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INSTALLATION  
**2.0** TURBO  
STAGE III



TL100019

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**APR, LLC**

4800 US HWY 280 West Opelika, AL 36801

**[www.goapr.com](http://www.goapr.com)**

+1.334.502.5181

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## NOTES:

Before attempting to install an APR Stage III Upgrade yourself, ask yourself if you think you are up to the task. While fairly straightforward, this is an extensive kit and will take a novice mechanic more than a weekend to install. Also be aware that the ECU needs to be sent to APR to be programmed, so you will need to plan appropriate time for shipping.

These instructions were written for a MkVI VW GTI/Jetta TSI, but other models (Audi A3, VW EOS) are similar. If you are working on a different model, you may want to double check the torque specifications for some of the factory hardware.

These instructions assume that you have basic mechanical skills and several varieties of the tools listed in order to install the kit. If you have any questions about the install, feel free to contact your APR representative.

While your friend's dad may have an "awesome set of tools", there are several specialty items that may not be in your average mechanics toolbox. In addition to basic mechanics tools (metric and standard socket sets, screwdrivers, hand tools, etc.), the following items listed below are needed:

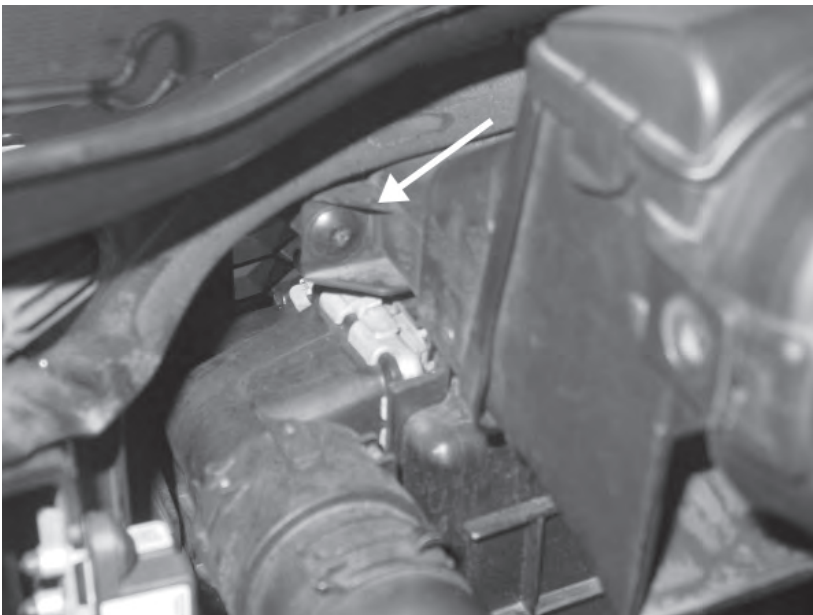
Combination Wrenches: 18mm

Sockets: T25 Torx, T30 Torx, 8mm Triple Square, 10mm Triple Square, 12mm Triple Square, 24mm 12 point, 27mm 6 point, 3mm Allan, 4mm Allen, 5mm Allen, 6mm Ball Head Allen, Spark Plug Socket, M8x1.25 Tap, Crimp Clamp Crimpers

When disassembling the car, be sure to keep and mark all fasteners so they can be reused if needed. It is recommended that you get some kind of compartmented tray to organize the fasteners, such as a fishing tackle box or several large ice cube trays. Fasteners are referred to by the type of tool used to remove them.

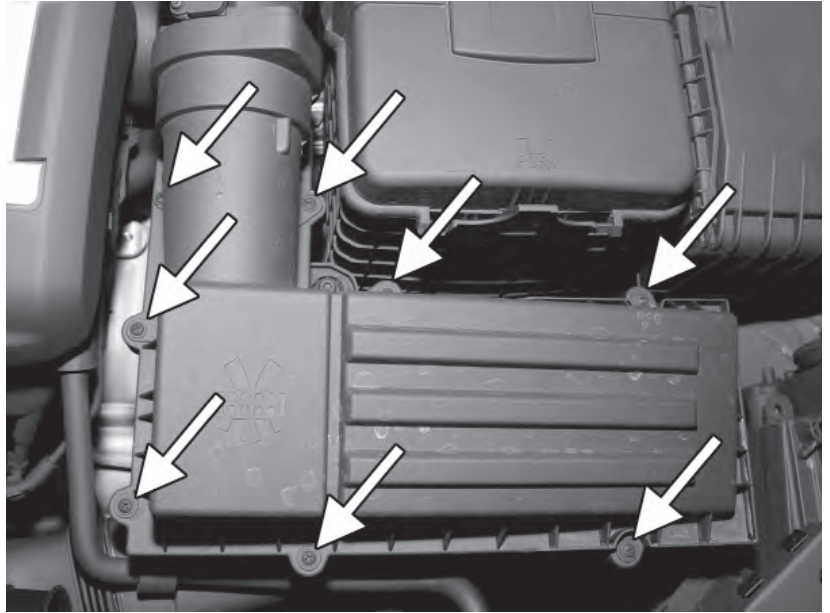


1) Support the car on jack stands or a lift. Open the hood and disconnect the 10mm negative battery terminal.



2) Remove the two T25 screws that connect the intake ducting to the radiator support. Then remove the hose clamp next to the round accordion tube, and remove the intake from the car.

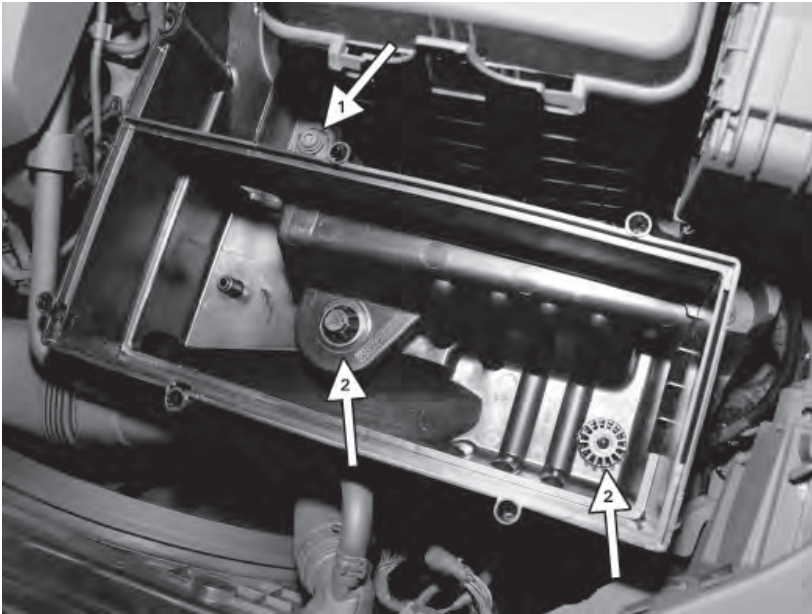
3) Disconnect MAF sensor and remove the eight phillips screws on the airbox lid



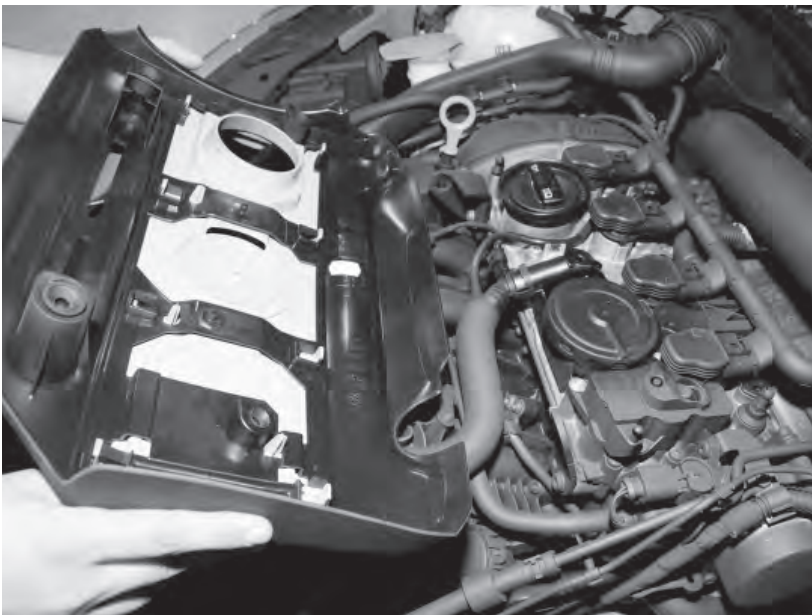
4) Disconnect the hose clamp between the plastic accordion tube and the compressor inlet pipe. Remove the factory airbox lid and inlet hose.





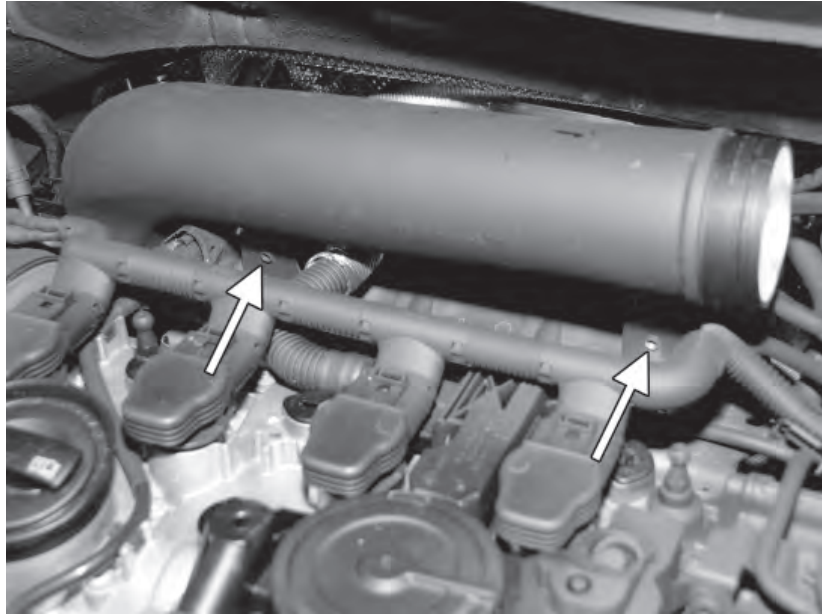


5) Remove the air filter and air baffles. Unscrew the T30 screw (1) and lift the airbox from the car. The airbox sits on two rubber grommets (2).



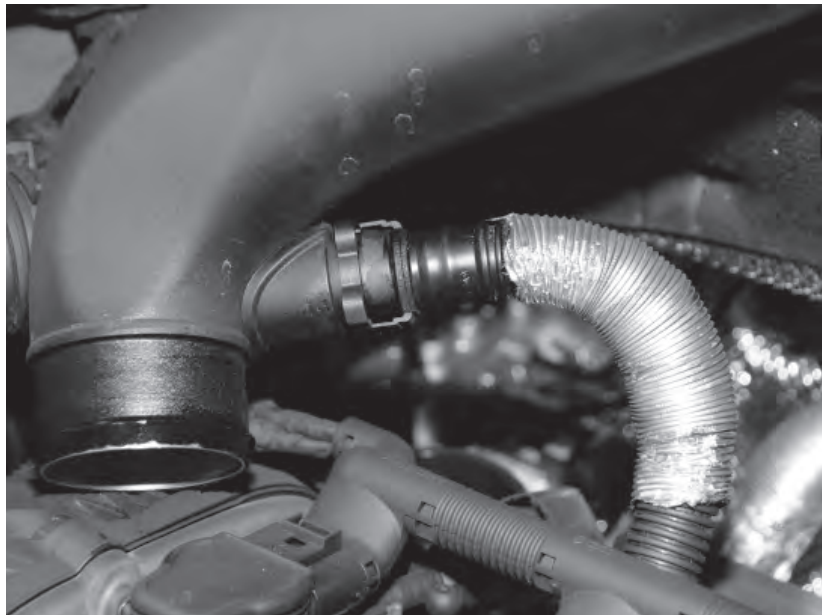
6) Remove the engine cover by lifting carefully at all four corners. The engine cover sits on three plastic posts that are on top of the engine.

7) Disconnect the compressor inlet pipe by removing the two T30 screws and the hose clamp connecting the pipe to the turbocharger.



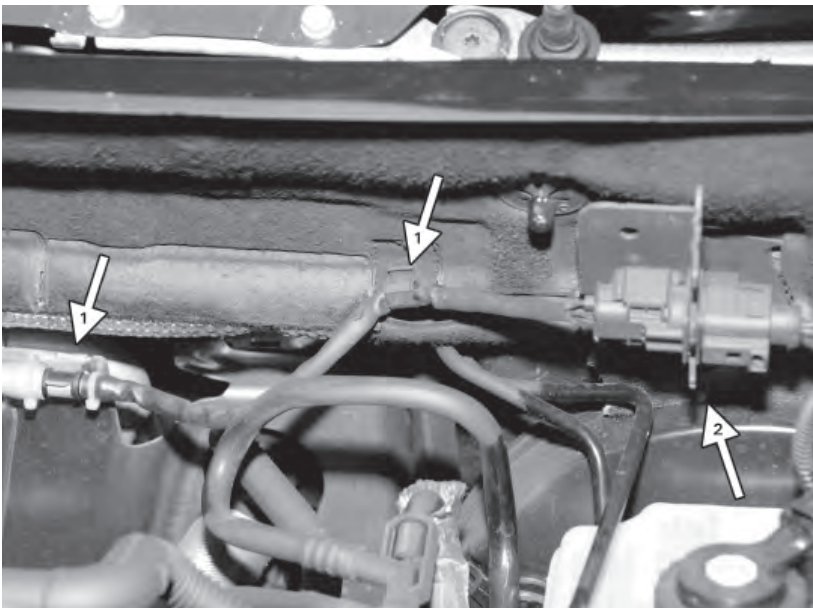
8) Disconnect the PCV hose from the compressor inlet pipe.

Note: All four sides of the connector must be removed at once. Use four small screwdrivers, wedging one on each side of the connector until sides all are free.





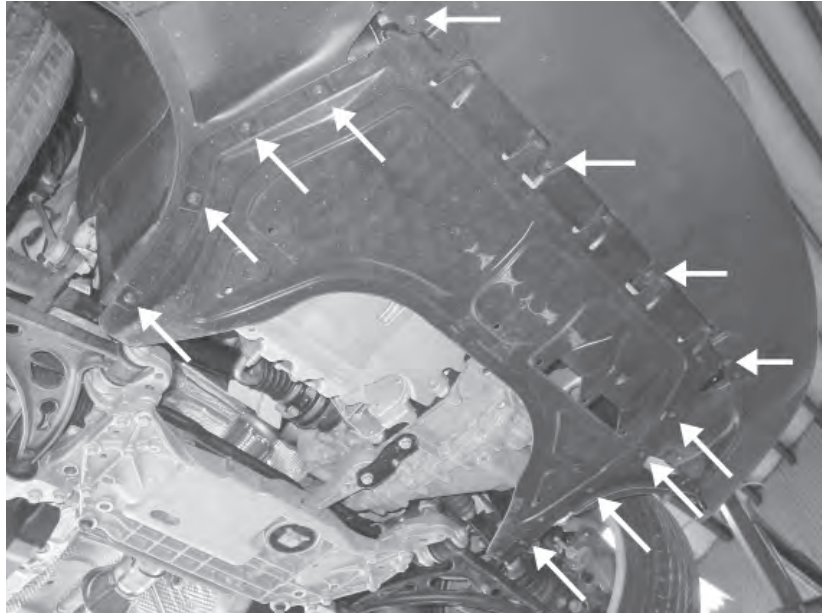
9) Follow the plastic vacuum line that rests on top of the valve cover. Cut the hose clamp by the check valve and disconnect the rubber, heat-shielded vacuum line that connects to the check valve, leaving the check valve and upper plastic vacuum line in place.



10) Disconnect the primary Oxygen Sensor electrical connector (2) and remove the wiring harness from its clips (1).



11) Remove the belly pan on the car with a T25 Torx.



12) Remove the lower drivers side intercooler hose and place a rag in the intercooler itself. Drain the engine coolant by removing the quick disconnect coupling on the lower coolant line off of the drivers side of the radiator. Remove the coolant reservoir cap to aid in draining. Once the coolant is drained, reconnect the coolant line and make sure it is secure. Also properly reattach the intercooler hose.



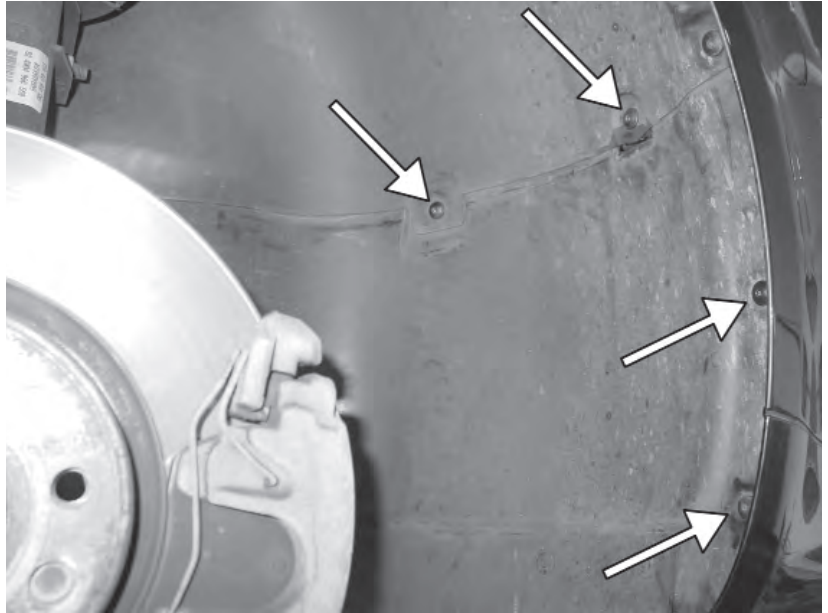


13) Drain the engine oil by removing the 18mm drain bolt from the bottom of the oil pan. It is advisable to change the oil filter on the car at this time as well.

