



SC-4RN-015-A, SC-LCX-010-A, SC-LXX-010-A, SC-SEQ-011-A, SC-TUN-018-A
4Runner (2003-2004)
Land Cruiser/LX470 (1998-2004)
Sequoia (2001-2004)
Tundra (2000-2004)

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

Part Number: 00602-17620-471

Section I – Installation Preparation

Kit Contents

Item #	Quantity Req'd.	Description
1	1 bottle	Gear lube
2	1	Fill nozzle
3	1	Drive assembly
4	1	Fill plug
5	1 tube	Loctite Gasket Eliminator
6	1	Phenolic drive adaptor

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1	1 tube	Toyota FIPG sealant (Toyota Part Number 00295-00103)
2	1 can	Ultra Copper spray sealant
3	8	Banjo bolt gasket
4	1	Fuel injector O-ring kit

Conflicts

Note:

Tools Required

Safety Tools	
Special Tools	
Installation Tools	

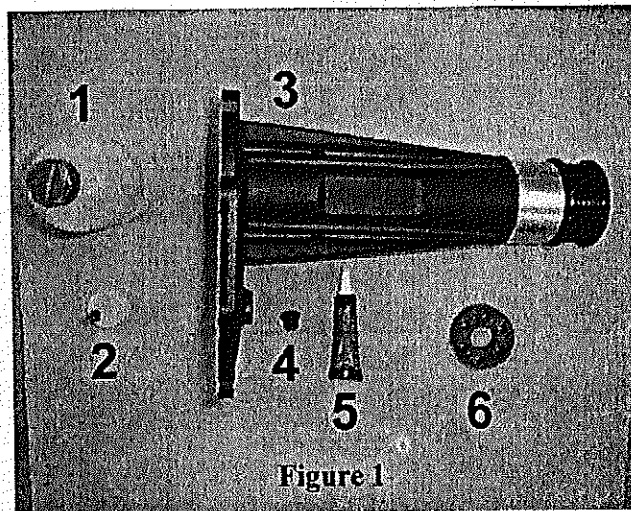


Figure 1

General Applicability

All 4.7L V8 superchargers

Notes and Recommendations

1. Read through the entire instruction set before beginning work.
2. Let the engine cool completely.
3. Clean the area around the supercharger to prevent any contamination during removal. Use compressed air to remove dirt from the engine valley.
4. Disconnect the negative battery cable from the battery.



4Runner (2003-2004)
Land Cruiser/LX470 (1998-2004)
Sequoia (2001-2004)
Tundra (2000-2004)

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

TOYOTA RACING DEVELOPMENT

**TRD Nose Cone Kit Core Return Instructions**

1. Call a TRD Technical Sales Representative at **1-800-688-5912** to get a Return Merchandise Authorization (RMA) Number assigned to you. Have handy your dealer code. The Core return Part Number for the 4.7L Supercharger Nose Cone is:

00602-17620-227

2. Drain and clean all of the Residual Oil in Nose Cone and return in sufficiently protected box (Same as Replacement Kit received).
3. Clearly mark the **RMA #** and **Dealer Code** on the outside of the Box.
4. Ship the core pre-paid, via ground, within 15 days after receipt of the RMA#. The Shipping address is:

TRD U.S.A., Inc.
Attn: RMA
1382 Valencia Avenue
Tustin, CA 92780

5. After the core return is confirmed your parts statement will be credited the core charge within the next two billing cycles. This covers the value of the core and your return freight charge.
6. If you have any additional questions contact a TRD Technical Sales Representative Mon. – Fri., from 8:00am to 4:30pm, Pacific Time at **1-800-688-5912**

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

Section II – Removal Procedure

NOTE: Pictures may vary slightly between applications.

