

**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

**Part Number:** 00602-17620-105  
 00602-17620-106  
 00602-17620-107  
 00602-17620-108  
 00602-17620-109  
 00602-17620-111  
 00602-17620-114  
 00602-17620-115

**2003 Matrix Auto**  
**2003 Matrix Manual**  
**2003 Corolla Auto**  
**2003 Corolla Manual**  
**2004 Matrix Auto**  
**2004 Matrix Manual**  
**2004 Corolla Auto**  
**2004 Corolla Manual**

**Section I – Installation Preparation**

**Kit Contents**

Item #	Quantity Req'd.	Description
1	1	Main Component Kit
2	1	TRD ECU Kit

**Conflicts**

Note: Will not fit AWD Matrix

**General Applicability**

2003-2004 Corolla
2003-2004 Matrix, 2WD with 1ZZ-FE engine

**Recommended Sequence of Application**

Item #	Accessory	
1	Main Component Kit	
2	TRD ECU Kit	

\*Mandatory

**Notes and Recommendations**

Read through the entire instruction packet before starting to become familiar with all the procedures.



**Caution: Do not use any aftermarket “Cold Air Intake” kits with the TRD Supercharger. The OE Air Filter Housing and the OE Mass Air Flow sensor are critical for the correct Air/Fuel ratio calibration with the TRD Supercharger. The use of any aftermarket “Cold Air Intake” kits will void the TRD Supercharger warranty and also the vehicle powertrain warranty.**

	<b>STOP:</b> Damage to the vehicle may occur. Do not proceed until process has been completed.
	<b>OPERATOR SAFETY:</b> Use caution to avoid risk of injury.
	<b>CRITICAL PROCESS:</b> Proceed with caution to ensure a quality installation. These points will be audited on a completed vehicle installation.
	<b>GENERAL PROCESS:</b> This highlights specific processes to ensure a quality installation. These points will be audited on a completed vehicle installation.
	<b>TOOLS &amp; EQUIPMENT:</b> Special tools are needed for this step.

1. Before you begin, TRD recommends that you thoroughly clean the engine compartment. If you don't, grease buildup on parts could become dislodged during the procedure and fall into the engine.
2. Make sure the engine has fully cooled before you begin.
3. To help with re-connecting the vacuum hoses, you should draw diagrams of your engine's vacuum hose routing before you disconnect anything. However, some of the vacuum connections on your stock air intake chamber may not be the same as those on the supercharger. Study and closely follow the installation instructions for correct vacuum hose connections.
4. The TRD supercharger system has been designed to reuse most of the original equipment (OE) 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.

**Recommended Tools:**

Basic Tools:

Metric Socket Set  
Metric Allen-Head Set  
Metric Combination Wrench Set  
½" Wide Masking Tape for Labeling Hardware and Parts  
China Marker or "Grease Pencil"  
A Clean Work Bench  
A Parts Tray  
Rags or Shop Towels  
Permatex Copper Spray-A-Gasket Sealant: Item # 80697 (101MA)  
Scissors

Safety Tools:

Safety Goggles

Special Tools:

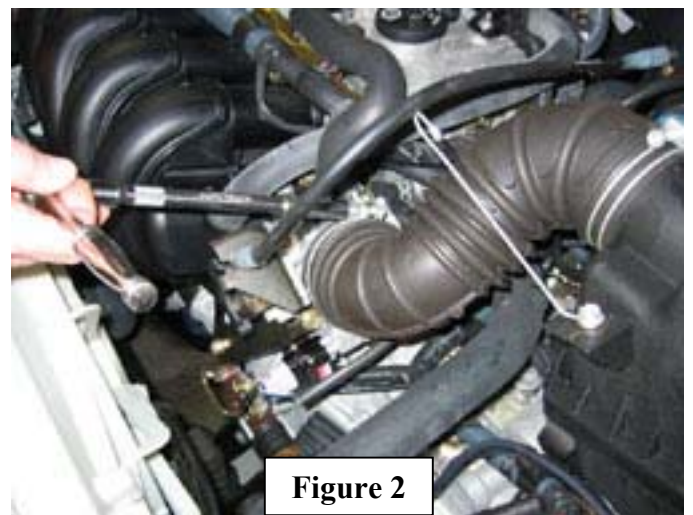
Jigsaw or Band Saw (to trim engine cover)  
Toyota Repair Manual: Available from Toyota, 800-622-2033

## Section II – Removal of Stock Components

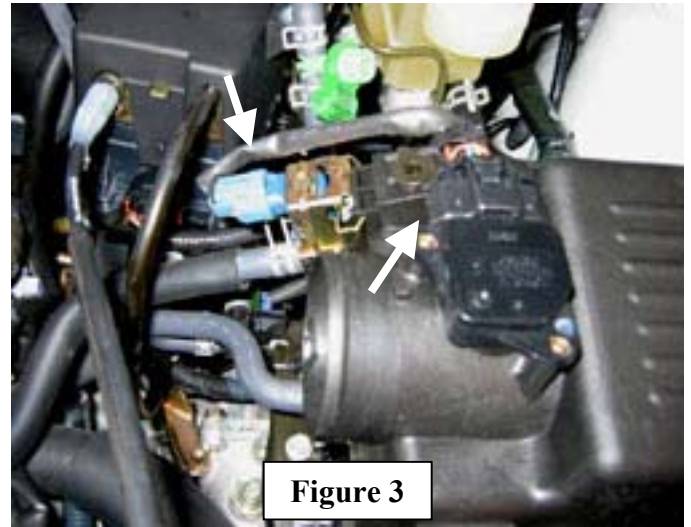
1. Disconnect negative battery cable, then the positive cable.
2. Drain the engine coolant by turning the radiator petcock 1 ½ turns counter-clockwise. Use a clean drain pan to catch coolant. Close the petcock after the coolant is drained.
3. Remove the battery hold-down bracket and remove the battery.
4. Remove the cylinder head cover (Figure 1).



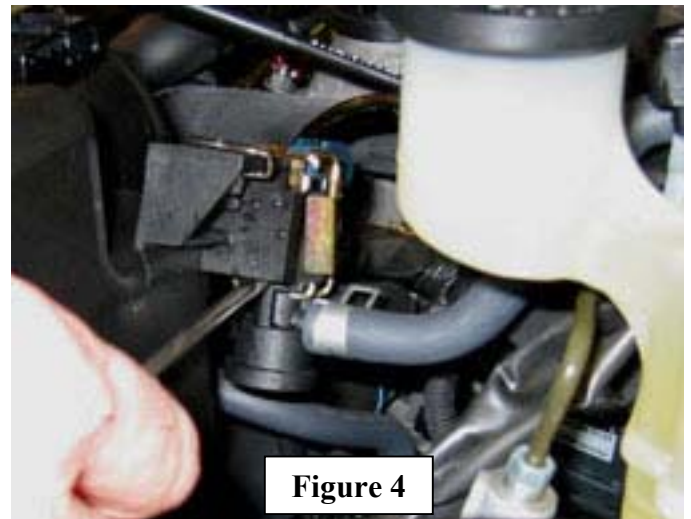
5. Remove the air filter hose from the air filter housing and the throttle body (Figure 2).



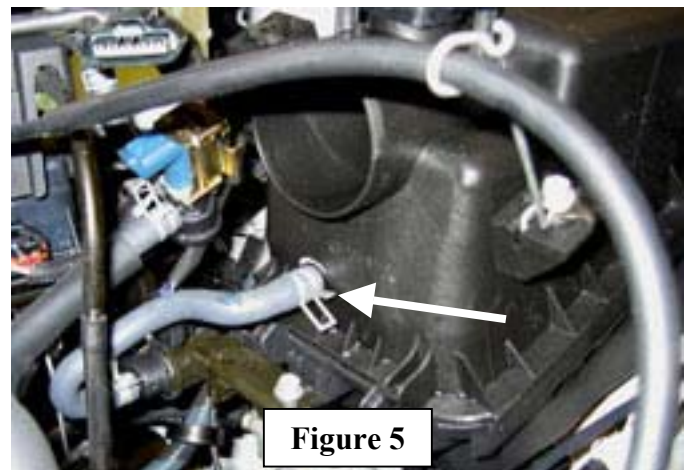
6. Disconnect the Vacuum Switched Valve (VSV) connector and Mass Air Flow (MAF) connector (Figure 3).



7. Remove the VSV mount and VSV from the factory air filter cap and set them aside. Use a small screwdriver to unclip the VSV mount as shown in Figure 4.



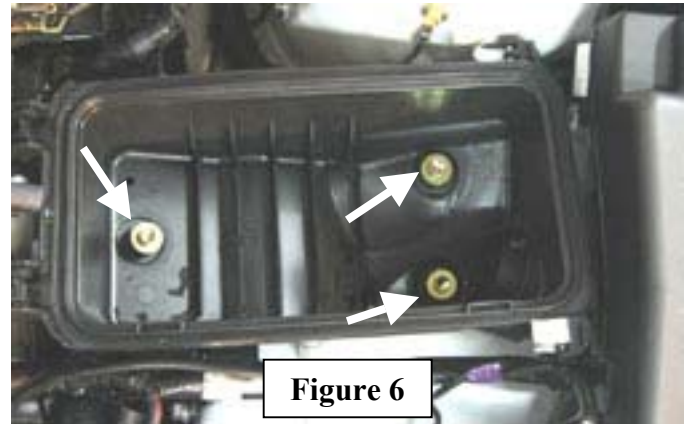
8. Disconnect the evaporative (EVAP) canister closed valve hose at the air filter cap (Figure 5).
9. Remove the air filter cap and air filter.



**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

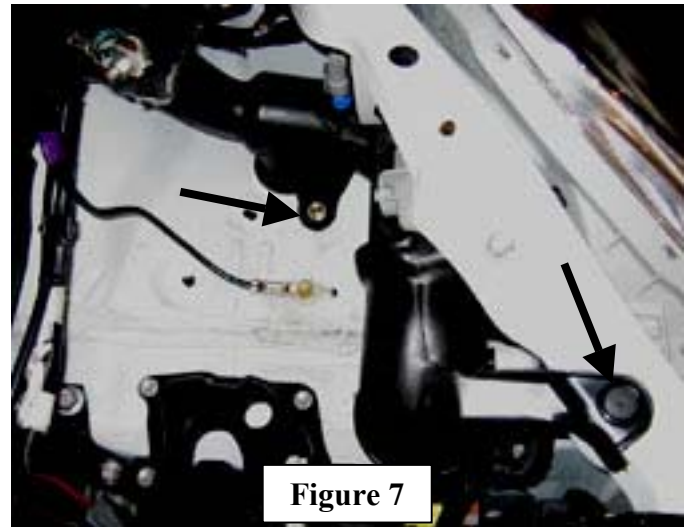
10. Remove the three (3) bolts that secure the air filter housing (Figure 6).

**Note:** The air filter housing does not need to be removed from the vehicle. The housing needs to remain loose for the following steps.



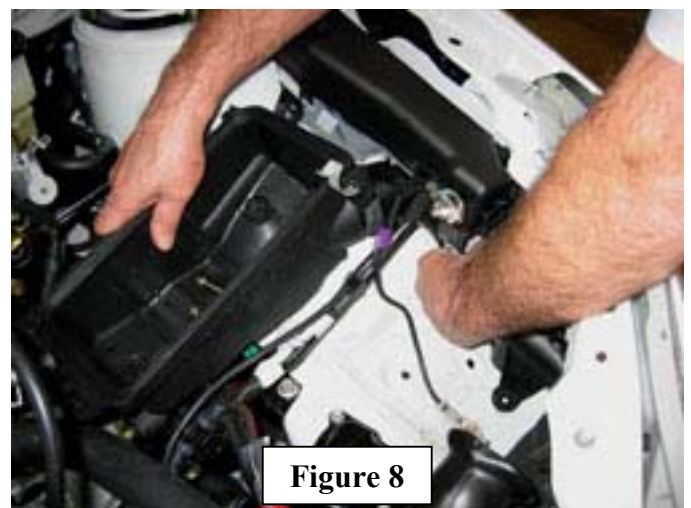
**Figure 6**

11. Remove the pushpin fastener and one 6mm bolt that secures the air filter inlet duct (Figure 7, the air filter housing has been removed for clarity).



**Figure 7**

12. Remove the inlet duct by moving the air filter housing towards the engine and separating the inlet duct at the air filter housing (Figure 8). The inlet duct will not be reused.

