WORKS
MOTORSPORTS

FR-S/BRZ Stage 2 Turbo Kit
Installation Instructions

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Disclaimer:

Read through the instructions completely before beginning the installation process.

WORKS prides itself in offering the highest caliber performance products for your Scion/Subaru.

Before beginning the installation process, please inspect the parts ordered for any damage that may have occurred during shipping. If there is any question about the product's condition, please contact WORKS or your Authorized WORKS Dealer.

Please note the installation process requires proficient mechanical skills. Improper installation of WORKS performance parts can have serious consequences. When in doubt, please contact WORKS or your Authorized WORKS Dealer for a service center near you to assist with the installation of WORKS performance products.

Prerequisites for Kit Installation:

The following instructions outline the steps necessary to install the WORKS FR-S/BRZ turbo kit onto a stock vehicle. Any vehicle modifications done prior to the installation of the FR-S/BRZ turbo kit may affect the installation procedure and cause compatibility issues with the kit. WORKS is not responsible for problems or component failures associated with running aftermarket parts or custom ECU tuning in conjunction with the WORKS FR-S/BRZ turbo kit. Following the steps and sequence outlined in this document is critical to proper kit assembly.

The list below outlines some of the most common compatibility requirements for installation of this kit, but is not intended to be comprehensive – some modifications not listed below may also cause compatibility issues during installation or operation. WORKS recommends fully reading through the installation instructions before beginning installation to check for compatibility issues with existing aftermarket components.

- Model Year 2013-2015 Scion FR-S/Subaru BRZ
- Vehicle must be left hand drive
- Vehicle must have a manual transmission
- Vehicle must have either OEM exhaust components or equivalent components that retain all stock exhaust flange locations and bolt patterns
- Vehicle must retain stock airbox or utilize an aftermarket equivalent that retains the stock airbox's outlet location and geometry
- CARB-approved kits must retain stock exhaust equipment to continually maintain CARB compliance (exhaust manifold, front pipe, mid pipe, and muffler)
- CARB-approved kits must retain stock airbox to continually maintain CARB compliance
- This kit may be incompatible with some strut bar configurations
- This kit is not compatible with intake manifold spacers
- All vehicles must retain stock right injector cover 14047AA991
- Stage 2 vehicles must retain rear engine hangar bracket 10004AA310
- Vehicle must be in otherwise good mechanical condition

Pre-Installation Preparation:

Ensure you have the ability to flash your vehicle with EcuTek, OpenFlash Tablet or brzEdit. Regardless of which tool you are using, your very first step should be reading your ROM ID from your ECU by plugging in and using your respective software to do so. This information must be provided to WORKS before you receive any tune files. Send the file to engineering@worksmotorsports.com. This is good to do before beginning installation to save time once the kit is installed.

In addition to flashing capability and a full set of metric tools, ensure that you have the following items before beginning installation:

- 5.5 quarts/5.4 liters of full synthetic 5W-30 engine oil for the recommended oil change immediately after kit installation
- OEM Toyota or Subaru coolant and distilled water for water-to-air intercooler circuit. Total system capacity is 2.1 quarts/2.0 liters.
- Anti-seize compound for exhaust fasteners
- RTV silicone sealant

WORKS highly recommends performing installation with the vehicle on a lift – the following guide is written assuming an on-lift installation. Always use designated vehicle lifting points and observe proper lifting procedure.

Care and Ongoing Maintenance Recommendations:

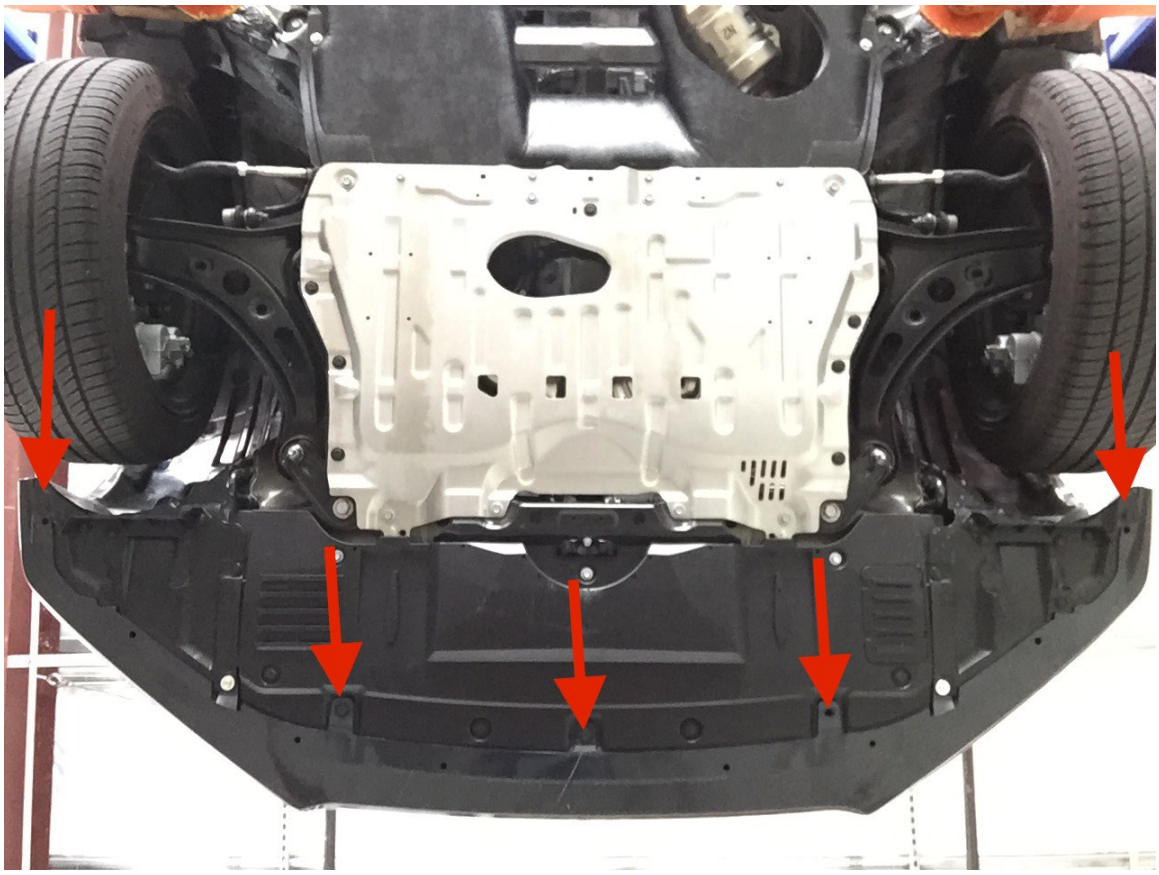
- WORKS highly recommends installing stiffer aftermarket engine mounts in conjunction with this kit for competition, track, or aggressive street use.
- Always use Top Tier gasoline, minimum octane rating 91 (R+M)/2.
- Always use 5W-30 full synthetic motor oil. WORKS specifically recommends Eneos 5W-30 Fully Synthetic Motor Oil.
- Change engine oil every 3,000 miles with normal street usage. Change more frequently if vehicle sees track and/or extreme climate operation.
- Allow vehicle to fully warm up before heavy throttle application. After heavy throttle application, allow a few minutes for cool-down (either idling or light driving) before shutting engine off.
- Change coolant in water-to-air cooling system every 5 years or 60,000 miles, whichever comes first. Use a coolant mixture of down to 25% coolant/75% distilled water for warm-climate cars, and up to 50/50 for cold-climate vehicles.
- Any questions, problems, or concerns, contact WORKS Motorsports directly.

1. Bumper Removal

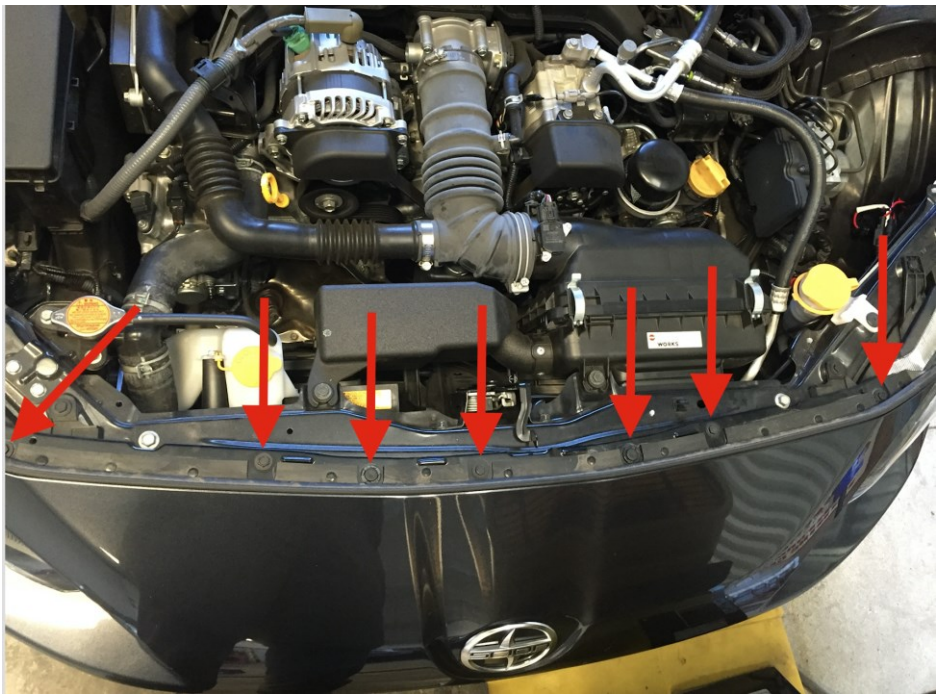
Turn the wheels to one side and remove the retaining clip rivets from fender liners.

Remove amber side markers. These are held in by metal clips – to remove, slide a small, flathead screwdriver horizontally into the hole above the green arrow. Push forwards and inward towards the car to release the top retaining clip. This step may take some persistence – try pulling the sidemarker in the direction of the red arrow during removal to help free it from the bumper.

Remove the single vertical retaining clip rivet that resides in the side marker cutout.
Remove the 3x retaining clip rivets and the 2x 10mm-hex bolts under front bumper.



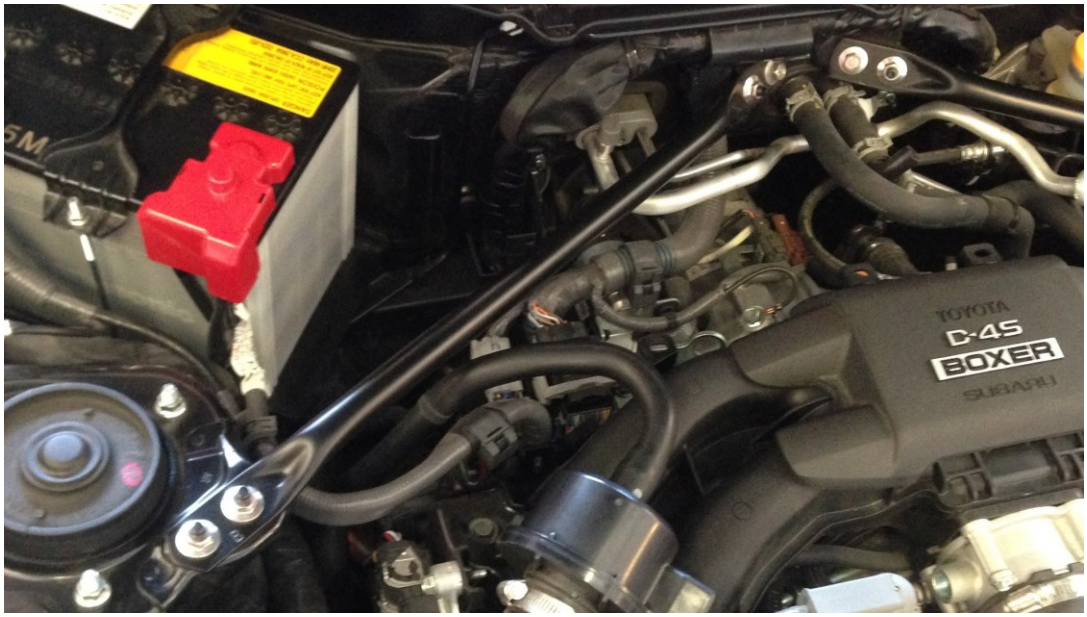
On the top of the bumper near the hood latch, remove the 5x 10mm-head hex bolts and 2x retaining clip rivets.



Remove the blade piece. Separate bumper from body by pulling outward on the bumper sides near the fenderwells. Exercise caution - there may be DRL/fog/signal lamp wiring connections that run between the bumper and body of the car. Disconnect these before fully removing the bumper.

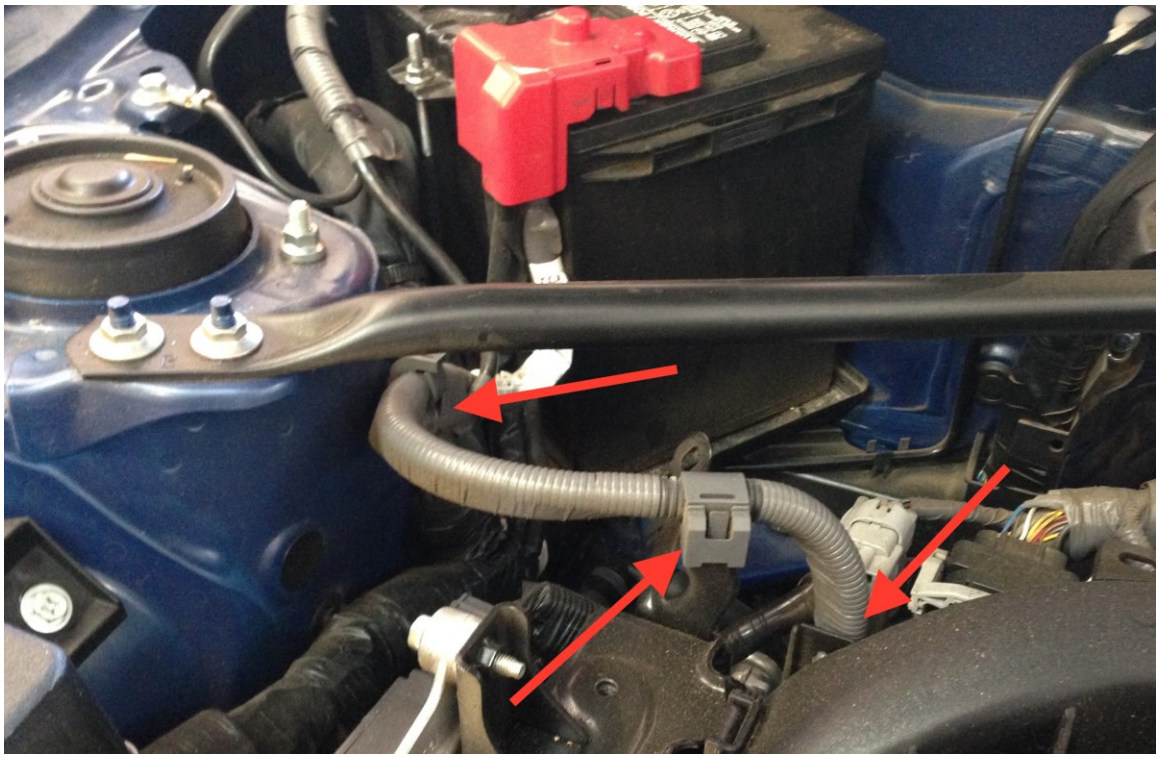
2. Top-Side Engine Bay Preparation

Disconnect both battery leads. Remove the passenger-side brace bar that connects the shock tower to the firewall.