1. Disconnect the negative battery cable from the battery.
2. Remove the A/C suction hose bracket. With a tie wrap, position the hose out of the way (Arrow A, Figure 2).
3. Remove the throttle cable from throttle body (Arrow B, Figure 2).
4. Remove the bracket (Arrow C, Figure 2), with the cable attached, and set the assembly aside.
5. Remove the following from the air inlet tube (Figure 3):
 - Cam cover breather hose (Arrow A)
 - EVAP canister hose (Arrow B)
 - Fuel pressure regulator hose (Arrow C)
 - MAF wire clamp (Arrow D)
 - Power steering vacuum line (Arrow E)
6. Loosen the clamps and remove the air inlet tube.

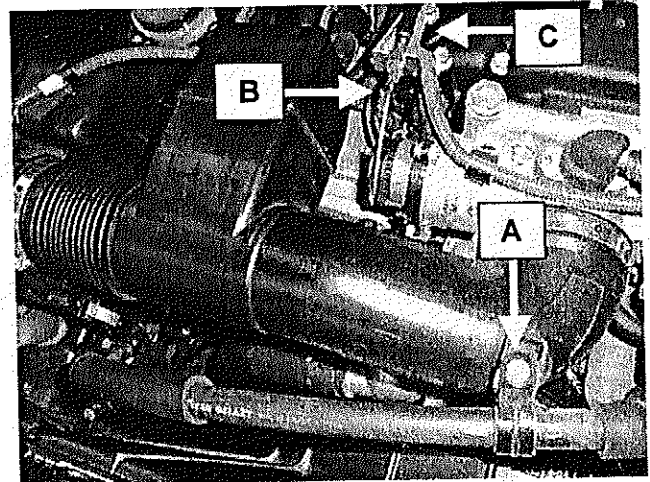


Figure 2

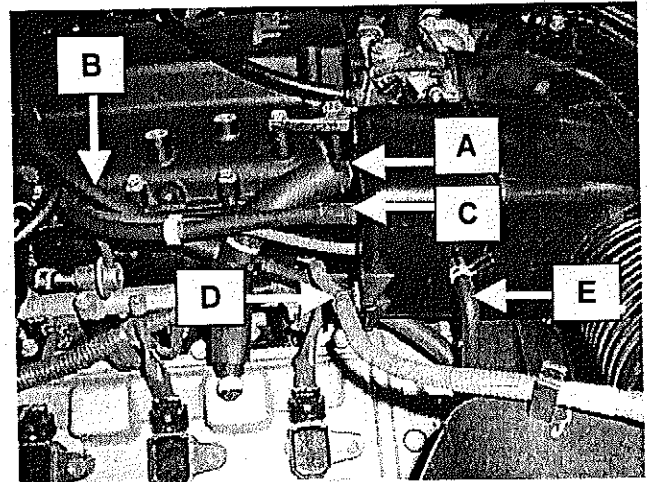


Figure 3

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

7. Remove the throttle position sensor and throttle control motor connectors from the throttle motor (Figure 4).

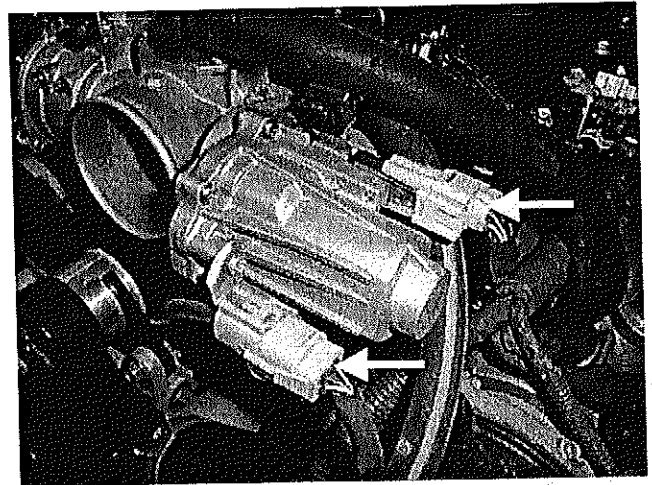


Figure 4

8. Remove the PCV hose from the throttle body and cam cover (Arrow A, Figure 5).
9. Remove the throttle position sensor loom clips (B Arrows, Figure 5) from the throttle body and unplug the sensor connector (Arrow C, Figure 5).
10. Remove the throttle body hardware and place it in a secure position. It will be reused.