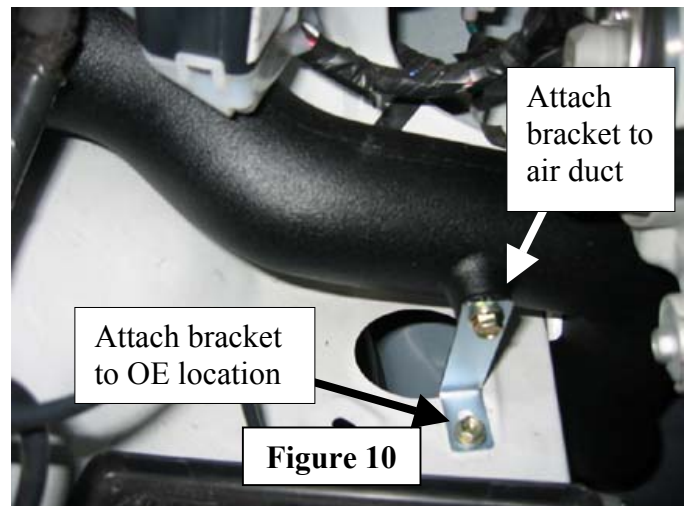


**Figure 8**

13. Insert the TRD-supplied air duct into the air filter housing inlet. The bell shaped side on the opposite end fits into the open area below the OE headlights (Figure 9).
14. Reinstall the three (3) factory bolts that secure the air filter housing to the vehicle (Refer to Figure 6 on Page 5). Torque the bolts to 7 N·m (62 in·lbf).



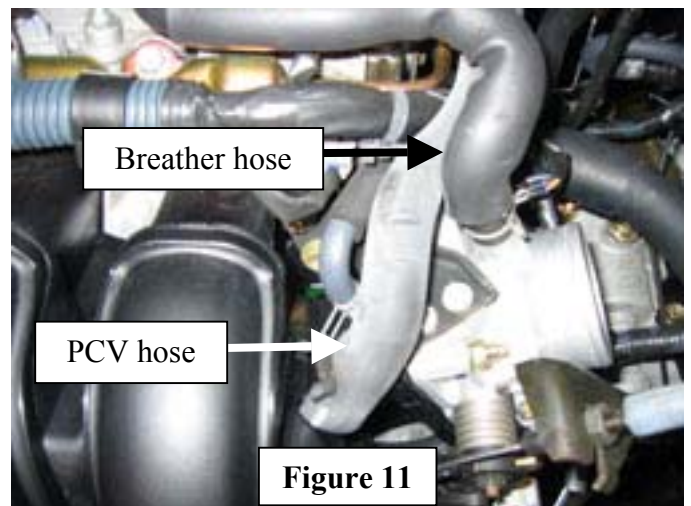
15. Attach the TRD supplied air duct bracket to the air duct using the supplied 6mm x 10mm long flange head bolt. Secure the air duct bracket to the original mounting location in the engine bay by re-using the OE bolt (Figure 10). Torque bolts to 7 N·m (62 in·lbf).



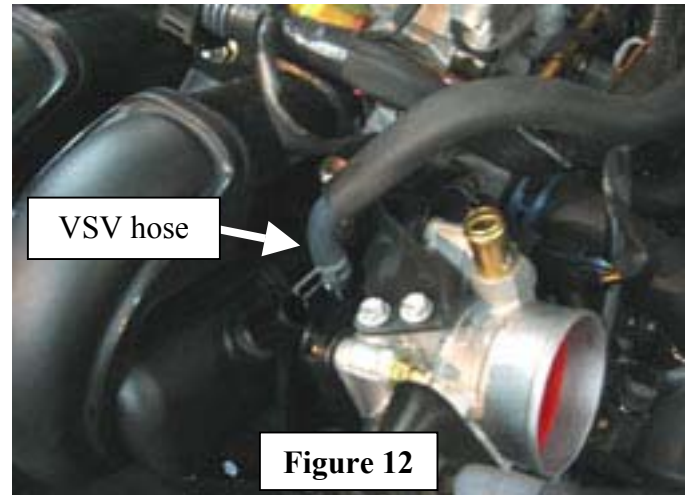
16. Reinstall the air filter and air filter cap.

**CAUTION: The factory air filter cap and supplied inlet parts must be used to achieve the correct air/fuel ratio at wide-open throttle (WOT). The use of any aftermarket “cold air intake kits” with the supercharger will void the supercharger warranty and also the vehicle powertrain warranty.**

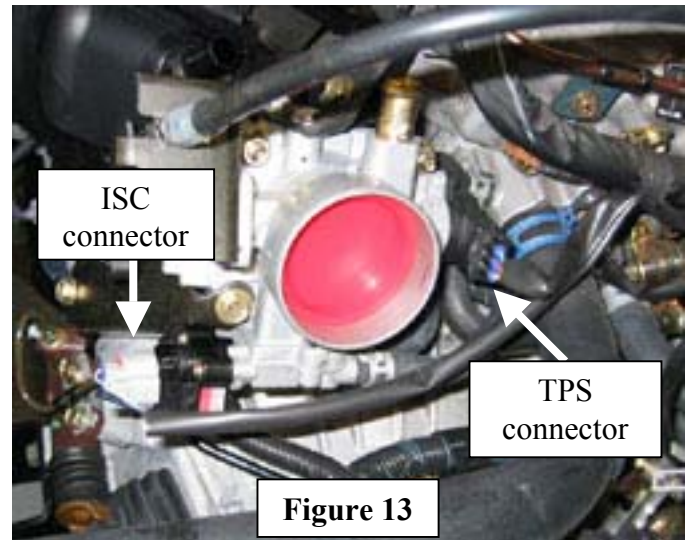
17. Reconnect the EVAP canister closed valve hose to the air filter cap (Refer to Figure 5 on Page 4).
18. Reinstall the VSV to the air filter cap (Refer to Figure 4 on Page 4).
19. Reconnect the VSV connector and the MAF connector (Refer to Figure 3 on Page 4).
20. Remove the breather and PCV hoses at the throttle body and cam cover (Figure 11). The PCV hose will not be reused.



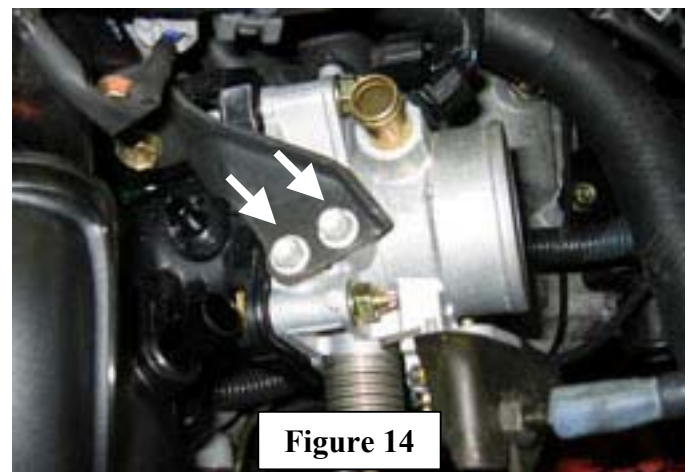
21. Disconnect the VSV vacuum supply hose at the throttle body only and set it aside (Figure 12).



22. Remove the throttle position sensor (TPS) connector and the idle speed control (ISC) valve assembly connector (Figure 13).

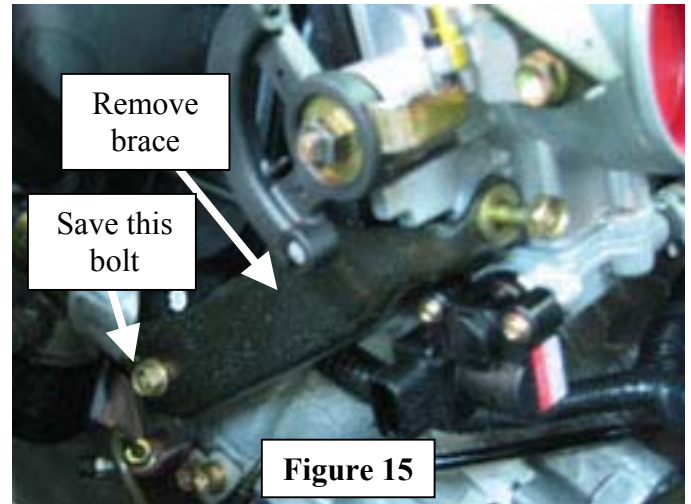


23. **Manual transmission vehicles ONLY:**  
Remove the two (2) 6mm bolts that secure the top bracket to the throttle body (Figure 14). The bracket will not be reused.



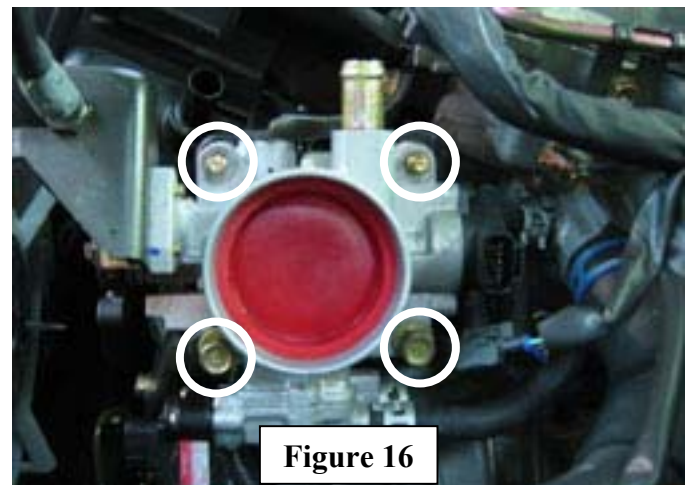
**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

24. On all models, remove the lower brace from the throttle body and intake manifold. Save the factory bolt for use with the supercharger installation (Figure 15).

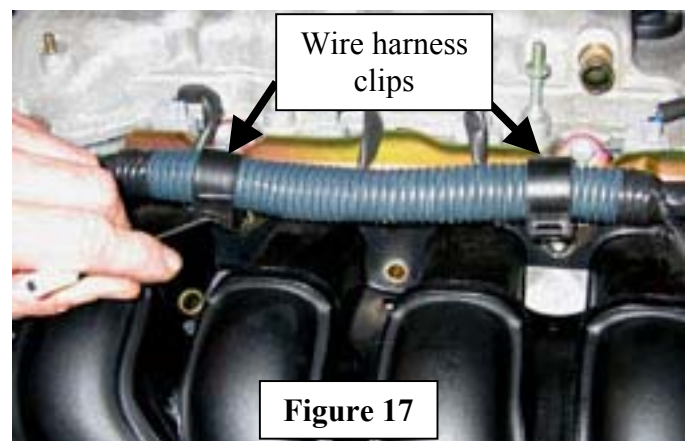


25. Remove the hardware that secures the throttle body and move the throttle body towards the air filter housing (Figure 16).

26. Remove the oil level dipstick from the tube and set it aside.



27. Use a small screwdriver to release the clips that secure the wire harness to the cylinder head, and then remove the wire harness brackets from the cylinder head (Figure 17).