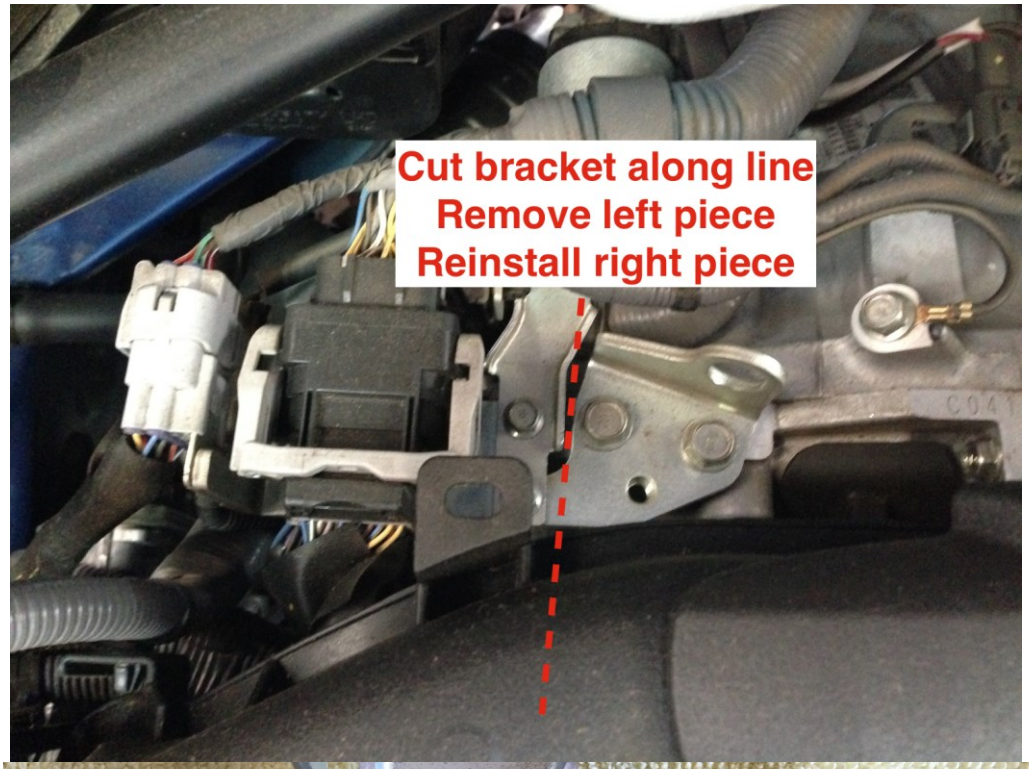


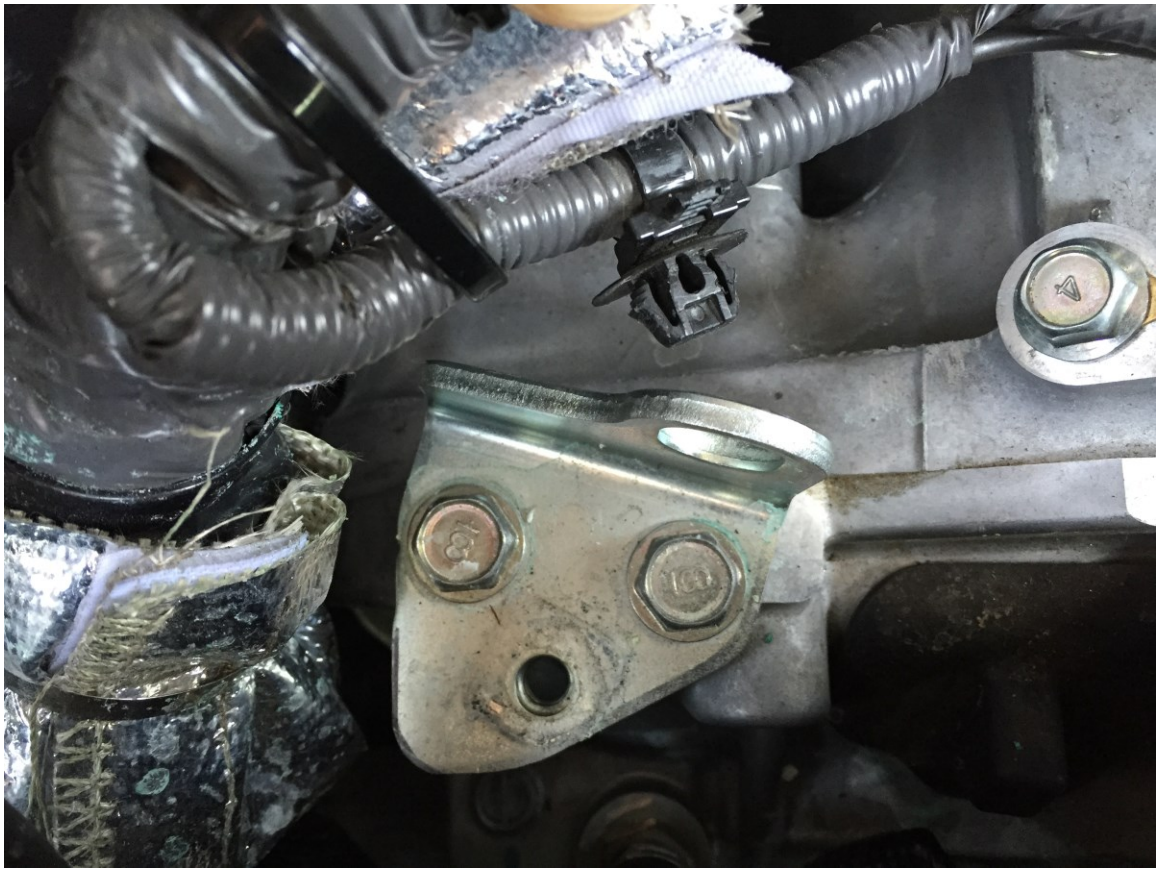
Remove noise generator and intake tube. The noise generator is secured by two 10mm-head bolts on top of the injector cover, two push-lock plastic connectors, and by a pull-to-remove grommet connection in a pocket below the firewall. Remove the intake tube by loosening the two large hose clamps on either end as well as the PCV connection, held by a spring-loaded clamp.

Separate the three tie-down points for the grey battery cable: one push-lock connector on the shock tower, one slide-lock connector on the injector cover bracket, and one push-lock connector behind the intake manifold.

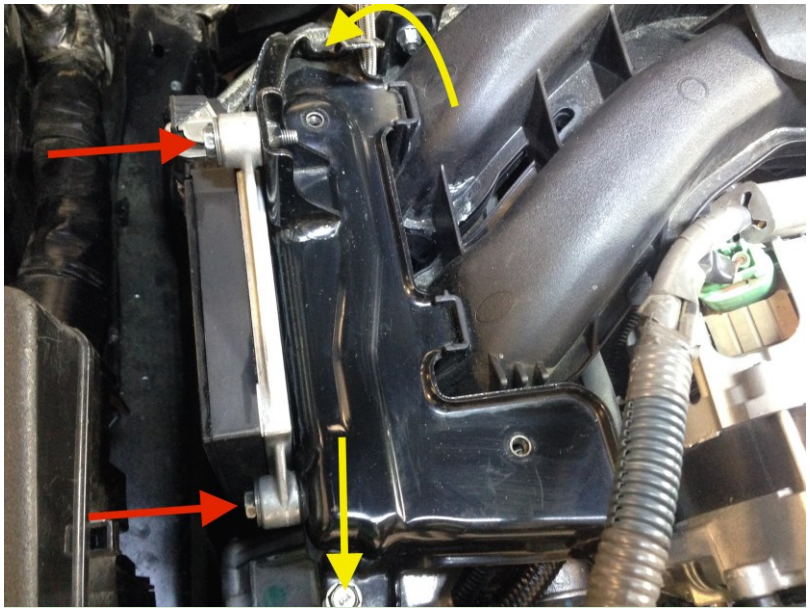


Remove the two 14mm-head bolts holding down the gold wiring harness bracket. Release the wiring harness connections attached to it and remove the bracket from vehicle. Remove bracket and cut as shown, leaving engine hoist eyelet and 3 closest holes (2 14mm-head bolt holes and open threaded hole). Spray cut edge with a light coating of primer to prevent corrosion. Reinstall bracket.



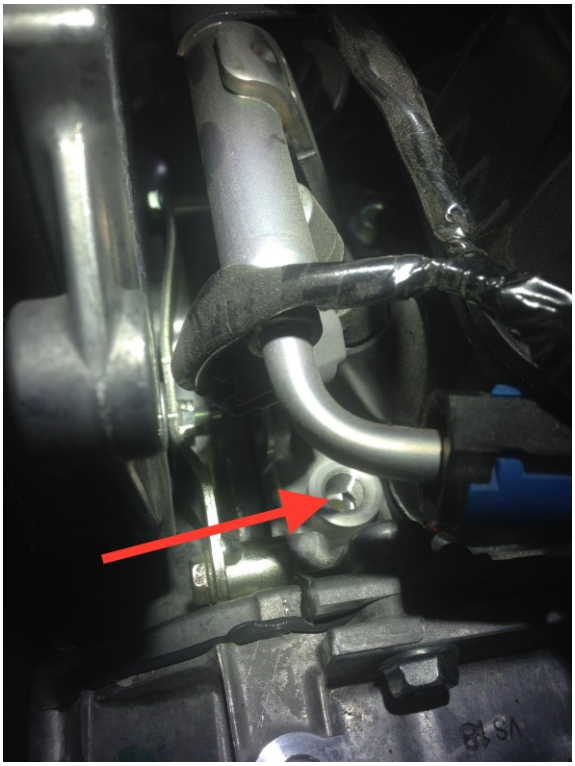


Separate the injector cover from the injector computer by removing the two 10mm-head bolts (red arrows in picture below). Remove the two 12mm-head bolts (yellow arrows) that fasten the injector cover to the engine block. Release the slide-lock plastic connector holding the alternator cable to the injector cover's front bracket. Remove injector cover.



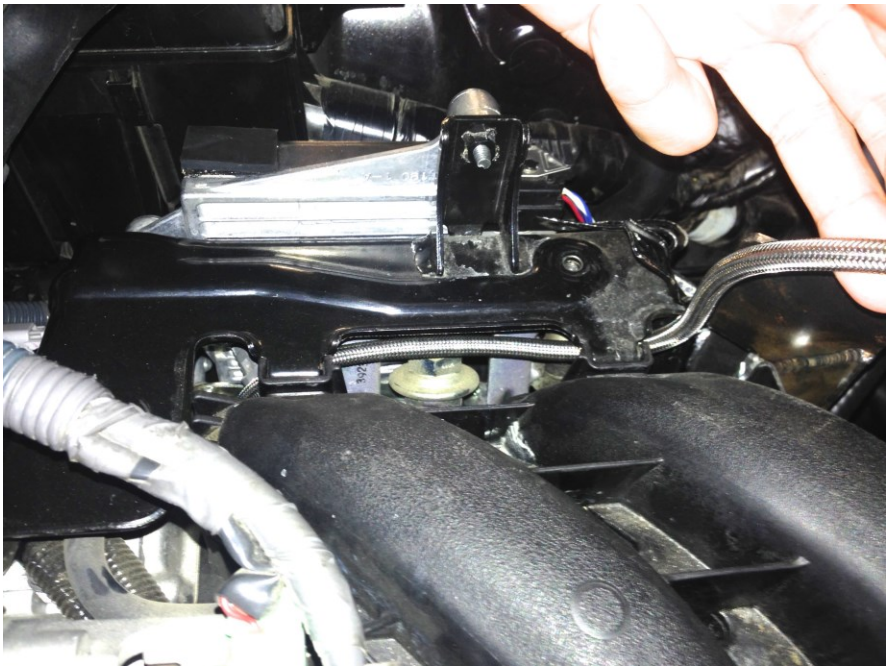
Using a vice or channel locks, bend the two rear bracket tabs forward until they are nearly flush with the top surface of the injector cover - this will make room for the turbocharger. You may also remove these two tabs entirely with a cutoff wheel if desired – be sure to follow up with a coat of spray primer after to prevent corrosion.

Locate the oil port pictured. This port is plugged with a 14mm-hex head bolt and resides underneath passenger side injector cover plate, near the front of the engine. Remove the plug and factory crush washer.



Locate the supplied oil fitting adaptor and install it into the same hole, using the supplied new crush washer. **Tighten this connection to 18 foot-pounds**.

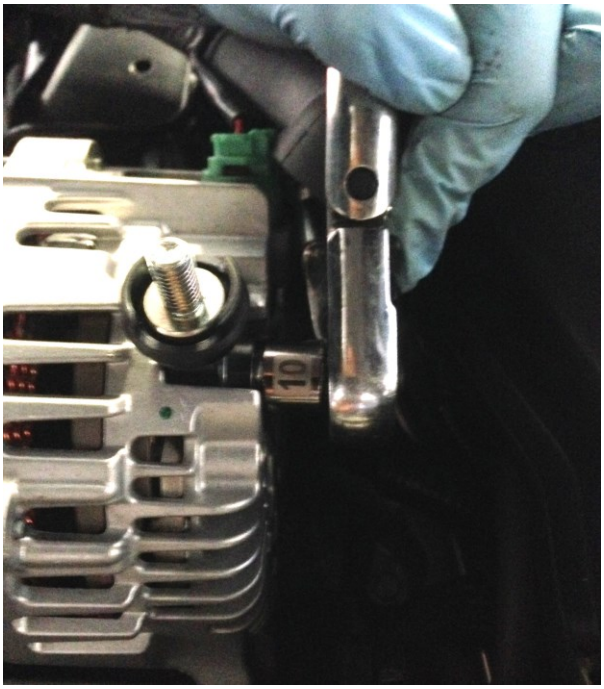
Locate the supplied stainless-braided oil line, thread the end with the straight fitting onto the adapter, and tighten. Reinstall the injector cover, routing the oil line out the rear as shown below. Reinstall the three 10mm-head bolts holding on the injector computer, and the **front** 12mm-head bolt. Leave the rear 12mm-head bolt out at this time.



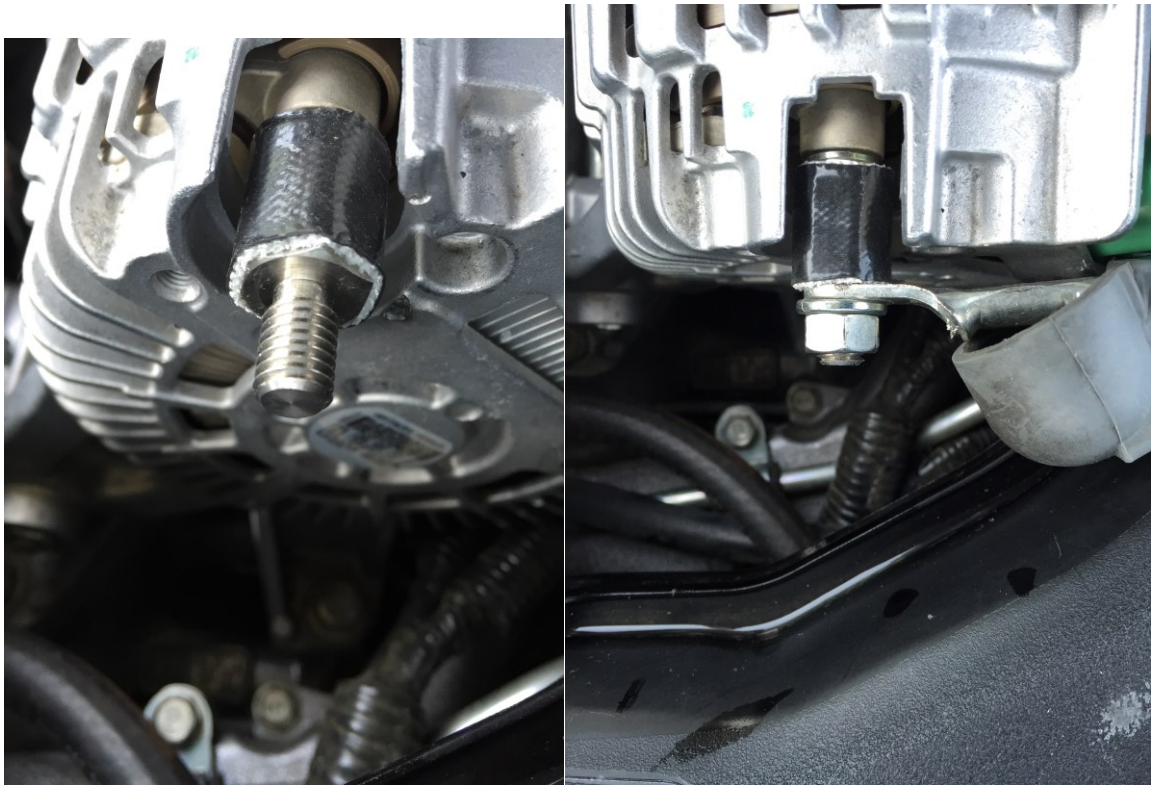
3. Alternator Tab Relocation:

Ensure the battery has been disconnected. Slide back the gray rubber shroud cap on the alternator cable.

Remove and save the nut and lockwasher that fasten the alternator cable. Remove the circular cap on the backside of the black plastic alternator tab, and then remove the nut underneath it using a 10mm socket. Remove the black plastic connector assembly from alternator.



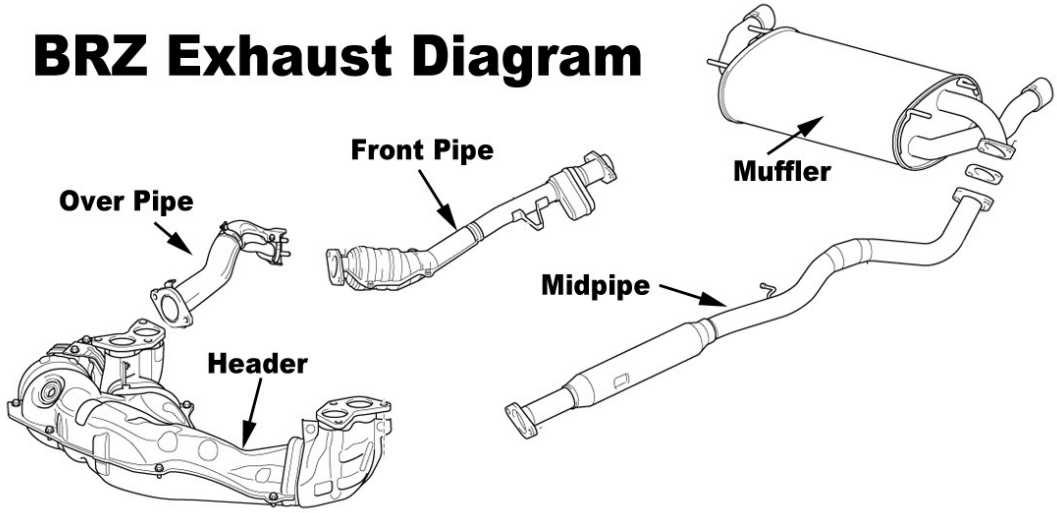
Slide the provided 6mm split lockwasher onto the stud that protrudes horizontally out of the rear of the alternator body. Thread on the provided alternator stud extension piece and tighten. Slip the provided insulating sleeve over the alternator stud extender. Re-attach the alternator contact tab and fasten using the original nut and lockwasher.



Re-attach the alternator cable to its bracket on the injector cover. It may be necessary to reposition the plastic slide-lock connector on the alternator cable to give additional slack. Ensure there is no contact between the alternator cable and the alternator housing, as this can cause an electrical short. Slide the gray rubber shroud back over the connection.

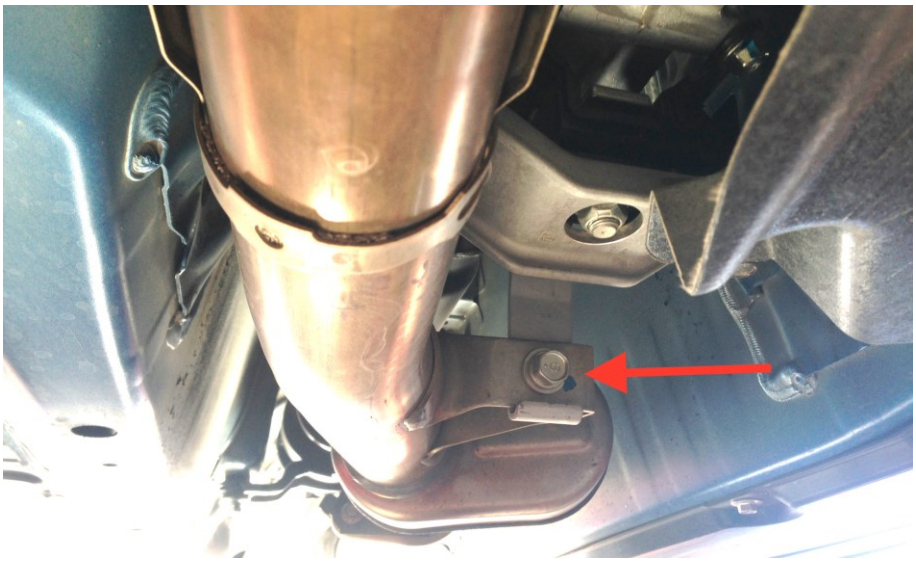
4. Bottom-Side Engine Bay Preparation:

Remove aluminum and fiberglass undertrays. Unbolt the junction between front pipe and overpipe by removing the two 14mm-head hex nuts. Unbolt the connection between exhaust header and overpipe, also secured by 2x 14mm hex nuts.