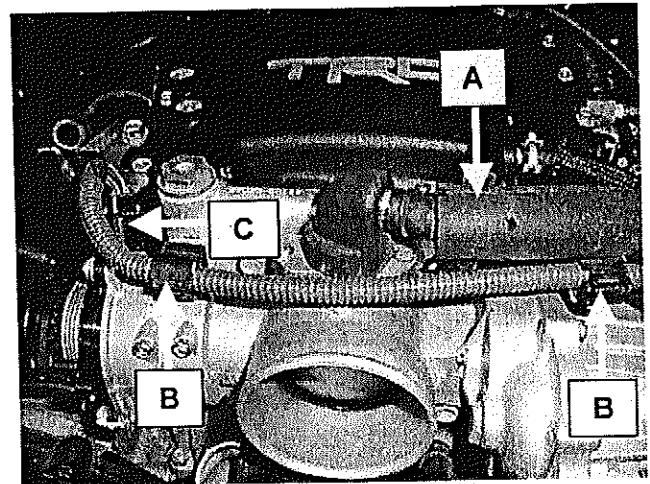


Figure 5

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

11. On the passenger side, disconnect the other ends of the:

- EVAP VSV hose (Figure 6, Arrow A).
- Power steering idle-up vacuum hose (Figure 6, Arrow B).
- By-pass actuator vacuum diaphragm hose (Figure 6, Arrow C).

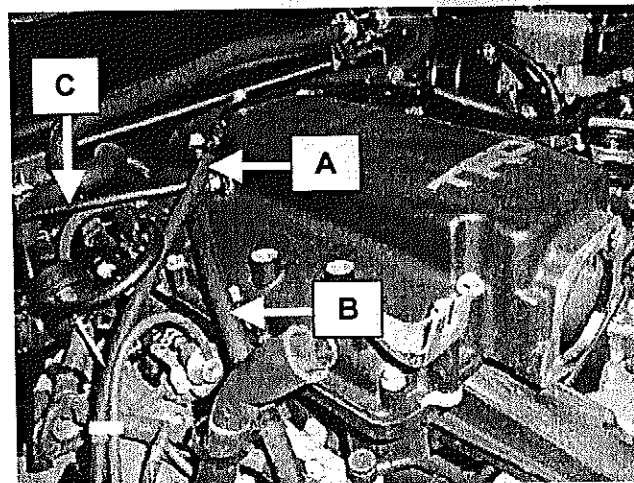


Figure 6

12. Disconnect the TRD bypass actuator assembly by removing the two attachment bolts. Also, unplug the supercharger diaphragm VSV (Figure 7).

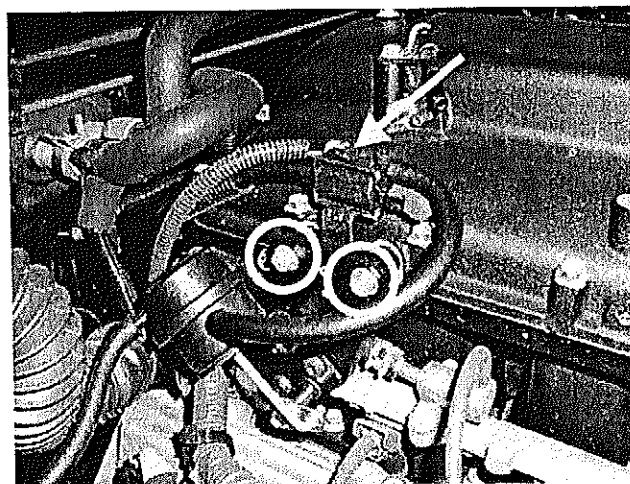


Figure 7

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

13. On the driver's side remove:

- EVAP VSV hoses (Figure 8, Arrows A & B).
- Brake boost vacuum assist hose (Figure 8, Arrow C).

