

MAGNUSON

SUPERCHARGERS

Installation Instructions for:
TVS1320 Toyota 5VZ-FE 3.4L
(1997-2004 Tacoma, 1996-2002 4Runner,
1997-1998 T100, and 2000-2003 Tundra)



*** PREMIUM GASOLINE FUEL REQUIRED ***



ATTENTION!
Your MAGNUSON SUPERCHARGER kit
is sensitive to corrosion!
Use only the vehicle manufacturer
recommended coolant for your engine in
the intercooler system as well.

Magnuson Superchargers
1990 Knoll Drive, Bldg A,
Ventura, CA 93003
(805) 642-8833 phone
magnusonsuperchargers.com

INSTALLATION MANUAL

Magnuson Supercharger Kit: TVS1320 Toyota 5VZ-FE 3.4L

Please take a few moments to review this manual thoroughly before you begin work: Make a quick parts check to be certain your kit is complete (see Bill of Material (BOM) parts list inside the accessory box). If you discover shipping damage or shortage, please call our office immediately. Take a look at exactly what you are going to need in terms of tools, time, and experience. Review our limited warranty with care.

Use only premium gasoline fuel, 91 octane or better.

Magnuson Products recommend that you run a minimum of one (1) tank of premium fuel through your vehicle prior to installation of the system to prevent any possible damage that may occur due to running the supercharged engine on lower octane fuel.

Magnuson Products Supercharger systems are designed for engines and vehicles in "GOOD" mechanical condition. Magnuson Products recommend that a basic engine system "Health Check" be performed prior to the installation of this supercharger system. Be sure to check for any pending or actual OBDII codes and fix/repair any of the stock systems/components causing these codes. If there are codes prior to the installation they will be there after the installation.

Magnuson Products also recommend the following services to be performed on your vehicle before starting and running the vehicle post supercharger system installation:

- **It is HIGHLY recommended that new spark plugs are used for this installation. Ensure that the plugs are gapped to Toyota specifications.**
- Fuel Filter change
- Coolant system pressure test and flush. **NOTE: YOU MUST USE TOYOTA SPECIFIED COOLANT MIXTURE!**
- Engine oil and filter change using brand name oil (organic or synthetic) and filter.

Note: It is VERY IMPORTANT to use the factory specified oil viscosity. The original equipment manufacturer has selected this grade of oil to work with your other engine systems such as hydraulic chain tensioner and variable cam controls. Deviation from this specification may cause these systems to fail or not function properly. Please refer to your owner's manual for the recommended oil viscosity for your engine and application.

Non "Magnuson Approved" calibrations or "tuning" will Void ALL warranties and CARB certification.

Supercharger belt = Gates K040630

Tools Required:

Metric wrench set
Metric 1/4" and 3/8" drive metric socket set (standard & deep)
1/4" and 3/8" drive ft-lbs and in-lbs torque wrenches
Metric Allen sockets
Phillips and flat head screwdrivers
Safety glasses
Compressed air
Clip removal tool
Telescoping magnet
Coping saw or small hacksaw
Penetrating oil
M10x1.25 thread chasing tool (not a tap)

Contact Information:

Magnuson Superchargers
1990 Knoll Drive, Bldg A
Ventura, CA 93003

Sales/Technical Support Line: (805) 642-8833
Website: www.magnusonsuperchargers.com
Email: sales@magnusonsuperchargers.com

Kit Contents

QTY	Description	Connection or Installation Location
1	Main Supercharger Assembly	Bolts directly to factory manifold
1	Supercharger Belt	Replaces factory alternator belt
1	Assembly, Tensioner and Pulley	Installed on front of engine
1	Dynamic Tensioner Plate	Installed on front of engine
1	Bolt, M10x1.25x73mm Flat Head	Belt tensioner
1	Bolt, M10x1.25x130mm Hex Head	Belt tensioner
1	Washer, 10mm Flat	Belt tensioner
1	Wiring Loom Relocation Bracket	Installed on front of engine
1	Dipstick Relocation Bracket	Installed on front of engine
1	M6x1.0x12mm Flange Head Bolt	Dipstick relocation bracket
1	Gasket, 3.4L Supercharger	Between throttle body and supercharger
1	Template for cutting Front Cover	Use to modify factory timing belt cover
1	Belt Routing Sticker	Under hood
2	Premium Fuel Sticker	Place 1 on or near fuel gauge and 1 inside of fuel filler door
1	1/8" Vacuum Plug	2001 and newer Tacoma only w/drive by wire throttle body
1	3/16" Vacuum Plug	For hose barb on S/C near throttle body if applicable
2	3/8" Vacuum Plug	Intake silencer plug
1	Vacuum Hose -1/2"x34" long	Connects air tube to cam cover
1	Vacuum Hose-1/8"x14" long	Connects vacuum throttle opener to intake manifold
1	PCV Hose-3/8"x8" long	Connects PCV valve to S/C
2	Wide Band Spring Clamps, Black	For PCV hose ends
1	Wide Band Spring Clamp, Red	Secures breather hose at the 12mm valve cover barb
4	Zip Tie, 3/16"x7"	Retains evaporative canister hose to throttle body cable
1	Vacuum Adaptor Tee, Vacuum Adapter Tee- 4WD only	See hose routing diagram
1	Valve, IAC Check	Installed near the IAC valve
1	Spacer, Manifold Support Bracket	Installed between manifold & factory support bracket, drive side
1	Bolt, M8x1.25x35mm Flange Head	Secure factory support bracket thru spacer to S/C manifold
1	Bolt, M8x1.25x170mm Flange Head	Installed thru top of S/C to factory manifold
2	Bolt, M8x1.25x30mm, 10mm Hex Head	Installed thru side of S/C to factory manifold
1	Bracket, Accelerator & Transmission Cable	Used on all models except 4WD M/T Tacoma
1	Bracket, Accelerator Cable	Used on 4WD M/T Tacoma only
1	Bracket, Throttle Cable	2001 & newer 4Runner only w/drive by wire throttle body
2	Bolt, M6x1.0x12mm Flange Head	Used to attach throttle cable brackets to S/C manifold.

Table Of Contents

Section 1: Removal of OEM Parts	5
Section 2: Installation Procedure	17
Appendix A: Throttle Body and Air Tube Installation for 2001 and newer 4Runner only with Drive by Wire throttle system	31
Appendix B: EGR Removal and Installation	32

- **Before you begin make sure the fuel in your tank has been completely switched over to premium 91 octane. This is necessary to avoid any pinging once the supercharger has been installed.**
- **Thoroughly clean the engine and engine compartment, If you don't, grease buildup on parts could become dislodged during the procedure and fall into the engine.**
- **Make sure the engine has cooled fully before you begin.**
- **To help you later, we suggest you draw diagrams of your engine's cable routing before you disconnect anything. You can do the same for the vacuum hoses; however, some of the vacuum connections on your stock manifold may not be the same as those on the supercharger. To ensure the proper hose connections, refer to the diagrams in the back of this manual.**
- **The Magnuson supercharger kit has been designed to reuse most of the stock nuts and bolts. Therefore as you remove them, keep them with their components or label them for location, This will assure a faster, easier installation.**
- **The following installation photos were taken of a 2003 2WD Tacoma and 2002 2WD 4Runner. Your installation may vary slightly from the procedures shown here.**

NOTE: This instruction manual follows the process we used to complete this installation on our test vehicle. This does not imply there aren't alternate approaches. If you find a procedure or process that improves the installation, please let us know! We strive to create the most comprehensive and complete instruction manuals available.

Section 1: Removal of OEM Parts

1. Your system requires the use of a minimum 91 octane gasoline fuel. This system is not compatible with E85 fuel.

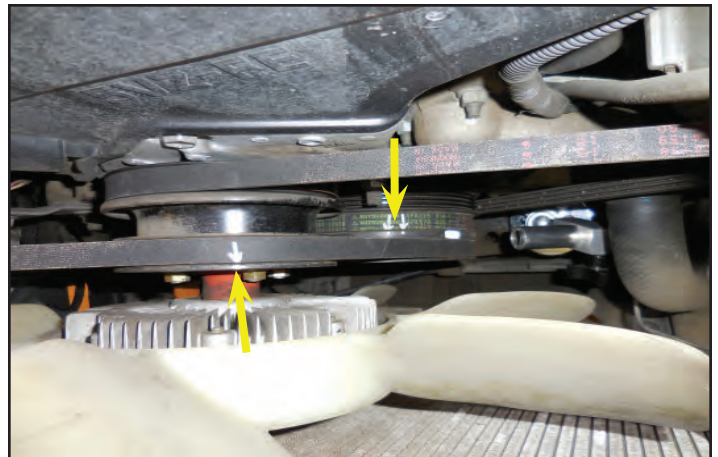


2. Remove the negative battery cable with a 10mm wrench. The battery is located in the left front area of the engine compartment. Insulate the wire removed in the last step with a towel or tape and tuck it behind the battery to prevent it from making a connection. Also cover the negative terminal with an appropriate cap.

Any reference to the left or right side of the vehicle is given from the driver's seat perspective.



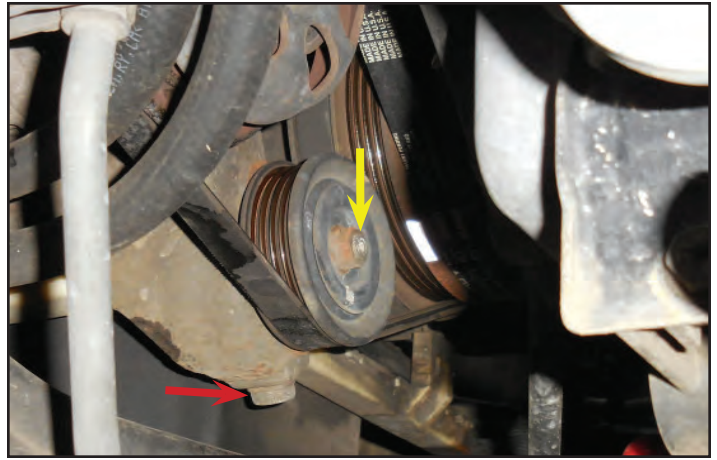
3. With tape or a permanent marker, mark the forward edge of the power steering and the air conditioning compressor drive belts as shown at the yellow arrow locations. This will ensure that the belts will be returned to their original positions and that they will rotate in the same direction. If you reverse the direction of rotation, it may cause the belts to fray. You can mark the air conditioning compressor belt with two arrows to differentiate it from the power steering belt.



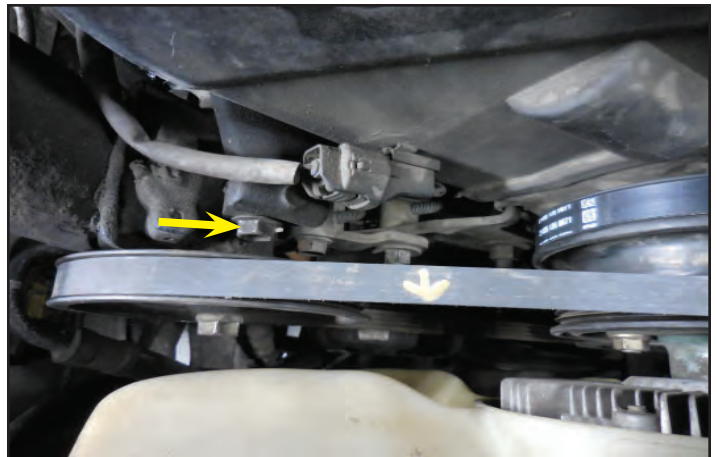
4. If equipped, remove the gravel guard from beneath the radiator. This will give you access to the A/C belt adjuster. **TIP: The gravel guard consists of two pieces but it's much easier to install if you remove it as a one-piece assembly. The front portion has 6 bolts and the back portion has two.**



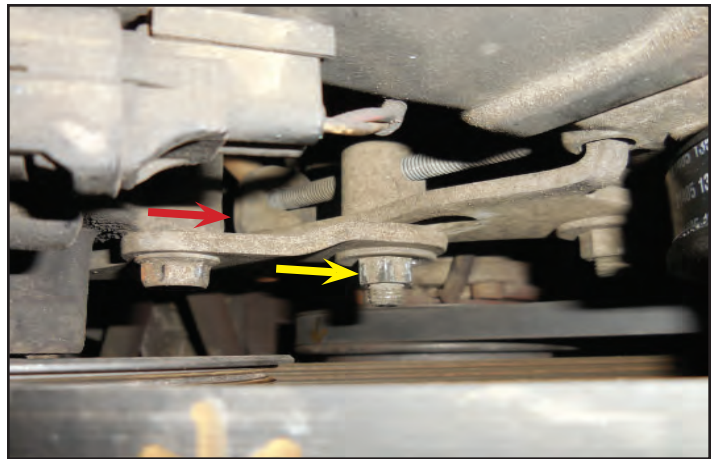
5. Loosen the pinch nut in the center of the A/C compressor pulley (yellow arrow) and loosen the adjuster bolt (red arrow) enough to remove the belt.



