tie the fan wires in a location that will not interfere with supercharger in later steps. This can wait until after Step 23 Air Inlet Hat installation.**



- Reinstall fan reversing the removable steps and plug in fan switch.

**Step 22: Air To Air Intercooler Preparation** Installing the Front Mounted Air to Air Intercooler (FMIC) will cool the boosted air produced by the supercharger. This intercooler has been specially designed to both cool the air passing through it and be as little as a restriction as possible to the engine cooling system.

- Once grill is removed locate the soft plastic flaps located on either side of the radiator.



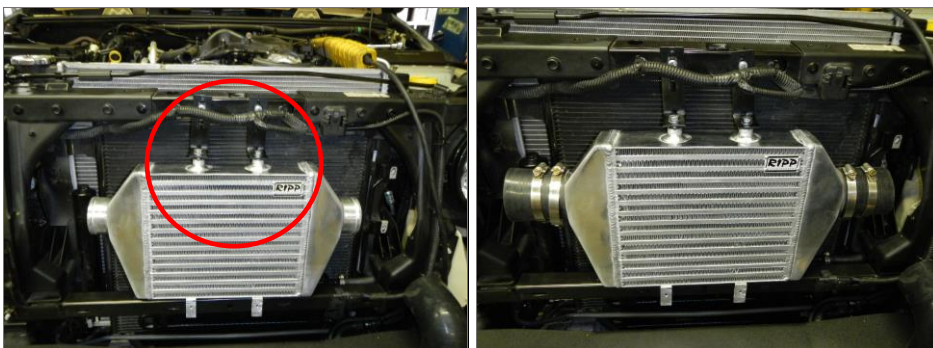
- Using a clip tool or a flathead screwdriver pry the push tabs loose



- Use an Razor Knife or Razor Blade to cut the plastic as shown in the above picture



- Use an air saw or dermal-tool to open area and make room for piping to pass
- For a cleaner look use a file to clean sharp edges or plastic



- Mount intercooler as close to center (Left to right) as possible in open radiator space
- Using the supplied "L" brackets and hardware, simply rest intercooler on lower radiator support and bolt into place as pictured.
- **A properly installed intercooler should not be touching the condenser.**

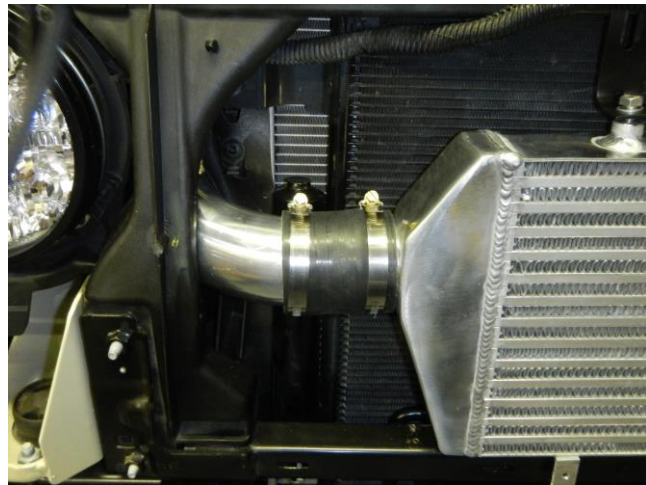
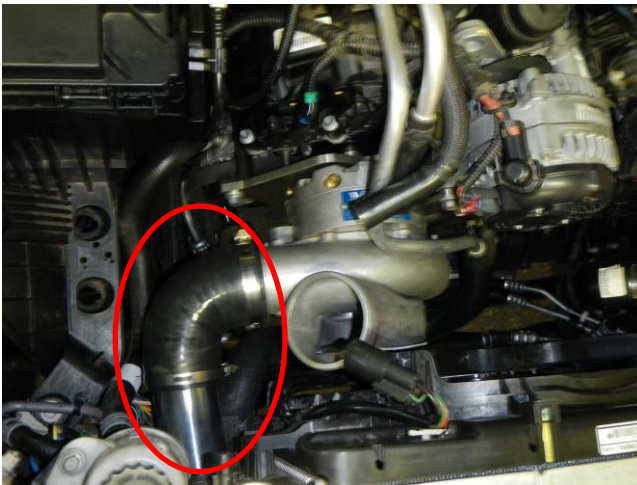


1) Assemble pipe loosely clamped



2) Thread piping through previously cut holes

**NOTE:** Make sure there is little to no interference around piping. These are tight fits, make sure nothing is pinched.



