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# Z1 VHR SUPERCHARGER KIT INSTALLATION MANUAL

| This Installation Manual is intended for the following models: | |
|---|---|
| 2009-2020 | Nissan 370Z |
| 2008-2015 | Infiniti G37/Q60 Coupe |
| 2009-2015 | Infiniti G37/Q40 Sedan |

**PROLOGUE:**
Study these instructions completely before proceeding to assembly. The installer must have a thorough knowledge of automotive systems operation. If unfamiliar with any of the concepts outlined in this instruction, we recommend the installation be completed by a qualified professional.

**WARNING!**
Extreme caution should be taken when performing maintenance or performance upgrades to your vehicle. Please observe and abide by any Warning or Caution labels placed on the various components and tools used when servicing your vehicle. If you have any questions regarding installation or the various components included with the Z1 Motorsports VHR Supercharger Kit, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

**THE Z1 VHR SUPERCHARGER KIT HAS HAD A COUPLE REVISIONS THAT INCLUDE DIFFERENT IDLER PULLEY BRACKETS AND ACCOMPANYING PULLEYS AND HARDWARE/SPACERS. THE BRACKET, PULLEYS, AND HARDWARE WILL HAVE SLIGHTLY DIFFERENT INSTALL INSTRUCTIONS.**

**IF YOU INSTALLED A PREVIOUS REVISION KIT, YOU WILL NEED TO REMOVE THE OLD IDLER PULLEYS, IDLER PULLEY BRACKET, AND ACCOMPANYING HARDWARE/SPACERS.**

**THE INSTRUCTIONS FOR THE NEWEST IDLER BRACKET, PULLEYS, AND HARDWARE/SPACERS STARTS ON THE BOTTOM OF PAGE 16. THIS STEPS ON PAGE XX ARE CURRENTLY AN OVERVIEW WITH GENERAL INSTRUCTIONS. DETAILED STEP-BY-STEP INSTRUCTOINS WILL BE ADDED IN THE NEAR FUTURE.**

## PARTS INCLUDED:

The entire Z1 Supercharger kit will arrive in 2 boxes. Each box will be labeled “Box 1” or “Box 2”. Throughout the instructions, pieces of the kit will be called out to be located and marked with their item number in parathesis (#X). Use the chart below to help locate each item.

| Item | Quantity | Description | Part Number (if available) |
|---|---|---|---|
| **BOX 1 – Contains Coolant Reservoir Kit (Z198195), Hardware Tray (Box B), and other loose items** | | | |
| #1 | 1 | Z1 Coolant Reservoir w/ Bracket and Bolts (Coolant Reservoir Kit) | 23067 |
| #2 | 1 | Coolant Overflow Hose (Coolant Reservoir Kit) | |
| #3 | 78” | Universal Z1 Coolant Hose (Coolant Reservoir Kit) | |
| #4 | 8 | Grey Spring Clamp(Coolant Reservoir Kit) | |
| #5 | 1 | 8mm Equal Tee Fitting (Coolant Reservoir Kit) | |
| #6 | 1 | Z1 Radiator Cap (Coolant Reservoir Kit) | |
| #7 | 1 | Z1 Radiator Cap – Non-Pressurized (Coolant Reservoir Kit) | |
| #8 | 1 | 1/2” Silicone Cap (Coolant Reservoir Kit) | |
| #9 | 1 | Z1 Z34 Intercooler | 22091 |
| #10 | 1 | Charger Pipe Set (4 pieces) | 21097-K |
| #11 | 1 | Silicone Coupler Kit (4 piece) | 21097-P |
| #12 | 2 | Silicone Straight Reducer Hose, 2.5" to 2.75", Black | |
| #13 | 1 | Z1 PROCOOLER 13 Row | 22127 |
| **HARDWARE STORAGE TRAY Box B (inside box 1)** | | | |
| #14 | 1 | M6 x 12mm Socket Head Bolt – Top of Bracket to Engine | |
| #15 | 4 | M6 x 25mm Socket Head Bolt – Bracket to Timing Cover | |
| #16 | 3 | M6 x 60mm Socket Head Bolt – Bracket to Timing Cover | |
| #17 | 4 | M8 x 16mm Flanged Button Head – Intercooler Brackets | |

| | | | |
|---|---|---|---|
| #18 | 4 | M10 x 50mm Socket Head Screw – Idlers to Brackets | |
| #19 | 2 | M10 x 95mm Socket Head Screw – Idler Brackets to Timing Cover | |
| #20 | 2 | 0.5mm Shim Ring | |
| #21 | 2 | 1mm Shim Ring | |
| #22 | 4 | M10 x 17mm Conical Spacer – Behind Idler Pulleys | |
| #23 | 2 | Small Black Spring Clamp – 5mm Vacuum Hose | |
| #24 | 2 | 21/32" Medium Black Spring Clamp – Brake Booster Hose | |
| #25 | 6 | 26mm Large Black Spring Clamp – PCV Hoses | |
| #26 | 8 | Grey Spring Clamp – Supercharger Oil Hose | |
| #27 | 1 | 5/8” Equal Tee – PCV Hoses | |
| #28 | 1 | 3/8” to 1/4” Reduction Tee – Boost Reference | |
| #29 | 2 | M22 to 8mm Barb Banjo Fitting | |
| #30 | 2 | M22 Banjo Bolt | |
| #31 | 4 | Aluminum Crush Washer | |
| #32 | 1 | Cushioned Rubber Loop P-Clamp – Rotrex Magnetic Oil Filter | |
| #33 | 4 | M6 Nylon Lock Nut – Procooler to Setrab Bracket | |
| #34 | 3 | M5 x 8mm Button Head Screw – Z1 Rotrex Oil Reservoir to Bracket | |
| #35 | 1 | Neoprene Rubber Trim | |
| #36 | 2 | 1/2” Silicone Caps | |
| #37 | 6 | Zip Ties | |
| **BOX 2 – Contains Box C, D, E, F, G, and other loose items** | | | |
| #38 | 1 | Assembled Z1 Supercharger Unit (Box F) | Z198125 |
| #39 | 1 | Dual Idler Bracket (Sub-Box in Box F) | 21097-L |
| #40 | 2 | Idler Pulley Assembly, 45mm, Extra Lipped (Sub-Box in Box F) | |
| #41 | 1 | Idler Pulley Assembly, 45mm, Lipped (Sub-Box in Box F) | |
| #42 | 1 | Idler Pulley Assembly, 45mm, 7-Rib (Sub-Box in Box F) | |
| #43 | 1 | Rotrex SX150 Traction Oil – 1 Liter Bottle (Sub-Box in Box F) | |
| #44 | 12.5’ | 5/8” Hose (Box E) | |
| #45 | 12” | 5mm Vacuum Line (Box E) | |
| #46 | 25’ | 5/16” Hose (Box E) | |
| #47 | 2 | Intercooler Brackets (Box E) | 22091-B |
| #48 | 1 | Supercharger Oil Reservoir Bracket (Box E) | 22093-D |
| #49 | 1 | Setrab Oil Cooler Bracket (Box E) | ABKT-235 |
| #50 | 7 | Small T-Bolt Clamp – 67-75mm (Box C) | |
| #51 | 2 | Medium T-Bolt Clamp – 73-81mm (Box C) | |
| #52 | 4 | Large T-Bolt Clamp – 79-87mm (Box C) | |
| #53 | 1 | K&N Filter (Box G) | |

| | | | |
|---|---|---|---|
| #54 | 1 | Supercharger Silicone Intake Pipe w/ Barb and Plug (Box G) | 21097-U |
| #55 | 1 | 84mm Metal Air Filter Joiner (Box G) | |
| #56 | 2 | Large 3.5” Worm Gear Clamp (Box G) | |
| #57 | 1 | Supercharger Pulley – sized based on customer’s choice (Box D) | |
| #58 | 2 | Supercharger Drive belt – sized based on customer’s choice (Box D) | |
| #59 | 1 | Supercharger Oil Reservoir | 22093 |
| #60 | 1 | Rotrex Magnetic Oil Filter | 22092 |
| #61 | 1 | Turbosmart RacePort | TS-0204-1192 |
| #62 | 1 | Bash Bar | 22092 |
| #63 | 1 | OMNI 4-Bar Map Sensor (not included in “Tuner” kit) | MAP-GTR-4BR |
| **Z1 VHR Supercharger V5 Supplement Kit** | | | |
| | 1 | Z1 VHR Supercharger, Dual Idler Bracket - V5 (large bracket) | |
| | 1 | Z1 VHR Supercharger Main Bracket, Add-on (small bracket) | |
| | 2 | Z1 Idler Spacer, M10, 17mm OD, 10mm | |
| | 1 | Idler Spacer, M10, 17mm OD, 3mm | |
| | 2 | Idler Spacer, M10, 17mm OD, 5mm | |
| | 1 | Gates Smooth Idler Pulley | |
| | 3 | M10 x 110mm Socket Head Screw – Large Idler Bracket to Timing Cover | |
| | 2 | M10 x 25mm Flat Head Screw – Small Idler Bracket to Main Bracket | |
| | 2 | M10 x 30mm Flange Head Bolt – Idler Pulley to Bracket | |
| | 3 | M10 x 45mm Flange Head Bolt – Idler Pulley to Bracket | |
| | 2 | INA Idler Pulley- Grooved | |
| | 2 | INA Idler Pulley- Smooth | |
| | 1 | Z1 VHR Supercharger, Dual Idler Bracket - V5 | |

## TOOLS REQUIRED:

- Hydraulic Jack
- (2) 2-Ton (or greater) Jack Stands
- Ratchet
- Ratchet Extension(s)
- Assorted Metric Sockets
- Assorted Metric Wrenches
- Assorted Metric Allen/Hex Keys
- 12mm Allen/Hex Bit
- Torque Wrench
- Pliers
- Body Saw or Die Grinder
- Silicone Spray
- Long 3/8” Ratchet
- File
- Long Funnel or Small Fluid Pump
- Thread Sealant
- Air Compressor and Air Gun
- SAE 5/16” Allen/Hex Key
- SAE 1/2” Wrench

## SAFETY REQUIREMENTS:

- Always wear safety glasses and any necessary protective garments. If using any fluids, chemicals, or solvents, a respirator is recommended.
- Always turn the ignition to the OFF position and disconnect the NEGATIVE battery terminal.
- Always use properly rated jack stands when working under your vehicle.

- Always keep limbs and parts away from moving drivetrain parts.
- Only operate drivetrain in safe space and well-ventilated areas.

## BEFORE YOU BEGIN:

Remove contents from Z1 Motorsports VHR Supercharger Kit and verify that ALL necessary hardware is present.

The following installation manual will outline the procedure for installing the Z1 supercharger kit on a relatively stock 370Z besides some fueling upgrades and an engine oil cooler. It will not cover the steps for installing the necessary fueling components or engine oil cooler as those will change depending on the options chosen and what fuel system you have. This installation manual cannot possibly cover every step or account for the countless other modifications you may have. You will likely need to use some leeway to adjust these instructions to fit your vehicle.

For all levels of the supercharger kit, you will need some sort of fueling upgrade. For 450hp and 500hp levels, we recommend at least 1000CC injectors and a drop-in fuel pump. For 550hp and 600hp+ levels, you will most likely need a fuel return system.

**DO NOT spin the supercharger unit prior to installation and before filling it with fluid. Follow the Rotrex priming and starting procedure (pg. 22) which is outlined in step #133. Failure to follow the procedure may result in permanently damaging the supercharger unit.**

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## PROCEDURE:

### Section One: Disassembly

Tools needed:

| | | | |
|---|---|---|---|
| Ratchet | Assorted Metric Wrenches | Pliers | Jack-Stands |
| Assorted Metric Sockets | Flat-head Screwdriver | Hydraulic Jack | Long 3/8” Ratchet |

Parts needed:

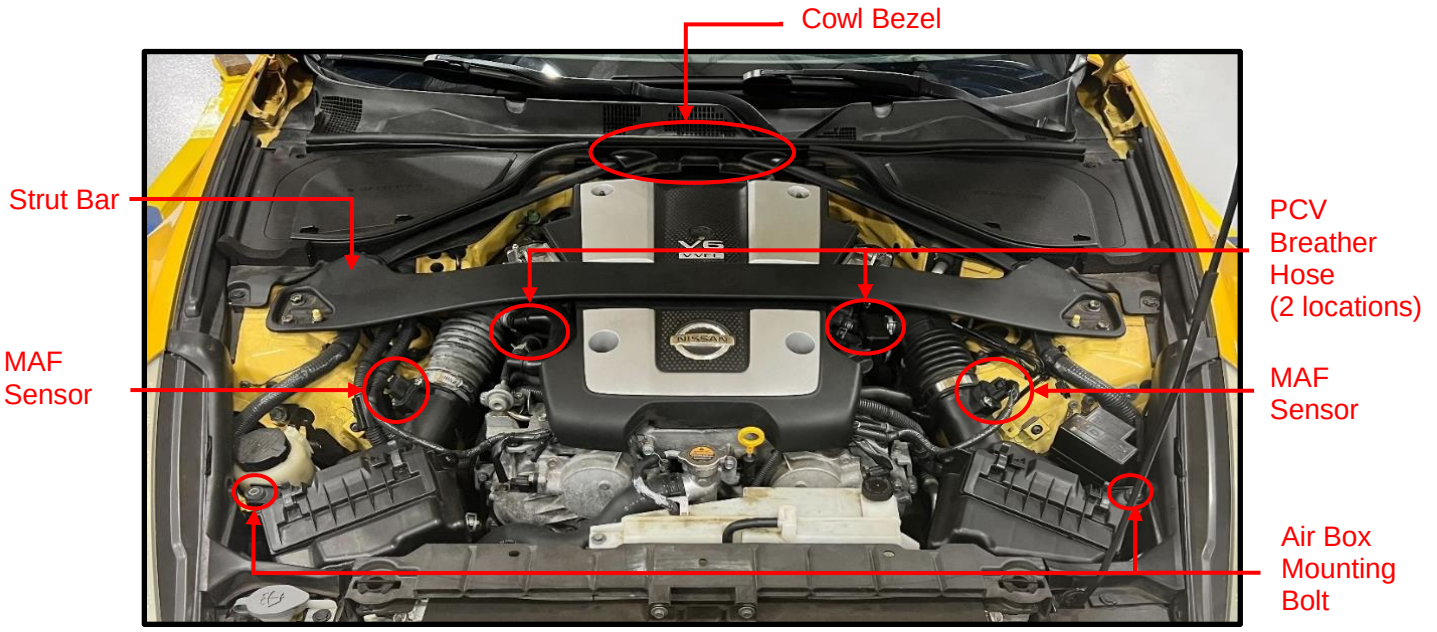
(2) 1/2” Silicone Caps (#36)

1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.

2. Open hood of vehicle

Use the diagram below as reference for the following steps:

*G37 owners should follow the same steps but ignore the steps about removing the cowl bezel and strut bar.*

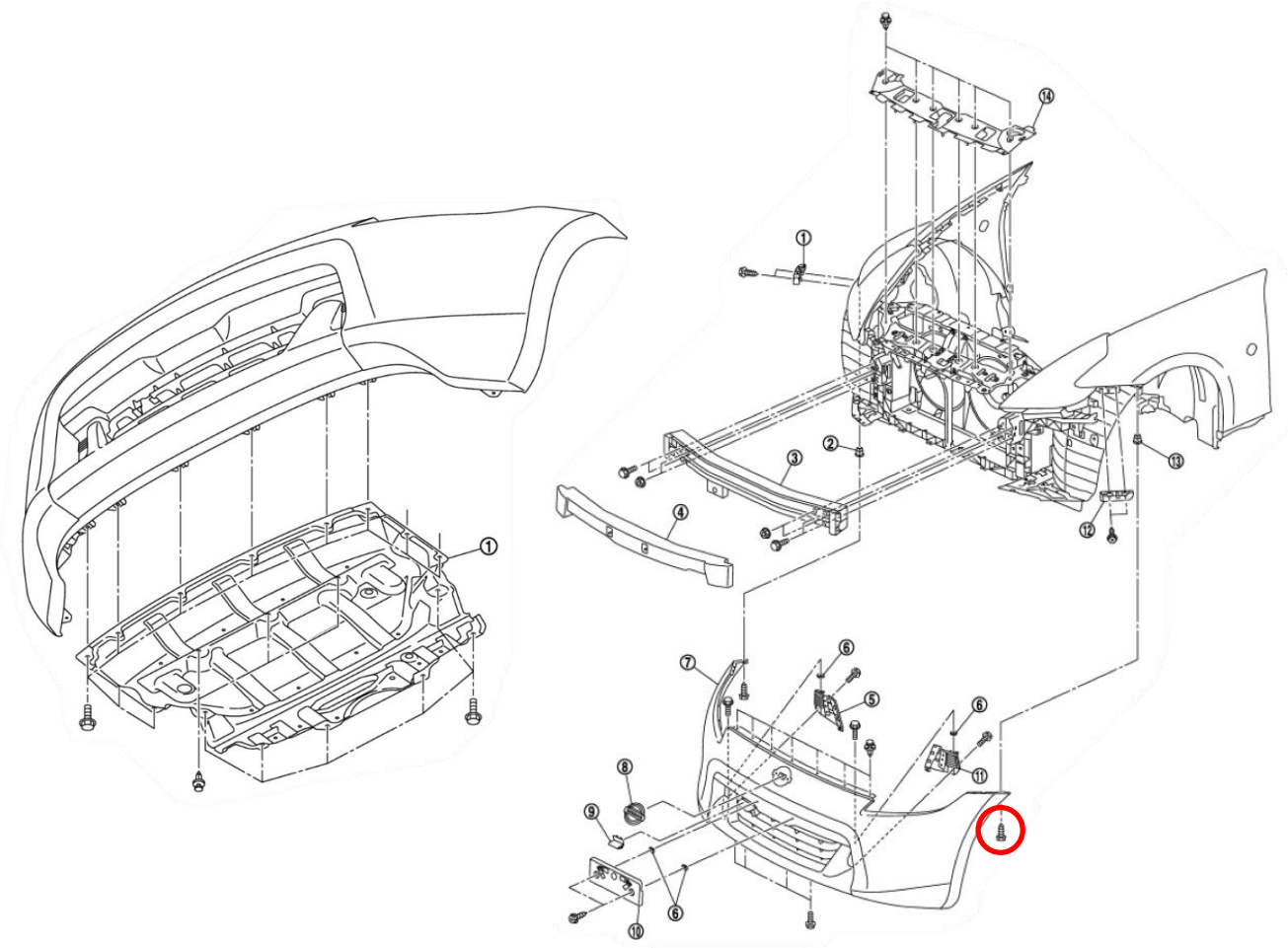



3. Remove (2) plastic clips which attach cowl bezel to cowl assembly.
4. Carefully pry loose backside of cowl bezel. Firmly pull the cowl bezel up to remove and set aside.
5. Remove (4) bolts and (4) hex nuts which attach strut bar to chassis. Remove strut bar and set aside.
6. Locate and unplug (2) MAF sensor connectors as well as its plastic harness clips.
7. Remove (2) acorn nuts and (2) bolts which attaches engine cover to engine. Remove cover and set aside.
8. Remove (1) bolt which attaches passenger side Intake canister to plenum.
9. Using pliers, loosen and pull OEM PCV Breather hoses at valve cover end.
10. Loosen hose clamp at each throttle body.
11. Remove (2) bolts on each OE airbox that mount them to the chassis.
12. Remove plastic clip and (1) 10mm bolt on each side that attaches the air inlet duct to the composite radiator core support near each OEM air box opening. Remove air intake ducts.
13. Using a light pull motion, loosen OEM air boxes from vehicle.
14. Completed OEM air intake assembly should be loose at this point. Remove intake boxes, hoses, and intake balancing hose from vehicle, as shown at right.
15. Release tension on front lug nuts but DO NOT remove them.

16. Locate proper jacking points on vehicle's chassis (refer to vehicle's Owner Manual). Raise and support vehicle using jack & jack stands.

17. Remove front lug nuts and wheels.

370Z Owners: Use the diagram below as reference for steps # 18 - 24.



18. Remove the lower engine splash shield (undershroud). Fasteners will be an assortment of 10mm screws and plastic panel clips. Use a flat blade screwdriver to gently pry up the pop clips.

19. Remove plastic clips and remove the front wheel/fender liners to reveal (1) mounting screw at each side of vehicle which mounts corner of bumper fascia to the vehicle (screw circled in diagram above). Remove mounting screw on each side.

20. Remove (7) plastic pop clips securing upper of bumper fascia to vehicle at radiator core support.

21. With a light pull motion, carefully disengage bumper fascia from clips on vehicle just below each headlight. Remove bumper fascia and set aside.

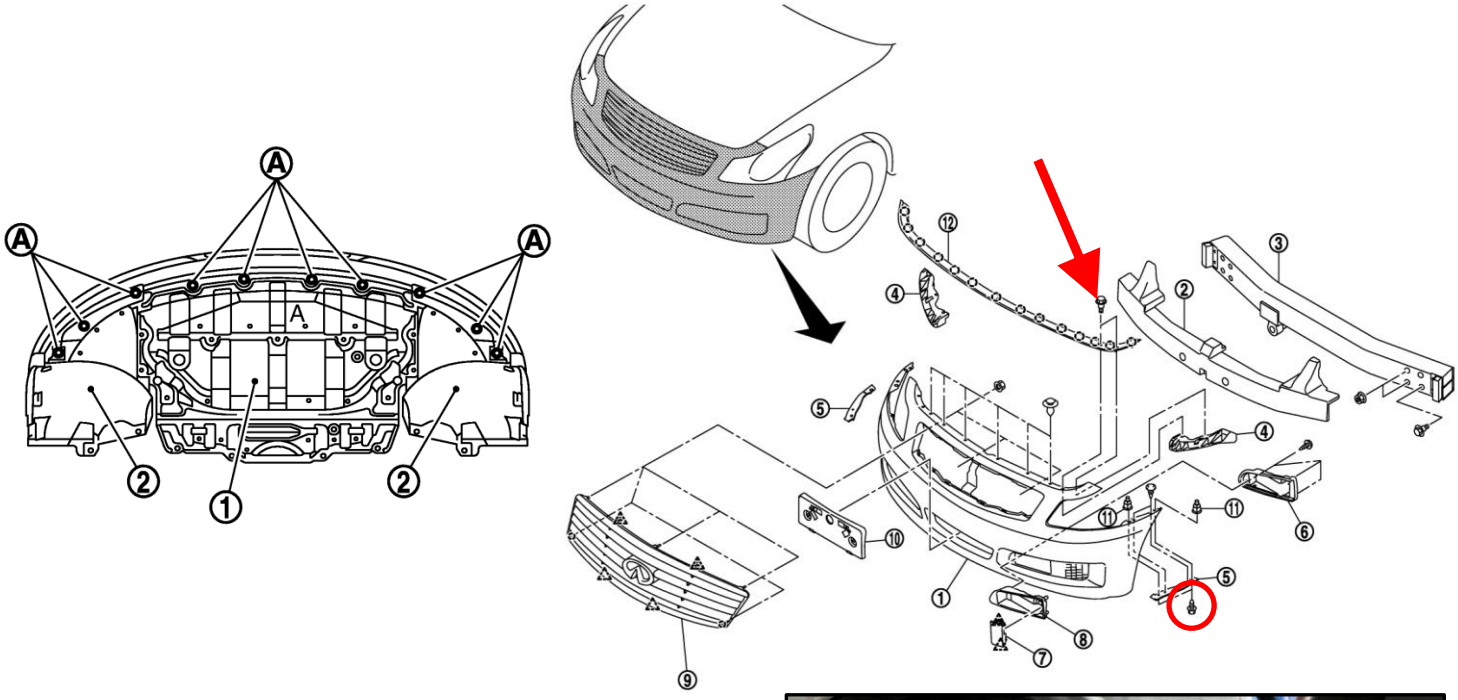
22. Remove (8) plastic clips which attach diversion panel/radiator air guide to composite radiator core support. Set aside diversion panel.