14. Unplug the VSV and remove the EVAP VSV bracket and assembly and set it aside (Figure 7, Arrow D).

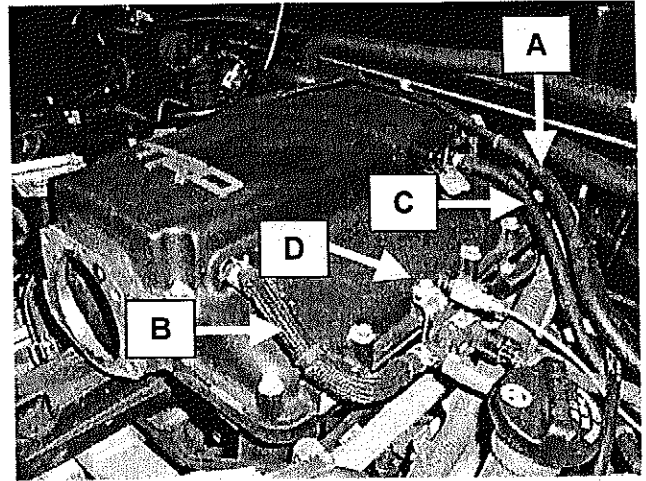


Figure 8

15. Remove the TRD VSV hose and, if equipped, the boost gauge line (Figure 9).

16. Follow the procedure in the Toyota service manual to remove the drive belt.

NOTE: Mark the direction the belt runs so that it is replaced in the same orientation. Now is a good time to check the condition as well and replace it if necessary.

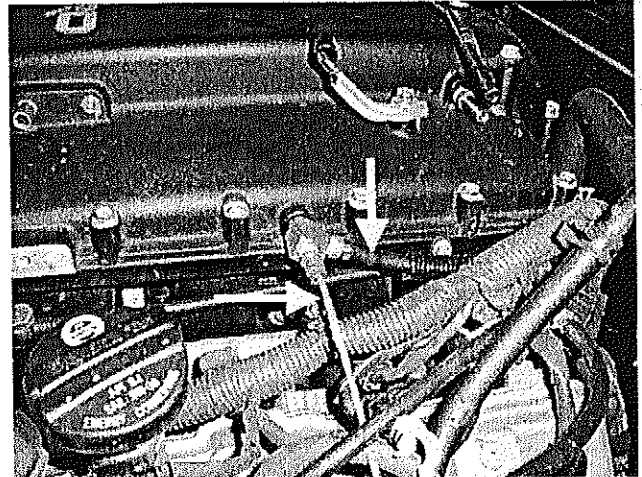


Figure 9

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

17. If the supercharger is equipped with a nose drive support bracket, remove it now (Figure 10).

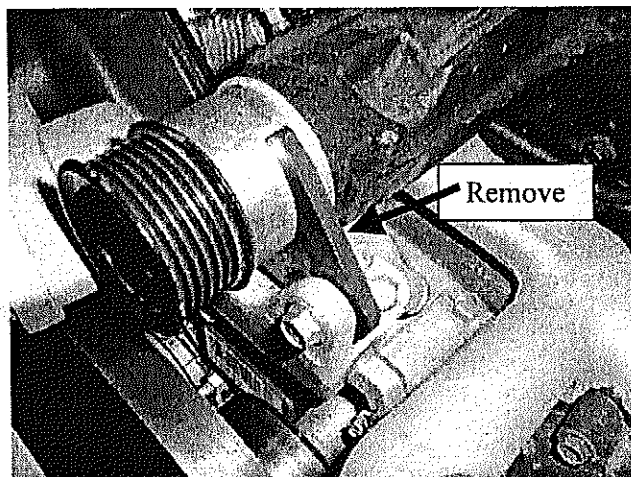


Figure 10

STOP

18. On the passenger's side of the supercharger, refer to Figure 11 and perform the following:

- Unplug the fuel injector connectors (A).
- Remove the fuel return hose (B) and vacuum hose (C) from the fuel regulator.