3&4) The pipe will find its "home" into the couplers – move onto the next pipe

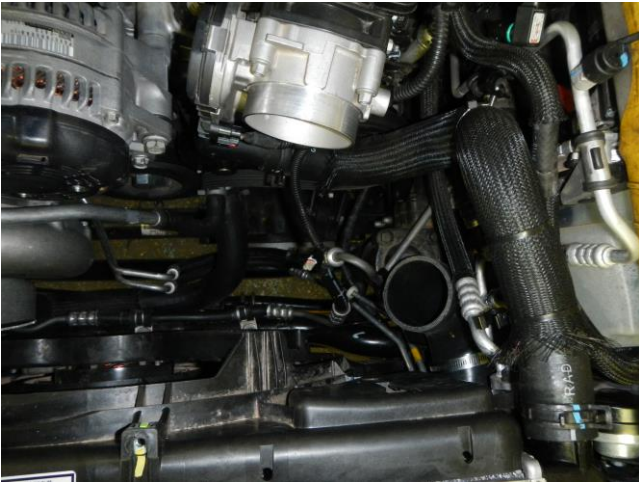
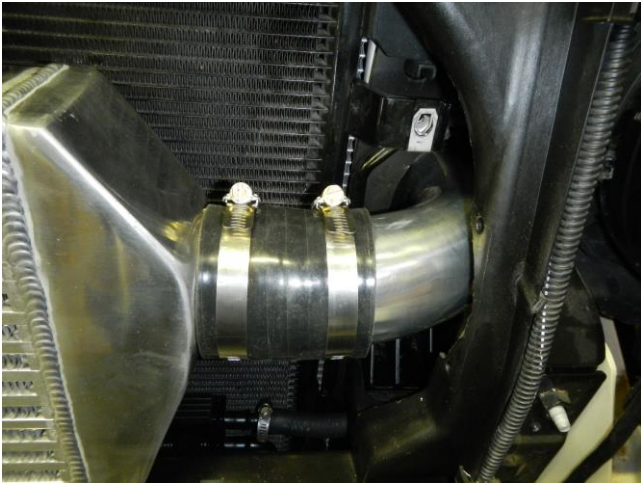


5) Assemble pipe loosely clamped

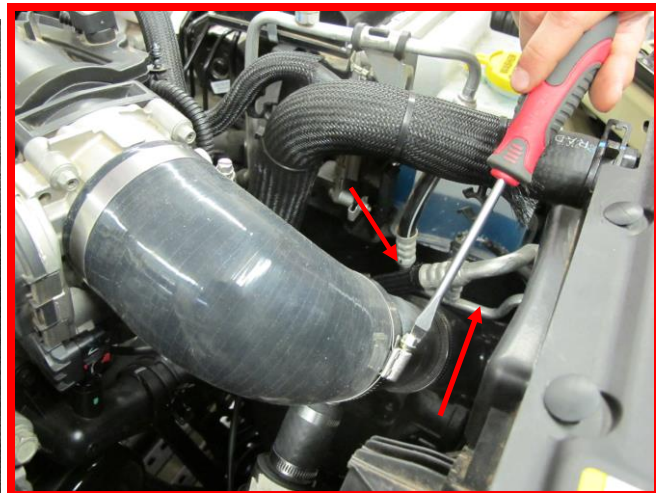


6) Bend AC line up slightly to make room for boost pipe, Install boost pipe leading to throttle body

**NOTE:** Make sure the intercooler is not interfering in with the condenser or radiator behind it. It will wear a hole and render the condenser useless.

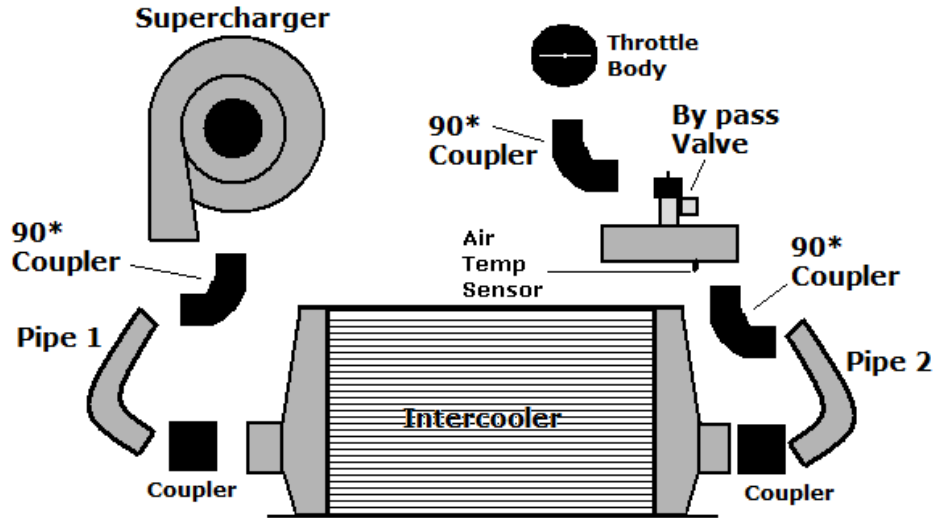


- Remove factory O-Ring from Temp sensor and install sensor directly into grommet in boost pipe.
- Make sure temp sensor faces air stream for proper metering... Support should face throttle-body