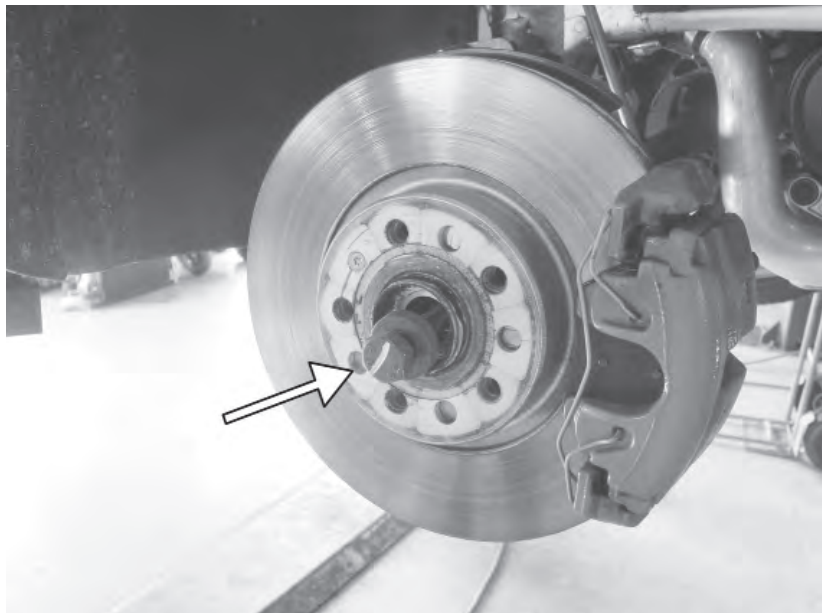


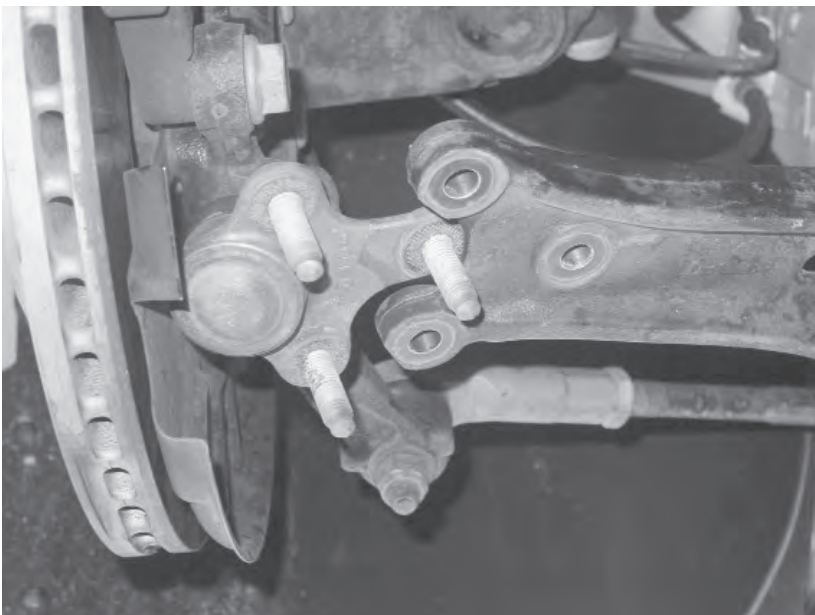
14) Remove the 17mm lug bolts and remove the front passenger wheel and set aside.

15) Remove the T25 screws and remove the lower portion of the passenger side wheel wells.

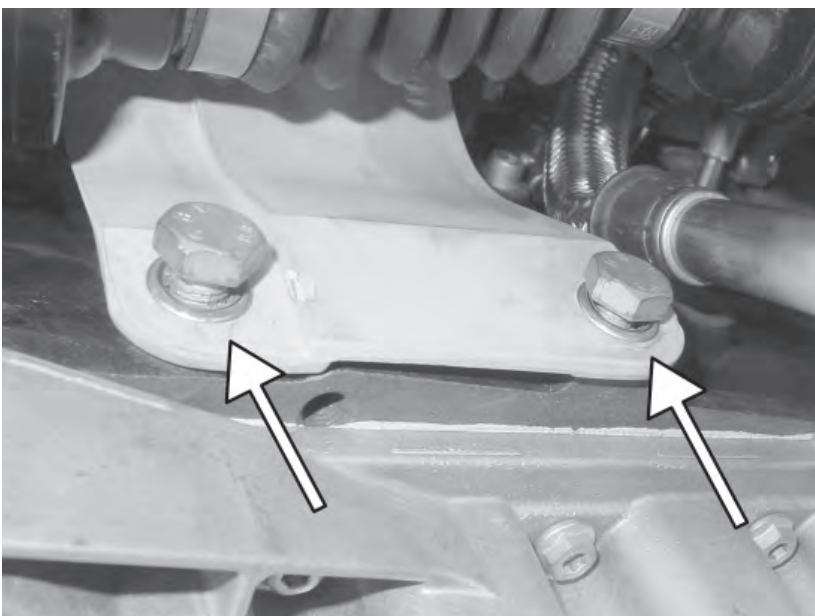


16) Remove the 24mm, 12 point axle bolt from the passenger axle. Some vehicles may have a 27mm, 6 point bolt.





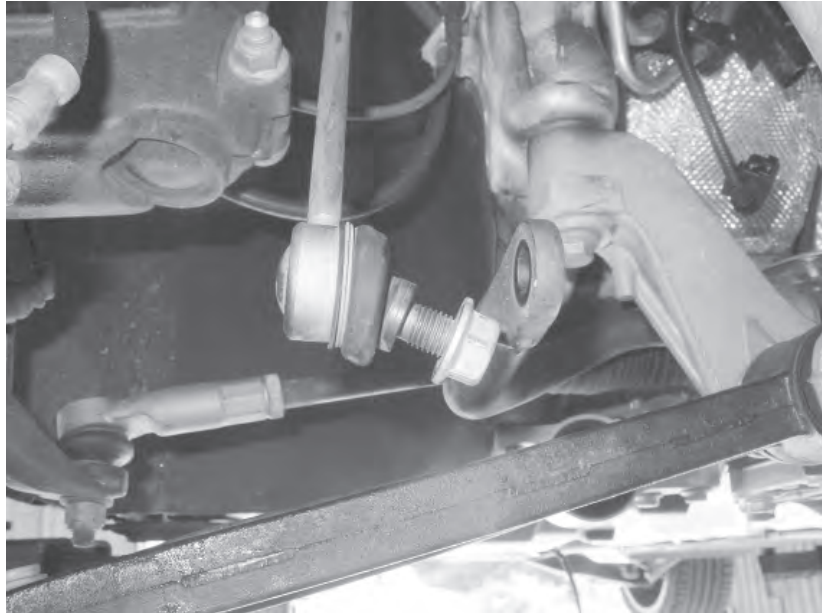
17) Remove the three lower 16mm nuts from the lower ball joint on the lower passenger control arm.



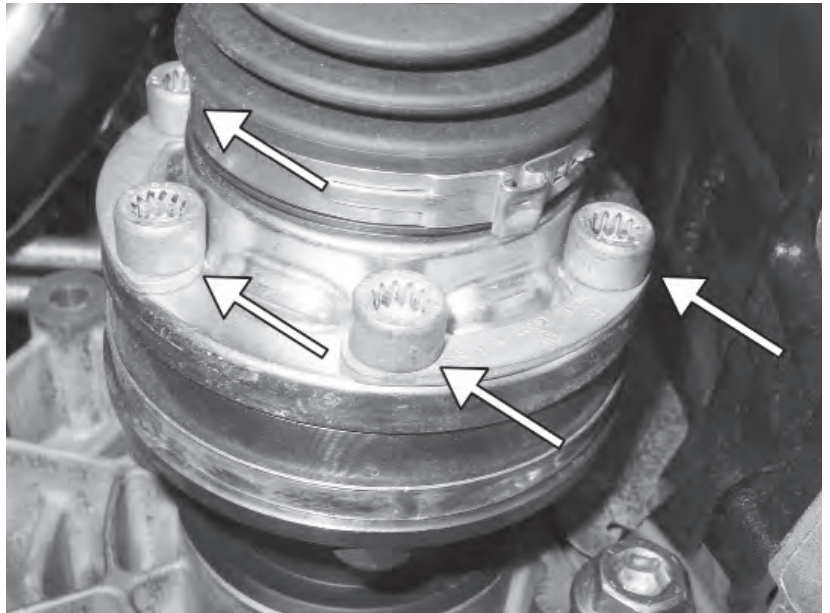
18) Remove the two 16mm bolts from the inner axle heat shield, and remove the shield from the car



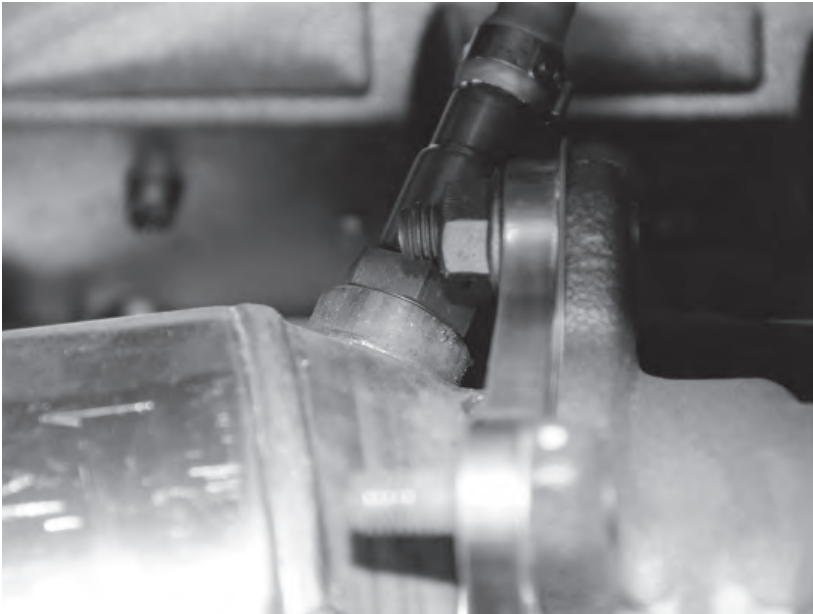
19) Disconnect the 18mm nut from the passenger side sway bar end link and separate the link.



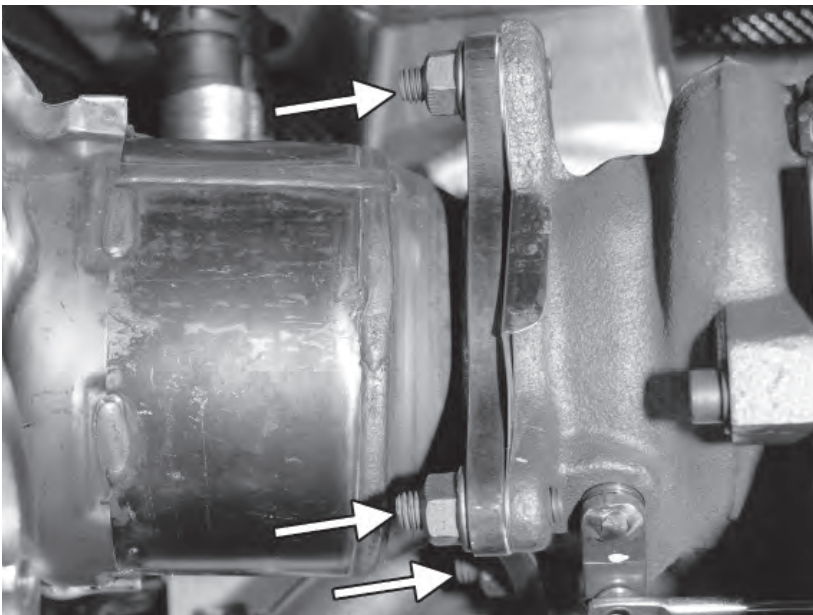
20) Using a 10mm triple square, remove the six inner axle bolts from the passenger side axle. Keep the axle bolts and bolt straps together. Carefully remove the axle from the car.





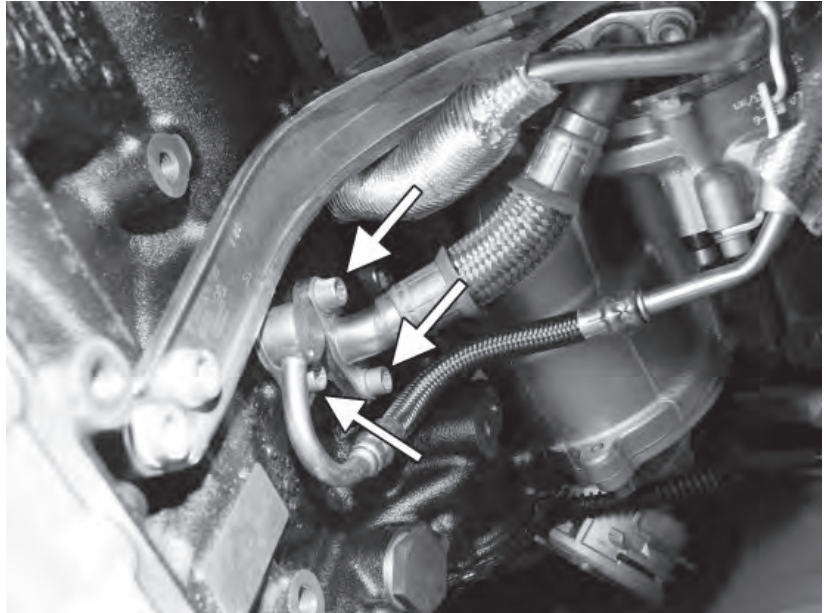


21) Remove the primary oxygen sensor from the downpipe with an oxygen sensor socket. Take care to not get grease/oil/water on the sensor element.

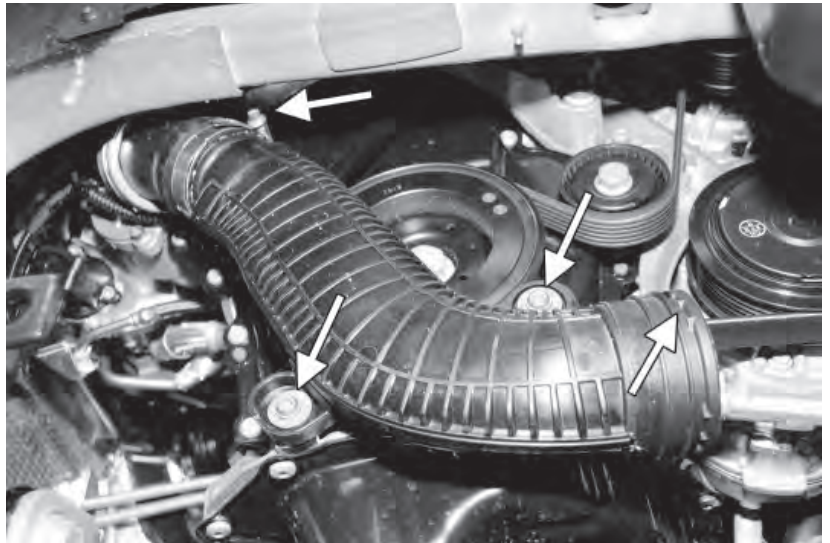


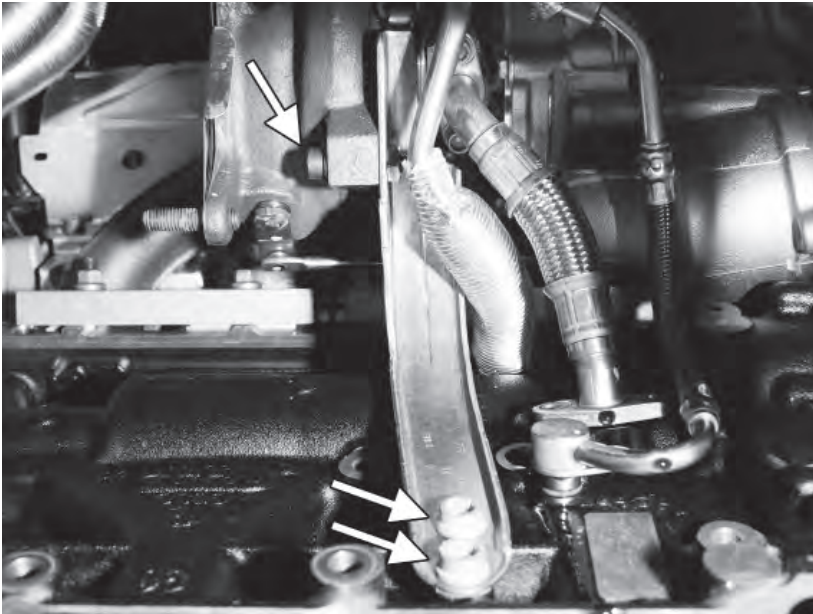
22) Remove the downpipe portion of the exhaust by removing the four 16mm nuts from the turbocharger. Disconnect the downpipe portion of the exhaust from the catback and remove from the car.

23) Remove the 8mm triple square bolts from the stock turbocharger oil drain line to the engine block. Also disconnect the 8mm triple square oil feed line bolt. Keep these bolts as they will be reused. +



24) Remove the passenger side plastic pressure pipe. Pull the clip from the lower intercooler hose coupler and disconnect the coupler. Also disconnect the hose clamp and coupler on the connection to the stock turbocharger. Remove the two T30 bolts from the pressure pipe and remove from the car.



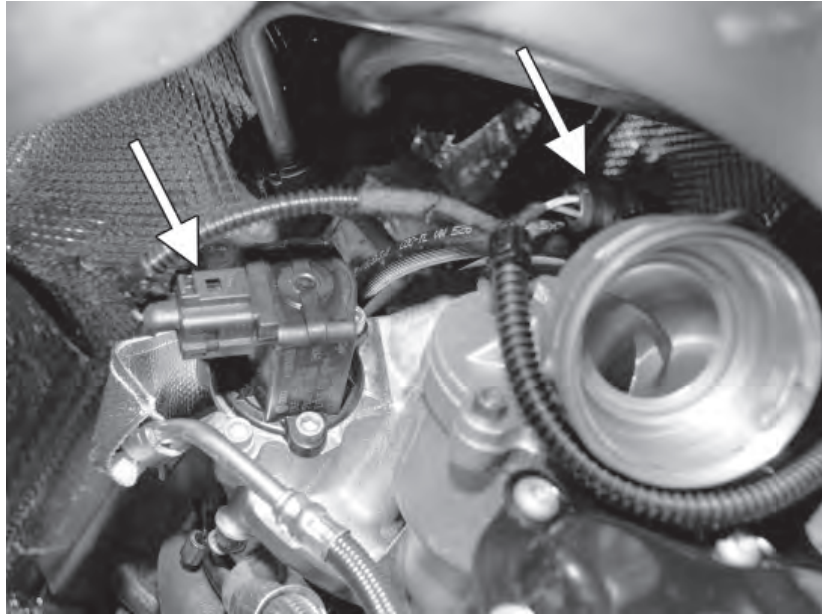


25) Remove the turbo support bracket by removing the two 10mm triple square bolts from the bottom of the bracket as well as the 6mm allen bolt from the top of the bracket.

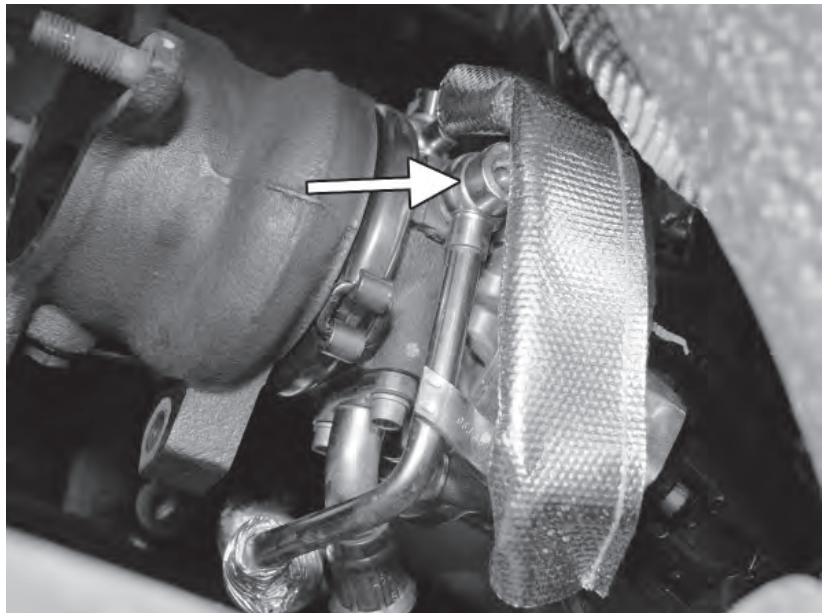


26) Disconnect the transmission dogbone mount from the engine by taking off the two front 16mm bolts.