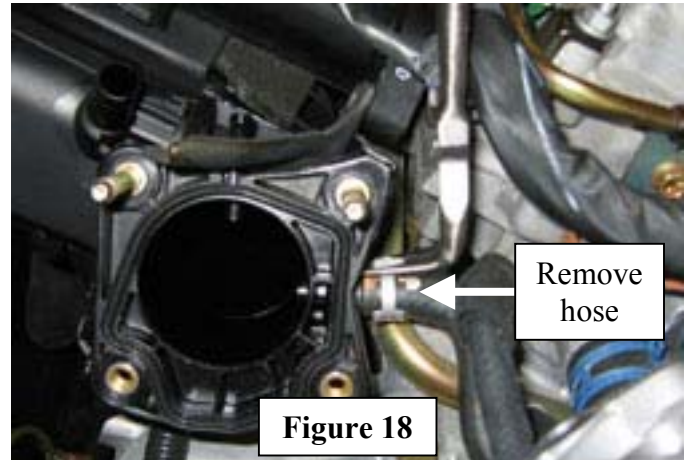


**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

28. Disconnect the factory brake booster vacuum supply hose where it connects to the intake manifold (Figure 18).



**Note: Do not remove the OE fuel rail.**

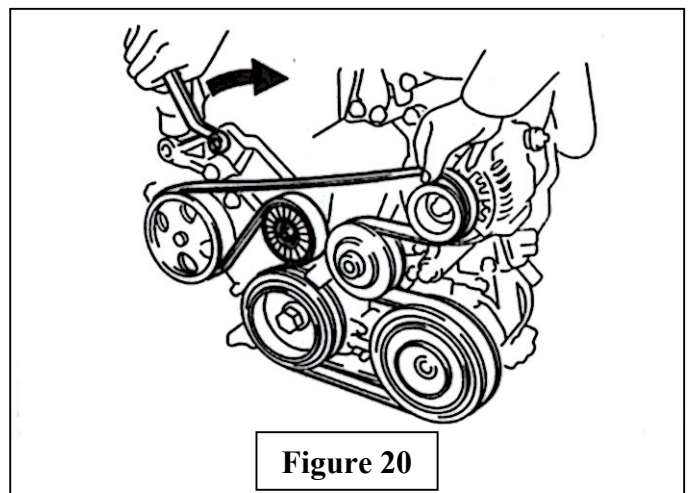


29. Remove the 3 bolts and 2 nuts, and then remove the intake manifold (Figure 19).

30. Use duct tape or masking tape to cover the intake ports on the cylinder head.

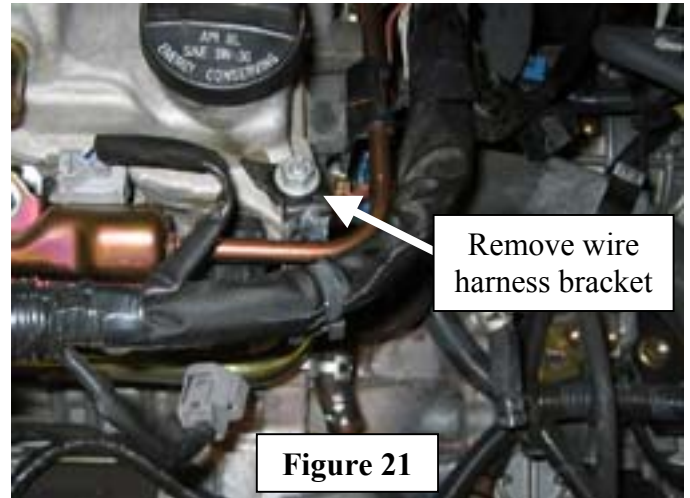


31. Release the belt tensioner and remove the accessory drive belt (Figure 20).

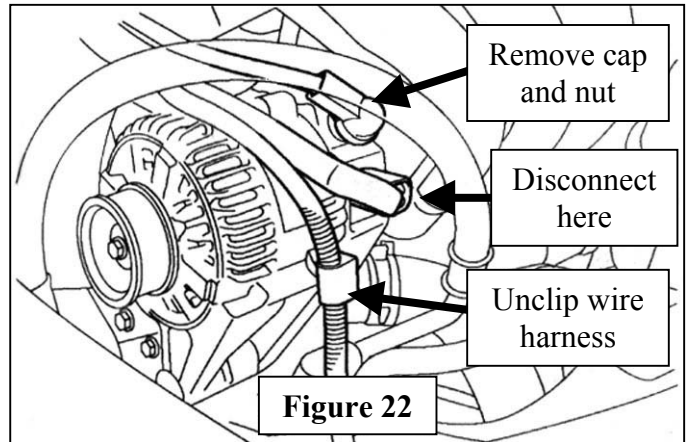


**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

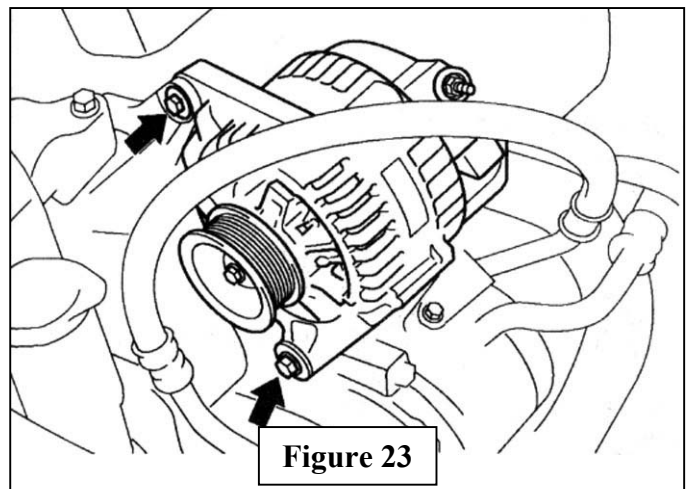
32. Remove the wire harness bracket from the cam cover and the wire harness. Re-install the nut to secure the cam cover (Figure 21). The bracket will not be reused.



33. Disconnect the wire clamp from the wire clip on the alternator rectifier end frame, remove the rubber cap and nut, then disconnect the alternator wire (Figure 22).

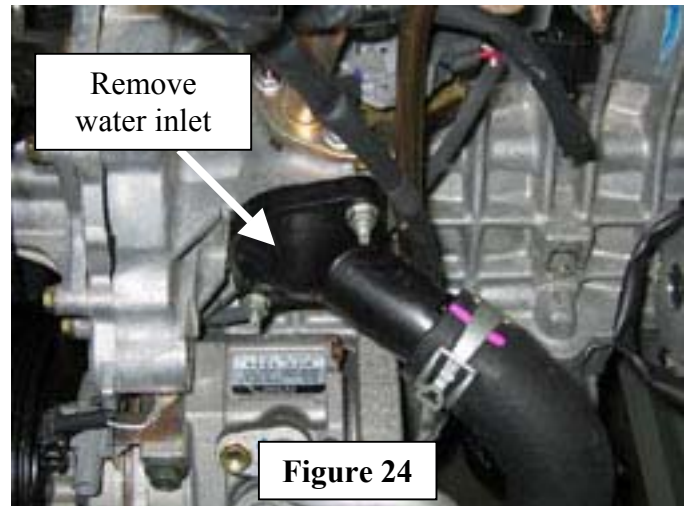


34. Disconnect the alternator connector; remove the two bolts and alternator (Figure 23).



**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

- 35. Remove the water inlet (Figure 24).
- 36. Remove the factory thermostat.

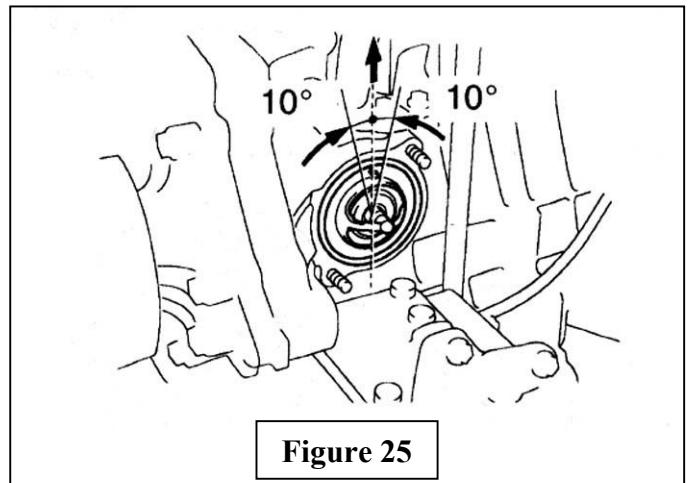


- 37. Install the TRD-supplied thermostat and gasket.

**NOTE:** Install the thermostat with the jiggle valve upward as shown in Figure 25.

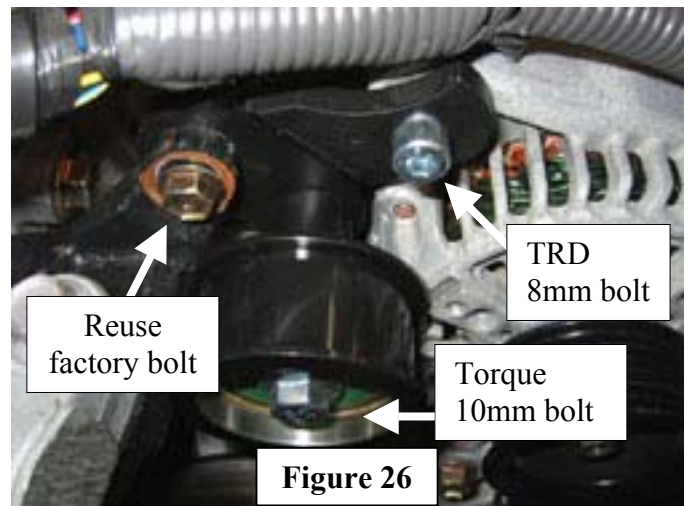
- 38. Install the water inlet (Refer to Figure 24).  
Torque the nuts to 11 N·m (8 ft·lbf).

- 39. Hold the alternator in place and install the lower bolt (14mm head) finger tight (Refer to Figure 23).



- 40. Reuse the factory bolt (removed in Step 34 on Page 10) to secure the idler bracket to the alternator bracket as shown in Figure 26. Use the TRD-supplied socket head 8mm bolt to mount the idler bracket to the alternator. Finger-tighten both bolts at this time.

- 41. Install the idler pulley/bearing assembly onto the bracket. Use (2) supplied .062" thick shims between the bracket and pulley assembly. Secure pulley/bearing assembly to bracket using the supplied 10mm flange-head bolt and 10mm heavy-duty washer (Figure 26). Torque bolt: 47 N·m (35 ft·lbf).



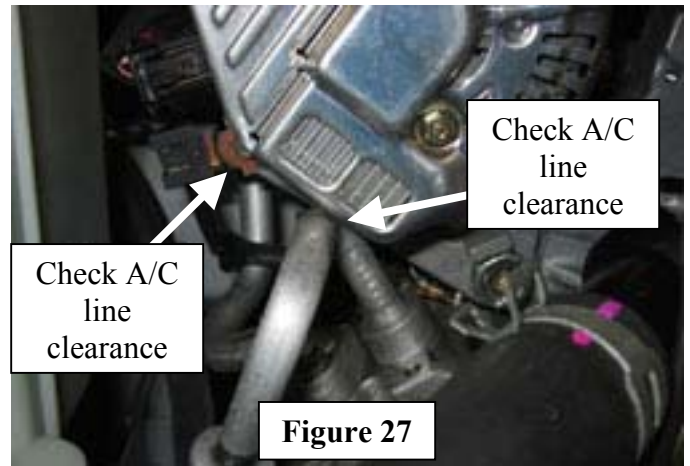
**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

42. Tighten the lower 14mm head alternator bolt shown in Figure 23. Torque bolt: 54 N·m (39 ft·lbf).

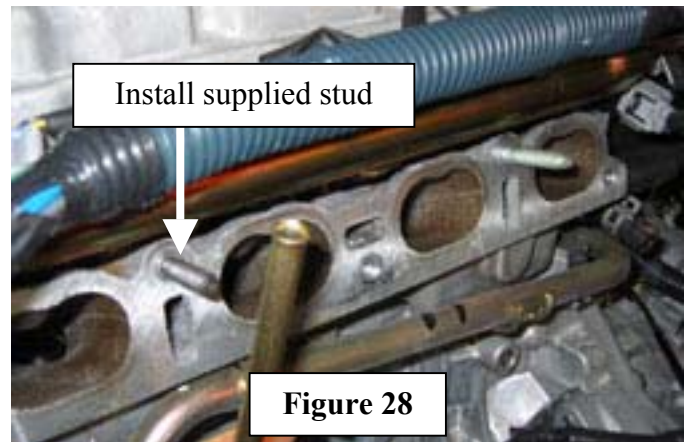


43. Check the clearance between both the A/C metal lines and the alternator housing (Figure 27). Clearance should be a minimum of 1.0mm (.040 inch). If clearance is not adequate, then adjust the metal line(s) away from the housing.