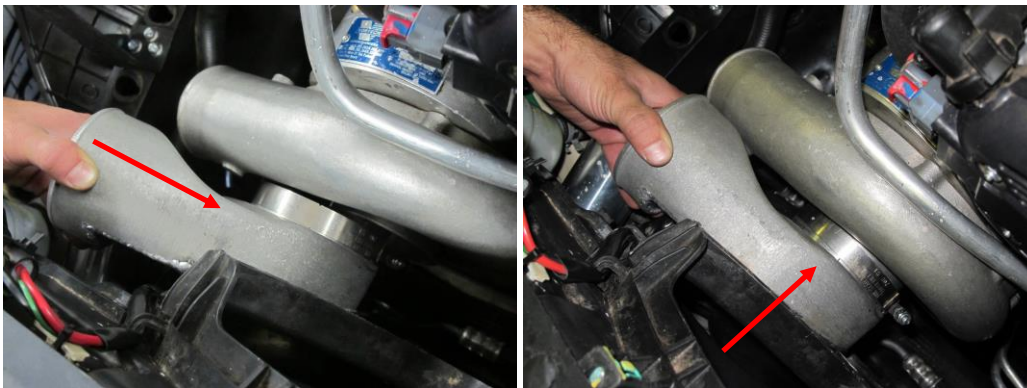
**NOTE:** On drivers side of vehicle boost piping could interfere with the Air Conditioning (A/C) pressure lines. If so, lightly bend the A/C lines upwards to create more room and position the boost piping so it does not interfere.

## 2012+ 3.6L V6 Pentastar Wrangler JK Intercooler Piping Diagram



**Step 23: Install the air inlet hat.** Install it by slipping the hat in the open leg of the fan. Once in slide onto compressor and rotate clockwise (upwards) while pushing inwards to seat, tighten.

**Note:** a small amount of lubricant can be applied to either supercharger's inlet tube or the Cast Plenums inner surface to help this slip over.



- Locate Cast Aluminum Air Filter Plenum with clamp pre-installed
- Squeeze Plenum in-between radiator and Supercharger until centered with air inlet
- Wiggle and/or turn it into place (This is tight) **be sure to leave clamp accessible for future service**



**HINT:** There may be excess trimming to the shroud at this point. If you do trim, use the blue shipping cover to protect the compressor's inlet from shavings. You can use a hack-saw blade to trim the plastic –or remove and file/shave down

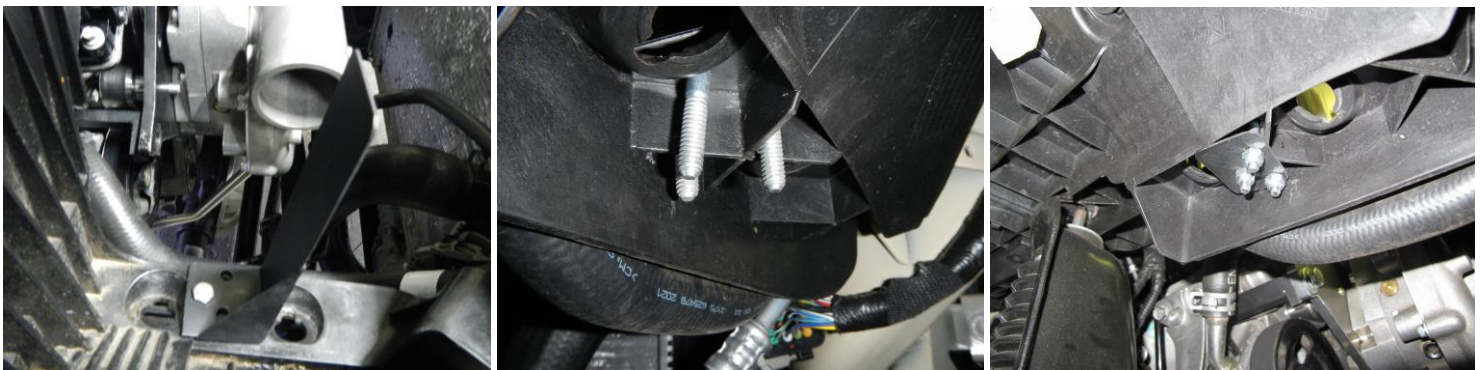


**Step 24:** Coolant overflow tank and bracket.

- The space formally occupied by the factory air bow will now be utilized for the supplied coolant overflow tank.
- Using supplied template place as pictured and mark three drill points.
- Drill three holes through plastic



- Place tank mount in aligned with holes
- Drop hardware in mounting holes
- Use supplied clamp, nuts and washers to strengthen the set up –
- tighten