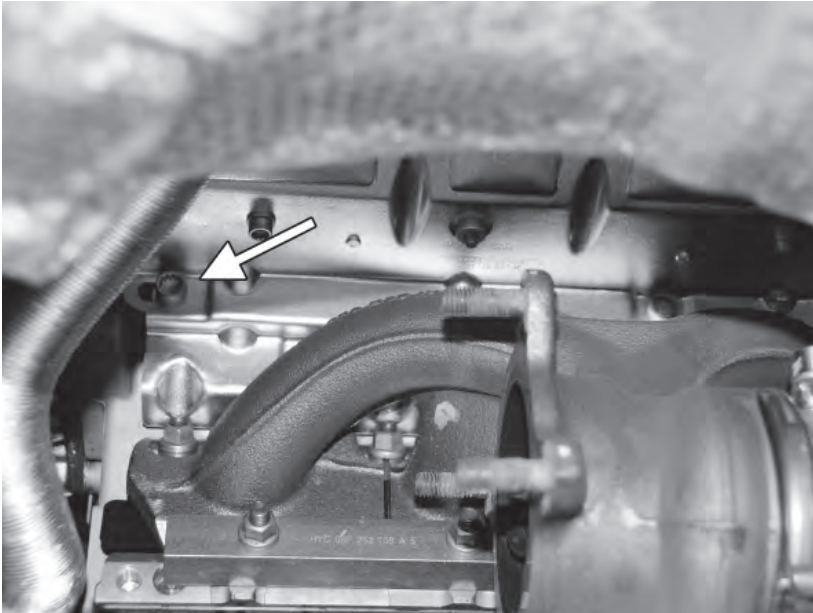
27) Disconnect the N75 and diverter valve electrical connectors.



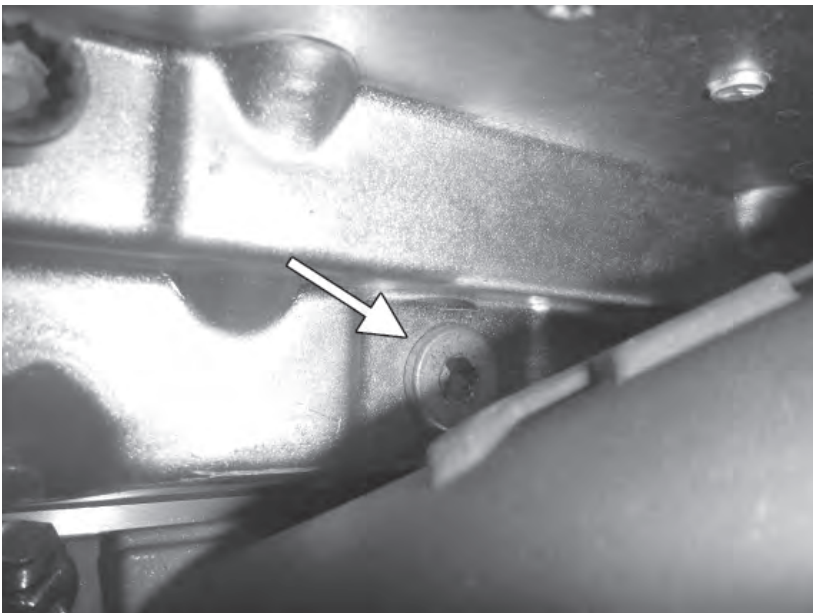
28) Remove the turbocharger coolant line from the turbocharger using a 12mm triple square. The coolant line is not removed until the turbocharger is removed from the car.







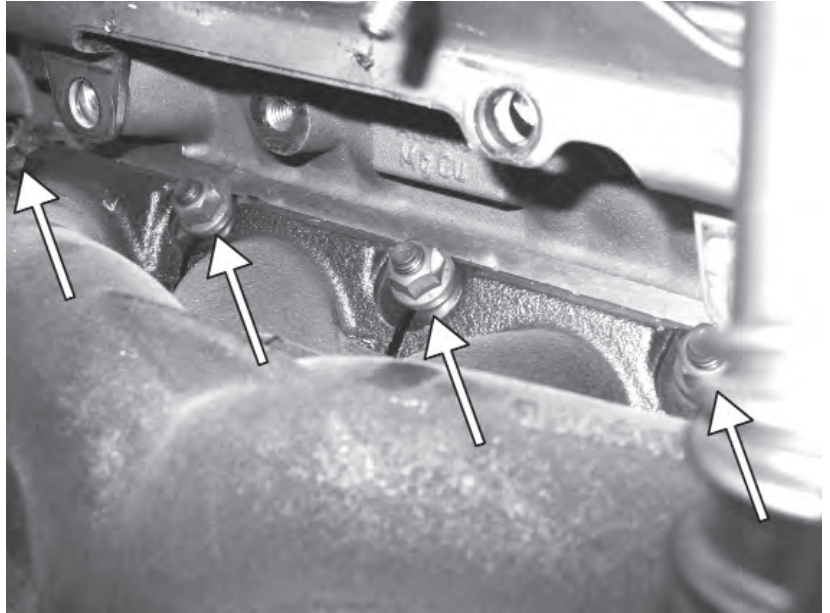
29) Remove the two 10mm triple square bolts that connect the turbocharger heat shield to the cylinder head.



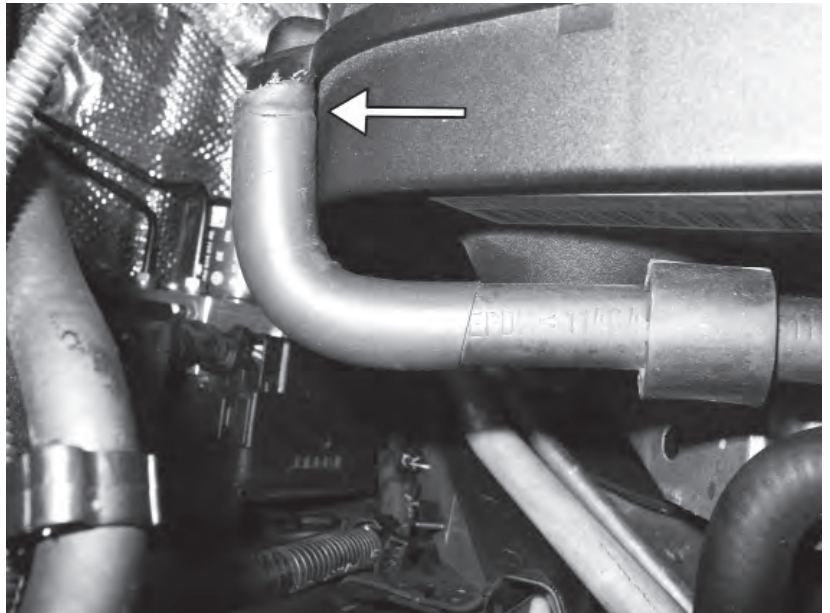
30) Remove the one 6mm Allen bolt from the turbocharger heat shield and remove the shield.

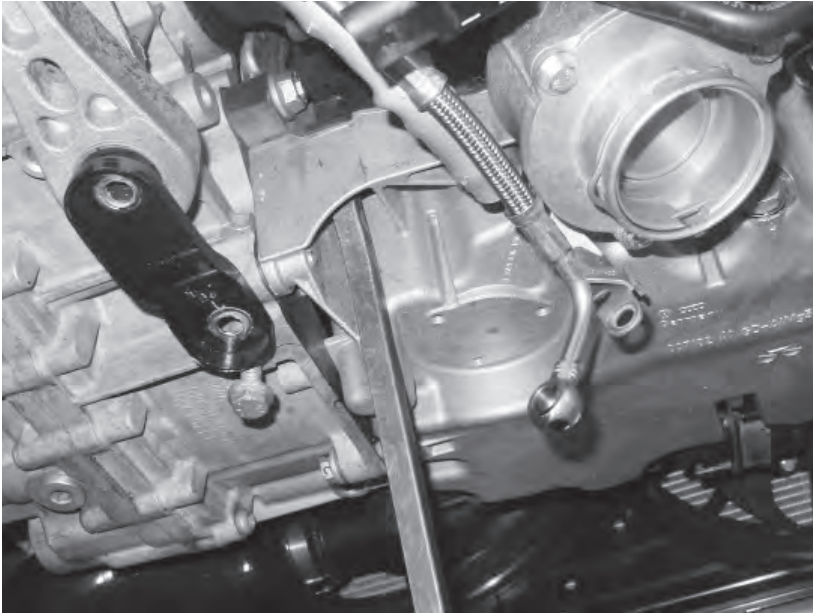


31) Remove the five upper 12mm nuts on the stock exhaust manifold. It may be necessary to loosen the lower nuts 3-4 turns to remove the manifold, but do not remove.

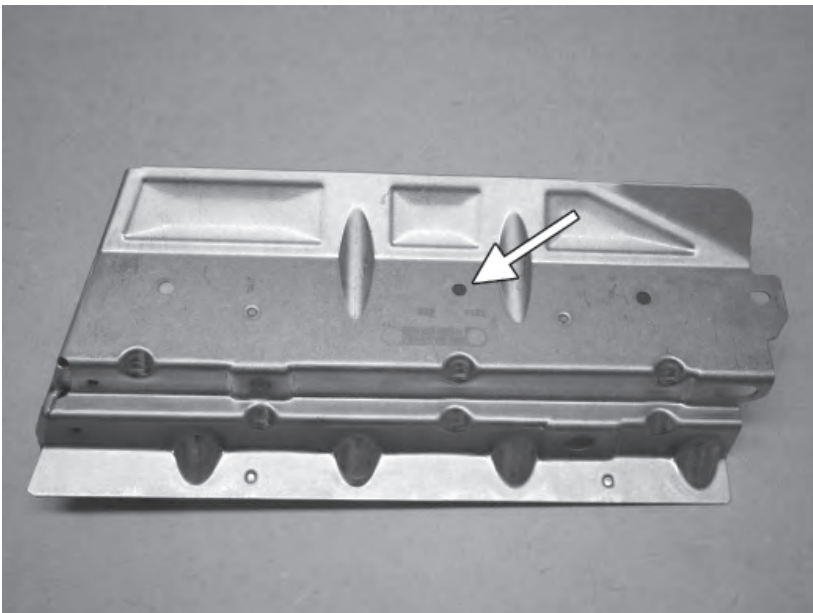


32) With the stock manifold/turbo assembly moved away from the block, cut the remaining coolant line leaving as much of the rubber portion of the line as possible. The rubber section of this line will be reused.



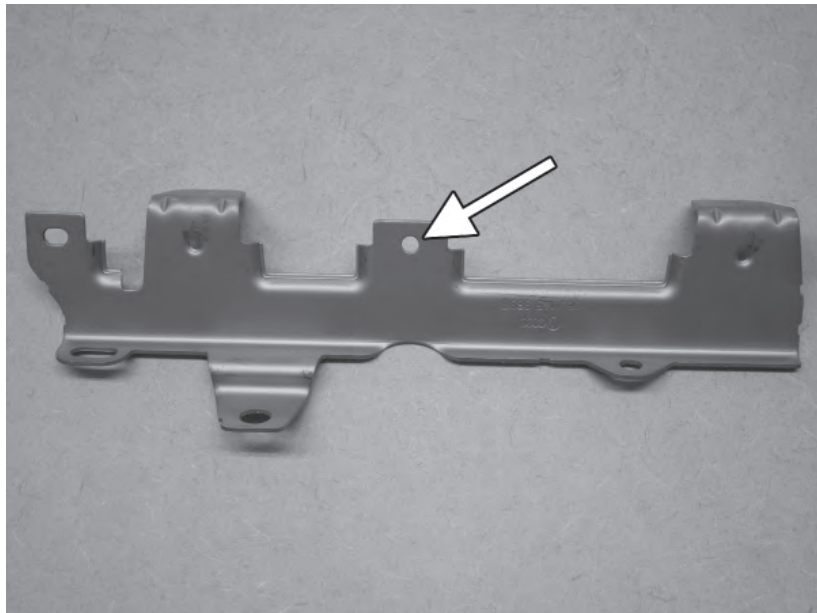


33) With a partner prying the engine forward, lower the turbo/manifold assembly and remove from between the block and subframe.



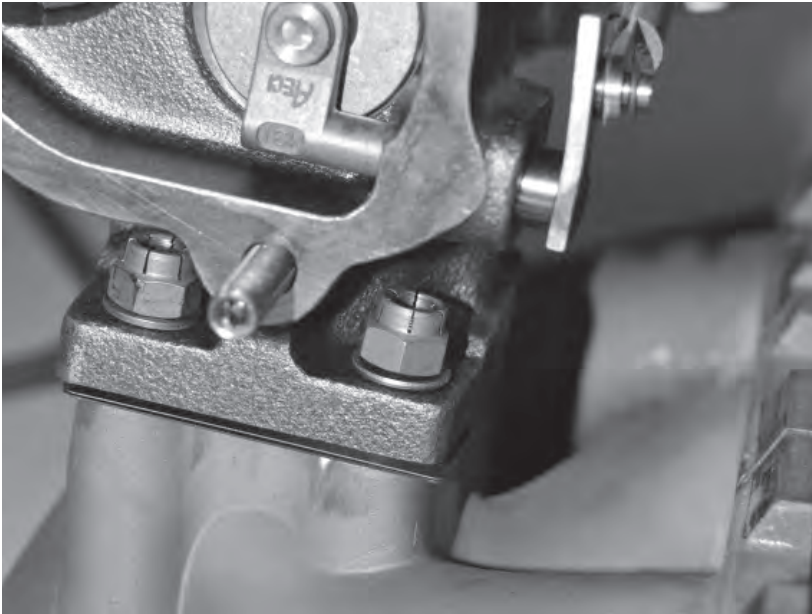
34) Check the heatshield and bracket that were above the stock exhaust manifold. If the car is equipped with a 8mm triple square bolt, skip to step 35. If it does not, remove the heatshield and bracket and slightly enlarge the hole in the factory heatshield so that an 8mm bolt slides through.

35) Also on cars that are not equipped with the 8mm triple square bolt on the heat shield, tap the corresponding hole in the factory bracket with an M8x1.25 tap. Reattach the factory heatshield and then install the 13mm bolt included with the APR MAF bracket hardware. The bolt should come from the bottom of the heat shield as it is oriented in the car. Reinstall the heatshield and bracket in the car.

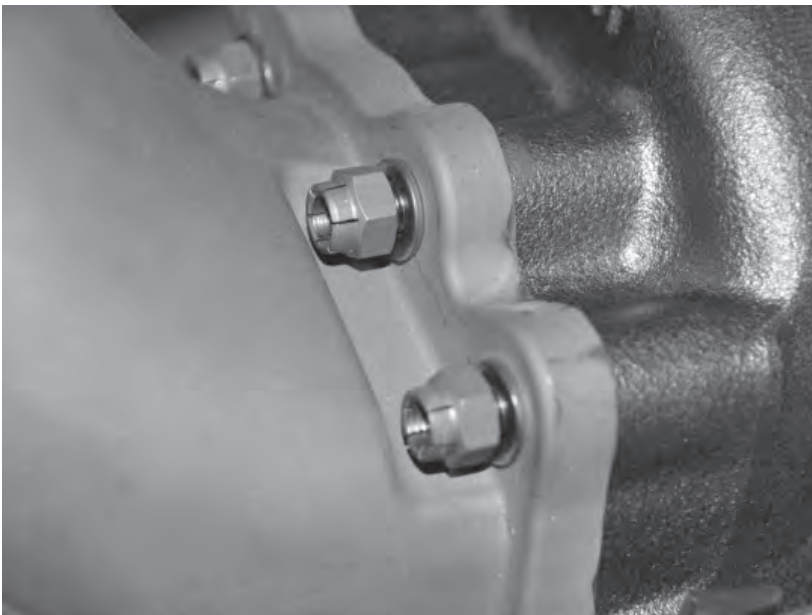


36) On a clean workbench, lay out the APR exhaust manifold, turbocharger, and turbo to manifold gasket set. Make sure all parts are clean and any debris is removed.





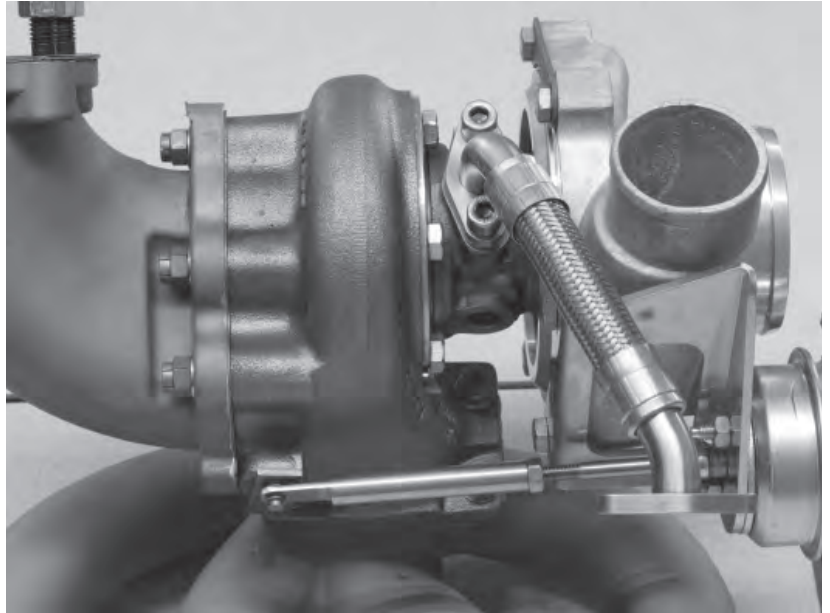
37) Install the gasket on the studs of the manifold and mount the turbocharger with the turbo support bracket facing the inlet ports of the exhaust manifold. Install the four flat washers and then start the locking nuts. Evenly tighten the four 13mm nuts, going in a crossing pattern.



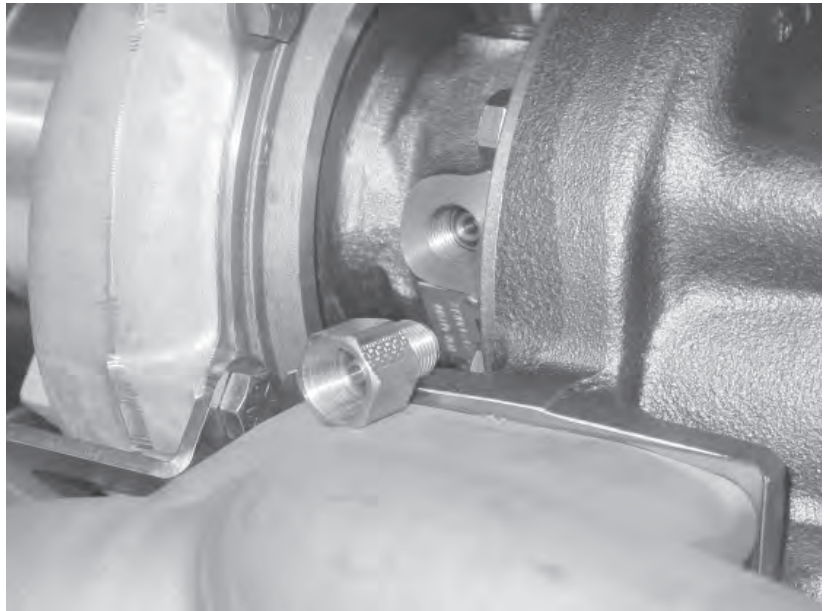
38) Install the five bolt turbo to downturn gasket and install the exhaust downturn. Install the five flat washers and the locking nuts. Evenly tighten the 13mm, going from one side to another in a crossing pattern.