6. Loosen the power steering pump pivot bolt at the arrow location.



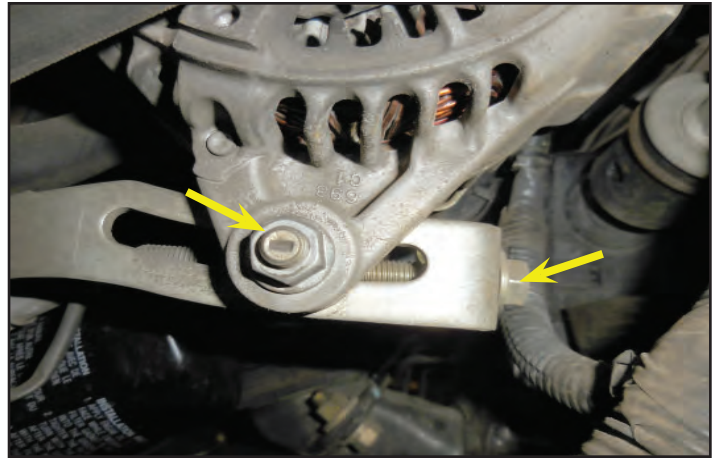
7. Using an angled flat ratchet, loosen the pinch nut at the yellow arrow. Now loosen the adjuster bolt behind the bracket at the red arrow to provide enough slack to remove the power steering pump belt.



8. Loosen the alternator pivot bolt at the arrow location.



9. Loosen alternator pinch nut and adjusting bolt shown at the arrow locations. Remove the alternator belt. It will not be reused. During the installation procedure it will be replaced with the supplied belt.



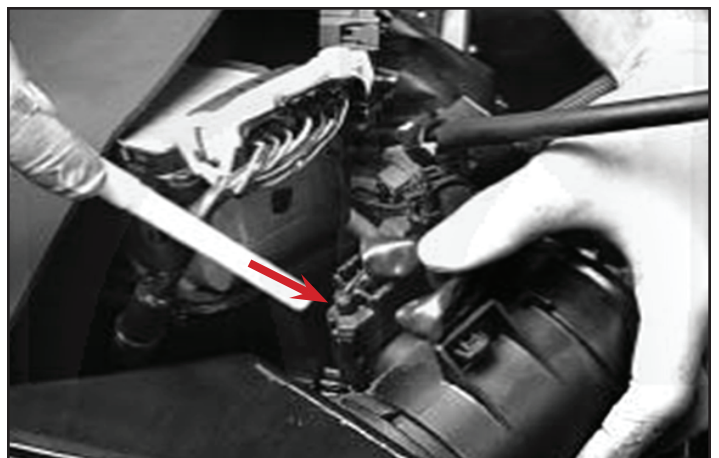
10. Loosen the air intake tube clamps at the throttle body and air box shown here with arrows.



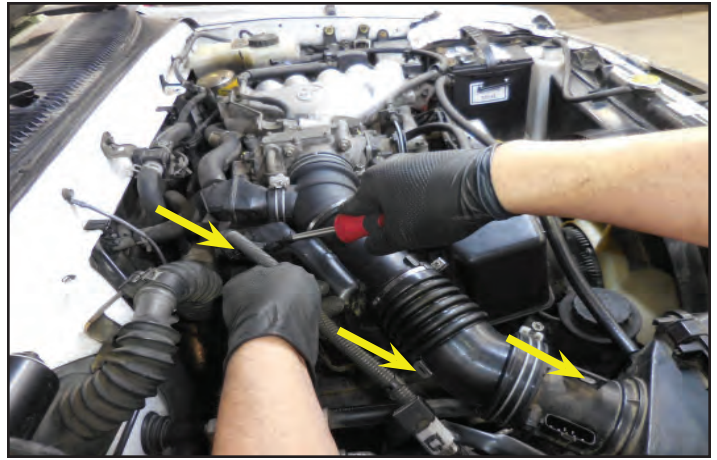
11. Disconnect the Mass Air Flow Sensor Plug.



12. **Caution: The air sensor shown with the arrow is fragile so be careful when working around it. Not all vehicles have this air sensor.**



13. Carefully remove the wiring anchor points from the air intake tube. These points will be used again during the supercharger installation.



14. Disconnect the hose shown at the yellow arrow. Also remove the hose at the red arrow.



15. Disconnect the vent hose at the arrow location.



16. Remove the air intake tube. This will be reused.



TIP: If your vehicle is equipped with cruise control, do not remove the cruise cable from the throttle body. If you do, you will have to readjust it later.

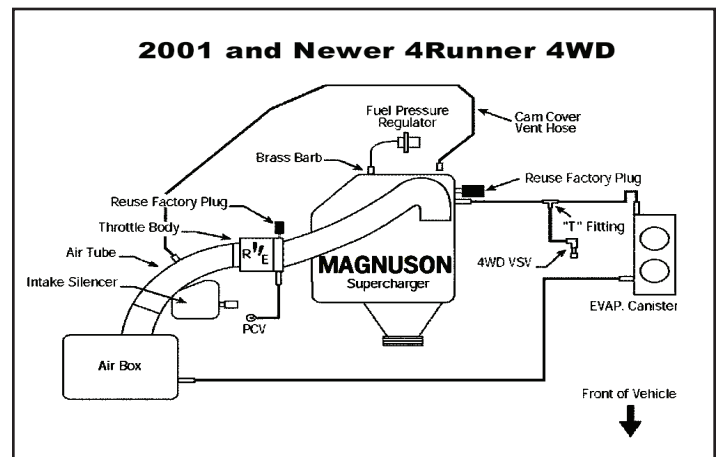
17. Rotate the throttle body lever clockwise and disconnect the ball end of the cable through the side hole as shown.



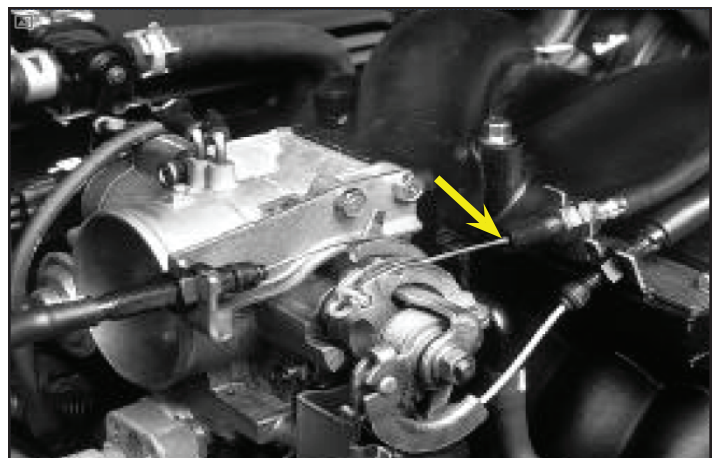
18. Use two 14mm wrenches to loosen the two throttle cable adjust nuts but don't remove, and pull the cable housing up out of the bracket.



19. Some trucks are equipped with one or two Vacuum Switch Valve (VSV) assemblies. To locate yours, consult the appropriate diagrams at the end of this manual. If the valve is mounted on the rear of the engine, it should be relocated to the firewall with the supplied bracket. (2001 and Newer 4Runner 4WD shown here.)



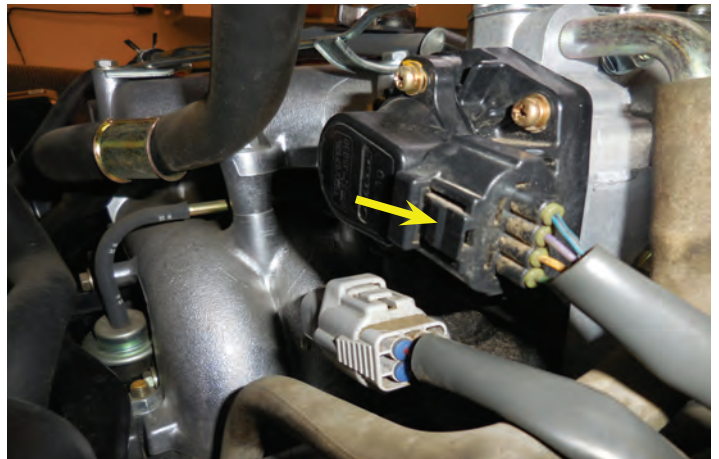
20. Note the tension and adjustment of the throttle cable and the transmission throttle pressure (kick down) cable (if equipped with an automatic transmission). You will need to re-create these adjustments during the assembly procedure. To help you remember, look for the small metal bead (the stake stopper, automatic transmission only) on the kick down cable. If the cable is properly adjusted, the bead should be flush with the end of the cable's rubber sheath (see arrow). **(Note: Your vehicle may not have this dual cable setup.)**



21. Unplug the throttle body lever sensor connector shown at the arrow location.



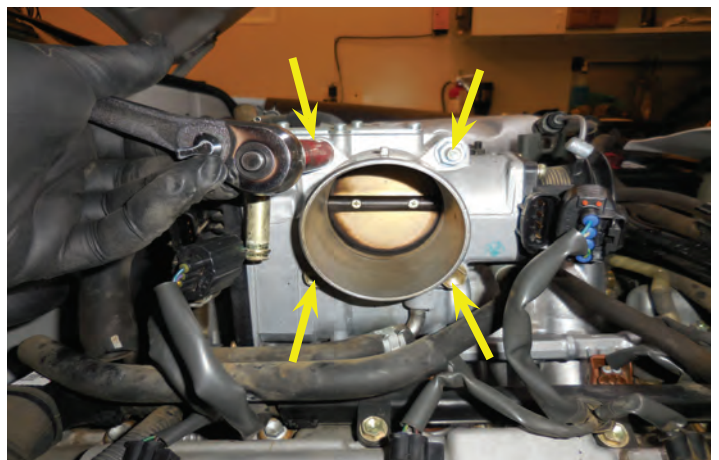
22. Unplug the throttle position sensor at the arrow location.



23. Remove vacuum hose from the throttle body but don't remove the two coolant hoses. The coolant hoses have clamps.



24. Remove the two nuts and two bolts holding the throttle body at the arrow locations.



25. Remove the throttle body with the attached coolant hoses and cruise control cable (if equipped) and set to the passenger's side.



26. At the driver's side of the engine, remove the diagnostic plug (yellow arrow) from its mounting bracket and set it aside. Remove the bolt (red arrow) and bracket that holds the diagnostic connector to the stock manifold and save for reassembly.