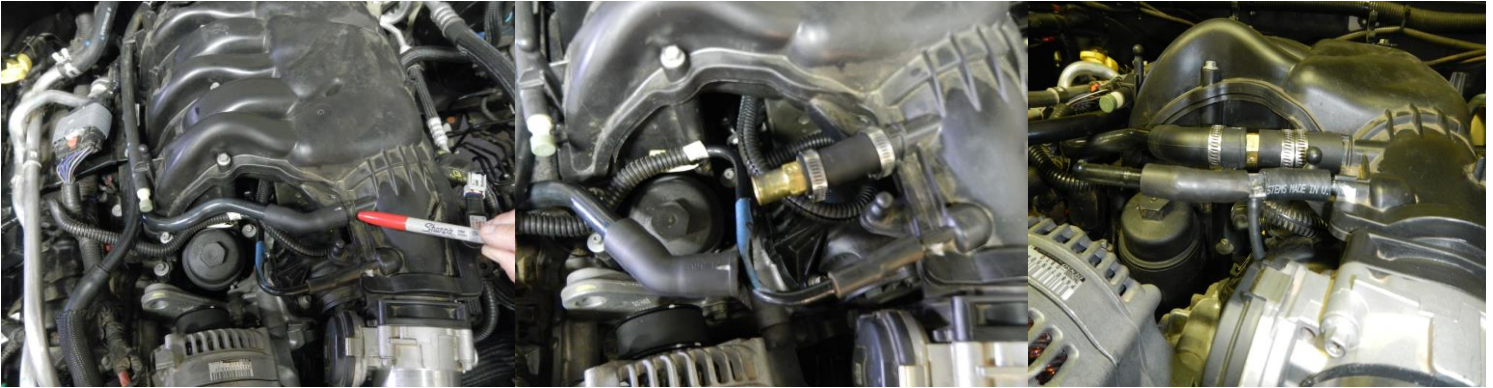


- Slide tank onto bracket until it bottoms out and make sure it's secure.
- Route coolant overflow hose from radiator to tank as preferred.



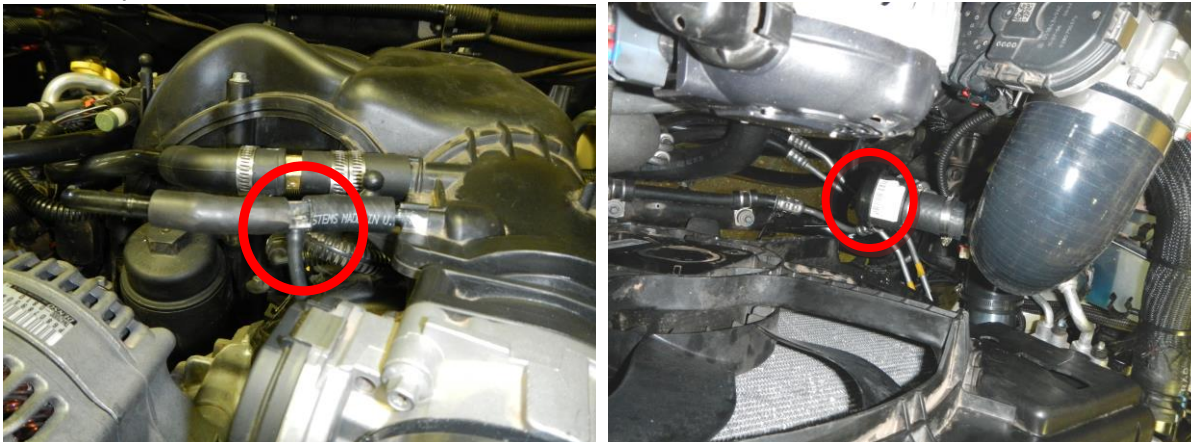
**Step 25:** Install PCV valve. **The PCV valve is a ONE WAY check valve and is critical to the proper running of your kit. It stops boost from entering the crank-case, but allows vacuum to travel back in for proper crank-case ventilation.**

- The supplied PCV valve installs in the crank case hose located behind the throttle body and slip in place.
- Simply cut the hose as shown
- Install the supplied PCV Valve with arrow pointing towards the intake manifold (in the line). The Valve should open in vacuum and close in boost. This valve stops boost from entering the crank case via the valve cover.