23. Remove the foam impact absorber in front of the crash bar.

24. Remove (4) bolts and (4) hex nuts securing front crash bar to chassis, retain the hardware as it will be reused. Remove crash bar.

G37 Owners: Use the diagram below as reference for steps # 25 - 33.

25. Remove the lower engine splash shield (undershroud). Fasteners will be an assortment of 10mm screws and plastic panel clips. Use a flat blade screwdriver to gently pry up the pop clips.

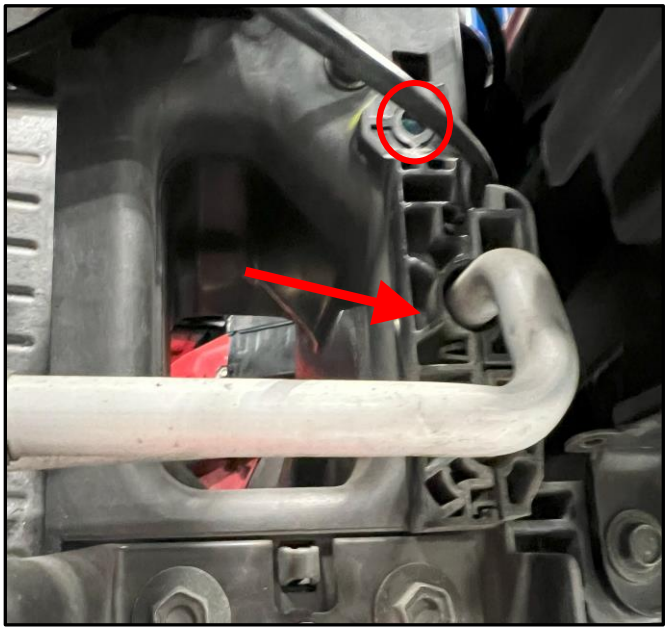


26. Remove plastic clips and remove the front wheel/fender liners to reveal (2) mounting screws at each side of vehicle which mounts corner of bumper fascia to the fender (screw circled in diagram above). Remove mounting screws on each side.

27. Lift up on the hood seals at the front corner of the engine bay to reveal (2) mounting screws at each side of vehicle that mounts the upper corner of bumper fascia to the fender (screw shown with arrow above). Remove mounting screws on each side.

28. Remove (6) plastic pop clips securing upper of bumper fascia to vehicle at radiator core support.

29. With a light pull motion, carefully disengage bumper fascia from clips on vehicle just below each headlight. Remove bumper fascia and set aside.



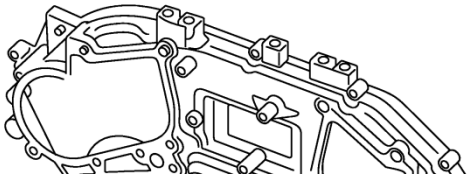
30. Remove plastic clips and bolts which attach diversion panel/radiator air guide to composite radiator core support. Set aside diversion panel.

31. Remove the foam impact absorber in front of the crash bar.

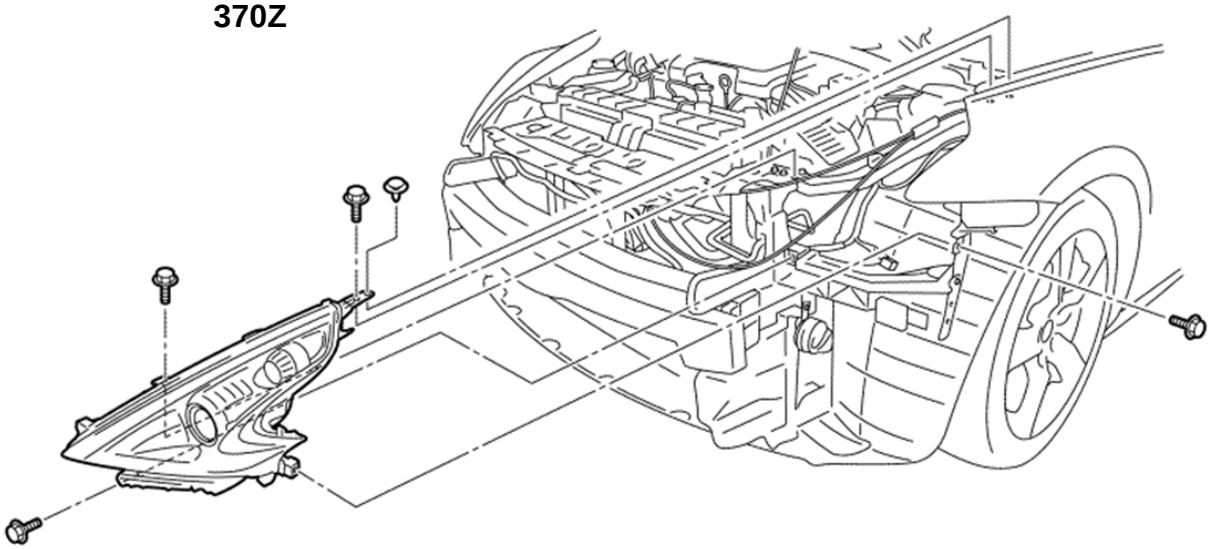
32. Remove (4) bolts and (4) hex nuts securing front crash bar to chassis, retain the hardware as it will be reused. Remove crash bar.

33. On the driver side of the core support, remove the 10mm bolt (circled at right) and then using a flat head screwdriver, open and remove the plastic clamp/support around the AC lines.

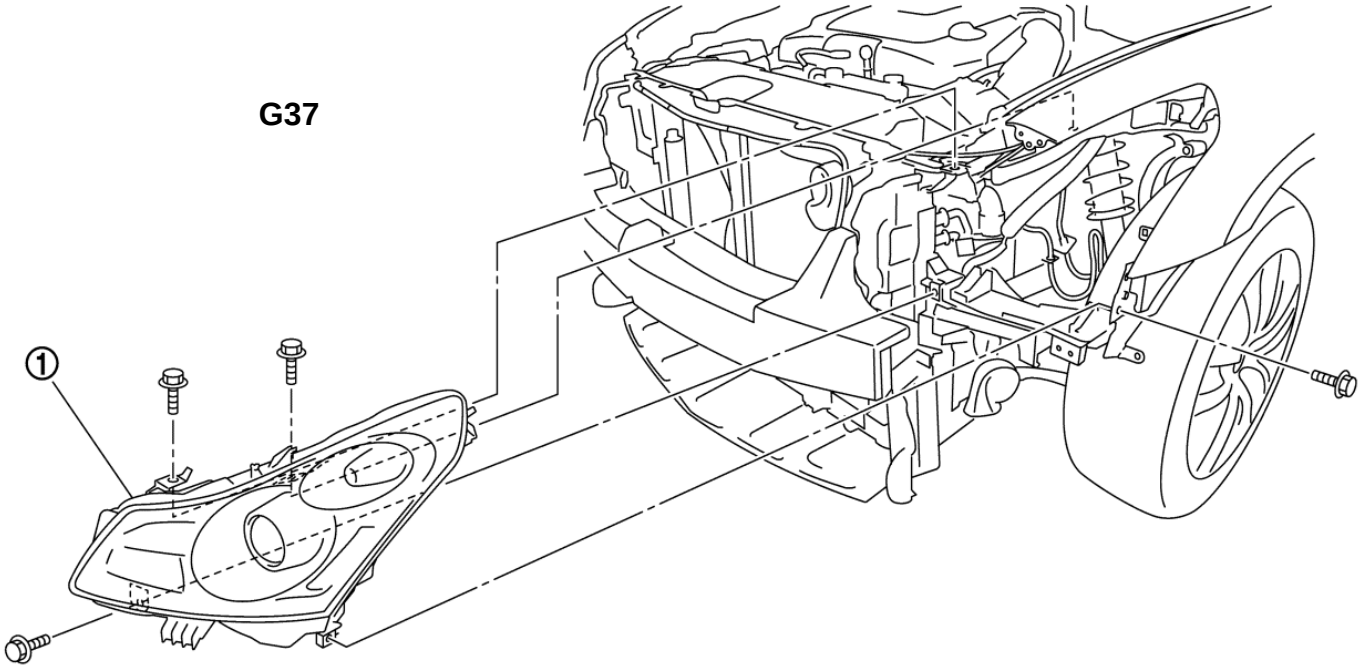
34. Disconnect the electrical connectors and remove the (3) screws and (1) plastic push-clip securing the headlights. Remove the headlights and set aside. While not required, performing this step will give you more access and prevent damage to the headlights.
35. Using a 3/8” ratchet, release tension from the tensioner pulley on the front of the engine, then place a M6 bolt/Allen key in the slot to hold the tensioner in place. The 3/8” slot on the tensioner is shown with an arrow below and the slot for the bolt is circled.



**370Z**



**G37**



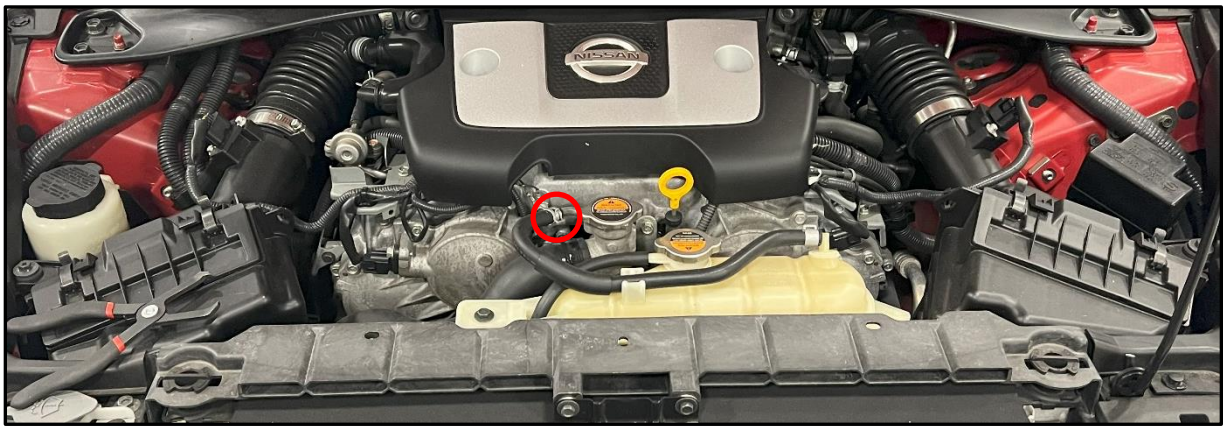
**Having a good tensioner is necessary for proper supercharger belt function. If you notice your tensioner is very tight or notchy it is recommended to replace it with a new OEM or Gates one.**

36. Once the belt's tension is released, remove the OE belt. The hardest part about removing the belt is getting it out of the tensioner. You will need to maneuver it behind and then down beneath the pulley on the tensioner.

37. Remove (1) grooved idler pulley on the front of the engine, shown above with a box. It is the highest center pulley on the engine.

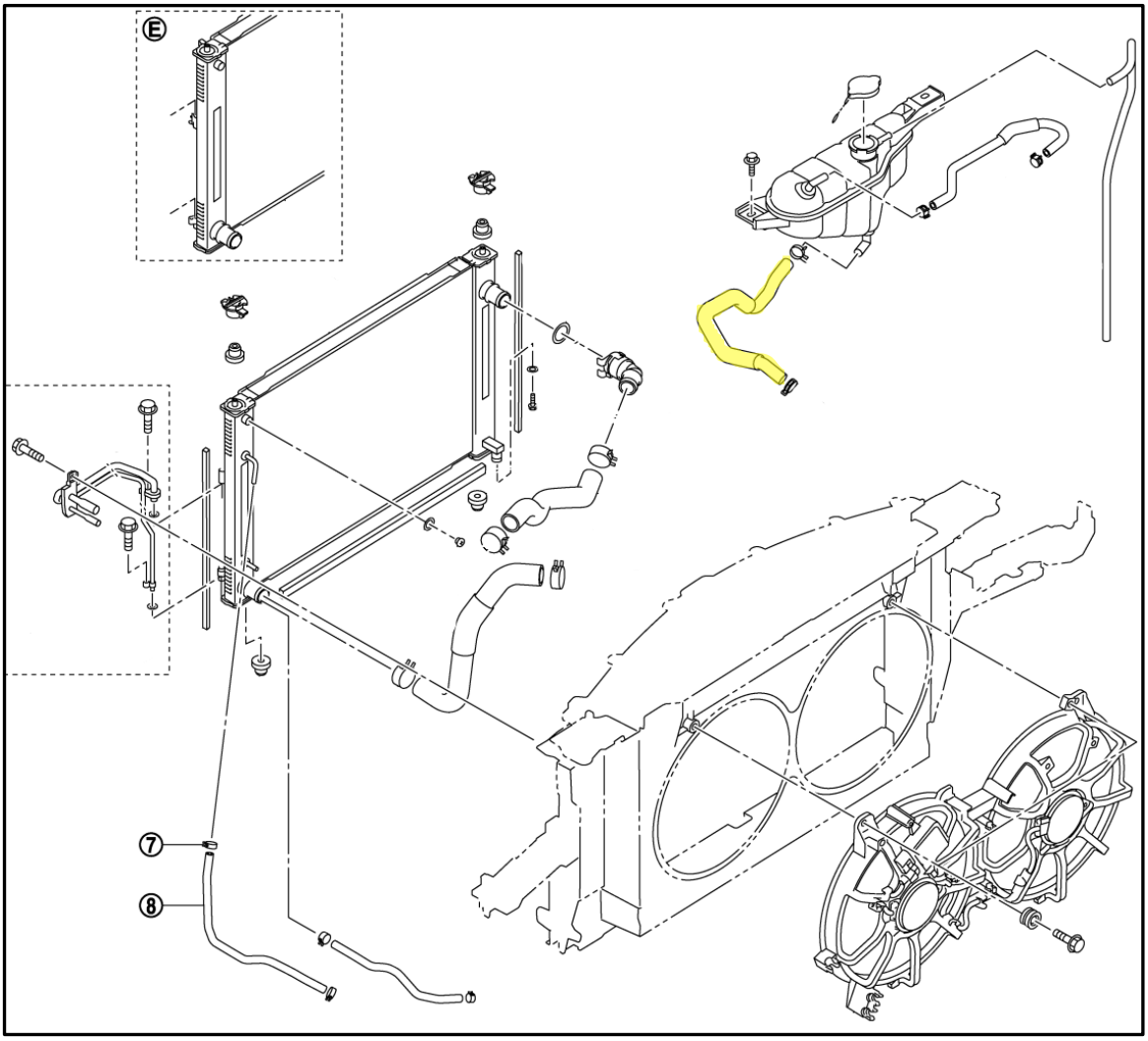
38. The 370Z has two different style coolant reservoir systems depending on the model year. From 2009-2011 production 370Z's used a standard non-vented reservoir. Models produced from 2012-current use a pressurized reservoir that can be differentiated from the use of a typical radiator cap, instead of a small plastic cap. If you are unsure which system you have, take a look at the cap on your OE coolant reservoir. If it is a black plastic cap, it is the early style. If it is a pressurized radiator cap, it is a late style. G37's appear to all use the early style with a black plastic cap on the coolant reservoir.

    a. <u>For early style cars</u>: Remove the hose running from the top of the coolant neck where the upper radiator hose connects (circled below). Then remove the (2) bolts securing the reservoir to the vehicle and lift up to remove the reservoir.

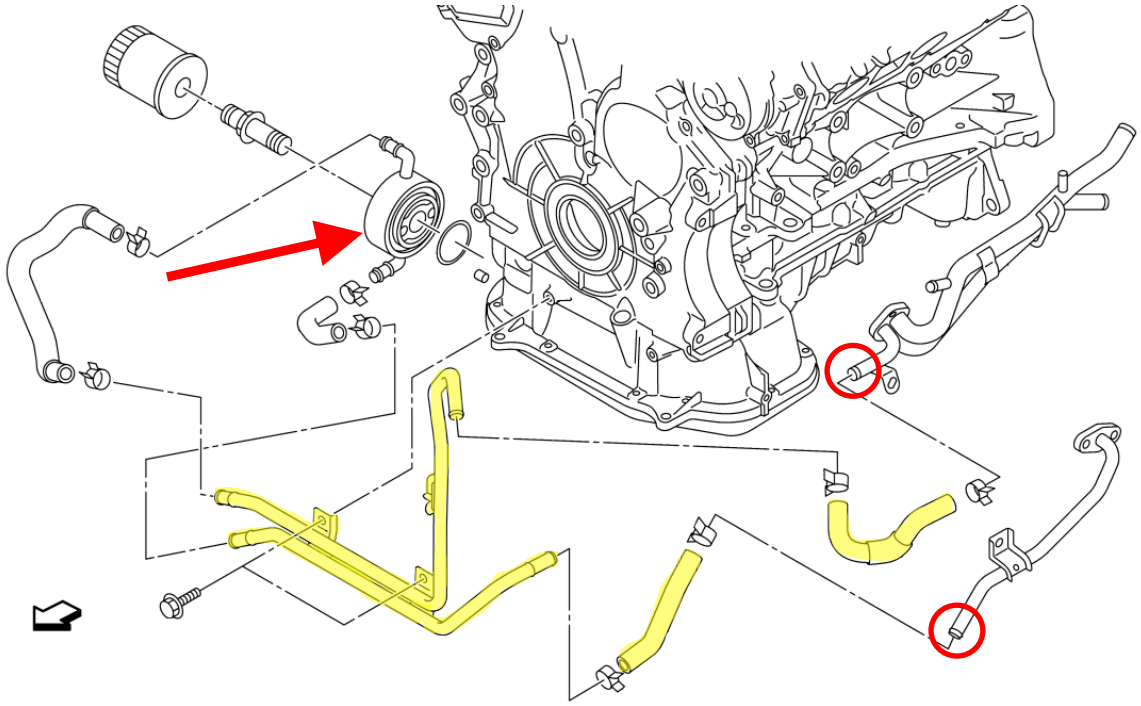



(late style is car is shown above, but coolant neck location is the same)

b. <u>For late style cars</u>: Remove the hose running from the top of the coolant neck where the upper radiator hose connects (circled on previous page). Then remove the hose at the bottom of the reservoir from the coolant hard pipe on the driver's side of the engine. The bottom hose is highlighted in the diagram below. Once removed it will leak coolant, be ready to pinch or kink the hose to prevent excess coolant from spilling over the engine bay. Once the (2) hoses are disconnected, remove the (2) bolts securing the reservoir to the vehicle and lift up to remove the reservoir.



39. The factory oil cooler lines (highlighted below) will need to be removed as they will interfere with the supercharger components. If you have not already removed the OE oil cooler/warmer (where the oil filter attaches and shown with arrow below) when installing an engine oil cooler, remove it and the accompanying components. Also remove the bolts and the highlighted lines below.



40. Use the (2) provided 1/2” silicone caps (#36) to cap the circled hardline ports off and secure with the OE clamps.

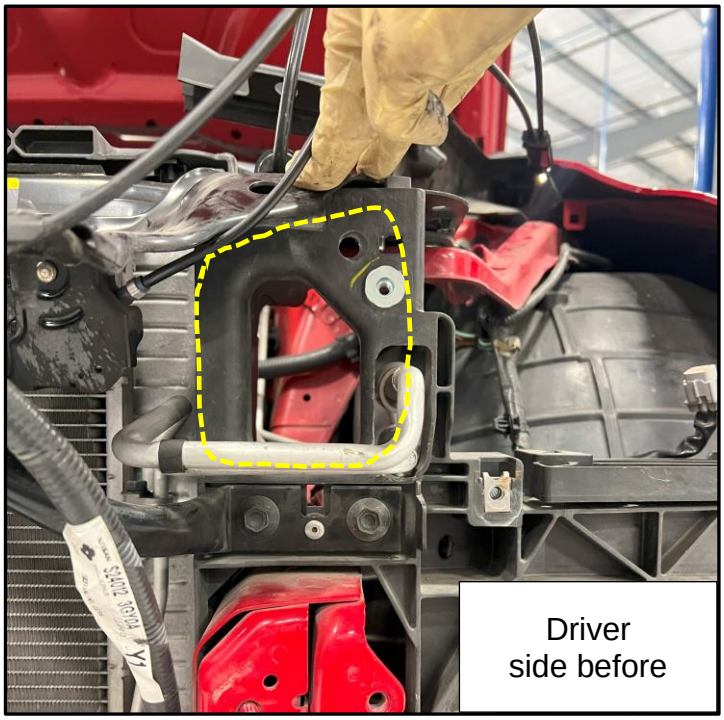
## Section Two: Clearancing

Tools needed:

Body Saw or Dremel | Vice Grips Pliers or Hammer | File or Deburr Tool

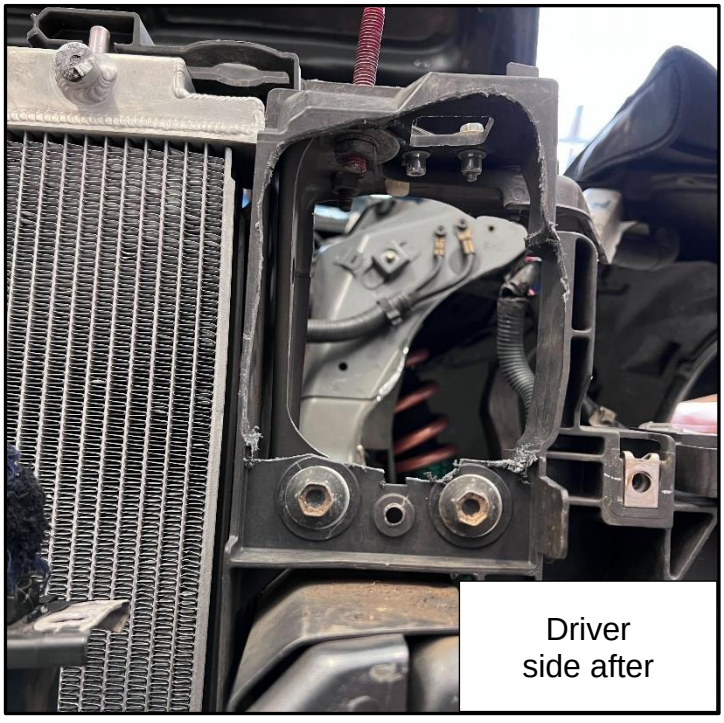
Parts needed: none

41. Both the driver and passenger core support pass-throughs will need to be opened up and enlarged to allow for silicone piping to fit. We recommend using a body saw to cut the core support. If you want a very clean install, it may require multiple trimming sessions after you test fit the blower. However if you just want to cut it once and be done you should cut out as much of the core support as possible. Please refer to the images below as reference.