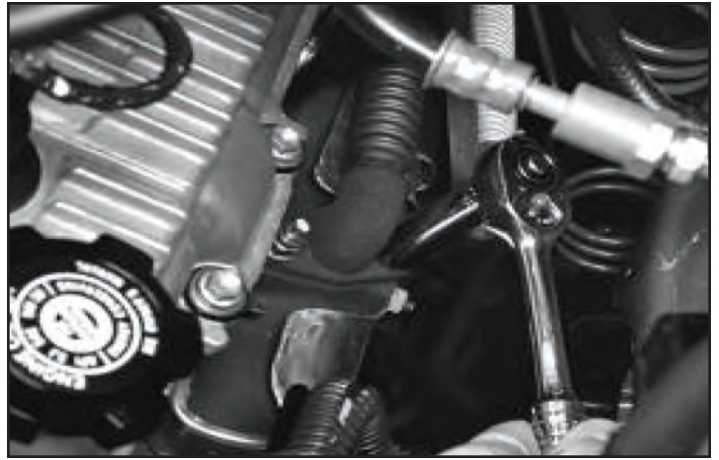
27. Remove the ground wire and move it to one side.



28. Remove the power brake booster vacuum hose from the intake manifold at the arrow location. (Not all vehicles will have this hose.)



29. A pre-2000 Tacoma or T-100 may be equipped with an EGR valve. To be sure, look for this tube at the arrow location on the driver's-side exhaust manifold. Remove the valve according to the procedure shown in Appendix B. Note that the valve will be re-installed in the installation procedure.



30. Remove PCV hose at the arrow location.



31. Remove the EVAP hose from the tube on the upper manifold.



32. Remove the hose from the clamp on the back of the upper manifold.



33. Remove the bolt holding the throttle cable bracket. Save this bracket and bolt for reinstallation later.



34. **Note: It is VERY important to not contaminate your work environment or allow any debris to fall into the exposed ports, or engine damage can occur.** Use a 12mm socket wrench to remove the nuts and bolts from the upper half of the intake manifold.



35. Set aside the upper intake manifold. Some brackets and the throttle body studs will be removed from this manifold for use with the supercharger install.



36. Remove the bolt at the back of the lower intake manifold shown at the arrow. Save this bolt for use on the supercharger housing.



37. Disconnect the hose at the back of the lower manifold.



38. Remove the bolt shown at the arrow. This bolt and bracket will be used with the supercharger housing.



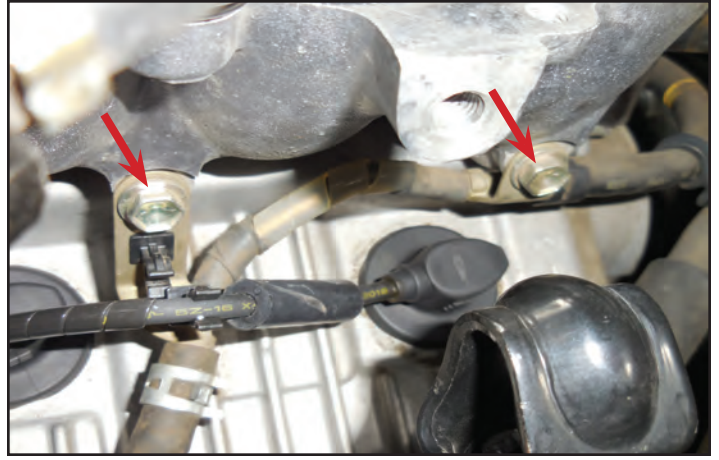
39. Remove the bolt at the arrow location. This bolt will be replaced with a provided bolt and spacer for the installation of the supercharger. The bracket will be reused.



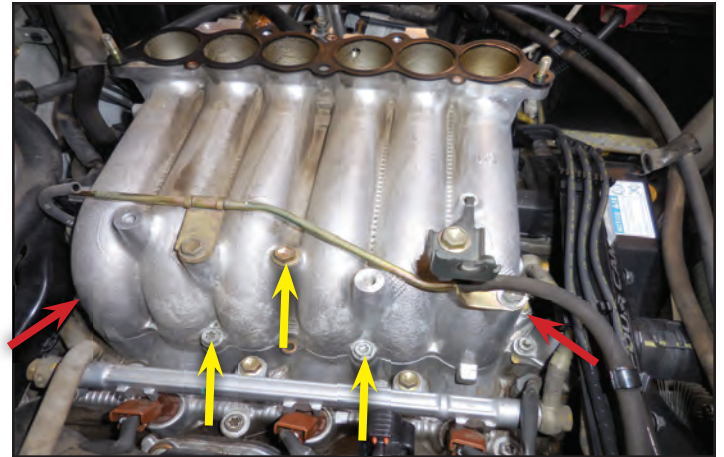
40. Loosen the lower bolt on the bracket that you just removed the upper bolt from. Do not remove this bolt. The bracket will be used to secure the supercharger.



41. Remove the 2 bolts shown with arrows and disconnect the bracket (but don't disconnect the fuel hose) from the driver's-side of the lower manifold and remove the bolt from the wire-loom bracket.



42. Remove the three bolts at the yellow arrows. They will not be reused. Carefully remove the two nuts at the red arrow locations so you don't lose them. Use a magnet to retrieve these since they will be reused.



43. Remove the lower manifold from the engine manifold. This manifold will not be reused for the supercharger install.



44. Remove and inspect the gasket. If it is in good shape, reuse it; if not, replace it with a new one (Toyota part # 17176-62040).

Note: The gasket between the upper and lower manifolds is interchangeable for use as the supercharger's intake manifold gasket.



45. Clean the surface of the engine manifold ports to allow tape in next step to bond.



46. Tape over the engine manifold ports to keep out debris.



47. Using the provided template and a scribe or marker, mark the top of the timing belt cover around the template.



48. Move any wires out of the way and with a coping saw or flexible saw, cut along the scribe mark and remove the upper piece. The cut will provide the clearance for the drive housing of the supercharger.



49. Attach the plastic wire looms to the cut edge of the front cover. The ignition wires will go beneath the supercharger drive housing.

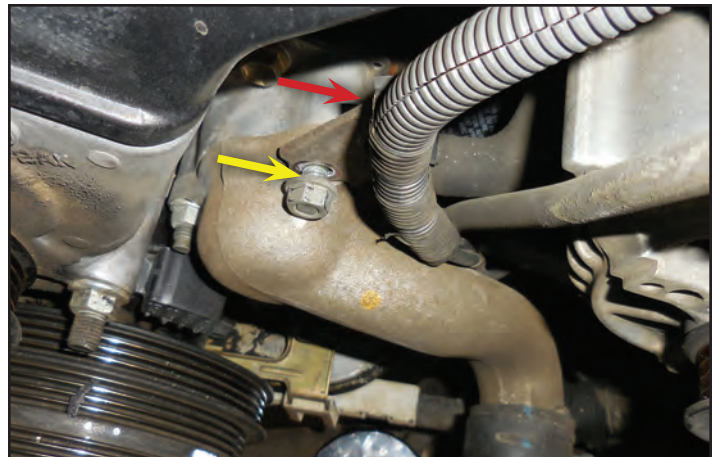


Section 2: Installation Procedure

50. Remove the bolt holding the dipstick tube. Remove the oil dipstick followed by the dipstick tube. Pull straight up to remove the dipstick tube.



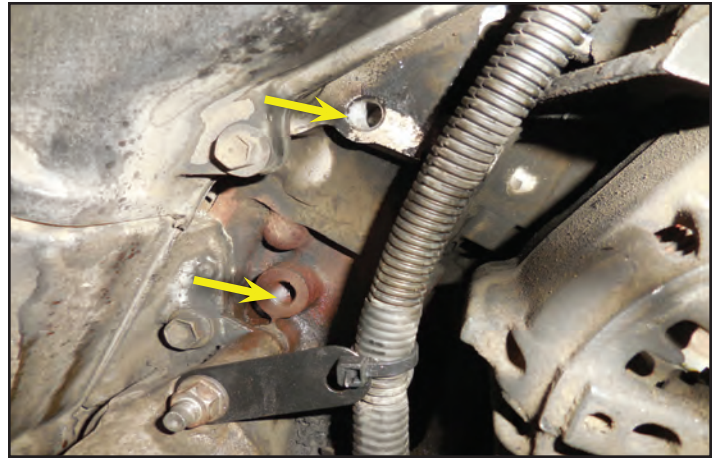
51. Unclip the wire loom from the factory bracket at the red arrow and remove the bracket at the yellow arrow and replace with the supplied wire loom relocation bracket shown below.



52. Use the existing nut on the water pump housing's upper stud to install the bracket from the last step. Ensure that the bracket is clocked in the orientation shown. Torque to 168 in-lbs and clip the wire loom to the back of the supplied bracket.



53. **Wear eye protection when using compressed air.** Use compressed air to blow out the two threaded holes shown with arrows. Spray some penetrating oil and let it set. Chase the threads on the two holes with an M10x1.25 thread chasing tool. **Do not use a tap because it will potentially remove thread material.** Use some brake cleaner to clean the holes and blow out the holes again to ensure they are clean and dry.



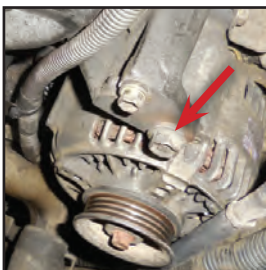
54. Apply Loctite 242 to the provided M10x130mm and M10x73mm bolts shown. Ensure that you place the M10 washer over the M10x130mm bolt.



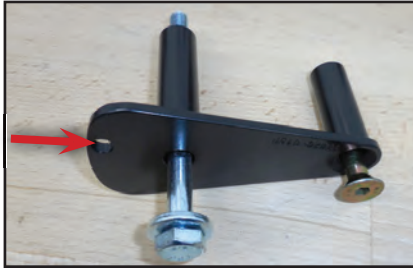
55. Insert the M10x73mm bolt through the provided tensioner mounting bracket at the yellow arrow location and install in the top threaded hole from two steps ago. Insert the M10x130mm bolt through the bracket at the red arrow and thread it into the lower threaded hole from two steps ago. **Torque the M10x73mm bolt to 25 ft-lbs. Remove the lower M10x130mm bolt.**



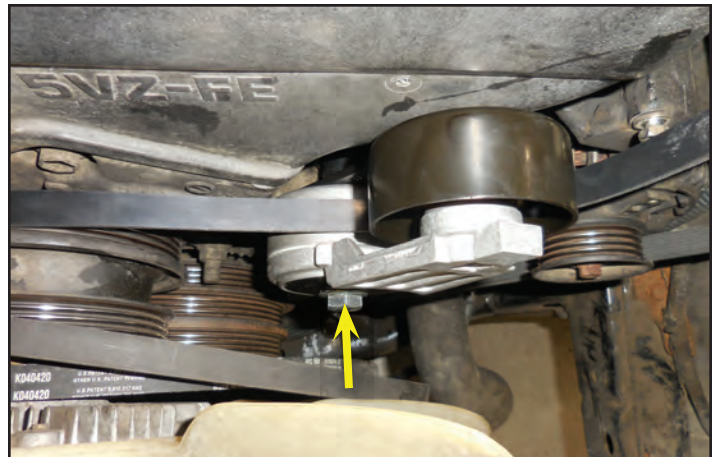
56. Set the alternator to mid-point of the adjustable bracket as shown to the right and torque the pinch nut at the yellow arrow to 25 ft-lbs. Also torque the alternator pivot bolt with the 14mm head at the red arrow below to 38 ft-lbs.



57. Gather the provided belt tensioner assembly shown to the right. Ensure that you line up the pin on the tensioner (yellow arrow) with the hole in the tensioner mounting bracket (red arrow) shown below.