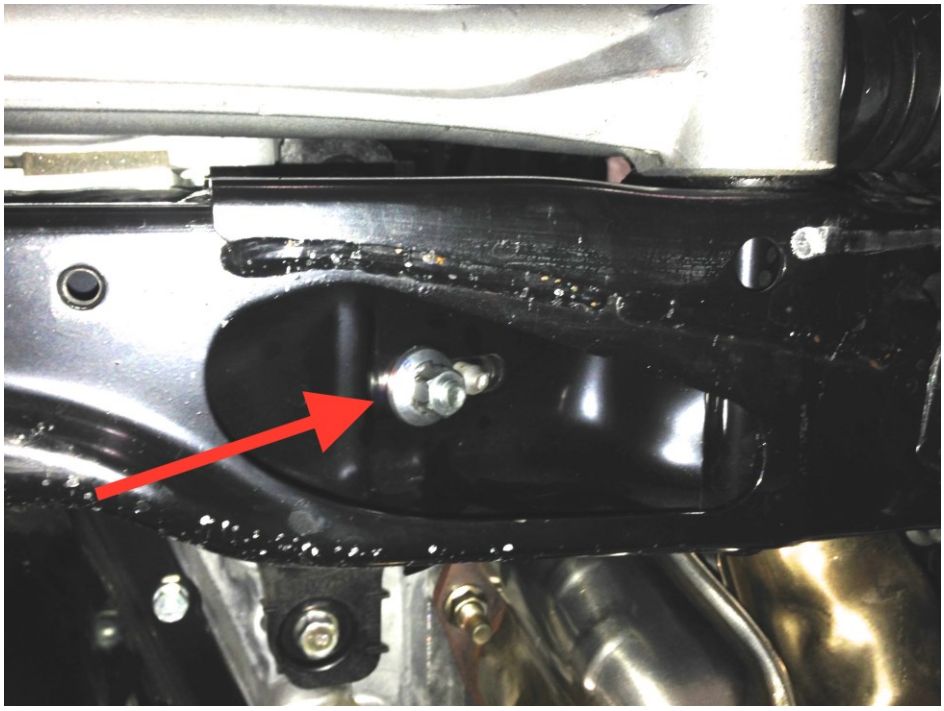


WARNING: Exhaust hardware is prone to seizing, even on fair-climate cars. It is recommended to use penetrating fluid and a box-end wrench to avoid damaging fasteners.

Remove the single 14mm-head bolt that fastens the front pipe as shown. Secure the exhaust to vehicle body using a bungee cord; do not let exhaust hang freely. Loosening this connection provides additional clearance at the front of the car to aid installation.



Remove overpipe. The overpipe is often difficult to remove due to space constraints. To gain additional clearance, remove the two 14mm-head engine mount nuts inside the front subframe pockets shown below.



Using a screw jack or floor jack, gently raise the engine/transmission out of the chassis about 1”. Use the transmission bellhousing as a jacking point as shown below. Do not to put excessive pressure on the jack point; 1” of lift provides enough additional clearance to easily remove the overpipe.

After removing overpipe, lower engine back onto mounts and re-install 14mm-head nuts in subframe. Torque nuts to 33 foot-pounds. Ensure alignment dowels properly enter slots when lowering engine back down.

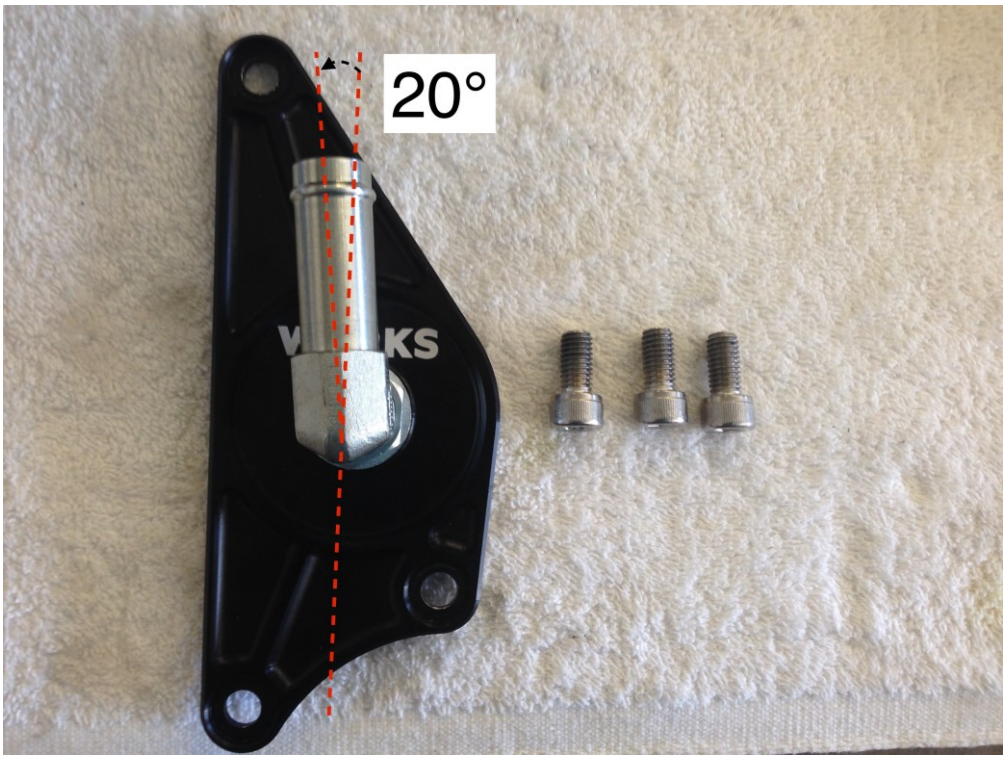
5. Cam Plate Installation:

Locate the cam plate pictured below. This piece is located on the passenger side rear of the engine block, and is held on by three 12mm-head bolts.

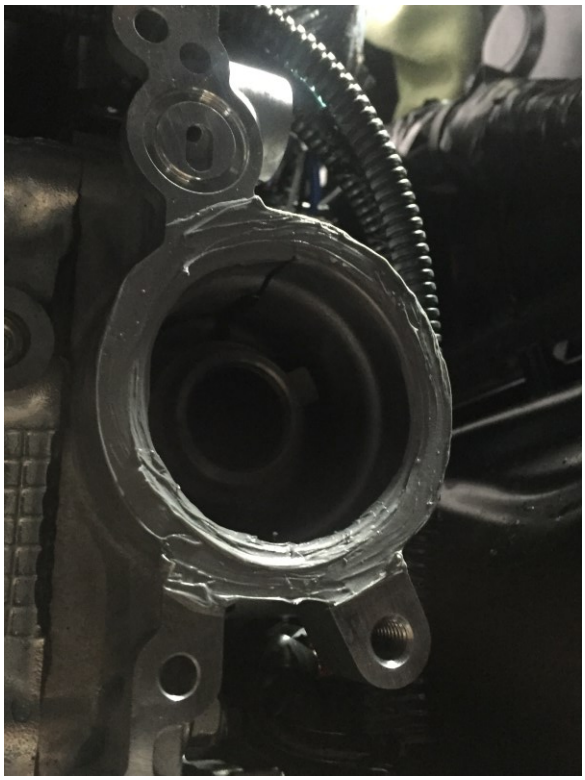
Remove the three bolts and gently pry the cam plate off the block. It is factory-sealed to the block with silicone sealant, so it may require some effort to remove. Exercise caution when removing the plate and be careful not to mar the engine block's

aluminum sealing surface upon removal. Once the cam plate is removed, clean all silicone sealant from the engine block, again taking care not to scratch or gouge the sealing surface. Use a non-marring plastic gasket scraper, along with a rag sprayed with parts cleaner. Clean out the circular oil port to remove any residual gasket material.

Thread the fitting into cam plate and orient as pictured - the barbed tube should point approximately 20 degrees left of vertical. Tighten the jamnut. Do not overtorque; this fitting only needs to be snug.



Apply a light film of engine oil to the large rubber o-ring and install it onto the backside of the plate. Optional: you may opt to put a light film of RTV compound on the block as shown to provide an extra measure of insurance against oil leaks.



Install the new cam plate onto the engine using the supplied hardware. Tightening torque is 15 ft-lbs.

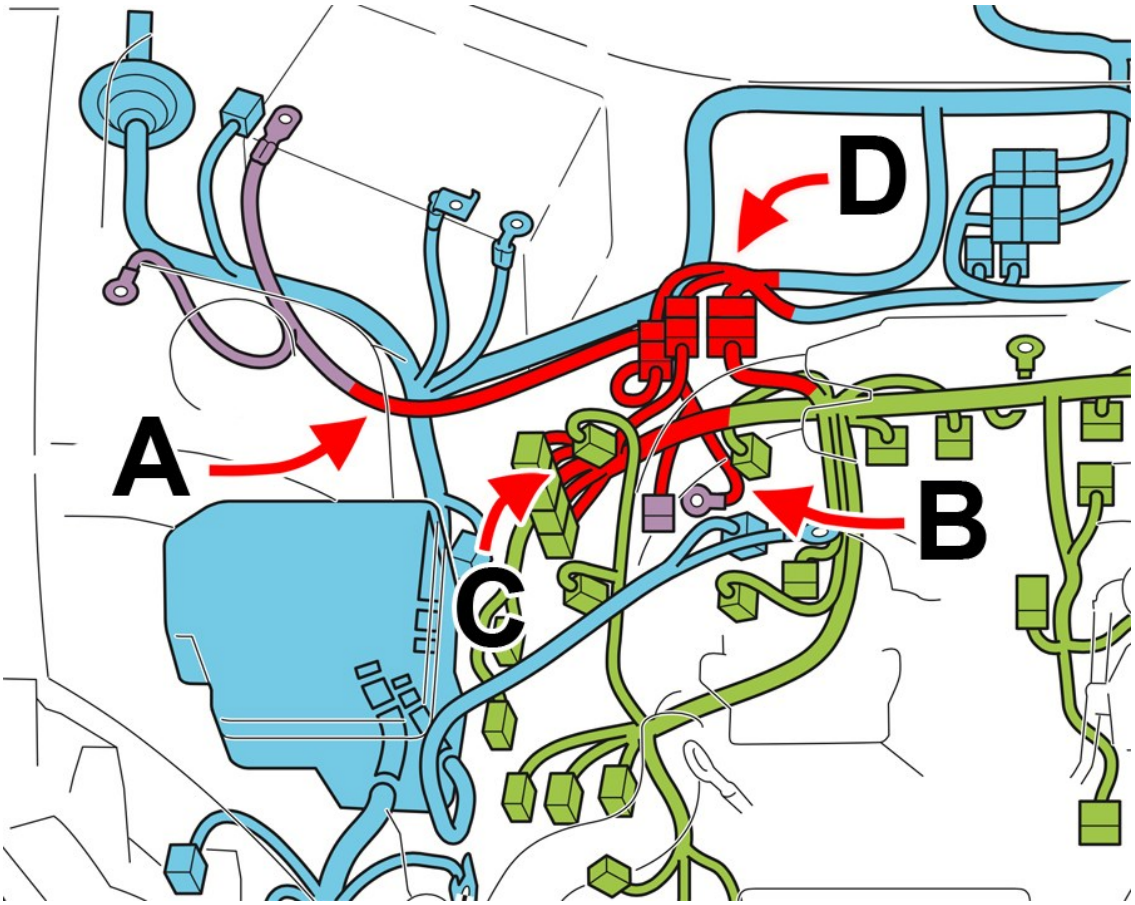
6. Turbocharger Preparation:

Note: Proper shielding of all wiring in the vicinity of the turbocharger is critical to the safety and longevity of the vehicle. Failure to shield and secure all wiring properly can result in a safety hazard or wiring harness damage.

Find the two supplied lengths of heat shielding wrap. One supplied segment is wider than the other (5.25” wide vs. 3.75”).Cut a 17” length from the narrower, 3.75” heat wrap. Locate the thick gray cable (A in diagram on next page) that runs from the battery to the wiring harness junction on the passenger side rear of the engine. Remove the three plastic gray connectors on this cable, then wrap with the 17” length of heat shielding. Ensure that the wrap reaches all the way to the wiring junction behind the intake manifold. Secure wrap with the supplied zipties.

Cut a 10” length from the narrow, 3.75” wrap. Use this wrap on the transmission cable that extends from the wiring harness junction downward to the transmission grounding cable (B in diagram below) on the passenger side of the transmission bellhousing. Secure with zipties, ensuring the entire cable segment is shielded.

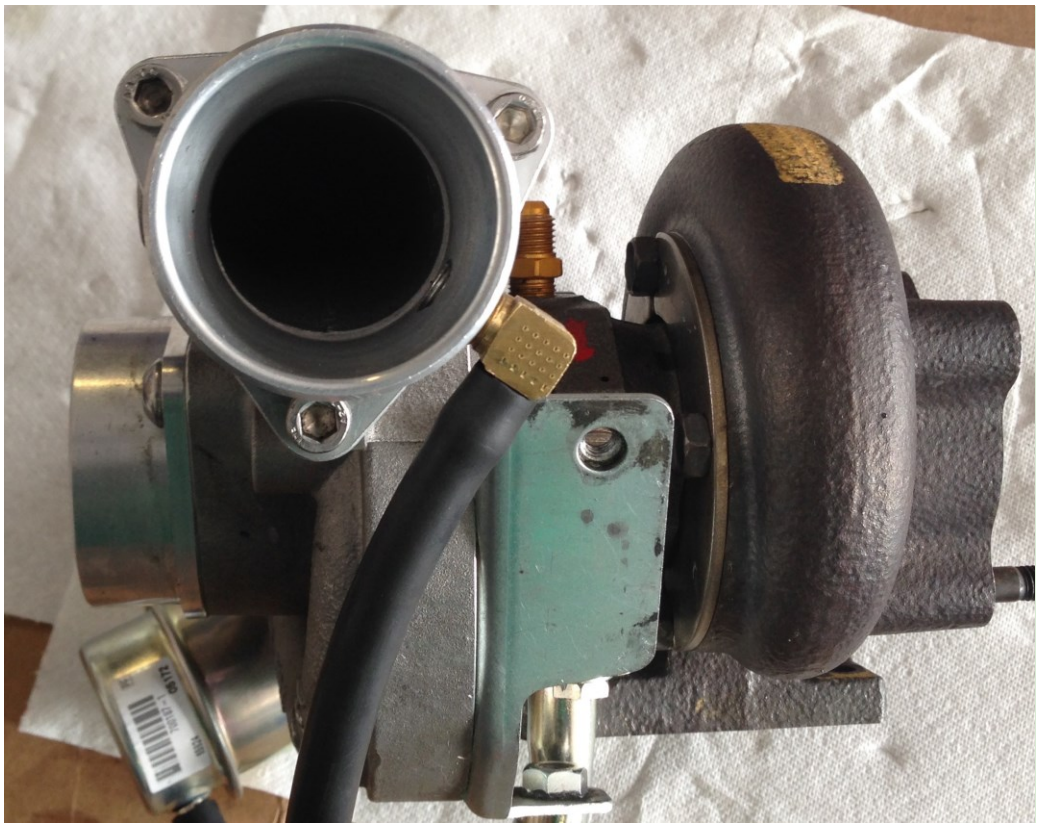
Cut a 6” length from the wider, 5.25” wide heat wrap. Use this wrap to secure the bundle of wiring that extends from the harness junction behind the intake manifold to the injector computer (C in diagram below). Ensure that the entire wiring assembly is covered. Secure with supplied zipties.



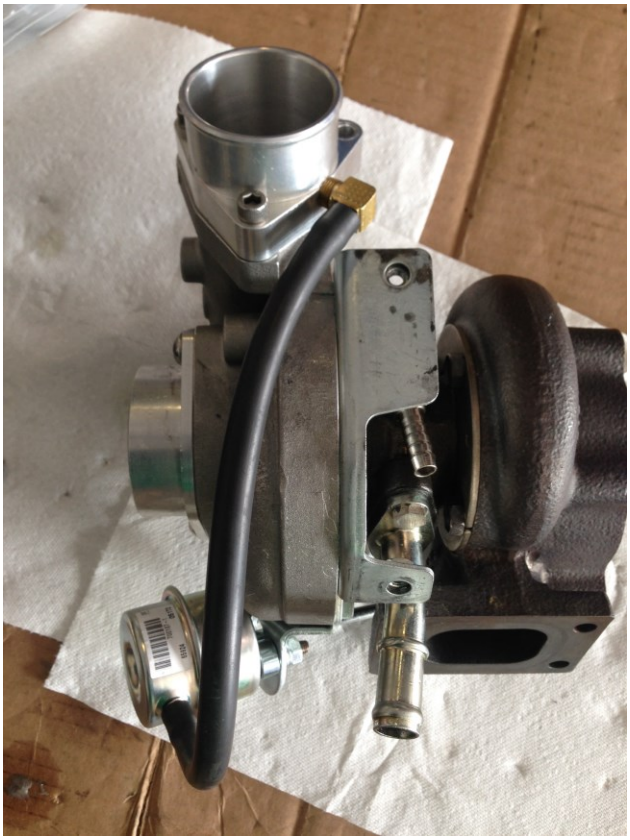
Bundle the three wiring harness connectors that were previously attached to the gold wiring harness bracket. Cut two 6” pieces of the 5.25” wide wrap and connect them end-to-end, creating a single piece 6” inches long and roughly 10” wide. Use this to wrap the connector assembly (D in diagram below).Secure using supplied zipties.

Use the remaining heat wrap to cover up any additional exposed wiring. Ensure that all wiring segments shown in red in the diagram below are fully shielded. Once the wiring harness is fully wrapped, it may be necessary to secure the harness to the transmission/intake manifold using zipties so that it does not come near exhaust piping during vehicle operation.Unpack the bag containing the two aluminum turbocharger flanges. Install the rubber o-rings into their respective flanges. Install the 2.5” aluminum flange onto the turbocharger compressor inlet using the supplied hardware.