CAUTION: Take precautions not to spill pressurized fuel.

- Unplug the supercharger diaphragm VSV wire (D).

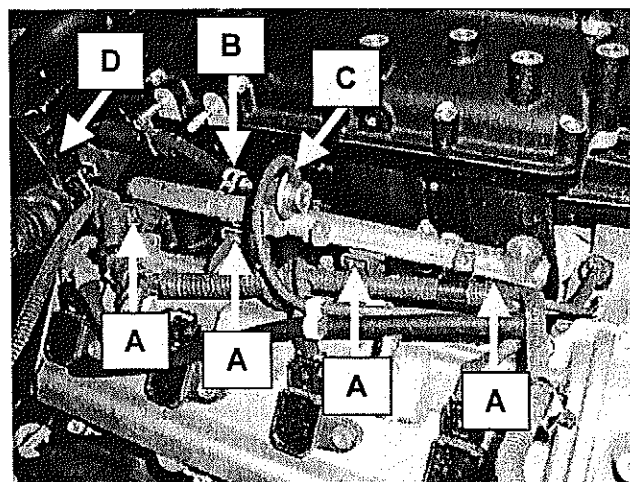


Figure 11

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

19. Remove the banjo bolt at the TRD auxiliary injector fuel line from the block at the rear of the supercharger (Figure 12). The injector block assembly may vary in appearance from the one in photo depending on the vintage of the vehicle and/or supercharger.

CAUTION: Take precautions not to spill pressurized fuel.

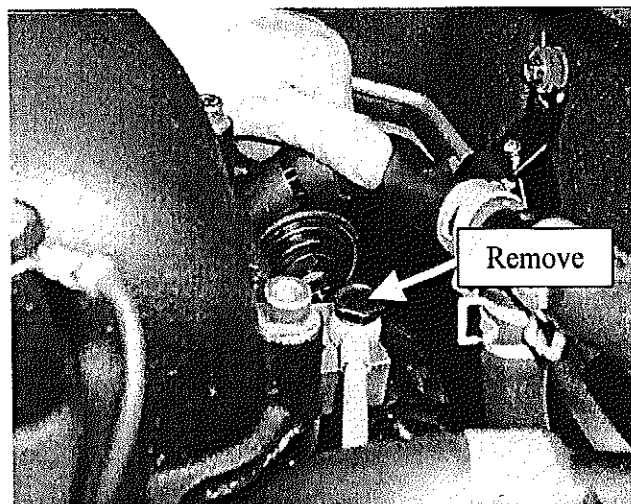


Figure 12

STOP

20. On the driver's side of the supercharger, refer to Figure 13 and perform the following:

- Unplug the fuel injector connectors.
- Remove the TRD fuel line bracket (Arrow A) holding the fuel line (Arrow B) to the side of the supercharger plenum.

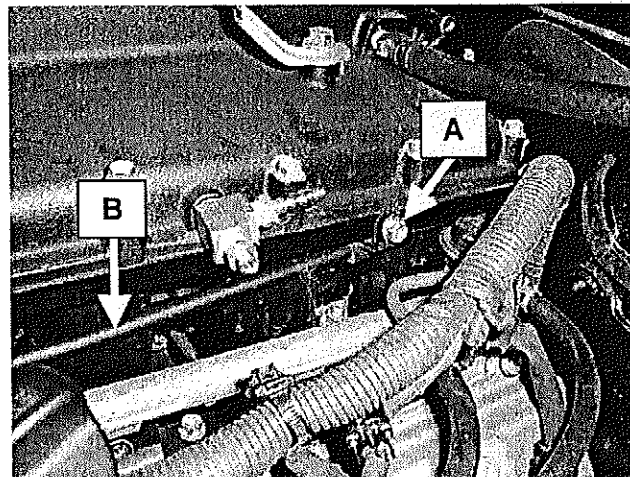


Figure 13

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

21. Remove the passenger's side fuel crossover tube fitting from the front of the engine (Figure 14, Arrow A).

CAUTION: Take precautions not to leak or spill fuel that will be released under pressure.