58. Place the provided belt over the crank and waterpump pulleys. Slide the tensioner from the last step over the belt and line up the pin with the hole in the bracket as you thread the M10x130mm bolt with M10 washer through the tensioner at the arrow location and into the bracket hole. **Torque the M10x130mm bolt to 40 ft-lbs.**



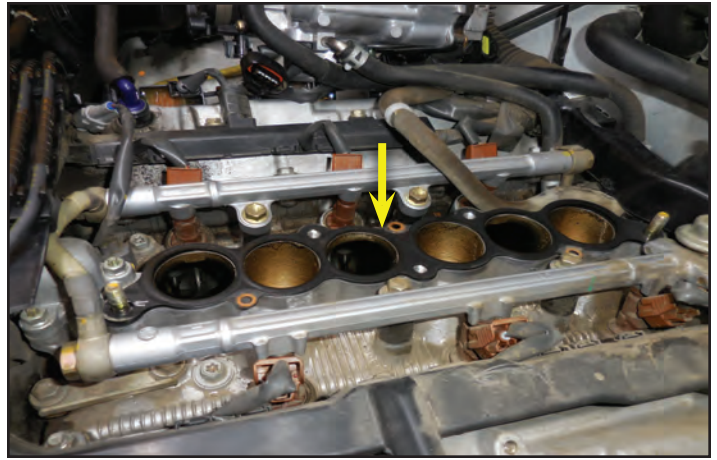
59. (Skip this step for 2001 and newer 4Runner) **Important: The IAC hose and the coolant hoses are similar in size. Don't cut the wrong one. The coolant hoses have clamps, the IAC hose does not have a clamp.** Cut the hose leading to the IAC valve connector at the location shown here and insert the kit's one-way valve into the straight part of the hose. There is a small triangle on the one way valve (marked in black here) to indicate the direction of flow. You can also test this by blowing on both sides of the valve to find the air flow direction. **Air should only flow away from the throttle body.**



60. Remove the tape from the engine manifold.



61. Reinstall the stock gasket if it is in good shape. If not replace with Toyota part #17176-62040.



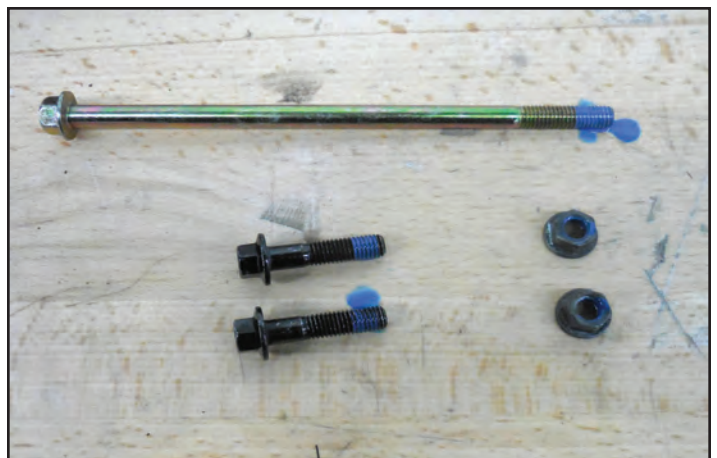
62. Lower the supercharger and manifold into place making sure there are no hoses or wires in the way. The ignition wires should be routed beneath the supercharger's drive housing.



63. When the assembly sits flat on the engine, loosely install the stock manifold brace (driver's side) bolt and supplied spacer (shown below) in first.



64. Apply Loctite 242 to the stock nuts, 2 supplied M8x30mm bolts and one supplied M8x170mm bolt shown. **Do Not use the OEM M8x25mm bolts.**



65. Insert the bolts and the nuts from the last step at the stock engine manifold locations.
Alternating from once side to the other, slowly work your way up to 15 ft-lbs at all 5 locations.



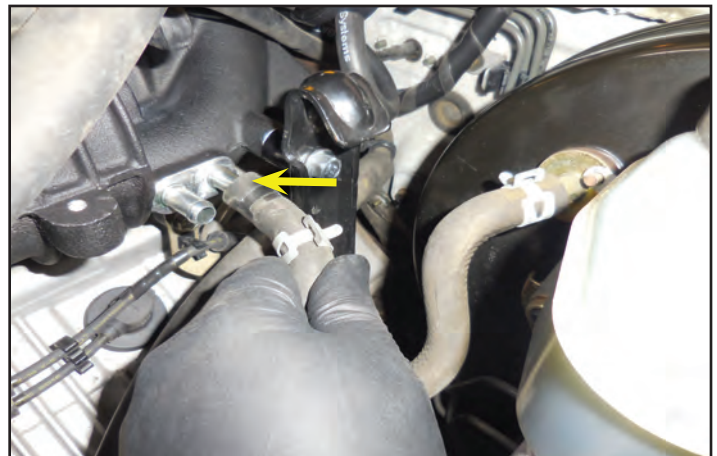
66. **Go back to the brace from three steps ago and torque the upper bolt to 15 ft-lbs.**



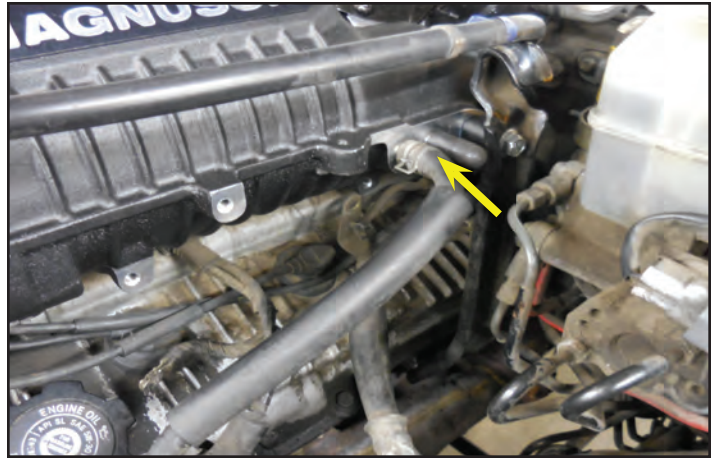
67. **Torque the lower bolt of the brace from the last step to 15 ft-lbs.**



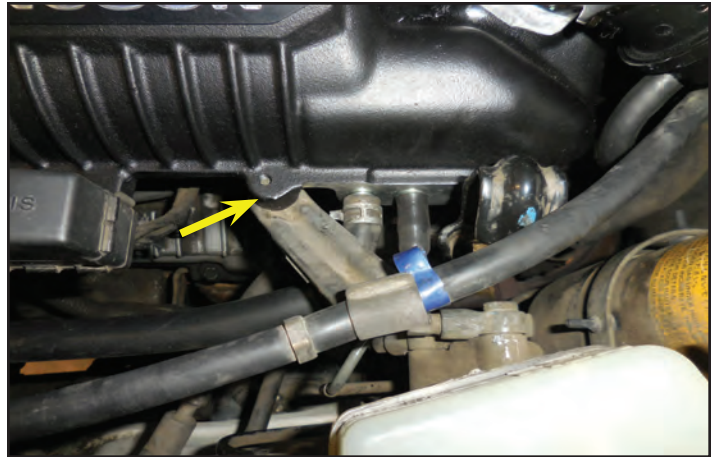
68. Connect the vacuum line from the brake booster to the air tube at the back of the supercharger and secure with the OEM clamp. If your vehicle does not have a vacuum assisted brake booster this air tube will be plugged as shown in the next step.



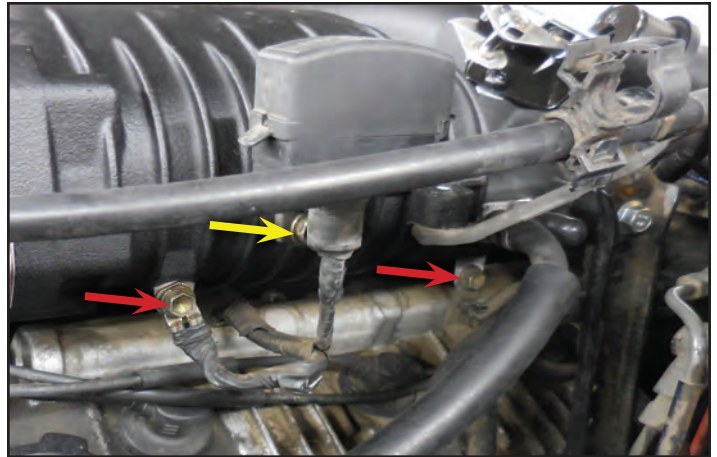
69. Connect the EVAP canister hose to the other air tube at the driver's side rear of the supercharger and secure with OEM clamp. Confirm all of your vacuum hoses are connected to the correct locations by following the diagram that corresponds to your vehicle at the back of this manual. The vehicle in this photo does not have a vacuum brake booster and therefore has a cap on the rear air tube.



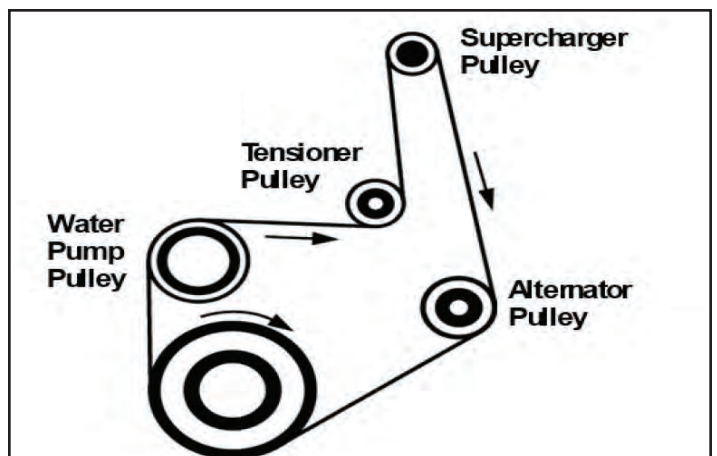
70. Attach the OEM bracket for the throttle cable housing at the arrow location. This bolt gets inserted on the underside. Torque this bolt to 108 in-lbs.



71. Attach the OEM bracket at for the diagnostic plug at the yellow arrow location and torque to 108 in-lbs. Secure the diagnostic plug onto the bracket. Attach the two electrical grounds at the red arrow locations and torque both to 108 in-lbs.



72. Follow the belt diagram for installing the provided supercharger belt. The next step gives more details on this process.

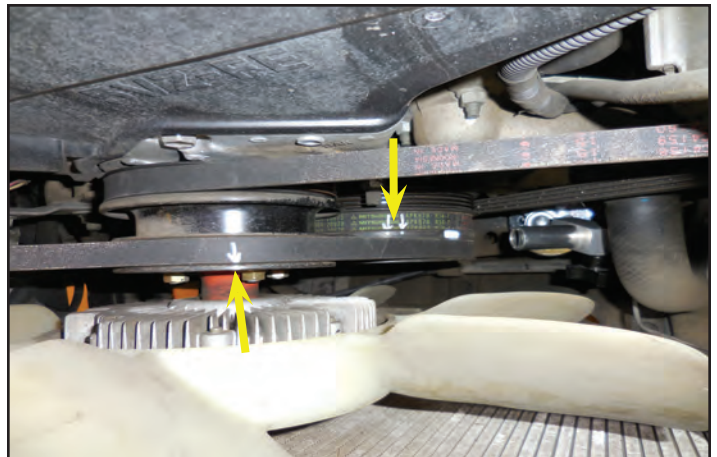


73. Use a 3/8" drive long-handle ratchet inserted at the arrow location to rotate the tensioner counter-clockwise to provide slack on belt for installation. If you find that it is difficult to get the belt over the supercharger pulley then try making the alternator pulley the last one you place the belt over.



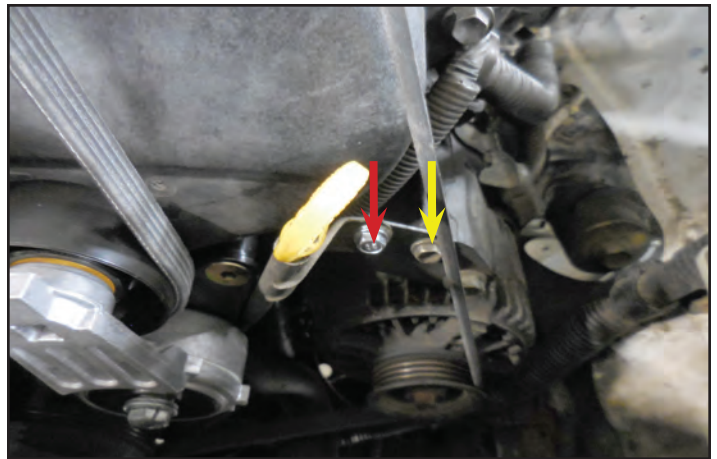
74. Install the power steering and A/C belts according to the marks that you made before removal. Set belt tension to factory specifications. Torque the bolts following the specifications shown below.