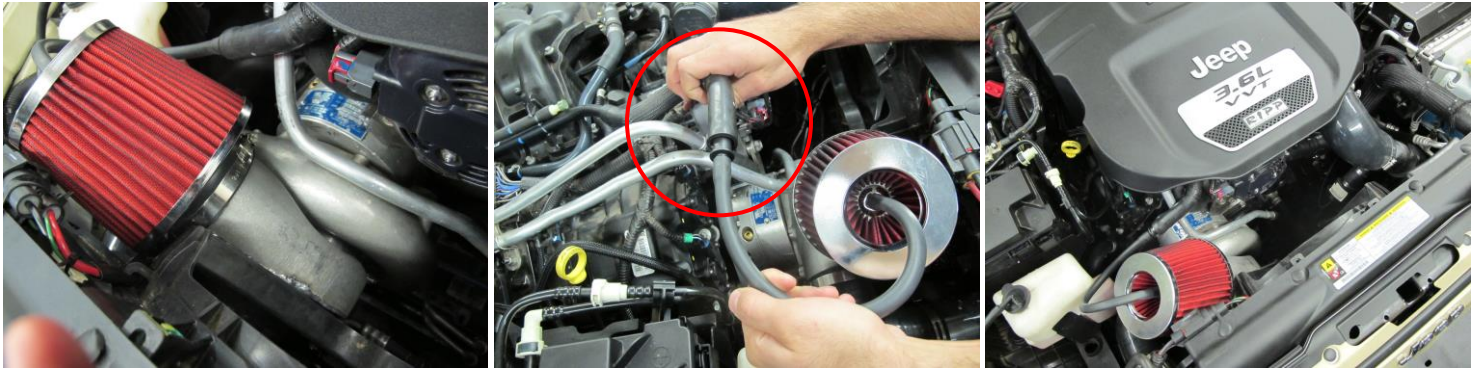
**Step 26: Vacuum Line (Attention Critical Step)**

- Locate main vacuum line leading to EVAP valve behind throttle body.
- Cut as pictured below
- Use supplied Tee fittings and line
- Route vacuum line to TOP of By Pass Valve as pictured
- Zip-Tie line to avoid interference with drive belt



**Step 27: Wrapping it up (Attention Critical Step)**

- Going over all your bolts, clamps, hoses, tie wraps, and fluids **twice (Don't skip this step)**.
- Refill your engine oil with fresh oil and filter
- **Make sure you followed the oil breather instructions for self contained blowers**
- **Check oil level in self contained units before starting the vehicle**
- Refill your coolant (as per the factory guide lines) PURGE AIR FROM SYSTEM COOLANT SYSTEM
- Make sure all plug connections are solid and no wires are exposed
- Go over vacuum diagram making sure your sending vacuum properly
- Make sure all hoses are tight
- Install your air filter
  - Run the hose in front of the air filter to the crank case vent as pictured
- Install engine cover
- Follow ECU programming steps