22. Loosen the driver's side fuel crossover tube fitting (Figure 14, Arrow B) and gently pull the driver's side fuel tube away from supercharger. Completely remove the fitting when it is clear of the supercharger.

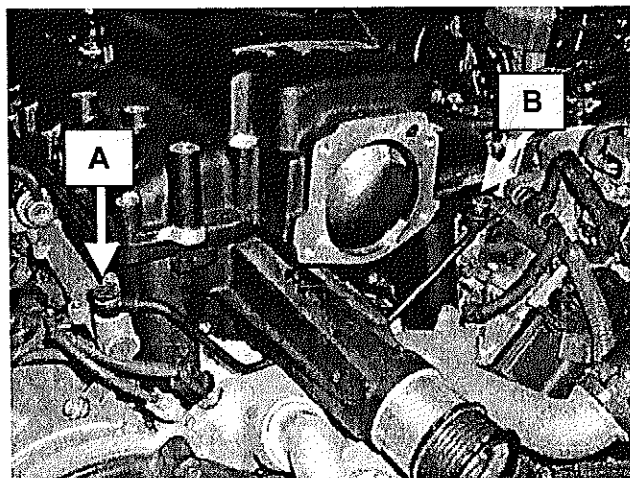


Figure 14



23. Remove the Fuel Pressure Pulsation Damper from the LH Delivery Pipe & Fuel Main Hose (Figure 15). Use caution so as not to lose the washers (gaskets). Remove the bolt connecting the Fuel Return Pipe to the LH Delivery Pipe (Figure 15). Set the Fuel Main Hose aside.
24. Remove the supercharger plenum bolts and nuts. Start from the center and work outward and alternate between the right and left sides to uniformly loosen it.
25. Remove both fuel rails and spacers.

left (driver side).

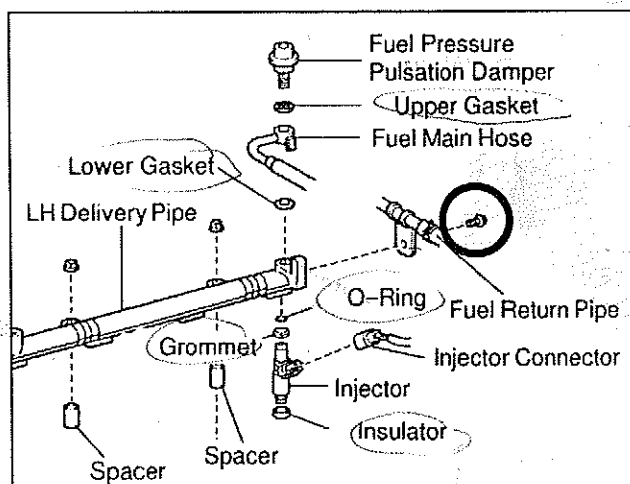


Figure 15

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

STOP

26. Carefully lift and pull the supercharger slightly toward the front of the engine to gain access to the auxiliary injector connector(s) on the back of the supercharger. Unplug the connector(s) (Figure 16).

NOTE: It is much easier with a 2nd person assisting as the supercharger assembly is heavy and awkward to handle alone.

CAUTION: Do not make contact with the heat riser pipe or coolant sensor plug on the crossover manifold.

STOP

27. Carefully remove the supercharger.
28. Remove the intake gaskets. Note the installation orientation for reinstallation.
29. Cover the intake ports and fuel lines to prevent debris from entering.
30. Clean the gaskets for reuse.