- AC Pulley Nut: 29 ft-lbs.
- Power Steering pivot bolt: 32 ft-lbs.
- Power Steering Lock: 32 ft-lbs



75. **Note: Be sure to maintain proper dipstick seal at oil pan. Check the rubber grommet at end of dipstick tube for engagement as you install it.**

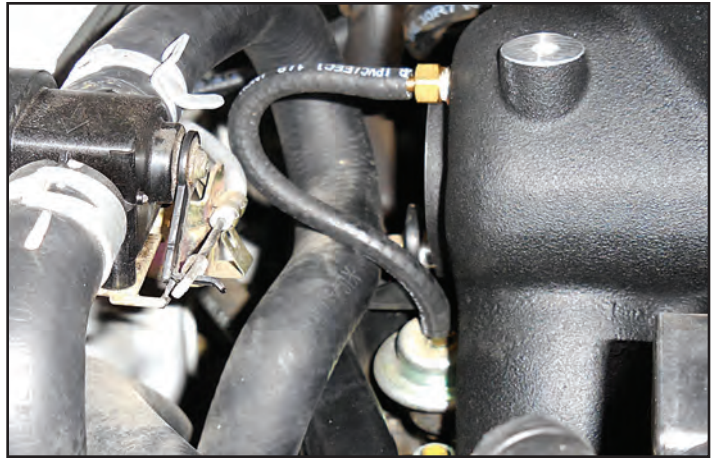
Install the supplied dipstick relocation bracket utilizing the factory bolt at the alternator (yellow arrow). Reinstall the dipstick tube and attach it to the new bracket using the supplied bolt (red arrow). Torque both bolts to 108 in-lbs.



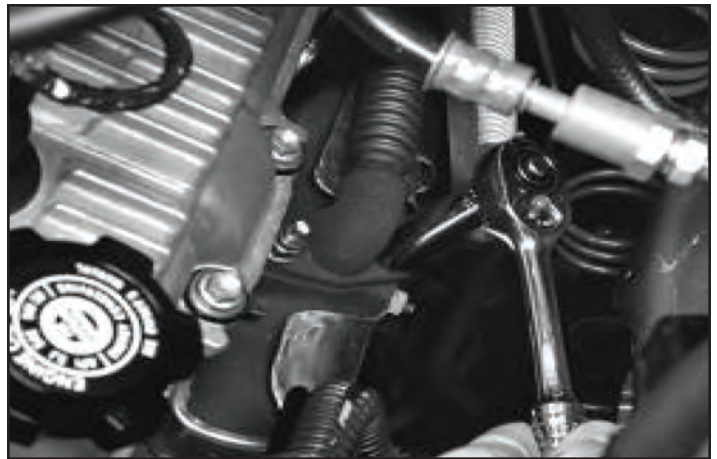
76. Reinstall the OEM bolt that was at the back of the upper intake manifold at the arrow location on the back of the supercharger.



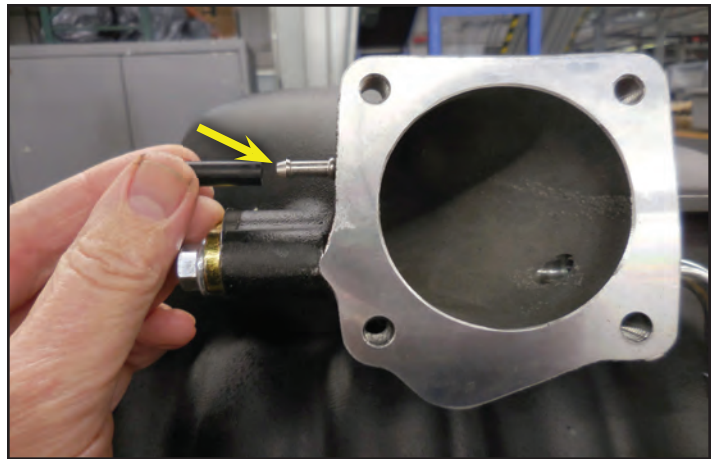
77. Run the hose from the fuel pressure regulator to the brass barb on the rear of the supercharger. If you plan to run a boost gauge use a tee hose fitting to connect the hose here.



78. If your vehicle is equipped with an EGR system, reinstall it now according to the information in Appendix B.



79. Check the diagram at the back of the manual that corresponds to your vehicle to see if it requires a cap at the supercharger inlet barb shown. Reuse the factory cap at this location if necessary otherwise a 3/16" rubber cap is provided. Some vehicles use this location for the hose on the vacuum throttle opener.



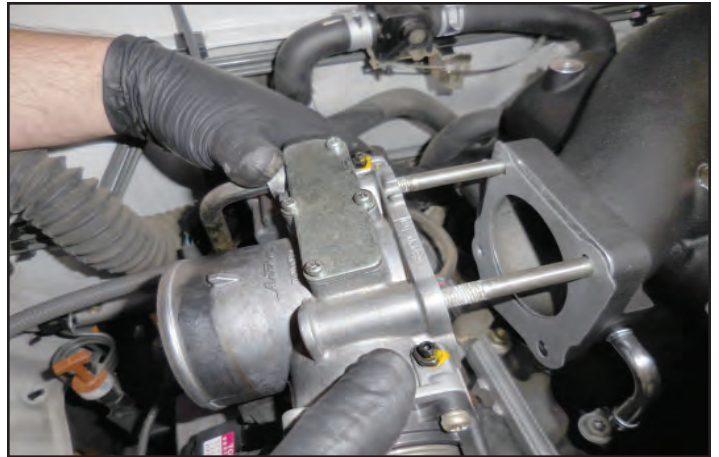
80. If you had two studs on your OEM upper intake manifold you will have to remove these for use on the supercharger. You can use two of the nuts tightened against each other to remove these studs, or use a stud removal tool.



81. **Important: Do not reuse the OE metal gasket on the throttle body. It will reduce the boost output by 1.5 psi. Use the gasket supplied with the kit and make sure that it is positioned properly. Its shape must coincide with that of the throttle body. If not, you will create a vacuum leak.**



82. Using the provided gasket and OEM fasteners, install the throttle body on the supercharger's manifold.



83. **Torque the 4 throttle body fasteners to 108 in-lbs.**



84. Plug in the throttle position sensor at the red arrow location. Also connect the vacuum hose at the yellow arrow location.



85. Plug in the throttle body lever sensor connector.



86. Install the inlet tube to the throttle body and air box and tighten the clamps at the arrows.



87. Install the Mass Air Flow Sensor and connect its hoses and tubes. On some older vehicles you will need to be careful not to damage the sensor that is near this location (shown at the beginning of the instructions).



88. Connect the vent hose at the arrow location.



89. Install the OEM clamp from the upper manifold onto the back of the supercharger at the arrow location and insert the vent hose into it.



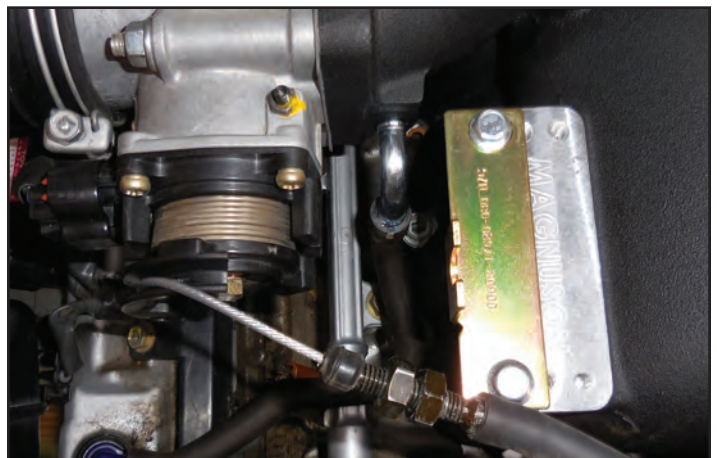
90. Consult the diagrams at the end of this manual to determine if you need to place a cap at the yellow arrow location. Secure the hose at the red arrow location.



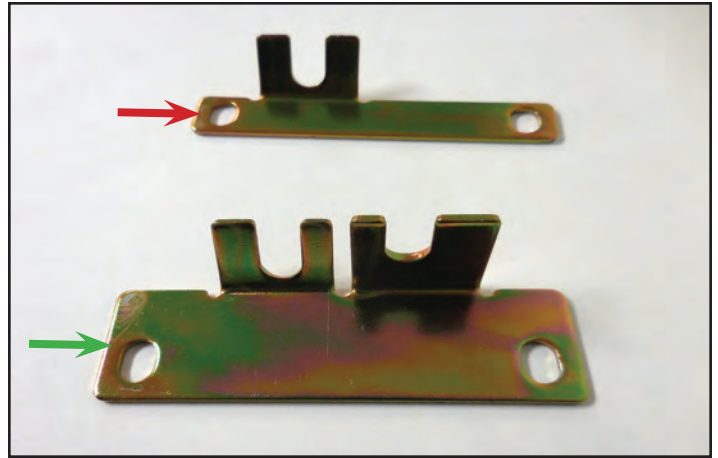
91. Attach the provided 3/8" PCV hose and spring clamps between the PCV valve and the supercharger as shown.



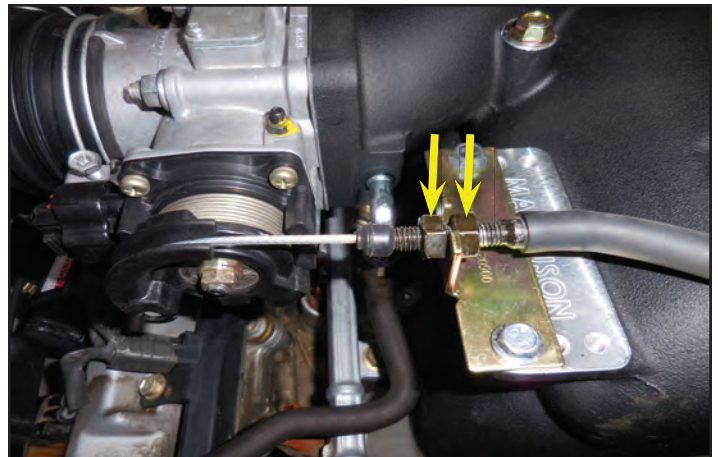
92. Install the proper provided cable bracket to the top of the manifold with the two provided M6x12mm flange head bolts. **Torque these two bolts to 108 in-lbs.** Three throttle cable brackets are supplied with this kit. For 2001 and newer 4Runners, use cable bracket number 00602-17620-080 (shown in this photo). The other two brackets are identified in the next step.



93. The bracket with only one U-shaped cable mount and no part number (red arrow) should only be used on Tacoma 4WD manual transmission vehicles. The bracket with two U-shaped cable mounts (green arrow) should be used on all other models except 2001 and newer 4Runners.



94. Install the throttle cable at the throttle body lever. Adjust the cable tension with the two 14mm nuts and tighten them against each other.

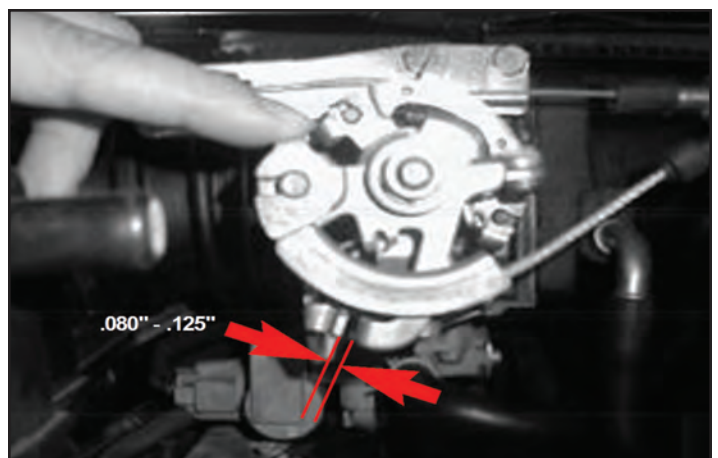


Important: If the throttle cable is not properly adjusted, engine performance will suffer. Refer to factory setup if necessary.