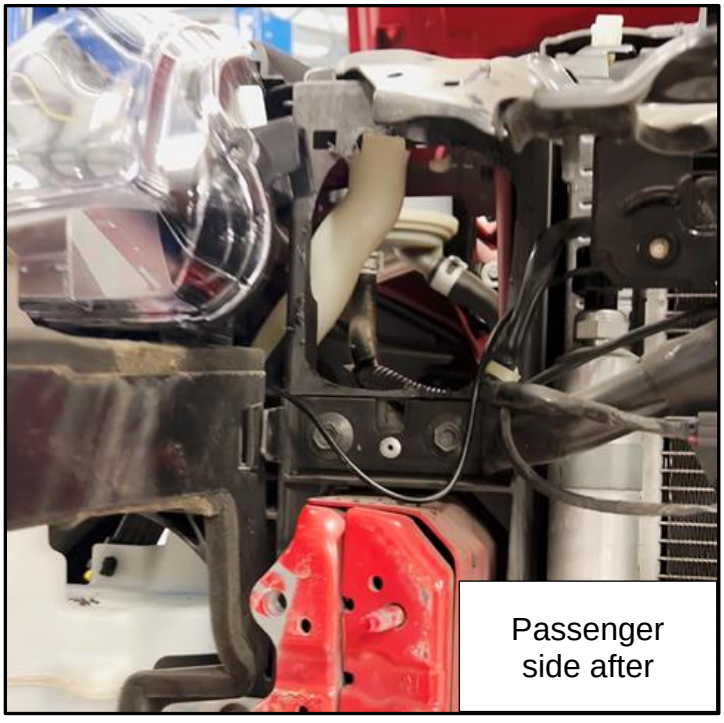


Driver side before

Passenger side before

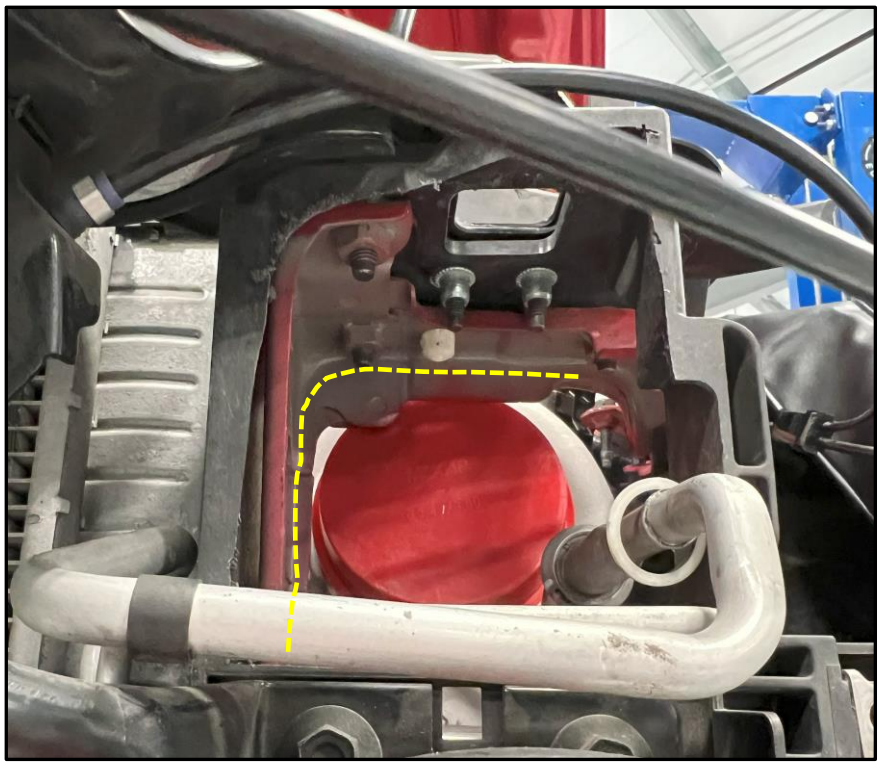


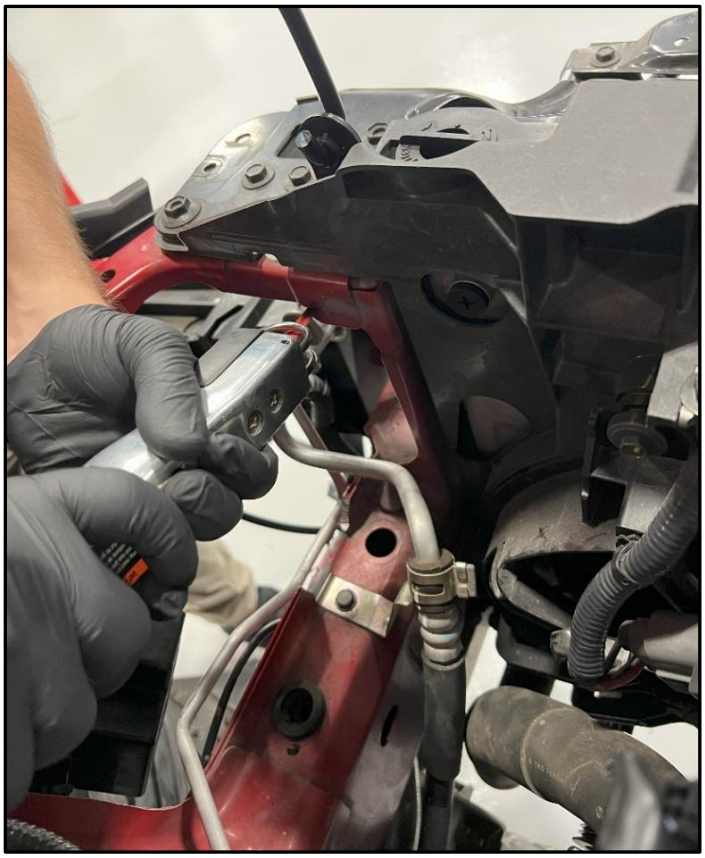
Driver side after



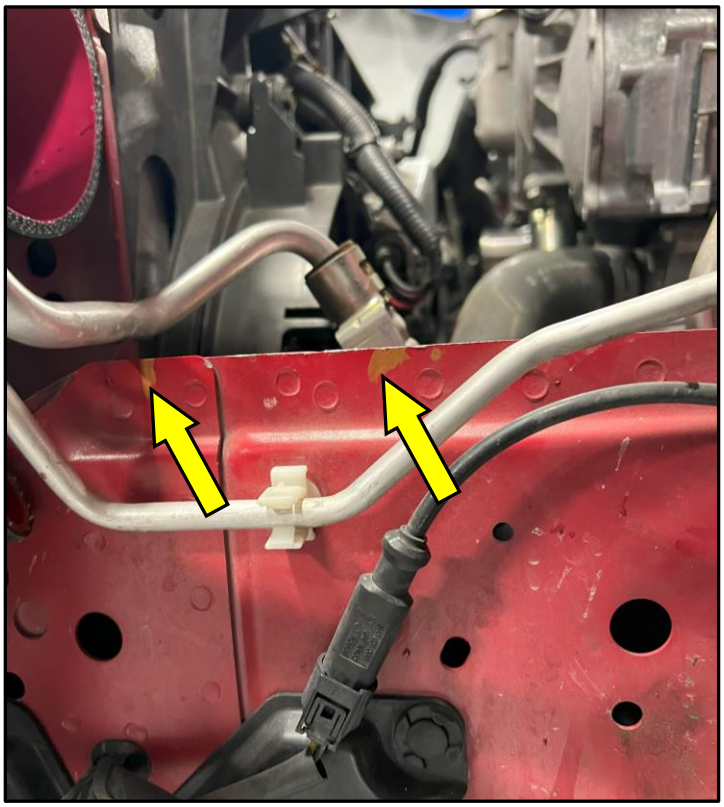
Passenger side after

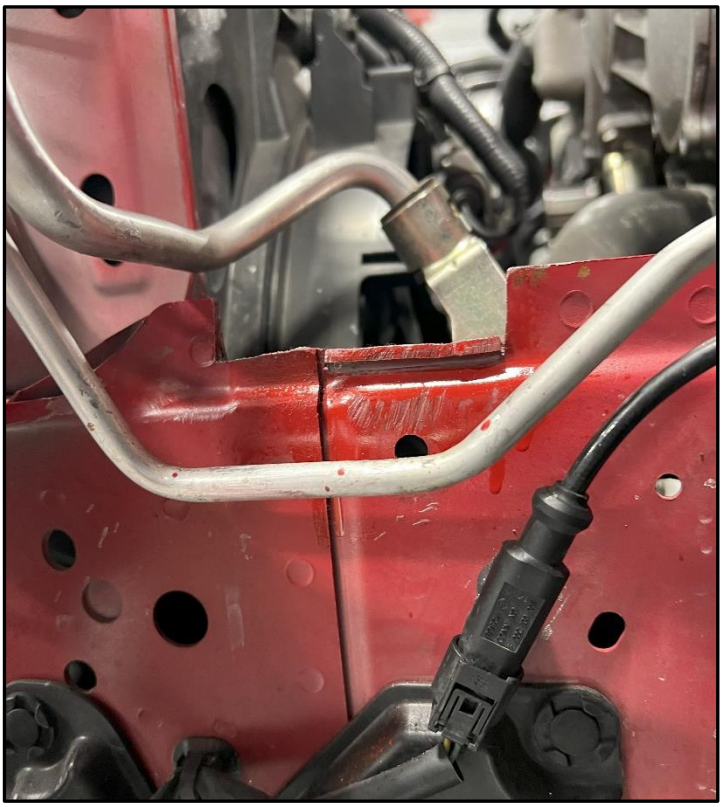
42. Using a body saw or other cutting tool, trim the metal driver side core support pass-through (as shown below).





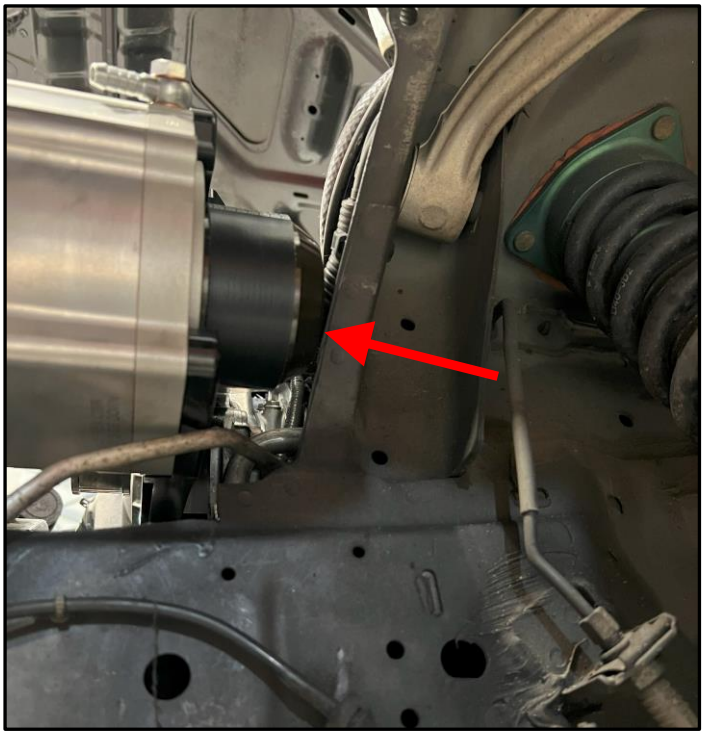
43. The pinch weld at the top of the front of the driver side frame will rail will need to be notched to fit the supercharger outlet. Use the images below as reference.

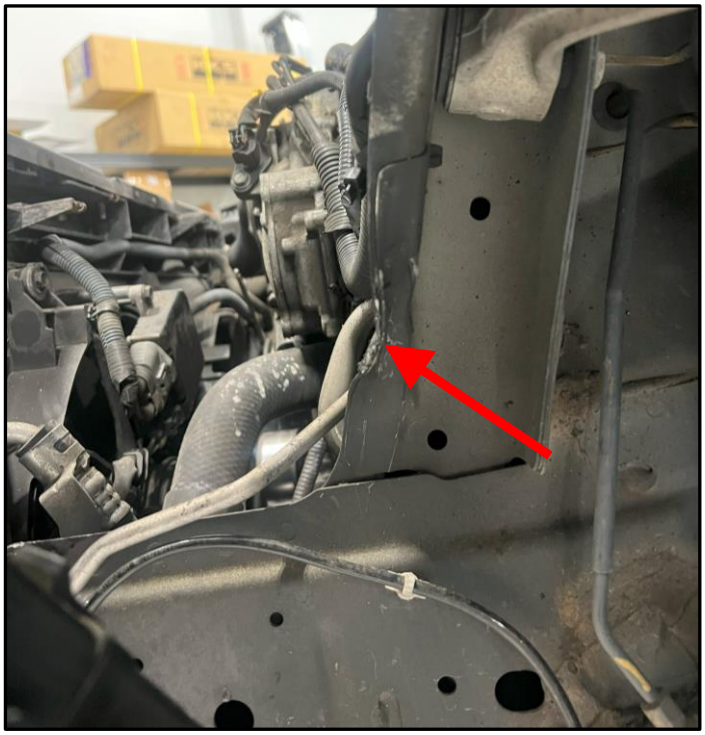




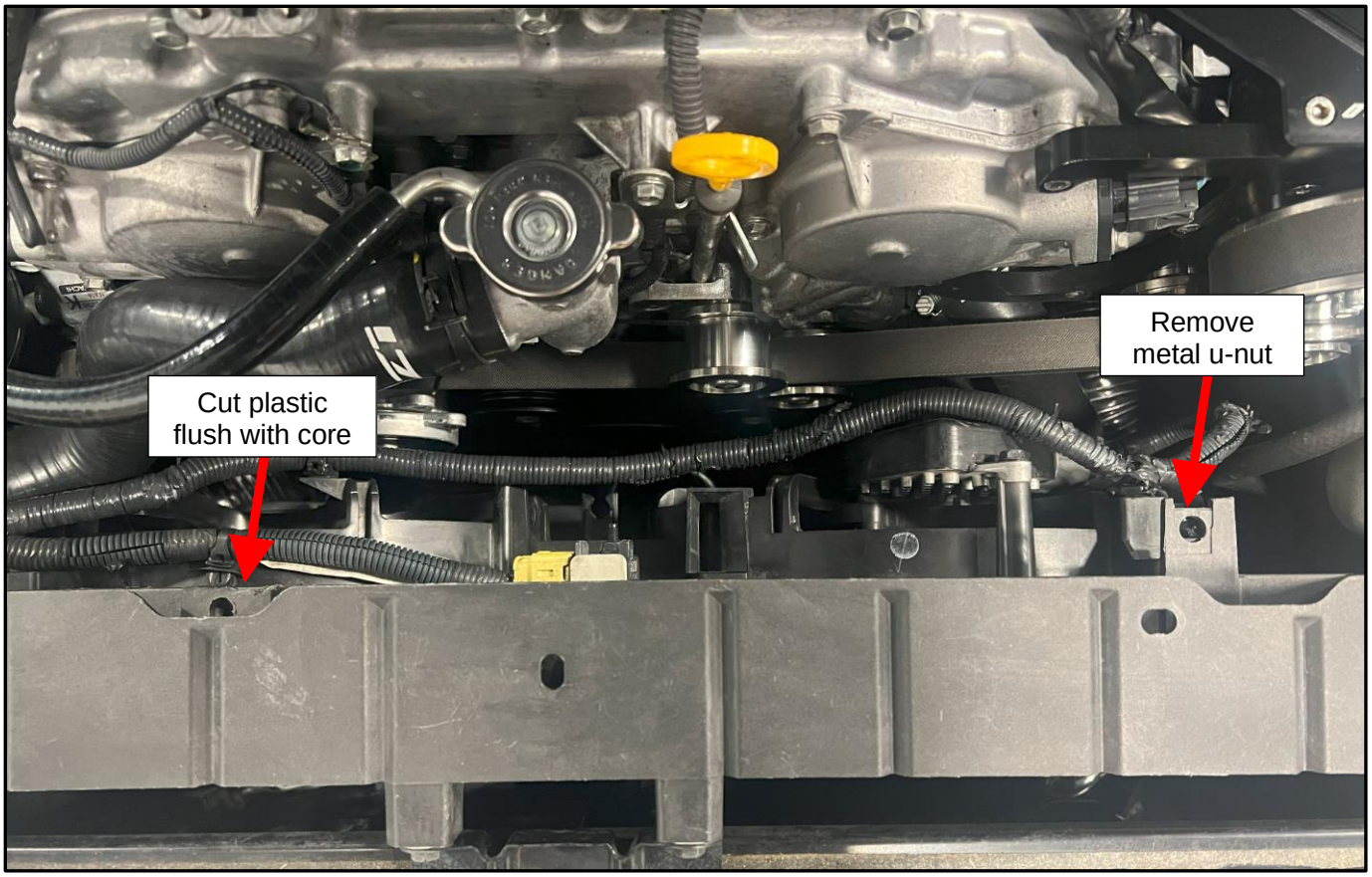
c. In the image at the left, there are two paint markers (shown with arrows), where we marked a rough area to trim. Depending on the height of your engine, you may need to trim more or less than the images shown.

44. The backside pulley will also interfere (or be really close) to the fender well (as shown below). Use vice-grip pliers or a hammer to clearance the fender well. Reference the images below.





45. There are two tabs on the radiator core support where the OE coolant reservoir was attached. The passenger side tab will need to be cut off with a body saw as it will interfere with the charge piping. The driver side one will need to have the metal u-nut removed to prevent any rubbing on the charge piping.




Note: The image above is used to show the modified core support and is shown with the supercharger kit already installed.

46. Once all areas have been trimmed, use a file or deburr tool to clean up and deburr the edges.

47. It is recommended to paint (rattle can or paint pen) the cut areas of the core support and frame.

48. Check to make sure the AC lines are not touching each other. For added protection you can cover the lines with a protective wrap/shield.

## Section Three: Blower Installation

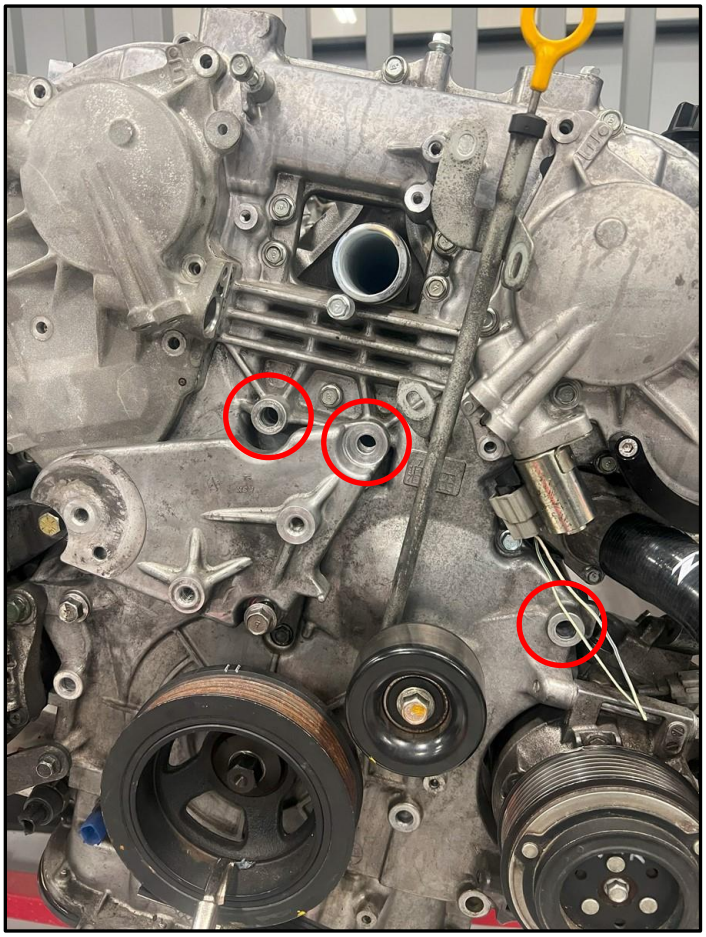
Tools needed:

| | | |
|---|---|---|
| Ratchet | 8mm Allen/Hex Key | Torque Wrench |
| 2x 5mm Allen/Hex Key | Pliers | |

Parts needed:

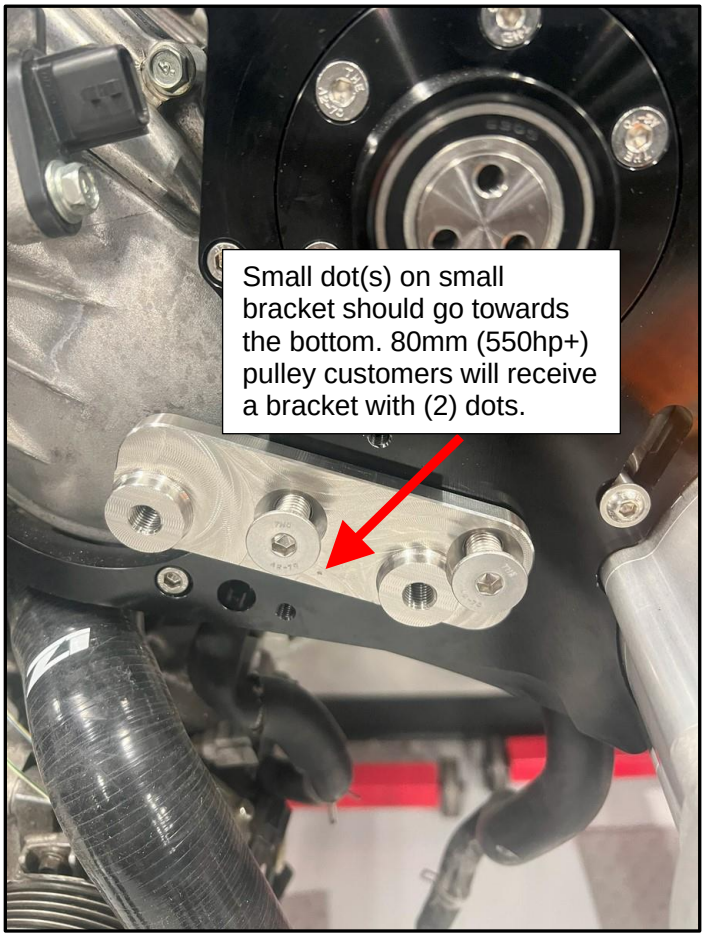
| | |
|---|---|
| Supercharger Unit And Bracket (#38) | Supercharger Belt (#58) |
| Large Pulley (#57) | VHR Supercharger V5 Supplement Kit |