Section III – Nose Drive Replacement Procedure

1. Place the supercharger on a clean, dry bench.
2. Alternate between the right and left sides and work from the center outward to uniformly loosen and remove plenum cover bolts. Follow the pattern below and in Figure 17:
 - One 8mm Allen-head bolt on the top of the plenum cover (square).
 - Twelve 6mm bolts (circles).
 - Four 8mm bolts on the front and back (arrows).
3. Gently tap on the plenum cover with a rubber mallet. Carefully pry up on the upper throttle body housing at the top of the opening. The plenum cover will now lift off the main supercharger (plenum) assembly.

CAUTION: Take care to prevent any debris or foreign objects from falling into the supercharger rotors.

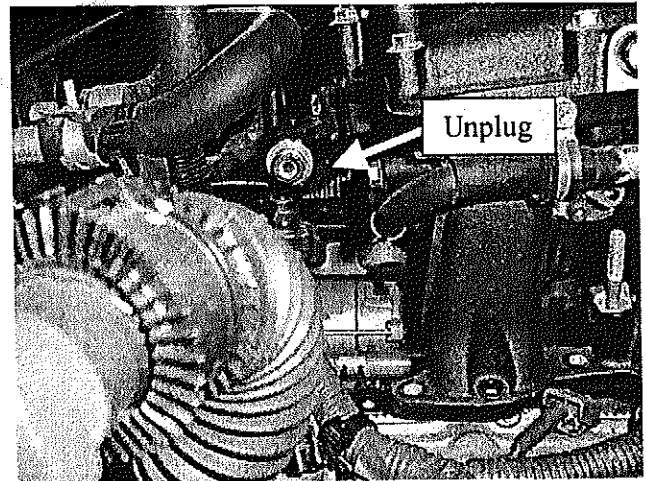


Figure 16

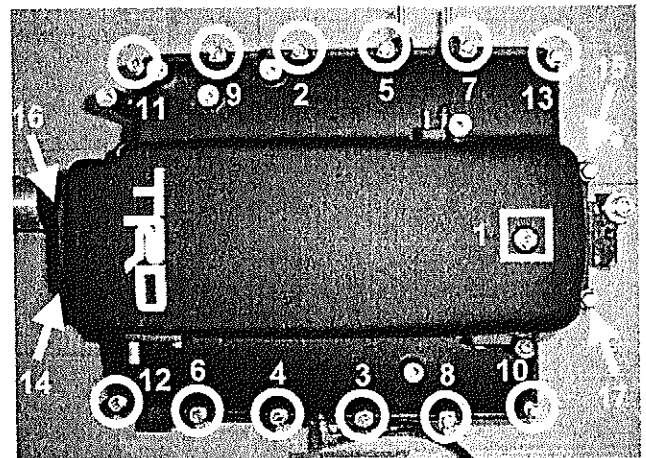


Figure 17

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

4. Place the supercharger plenum over a large drain pan on a flat, secure surface (Figure 18).
5. Remove the plug from the front of the supercharger nose drive assembly.

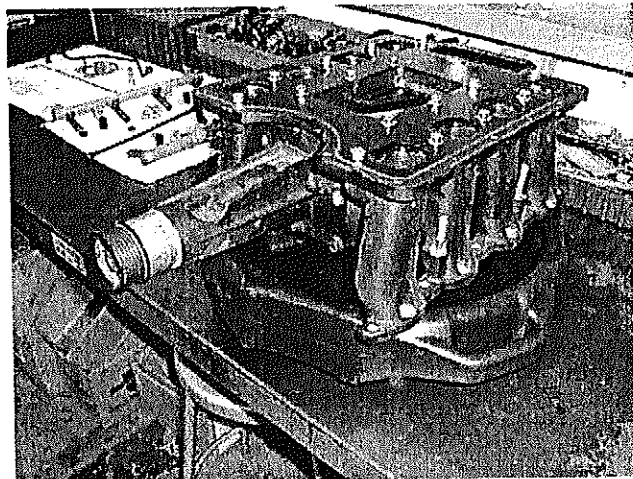


Figure 18

6. Evenly remove the 8 bolts holding the nose drive assembly by alternating from side to side and top to bottom. Support the main assembly and gently rock the nose drive assembly back and forth while pulling the unit from the supercharger plenum. Drain all remaining fluid into the pan (Figure 19).