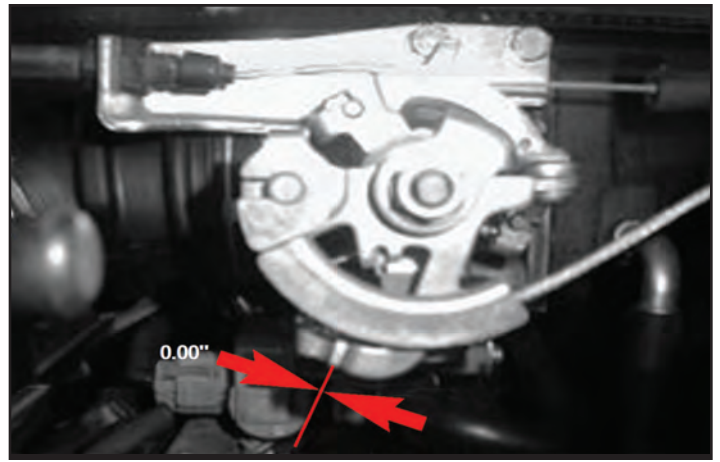
95. **For vehicles with dual cables at the throttle body.** Install the transmission kick down cable (see arrow A) and throttle cable (see arrow B) ends in their original throttle body levers and then into the supplied bracket.



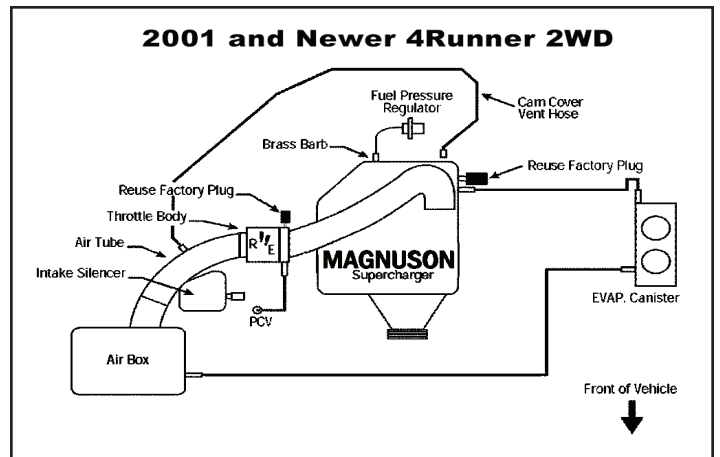
96. **For vehicles with dual cables at the throttle body.** Proper throttle cable tension can be accomplished by viewing the photo here and in the next step. With a light but firm pressure you will be able to hear a distinctive “click” when pressing down as shown here. The distance between brackets (arrow location) should be 0.080”-0.125”.



97. **For vehicles with dual cables at the throttle body.** Release finger pressure at the throttle lever and you should hear another “click” as the two brackets meet each other. The distance between brackets (arrow location) should be 0.00”.



98. Use the diagram that corresponds to your vehicle at the back of this manual to check the routing of vacuum hoses, cables and brackets and correct any problems.



99. Install the gravel guard.



100. Attach the ground cable to the battery.



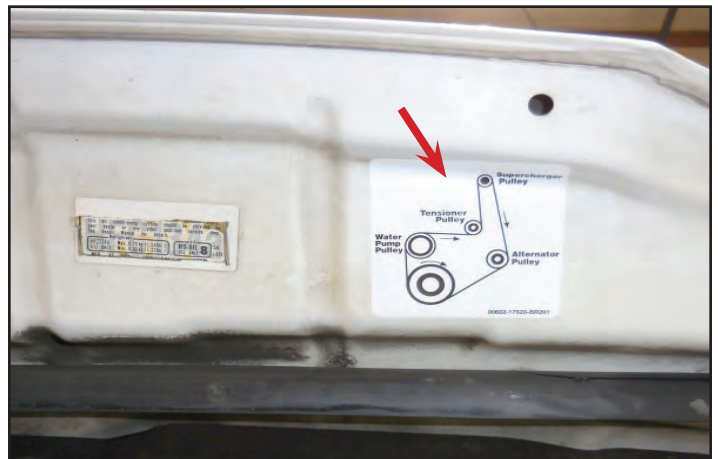
101. Run the engine for about 15 minutes and check for leaks.



102. Apply the premium-fuel only stickers to the fuel gauge and fuel filler door.



103. Apply the Magnuson belt routing sticker to the underside of the hood.



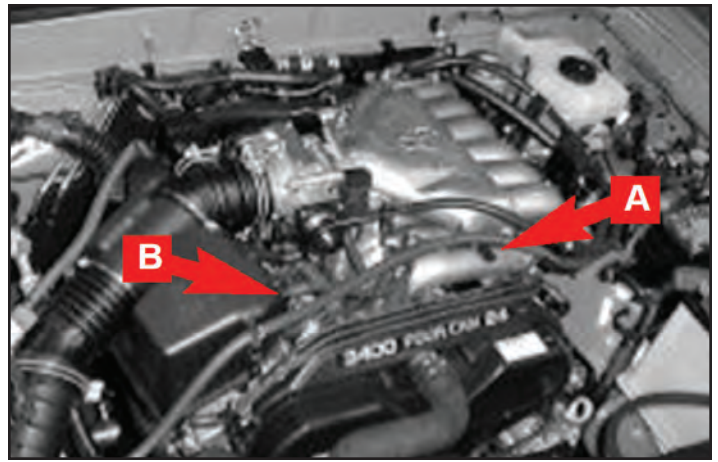
104. Drive test the vehicle. **Do not attempt any wide open throttle runs until the engine computer has had some time to adjust!** Listen for unusual noises, or engine misfires. The supercharger does have a slight whining noise under boost conditions, which is normal. Listen for engine detonation (pinging). If any detonation is heard let up on the throttle immediately. Most detonation is caused by low octane gasoline still in the tank. Premium fuel is required. **After you finish your installation and road test your vehicle, please fill out the warranty registration. This can be found on our website.**

If you have questions about your vehicles performance, please check with your installation facility.

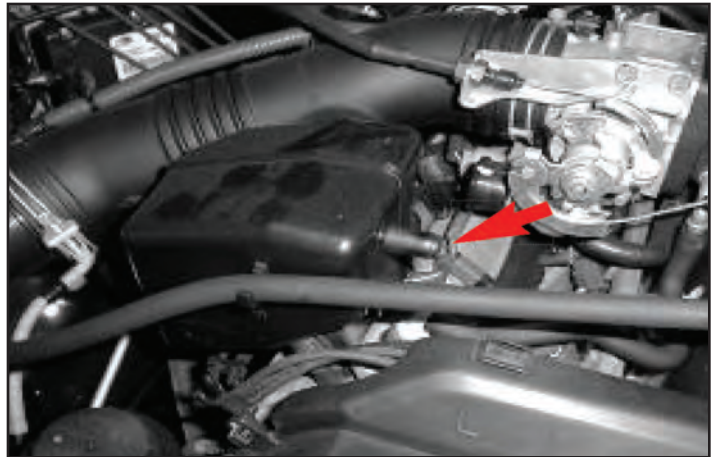


Appendix A: Throttle Body and Air Tube Installation for 2001 and newer 4Runner only with Drive by Wire throttle system

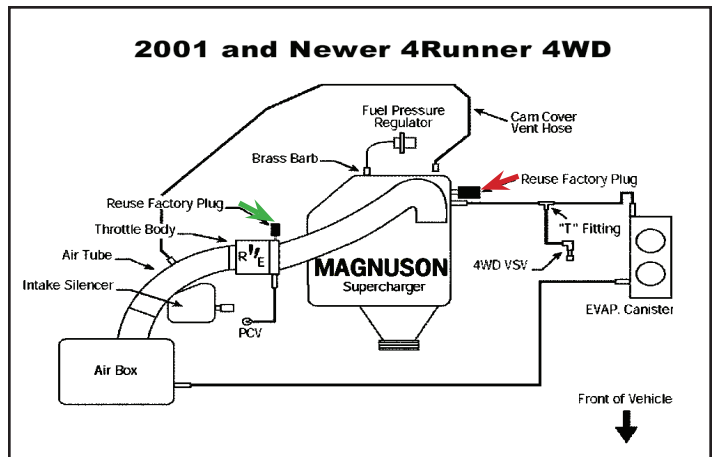
1. Remove the rubber plug (See arrow A) and hose (see arrow B). Retain the plug for reuse, but the hose is not used on the supercharger install.



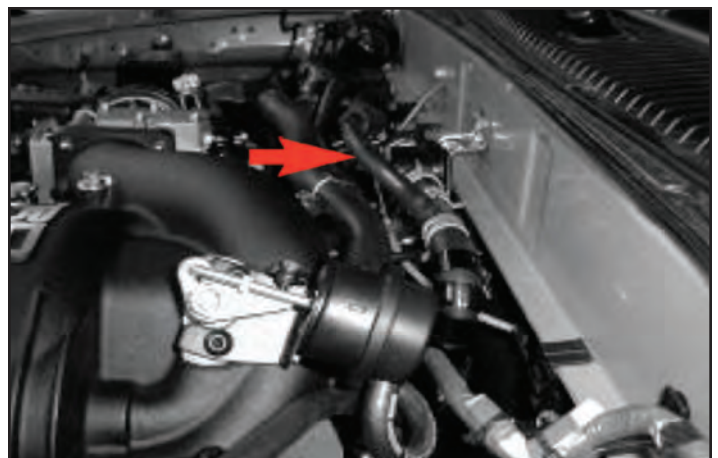
2. Place the rubber plug on the open air box nipple (see arrow).



3. The rubber plug for the brake booster moves to the same location nipple on the supercharger housing (see red arrow). The rubber plug from the metal vacuum tube at the top rear of manifold will move to the barb on the throttle body mounting surface (see green arrow).



4. Rotate the stock heater hose assembly (see arrow) located on the firewall and rotate approximately 30 degrees upward. This will provide clearance away from the re-routed valve cover breather hose.



Appendix B: EGR Removal and Installation

If your Tacoma or T-100 is equipped with an Exhaust Gas Recirculation (EGR) valve (see arrow, figure A), you will need to remove the valve from the stock manifold and reattach it to the Magnuson supercharger manifold using the following steps.

A. Removal:

1. Loosen the EGR pipe from the driver's side exhaust manifold. This will ease the removal and the installation procedures (Figure A).
2. Loosen or remove the clamp holding the pipe to the back of the engine.
3. Remove the two nuts holding the EGR pipe to the EGR valve and separate the two.
4. Remove the two nuts holding the valve and its gasket to the studs on the intake manifold.
5. Remove the EGR valve and gasket from the intake manifold and set to one side. If necessary, remove the EGR hose and vacuum hose but don't disconnect the two water bypass hoses. They're the ones with the spring clamps.