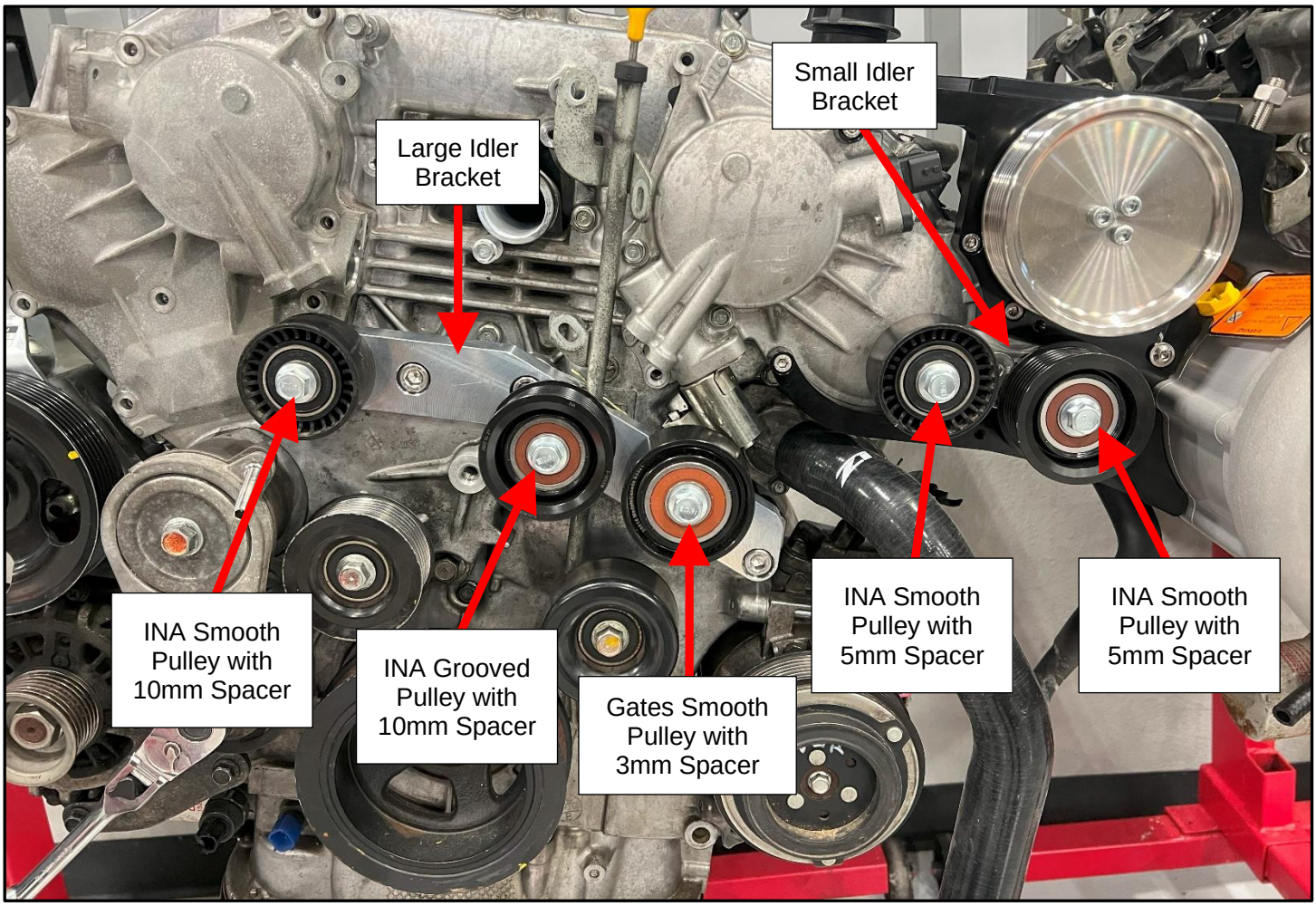
**DETAILED STEP-BY-STEP INSTRUCTIONS FOR THE V5 SUPPLEMENT KIT WILL BE ADDED SOON. THE PICTURES BELOW AND BRIEF OVERVIEW ARE FOR CUSTOMERS WHO ARE VERY EXPERIENCED AND ARE CONFIDENT INSTALLING THESE PARTS WITH MINIMAL INSTRUCTIONS.**

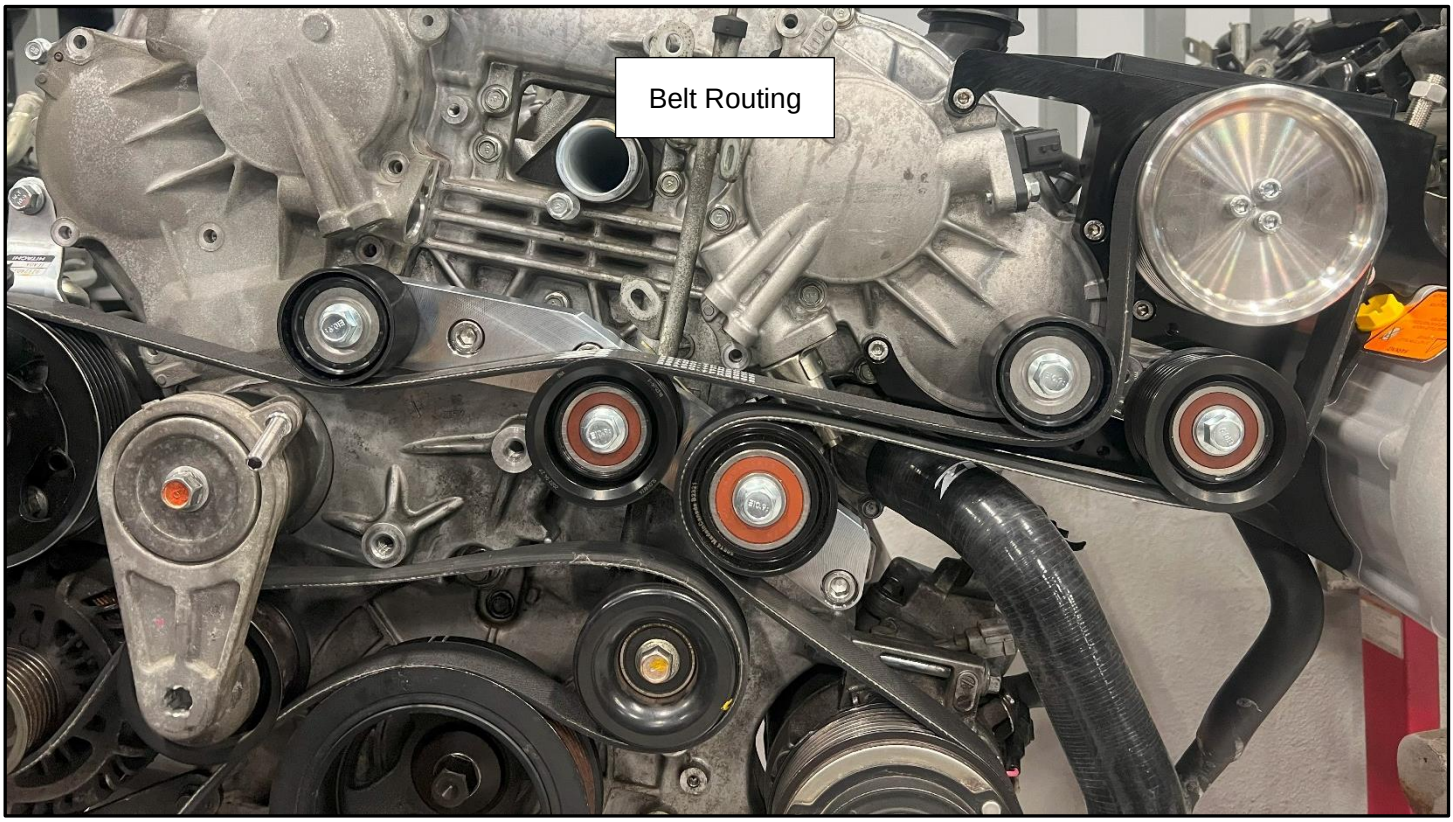


The large idler bracket above will mount to the timing cover in the three circled mounting holes above, using (3) M10 x 110 socket head bolts.

The small idler bracket will mount to the main supercharger bracket using (2) M10 x 25mm flat head bolts.

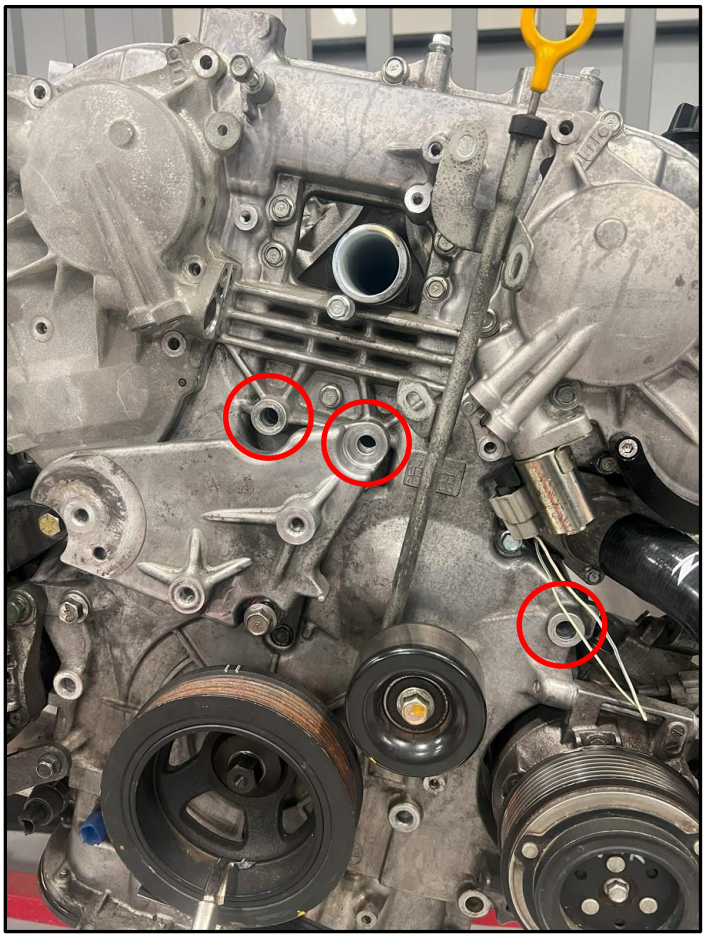



Small Idler Bracket
Large Idler Bracket
INA Smooth Pulley with 10mm Spacer
INA Grooved Pulley with 10mm Spacer
Gates Smooth Pulley with 3mm Spacer
INA Smooth Pulley with 5mm Spacer
INA Smooth Pulley with 5mm Spacer


Belt Routing

49. Locate the VHR Supercharger V5 Supplement Kit that contains the large idler bracket, small idler bracket, three different length spacers, five pulleys, and hardware.

50. The large idler bracket will bolt to the middle of the front timing cover and around the dipstick tube. Remove the bolts circled in the image below. There is also a wiring harness that runs in front of the dipstick that may interfere with the idler pulleys. You can either unclip the harness from the dipstick and move it behind the dipstick or push it back against the timing cover once the bracket is installed.

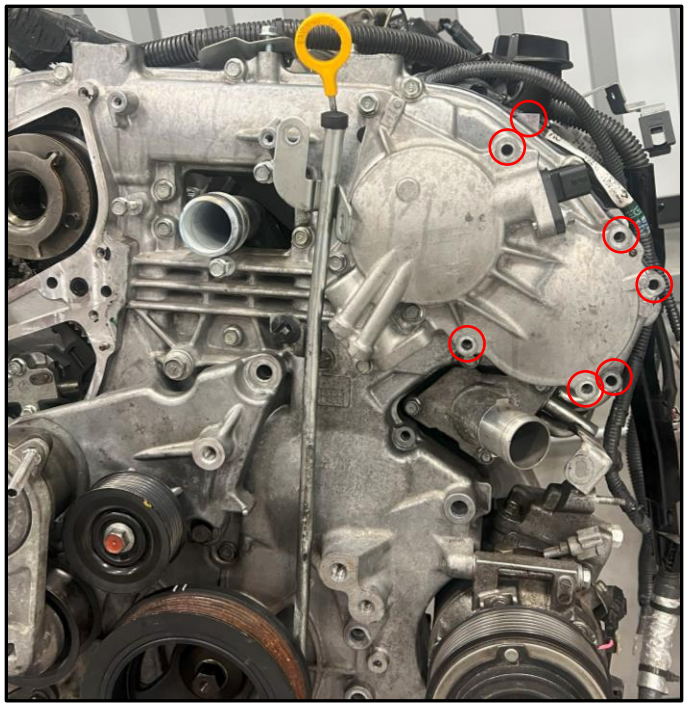


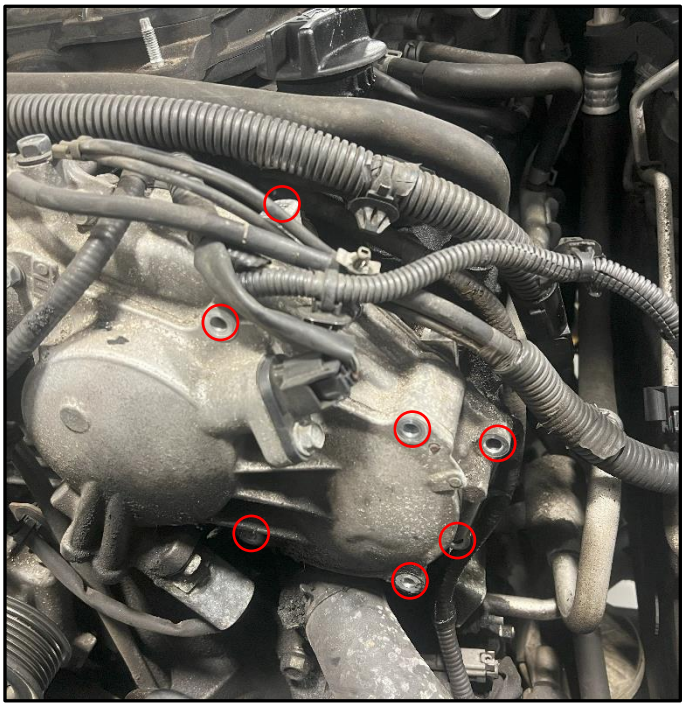
51. The dipstick tube will get slightly pushed toward the passenger side of the engine. Make sure the dipstick rests in the channel and then start the M10 bolts. Torque M10 bolts to 41ft-lbs. Be careful not to pinch the wiring harness between the bracket and front timing case. If you didn't move the wiring harness behind the dipstick, push the harness back against the timing cover and zip tie it to either the dipstick tube or solenoid above the bracket.

52. Install the pulleys onto the large idler bracket according to the diagram on page 18. The order should be bolt -> pulley -> spacer. Torque idler pulley bolts to 21ft-lbs.

53. Locate the main bracket and supercharger unit (#38), the large pulley (#57), (1) M6 x 12mm socket head bolt (#14), (4) M6 x 25mm socket head bolts (#15), and (2) M6 x 60mm socket head bolts (#16).

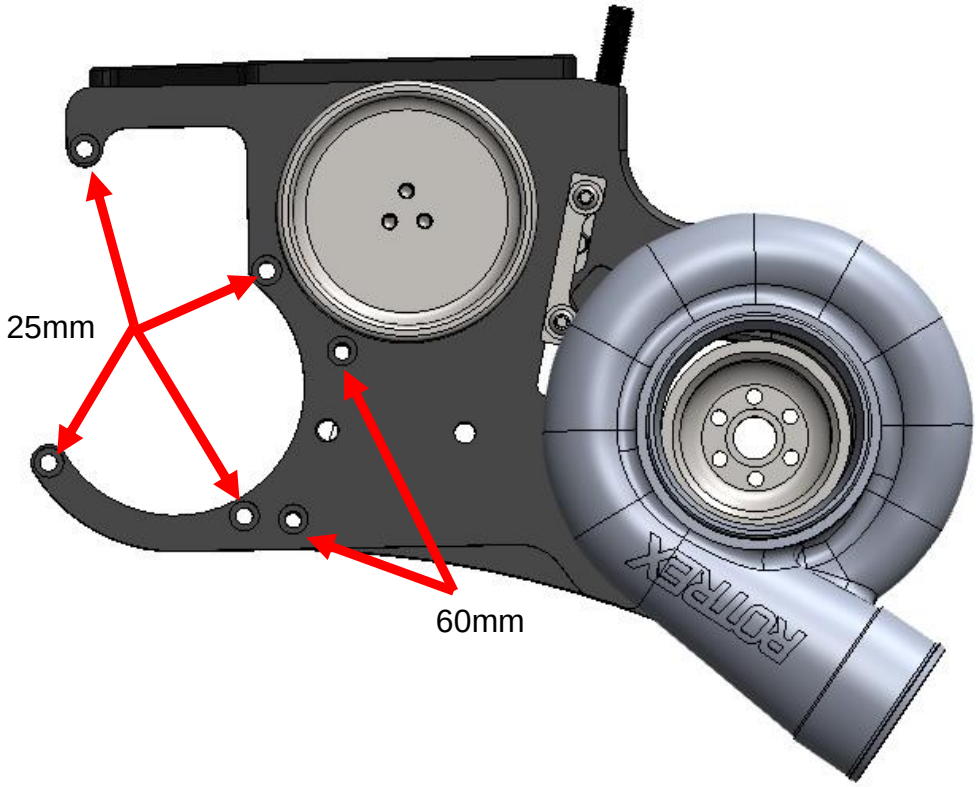
54. The bracket bolts to the front timing cover in (6) locations and on the top of the engine in (1) location. Remove the bolts circled in the images below, these bolts will not be reused. The image at the left is an engine out of the vehicle to show the locations better, the other is still in the engine bay.

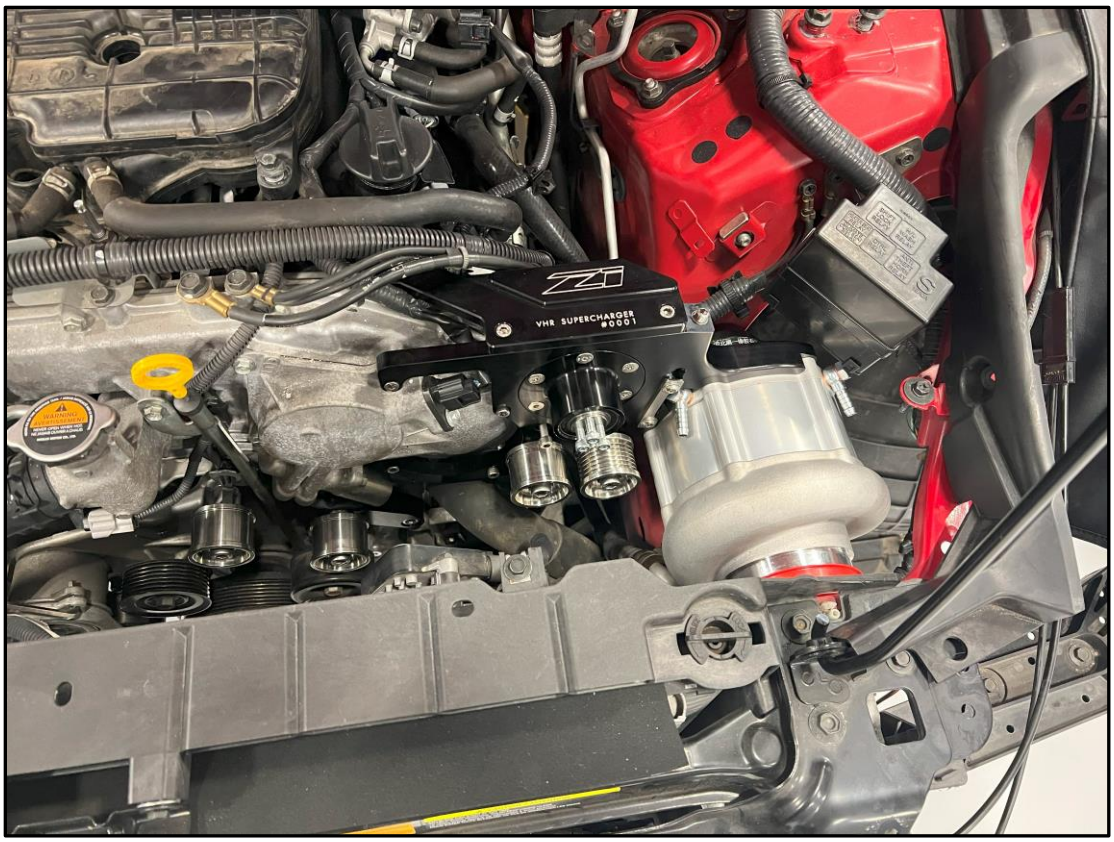




55. There is a bracket at the front right (driver) side of the engine that secures the wiring harness that will need to be removed.

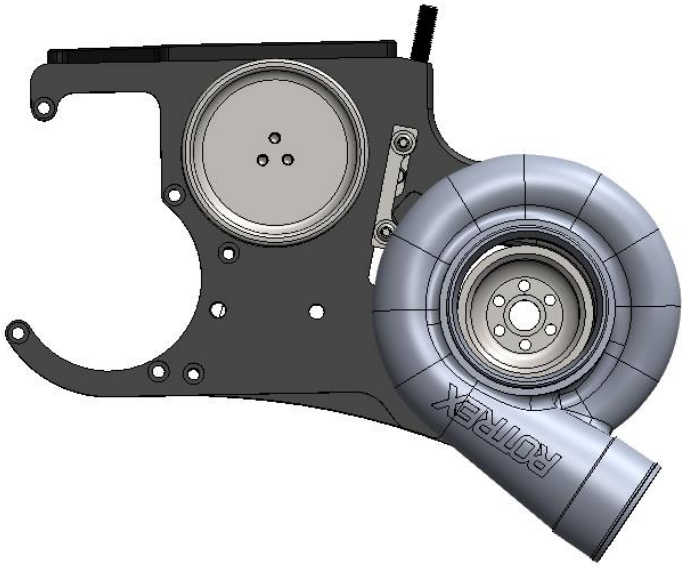
56. The 12mm long bolt is used on the top plate of the bracket, refer to the image below as reference for the 25mm and 60mm bolts locations. With 2-3 bolts, loosely attach the main bracket and blower to the engine. Once loosely mounted, check all around the blower for clearance issues (frame rail, fender well edge, AC lines, etc.). If the blower is contacting anywhere, remove the 2-3 bolts and clearance the vehicle accordingly.