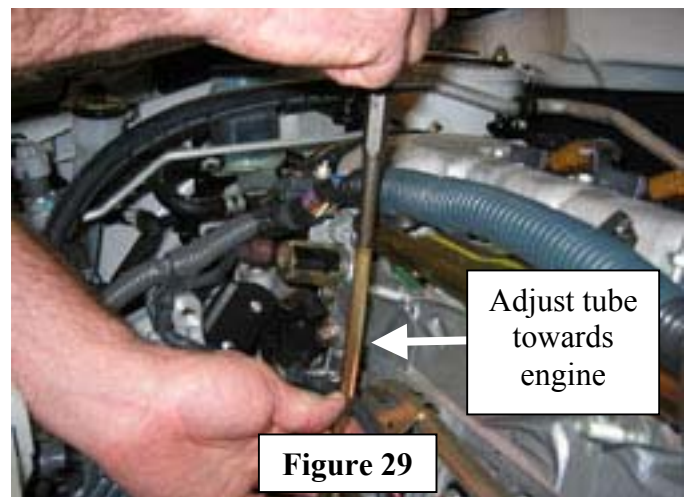
44. Reconnect the alternator wires that were removed in Step 33, Figure 22



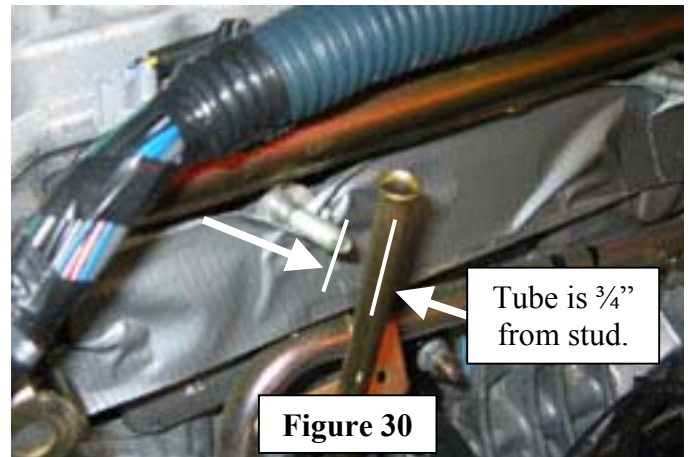
45. Remove the factory intake manifold stud (passenger-side). Replace it with the TRD-supplied 8mm x 40mm long stud (Figure 28).



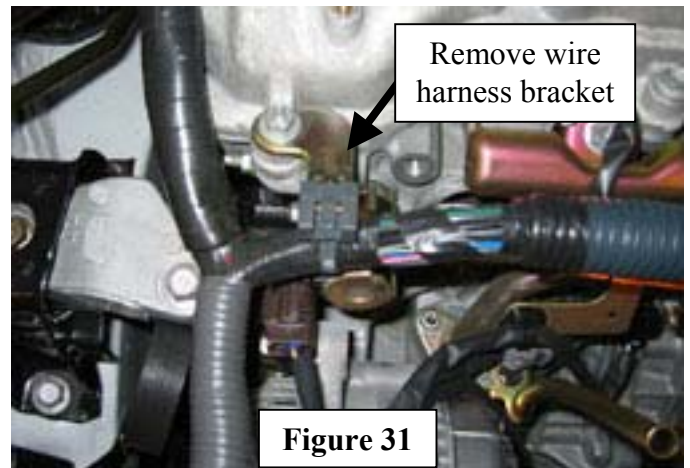
46. Adjust the oil level dipstick tube as shown. The factory tube location at the closest point to the intake stud is approximately 67mm (2-5/8 inches) from the stud (Figure 29).



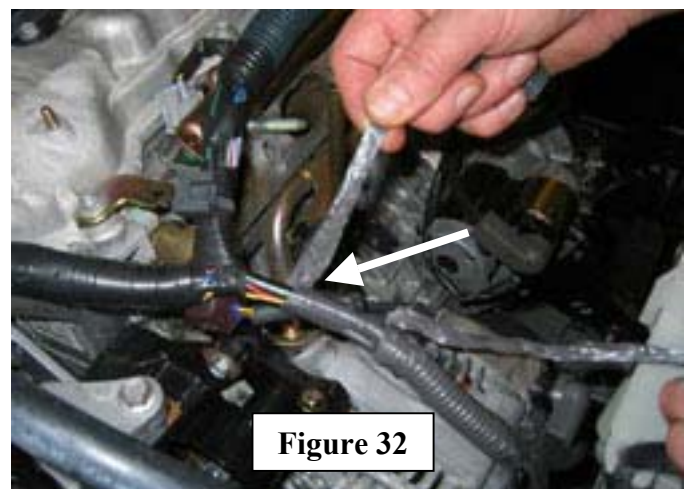
47. Adjust the tube to approximately 19mm ( $\frac{3}{4}$  inch) away from stud (Figure 30).



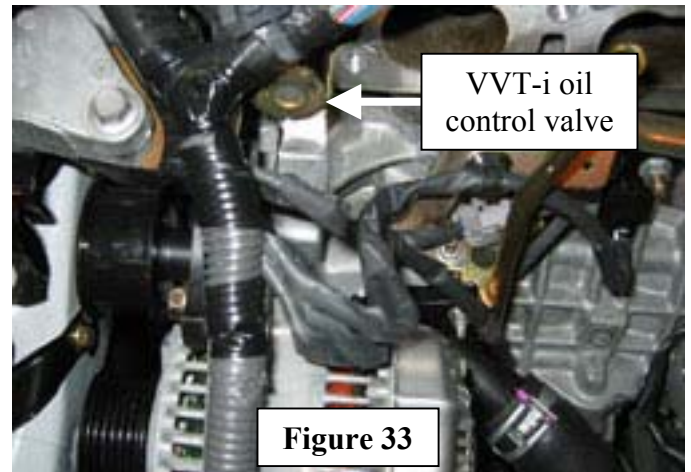
48. Remove the wire harness bracket from the cam cover and the wire harness. Re-install the nut to secure the cam cover (Figure 31). The bracket will not be reused.



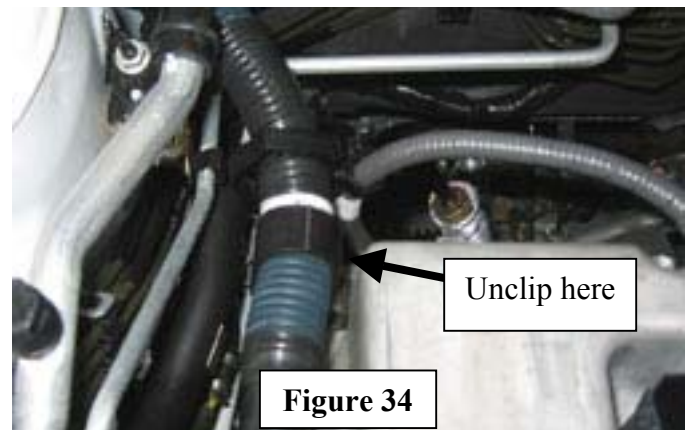
49. Remove the electrical tape from the area just past the “Y” in the wire loom. Remove the convoluted shell and remove the tape that groups the engine sensor wires together (Figure 32).



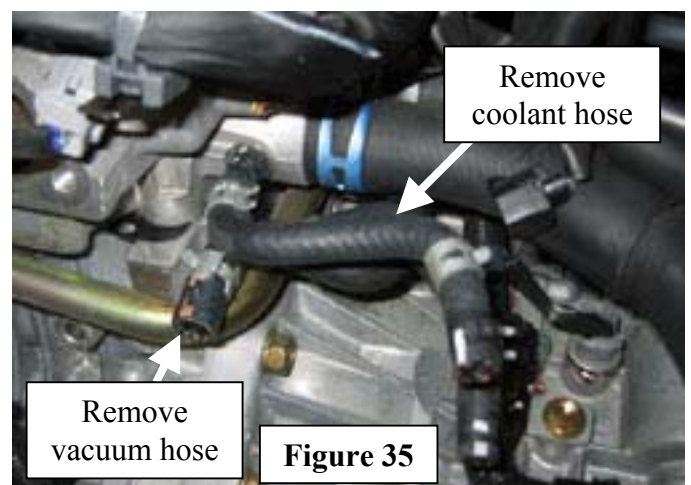
50. Move the VVT-i oil control valve wire out from the wire bundle. Reinstall the convoluted shell and re-tape the shell as shown (Figure 33).



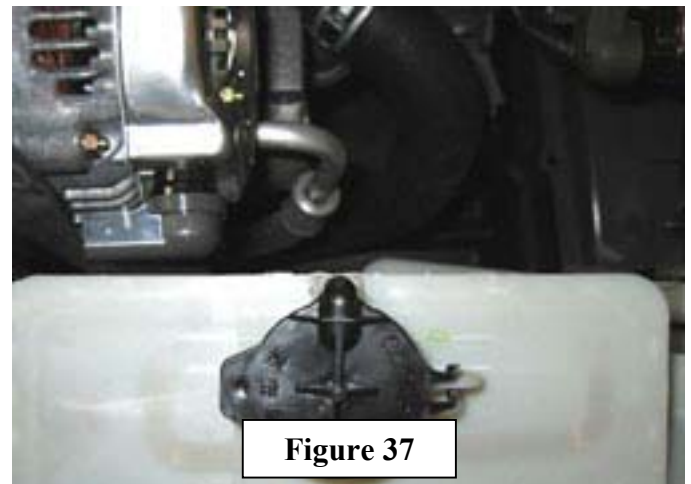
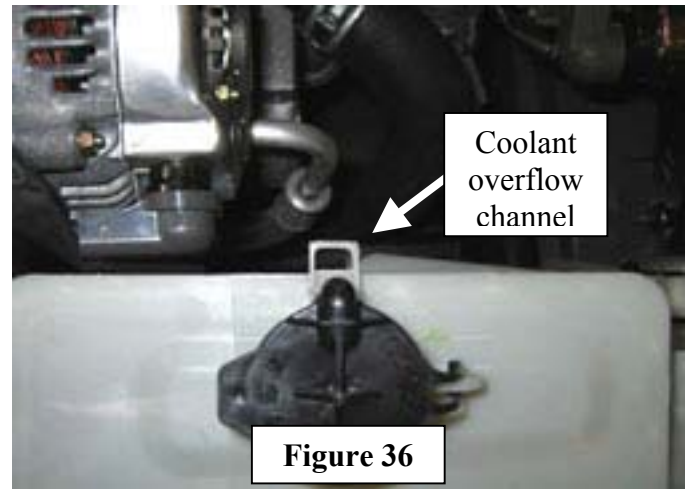
51. Release the engine wire loom from the factory clip on the cam cover (Figure 34).



52. Remove the upper “S-formed” factory coolant hose from the engine block and the throttle body (Figure 35). The hose will not be reused, but retain the clamps as they will.
53. Remove the factory vacuum hose from the steel line that connects to the brake booster (Figure 35).
54. Install the TRD-supplied 3/8” x 9” long vacuum hose to the steel line of the previous step. Use one TRD-supplied spring clamp to secure the hose.



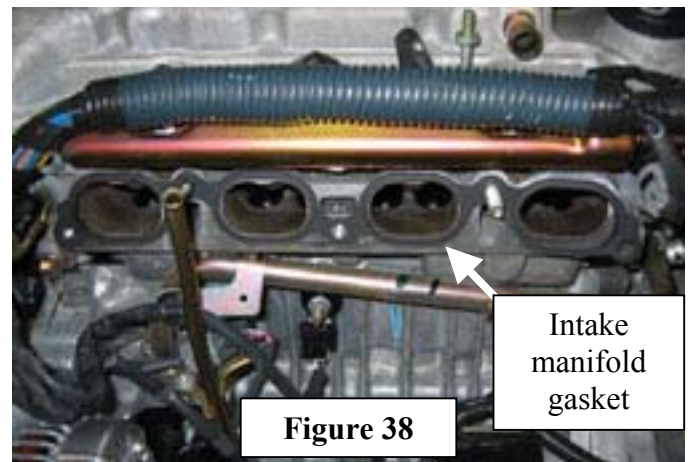
55. Remove the coolant overflow channel on the coolant recovery tank. See before (Figure 36) and after (Figure 37) photos. The channel can be removed by using an air tool with an abrasive sanding disk.