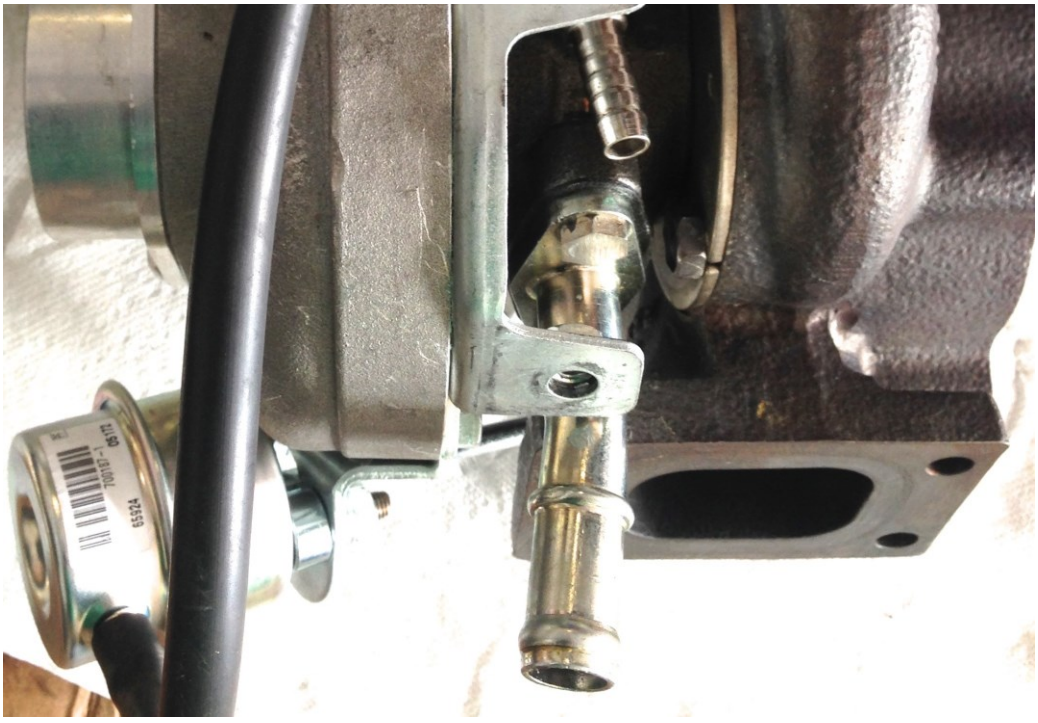
Install the brass fitting into the compressor outlet flange and tighten until snug. Install the 2.0” aluminum flange onto the turbocharger compressor outlet flange in the orientation shown.



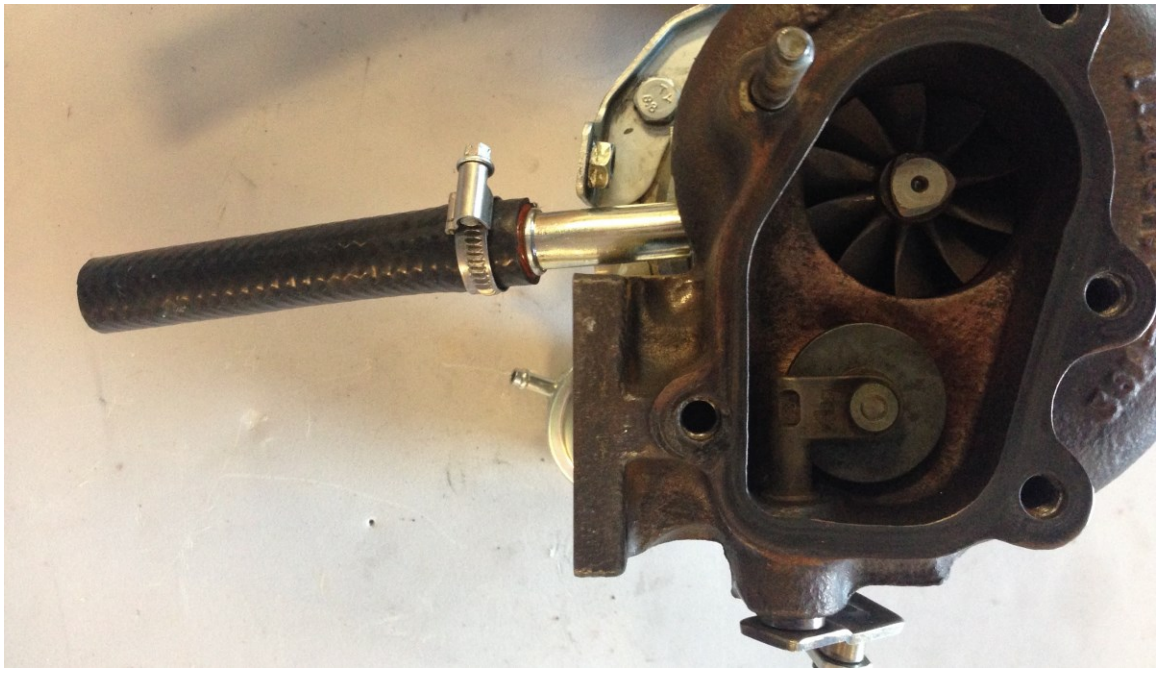
Run the supplied vacuum tubing from the brass fitting on the compressor outlet to the wastegate, routing as shown. Secure using the spring clamps provided.



Install the oil drain tube onto the turbo's oil drain flange using the supplied gasket and fasteners – add a light film of RTV compound to the gasket. Orient the oil drain tube so that it curves towards the aluminum compressor housing and away from the iron turbine housing.

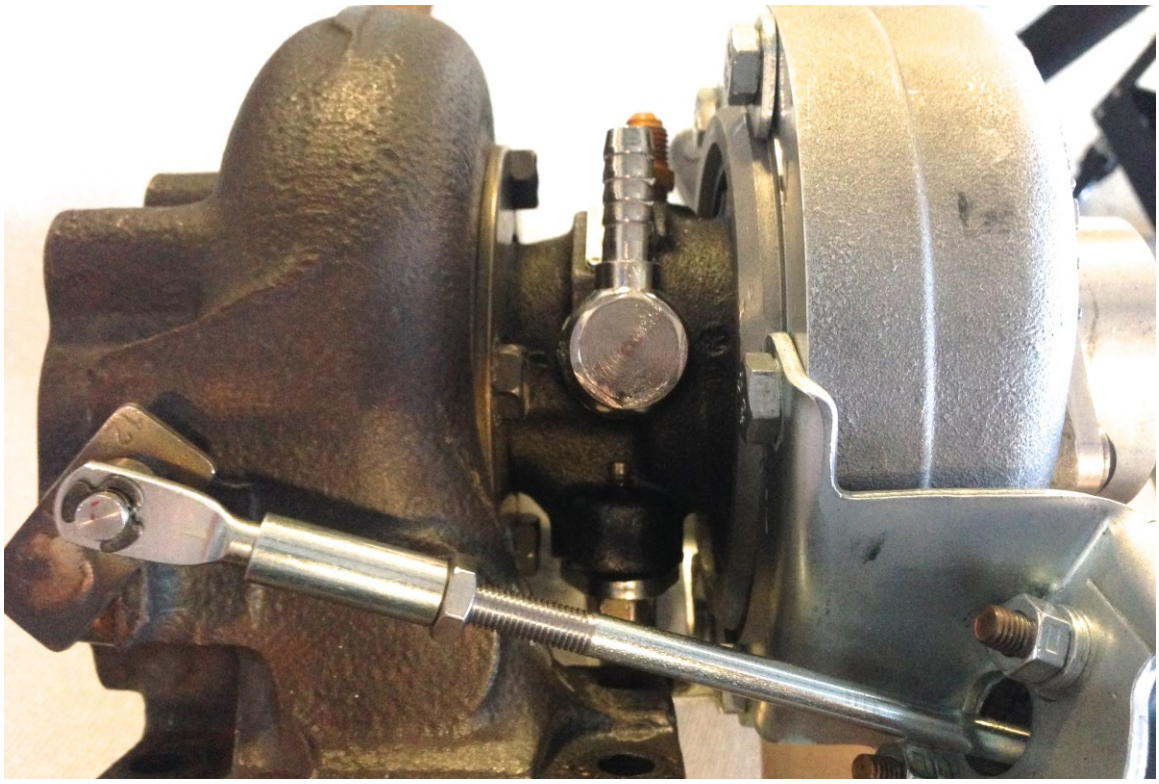


Attach the supplied length of silicone oil drain hose to drain tube and secure with the supplied worm-drive hose clamp.



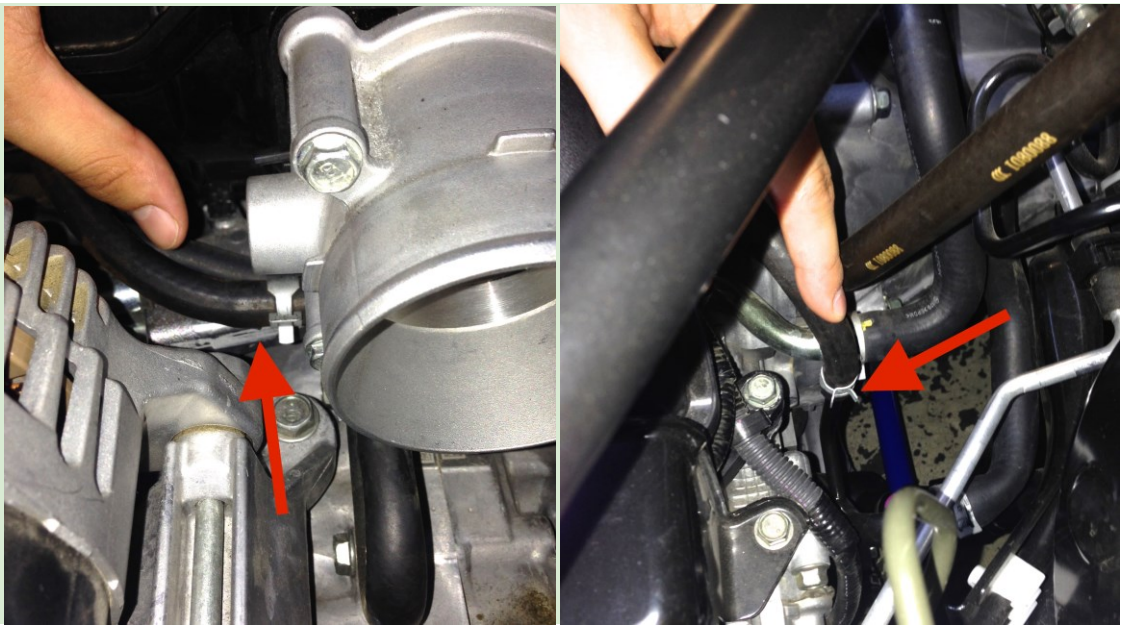
Install the gold oil fitting into the top of the turbocharger oil supply port and tighten until snug.

Install the first banjo coolant fitting. Be sure to include a crush washer on either side of the banjo fitting. Orient this fitting vertically up as shown below.



Install the second banjo coolant fitting, again ensuring use of a crush washer on either side of the banjo fitting. Orient this fitting as shown below: roughly 15 degrees right of vertical-down.

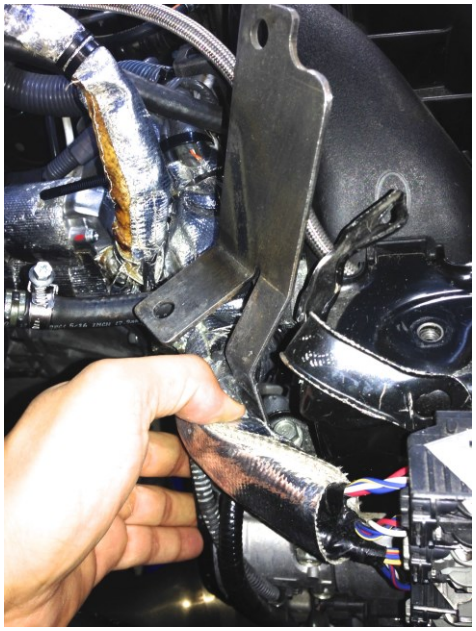
Ensure that engine/cooling system is cool enough for service. Remove the radiator cap to release any residual pressure in cooling system. Locate the coolant hose pictured on the left. This hose originates under the throttle body and ends on a fitting at the driver's side rear of the block.



Release the spring clamp on either end of this hose and remove the hose entirely. Because this hose runs underneath the intake manifold, it may require some manipulating to remove.

Find the included 5/16” coolant hoses. Install the longer hose to the connection under the throttle body, and route it under the intake manifold towards the turbocharger location. Install the shorter coolant hose to the upward-facing coolant fitting behind the block. Route this hose behind the intake manifold and towards the turbocharger location. Secure these fittings using the two spring clamps from the previously removed OEM coolant hose.

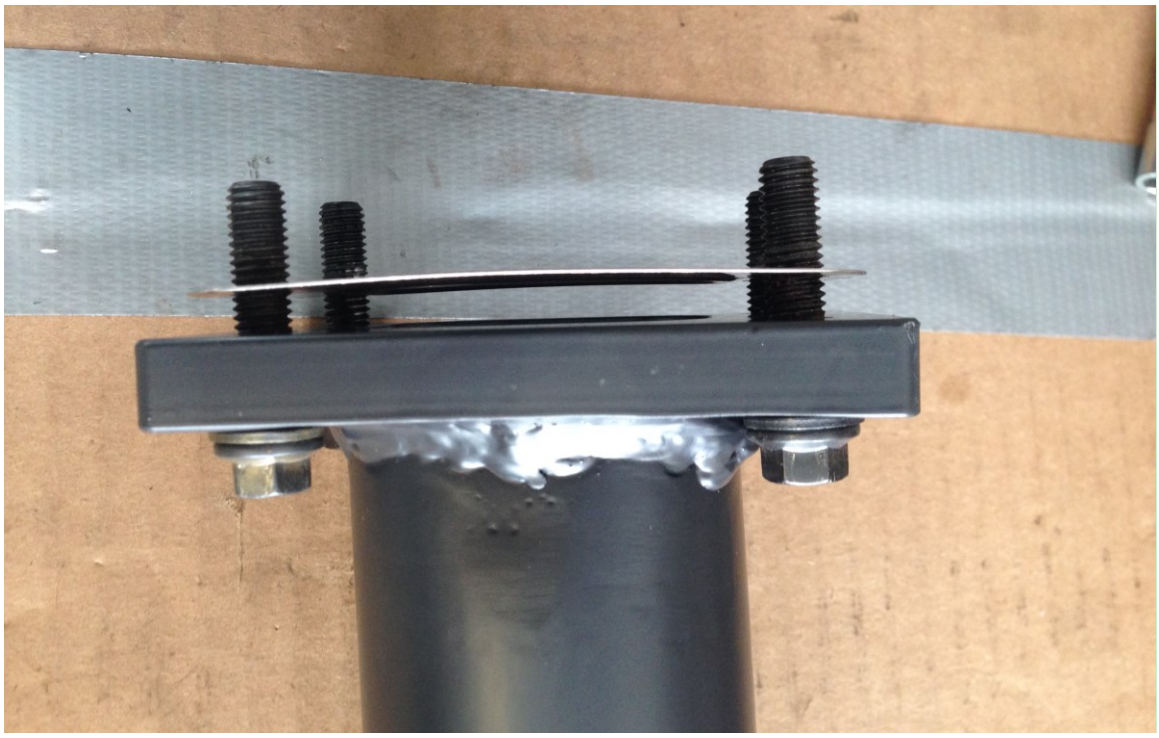
Install the provided turbocharger bracket as shown below. Ensure bracket’s bottom foot rests on top of the injector cover. Re-use the factory 12mm-head bolt to hold down this bracket. Thread this bolt in but do not tighten yet – leave the connection loose enough so that the bracket is still free to move.



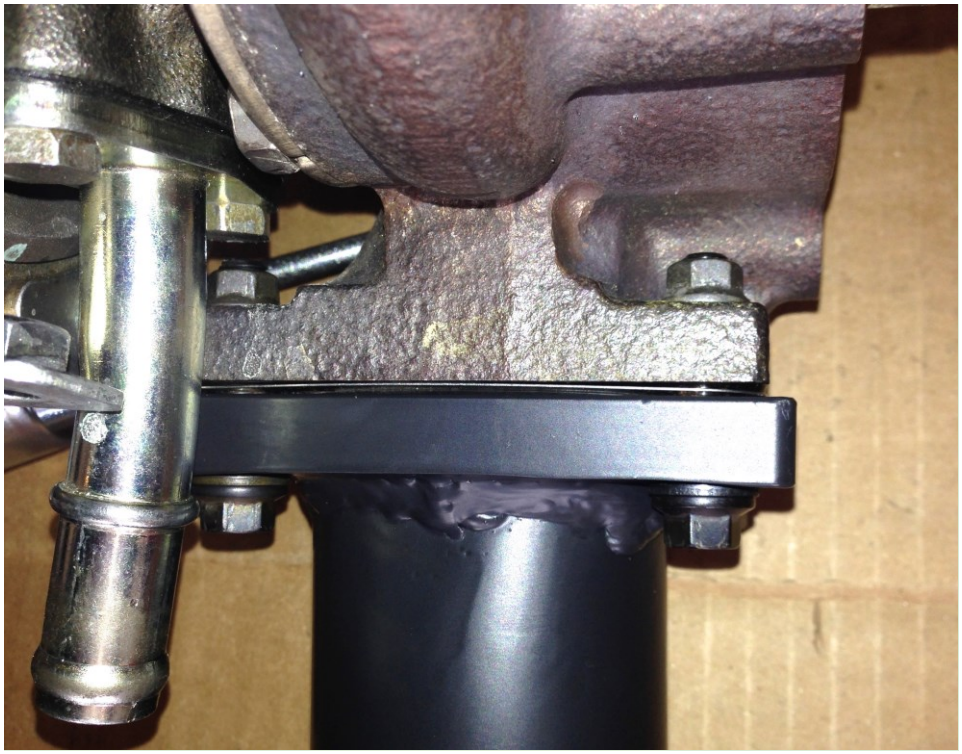
Install the supplied nut and bolt into the bracket's center connection, which mates to a plastic tab on the back of the intake manifold as shown below. Leave this connection loose for now as well.

7. Up Pipe & Turbocharger Installation:

On a workbench, place the rectangular gasket between the up pipe and turbocharger and loosely fasten them in orientation shown below.



Use the provided black bolts. Install with washers under the bolt heads. Orient the bolts upside down as shown below. Again, ensure that this connection remains loose at this time.