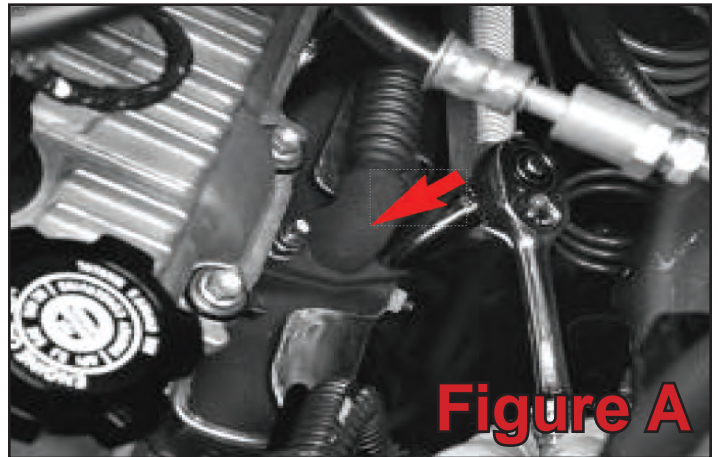


Figure A

B. Installation:

1. Remove the EGR block-off plate from the two studs on the supercharger manifold and using these nuts and washers, install the EGR gasket and valve to the manifold and hand tighten. (see red arrow, figure B)
2. With the supercharger bolted to the engine, attach the EGR valve to the EGR pipe and hand tighten with the original nuts (see yellow arrow, figure B).
3. Tighten the nuts holding the EGR pipe to the exhaust manifold (figure A) and torque them to the specs provided in the Toyota Repair Manual.
4. Torque the EGR-pipe-to-EGR-Valve nuts and the EGR-valve-to-manifold nuts to the specs provided in the Toyota Repair Manual.
5. Install the pipe clamp to the stud on the back of the engine and tighten the nut.

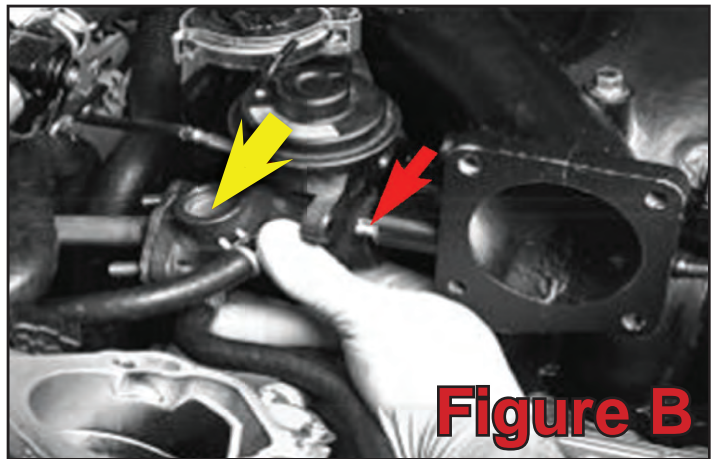
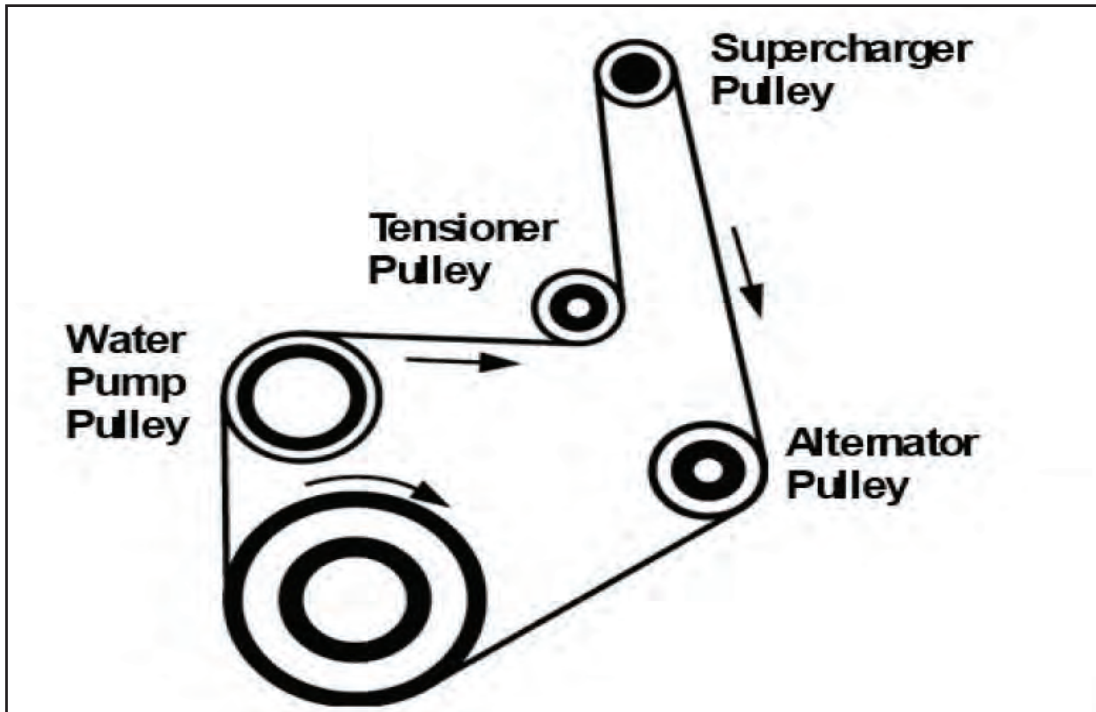