### Section III – Supercharger Installation

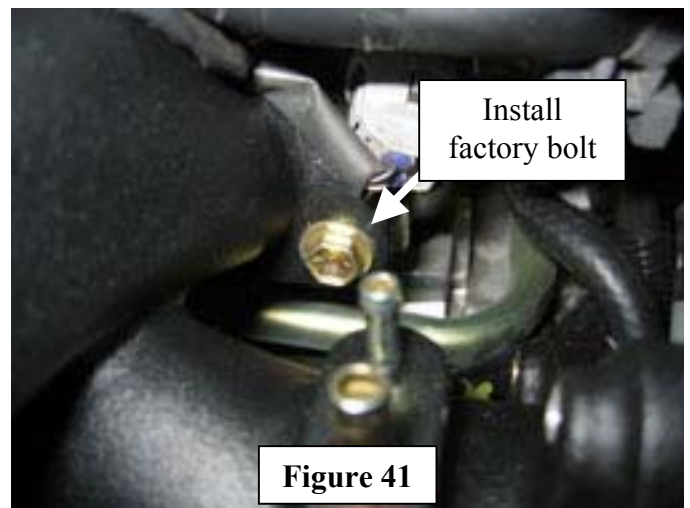
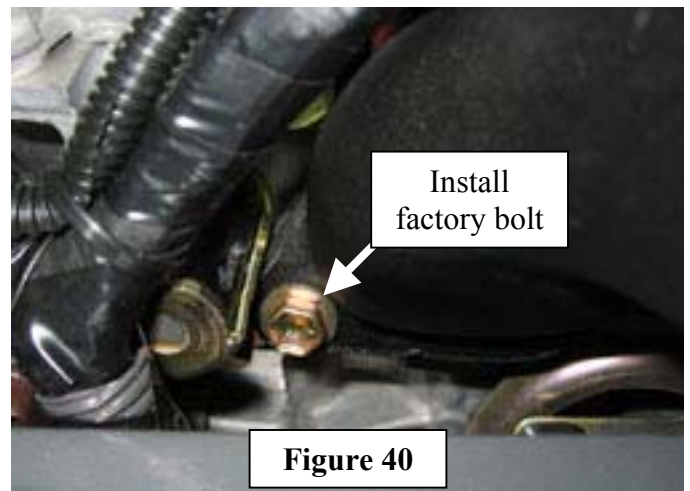
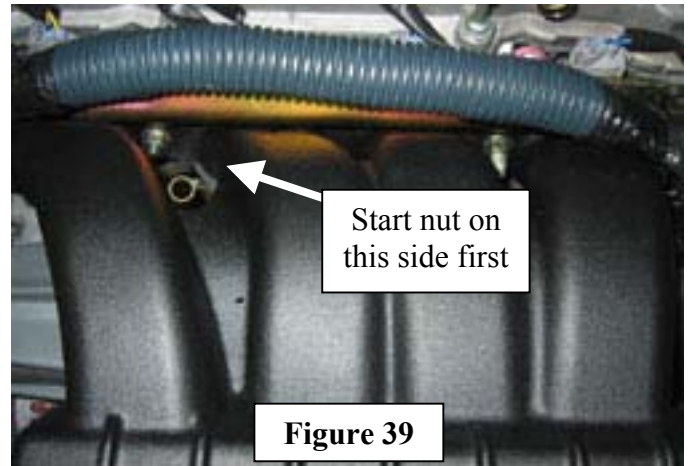


1. Apply Permatex Copper Spray-A-Gasket sealant to both sides of the supplied intake manifold gasket. Allow sealant to set up or “tack” for a few minutes before installation.
2. Remove the tape covering the intake ports from the cylinder head.
3. Slide the TRD-supplied intake manifold gasket over the two studs in the cylinder head (Figure 38).



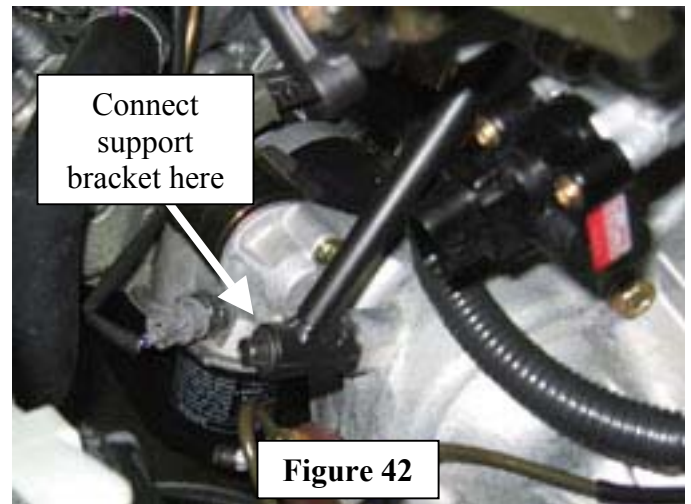
**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

4. Install the supercharger assembly by sliding the unit over the two studs in the cylinder head. Start the factory nut over the TRD-supplied (shorter) stud before starting the second nut (Figure 39). **Caution:** Check routing of wire harness under supercharger nose. The harness should fit in the machined area on the underside of the supercharger nose.
5. Use the factory bolt removed in Step 24 of the Removal Procedure on Page 8 to secure the supercharger to the cylinder head. Start the factory bolt in the center hole.
6. Use two factory intake manifold bolts in the supercharger outer holes (Figure 40: passenger-side, Figure 41: driver-side). Start both bolts, and then finger tighten all fasteners.
7. Tighten the supercharger to the cylinder head starting with the center bolt, then progressively work outward to the studs and finally to the outer bolts. Torque bolts and nuts to 30 N·m (22 ft·lbf).
8. Insert the oil level dipstick back into the dipstick tube.
9.  Preload the idler pulley bracket against the supercharger nose, and then tighten both bolts that secure the idler pulley bracket to the alternator bracket and to the alternator. Torque bolts to 25 N·m (18 ft·lbf).

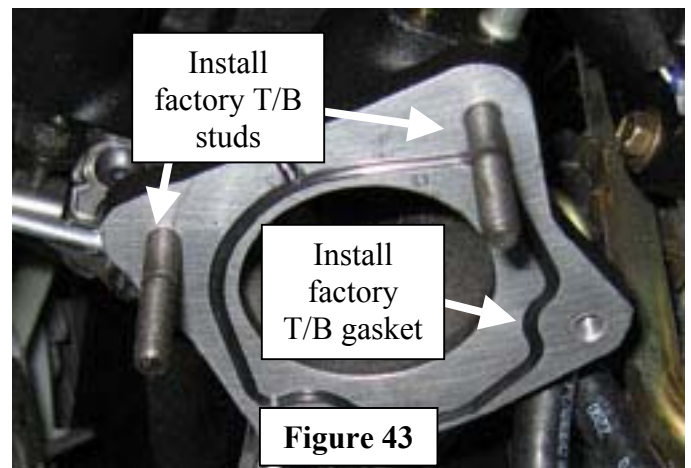




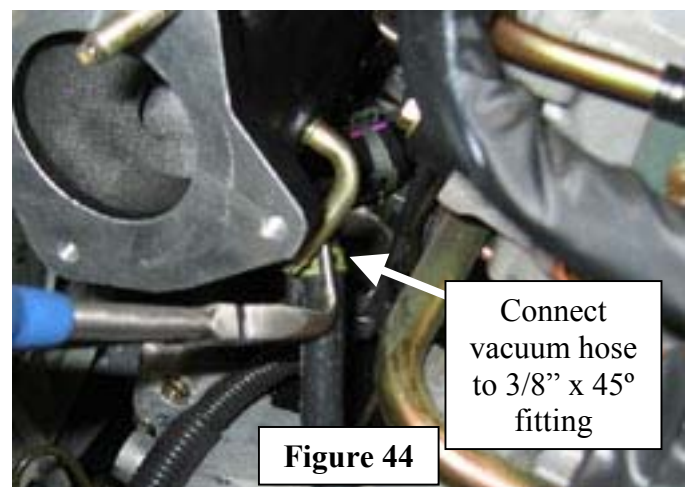
10. Install the TRD-supplied supercharger support bracket. Secure the lower bracket boss (marked with a sticker) with one TRD-supplied 8mm x 45mm long bolt to the engine as shown in Figure 42. Secure the top of the bracket to the supercharger with the second TRD-supplied bolt. Torque the bolts to 30 N·m (22 ft·lbf).



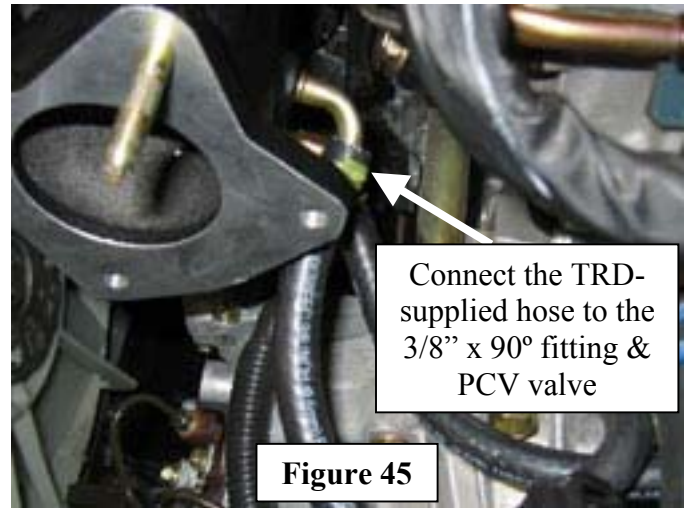
11. Remove the two factory throttle body studs from the factory intake manifold. Install the studs into the supercharger manifold (Figure 43).
12. Remove the factory throttle body gasket from the intake manifold and install it into the groove in the supercharger manifold (Figure 43).



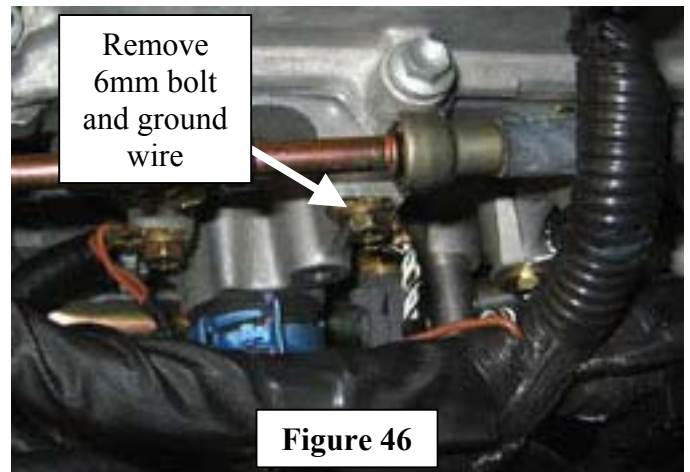
13. Connect the 3/8" vacuum hose from the brake booster steel line to the 3/8" x 45° hose nipple on the supercharger. Use the TRD-supplied spring clamp to secure the hose (Figure 44).



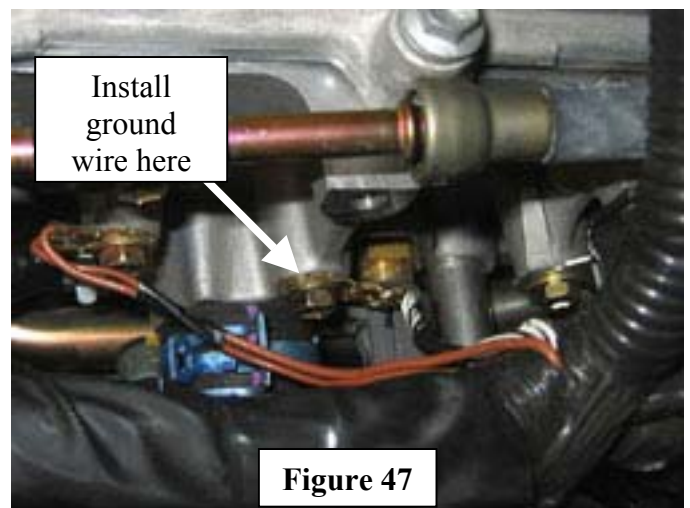
14. Connect the TRD-supplied 3/8" x 22" long rubber hose to the PCV valve on the cam cover and to the 3/8" x 90° hose nipple on the supercharger. Use the two TRD-supplied spring clamps to secure the hose (Figure 45).



15. Remove the engine ground wire from the boss shown in Figure 46.



16. Connect the ground wire to the unused boss directly below the original location (Figure 47). Clock ground lug in horizontal plane for fuel line clearance.



17. Use special service tool (SST) 09268-21010 to disconnect the factory fuel supply hose at the fuel delivery pipe junction (Figure 48).

**CAUTION: The fuel rail is full of fuel, so take precautions to absorb it.**



Figure 48

18. Remove the fuel pipe clamp from the other end of the factory fuel supply hose. The fuel pipe clamp is attached to the steel fuel tube and will un-snap from the quick-type connector on the end of the factory hose (Figure 49).