Lower the joined up pipe/turbo assembly into car and test fit. Raising the motor slightly using a floor jack may provide extra installation clearance during this step – follow the same jacking instructions used earlier for overpipe removal.

Install and loosely thread the following fasteners:

1x 12mm-head hex head bolt holding turbo bracket to injector cover
1x 10mm-head hex bolt + nut combo that attaches turbo bracket to intake manifold
2x 10mm-head hex bolts that attach turbo to bracket
2x 14mm-head nuts attaching up pipe to manifold.

Thread each of these fasteners incrementally, alternating frequently between tightening different connections. While tightening, manually wiggle turbo and up pipe to ensure that the assembly tightens in a relaxed state. This step is critical and allows the turbo/up pipe assembly to self-locate in the car.

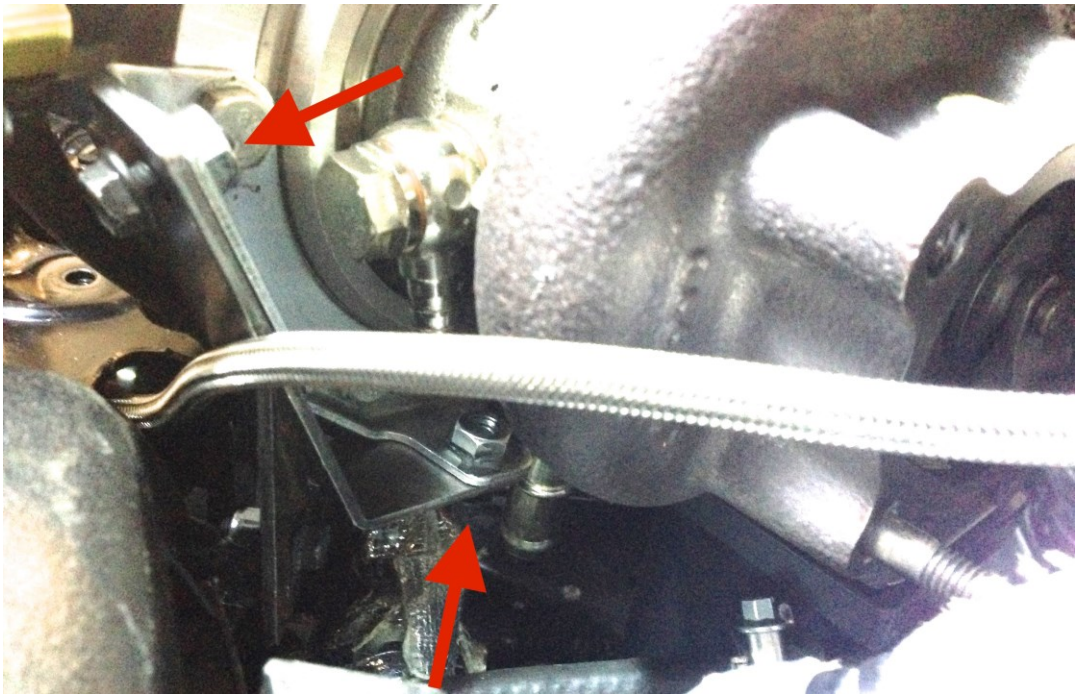
Once each of the aforementioned fastener connections are snug, use a 10mm socket along with a 10mm wrench to snug the fasteners that connect the turbo to the up pipe. Due to space constraints it may only be possible to snug two of the four fasteners at this time. This step is only intended to affix the turbocharger to the up pipe with proper alignment; final fastener torqueing procedure is completed with the assembly on a bench.

Loosen and remove the two 10mm-head bolts attaching the turbocharger to the bracket. Loosen and remove the two 14mm-head bolts attaching the up pipe to the exhaust manifold. Pull the mated turbo/up pipe assembly out of the car. Tighten the 12mm-head bolt that fastens the bracket to the injector cover. Socket access is tight in this area; we recommend using a 12mm wobble socket. Tighten the 10mm-head bolt/nut connection that fastens the bracket to the intake manifold.

On a workbench, tighten and torque all four bolts that fasten the turbocharger to the up pipe. Tightening torque is 25 ft-lbs. Inspect junction between up pipe and turbocharger for proper gasket seal; a leak at this connection will be very time consuming to fix once the kit is fully installed.

Slip the supplied fire sleeve over the silicone drain tube and re-install assembly in car. Remember to install the supplied gasket on the exhaust manifold outlet. Slip the turbocharger's silicone oil drain tube onto the barbed oil fitting and secure with included worm-drive hose clamp.

Re-install and tighten the two M6 bolts that fasten the turbo to the bracket.



Re-install and torque the two 14mm-head nuts on the exhaust manifold. Again, inspect this junction carefully as an exhaust leak at this location will be time consuming to fix.

Connect the two coolant hoses routed earlier to the two barbed fittings on the turbocharger. The hose that originates at the throttle body connects to the upward-facing barbed fitting on the firewall/battery side of the turbo. Route the hose over the turbocharger to make this connection. Secure with supplied spring clamp. The hose that originates behind the engine block connects to the downward-facing barbed fitting. Make this connection and secure using supplied spring clamps.

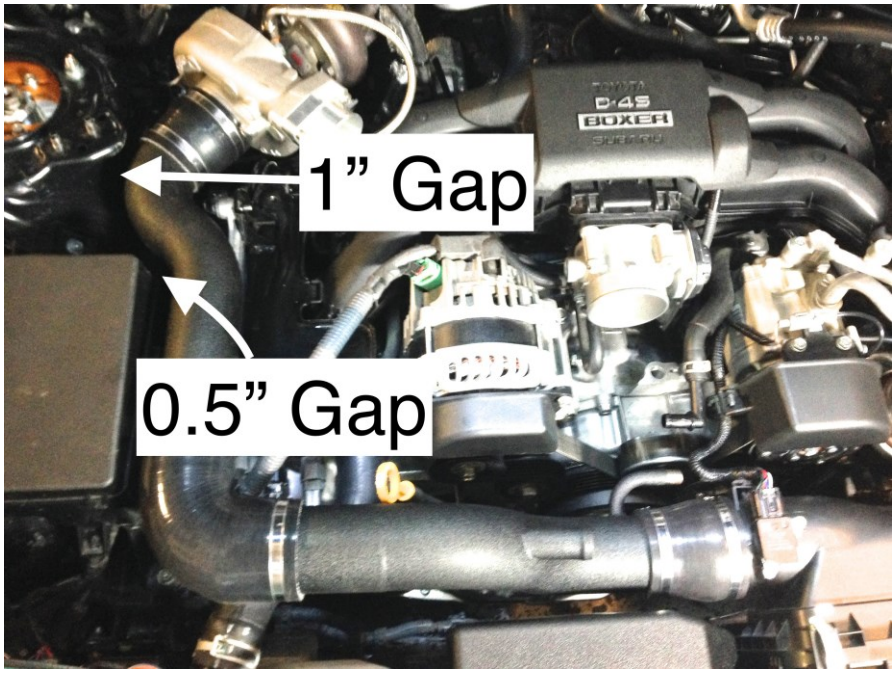
Locate the stainless-steel braided oil line routed earlier. Thread the 90-degree fitting into the gold oil connector on top of the turbo and tighten. Ensure that when installed this is not twisted or preloaded, as this can cause line failure and leakage.

8. Compressor Inlet Tubing Installation:

Apply the adhesive-backed rubber on top of the electronic control module as shown.

Connect the two inlet pipes in the orientation shown using the silicone elbow. Using the provided tubing, silicone connectors, and hose clamps, create the tubing assembly as pictured below.

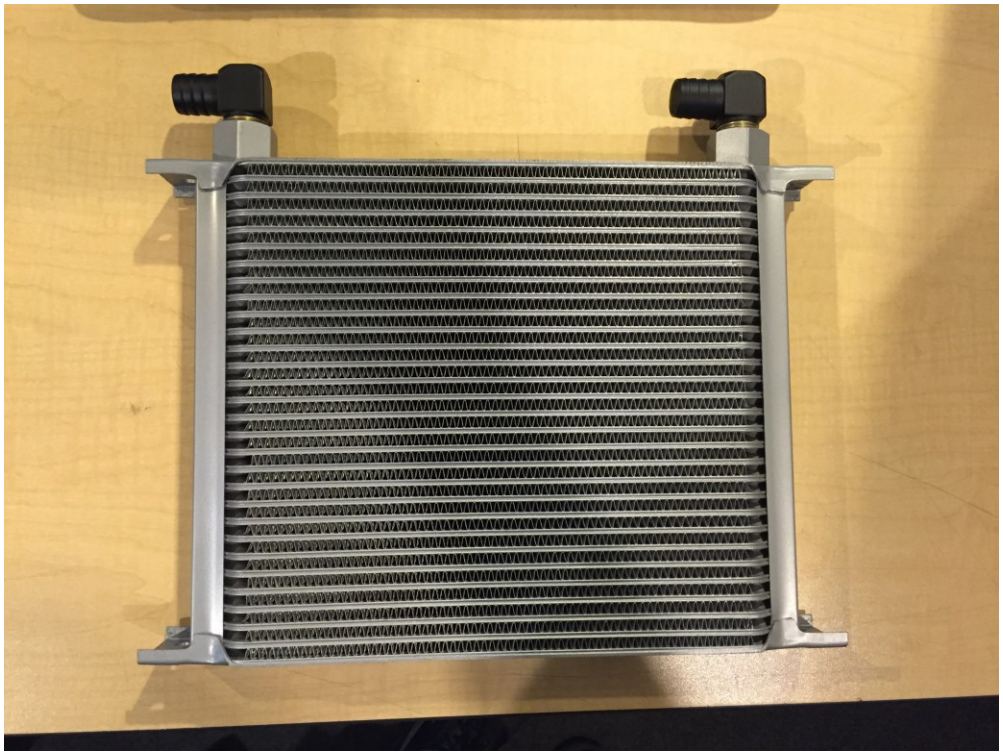
Install tubing assembly between turbocharger inlet and airbox. It may be necessary to adjust pipe protrusion into the silicone connectors during installation. Ensure proper clearance around all piping before tightening hose clamps.



WARNING: Avoid excessive tightening torque when installing worm-drive hose clamps. High tightening torque is not necessary to achieve proper sealing. Recommended tightening torque for supplied 9mm-wide worm-drive hose clamps is 29 **inch**-pounds. Over-tightening can damage silicone connectors and crush tubing.

9. Auxiliary Radiator Installation:

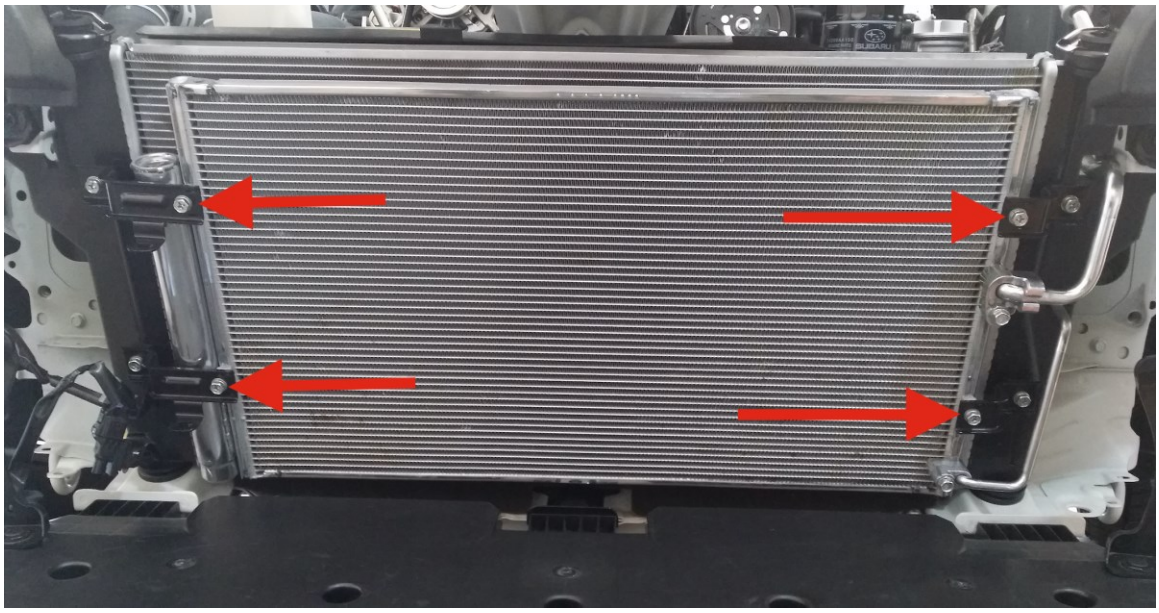
With the components on a bench, apply a light film of Loctite 545 thread sealant to the male threads of two black 90-degree elbow fittings. Thread these fittings into the radiator until snug. Ensure that the two barbed elbow fittings face in the same direction when tightened, as pictured.



Slide the two silver WORKS radiator mounting brackets into place as shown. The bracket's vertical spine mates flush with the sides of the radiator. Due to radiator manufacturing tolerances it may be necessary to utilize the supplied M6 washers between the WORKS bracket and the radiator mounting tabs to ensure a tight fit.

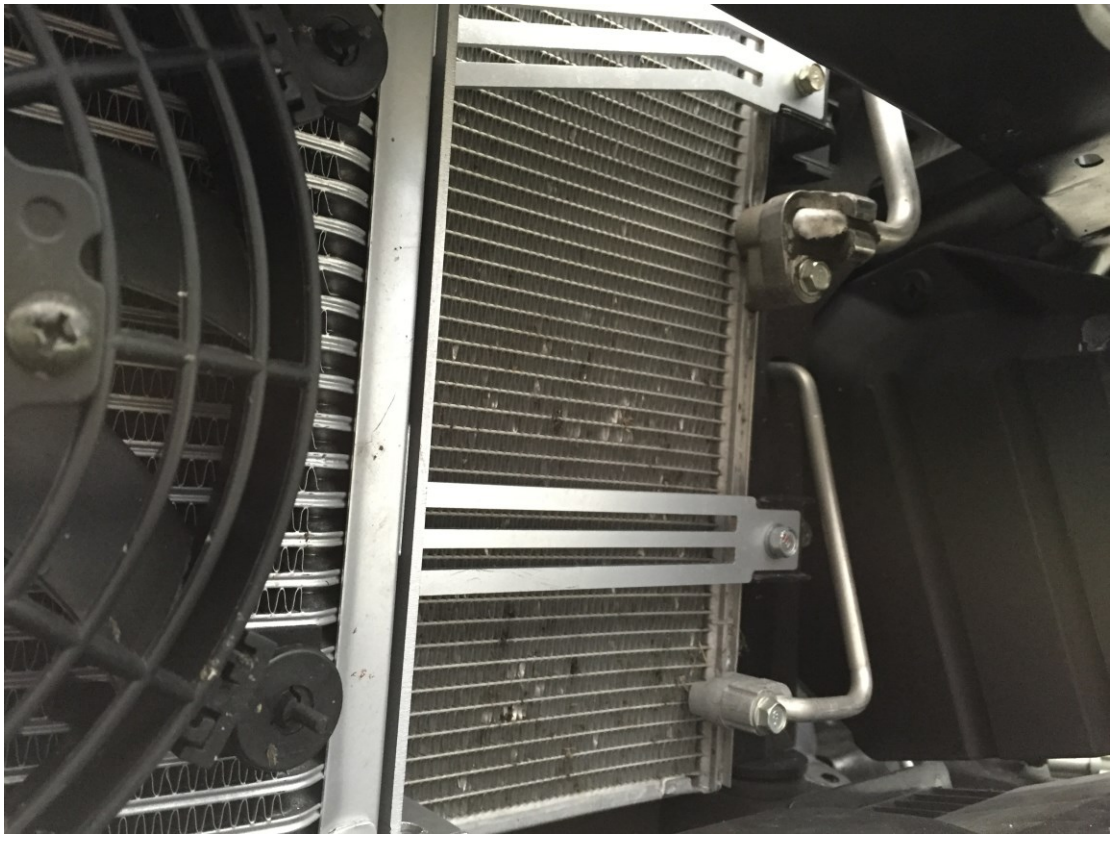
Thread the 4x supplied M6 10mm-hex hardware through the WORKS bracket, through the factory AC condenser bracket, and into the threaded AC condenser mounting tabs. Leave these bolted joints loose for now. Fasten the WORKS brackets to the radiator through the 8x vertical holes using the supplied M6 bolt/nut combo. If you chose the radiator fan add-on, install this now using the photo on the next page as a locating guide.

Remove the long black plastic air dam that sits between the crash beam and the intake snorkel. Remove the 4x M6 10mm-hex bolts that secure the AC condenser to its mounting bracket, shown below. Do not remove the long horizontal crash beam.



Slide the radiator into place against the AC condenser, orienting it so that the fitting outlets face toward the passenger side of the car.

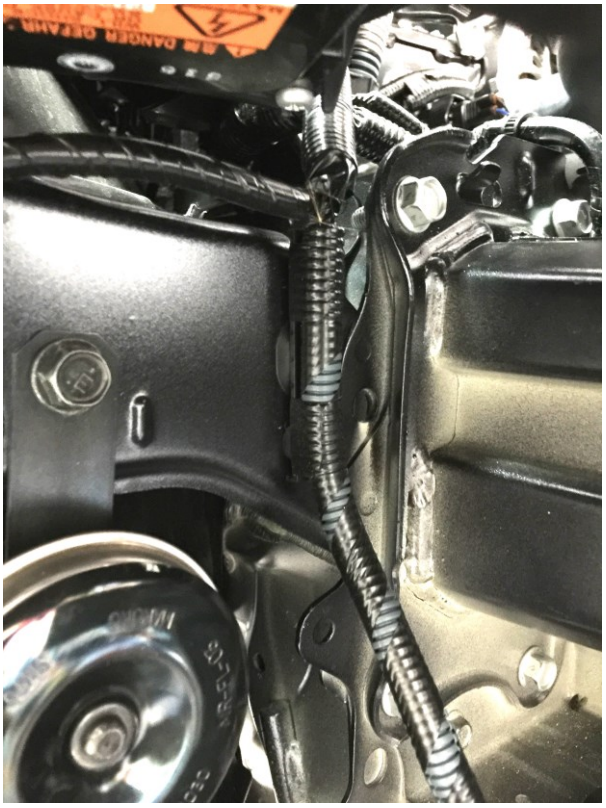
Radiator shown with optional fan add-on.