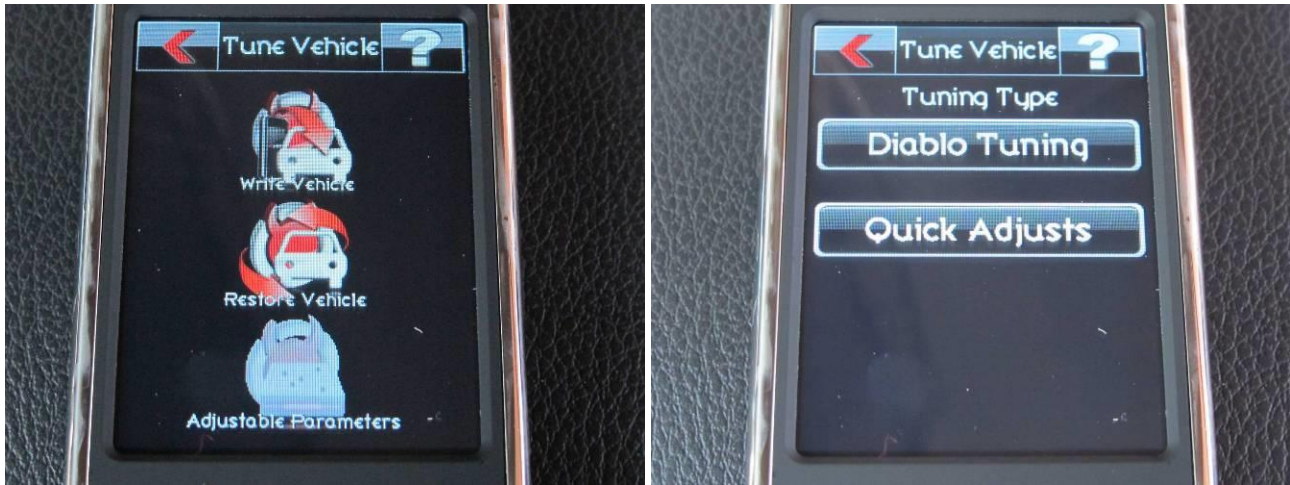


## Step (28):\_Diablo Sport Predator Instruction Steps

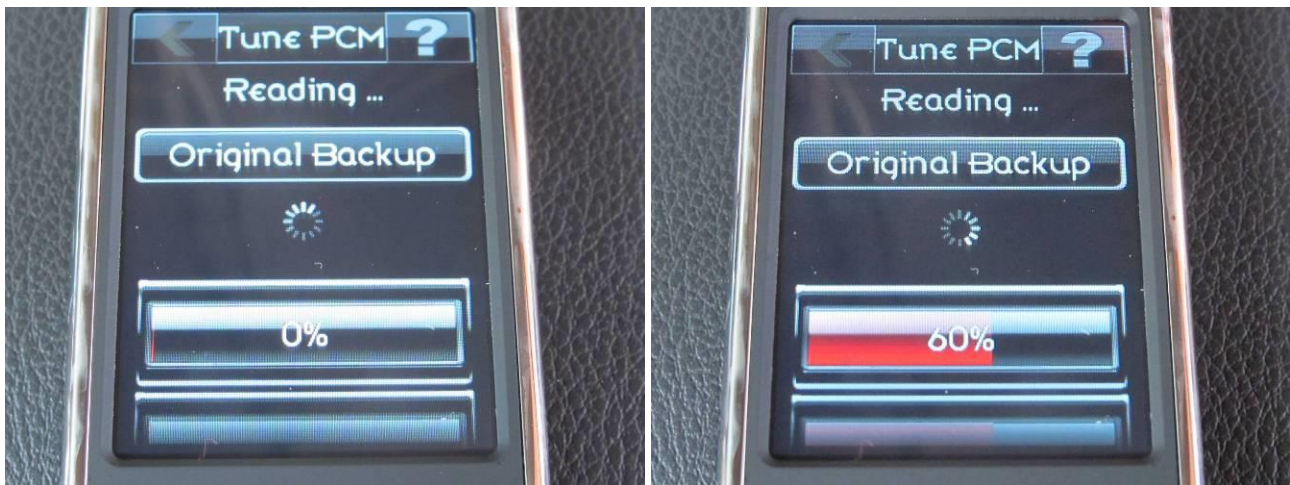
- 2007-2013 JK Diablo's are Pre- Programmed (unless supplemental instructions provided) During the file writing process your dash board will flash and ring several times.

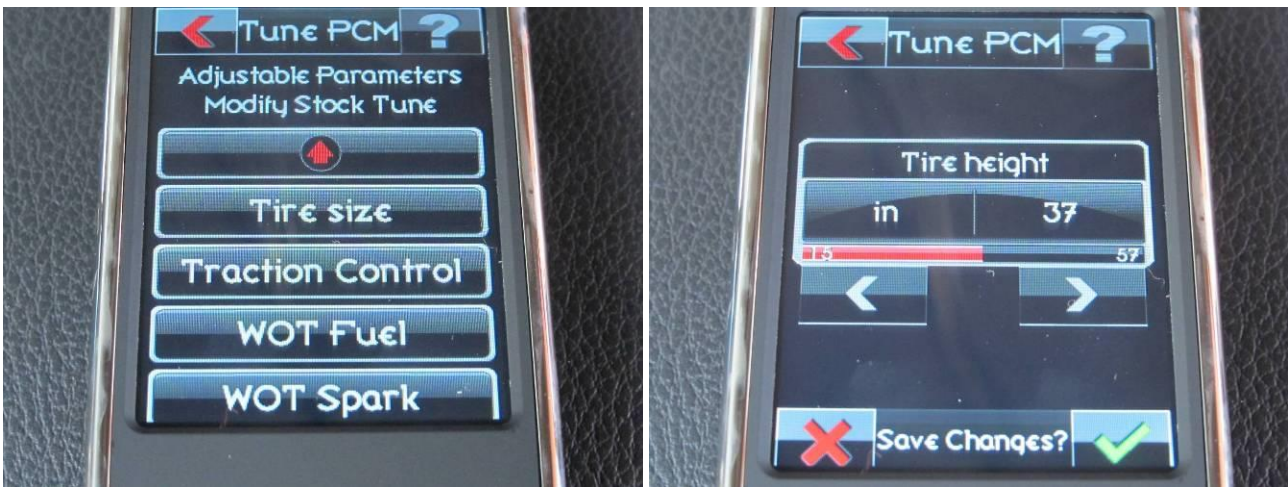
Please follow the tools steps, using this pictorial as a guideline