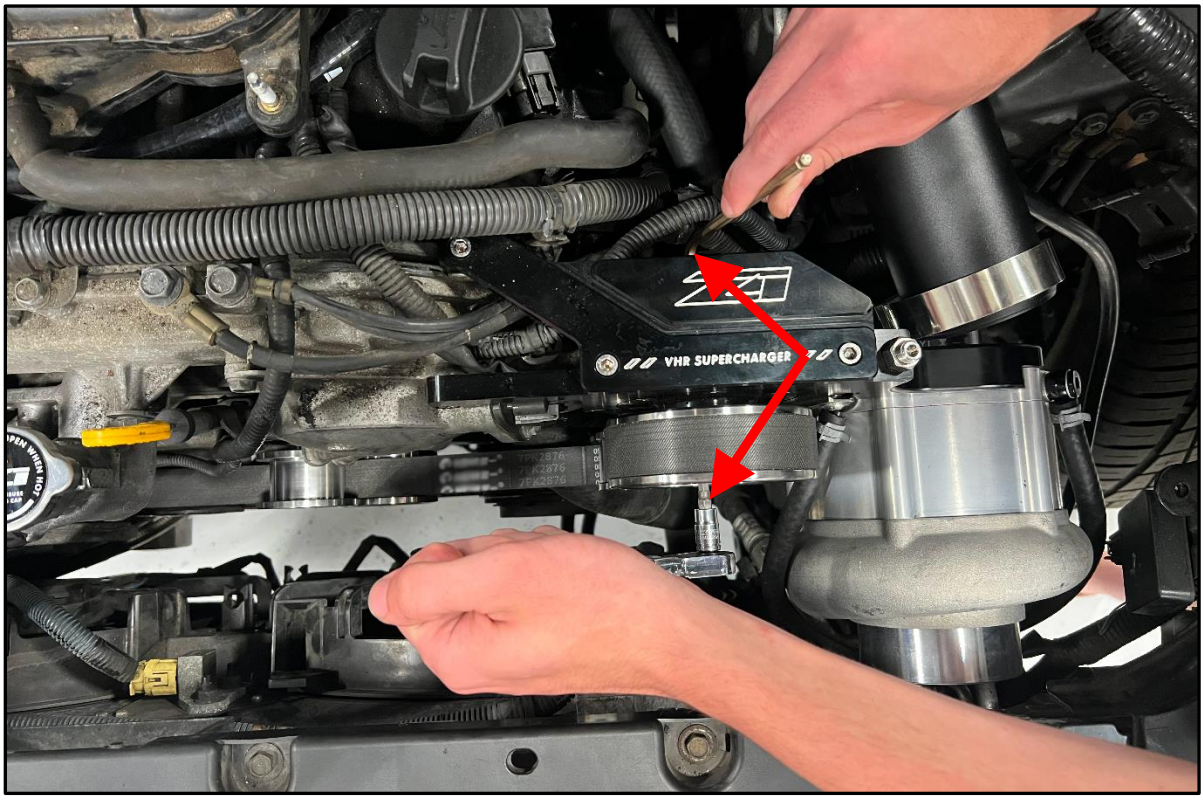




57. Once properly clearanced, bolt the rest of the main bracket and blower to the engine. Torque bolts to 9ft-lbs.

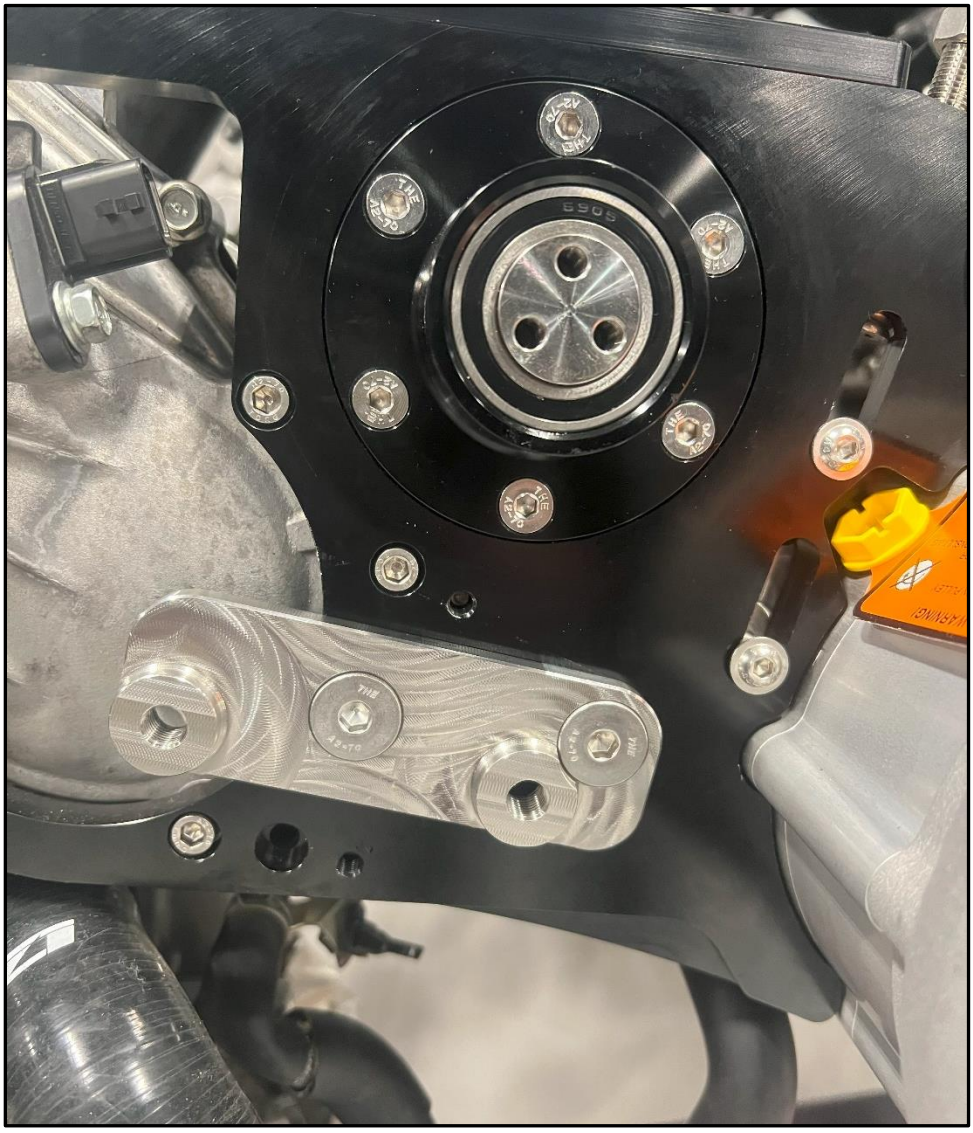
58. Remove the (3) pre-installed socket head bolts on the main bracket and install the large pulley as shown below. DO NOT spin the blower. For added security, you can add just a drop of red Loctite to each bolt, DO NOT add too much as it may leak out into the jackshaft bearing in the bracket.




59. Using 2x 5mm Allen/Hex keys, one on the rear pulley and one on the front, torque down the (3) socket head bolts on both of the pulleys on each side of the bracket. DO NOT spin the pulleys. Torque bolts to 9ft-lbs. Make sure all (3) bolts on BOTH sides are torqued.



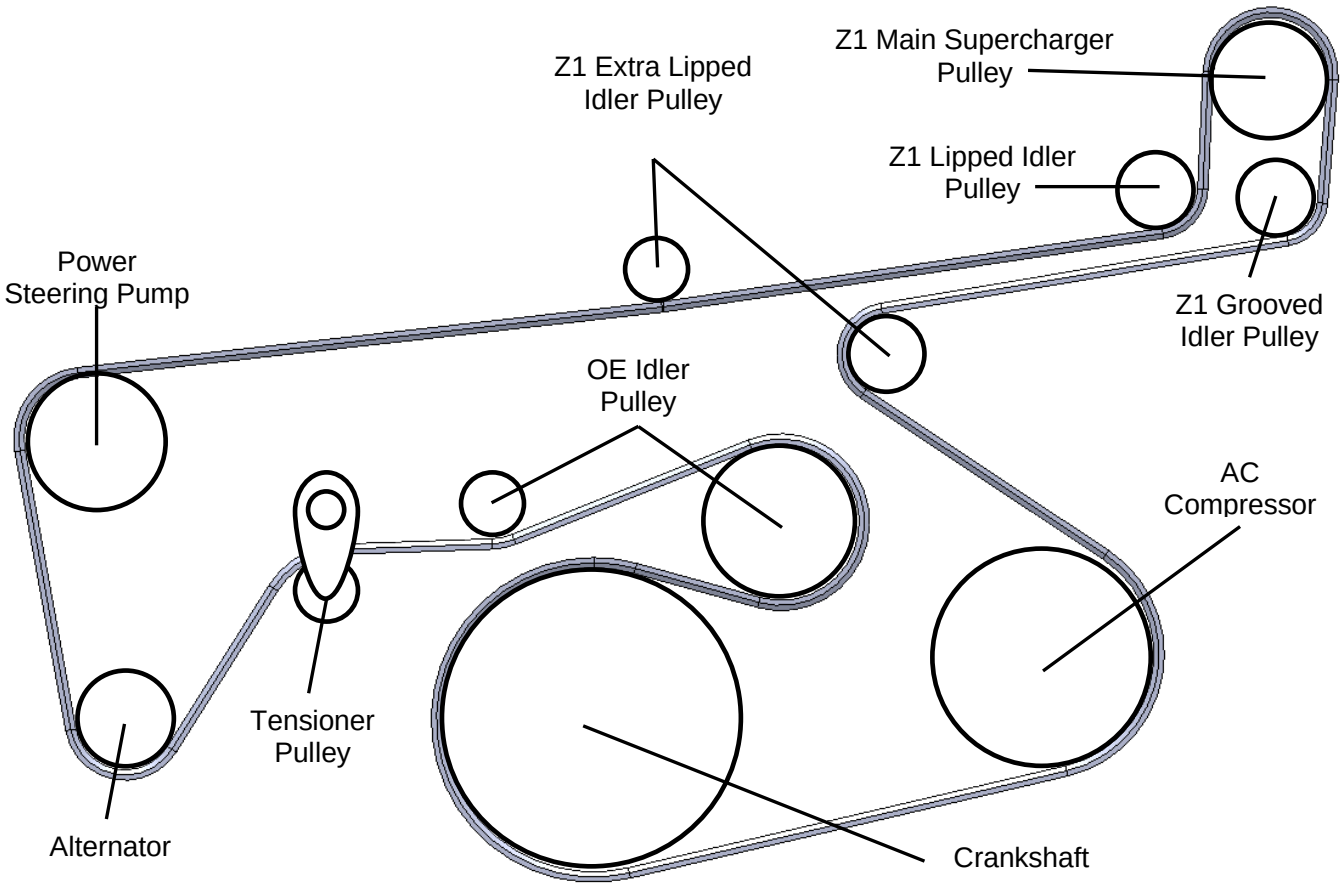
60. Install the small stainless steel idler pulley bracket onto the main bracket using (2) M10 x 25mm flat head screws. The image below shows the bracket on an engine on a stand to better show the parts. The main drive pulley is also not installed in the images.



61. Install the pulleys onto the small idler bracket according to the diagram on page 18. The order should be bolt -> pulley -> spacer. Torque idler pulley bolts to 21ft-lbs.

62. Locate the Z1 supercharger belt (#58). Start the belt installation by positioning it around and above the pulley on the tensioner, so that the smooth side of the belt is resting on top of the pulley on the tensioner. This is a bit tricky and is best done by making a loop with the belt, ribbed side out, and “scoop” under the tensioner pulley to get the belt behind and then on top of the pulley.

The rest of the belt routing is very similar to the stock VHR belt routing but goes to the supercharger between the AC compressor and power steering pump pulleys. Please refer to the diagram below. **THE DIAGRAM BELOW IS THE PREVIOUS REVISION BELT ROUTING. A NEW DIAGRAM WILL BE UPDATED SOON. PLEASE USE THE IMAGE ON PAGE 18 FOR THE V5 SETUP.**




63. Once the belt is nearly on every pulley, slightly remove it from the smooth OE idler that has no lip (beneath the idler bracket installed in step # 50), then make sure it is properly seated on all grooved pulleys, then slide it back on the smooth OE pulley. Since that OE pulley has no lip it is the easiest one to slide it on last.

64. Verify that the belt is properly seated on each pulley, then using a long 3/8” ratchet turn the tensioner slightly to remove the bolt/Allen key and then re-tension the belt.

65. The belt should do most of the work, but hold the large pulley on the main bracket still and using an M5 hex wrench tighten the (3) socket head bolts securing the large pulley to the jackshaft bearing.

## Section Four: The Oiling System

Tools needed:

| | | |
|---|---|---|
| Ratchet | Pliers | Small Fluid Pump or Long Funnel |
| 10mm Socket | Torque Wrench | Hose Cutter |
| 3mm Allen/Hex Key | Vice | |

Parts needed:

| | | |
|---|---|---|
| Z1 13 Row Procooler (#13) | Cushioned Loop P-Lamp (#32) | (2) M22 to 8mm Hose Barb (#29) |
| Setrab Oil Cooler Bracket (#49) | Split Neoprene Rubber Trim (#35) | (2) M22 Banjo Bolts (#30) |
| Z1 Oil Reservoir (#59) | Rotrex Magnetic Oil Filter (#60) | (4) M6 Nylon Lock Nuts (#33) |
| Z1 Oil Reservoir Bracket (#48) | Rotrex SX150 Traction Oil (#43) | (8) Grey Spring Clamps (#26) |

(4) Aluminum Crush Washers (#31)  (3) M5 Button Head Hex Bolts (#3)

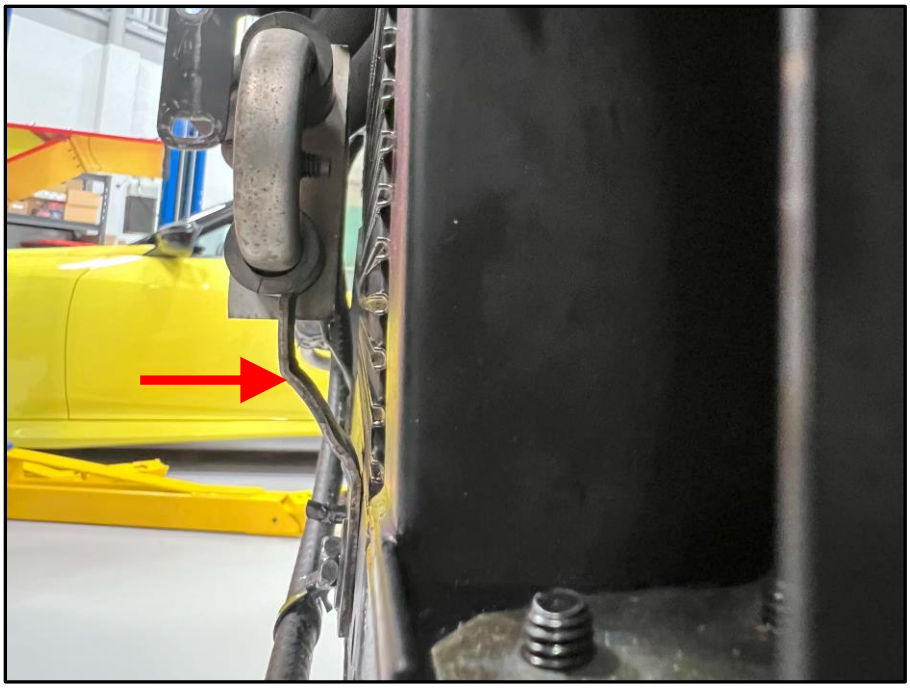
66. Locate the Z1 13 row Procooler (#13), Setrab oil cooler bracket (#49), (2) M22 to 8mm hose barb fitting (#29), (2) M22 banjo bolts (#30), (4) M6 nylon lock nuts (#33), (8) grey spring clamps (#26), (4) aluminum 22mm crush washers (#31), Z1 oil reservoir (#59), Z1 oil reservoir bracket (#48), (3) M5 button head hex bolts (#34), Rotrex Magnetic oil filter (#60), (1) cushioned rubber loop P-clamp (#32), and the ~2" section of split neoprene rubber trim (#35).

67. Tighten the banjo bolts on the Z1 oil reservoir so that the upper barb is pointing down and the bottom barb is pointing forward. Torque to 80in-lbs, over torquing the bolts could damage them. Reference the image below.

68. Install the Setrab oil cooler bracket, onto the bottom of the Z1 13 row Procooler using (2) M6 nylon lock nuts.

69. Remove the (2) 10mm bolts securing the power steering cooler to the bottom of the radiator core support.

70. The brackets for the OE power steering cooler will need to be bent so it will not touch the intercooler. The brackets have (2) 90º bend from the factory. Squeeze the brackets in a vice to make (2) ~135º bends. Use the pictures below as reference.

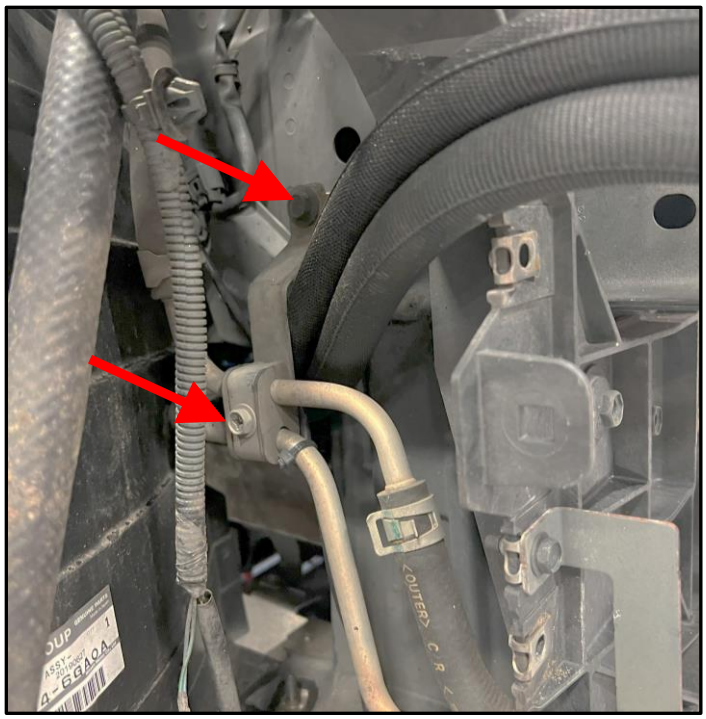


71. Using a long narrow funnel or fluid fill pump, fill the Z1 Rotrex fluid reservoir (the one installed in the passenger fender well) with the supplied Rotrex SX150 fluid. Be careful not to spill the fluid, only one bottle is included. You can purchase more here.

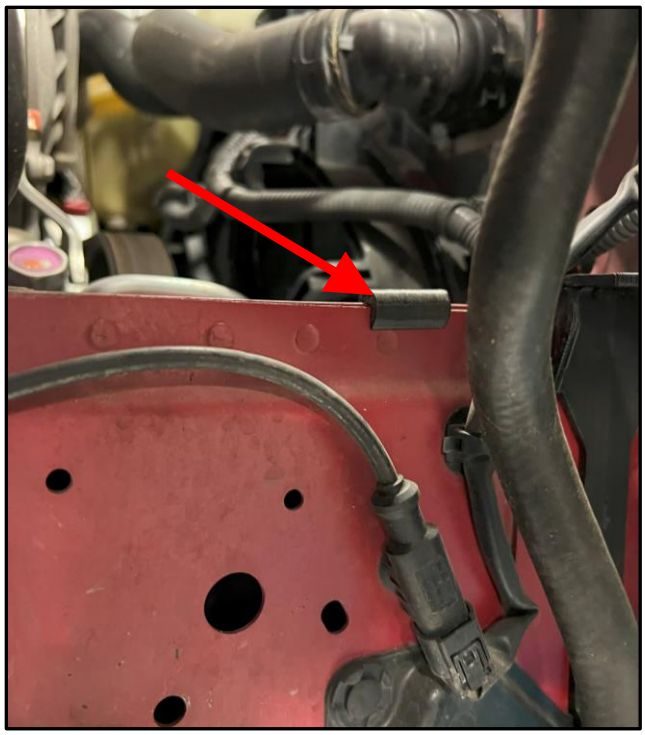
72. With a crush washer on each side, install the M22 banjo bolt through the M22 barb fitting and thread into the Procooler. Point the barb fittings outward towards the sides of the vehicle. There are aluminum bolts, do not over tighten them as they may break.

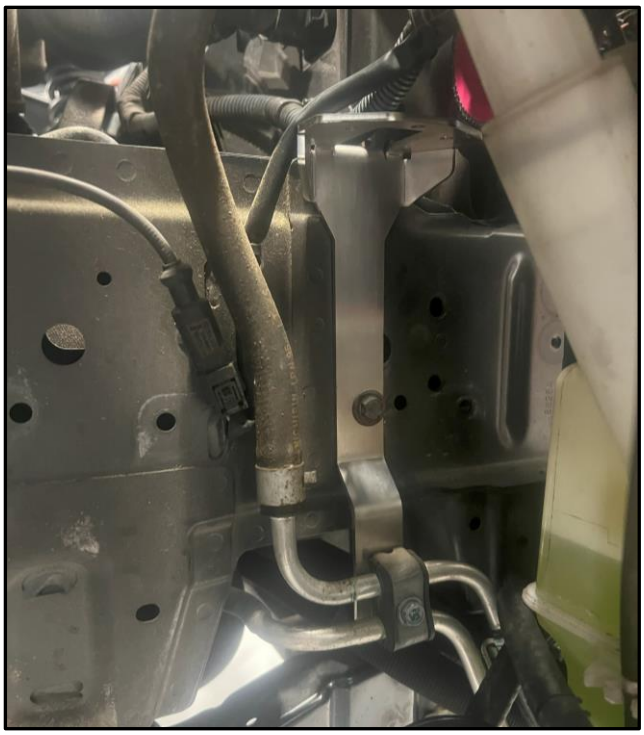
73. Position the Z1 Procooler on the radiator core support and reinstall the OE power steering cooler, sandwiching the Setrab bracket with the Procooler in place (shown above).