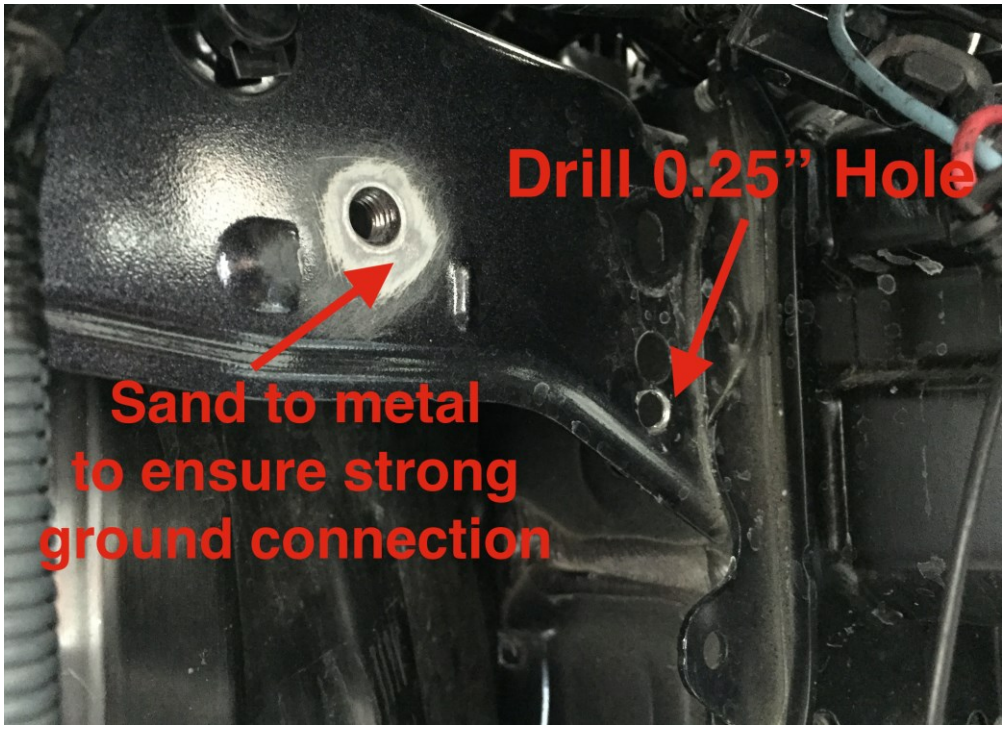
Tighten all 12 bolted joints until snug to fully fix the radiator.

10. Auxiliary Pump Installation:

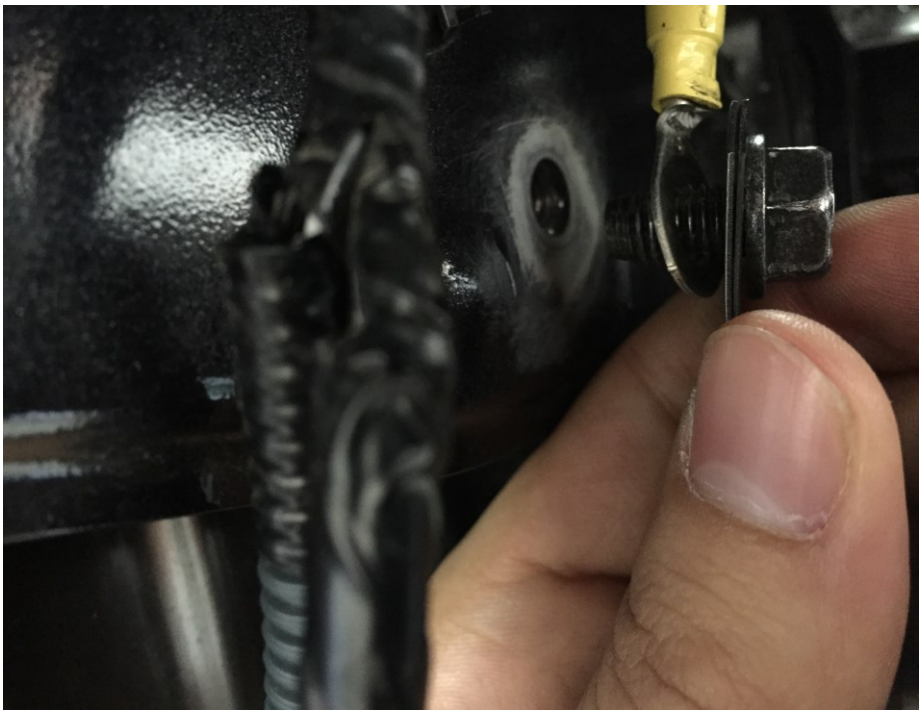
Locate the area pictured below, under the right headlight. Remove horn and detach the wiring harness from the chassis.



Drill a single 0.25” hole in the location shown. Spray with a light coating of primer after drilling to prevent corrosion. Using a small piece of sandpaper, remove the paint around the threaded hole shown to ensure a proper ground connection at this point.

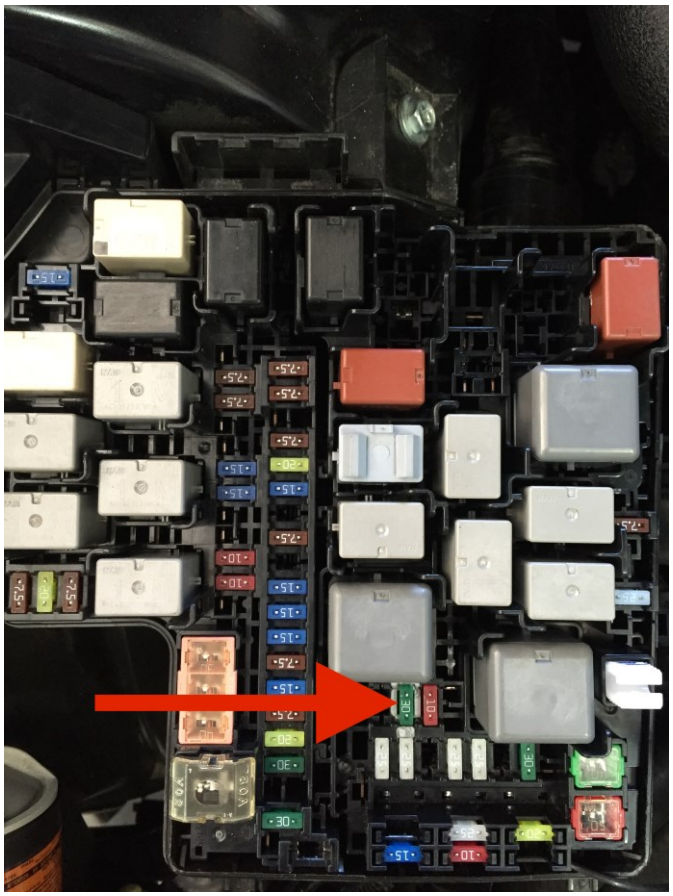


Install the pump mounting bracket using the drilled hole and the pre-existing oval hole. Place the ring terminal of the supplied wiring harness directly against this bare metal point and reinstall the horn as shown.

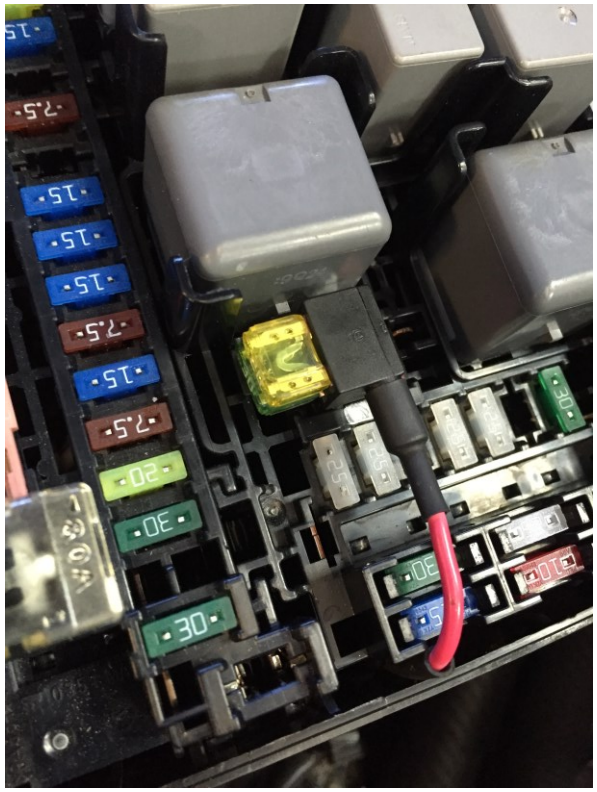


11. Wiring Harness Installation

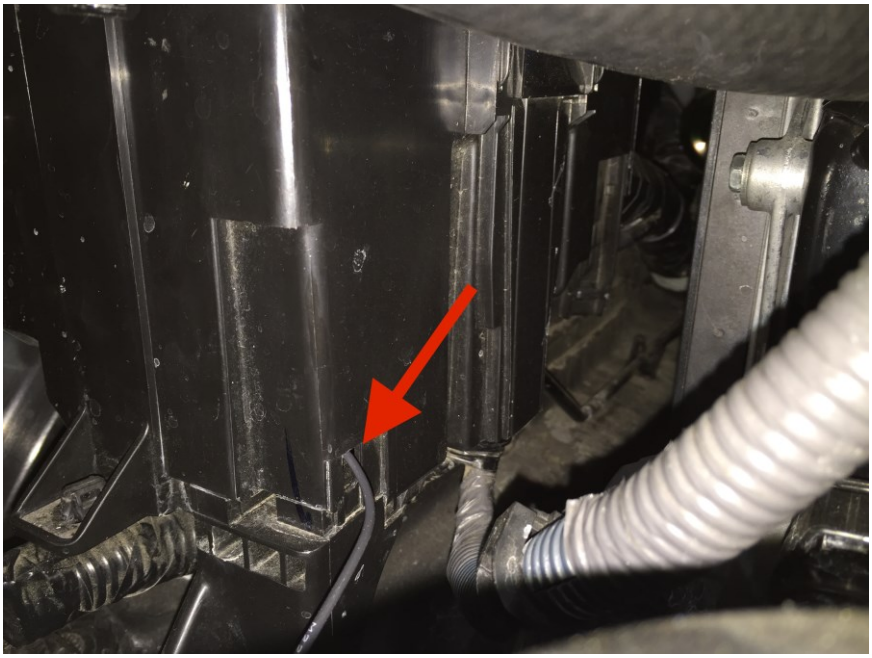
Open fusebox and find the fuse shown.



Remove the 30-amp fuse and place it in the free slot in the provided add-a-fuse harness. Install the add-a-fuse harness in the same slot the 30-amp fuse previously occupied. If you opted for the pump-only kit, your add-a-fuse will come with a 10-amp fuse pre-installed. If you opted for a pump-and-fan kit, your add-a-fuse will come with a 15-amp fuse.



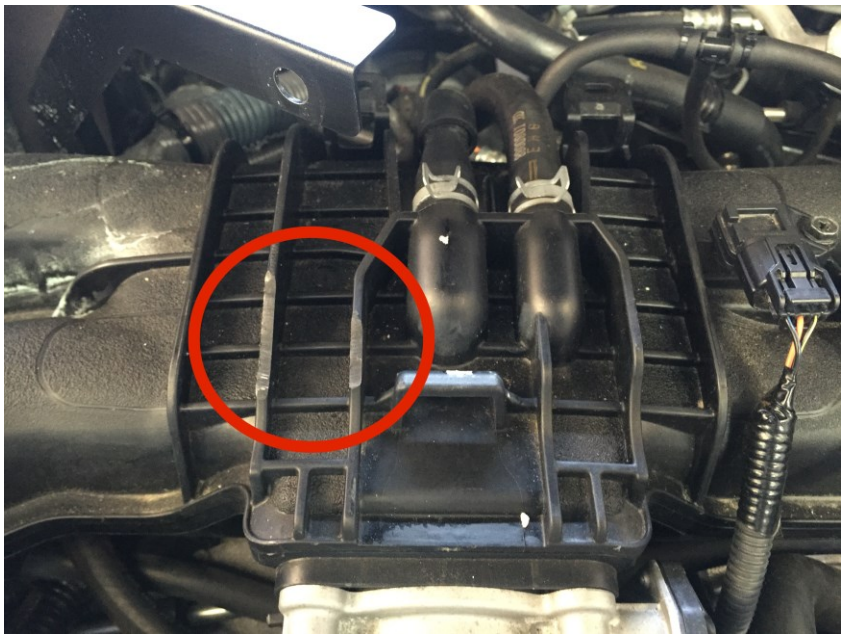
Run the wire end down the inside of the fusebox and out the hole in the side of the fusebox. Running this wire may be tricky – we recommend creating a wire puller using a coat hanger or welding rod. Route the wire puller upwards through the hole and out the top of the fuse box, then tape the wire end to the end of the wire puller and pull down through the fusebox and out the hole.

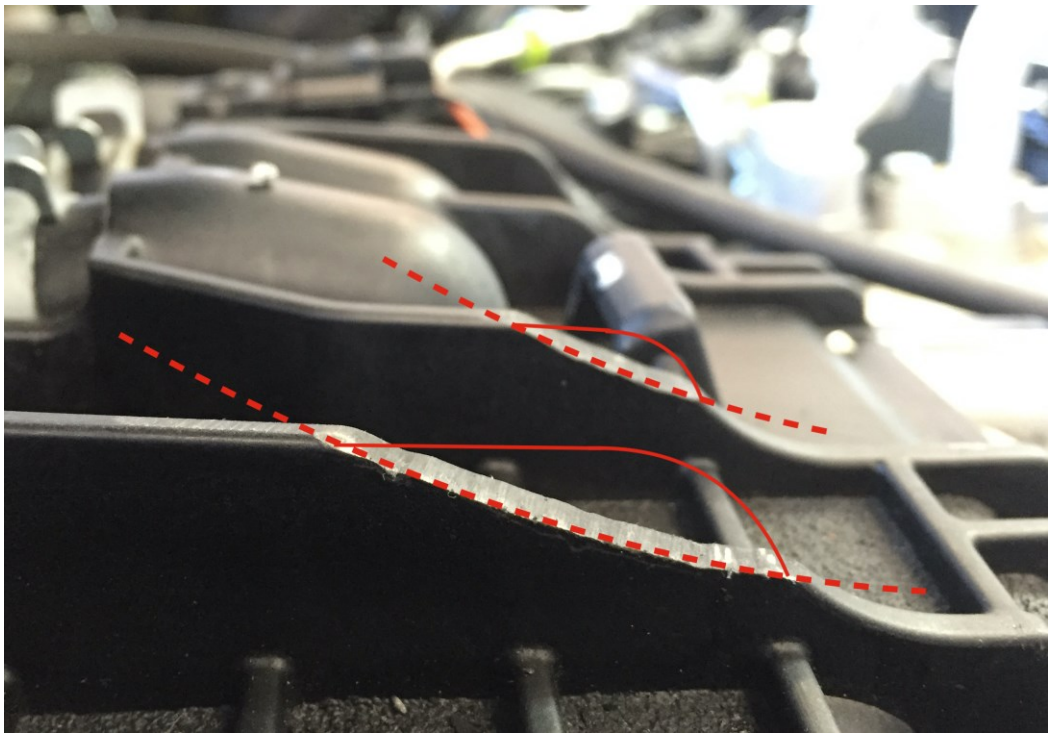


Route this wire down to the provided pump wiring assembly. Strip the end of this wire and crimp into the butt connector on the pump wiring assembly.

12. Intercooler Installation

Remove the intake manifold cover. Using the photo below as a guide, trim the plastic ribs shown to provide clearance for the water-to-air intercooler. We recommend using a Dremel tool or similar for this step. Be sure to mask the engine bay to contain plastic shavings removed during this process.



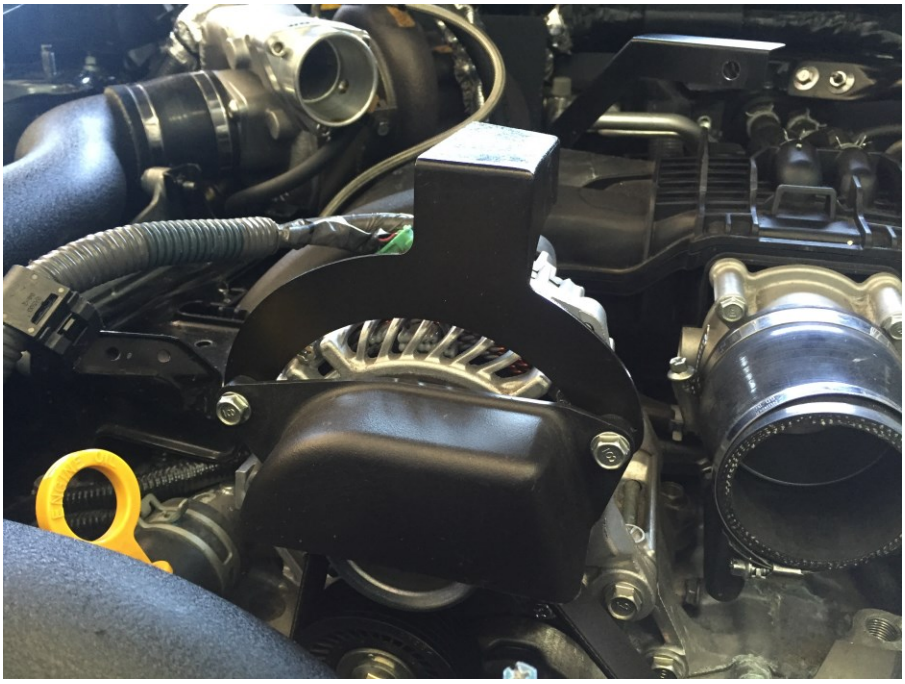


On a bench, assemble the four water fittings (straight barb fitting, tee fitting, 45 fitting, plug) as shown, applying Loctite 545 thread sealant to each threaded connection. Tighten until snug.