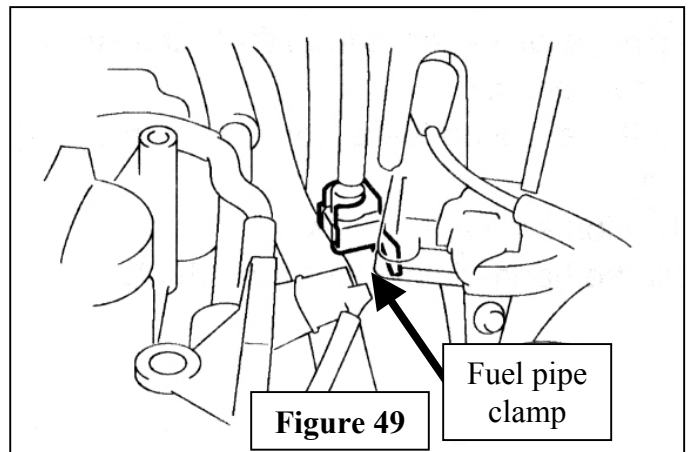


Figure 49

19. Disconnect the quick-type connector from the factory fuel tube and remove the factory fuel supply hose (Figure 50).

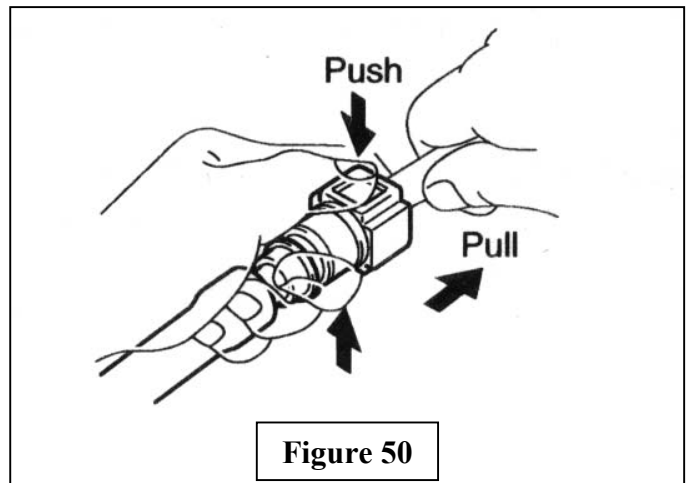


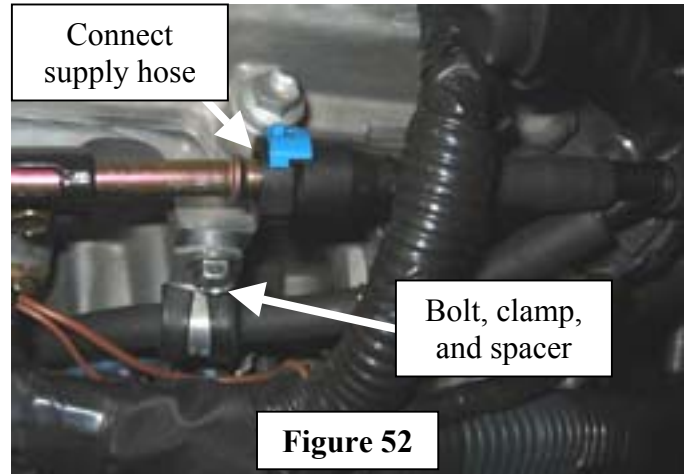
Figure 50

20. Rotate the factory radiator hose clamp at the block towards the firewall to allow clearance for the fuel line (Figure 51).
21. Slide the supplied Adel clamp over the new fuel hose about 4 inches away from the “Y” connection point. The Adel clamp secures the straight hose with the banjo fitting on the end.

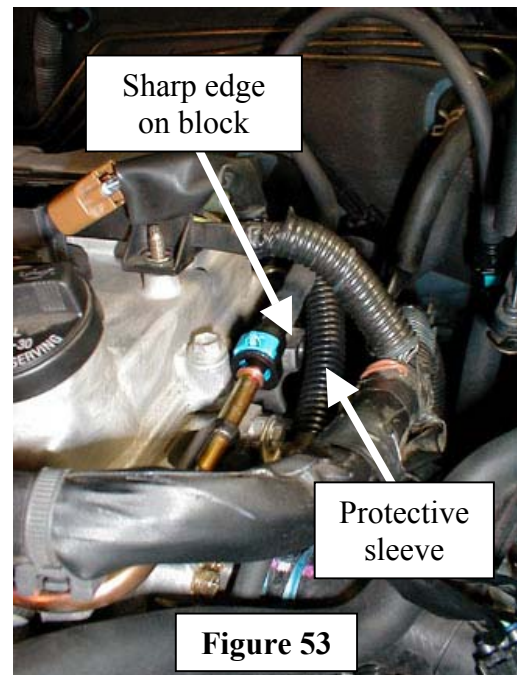


**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

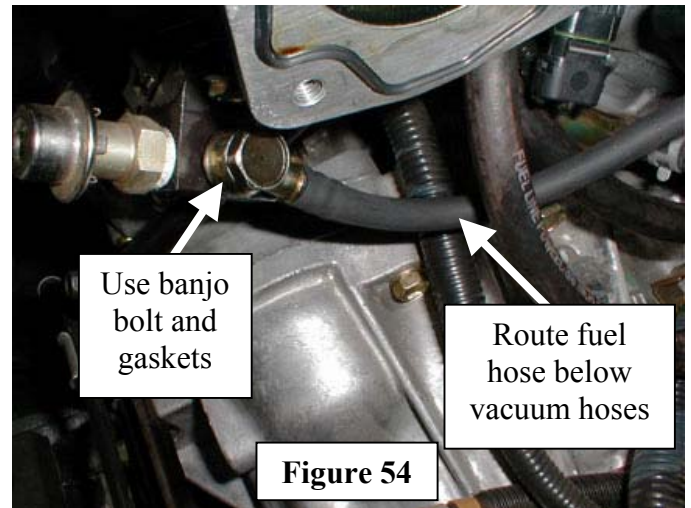
22. Mount the Adel clamp and fuel hose to the open boss that originally was used for the engine ground wire. Use the TRD-supplied 6mm x 16mm long flange-head bolt to secure the Adel clamp, aluminum spacer and fuel supply hose (Figure 52). Do not tighten the bolt at this time.
23. Connect the shortest length of the fuel supply hose with the female end onto the factory fuel delivery pipe. The fuel hose slides over the male end and locks into place (Figure 52).



**NOTE:** Be sure the wrap on the fuel line is placed to protect the fuel line from the sharp edge on the engine block (Figure 53).



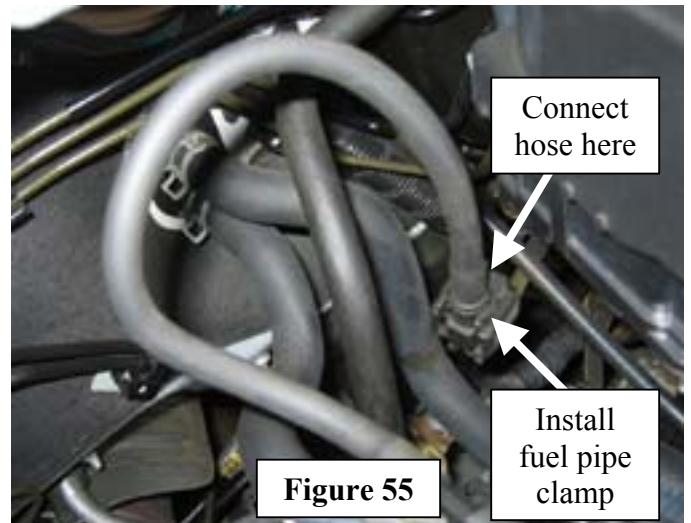
24. Route the 5<sup>th</sup> injector fuel supply hose below both rubber vacuum hoses that connect to the supercharger manifold (Figure 54).
25. Use the TRD-supplied banjo bolt and two aluminum gaskets to attach the fuel supply hose to the 5<sup>th</sup> injector fuel rail (Figure 54). One gasket is positioned on each side of the fuel banjo fitting. Torque the banjo bolt to 39 N·m (29 ft·lbf).



26. Connect the fuel supply hose with the pre-formed loop to the male end of the factory fuel tube. Route the hose so that it does not touch any other components (Figure 55).



27. Re-check all fuel connections. Also check the fuel supply hose for any clearance problems with any other components.
28. Snap the fuel pipe clamp over the new connection to the steel fuel tube (Figure 55).
29. Tighten the 6mm bolt that secures the Adel clamp and the fuel supply hose to the cylinder head (Refer to Figure 52 on Page 21). Torque the bolt to 11 N·m (8 ft·lbf).
30. Install the throttle body using the factory nuts and bolts (Figure 56). Torque the nuts and bolts to 30 N·m (22 ft·lbf).

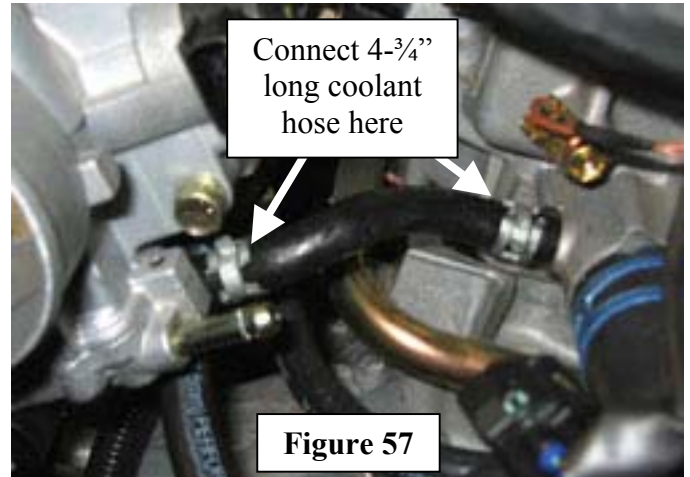


**CAUTION:** Check the 5<sup>th</sup> injector fuel supply hose for clearance to the throttle body idle speed control (ISC) valve assembly.



**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

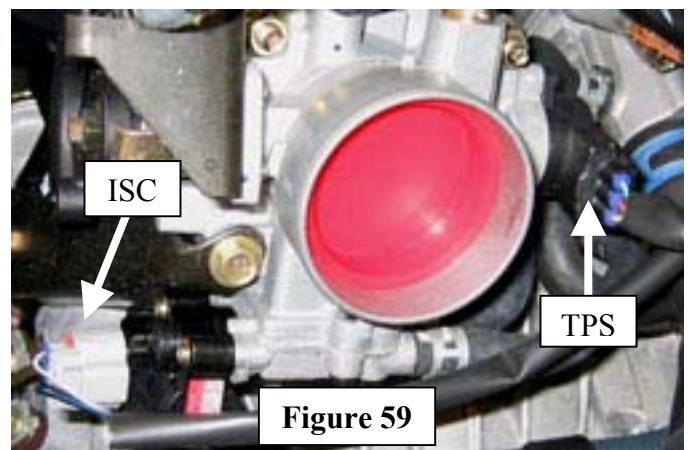
31. Connect the TRD-supplied 5/16" x 4 3/4" long coolant hose to the steel nipple on the cylinder head and the hose nipple on the throttle body. Use the factory spring clamps removed from the factory formed coolant hose to secure the new hose (Figure 57).



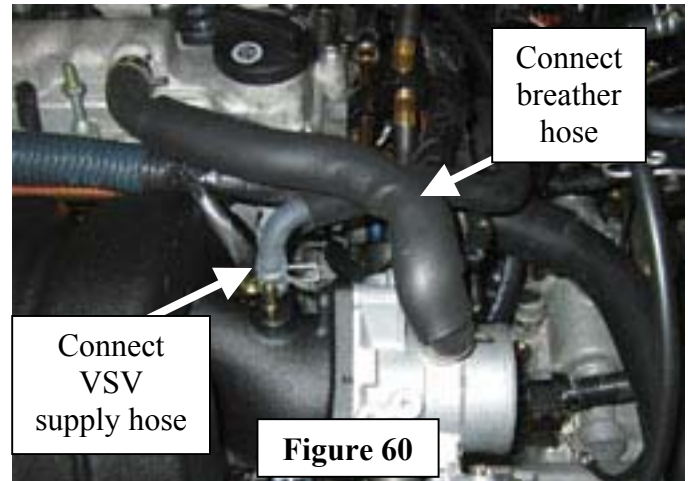
32. Reconnect the second factory coolant hose to the throttle body. Use the factory clamps to secure the hose (Figure 58).



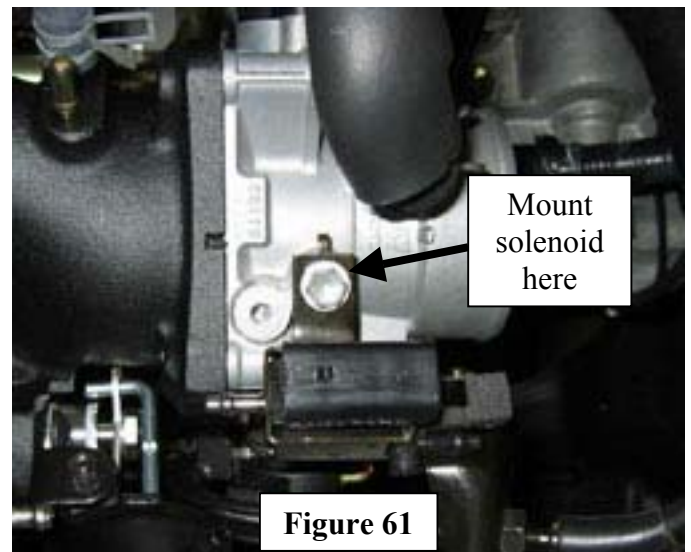
33. Reconnect the throttle position sensor (TPS) connector and the idle speed control (ISC) valve assembly connector to the throttle body (Figure 59).