74. Remove both bolts securing the power steering cooler line's bracket to the passenger side fender well (shown below).



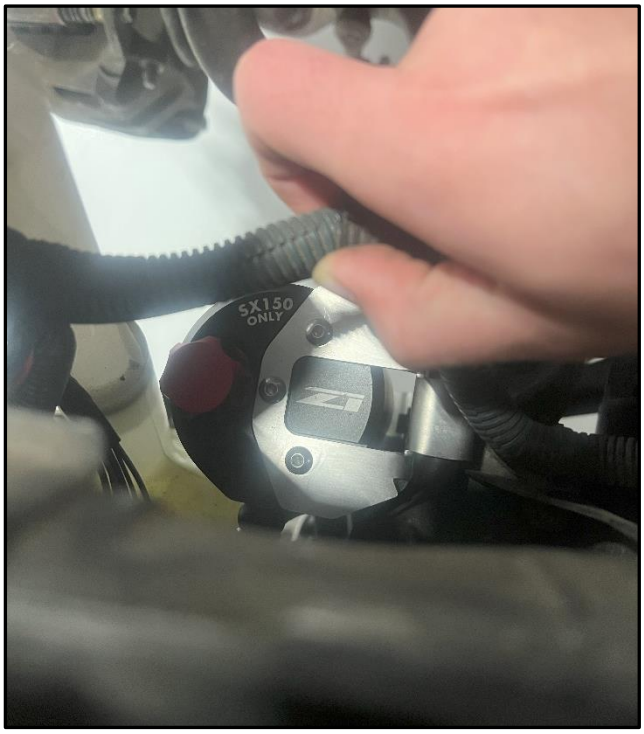
75. Position the small split rubber trim piece on the pinch weld of the passenger side frame.



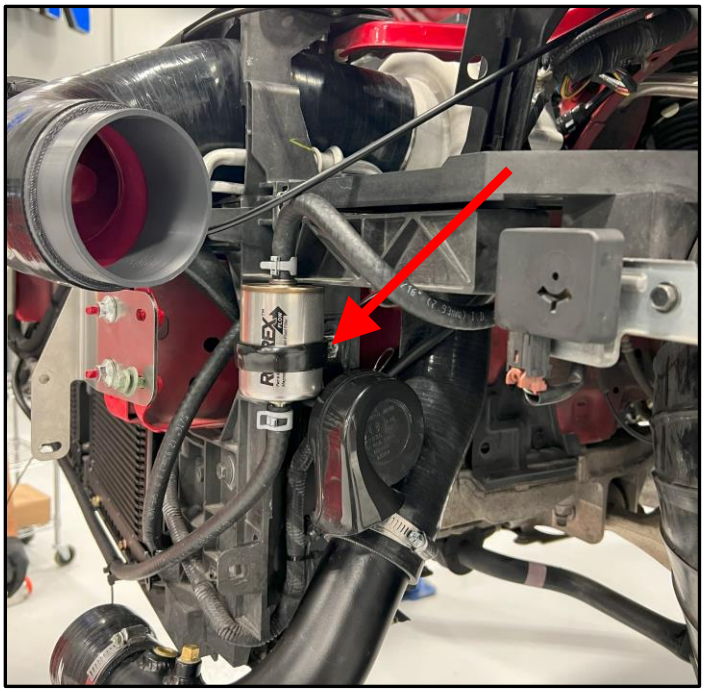


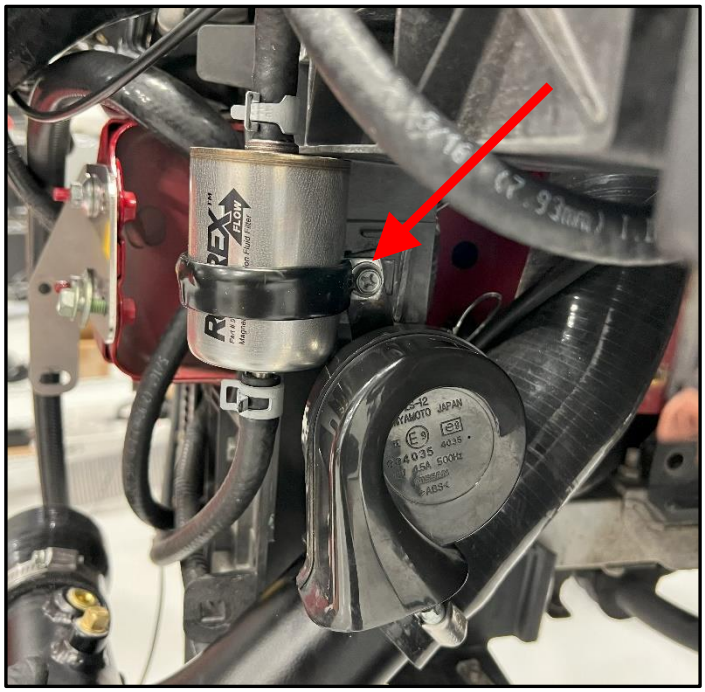
76. Position the Rotrex oil reservoir bracket onto the spilt rubber trim piece and secure it to the frame rail in the same spot as the bracket was removed from in step # 74 with the OE bolt. Then secure the OE power steering cooler lines to the Z1 oil reservoir bracket. The bottom part of the bracket is bent away from the frame rail to allow you to run your engine oil cooler lines in the gap. See picture above as reference for how the engine oil cooler line were ran under the OE bracket.

77. Secure the assembled Z1 Rotrex oil reservoir to the bracket with the (3) provided M5 x 8mm button head screws with a 3mm Allen/hex bit. You will likely need to hold the wiring harness out of the way to access the bolt holes.



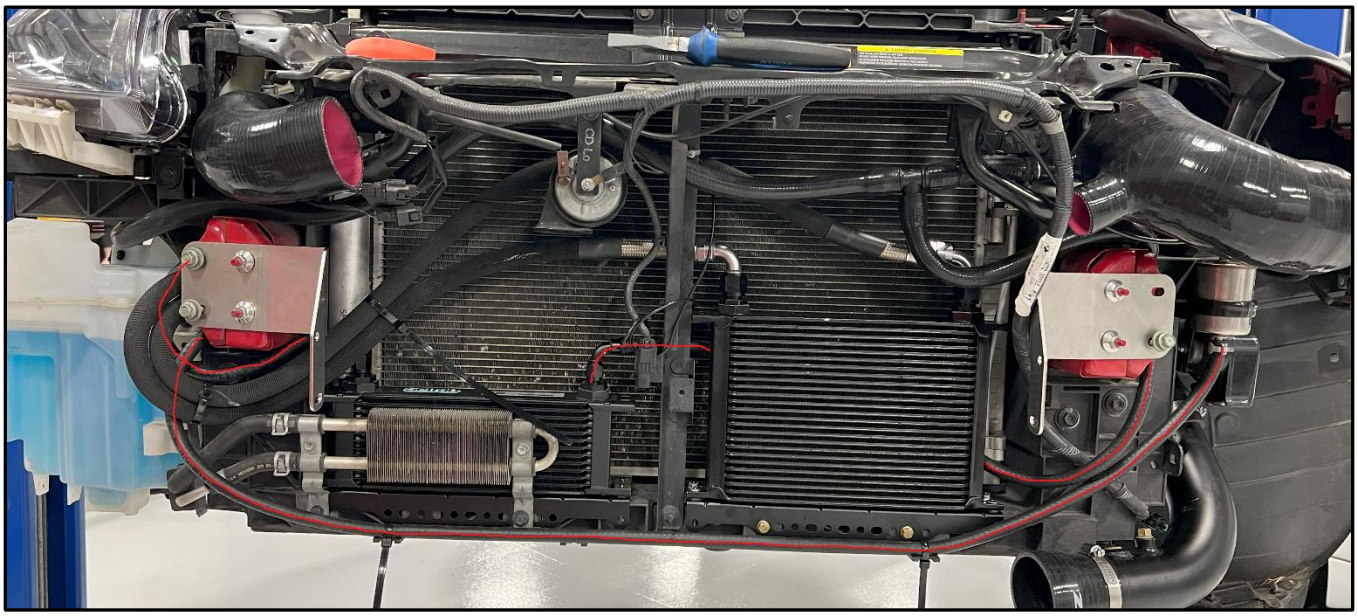

78. Remove the 10mm bolt securing the driver side horn to the core support. Using the provided large, cushioned rubber loop P-clamp, secure the Rotrex magnetic oil filter to the core support under the driver's headlight (as shown below) with the horn rotated and sandwiched under the P-clamp. The filter has an arrow indicating the direction of flow for the oil, ensure the arrow is pointed up or towards the supercharger.





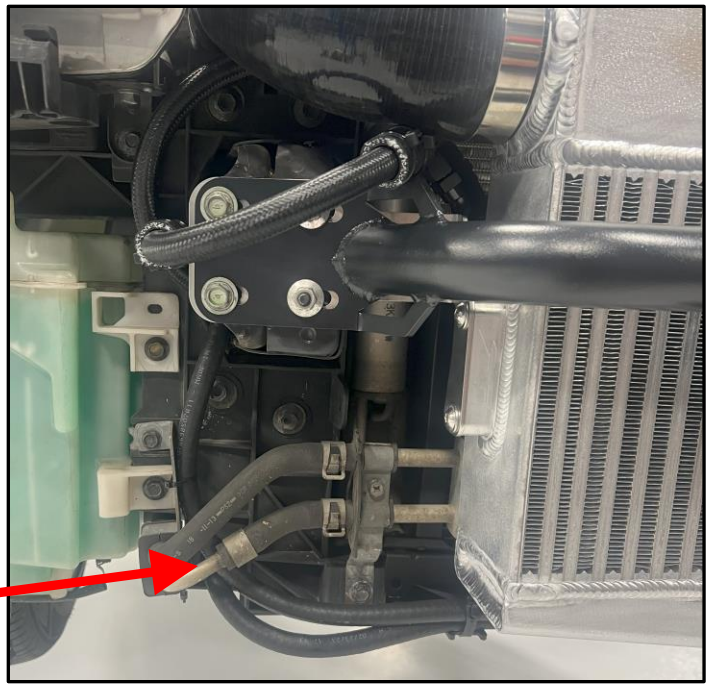
Installation Note: The images above are shown with the lines, clamps, and supercharger outlet already installed. Those components will be installed in the steps below.

79. The Rotrex oil system will need to be plumbed just like the diagram below. Using the provided 25’ of 5/16” hose, cut appropriate lengths and install the hose onto all of the Rotrex oil system components, with a grey spring clamp at each connection. The ports on the Rotrex supercharger unit are market “IN” or “OUT”.
80. Hose routing from bottom (outlet) of the Z1 Rotrex oil reservoir to the bottom (inlet) of the Rotrex magnetic oil filter.
81. Hose routing from the top (outlet) of the oil filter to the inlet of the Rotrex supercharger unit.
82. Hose routing from the outlet of the Rotrex supercharger unit to the inlet of the Z1 Procooler.
83. Hose routing from the outlet of the Z1 Procooler to the top (inlet) of the Z1 Rotrex oil reservoir.



a. There are countless ways to route all the hoses. The image above is what we found best on our vehicles based on other modifications. We have provided a few extra feet of hose as you may prefer to route some of the lines in a different location, just make sure they follow the same path listed above and shown in the diagram. For the lines running across the bottom of the core support, neatly zip tie them to the core support.

b. <u>G37 Owners</u>: Drill a hole in the bottom left (passenger) corner of the core support. Route the hose connecting to the bottom of the fluid reservoir in the wheel well through that hole.



84. If you have not replaced your spark plugs recently, it is recommended to do so at this time. For forced induction applications like the Z1 supercharger, we recommend spark plugs to be gapped at 0.032". OEM Nissan R35 GT-R spark plugs are pre-gapped and a drop-in solution. Install either R35 GT-R spark plugs or remove your old ones and gap them to 0.032". Be very careful when handling the sparkplugs, do not drop them. When installing, both new and used sparkplugs, check the porcelain/ceramic for any cracks. The cracks may be very small and hard to see. If your hands have a little dirt on them, rotate the plug while holding the porcelain, any dirt on your hand should transfer into the crack and make it easier to identify.

## Section Five: Coolant Reservoir

Tools needed:

| | | |
|---|---|---|
| Ratchet | 4mm Allen/Hex Key | Small Fluid Pump or Long Funnel |
| 10mm Socket | Pliers | Hose Cutter |
| 12mm Socket/Wrench | Vice | |

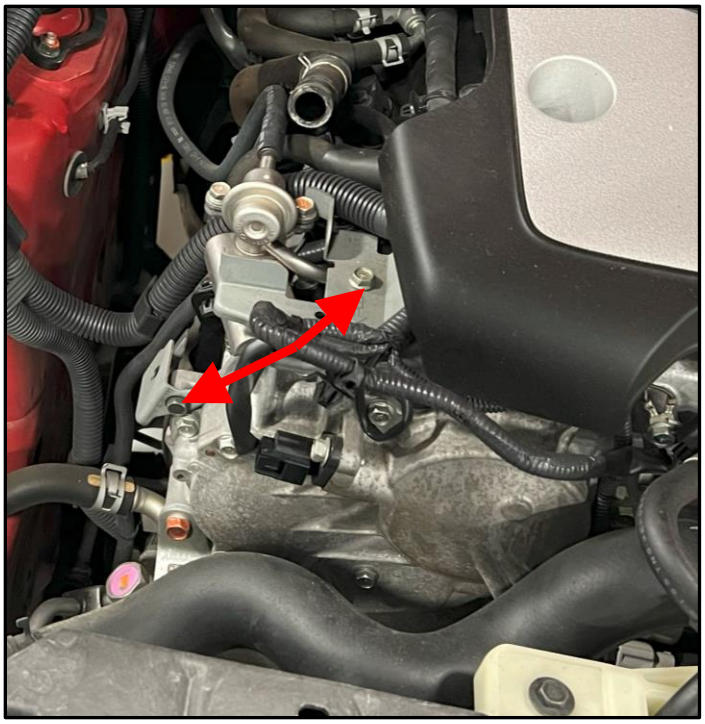
Parts needed:

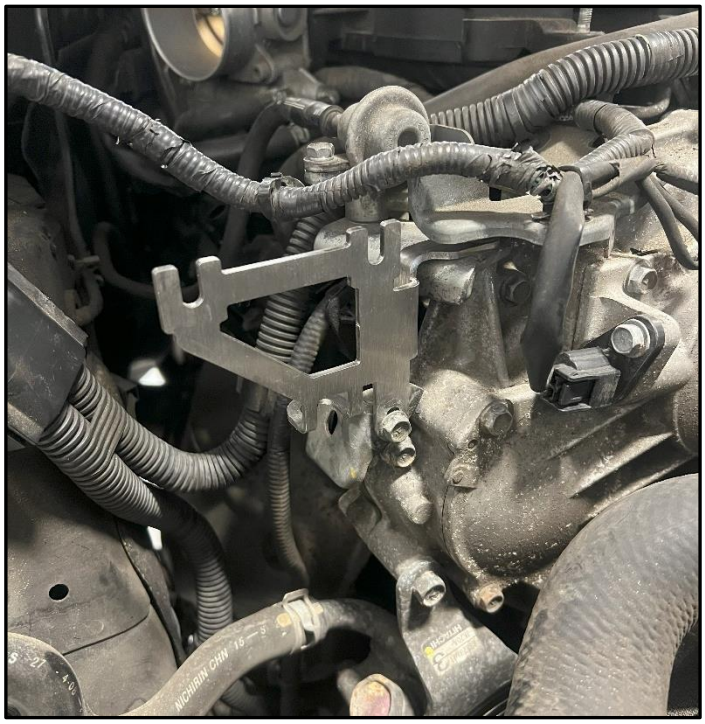
Z1 Coolant Reservoir Kit (#1)

85. Locate the Z1 Coolant Reservoir Kit (part number 23067) This box will have all the components needed.

86. Prepare the can by fully tightening the plug, both barbs, and the bottom banjo bolt with the banjo pointing towards the rear of the can. Torque the banjo bolt to 80in-lbs (the other hardware does not have a specific torque spec, just make them snug). Then install the long universal hose onto the bottom banjo barb with a grey clamp.

87. Remove (2) 10mm bolts on the passenger side of the engine bay securing wiring harness brackets. Lift up the bracket under the top 10mm bolt to reveal a 12mm bolt securing the fuel line bracket. Remove the 12mm under the bracket.





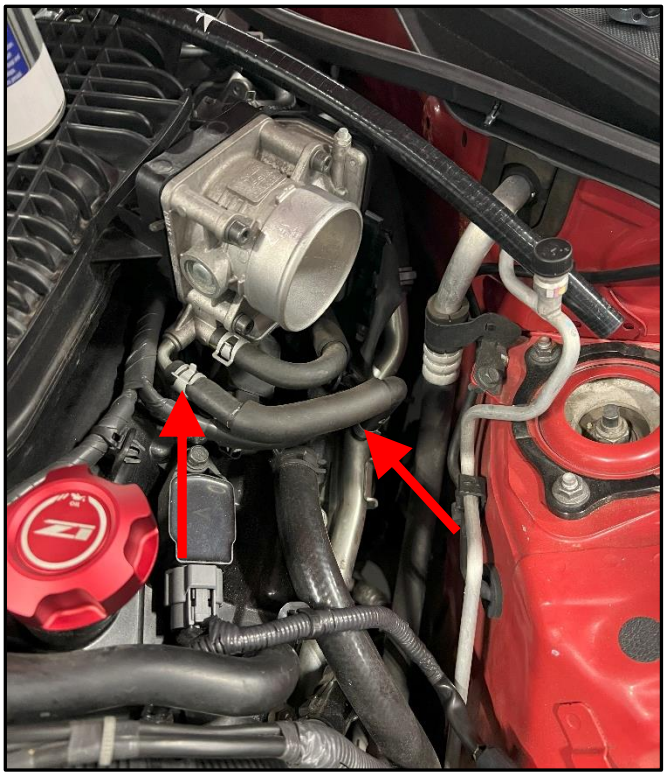
88. If you have not already installed your fueling components (injectors, fuel pump, etc.) now would be a great time. Refer to the instructions provided with your fueling components.

89. Position the Z1 bracket in place above the fuel line bracket but underneath the top bracket, then secure both brackets back in place using the OE bolts (as shown above). If you are still running the factory fuel feed line, you will likely need to carefully pry/bend the bracket onto the top mounting location.

90. Loosely install the (2) M5 bolts provided into the back of the reservoir. Slide the Z1 reservoir onto the slots on the bracket. Then, tighten the M5 button head bolts.

**Steps # 91-94 assumes you still have the coolant lines running to your throttle bodies. If you have done the throttle bodies coolant bypass skip to step # 95**

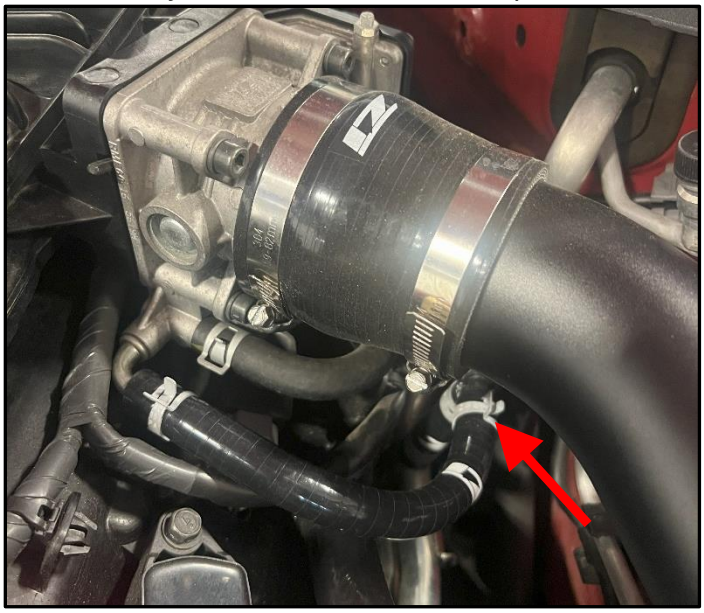
91. Remove the coolant hose attached to the driver side throttle body shown below. The arrows shows where it is connected to the throttle body and then to the heater pipe between the engine and driver side frame rail.

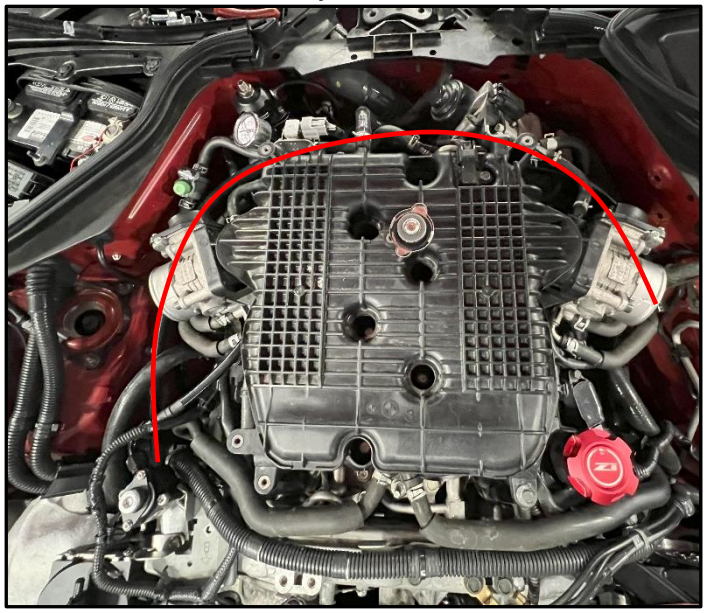


92. Route the hose connected to the bottom of the reservoir behind the engine and towards the driver side throttle body. Cut the hose a couple inches above the barb on the heater pipe. Refer to the images in step # 78.

93. Install the 8mm equal tee fitting into the hose from the previous step. Then cut another short section of hose to connect the tee fitting to the barb on the heater pipe.

94. Lastly, run a hose from the last spot on the tee to the barb on the throttle body.





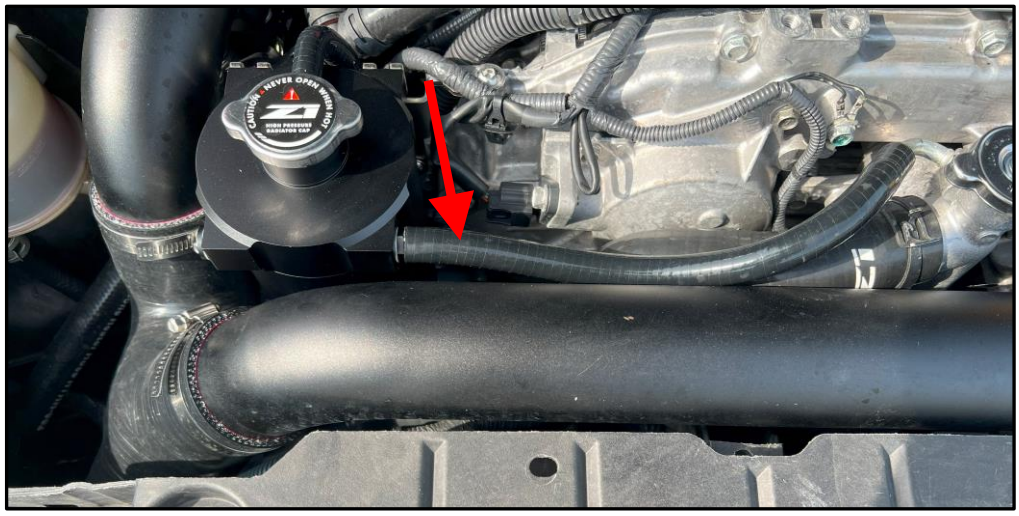
Note: Image above at left is shown with the charge piping installed. The tee fitting and coolant lines are shown with an arrow below the throttle body coupler.