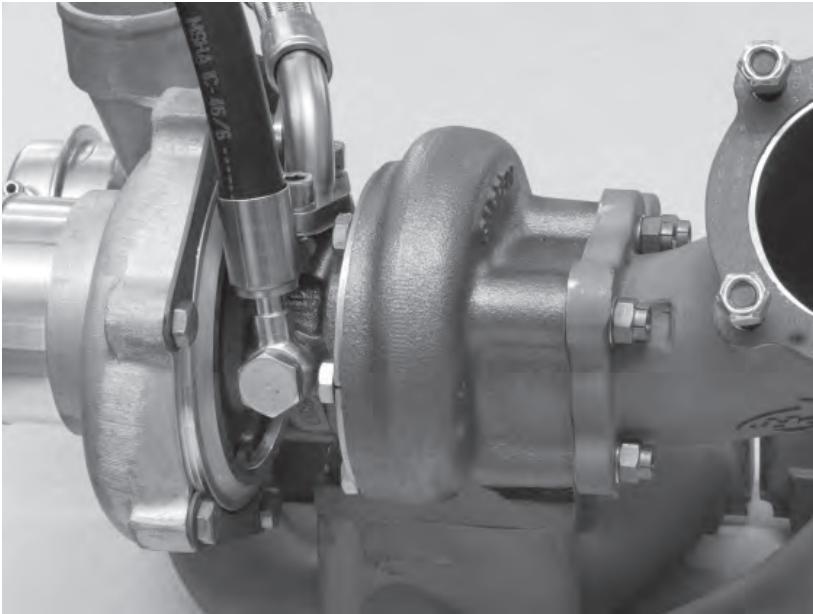
39) Install the gasket and oil drain line to the bottom of the turbocharger using the supplied 6mm allen bolts and lockwashers.



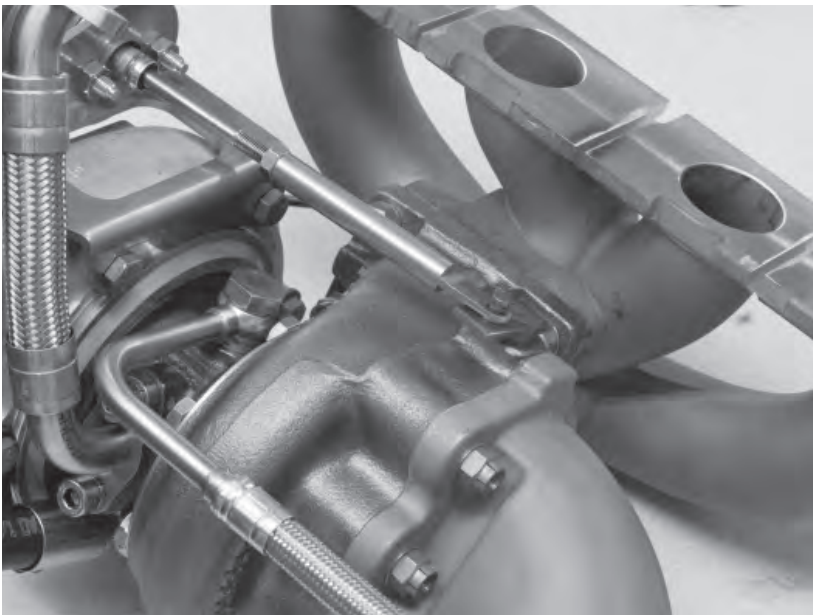
40) Install the oil feed line adaptor into the top of the turbocharger using a 5/8" socket.





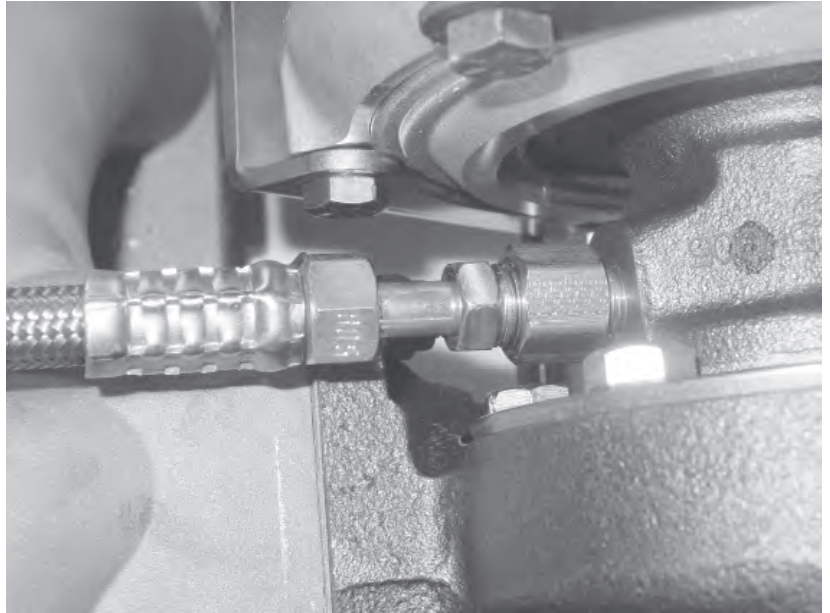


41) Install the rubber coolant line onto the outside (towards firewall) of the turbocharger. Use a crush washer on both sides of the banjo fitting, and tighten the 19mm banjo bolt. The line should be slightly canted towards the compressor housing side of the turbo, but not touching it.

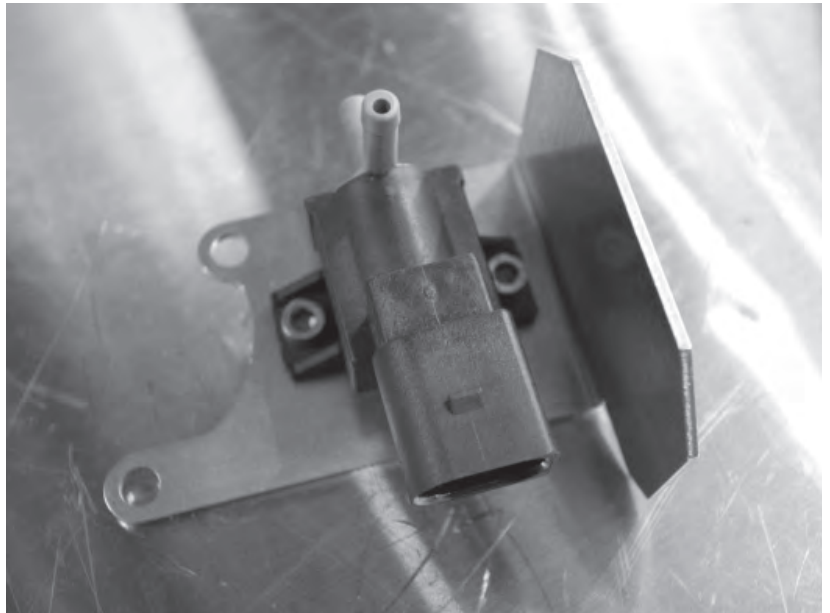


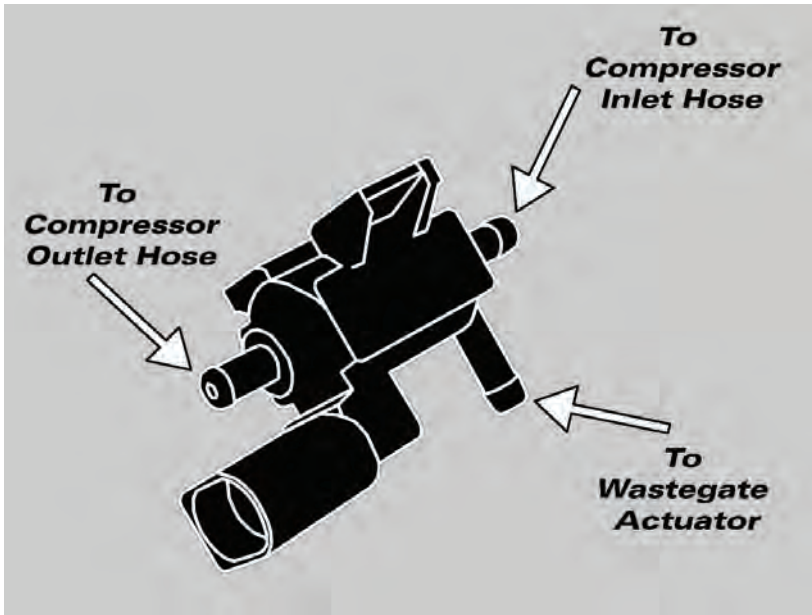
42) Install the other braided steel coolant line on the inside (towards engine) of the turbocharger. Again, install a crush washer on both sides of the banjo fitting, and tighten the 19mm banjo bolt.

43) Install the oil feed line into the fitting previously installed on the turbocharger. Tighten the connection with a 13mm wrench while holding the fitting with a 5/8" wrench.

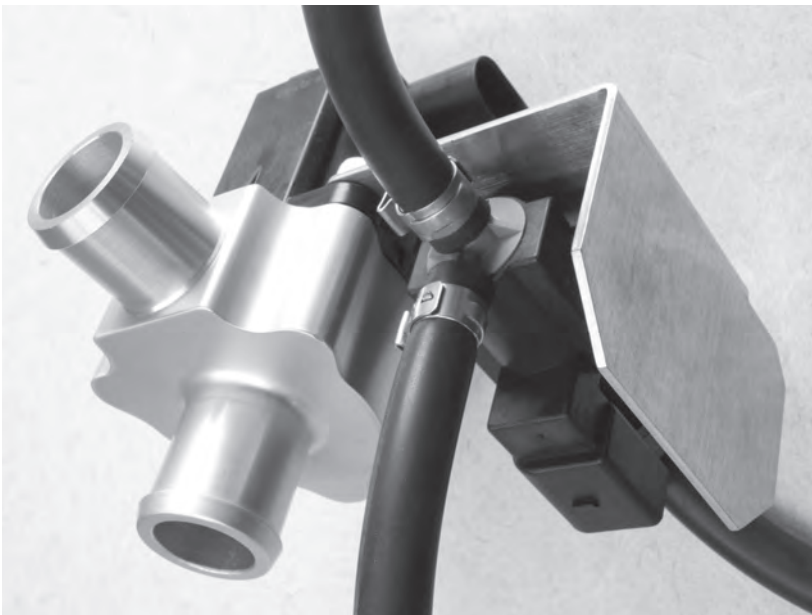


44) Remove the two 4mm Allen screws from the N75 valve on the stock turbocharger. Using the same screws, mount the N75 valve to the supplied APR bracket as shown.



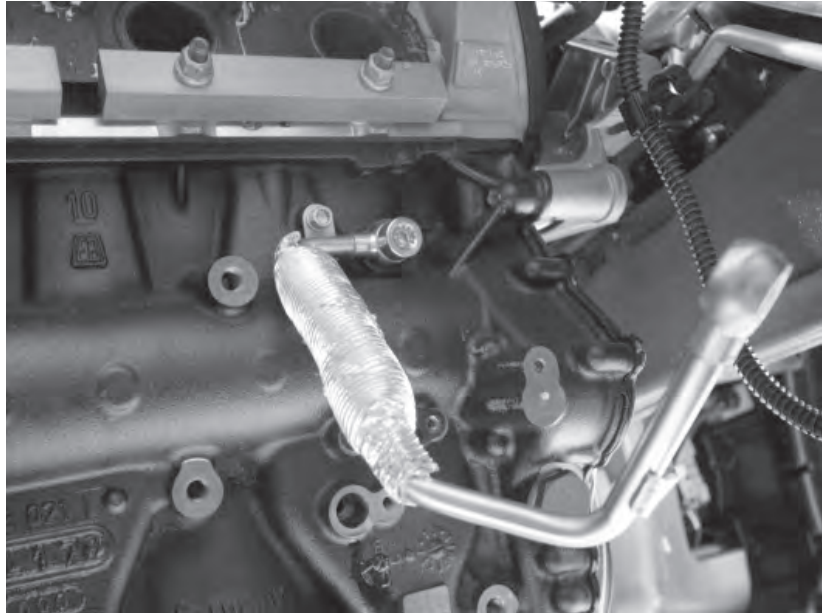


45) Cut 9" of vacuum line and connect to compressor outlet port of the N75 valve. Cut 6" of vacuum line and connect to the compressor inlet port of the N75 valve. Finally, cut 12" of vacuum line and connect to the wastegate actuator port of the N75 valve. Crimp all ports with the supplied crimp clamps.

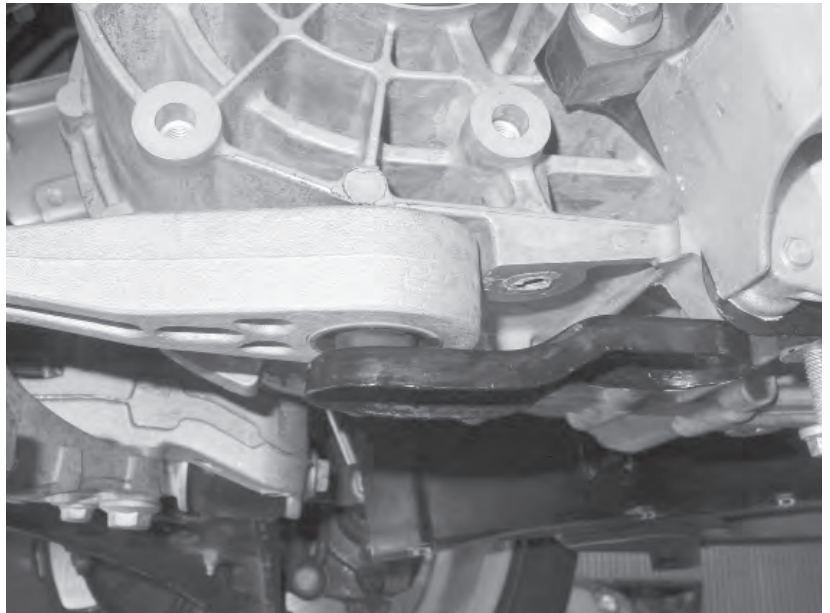


46) Attach the diverter valve to the APR N75 assembly as shown. Use the supplied screws with a medium strength threadlocking compound. Make sure to orient your diverter valve with the electrical connector towards the bracket.

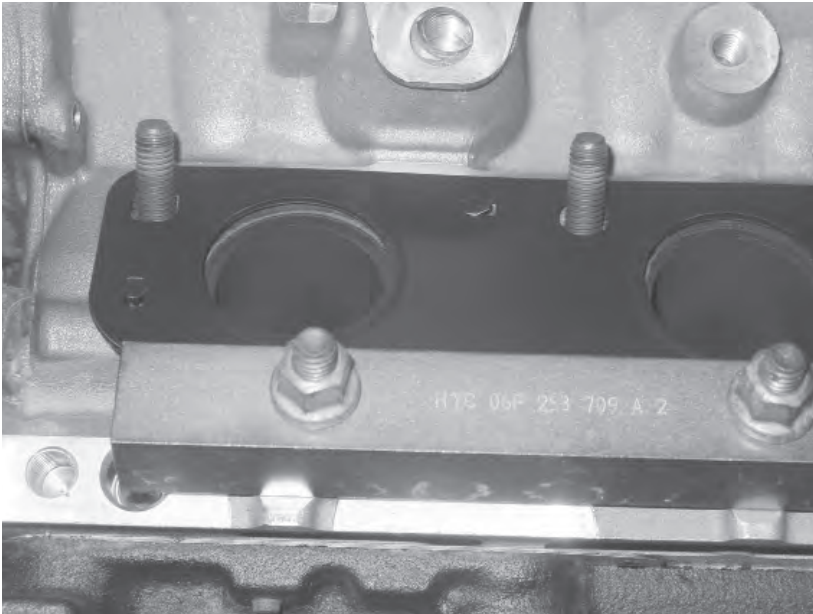
47) Uninstall the factory coolant drain line by removing the 8mm and 12mm triple square bolts from the engine block. This is also a good time to clean up any dripping oil or coolant before the installation of the new turbocharger.



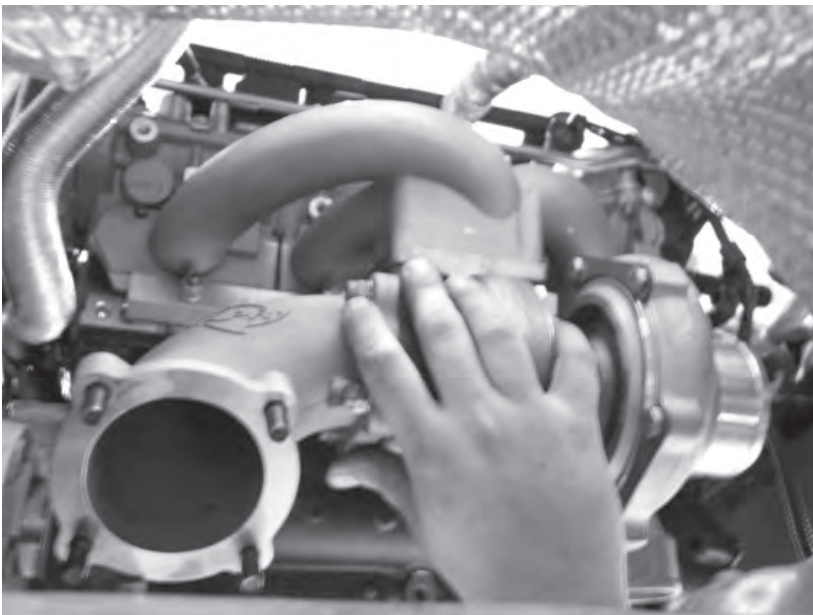
48) Pry the engine forward in the engine bay, and use the stock dogbone mount to hold the engine forward by wedging it against the transmission.





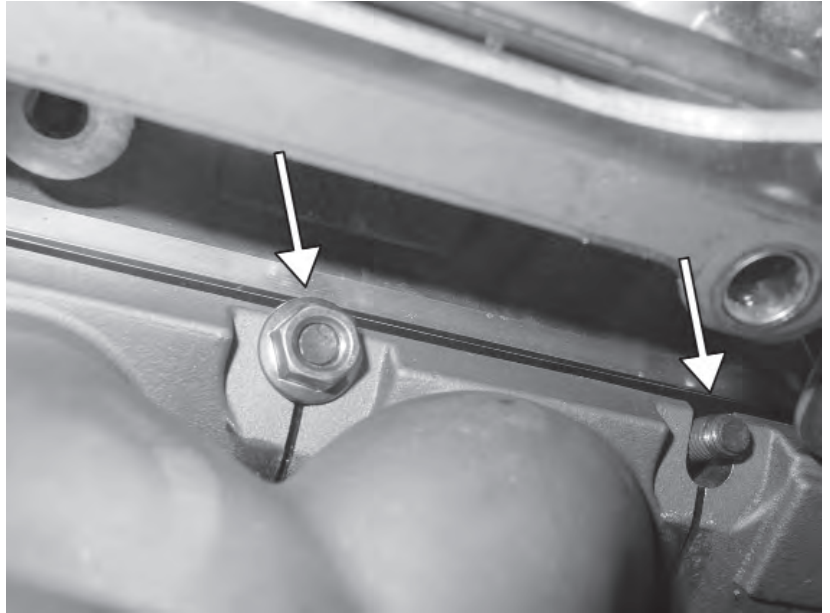


49) Remove old exhaust manifold gasket, if still installed, and replace with the new supplied gasket.