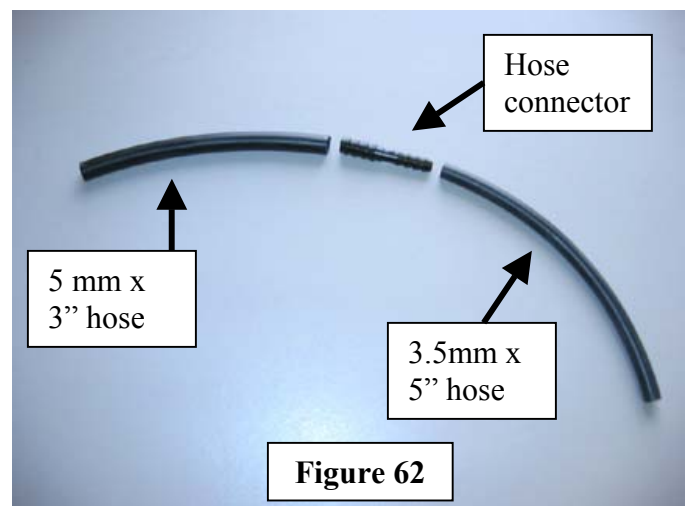
- 34. Reconnect the factory VSV vacuum supply hose to the 3/8" hose nipple on the supercharger (Figure 60).
- 35. Reconnect the cam cover breather hose to the cam cover and the hose nipple on the throttle body (Figure 60).



- 36. Mount the TRD-supplied solenoid valve to the throttle body as shown in Figure 61. Use one TRD-supplied 6mm x 12mm long flange-head bolt to secure solenoid. Torque the bolt to 13 N·m (9.6 ft·lbf).



- 37. Locate the TRD-supplied 3.5mm x 5" long synthetic rubber hose, 3.5mm x 5mm hose connector, and 5mm x 3" long synthetic rubber hose. Connect both hoses to the connector as shown (Figure 62).

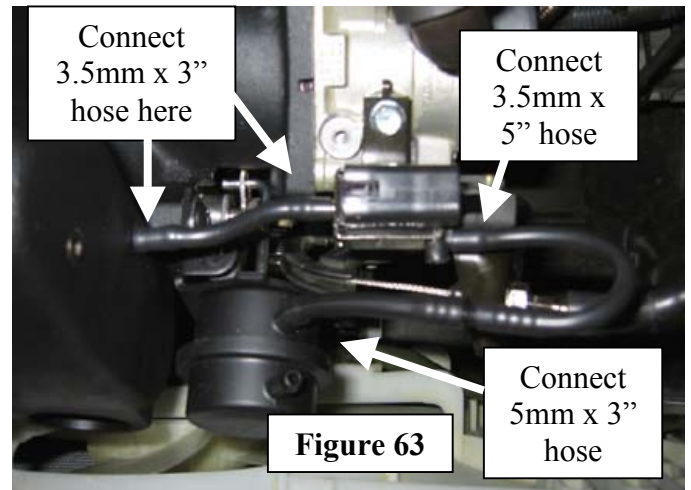




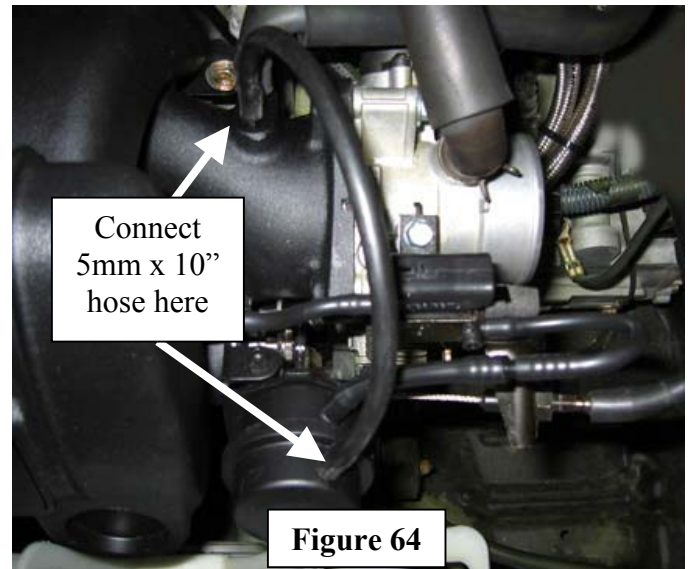
**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

➔ 38. Connect the TRD-supplied 3.5mm x 3" long synthetic rubber hose to the steel nipple on the solenoid valve and the steel nipple on the supercharger plenum (Figure 63).

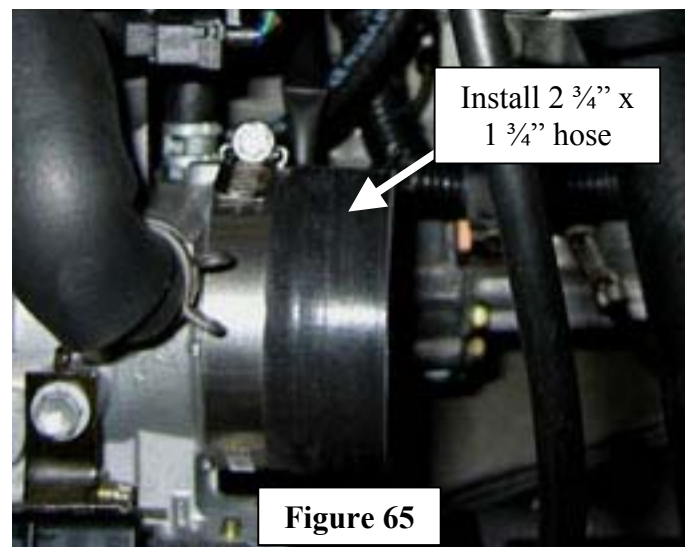
➔ 39. Connect the 3.5mm hose from the Step 37 (on Page 24) assembly process to the black nylon nipple on the solenoid valve. Connect the 5mm hose to the lower port on the actuator canister (Figure 63).



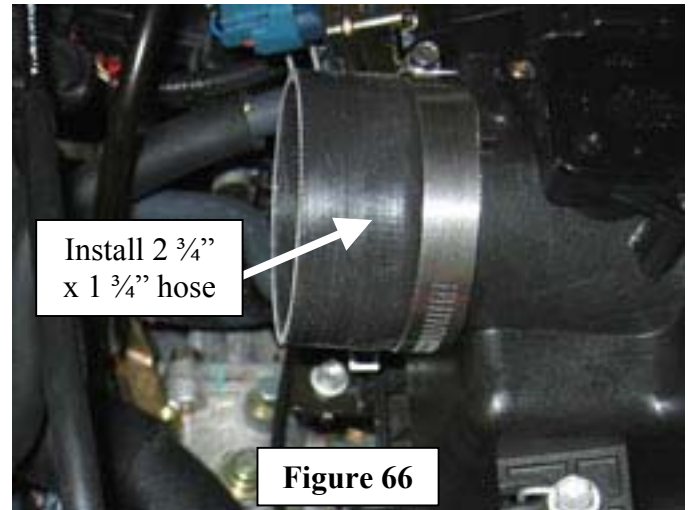
➔ 40. Connect the TRD-supplied 5mm x 10" long synthetic rubber hose to the 1/4" steel nipple on the supercharger and the upper port on the actuator canister (Figure 64).



41. Connect one TRD-supplied 2 3/4" diameter x 1 3/4" long hose to the throttle body. Secure the hose with one TRD-supplied hose clamp (Figure 65).

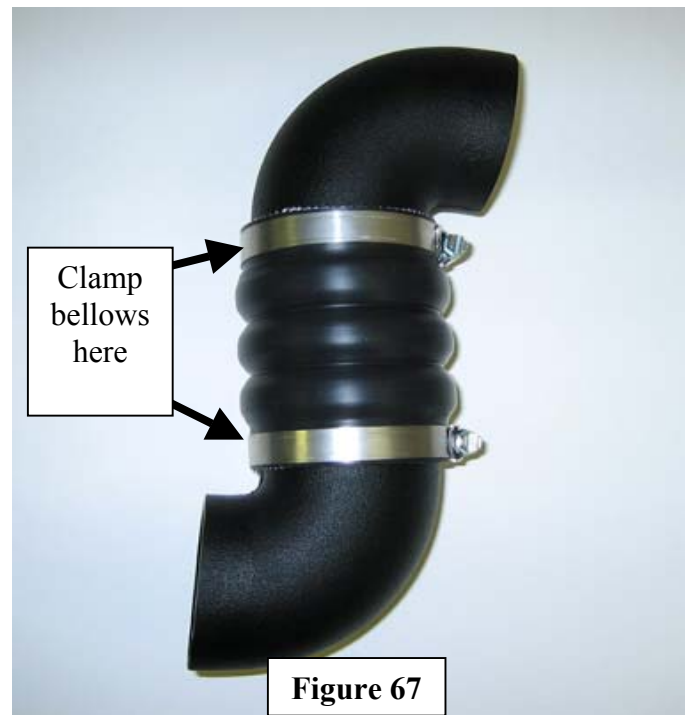


42. Connect the second TRD-supplied 2 3/4" diameter x 1 3/4" long hose to the air filter housing. Secure the hose with one TRD-supplied hose clamp (Figure 66).



**Figure 66**

43. Insert both TRD-supplied 80°-inlet elbows into the rubber bellows. Insert elbows only about 5/8" (0.625") into bellows. The part numbers on the inlet elbows should face down. Hand-tighten the two TRD-supplied hose clamps to secure bellows (Figure 67).



**Figure 67**

44. Connect the bellows and inlet elbow assembly to the air filter housing and to the throttle body.  
**Note:** You will have to compress the bellows in order to connect both 80°-inlet elbows to the 2 3/4" hoses. Use the last two TRD-supplied clamps to secure the 2 3/4" diameter hoses to the assembly (Figure 68). Tighten all hose clamps.

45. Apply the TRD-supplied belt-routing sticker to a suitable location under the vehicle hood. Clean the application area before applying the sticker.

**NOTE:** Do not cover any existing factory stickers.

46. Apply the TRD-supplied E.O. emissions compliance sticker to a suitable location under the vehicle hood. Clean the application area before applying the sticker.

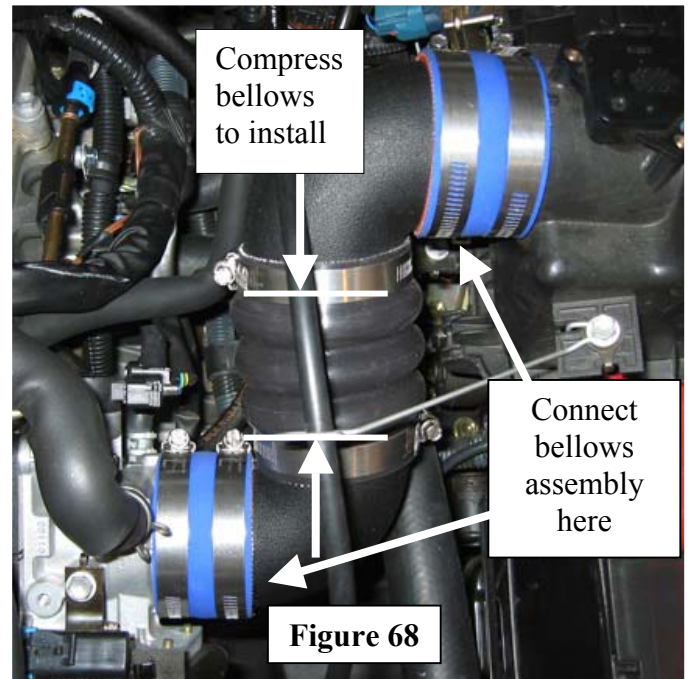
**NOTE:** Do not cover any existing factory stickers.

47. Apply the TRD-supplied tune-up sticker to a suitable location under the vehicle hood. Clean the application area before applying the sticker.