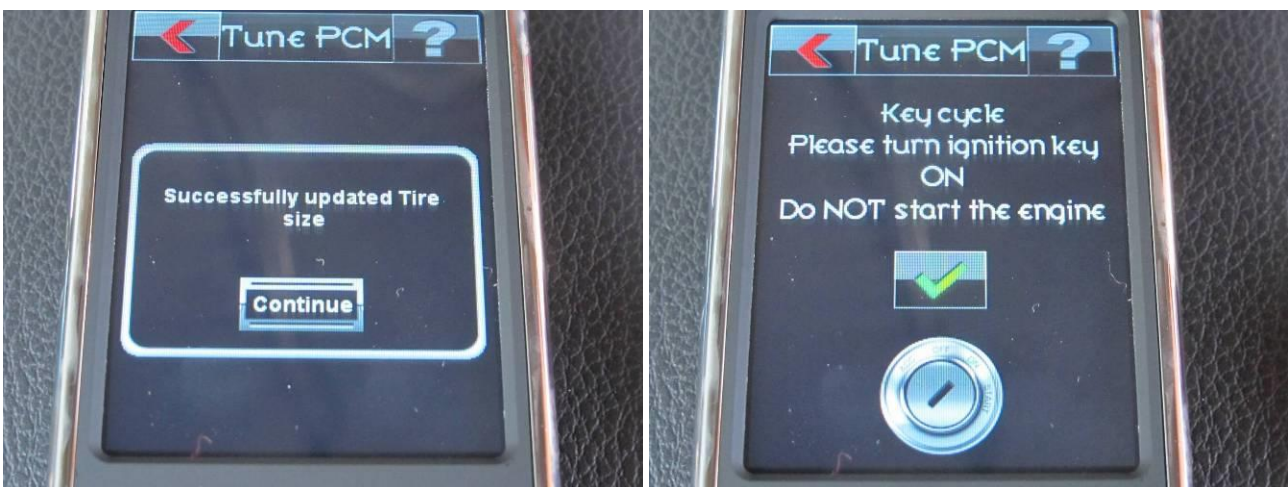


- 2007-2014 JK Diablo's are Pre- Programmed
- [ripptuning@gmail.com](mailto:ripptuning@gmail.com) tuning related issues NOT [tech@rippmods.com](mailto:tech@rippmods.com)





- 2007-2014 JK Diablo's are Pre- Programmed





Select the appropriate tune for your set up -

- RIPP SC Tune is for the SC at any elevation using 89-93 fuel
- RIPP SC Header Tune is for the RIPP Long Tube Header and SC combination; at any elevation and 89-93 Octane fuel **THIS TUNE is for RIPP long tube headers NOT short tube headers.**  
**DO NOT USE 87-88 Octane fuels ever**
  - **In some states your 89 fuel is weaker than others and you may be subjected to using high test.**



### Step (29): Starting the vehicle and dialing it in for the first time:

- Start the vehicle and bring to idle.
- **Check for leaks**
- Fuel leaks
- Oil leak feed (if so optioned)
- Oil Leak return (if so optioned)
- Blow off valve surge setting
- Vacuum leaks
- No misfires (running on five or not starting at all)
- No immediate engine lights (**Attention Critical Step**)
- If anything is lose shut it down and repair.
- If everything seems in order, let it run for 30-60 seconds, then shut down and let the vehicle sit for a minute. Recheck the oil level on the dipstick. (CHECK the entire oil feed and return system for oil leaks-if so optioned).

**CAUTION!!! Make sure there are no fuel leaks upon initial start up. Proper inspection of all fuel connection must be assessed before starting the vehicle. If there are fuel leaks, shut the vehicle down and repair.**

## Maintenance

The RIPP Supercharger *systems require minimal maintenance, beyond normal vehicles regularly scheduled maintenance. Use guidelines listed below and you will receive many years and miles of enjoyment from your system.* **Normal Maintenance Guidelines**

### Supercharger Lubrication Oil maintenance:

1. The self contained Vortech Supercharger comes with 3 bottles of oil. The first bottle is already pre-installed in the compressor from RIPP. The second bottle is to be used after 500 -1000 miles of break-in driving. The third bottle and from that point on oil should be changed every 8000-10000(Maximum) miles depending on the level of abuse. **DO NOT OVER FILL BLOWER UNDER ANY CIRCUMSTANCE DOING SO WILL OVER HEAT THE BLOWER AND CAUSE IRREVERSIBLE DAMAGE.** Additionally running the blower dry would damage the blower beyond repair and will not be covered under warranty. This will keep the charger sounding new and in tune. When cold, remove the oil inlet fitting at the supercharger and the oil drain plug located at the end on the stainless steel braided line and drain. **DO NOT OVER-TIGHTEN FITTINGS.** Use only Vortech lubricant - If you're using a V2 oil feed blower do not use engine oil additives as they may contain solid partials, which can clog the superchargers oil-feed line.
2. **For V3 Self-Contained blowers there is an oil case vent installed, it's important to keep that clean. If it is not clean the blower will build too much pressure in the oil case.** Vortech designed the V3 to purge pressure via sprung seal behind the impeller. In some cases it's normal to see some minimal oil traces there. **Make sure you check your oil level frequently to assure proper compressor operation. We recommend you check fluid level every 3000 miles, add accordingly.**