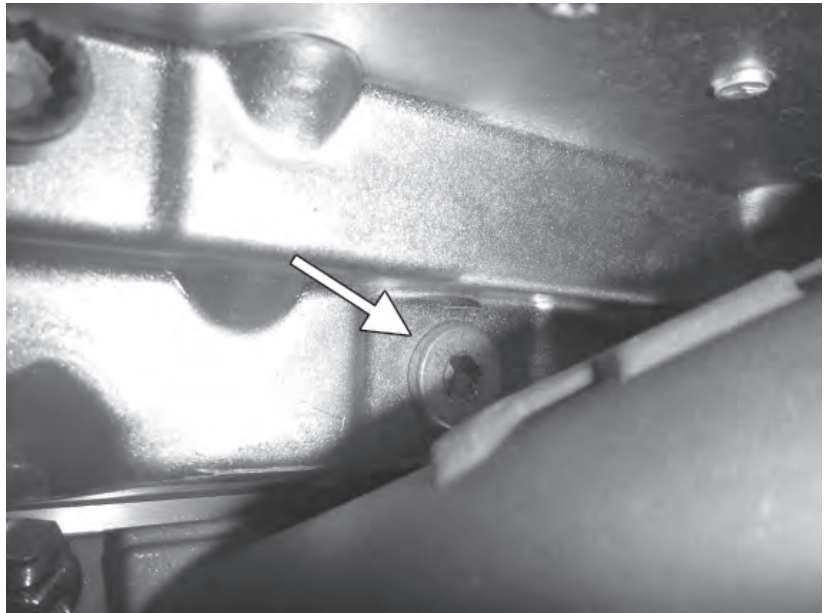


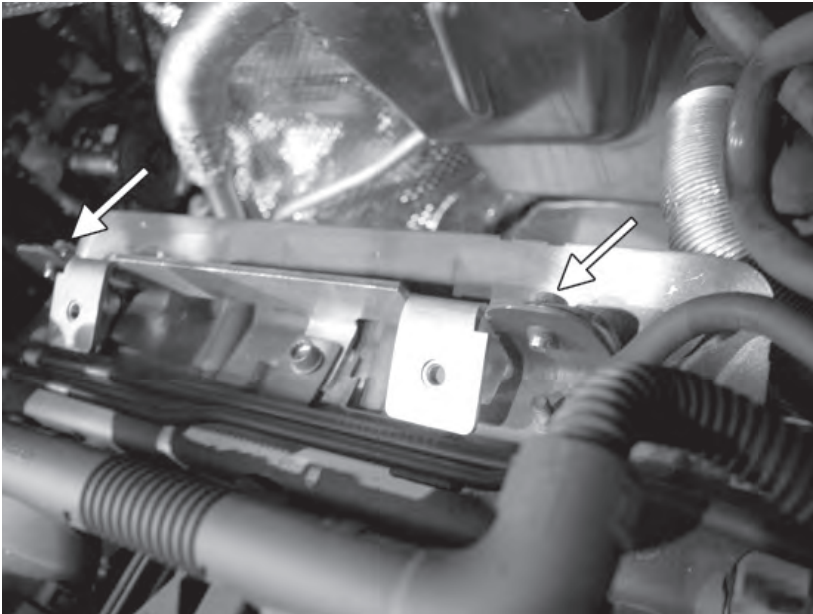
50) Lift the APR manifold/turbo assembly behind the engine as shown. Lift with the downturn end first as high as possible behind the engine, and then rotate the assembly into its correct orientation. Rest the manifold on the lower stock exhaust manifold brackets.

51) From above, thread the supplied flanged copper nuts onto the upper exhaust manifold studs. Tighten all exhaust manifold nuts to 15 lb-ft (upper and lower) from the center nuts to the outside ones in a crossing pattern.

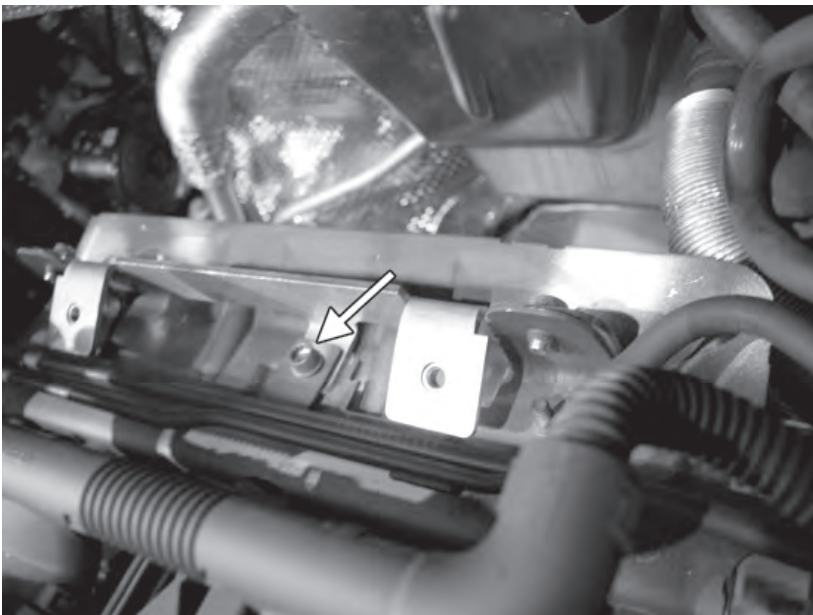


52) Reinstall the heat shield on the car and loosely attach with the two stock 8mm triple square bolts. Also, loosely install the stock 6mm allen bolt. Tighten all fasteners.



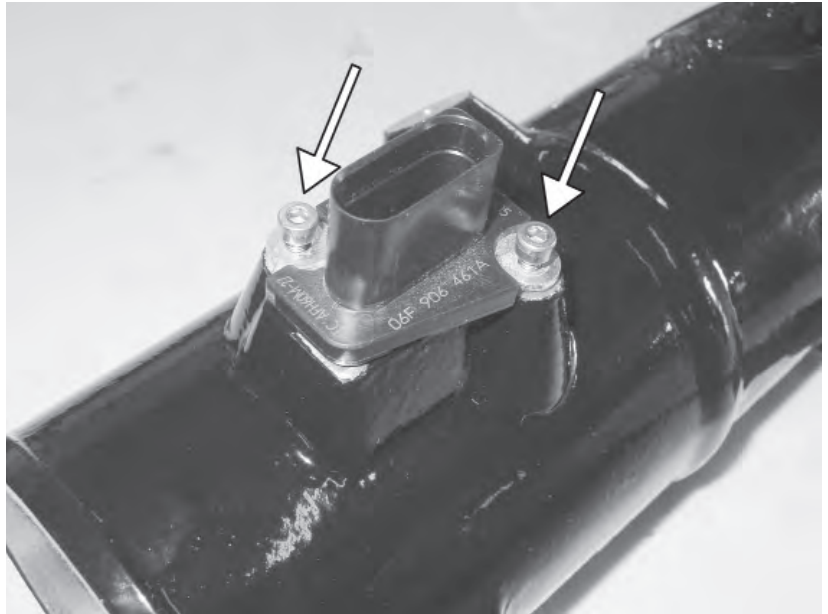


53) Install supplied MAF tube bracket with two 5mm allen screws and lockwashers. Note that the MAF tube bracket goes behind the OEM heat shield tabs, and the bottom of the tab of the APR bracket goes underneath the OEM tabs.

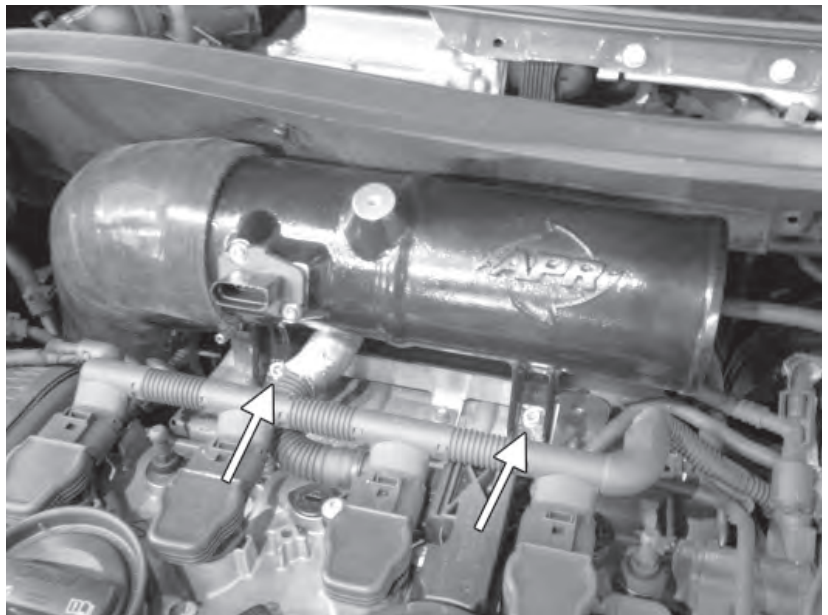


54) If equipped, reinstall the stock 8mm triple square screw in the middle of the bracket. If your vehicle does not have this screw, install the supplied lock nut to the bolt that was previously installed in step 33.

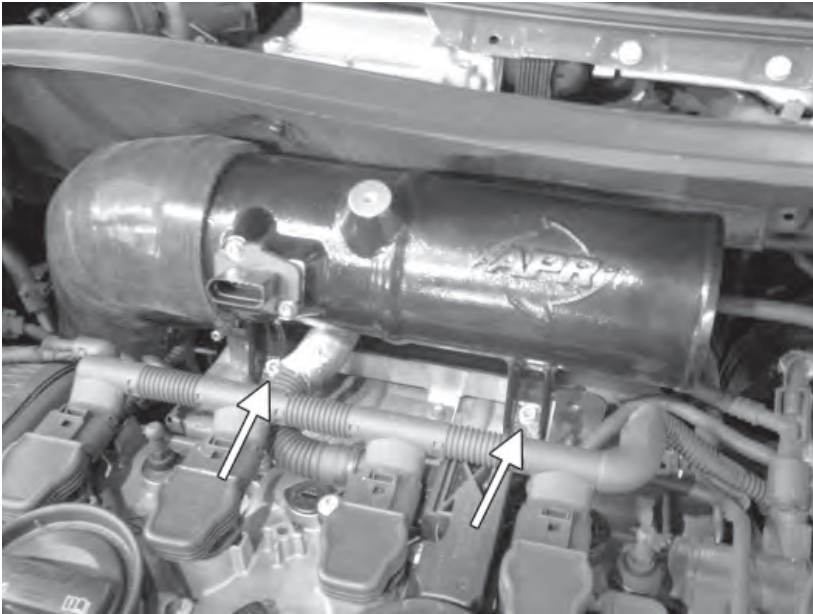
55) From the stock airbox assembly, remove the two T20 screws from the stock MAF sensor. Install the sensor in the APR MAF tube using the supplied 3mm allen bolts. The sensor fits only one way into the MAF tube.



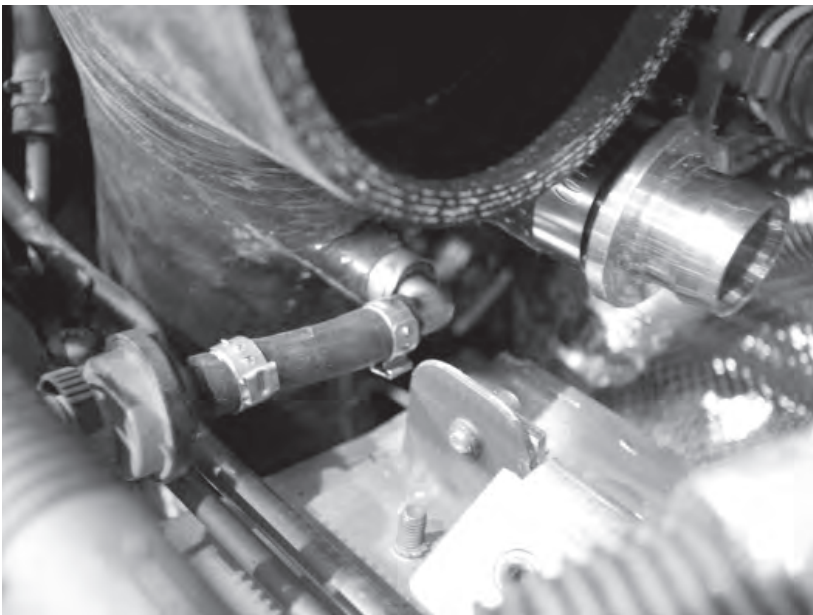
56) Loosely install the compressor inlet hose on the APR MAF Tube and lower into place on the car from above. From below, pull the compressor inlet hose down and place over the compressor inlet of the turbocharger.





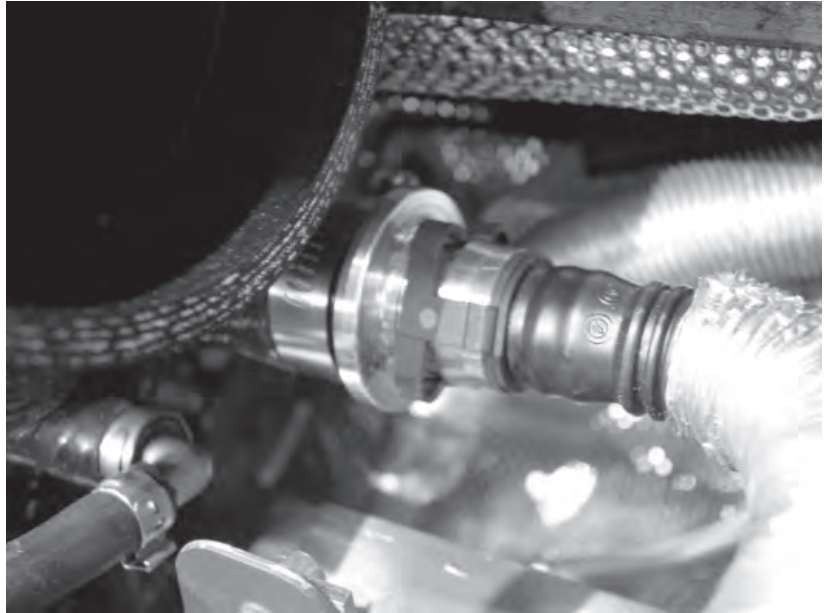


57) Install the two supplied 5mm allen bolts and lockwashers onto the MAF tube. Tighten the hose clamp from the compressor inlet hose to the turbocharger. Remove the 5mm bolts and lockwashers and remove the APR MAF tube, leaving the compressor inlet hose in the car. It was necessary to install the MAF tube to get the correct orientation on the compressor inlet hose before tightening that hose in place.

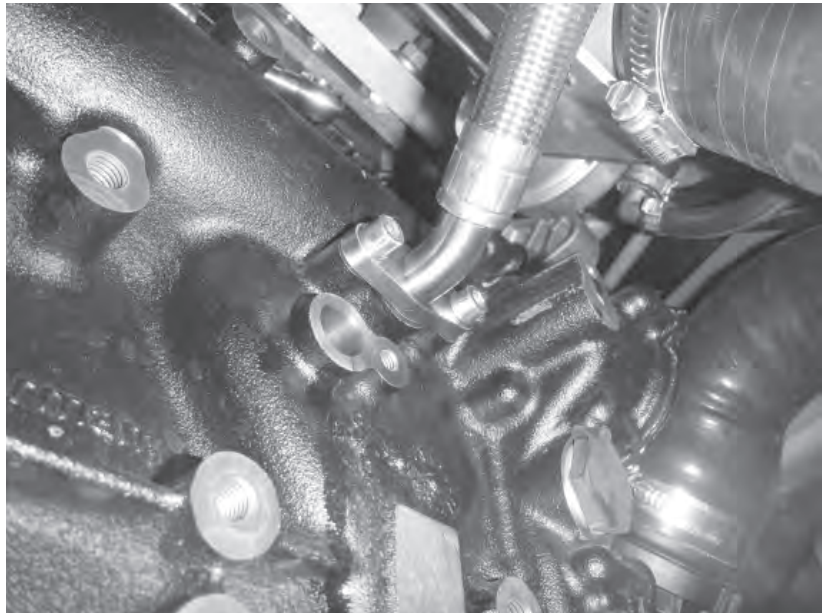


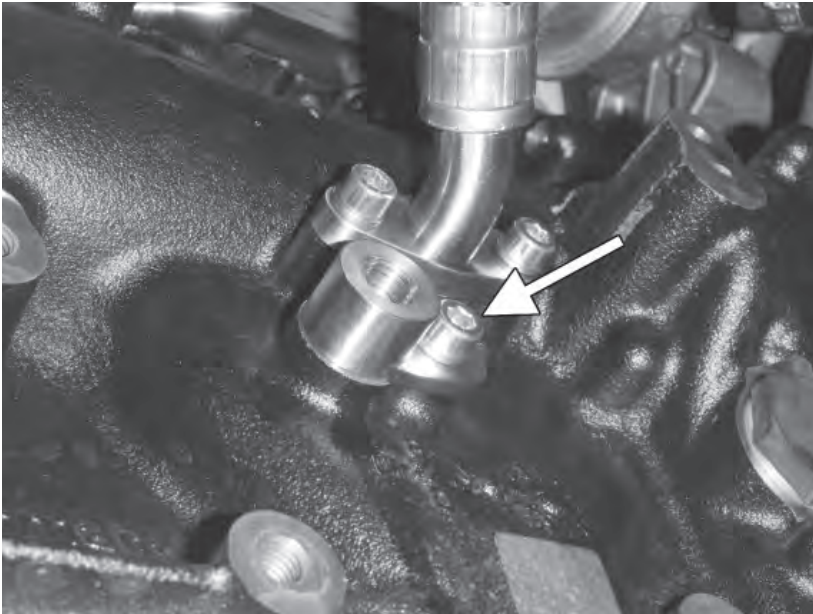
58) Connect the check valve that is on the back side of the valve cover to the compressor inlet hose as shown using the supplied vacuum hose and crimp clamps. The vacuum hose will need to be cut to length.

59) Slide the supplied heat shielding over the stock PCV hose, and then connect the hose to the APR compressor inlet hose. Slide the heat shield over the connection to protect the plastic tubing.

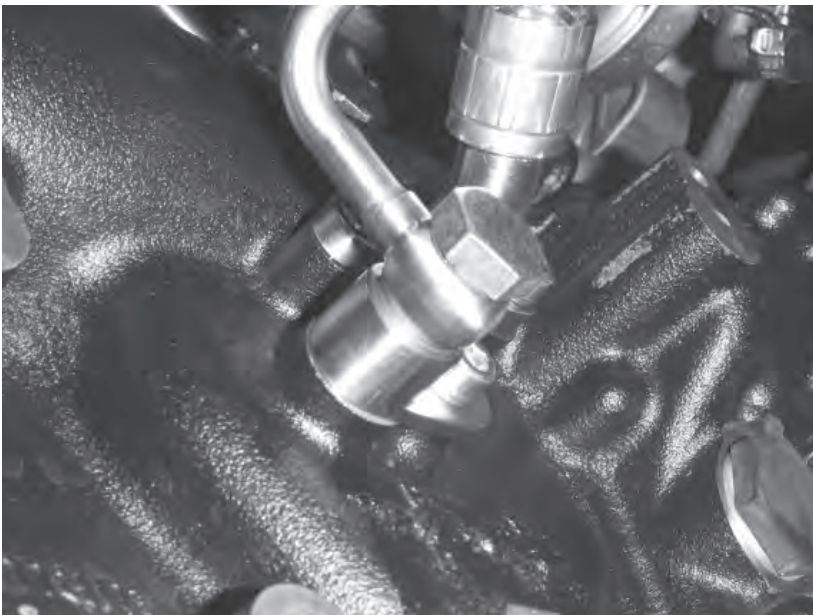


60) Connect the oil drain line to the engine block as shown. You will reuse the stock 8mm triple square drain line bolts with the new, supplied gasket. Once these bolts are tightened, also tighten the 6mm allen bolts that connect the drain line to the turbocharger with a 6mm allen ball head socket.