**Step # 95 is for customers who no longer have the throttle body coolant hoses. If you already followed steps # 91-94 to install the coolant reservoir lines, skip to step # 96.**

95. Using the universal silicone hose attached to the bottom of the reservoir and the equal tee fitting, tee into your coolant bypass hose that routes from the heater pipe to the water outlet at the back of the engine.

96. Attach the L-shaped coolant overflow hose to the top barb on the Z1 coolant reservoir and route it through the hole in the bracket towards the ground.

97. Cut to length and install the remaining universal coolant line routing from the top of the coolant neck, where the upper radiator hose connects, to the top port on the Z1 coolant reservoir that faces the coolant neck. (Charge piping in the photo below will be installed in later steps.)



98. Attach the flat, non-pressurized, Z1 radiator cap onto the coolant neck at the front of the engine. Attach the pressurized Z1 radiator cap onto the top of the coolant reservoir.

## Section Six: Charge Air

Tools needed:

| | | |
|---|---|---|
| Ratchet | 12mm Socket | 5/16” Allen/Hex Key |
| 11mm Deep Well Socket | 1/2” Wrench | 5mm Allen/Hex Key |

Parts needed:

| | | |
|---|---|---|
| Z1 Bash Bar (#62) | Turbosmart RacePort (#61) | Silicone Coupler Kit (#11) |
| Z1 Intercooler (#9) | (4) M8 Flange Button Bolts (#17) | Silicone Reducer Hoses (#12) |
| Intercooler Brackets (#47) | Charge Pipe Set (#10) | All (13) T-Bolt Clamps (#50, 51, 52) |

99. Locate the Z1 bash bar (#62), Z1 intercooler (#9), (2) intercooler brackets (#47), Turbosmart RacePort (#61), and (4) M8 x 16mm flange button head bolts (#17).

100. With thread sealant, install the barb fitting into the right port of the RacePort with a 1/2” wrench and install the plug into the left with a 5/16” hex key. Install the Turbosmart RacePort onto the flange on the top of the intercooler.

101. Loosely install the intercooler brackets onto the intercooler with the (4) M8 flanged button head bolts.

102. Position the intercooler brackets onto the studs on the vehicles frame rails.

103. While holding the intercooler in place, position the bash bar onto the studs on the frame rails. Secure the bash bar and intercooler to the vehicle with the (4) nuts and (4) bolts removed in step # 24/32.

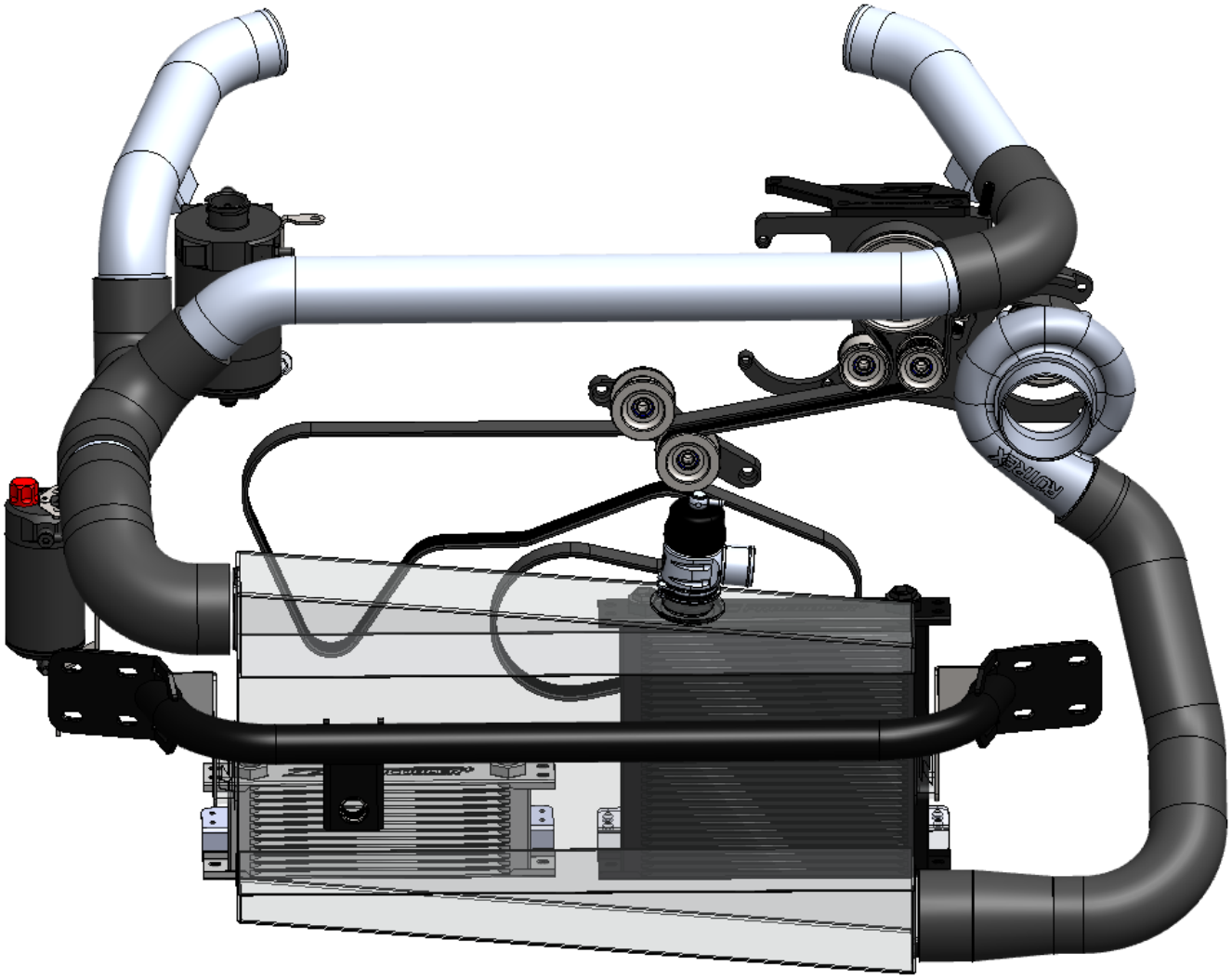
104. The bottom slots on the intercooler brackets are slotted, tip the intercooler to the desired angle then tighten the M8 bolts. Check to make sure the OE power steering cooler is not touching the intercooler. If it is, you will need to remove the intercooler, remove the brackets for the power steering cooler and bend them some more.

105. Locate the aluminum charge pipe set (#10), silicone coupler kit (#11), (2) silicone reducer hoses (#12), and all (13) T-bolt clamps (#50, #51, #52).

106. Remove the (2) intake tubes from the charge pipe set box. Transfer over the MAF sensor's from the OE intakes into the new Z1 charge pipes.

107. Install the (2) small silicone reducer couplers onto the throttle bodies with the larger side on the throttle bodies and a medium (73mm-81mm) T-bolt clamp on each.

108. Install the rest of the charge pipes and silicone couplers as shown in the diagram below. The outlet (passenger side) of the intercooler will use the 3" silicone elbow connected to the 3" metal joiner, and then connected to the single side of the silicone y-coupler.



a. Intercooler outlet:
   i. Install the metal joiner into the large L-shaped silicone coupler, secure with clamp but in a position where the clamp is still accessible once installed.
   ii. Install larger L-shaped silicone coupler over intercooler outlet and into core support.
   iii. With a clamp loosely on the Y silicone coupler, install the single side of the Y-coupler onto the metal joiner in the core support. Make sure the clamp is clocked so the screw is accessible through the core support.
   iv. Loosely install the rest of the charge piping. Each connection point will need a T-bolt clamp. Use the small (67mm-75mm) clamps on the 2.5" couplers, and the largest (79mm-87mm) clamps on the 3" couplers.
   v. Once in place, position/rotate all the charge piping and Y-coupler to prevent any interference and so the couplers are sitting nicely.
   vi. Lastly, tighten each clamp.

109. G37 Owners: The fuse box behind the driver-side headlight will likely interfere with the silicone elbow coupler above the blower. If you cannot fit the elbow between the main bracket and fuse box, you will need to remove the fuses/relays from the box and zip tie them out of the way.

## Section Seven: Intake

Tools needed:

Ratchet

8mm Socket or Wrench

Parts needed:

K&N Air Filter (#53)

Large Silicone Intake Pipe (#54)

84mm Metal Air Filter Joiner (#55)

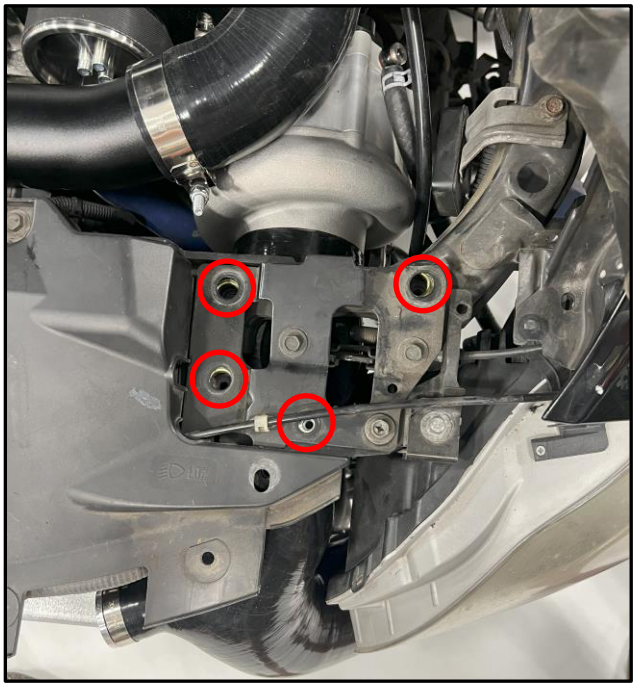
(2) Large 3.5" Worm Gear Clamps (#56)

110. Locate the K&N air filter (#53), the large silicone intake pipe (#54), 84mm metal air filter joiner (#55), and (2) large 3.5" worm gear clamp (#56).

111. Tighten the small worm clamp that is around the BPV plug in the intake pipe.

112. Place a clamp on the supercharger unit's inlet. If you place the clamp on the silicone intake tube it will be much harder to install the tube through the core support.

113. G37 Owners: Lift up on the rubber hood seal just behind the driver headlight. Remove the driver side hood latch bolts on the top of the radiator core support, just in front of the blower. Lift hood latch assembly up and out of the way.



114. Install the silicone intake tube through the core support passthrough that was enlarged earlier. It will likely be a tight fit and twisting/rotating the tube while pushing will help.

Note: The above image shows a prototype 3D printed silicone intake tube.

115. If you are having trouble installing the intake tube through the core support it is likely getting caught up on the metal section that was enlarged in step # 42. You may be able to carefully stick your finger or a screwdriver in there to press down on the silicone to get it past that section. If that doesn't work, you may need to trim the core support some more.

116. G37 Owners: The silicone coupler will likely not line up perfectly with the inlet of the blower. Using a screwdriver or L-shaped pick, stick the tool on the inside of the coupler and while pushing the coupler up and into the core support, pull it over and around the inlet of the blower with the tool. Once the coupler is on the blower, tighten the large hose clamp. Then reattach the hood latch the was removed in step # 113.

117. With a supplied clamp, install the 84mm air filter joiner into the air intake silicone inlet with the bead roll of the joiner inside the silicone inlet. Then install the K&N filter and included clamp onto the joiner.

## Section Eight: Crankcase Ventilation and MAP Sensor

Tools needed:

- Ratchet
- 10mm Socket or Wrench
- Pliers
- Hose Cutter
- Map Sensor (if purchased)

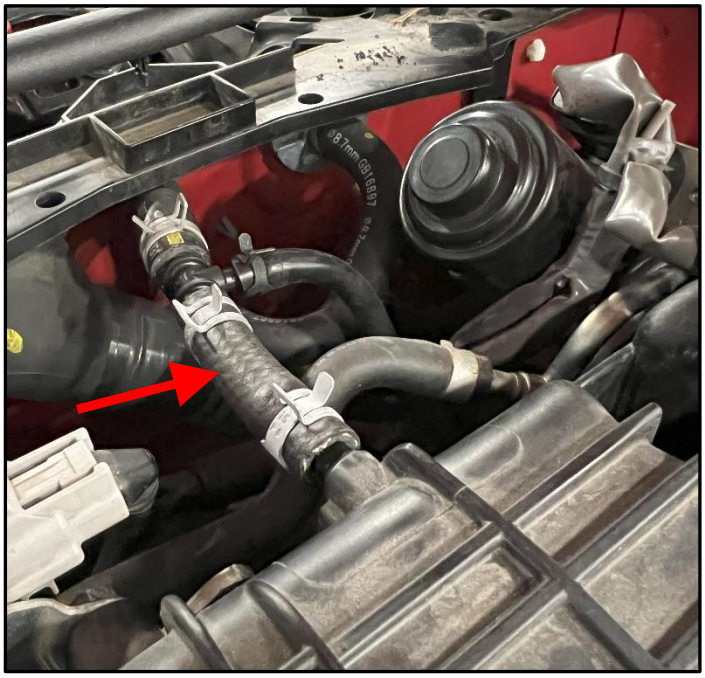
Parts needed:

- 5mm Vacuum Line (#45)
- 3/8 to 1/4 Reduction Tee Fitting (#28)
- 5/8 PCV Fuel Line Hose (#44)
- 5/8 Equal Tee Fitting (#27)
- (2) Medium Black Spring Clamps (#24)
- (2) Tiny Black Spring Clamps (#23)
- (6) Large Spring Clamps (#25)

118. Locate the 10ft of 5mm vacuum line (#29), the 3/8" to 1/4" reduction tee fitting (#21), (2) medium sized black spring clamps (#17), and (2) tiny spring clamps (#16).

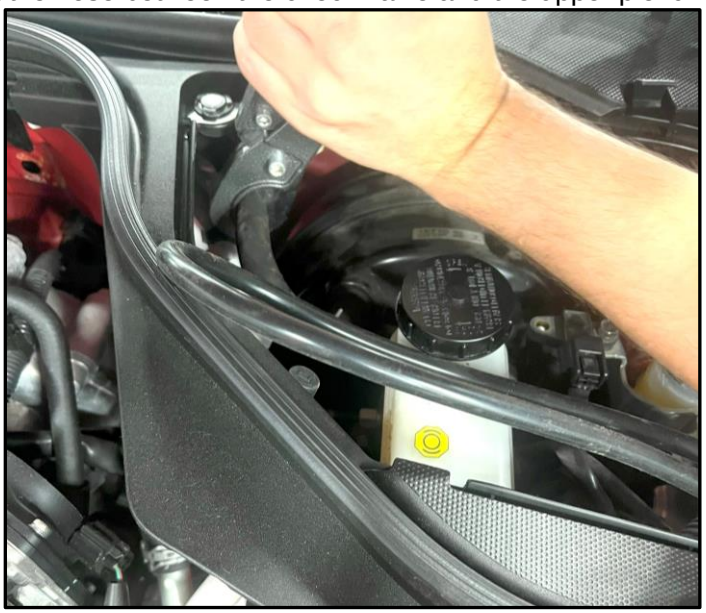
119. This vacuum line will be used as the boost reference for the Turbosmart bypass valve. It will need to be plumbed into a vacuum line. We recommend plumbing the supplied reduction tee fitting into the brake booster vacuum hose that runs to the rear of the upper intake plenum. There are several different spots you can tee into; a couple options are shown on the next page.

    a. Below shows the easiest spot right off the back of the intake plenum.



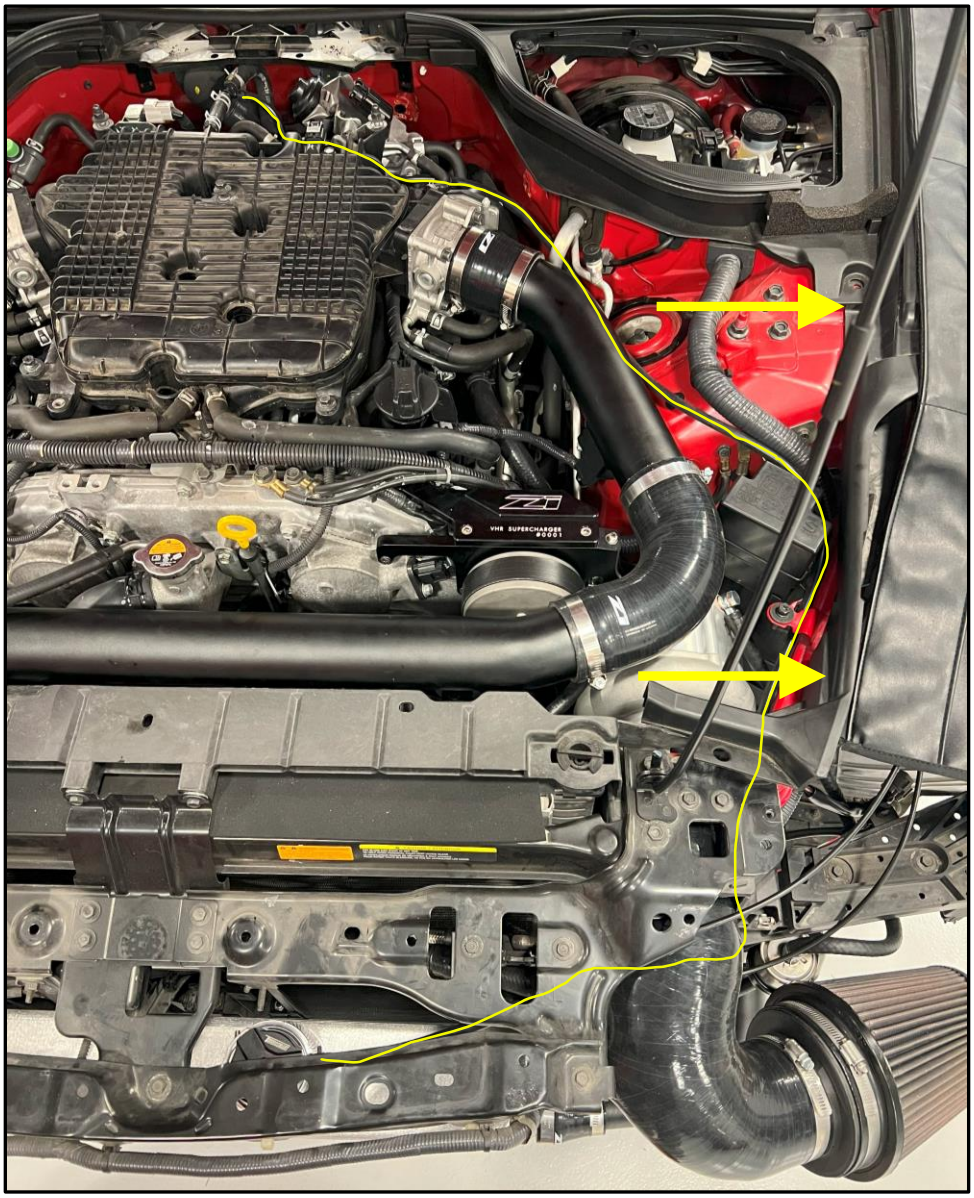
        i. Remove the brake booster hose. (You can trim it shorter if you'd like but it is not necessary)
        ii. Install the reduction tee into the brake booster hose.
        iii. Install a small section of the 5/16" rubber hose onto the plenum and other side of the tee fitting.
        iv. Install the 5mm vacuum line onto the 1/4" barb of the tee fitting.
        v. Make sure all connection points are secured with a clamp.

    b. You can also tee into the brake booster hose after it routes behind the firewall and towards the brake booster compartment for a cleaner looking installation.
        i. The brake booster hose has a check valve in the line near the brake booster. Feel/squeeze the hose to locate the check valve.
        ii. Cut the hose between the check valve and the upper plenum (shown below).



iii. Install the reduction tee in between the cut brake booster hose.
iv. Install the 5mm vacuum line onto the 1/4” barb of the tee fitting.
v. Make sure all connection points are secured with a clamp.

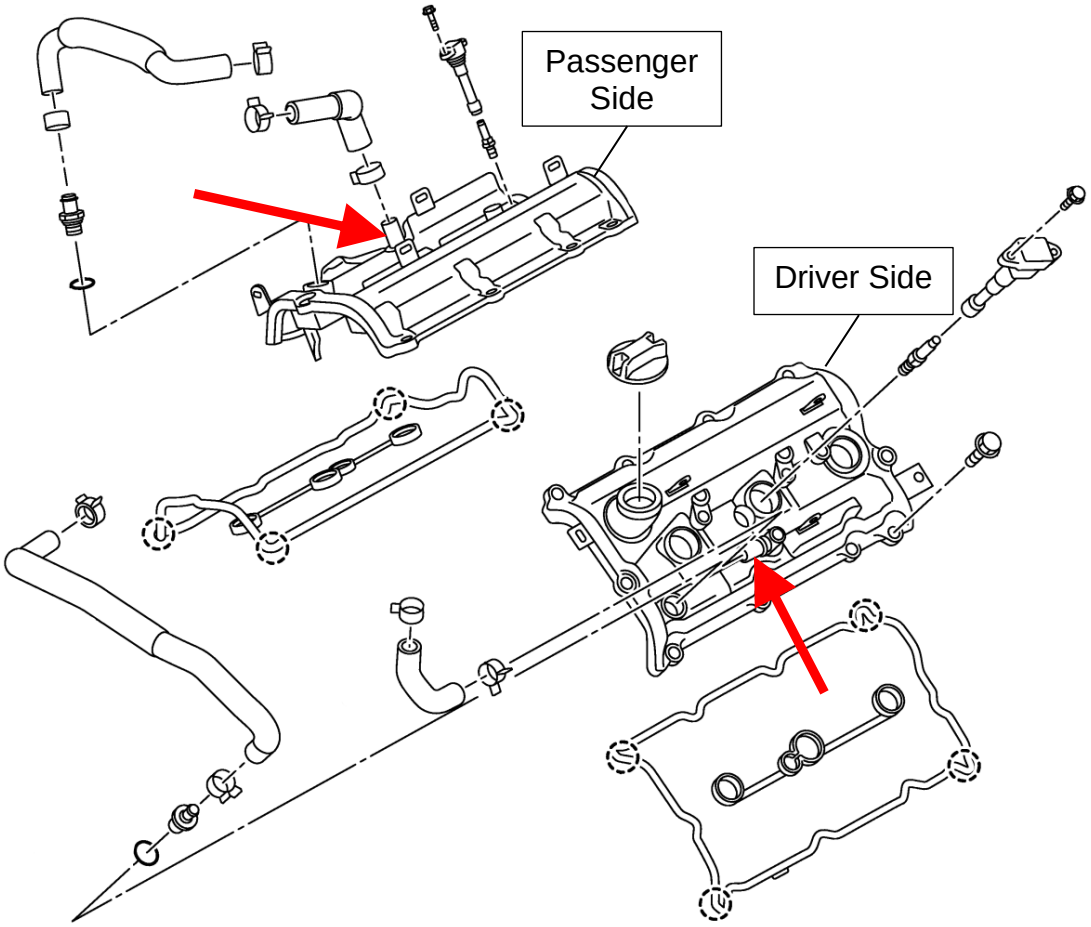
120. Once the vacuum line is tee’d into the brake booster hose, route the line towards the front of the car.
    a. The image below shows the first method mentioned, where the vacuum line is tee’d right off the back of the plenum. The line then routes around the engine, around the supercharger bracket, through the core support (that was enlarged earlier), and then to the port on the Turbosmart RacePort. The line’s path is drawn/highlighted with a yellow line.