**NOTE:** Do not cover any existing factory stickers.

48. Apply the TRD-supplied "Premium Fuel Only" stickers. Clean the application areas before applying the stickers. Open the fuel filler door and apply one sticker to a suitable location on the backside of the door or around the filler area where the vehicle owner will see the sticker. Apply the second sticker inside the vehicle on the instrument panel near the fuel gauge.

**NOTE:** Do not cover any part of the panel that displays any information (i.e. malfunction indicator lamps, etc.).



**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

**Hint:** It will be easier to perform the next three steps if the vehicle is on a lift.



49. Remove stock crankshaft bolt and washer. Use SST # 09960-10010 (09962-01000, 09963-01000) to hold pulley while removing bolt (Figure 69).



50. Install TRD-supplied crankshaft bolt and washer. Use SST # 09960-10010 (09962-01000, 09963-01000) to hold pulley while tightening bolt (Figure 69). Torque: 203 N·m (150 ft·lbf).

51. Install the TRD-supplied drive belt. Use the belt-routing sticker or Figure 70 for the correct belt routing.

**NOTE:** To release air from the tensioner, pull it through a full stroke 3 times, taking 3 seconds or more per stroke.

52. Refill the cooling system with coolant.

53. Install the battery and battery hold-down bracket.

54. Reconnect the positive battery cable then the negative cable.

55. Start the engine and immediately check for any fuel or coolant leaks.



56. While the engine is idling, check the drive belt to make sure it is running in the center of the TRD idler pulley. The belt should not touch either side of the outboard edges of the pulley. If the belt does touch, then either add or remove the supplied shims between the idler pulley bracket and the pulley bearing to center the belt between the edges of the pulley. Torque 10mm bolt: 47 N·m (35 ft·lbf).

**CAUTION: Do not drive vehicle until the supercharger ECU has been installed.**

57. Install the TRD supercharger ECU using the installation instructions packaged with the ECU.

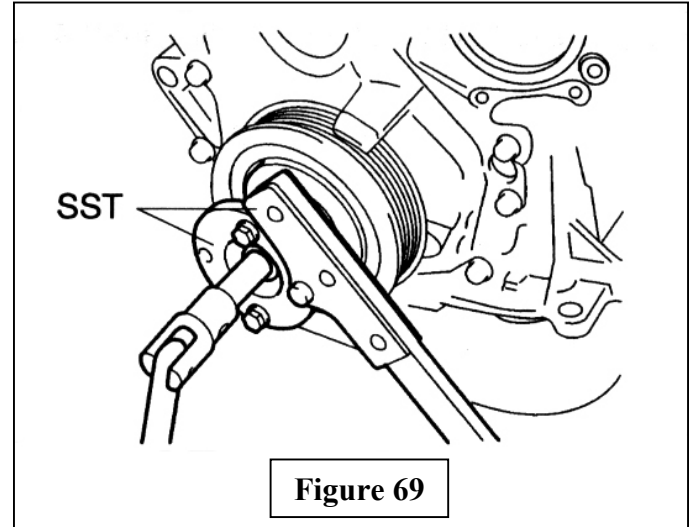


Figure 69

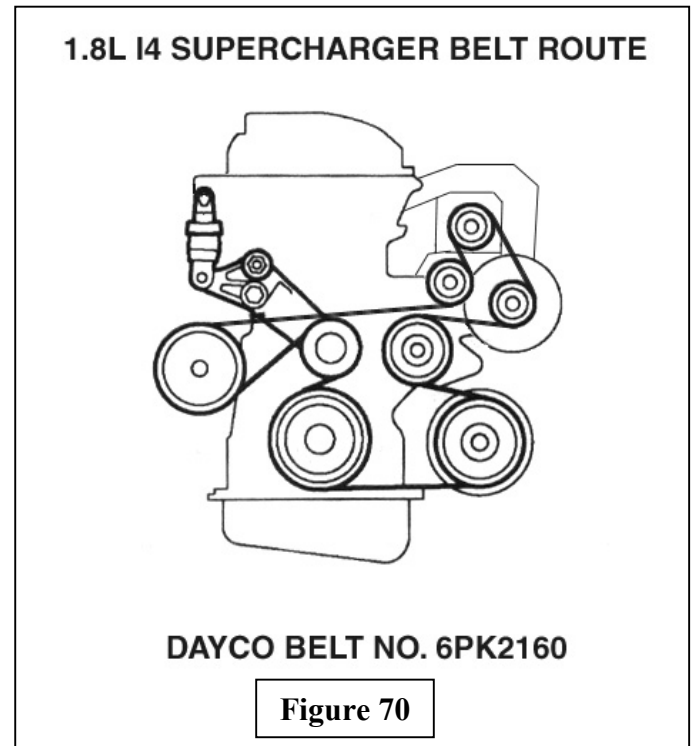
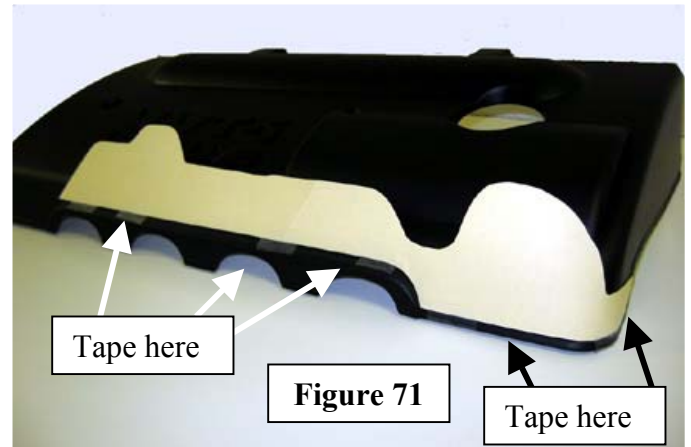
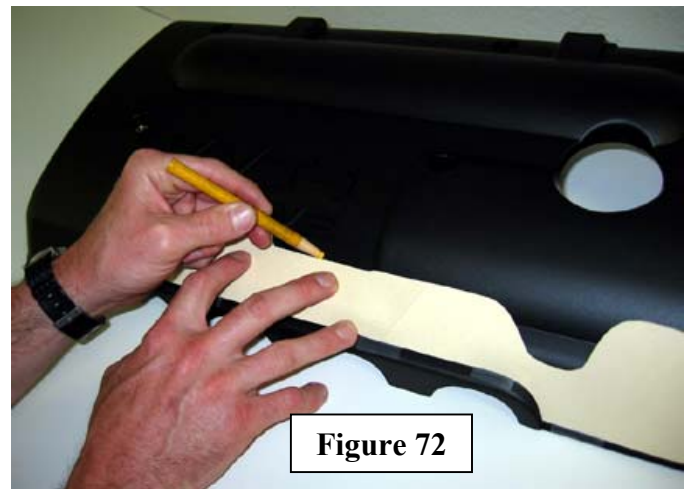


Figure 70

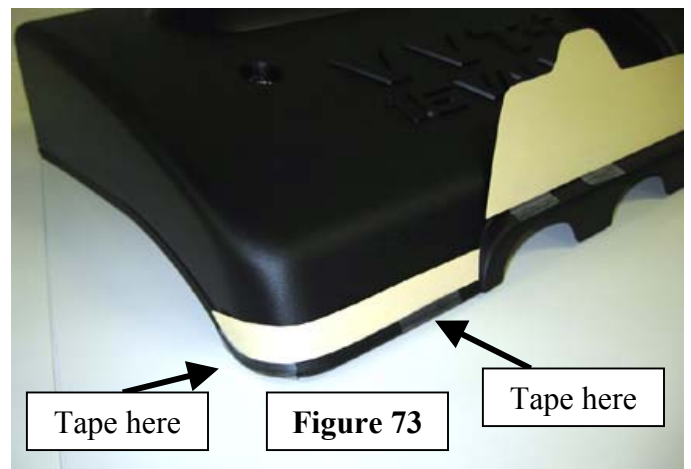
58. Use tape to secure the supplied engine cover trim template to the OE engine cover. The large template is taped just above the 4 cutouts for the OE intake manifold runners (Figure 71).



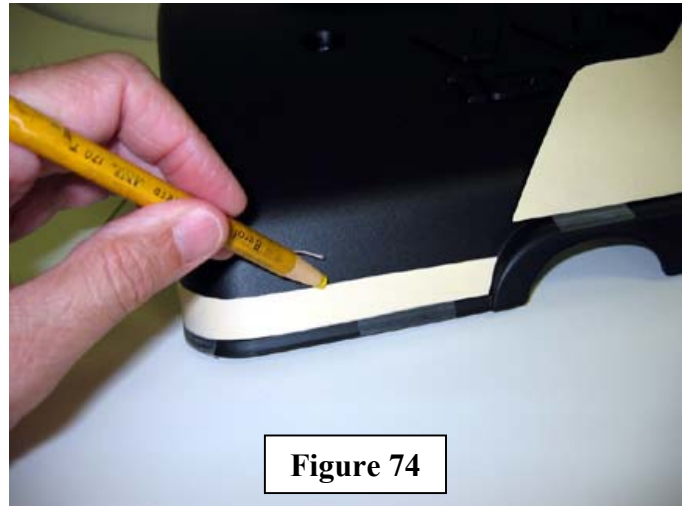
59. Press the topside of the template to the engine cover and trace the outline with a China Marker or “Grease Pencil.” Press the template so that it contours to the engine cover (Figure 72).



60. Use tape to secure the 2<sup>nd</sup> smaller engine cover trim template to the OE engine cover (Figure 73).



61. Press the topside of the template to the engine cover and trace the outline with a China Marker or “Grease Pencil” (Figure 74).



**Figure 74**

62. Trim the engine cover with a jigsaw or a band saw by following the China Marker lines traced along the templates (Figure 75). Deburr the cut edges with a small file or a small die grinder with a deburring bit. Use scissors to trim away any insulation that does not match the new engine cover shape.



**Figure 75**

63. Reinstall the engine cover using the factory fasteners (Figure 76).

64. The installation is now complete

**NOTE:** It may take the factory Toyota ECU 200 to 300 miles of driving before it fully adjusts to the additional airflow provided by the TRD supercharger.



**Figure 76**

**Corolla (2003-2004), Matrix (2003-2004)**

**1ZZ-FE 1.8L I4 SUPERCHARGER SYSTEM**

**Section IV -- Vehicle/Supercharger Diagnosis**

Symptom	Possible Causes	Corrective Action
Idles rough, “pings” (Trouble Code P0171—Lean Code)	Lean condition— vacuum leak	Check vacuum line connections for leaks and cracked ends  Review factory service manual for proper factory vacuum routing  Review instructions for proper vacuum line routing  Recheck torque on throttle body bolts  Recheck the torque on the intake manifold bolts
Pings during acceleration	Low octane fuel  Computer has yet to adjust to supercharger  Insufficient fuel delivery	Use only premium fuel  Drive several hundred miles in different driving modes (not all steady-state highway cruising for example)  Dirty fuel filter—replace and follow the factory diagnosis and replacement procedures  Low fuel pressure—follow the factory diagnosis and replacement procedures  Injector(s) clogged—follow the factory diagnosis and replacement procedures
Low boost	Belt slipping  Air filter dirty  Throttle not fully opened	Check condition of belt—oily, worn, high mileage  Check/replace air filter—TRD dyno tests have shown that the TRD air filter is among the best on the market for flow and filtering characteristics—consider installing one now  Recheck and adjust the throttle and transmission cables. Be sure that full depression on the gas pedal achieves full throttle opening at the throttle body.
Makes a moderately loud noise under full throttle—intake noise	Normal supercharger sound	No remedy. Superchargers are an air pump and the pumping action is impossible without some noise.
Rattling at idle—goes away at just above idle	Normal supercharger sound	Slight rattle at idle is normal, but only if the noise sharply decreases at 400-500 rpm above idle
Rattling at idle—gets louder with higher rpm or louder with more boost pressure	Drive housing bearing wear or backlash  Idler pulley bearing wear or excessive freeplay	Call TRD for further diagnosis  Diagnose by removing belt from supercharger and running engine for less than 30 seconds. If noise continues, source of problem is not within supercharger.
Supercharger belt jumps across pulley groove	Misaligned tensioner pulley or idler pulley  Damaged pulleys	Check the mounting and alignment of both the tensioner pulley and also the idler pulley  Be sure that the pulleys all run true—no eccentricity
Supercharger belt leaves grey/black powder on drive housing and other areas	Normal break-in residue	No corrective action necessary—belt should be fully broken in after 2000 miles
Supercharger appears to leak oil from drive housing	Front seal not fully broken in	No immediate corrective action is necessary—seal should be fully mated to pulley after 2000 miles. If leaking continues, contact TRD.