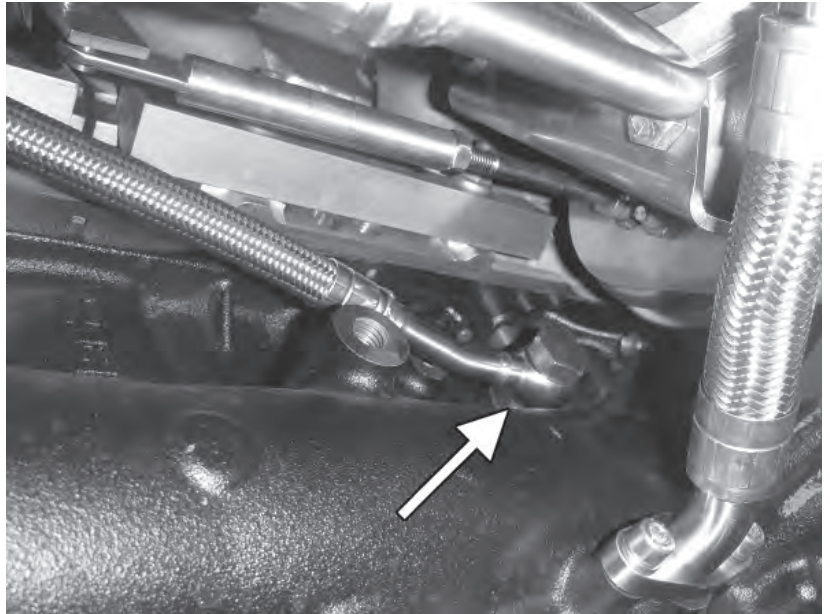
61) Connect the oil feed line adaptor to the engine block. Be sure to slightly lube the supplied o-ring when installing in the block.



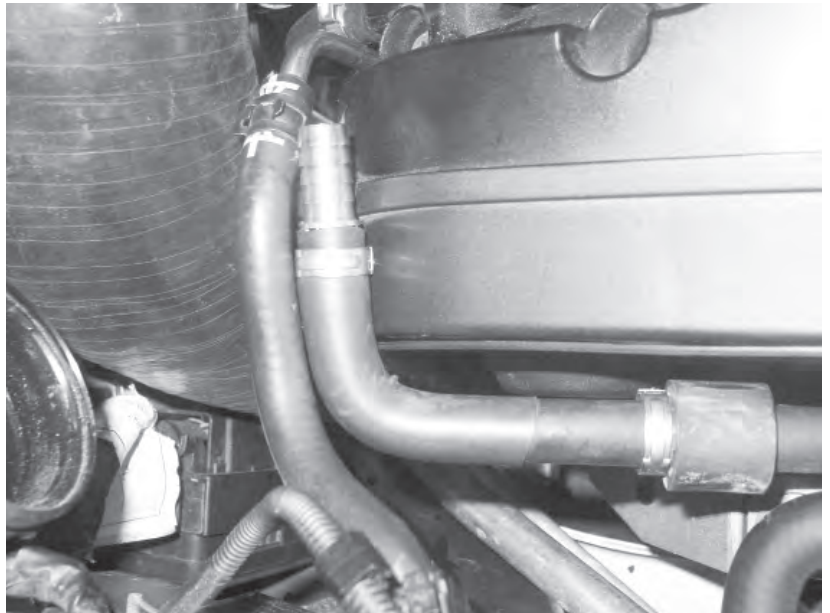
62) Install the oil feed line into the fitting previously installed on the top of the turbocharger. Tighten the connection with a 13mm wrench while holding the fitting with a 5/8" wrench. Then, connect and tighten the lower end of the oil feed line to the APR oil feed adaptor using the supplied 17mm banjo bolt and crush washers.



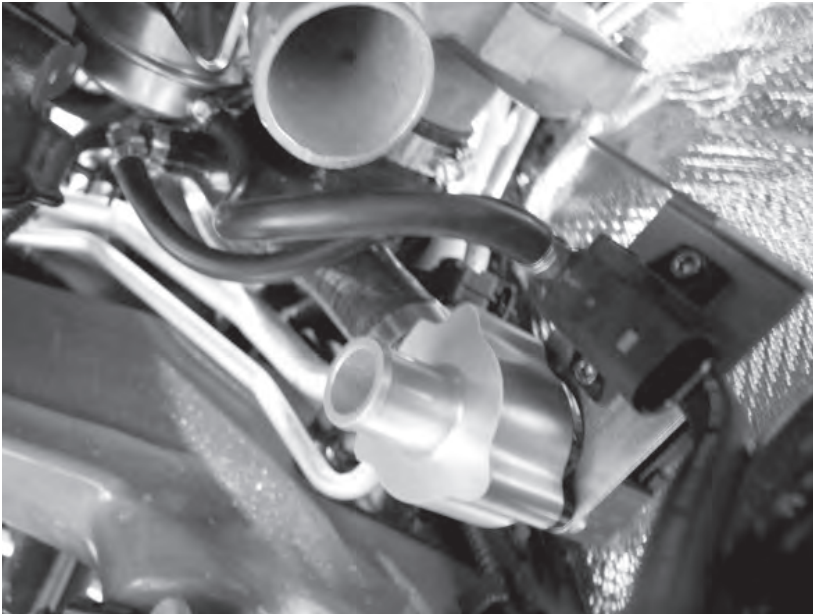
63) Connect and tighten the coolant drain line to the engine block as shown using the supplied 19mm banjo bolt and crush washers. Be sure to route the coolant line above the boss in the engine block.



64) Install the supplied stepped barb fitting into the upper coolant line that was previously cut with a crimped hose clamp. Route the lower rubber coolant line off the turbocharger as shown, and connect to the upper coolant line from underneath. Install the other crimp clamp on the coolant line.





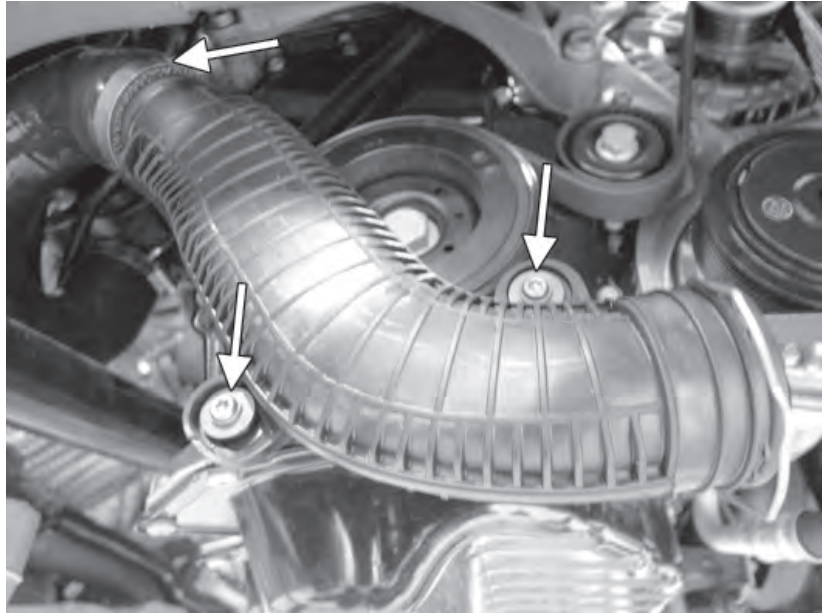


65) After sliding on the clamp on the bottom port of the compressor inlet hose, install the outlet (side) port of the diverter valve adaptor into the port. Loosely tighten the clamp. Connect the vacuum lines with crimp clamps from the compressor inlet and wastegate actuator ports of the N75 valve to the barb in the compressor inlet hose and the wastegate actuator, respectively. Crimp with the supplied crimp clamps.

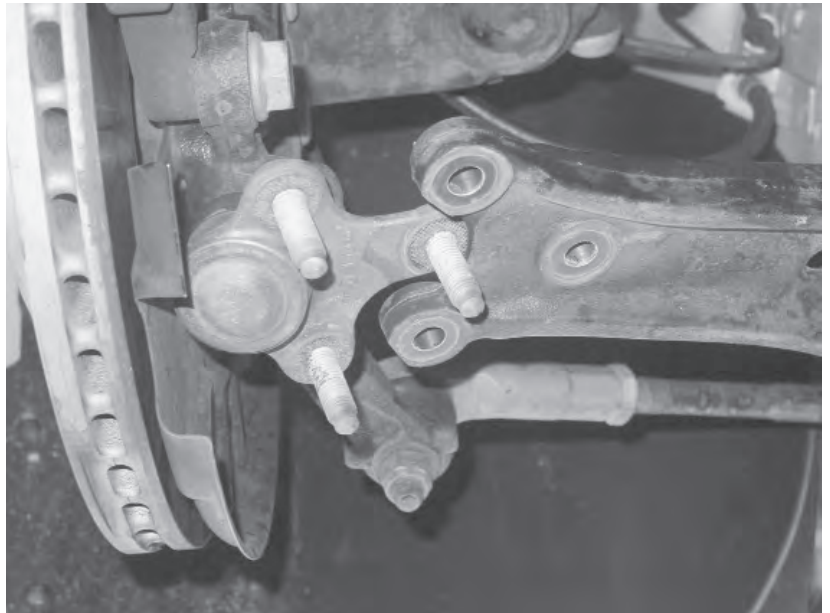


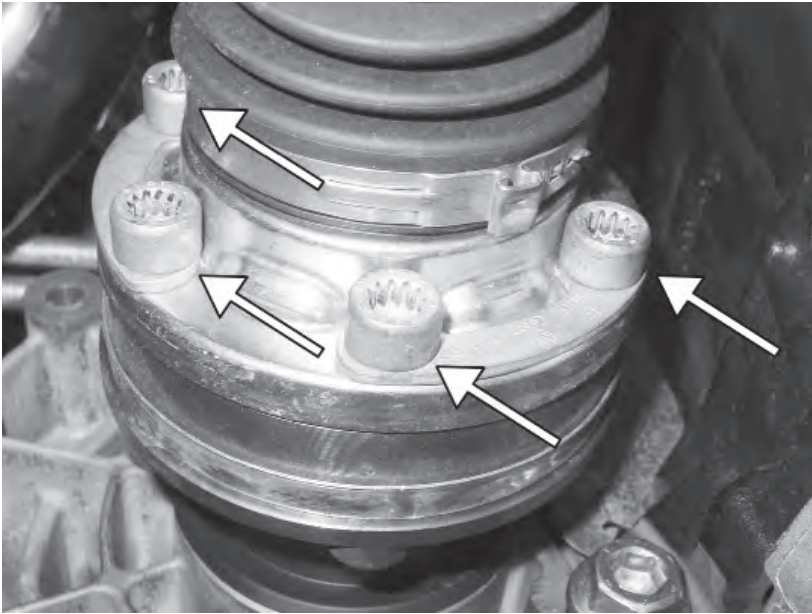
66) Install the compressor outlet hose to the turbocharger with the supplied clamp, but do not tighten the clamp. After sliding the supplied hose clamp on the port of the compressor outlet hose, install the inlet (bottom) side of the diverter valve adaptor into the port. Connect the final vacuum hose from the N75 compressor outlet port to the outlet hose with the supplied crimp clamps. Confirm all N75 vacuum lines are routed correctly and are all connections are tight.

67) Install the stock pressure pipe on the passenger side of the engine using the stock T30 screws and tighten to 8lb-ft. Connect the APR compressor outlet hose to the pressure pipe with the supplied hose clamp. Once oriented correctly, fully tighten the hose clamps on the compressor outlet hose at the pressure pipe, the turbocharger, and both diverter valve adaptor ports.

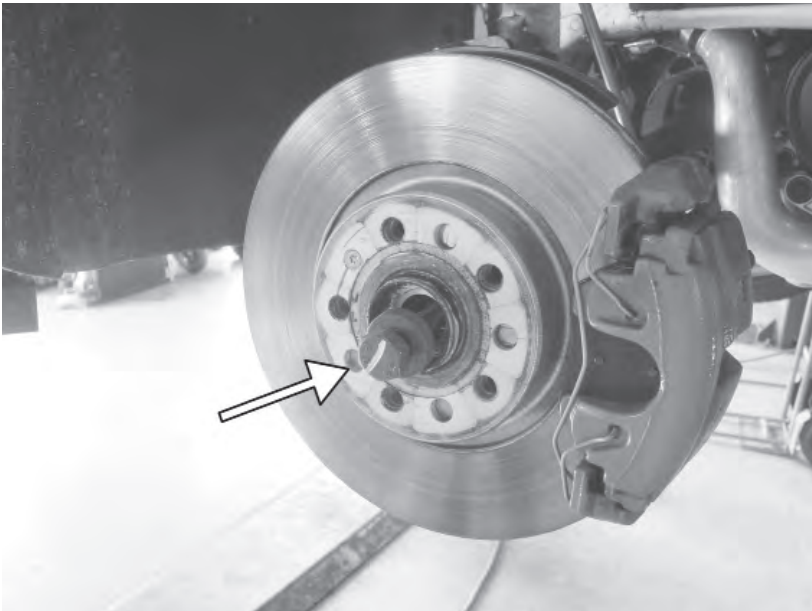


68) Reinstall the passenger axle into the car, making sure the splines on the axle line up into the hub. Reinstall the three 16mm nuts on the ball joint on the lower control arm and tighten to 45lb-ft.





69) Reinstall the six 10mm triple square bolts and bolt straps to the inner joint of the axle and tighten to 52lb-ft.

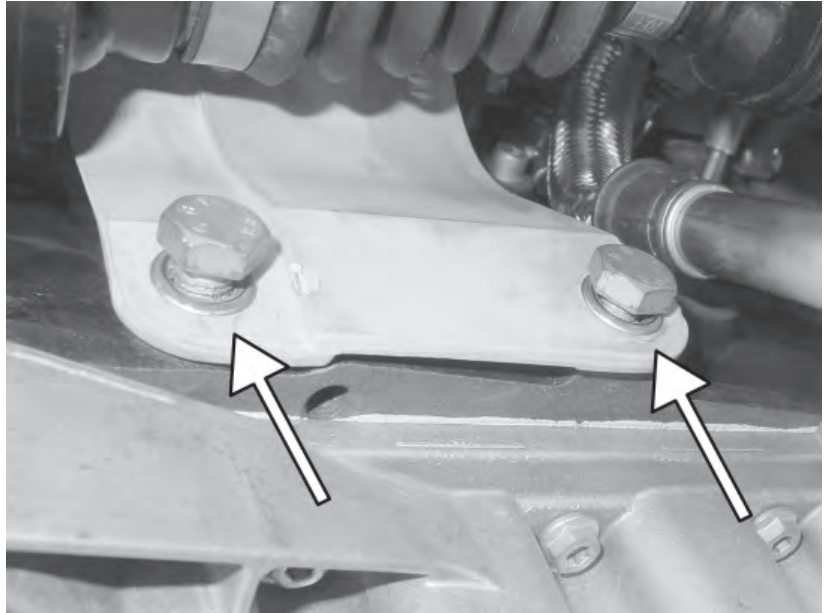


70) Reinstall the axle bolt. Have a partner hold the brakes on the car while you tighten the bolt.

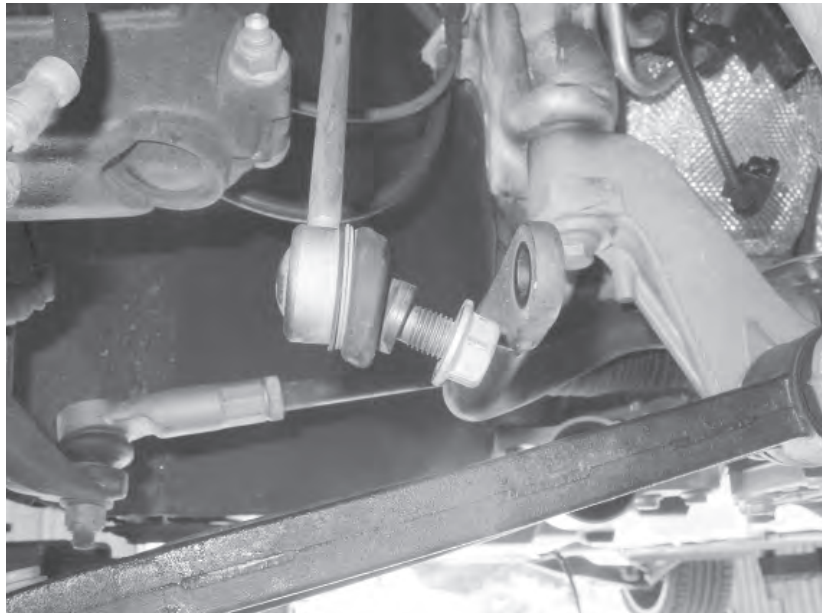
If you have the 24mm, 12 point bolt, tighten to 52lb-ft and then tighten the bolt an additional 90°.

If you have the 27mm, 6 point bolt, tighten to 148lb-ft and then tighten the bolt an additional 180°.

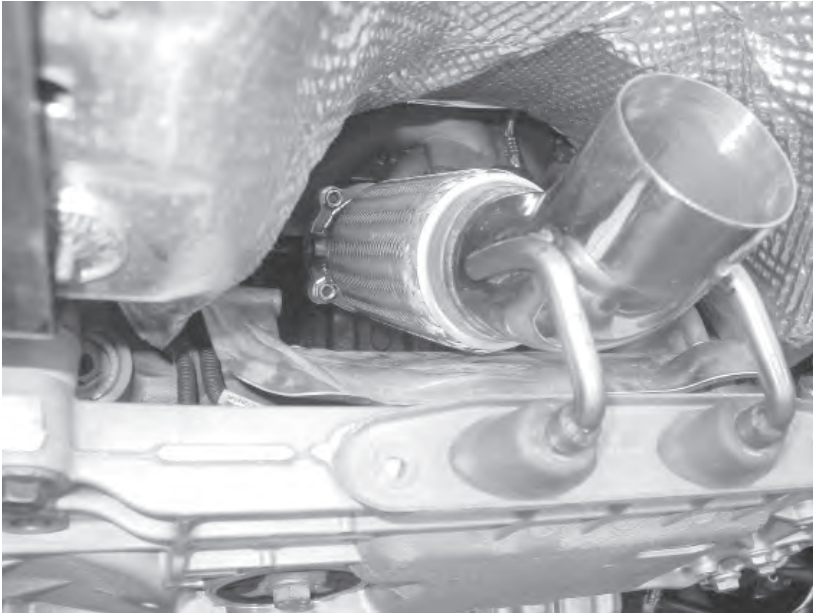
71) Reinstall the inner axle heat shield with the two stock 16mm bolts.