### Rock Climbing & Extreme Conditions

- a. **Check blower oil levels more often running it dry will cause irreversible damage and will not be covered under warranty.**

### Cold Weather

If you operate your vehicle in extreme cold weather follow the heavy duty/severe usage maintenance schedule in your vehicles owners' manual. Use the manufactures engine oil and filter recommendations. We strongly recommend oil changes from 3000 to 5000 miles to maintain integrity. In order to achieve the low noise level of Vortech superchargers, Vortech specifies manufacturing procedures that call for minimal internal clearance. These precise tolerances however are not conducive to temperatures below 25° F. Therefore, storing the vehicle in a heated garage and/or employing the use of an engine block heater/aftermarket engine blanket is required when the vehicle is subjected to a "cold startup" in ambient temperatures below 25° F. Failure to comply with this may result in immediate supercharger failure and invalidate the supercharger warranty

### Ignition

1. Spark plug/ignition system guidelines should be tuned up regularly. The entire ignition system should be checked bi-annually and fresh plugs installed during the first install (unless otherwise instructed). We recommend installing NGK Brand TYPE R Copper or Iridium core plugs in place of the stock ones. We do not recommend any platinum plug at any time. These should be changed once every two years and checked more frequently in race conditions.
2. Every 15000 miles, check to ensure the spark plug wires (if equipped) are within factory specified resistance. **Replace whenever beyond specification or every 30,000 miles or whichever comes first.**

### Fuel

1. RIPP has programmed its vehicle to run on higher octane fuels, in some cases 89oct fuel can be used, but only for commuting and not for full throttle operation or towing. Under all heavy throttle full boost and towing situations we would recommend 91 or higher fuels. Fuel additives will not substitute this.
2. The use of an injector cleaner can be used yearly to help keep older injection system efficient.
3. Under race-only conditions high octane/race gas (100octane or above) can be used, but only a small amount should be used. In a quarter tank, condition (3.5 gallons) use only one gallon of race gas. More will burn up oxygen sensor and catalytic converters.

### Mechanical



1. Inspect serpentine belt on every service interval for wear and aging, and replace if there is any sign of premature wear. If there is, abnormal wear that is reoccurring, there may be an alignment issue. Inspect pulley alignment or have a professional assess the problem.
2. Under boosted condition and with increased under hood temperatures, its normal for clamps to come loose. Inspect all clamps regularly.
3. The high flow air filter that is supplied with your kit can be cleaned with a mild detergent, or the use of an air filter cleaning and oiling kit.
4. Biannually check O2 resistance as per the technical guide in the trouble-shooting guide.
5. If you frequently submerge your vehicle in water, inspect all idlers including OEM units to keep belt alignment straight. It is normal to hear some belt squeak in this set up. We designed our belt to fit very tightly around the idlers and supercharger to avoid belt slip.

## Trouble Shooting Guide:

This is a reference guide to help you tech any issues you may encounter during or after the installation. The following are the most common tech'd and resolved.

### No start (Includes long crank-no start):

- Check fuses; if there is a no start situation it could be a blown fuse. If a fuse is blown it could have happened during installation and went unnoticed. If it blows again there is a direct short somewhere, trace your steps.

### Running rough and Check Engine lights:

- Make sure the RIPP Provided MAP sensor is installed and plugged in
- Make sure the air temp sensor is plugged in.
- Make sure Vacuum lines are hooked up correctly
- Make sure all vacuums are sound
- Make sure PCV valve is correctly installed, if backwards you will pump boost directly into the crank case. This will blow every seal out, examples being valve cover gasket.
- Make sure your spark plug wires/coil packs are snug and plugged in
- Do not use ANY other electronic power mapping such as the high octane setting in a Hypertech Max Energy Programmer. This will conflict with the RIPP mapping and cause run faults.

**Tire size calibration:** Use only the Diablo Sport Predator to calibrate tire size. RIPP does not endorse any other brand. This step is essential, just because your tire advertises to be XX size doesn't mean the tire is actually that size. Many tires that claim to be 35" high will in actuality be 33.5-34" by way of equation. Please make sure this step is properly administered. Run faults will occur.

## RIPP Snorkel Box:



Email [rippmods@rippmods.com](mailto:rippmods@rippmods.com) for more info on this product

## RIPP GAUGE Pods for JK's and other vehicles.

The JK is limited to space for on board instrumentation, we sourced out these gauge pods and think this is the easiest and best solution to the problem. These are very high quality units and are easy to install.

**Product Code: ATI-GK-EPOD-52**



**Wrangler JK GEN2 Supercharger AEV Snorkel Kit:** RIPP offers this rugged filter combination to mate to the AEV Snorkel System to our Supercharger System. If DEEP water crossings are in your future its best to be safe and add this option to your system. **Product Code: JKGEN2-SNRKL-AEV**