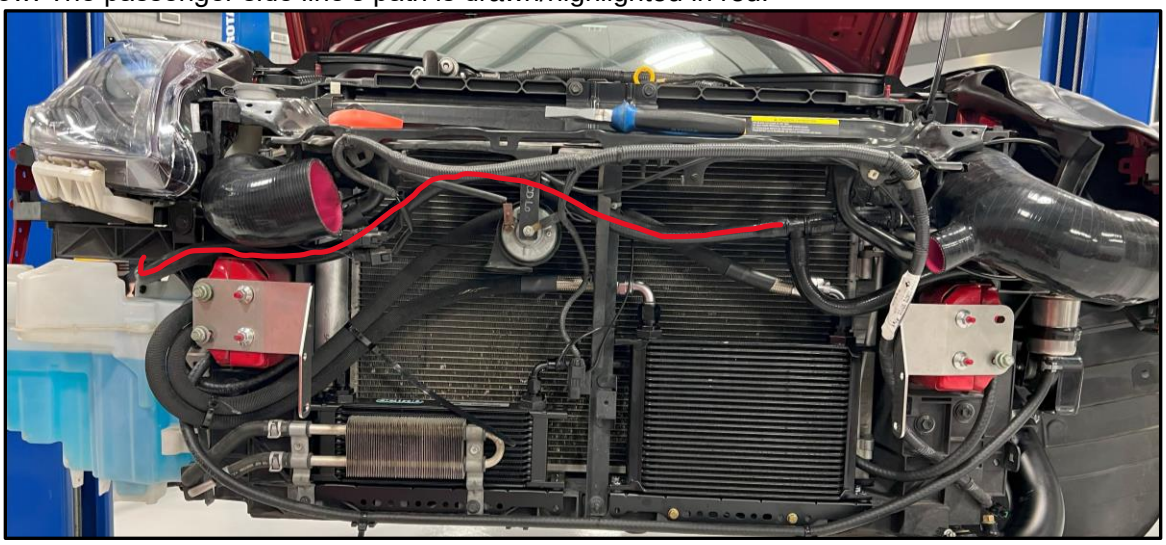
121. If you prefer to keep the engine bay a little cleaner and tee’d into the brake booster hose behind the firewall, you can route it against or underneath the trim on the side of the engine bay (shown with arrows below), then under the silicone intake and to the RacePort.
122. Locate the 12.5ft of 5/8” PCV/EEC fuel line hose (#28), (6) large spring clamps (#18), and the 5/8” equal tee fitting (#20).

123. This hose will connect to the PCV port on both valve covers where the OE hoses were removed from in step # 9. Then tee together at the front of the vehicle and connect to the port on the silicone intake tube.

124. Start by connecting one end to the passenger side PCV port (shown below with arrow).




125. Route the line under/around the charge piping, under the passenger headlight, in front of the radiator and towards the silicone intake tube. Cut the line ~8”-12” from the silicone intake tube. Reference the image below. The passenger side line’s path is drawn/highlighted in red.



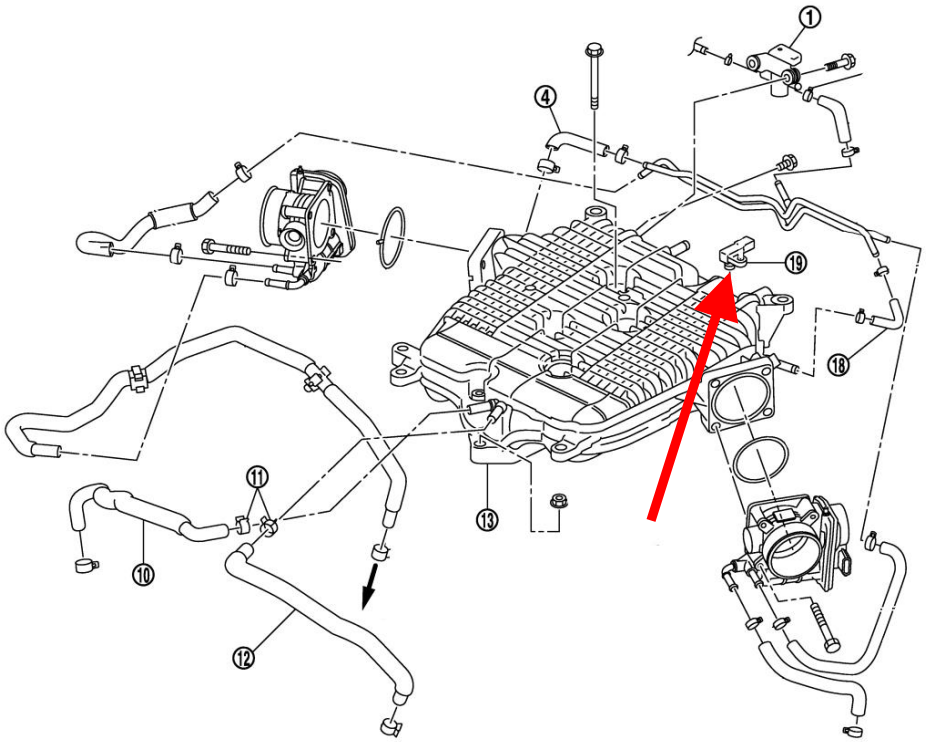
126. Install the 5/8” equal tee fitting into the new PCV line.

127. Connect a new section 5/8” hose to the bottom of the tee (as shown in image on previous page).

128. Route the hose under the silicone intake tube and towards the driver side valve cover. Cut the hose and connect it to the PCV port on the driver side valve cover (shown with arrow on diagram on previous page). Ensure the hose is not touching the rear supercharger pulleys, zip tie PCV hose away from pulleys.

129. Cut a small section and connect the last port on the equal tee to the barb on the silicone intake tube. Make sure all connection points of the PCV system are secured with a clamp.

130. If purchased, locate the OMNI 4-bar map sensor (#63). The map sensor is not included in our “Tuner” kit but is in our complete kit. The OE map sensor is located in the top right corner of the upper intake plenum (shown in diagram below). Disconnect the electrical connector, remove the mounting screw, and then pull up to remove the sensor from the plenum. Install the new OMNI 4-bar sensor in the plenum. Secure with the OE mounting bolt and reconnect the electrical connector.




131. **The Z1 Supercharger Kit is now installed. Prior to starting the vehicle, it is highly recommended to contact your tuner and get a base map flashed onto the ECU.**

132. **For all levels of the supercharger kit, you will need some sort of fueling upgrade. For 450hp and 500hp levels, you will need at least 1000CC injectors and a drop-in fuel pump. For 550hp and 600hp+ levels, you will most likely need a fuel return system. Follow the instruction provided with your fueling upgrades (link to Z1 370Z Fuel Return System).**

133. **Also prior to starting the vehicle, you MUST follow the Rotrex priming and starting procedure (pg. 22) below. Failure to follow the procedure may result in permanently damaging the supercharger unit.**

134. To ensure proper oil circulation and adequate lubrication during the first few minutes of operation, it is important to prime the oil system before the engine is started for the first time after the supercharger installation.

135. Fill the oil canister with traction fluid.

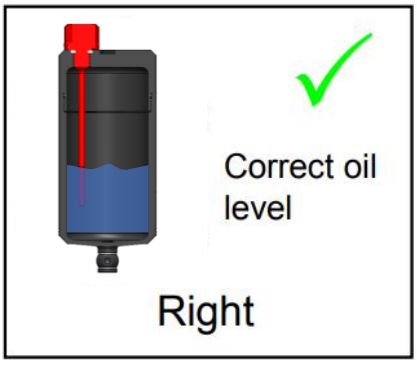
136. Loosen the banjo bolt at the oil line attached to the supercharger inlet marked IN a couple of turns allowing air to escape the system.

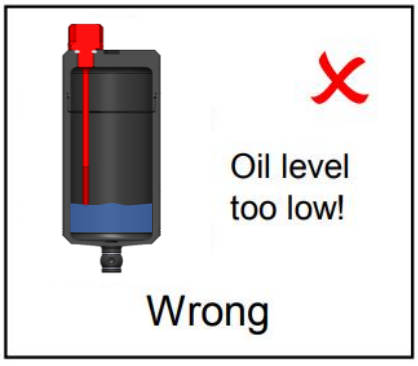

137. Remove the red dipstick/cap on the Z1 oil reservoir in the passenger fender well. Carefully apply pressurized air to the oil filler hole of the oil reservoir. Do not pressurize the system to more than one bar or 15psi. Use a rag or a sponge between the air-gun nozzle and the canister to fill the gaps. The nozzle does not need to perfectly seal on the reservoir, allowing some air to escape is okay and will help prevent more than 15psi from being applied.

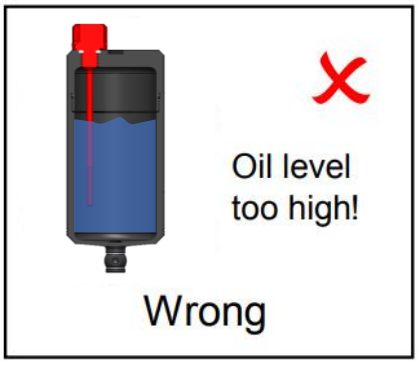
138. When oil appears at the “oil inlet” tighten the banjo bolt and the system is primed. Torque bolt to 80in-lbs. Over torquing the banjo bolt could damage it.

139. Top up the oil reservoir to the top of the hash mark on the dipstick when it is fully threaded in.

140. Start the engine and rev it to 2-3000 rpm and make sure the oil starts flowing by visual inspection, looking into the oil canister. Do not rev the engine more than specified, as this can cause damage to the supercharger. Oil flow is established when the oil level decreases immediately after start-up. Immediately after starting the engine (within 5 seconds) top up traction fluid before the oil level reaches the bottom of the canister. Check that the oil level is between the min and the max indicators on the dipstick while the engine is running at 2-3000 rpm. Note that this is the correct and only way to check the oil level (checking the oil level with the system turned off does not give a correct reading).



141. Let the engine idle for 5 minutes while checking the oil system for leaks.

142. Check the oil level again using the correct procedure described below:

    To check the oil level, set the engine speed to 2 - 3000 rpm and check the oil level while the engine is kept running at 2 - 3000 rpm. The correct oil level is between the min and max indicators on the dipstick measured with the thread of the cap fully engaged. Measuring oil level in any other way will not give a true reading of the oil volume in the system and can lead to overfilling or starvation and consequent damage, foaming or leaks.

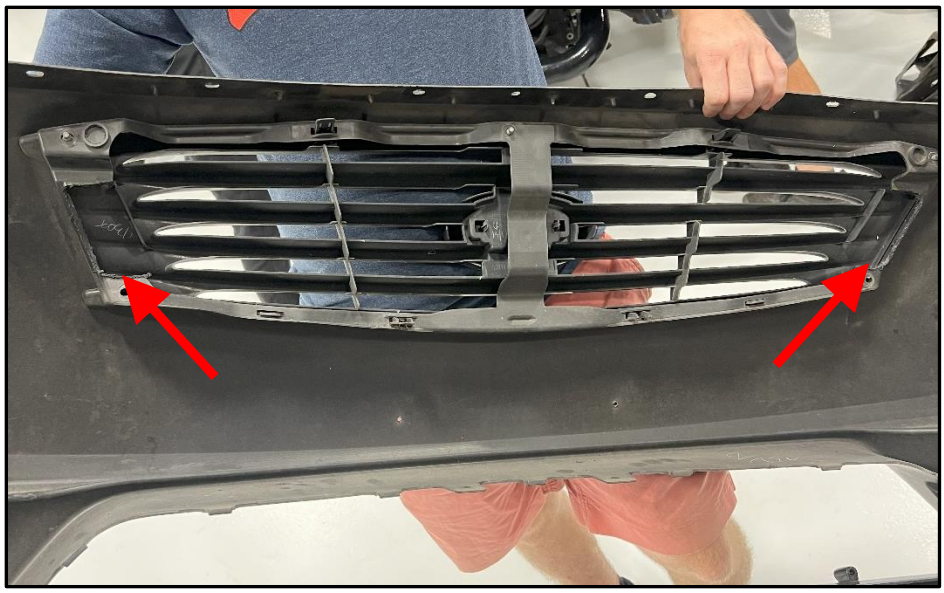
143. A run-in period of 100 km (65 miles) is highly recommended. During this run-in period don't run the engine at more than half of the engine's RPM range.

144. Once the supercharger is primed and the car is idling. Bleed the coolant system.

145. While the engine is idling, visually check where the belt sits on the extra lipped idler pulleys on the dual bracket. If the belt appears to be riding the edge of either pulley, you can adjust that pulley with the provided shims (#13 & #14). If the pulley is riding the front edge, you can space it out with the larger 1.0mm SHIM, or if it is riding the back edge you can remove the 0.5mm shim installed earlier. When installing the shim, place it between the conical spacer and the pulley. The order should be bolt -> pulley -> shim -> conical spacer.

146. Your Z1 VHR Supercharger Kit is now fully installed and primed! It is now time to reinstall all components previously removed. Many plastic trim pieces (like the fender liners, radiator diversion panels, etc.) may need to be trimmed or cut to prevent interference with the hoses/lines or other components installed. The driver side front fender liner will likely interfere with the bottom corner of the blower. When installing the fender liner, heat up that section with a heat gun until you can form it around the blower. Then install the fender liner clips and hold it in place until it cools down.

147. When reinstalling the bumper, go slowly and check for clearance or fitment issues. You may need to trim small amount of the inside of the bumper to fit everything nicely. We aren't able to test fit the kit on every single bumper on the market for every year/model/trim. An example of the trimming needed on one G37 coupe is shown below.



148. While reinstalling other components, it is a good idea to check all new clamps/screws/connection points to ensure they are secure and tight.

149. The completed installation of the Z1 VHR Supercharger kit should look as shown below.


Note: Aside from the coolant reservoir…a prototype reservoir was installed at the time of this photo.

150. Check vehicle for loose tools/items.

151. Reinstall front wheels and lug nuts.

152. Properly remove vehicle from jackstands.

153. Torque lug nuts.

154. Contact your tuner to ensure a safe base map is installed for the supercharger break-in period. Then perform a custom tune.

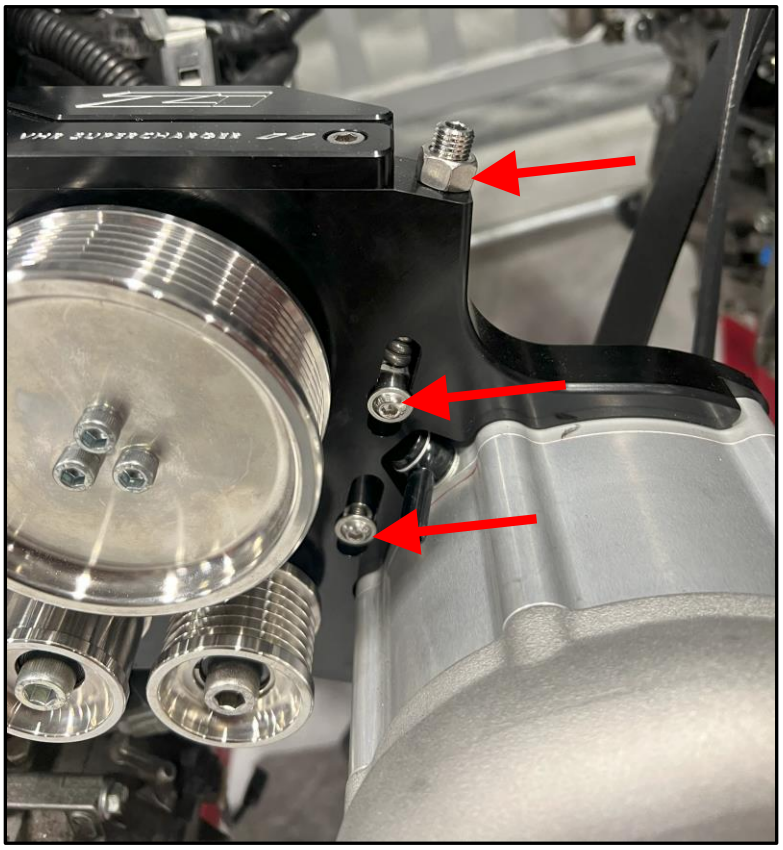
155. Take your vehicle for a test drive and enjoy!

## Rear Supercharger Belt Tensioning

The rear 10-rib belt should come pretensioned from Z1. However, due to various tolerances in the components and the belts themselves, you may need to adjust the tension if your belt is slipping.

If you notice dropping boost levels near the top end of the RPM range and have verified other components like the fuel system or PCV system are not the causes, it may be the rear belt slipping. Follow the steps below on how to tension the rear belt.

1. Loosen the 14mm jam nut on the set screw on the top of the main supercharger bracket and the (2) 4mm socket head bolts on the front.



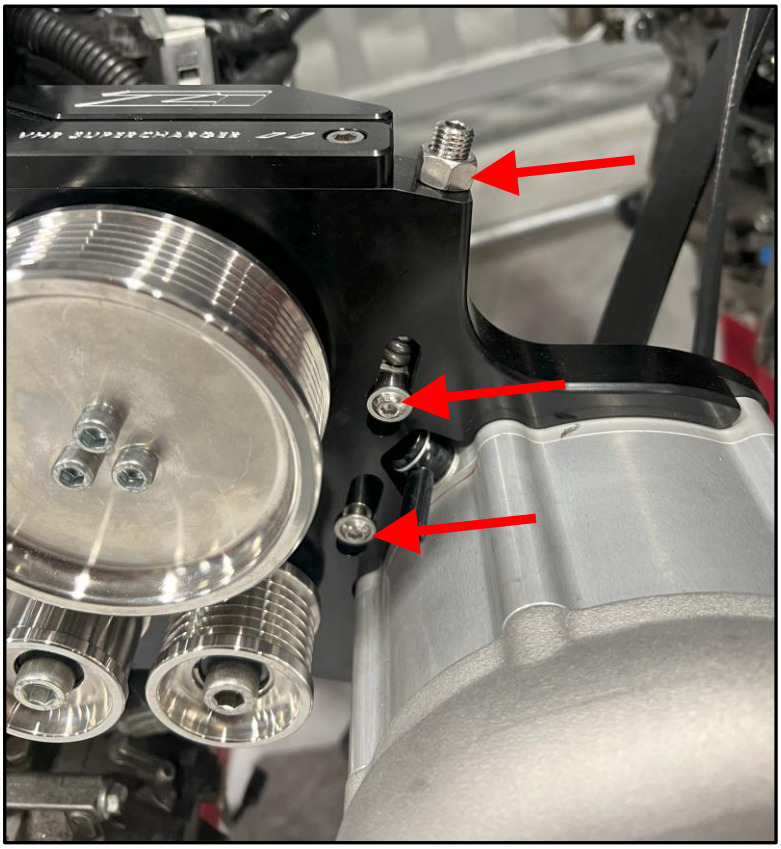
2. Using a 5mm Allen/Hex key, tighten the set screw to increase belt tension or loosen it to decrease belt tension. The belt should be fairly tight but still able to move with your hand.

3. Tighten the 14mm jam nut and (2) 4mm socket head bolts on the front to secure the set screw in place.

4. Once the jam nut is tight, there should be ~4-7mm of exposed thread on the set screw.

## Rear Supercharger Belt Replacement

1. Loosen the 14mm jam nut on the set screw on the top of the main supercharger bracket and the (2) 4mm socket head bolts on the front.



2. Using a 5mm Allen/hex key, back the set screw adjuster out as much as possible until it bottoms out to release the tension on the rear belt.

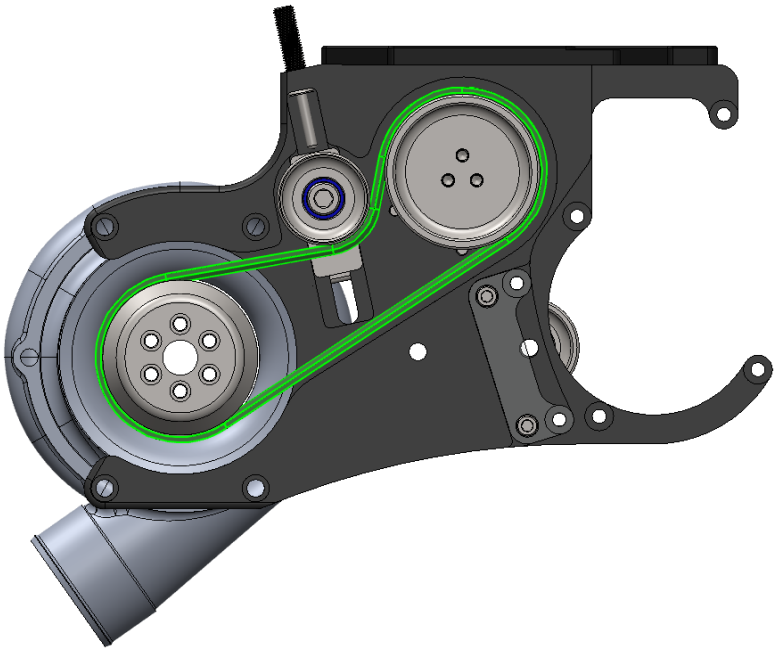
3. Remove the rear belt.

4. Install new 10-rib belt onto the rear pulleys, making sure all ribs of the belt sit in the grooves of the ribbed pulleys.

5. Using a 5mm Allen/Hex key, tighten the set screw back down to re-tension the rear belt. The belt should be fairly tight but still able to move with your hand.

6. Tighten the 14mm jam nut and (2) 4mm socket head bolts on the front to secure the set screw in place.

7. Once the jam nut is tight, there should be ~4-7mm of exposed thread on the set screw.



## END

**Additional Technical Support:**
Contact Z1 Motorsports at info@z1motorsports.com
Or call 770-838-7777 between 9am and 6pm ET