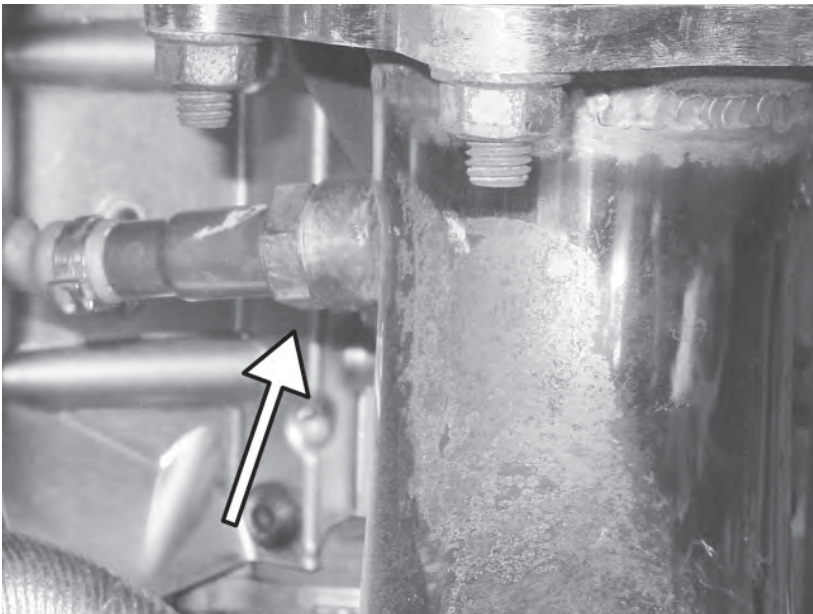
72) Reinstall the sway bar end link with the 18mm nut and tighten to 48lb-ft. Also reconnect the engine dogbone mount with the two 16mm bolts and tighten to 37lb-ft and then tighten an additional 90°.





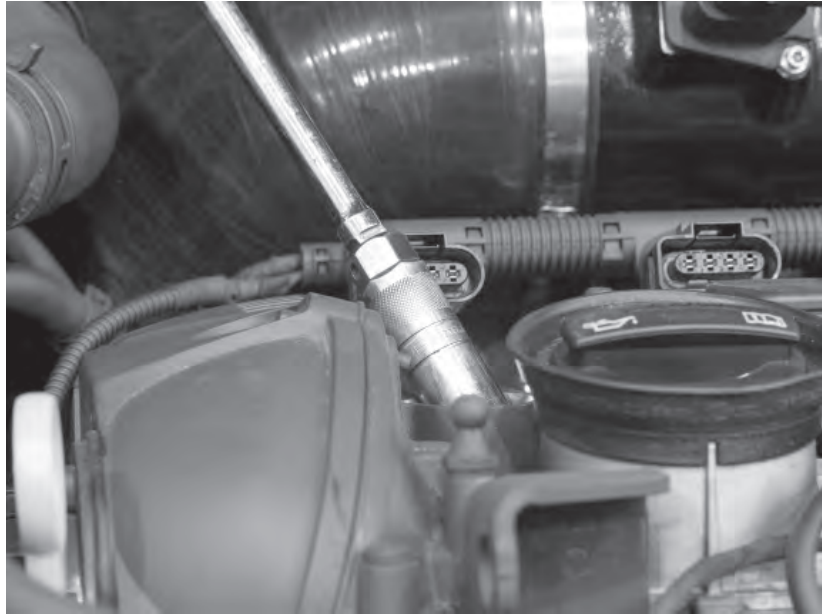


73) Install the supplied downpipe and gasket onto the APR downturn with the four 14mm nuts. Connect the rest of the exhaust system to the downpipe.

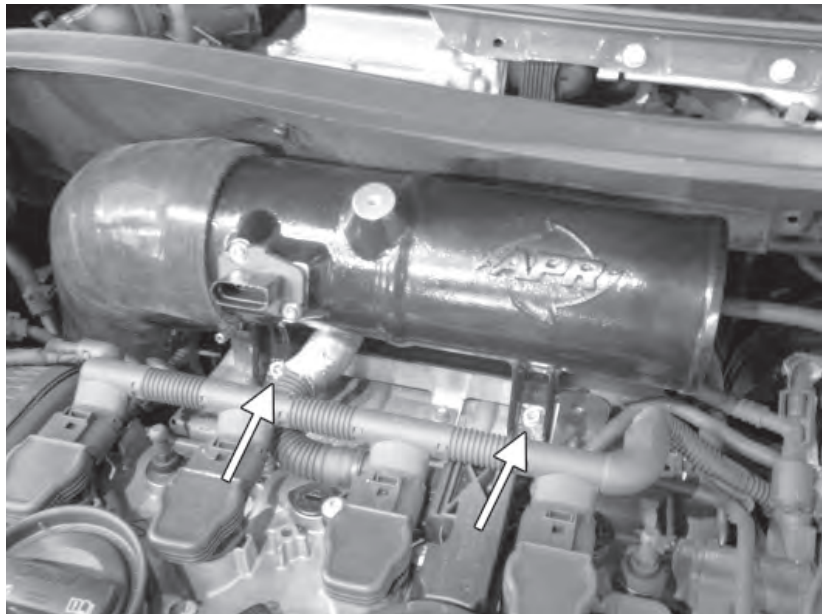


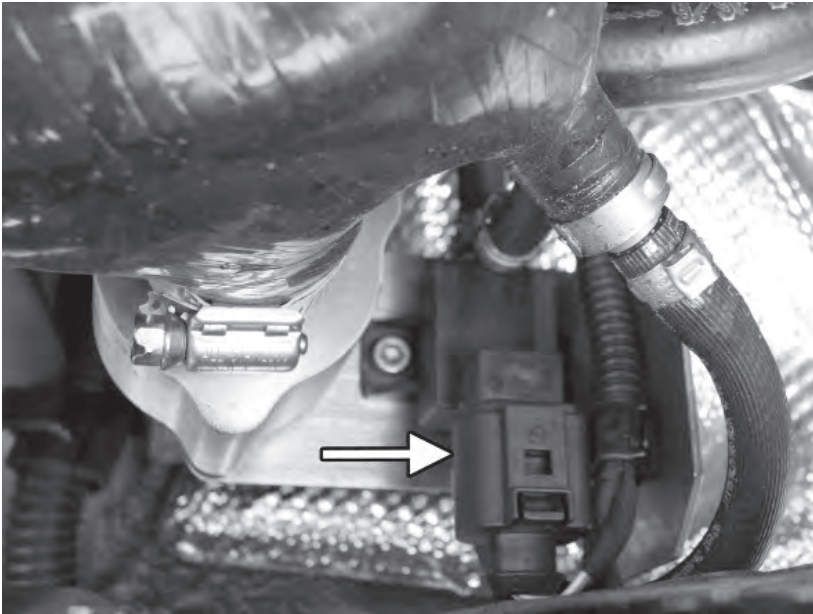
74) Reinstall the O2 sensors into the downpipe and tighten them with an oxygen sensor socket. Route the wiring for the sensors up and reconnect to the factory clips and electrical connectors.

75) Remove the stock coilpacks and sparkplugs. Check the gap on the APR plugs and verify/regap to .028". Install the new spark plugs and torque to 18lb-ft. Reinstall the coilpacks.



76) Reinstall APR MAF tube into the compressor inlet hose. Secure with the 5mm allen bolts and some red loctite thread fastener.





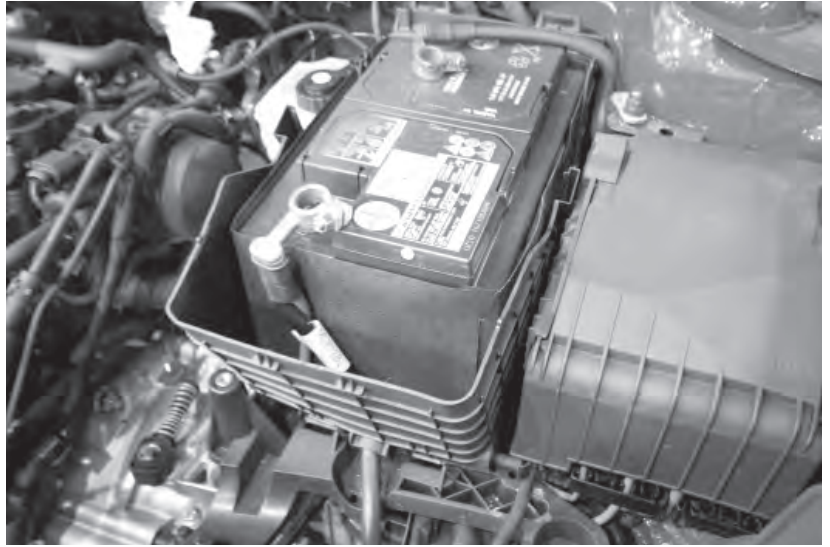
77) From above, drop the wires that connect to the N75 valve and diverter valve down the passenger side of the engine and reconnect them. From underneath, reconnect the electrical connectors to the N75 valve on the front side of the APR bracket, making sure it is behind the heat shield portion of the bracket. Then connect the diverter valve connector on the back side of the bracket.



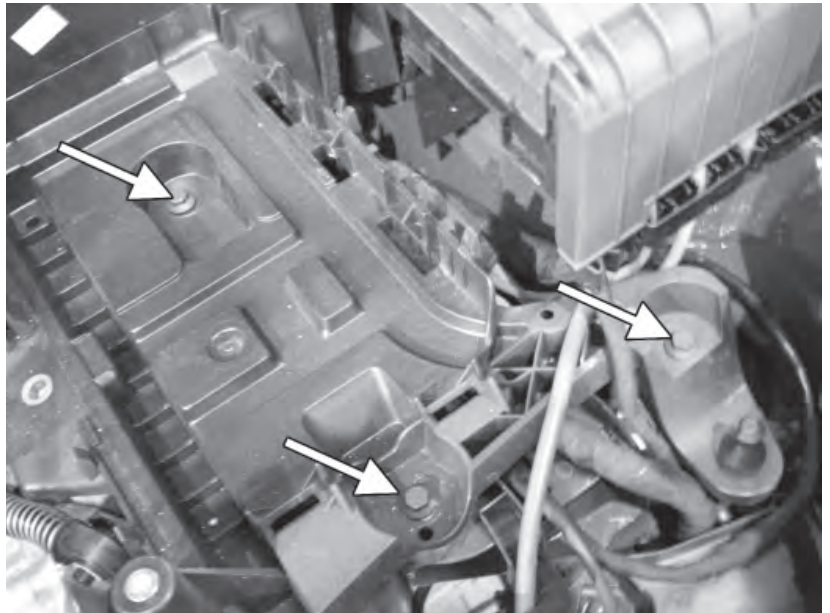
78) Remove the 13mm bolt that holds the battery bracket in place.



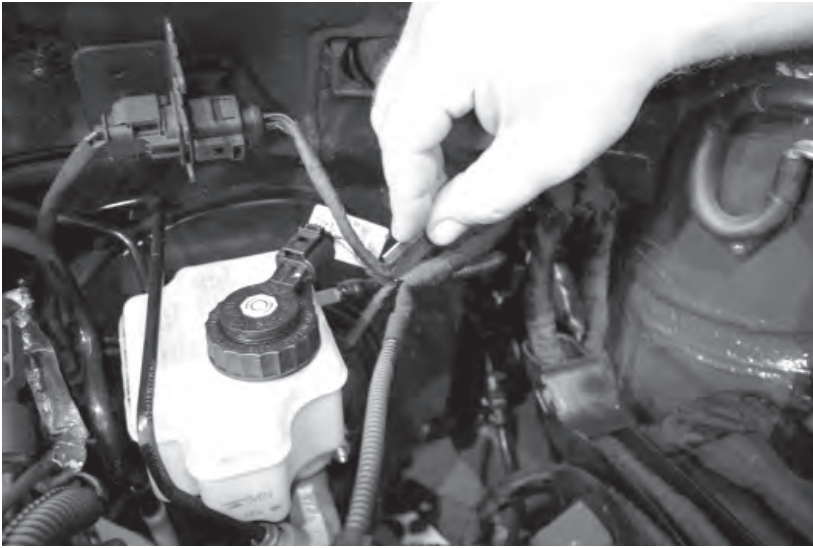
79) Disconnect the 10mm nut and remove the positive battery terminal. Remove the front cover around the battery and remove the battery from the car.



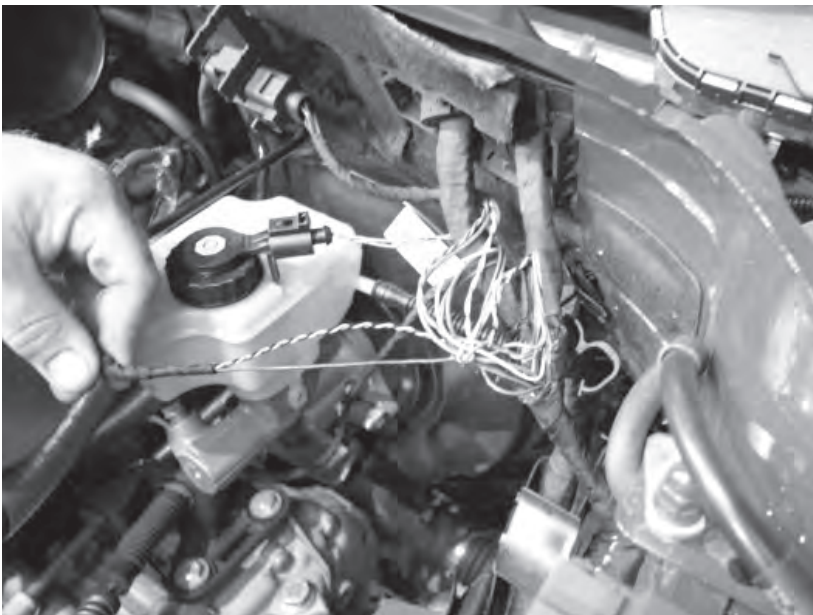
80) Disconnect the three 10mm bolts and remove the battery tray from the car. There is a post on the front side of the battery tray that needs to be lifted in order to be disconnected.





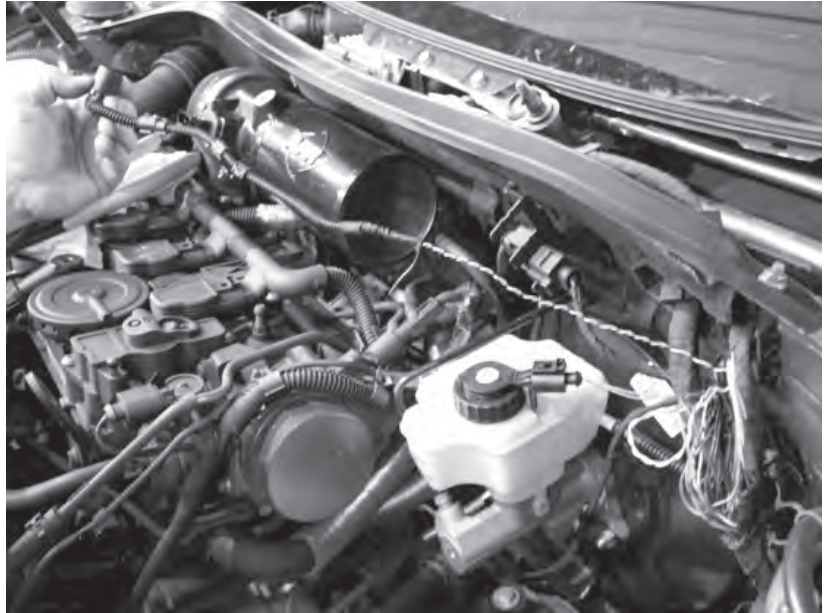


81) Pull the MAF harness tight, and gently cut away the electrical tape where it joins with other harnesses. Be very careful not to cut or slice any wires or wire insulation.

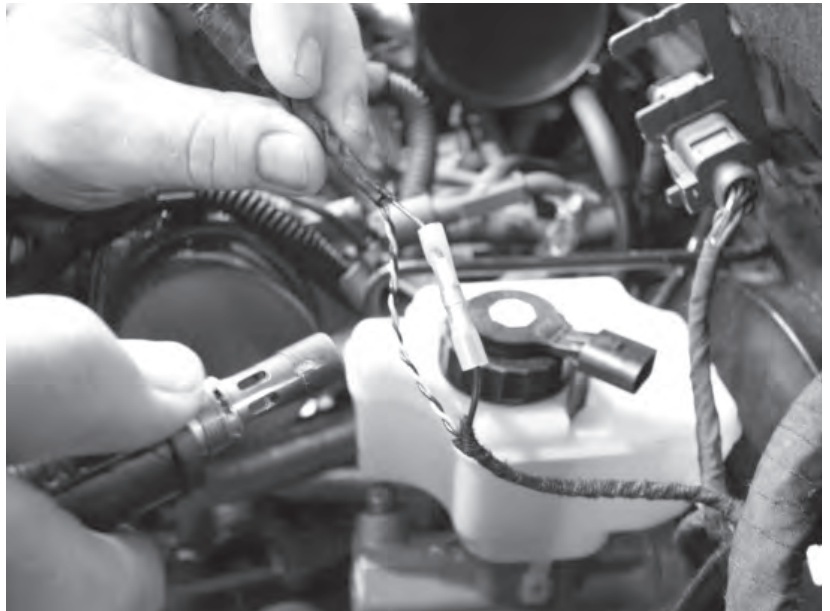


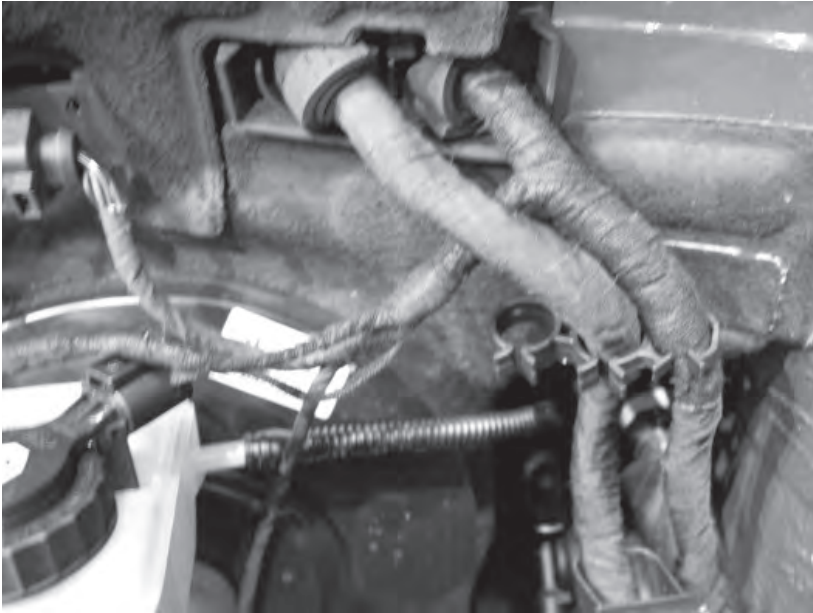
82) Remove the wiring harness from the retainer clip on the firewall and continue to expose the MAF wiring harness as shown.

83) Cut the black/blue power wire in the MAF wiring harness. This should allow the other wires from the MAF harness to have extra length. Extend the other wires as far as possible without stretching them.