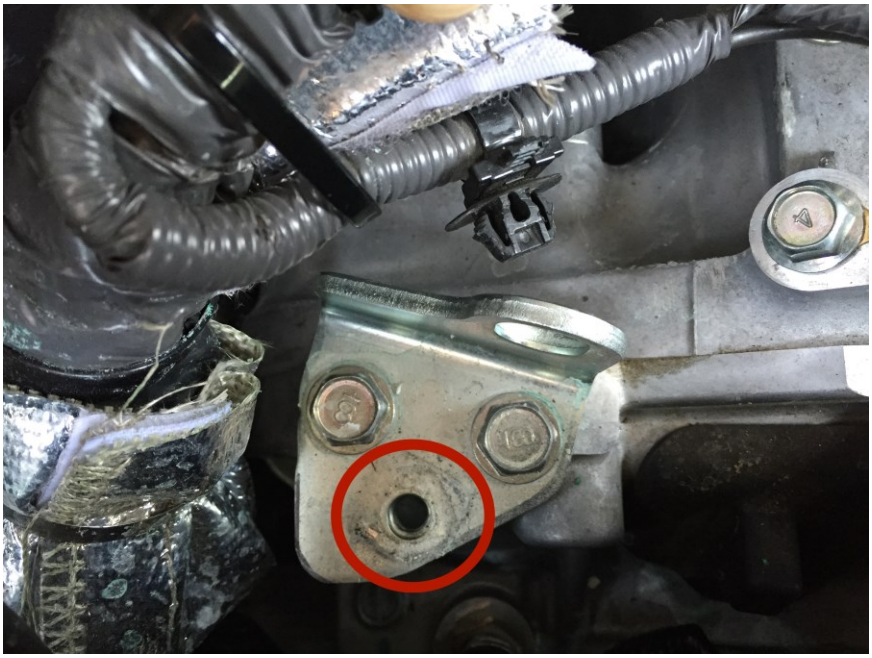
Apply Loctite 545 thread sealant to the tee connection and thread into the intercooler. Tighten until snug, ensuring the fitting assembly ends in the orientation shown.

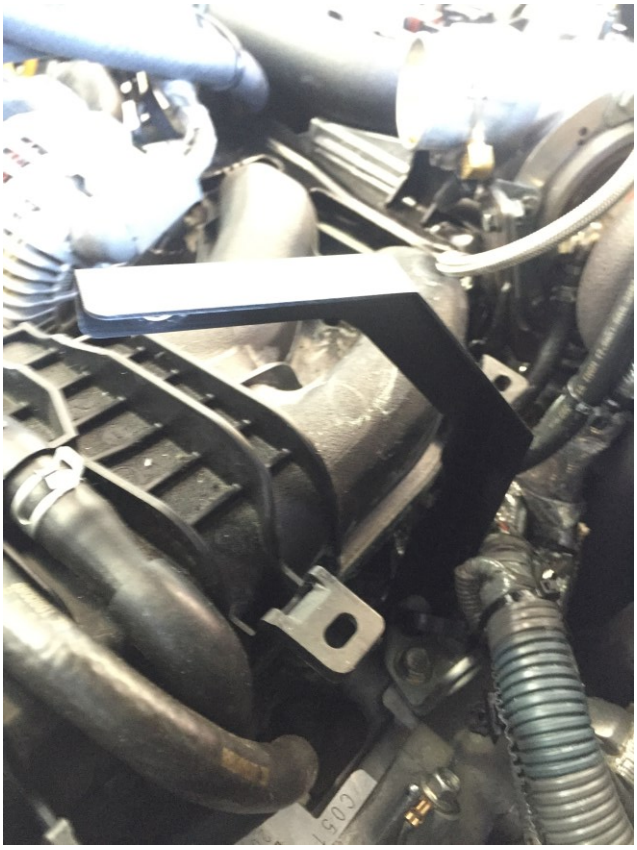
On the opposite side of the intercooler, install the remaining 90 degree elbow fitting in the orientation shown. Use Loctite 545 thread sealant.

Remove plastic cover on alternator, install supplied WORKS intercooler front bracket directly against alternator face. Reinstall alternator cover using original hardware. Leave this connection slightly loose at this time.



Install the WORKS intercooler rear bracket into the gold engine bracket shown, using the supplied M8 bolt. Thread this connection but leave loose at this time.



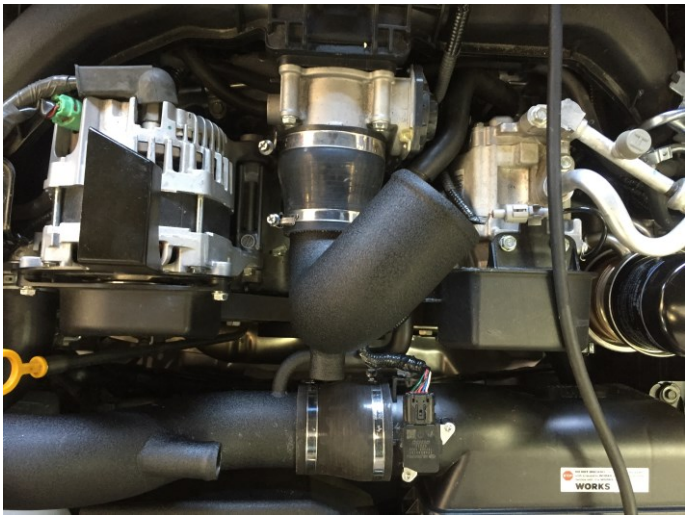


Mount the intercooler to the two intercooler brackets, utilizing a rubber washer between the bracket and the intercooler mounting face as shown. Apply a generous, 360 degree coating of Loctite 243 Threadlocker to the flanged M8 hardware and install.

Incrementally tighten the five bolted joints until snug, wiggling the intercooler around periodically to allow it to self-locate.

Pre-assemble the angled u-pipe as shown. The straight silicone transition should be installed on the pipe leg that aligns with the smaller diverter valve fitting.

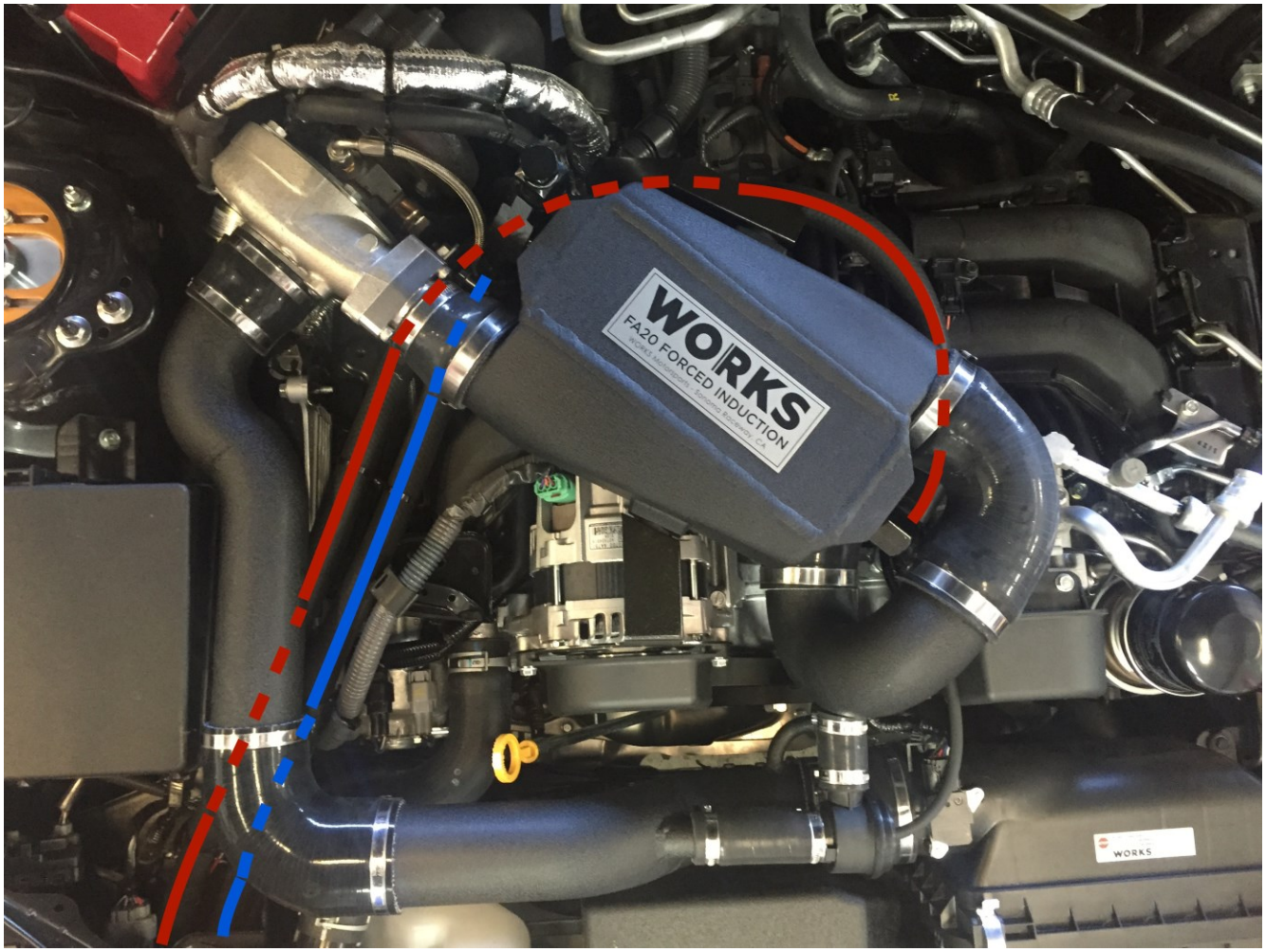
Leave all hose clamps loose until final tubing orientation is achieved. Install angled u-pipe onto throttle body in the orientation shown.



The 1” tube fitting should point straight towards the front of the car as shown in the next section. Install the 90-degree silicone elbow between the U-pipe and the intercooler. Seal with provided worm-drive hose clamps.

13. Water Line Routing and Bleeding Procedure:

Route the provided water lines in the engine bay as shown, then fasten them to their respective connections using the provided hose clamps. The 74” line routes from the driver’s side intercooler fitting to the driver’s side radiator fitting, the 49” line routes from the passenger side intercooler fitting to the pump bottom, and the 22” line routes from the pump side to the passenger side radiator fitting.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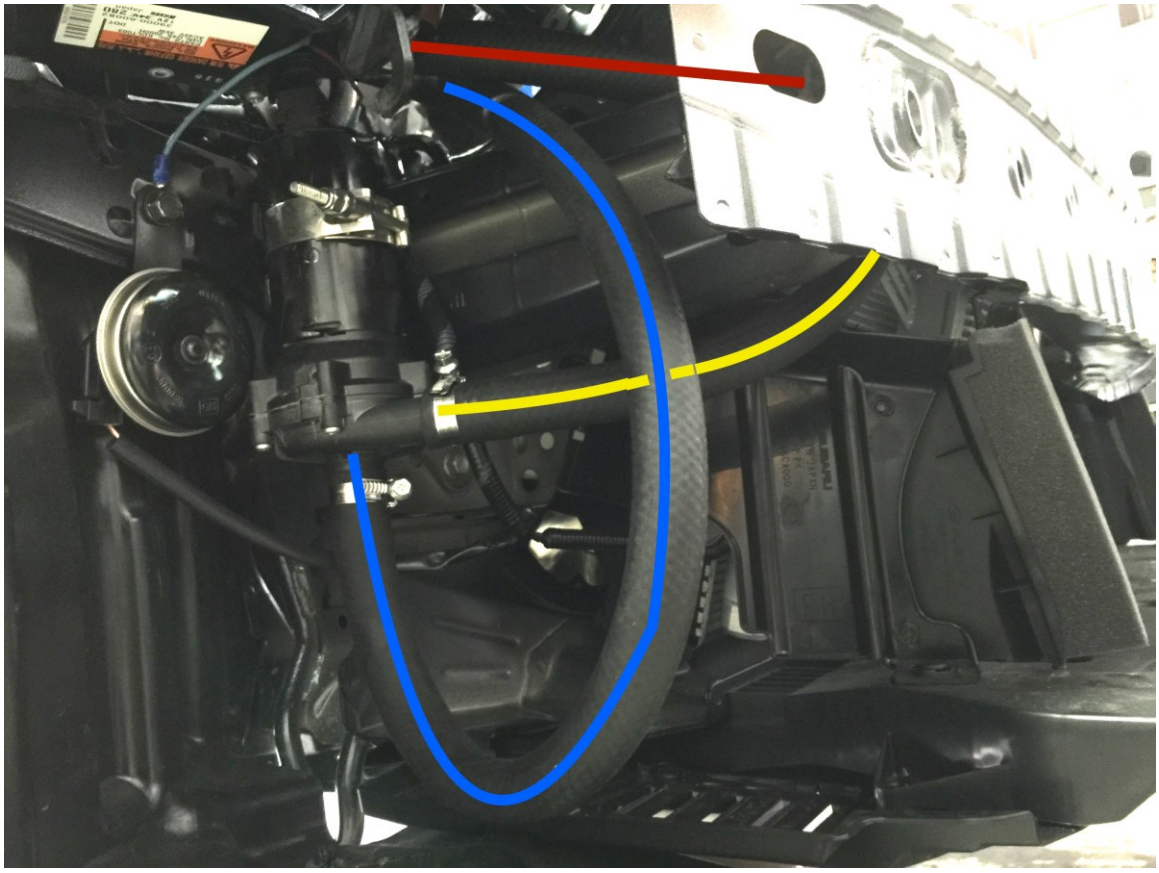
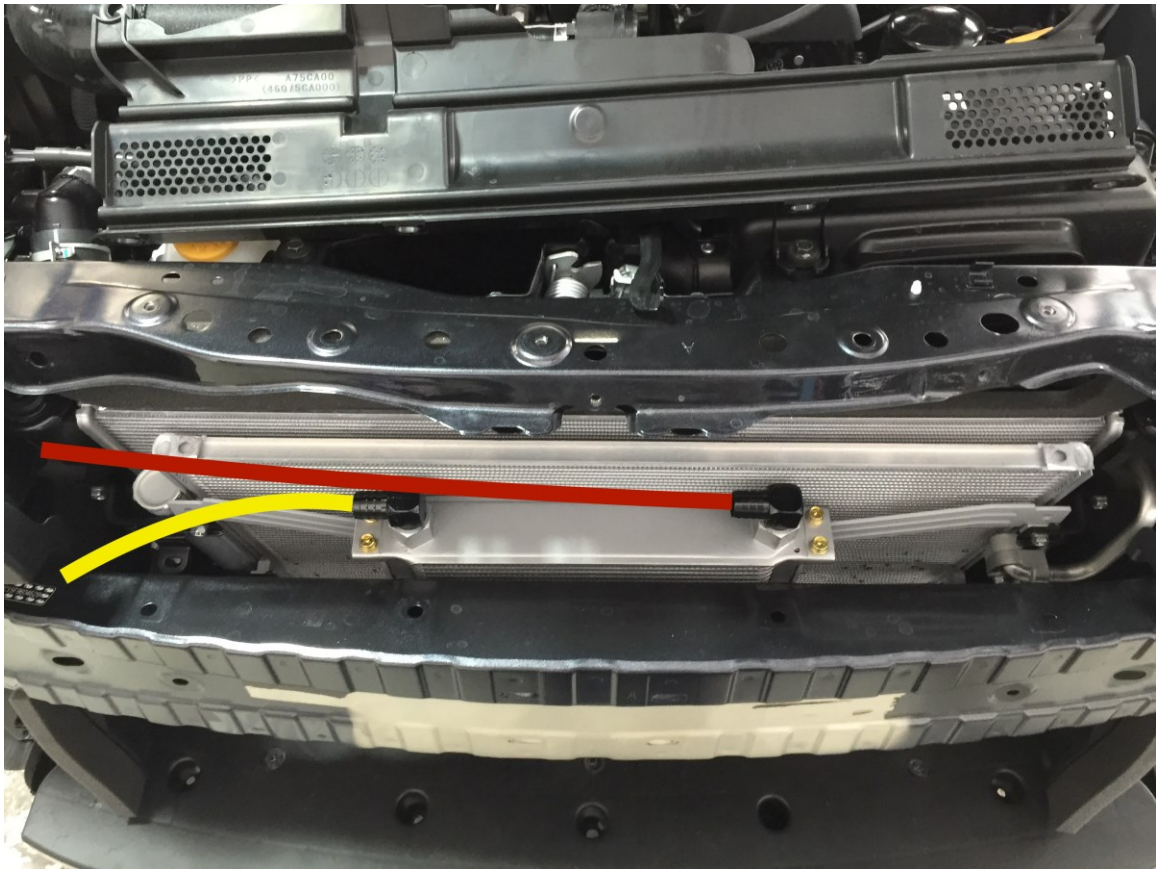




Create a mixture of Subaru or Toyota OEM coolant and distilled water. WORKS recommends a mixture of as low as 25% coolant/75% distilled water for warm-climate cars, and as high as 50% coolant/50% distilled water for cold-climate cars. You will need approximately 2.1 quarts/2.0 liters of total fluid. Assemble the filler neck using the following parts: Plastic NPT to barb fitting, clear ¾" ID hose, hose clamp. After ensuring all fittings in the system are sealed properly (either with thread sealant or a hose clamp), remove the black plug and thread the filler tube onto the filler port as shown. Place a funnel in the top of the clear filler tube. Slowly fill system with coolant/water mixture. Periodically squeeze water lines by hand to aid in air extraction.

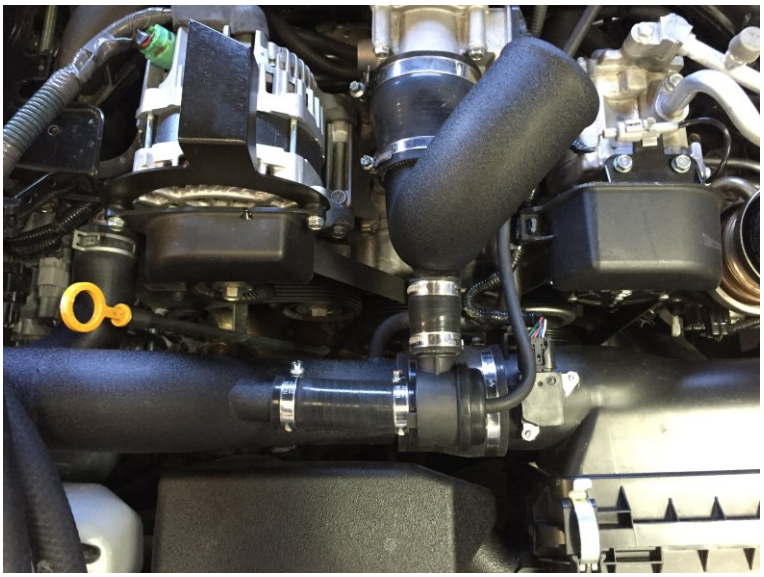
After the initial coolant fill, pulse the pump on/off 5-10 times to free large air bubbles from the lines. Once all large bubbles have been bled out, run the pump continuously to help circulate the coolant and extract smaller bubbles.