Figure B

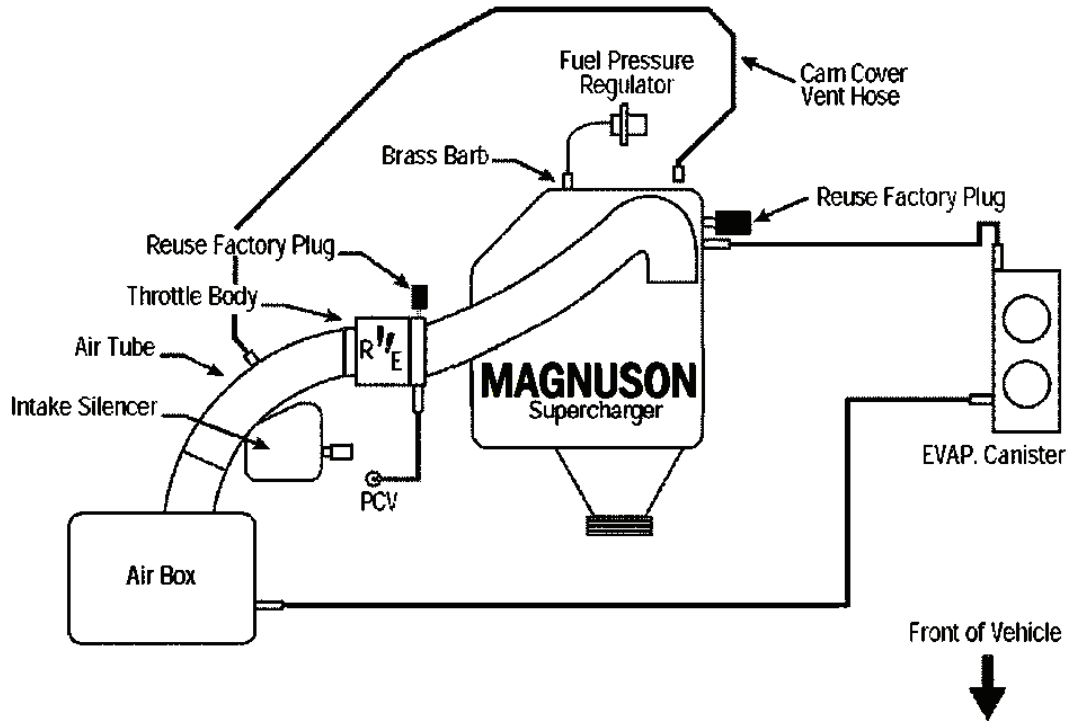
Diagrams



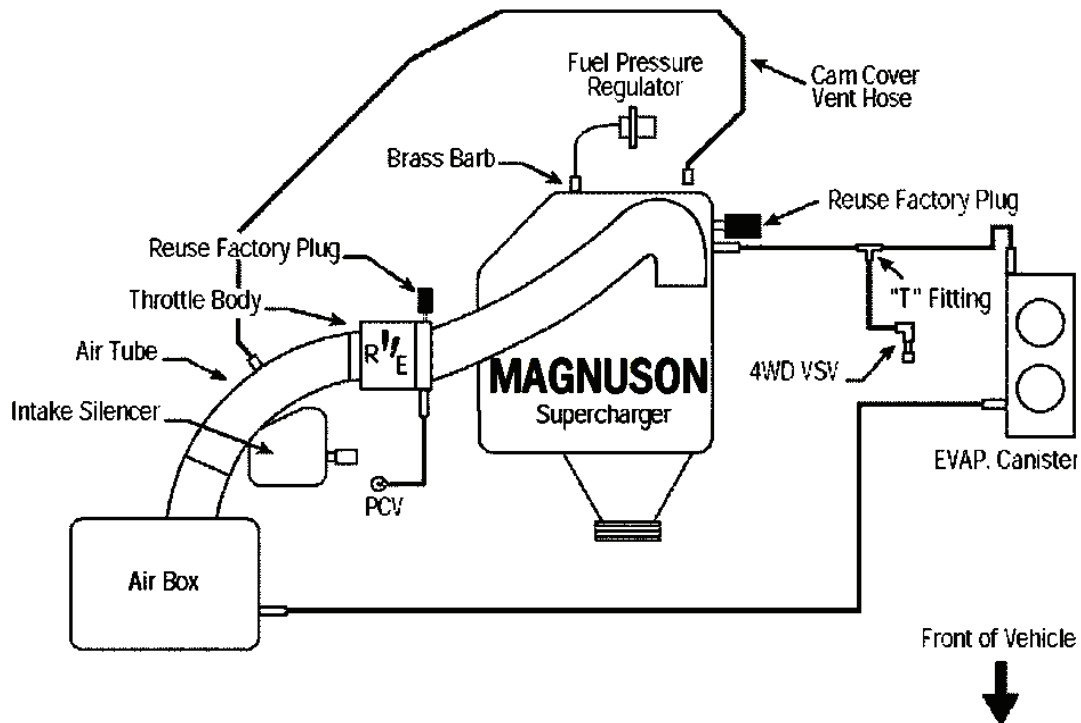
Belt Routing Diagram

Vacuum Hose Diagrams

2001 and Newer 4Runner 2WD

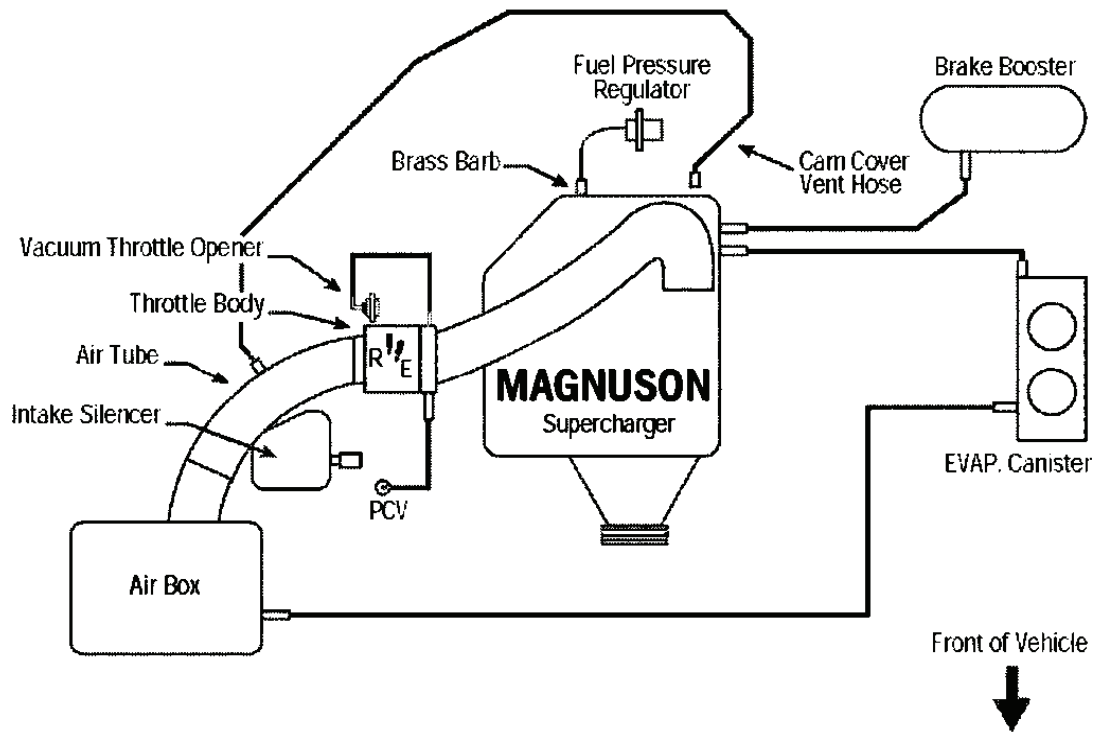


2001 and Newer 4Runner 4WD

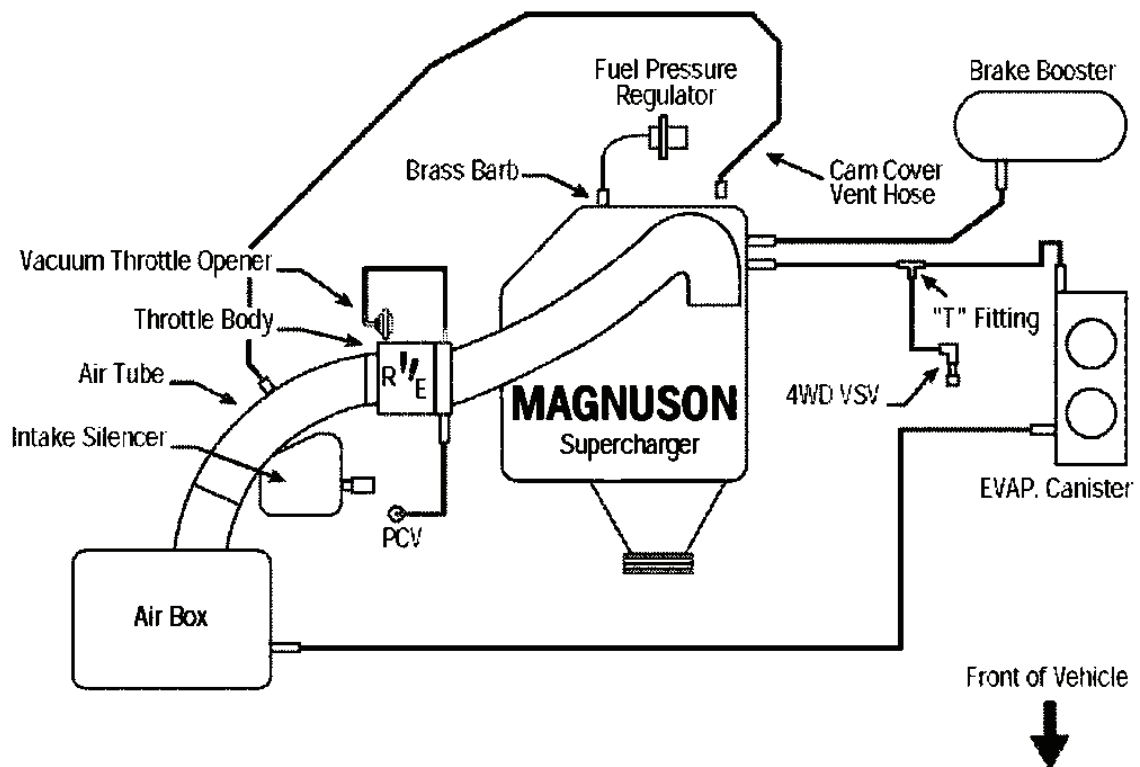


Vacuum Hose Diagrams

2001 and Newer Tacoma 2WD

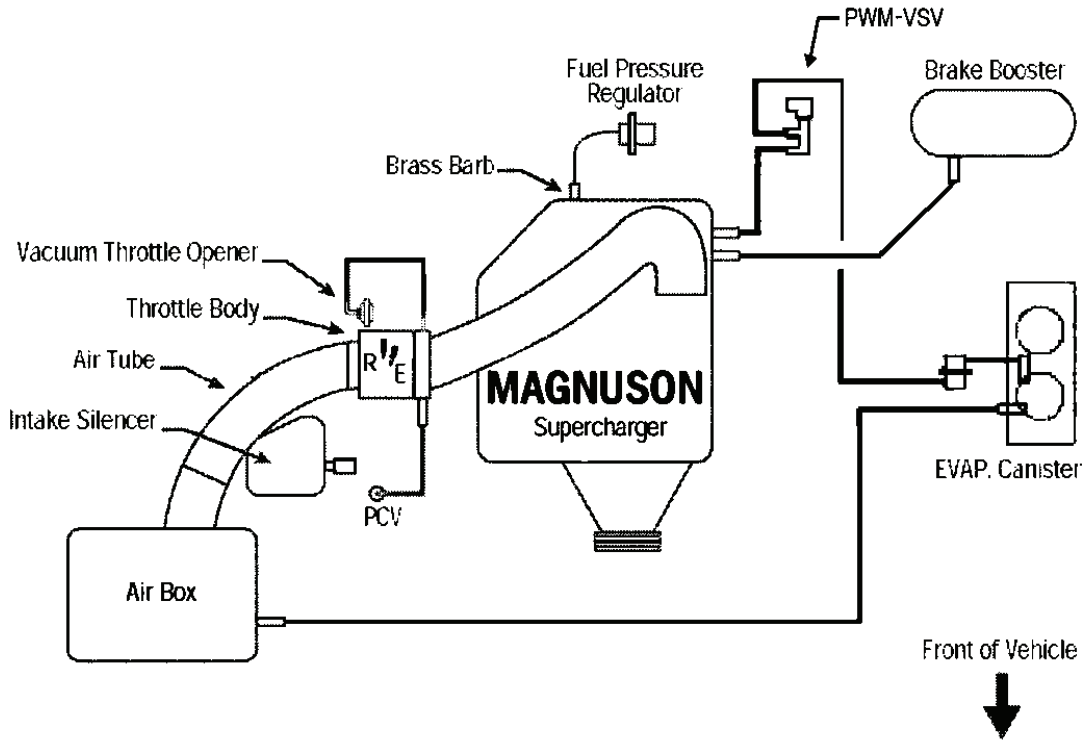


1997-2001 Tacoma 4WD and 1996-2000 4Runner 4WD

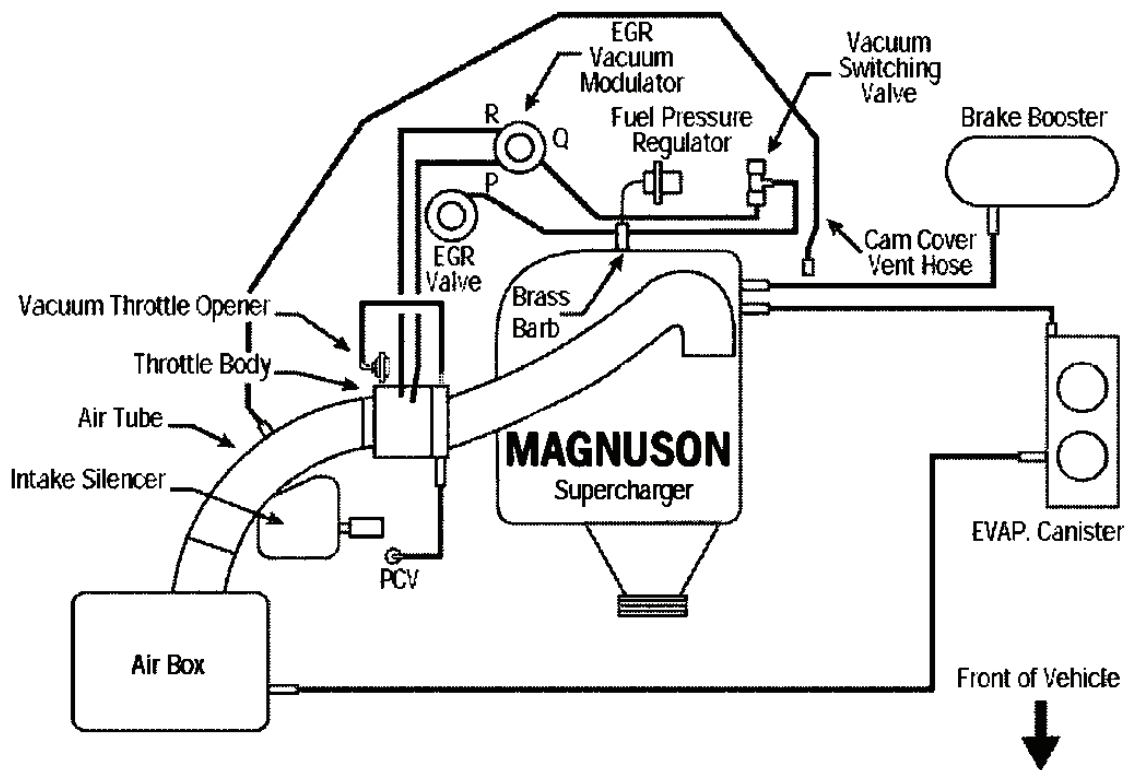


Vacuum Hose Diagrams

2001 Tundra V6

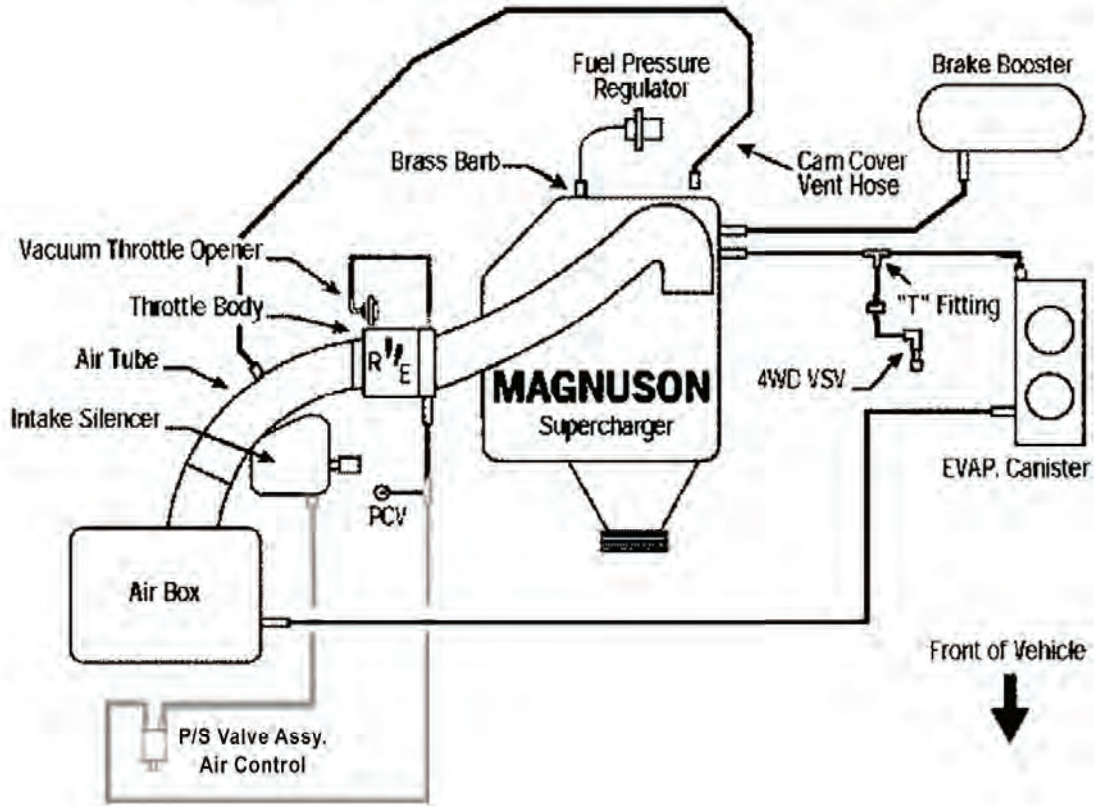


1997-1999 Tacoma 2WD, EGR



Vacuum Hose Diagrams

1997-1998 T100 2WD & 4WD



Notes



Use only premium gasoline fuel, 91 octane or better.

MAGNUSON
SUPERCHARGERS