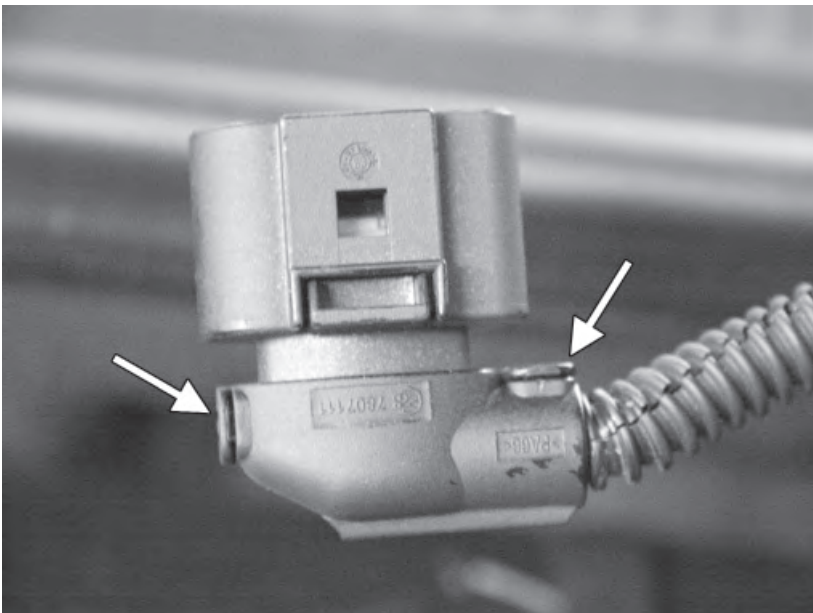


84) Using the supplied connectors, extend the black/blue power wire using the supplied extension wire. Heat the wire connector with a hot heat gun or torch to melt the internal solder in the connector and to seal the connection.





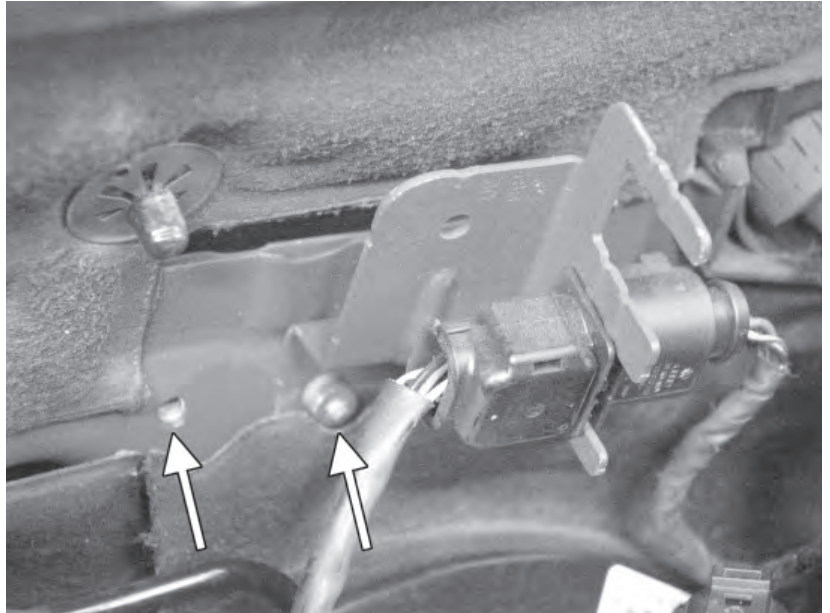
85) Rewrap the wiring harness that you cut into using electrical tape, making sure to leave the extra length of the MAF wiring harness separate. Mount the wires back into the clips on the firewall. We recommend that you use the same cloth tape that is available from a dealership.



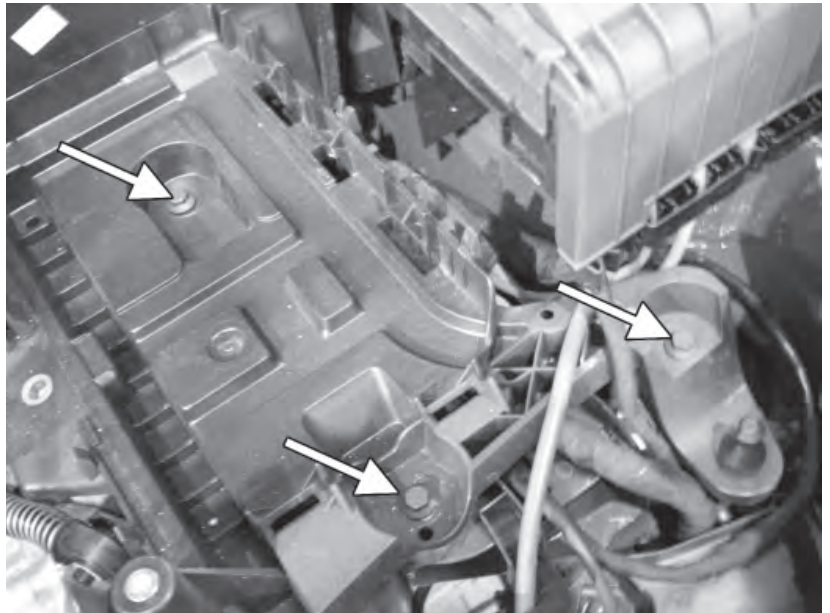
86) Disconnect the angled shroud on the back of the MAF wiring connector by lifting on the two clips. Rotate the shroud and wiring 180° so the wiring is facing the opposite direction from stock, as shown in the picture.



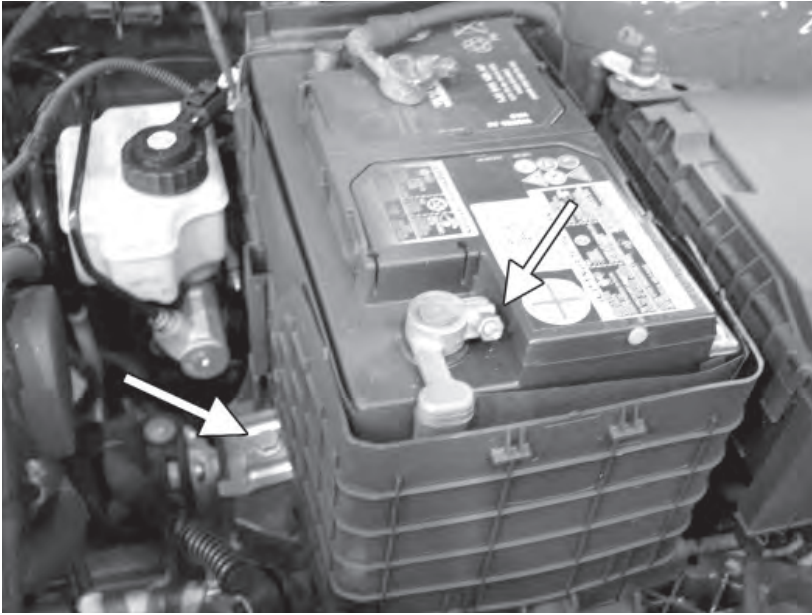
87) Remove the two T30 screws from the mounting bracket for the oxygen sensor wiring connector from the firewall. Shift the bracket to the drivers side of the car and reattach using one T30 screw.



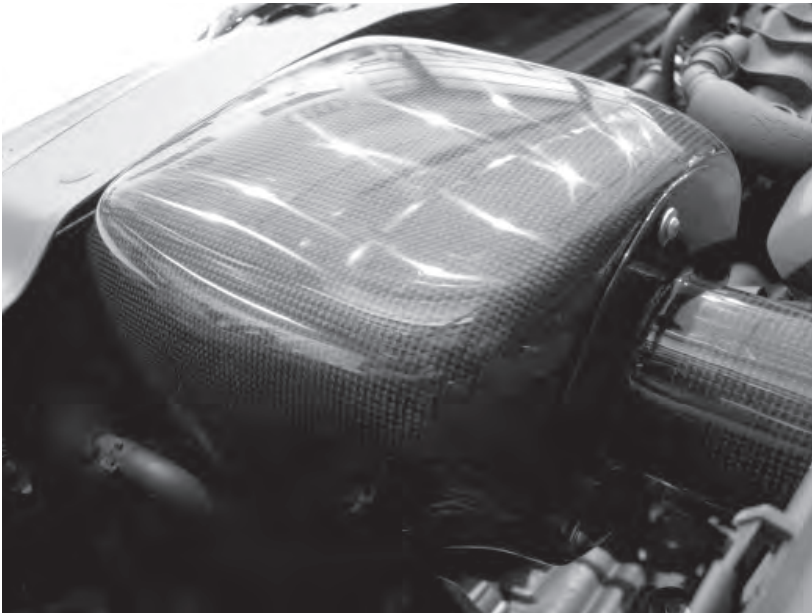
88) Reinstall the battery tray in the car, and then install the three 10mm bolts that hold the tray in the car.





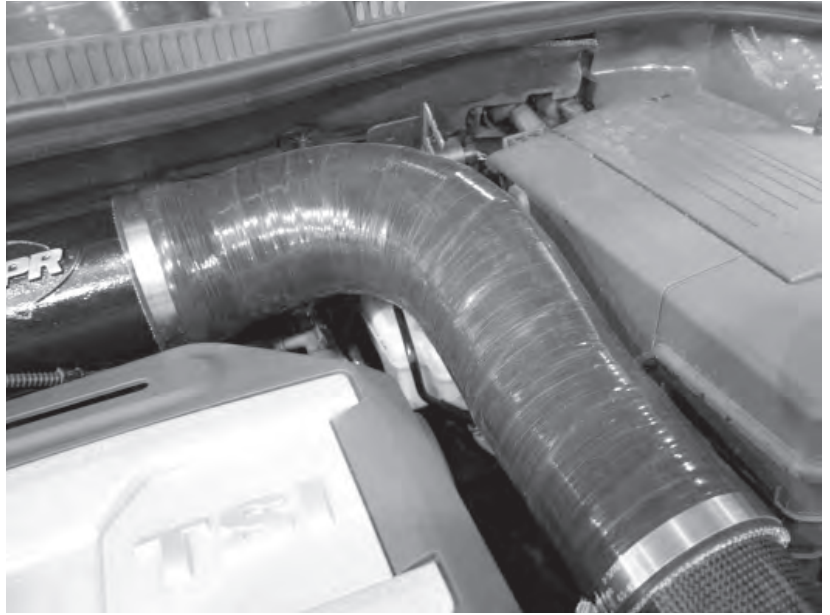


89) Reinstall the battery and the front battery cover. Install the battery bracket and the 13mm bolt that holds the battery in place. Finally, reconnect the positive battery terminal and tighten the 10mm bolt.

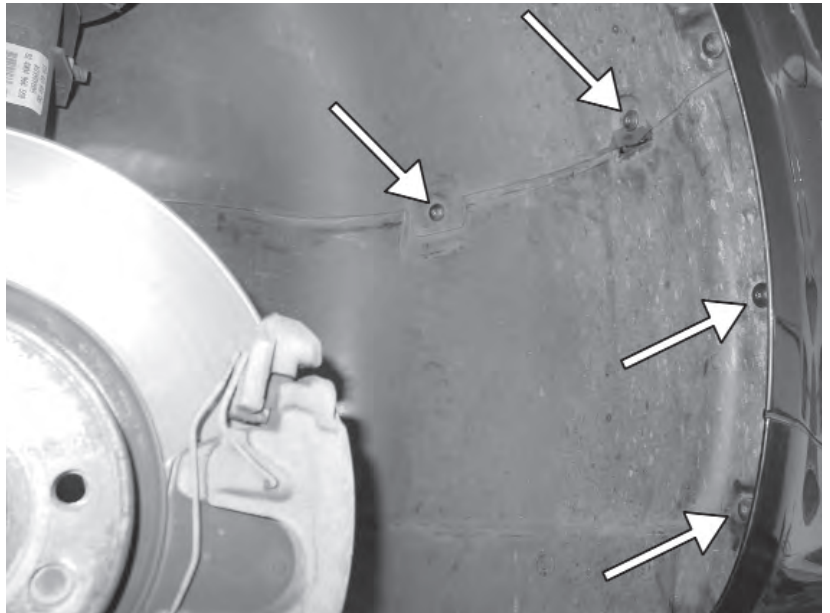


90) Install the airbox portion (Carbonio pictured) of the intake system that connects to the radiator core support with the two T25 screws.

91) Install the rest of the intake system as show, but leave the hose clamps loose. Preinstall the metal inlet elbow into the pipe by the fenderwell.



92) Reinstall both the driver and passenger side wheel well liners with the stock T25 screws. Leave the belly pan off for the initial testdrive, so you can check for leaks or reinstall the intercooler hose that blew off that you didn't tighten enough.





93) Reinstall the front passenger wheel and torque the lug bolts to 89lb-ft.

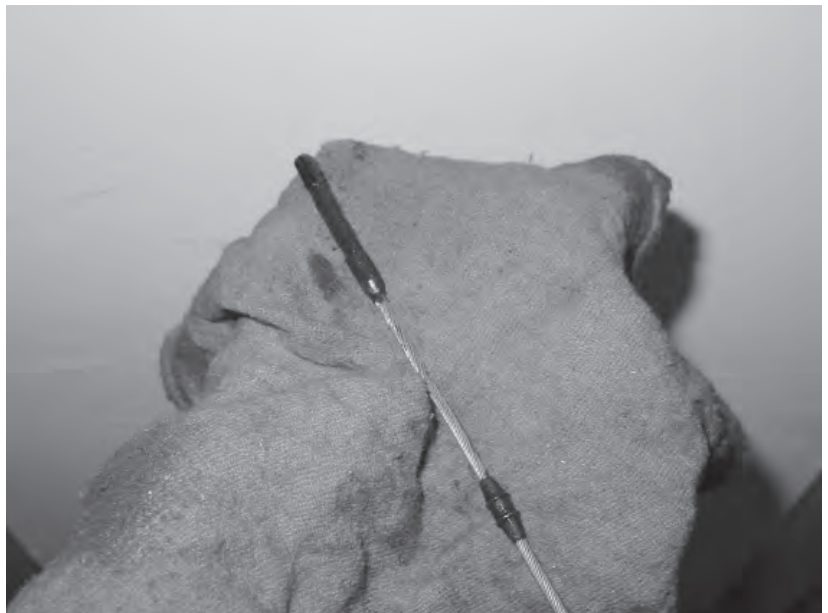


94) Fill the engine with oil and coolant. Use ONLY G12 plus coolant, and leave the reservoir cap off.

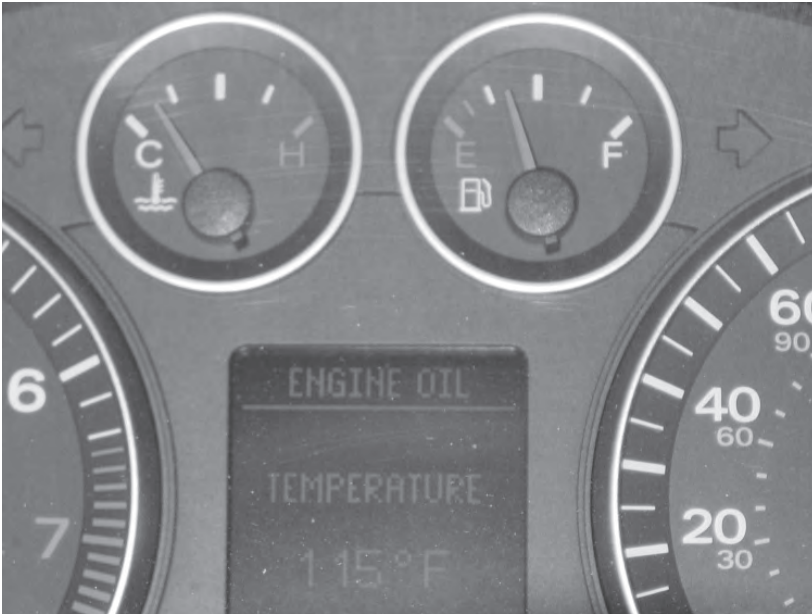
95) Reconnect negative battery terminal. Let the car sit for at least three minutes with the ignition key on and engine off. This is a good time to connect with a diagnostic tool and clear any error codes on the car.



96) Start the engine and let idle for ten seconds. Turn the engine off and check the engine oil level, topping off if necessary.







97) Restart the engine and check for any oil or coolant leaks as the engine idles. Let the engine come up to temperature in order to bleed the coolant. Smoke from the engine bay is normal as the oil and grease from your hands burns off the new components.

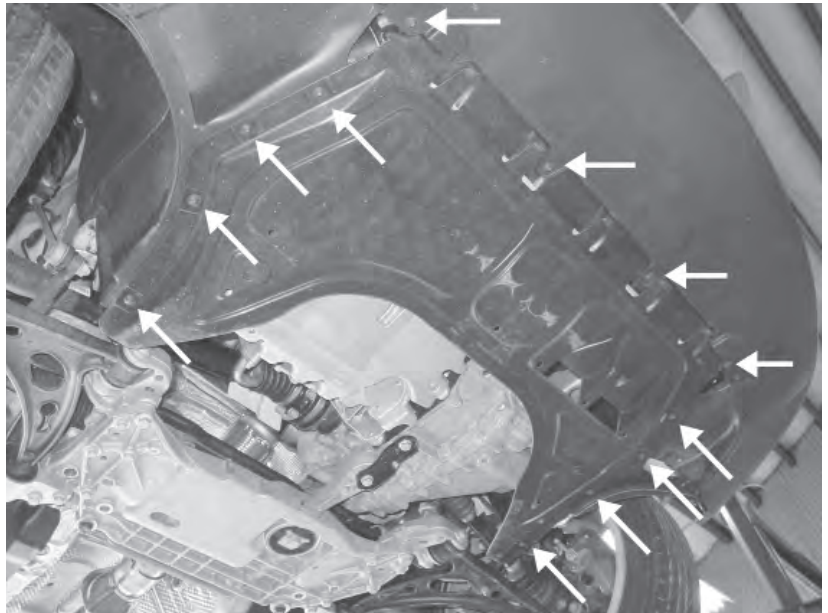


98) Check the engine coolant level and fill if necessary. Reinstall the reservoir cap before the thermostat on the car opens.

99) Turn off the engine and check for any leaks from underneath the car.



100) Reinstall the belly pan in the car with the T25 screws.



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# NOW WAIT BEFORE DRIVING AND READ THIS!!

## CONGRATULATIONS!

You just successfully installed your Stage III kit on your already great 2.0T. This kit completely transforms the car in more ways than you can imagine. Don't take your car out and drive it hard without first getting used to the new power. It would suck to have just spent all the time, money, and frustration you did on your car to go out and wreck it!! Here is what we advise for your first drive...

Get a friend who knows something about cars to go for the first drive with you. Grab your wallet (with some cash in it), your cell phone, and some basic tools in case you have a problem with that hose clamp or bolt that you forgot to tighten. Get all the extra boxes and junk you have in the back of your car out so they don't go flying around. Get in your car and PUT ON YOUR SEAT BELT!

Make sure your engine is fully up to temperature before going for a drive. Try not to pull out in traffic so you can have some time to react if something happens to your car. Use light throttle inputs and be easy on the car. As you start to drive you will hear some of the new noises it makes. It will take you some time to distinguish between what sounds normal and what is a problem. Don't worry too much for now about all of the air rushing noises that you hear, but make sure that you don't hear anything rattling or hitting things that they should not be hitting.

Gradually build up to driving your car with its newfound power. Soon, you will hear a new hissing sound, which is the sound of your tires spinning in second and third gear. Be careful about how much power you use in lower gears. Do not add too much power when in a turn, only when the car is pointed straight. You will get more comfortable with this power as time goes by...

Before you realize it, your brakes will not be working like they used to. They faded away when you made that stop after the third gear run. Go home now and don't try to get a ticket from racing that STi you saw heading the other way. Welcome to the next level. Welcome to Stage III.







APR

TUNED