When running and pulsing the water pump, we recommend keeping your battery on a charger, as frequent pump cycling can run down an unaided battery.

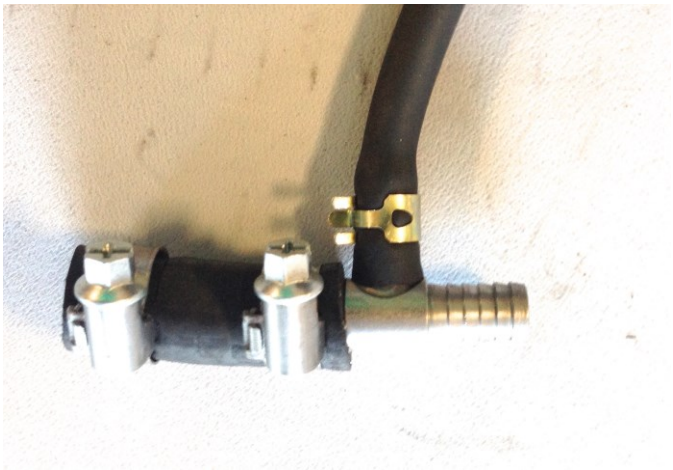
14. Diverter Valve Installation:

Attach the two provided lengths of silicone hose to the diverter valve as shown. The longer hose should be affixed to the fitting that runs in line with the diverter valve body. Install worm-drive hose clamps onto each length of silicone hose.

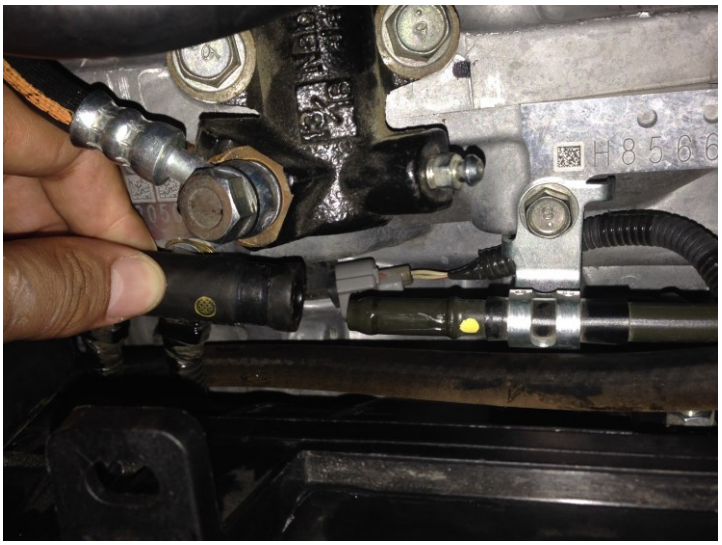
Install in the orientation pictured.



Slide the short length of rubber tubing onto one end of the stainless T-fitting and secure with provided hose clamp. Slide the long length of vacuum hose onto the T's smallest fitting and secure with the provided spring hose clamp. Refer to the picture below.



Locate the brake booster connection behind the intake manifold. Disconnect this connection and discard the OEM spring hose clamp.



Slide the T-fitting into place and secure on both ends using the supplied worm-drive hose clamps.

Route the small-diameter vacuum hose up towards the diverter valve. When routing, ensure that the line is not pinched or kinked, and that it is secured and out of the way of moving engine components. Attach the free end of the vacuum hose to the small fitting on the diverter valve, securing with the provided spring clamp.

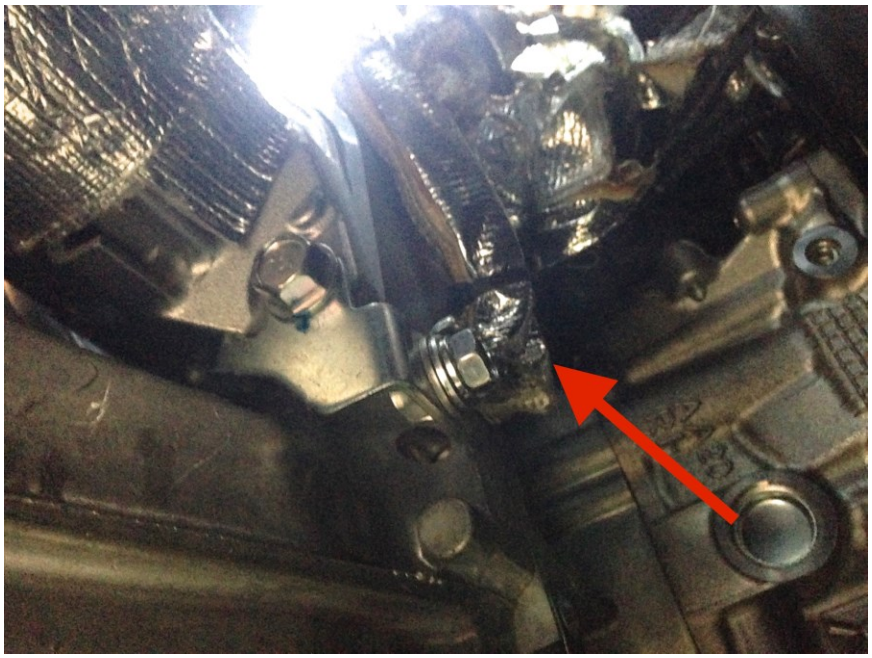
15. Downpipe Installation:

Slide the supplied gasket over the turbocharger stud, ensuring correct orientation as pictured below.

Install downpipe. Apply light coating of anti-seize to the supplied fasteners. Attach downpipe to turbocharger housing using the provided bolts with washers and the single flanged nut. Use the supplied washers under bolt heads. Tighten fasteners in a star pattern to ensure proper gasket sealing. Tightening torque is 25 ft-lbs.

Underneath car, fasten downpipe outlet to front pipe using the supplied fasteners and gasket.

Re-install the 14mm-head bolt that fastens the front pipe to the chassis and remove any straps or support provisions installed to support hanging exhaust. Check around downpipe path for clearance. It may be necessary to rotate or adjust manual transmission grounding wire to move away from downpipe path.

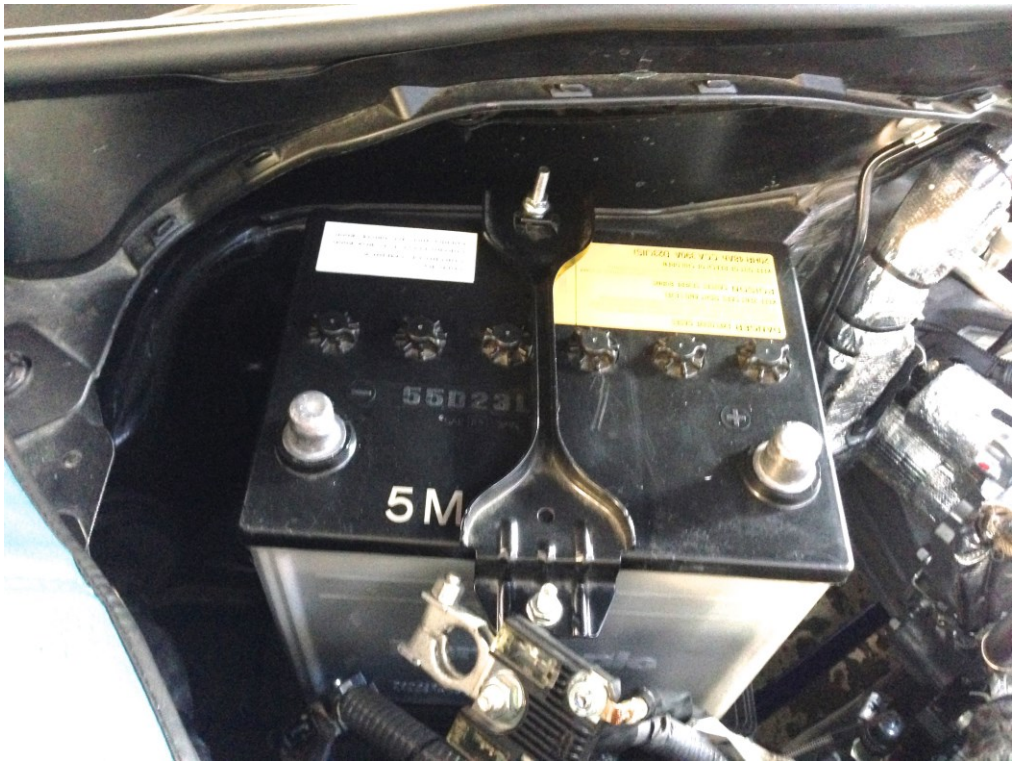


16. Battery Heatshield Installation:

Remove the battery tie-down bracket and associated hardware. Remove battery from car. Remove plastic battery tray.

Slide in the provided WORKS heatshield. The two holes in the bottom of the heatshield should align with the two holes in the frame that mate to the bumps on the underside of the battery tray.

Reinstall the plastic battery tray, ensuring bump alignment in the holes. Place battery back in tray, ensuring that tray and heatshield stay aligned. Once battery has been placed in tray, slide battery as far towards the fender/a-pillar as the tray will allow – moving the battery away from the turbo helps keep it cool. Reinstall battery tie-down tray and associated hardware. Reconnect battery leads.



17. Final Preparation & Recommendations:

A. ECU Flashing with EcuTek:

Your EcuTek ECU flashing kit includes a vehicle interface cable and a USB dongle with a unique ID number. Please keep these in a safe place where you will not lose them once you've flashed the vehicle! Ensure that your laptop has two USB ports. Before plugging the cable in, go to www.ecutek.com/downloads, download EcuTek AppDownloader, and follow their instructions. After installing AppDownloader, select ProECU from the list of downloads and install the program.

Now you may insert the EcuTek dongle into your laptop as well as the vehicle interface cable. Connect the interface cable to your laptop and then to your vehicle's OBDII connector which is located underneath and on the right of the driver's side dashboard. Open ProECU, turn on your ignition switch, select Detect Vehicle from the Tools drop down menu, and then select Query ECU. Find the vehicle ROM ID (i.e. ZA1JB01C) and send an email to info@worksmotorsports that includes your vehicle's ROM ID so that we can send you a matching tune file. You can then shut down ProECU and remove both the dongle and cable.

Once you have received the tune file and downloaded it to your computer (pay attention to which directory you download it to), open ProECU. Make sure your computer is plugged in to an AC power source, DO NOT run it off the battery. From the Tools menu, select Detect vehicle, and choose Program engine ECU. Press OK. EcuTek will then begin flashing your ECU. DO NOT disconnect power from the vehicle nor the computer, otherwise ECU damage will result. Once programming is finished, follow the onscreen instructions and enjoy your new flash!

B. Oil Change:

Change vehicle engine oil and filter. WORKS recommends use of full synthetic 5W-30 engine oil in conjunction with this kit. Extreme climate vehicles may require a different oil grade for optimum engine operation.

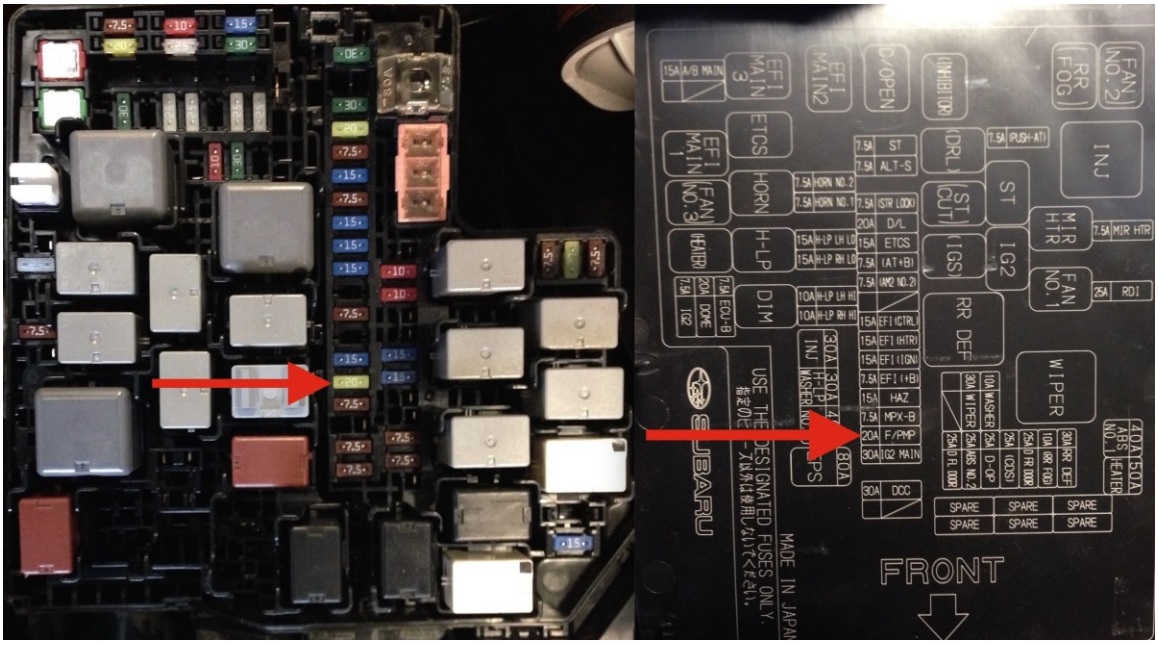
C. Pressure Test:

It is highly recommended to pressure test the intake tract using a regulated compressed air source prior to vehicle operation. No more than 12 psi of intake tract pressure is needed to reveal boost leak sources.

D. Oil System Priming:

Before proceeding, visually check all engine bay wiring to ensure proper heat shielding, and to ensure there is sufficient clearance between wiring assemblies and adjacent components.

Open the engine bay fuse box and pull the 20-Amp fuel pump fuse pictured below.



Sitting in the vehicle, crank engine continuously for 7 seconds, then allow it to sit for ~15 seconds after cranking. Note that on initial cranking attempt, the engine may start momentarily due to residual fuel line pressure. Repeat this procedure twice for a total of three cranking events. This builds oil pressure and primes the turbocharger.

Replace fuse, start engine and allow car to idle up to operating temperature. Check all connections for oil, coolant, or exhaust leaks. Bleed and burp engine coolant system.

E. Bumper Replacement:

Replace bumper, using the reverse procedure of removal (see page 6).

F. Re-checking Torque & Heat Shielding:

It is recommended to re-check torque on the following fasteners after the car has completed a full heat cycle:

4x turbo to up pipe fasteners
5x turbo to downpipe fasteners

2x 14mm up pipe nuts
2x 14mm downpipe fasteners

It is also recommended to re-check wiring heat shielding after the vehicle has completed roughly 10 full heat cycles to ensure proper shielding and clearance is maintained.

Legal:

Important Information – Please Read:

Legality: Some products sold by WORKS may not be legal for use on public roads in your jurisdiction. You are urged to check your state and local laws before installing these competition and sport parts on vehicles intended for use on the public roads. We make no guarantee or warranty as to the legality of any parts listed for use on public roads. Certain parts manufactured and/or distributed by WORKS may be deemed not legal for sale on pollution controlled and/or street vehicles in certain states or countries. Certain parts may not be legal for sale or use in California on pollution controlled motor vehicles.
By purchasing these products, customer warrants that he or she fully accept the legal responsibility for any and all parts purchased, and agrees to hold harmless WORKS in any and all matters arising out of non-legal use of such parts.

Hold Harmless:
Customer warrants that he or she fully accepts the legal responsibility for any and all parts purchased, and agrees to 'hold harmless' WORKS in any and all matters arising out of use of such parts.

Shipping Damage: Obvious damage to package(s) must be noted by the customer at the time of receipt and reported immediately to the shipper. Hidden damage must be reported to carrier immediately. In both cases, damages are to be settled between the customer and the carrier. We will assist the customer if and when necessary. Our errors, i.e., mis-shipment, etc., will be handled immediately after being brought to our attention.

Factory Warranty/Service: WORKS products will not automatically void or compromise your factory warranty. Although it is commonly thought that the installation of aftermarket parts will void the factory warranty, The Magnusson-Moss Warranty - Federal Trade commission Improvement Act of 1975 protects consumers from such fraudulent activity by new car dealers. Under the Act, aftermarket equipment that improves performance does not void a vehicle manufacturer's original warranty, unless the warranty clearly states the addition of aftermarket equipment automatically voids your vehicle's warranty or if it can be proven that the aftermarket device is the direct cause of the failure. The easiest way to check this is to look in your owner's manual under, "what is not covered". Under Magnusson-Moss Act a dealer must prove, not just vocalize, that aftermarket equipment caused the need for repairs before they can deny warranty coverage. If they cannot prove such claim-or proffer a questionable explanation- it is your legal right to demand compliance with the warranty. The Federal Trade Commission (202-326-3128) administers the Magnusson-Moss Act and monitors compliance with warranty law.

WORKS Warranty: WORKS products* carry a 12month, 12k mile limited warranty from date of first sale to the original purchaser against defects in materials or workmanship when installed by an Authorized WORKS Dealer and accompanied by the original proof of purchase. The warranty does not cover wear and tear items such as clutches and brakes. The customer’s sole remedy is limited to repair or replacement at WORKS’ sole discretion.
This warranty does not cover misuse, faulty installation, failure or damage of any other parts, or parts purchased other than from WORKS or WORKS Dealers. In no event shall WORKS be liable for labor or service charges from the replacement, removal, installation, or shipping of WORKS product or related products.
Warranty concerns must be communicated to WORKS within *three* (3) days of becoming aware of any defect during the Warranty Period. Dealer must provide all necessary access and information to enable WORKS to ascertain or verify the nature and cause of the defect and to carry out its obligations under the Warranty.
Customer warrants that he, she, or they fully accept the legal responsibility for any and all parts purchased, and agrees to 'hold harmless' WORKS in any and all matters arising out of use of such products.WORKS is not liable for any loss, damage costs suffered by the Dealer or by a third party whether direct or consequentially arising out of any dispute for breach of contract, negligence, breach of statutory duty, or for any other contractual or tortuous claims or proceedings made by or brought against the Dealer in connection with or relating to the supply of the product.
Products sold by WORKS that are not WORKS’ products carry their own manufacturer’s Warranty.
*WRP (WORKS Racing Products) are excluded.