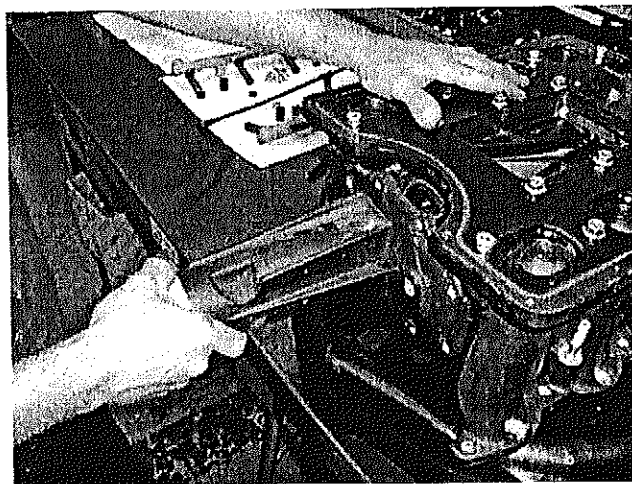


Figure 19

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

7. Remove the Phenolic block by pulling it straight off of the attachment pins (Figure 20).

NOTE: The Phenolic block may remain attached to the nose drive assembly.

8. Wipe the sealing surface clean and remove all of the old gasket material.

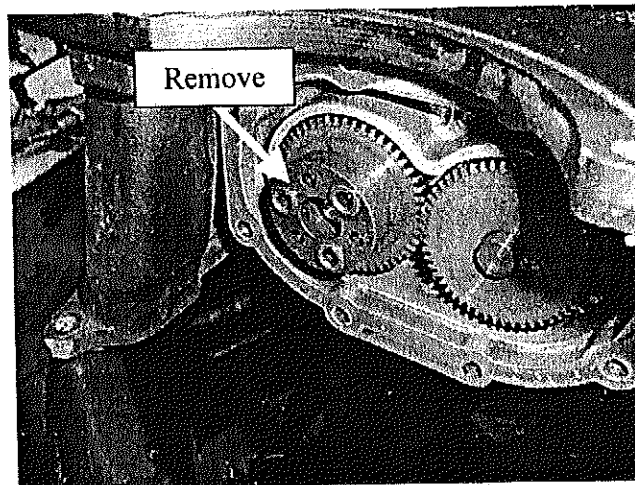


Figure 20

9. Insert the new Phenolic block over the attachment pins. Insert the attachment pins into the holes with flanged openings (Figure 21). These flanges touch the surface of the drive gear. Push the Phenolic block until it seats against the gear.

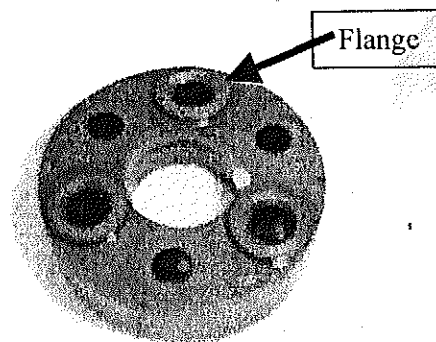


Figure 21

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

10. Spread a thin layer of the provided Loctite[™] Gasket Eliminator Sealant to the sealing surface of the nose drive assembly (Figure 22).
11. Align the pins on the nose drive assembly through the flanged holes (facing out) of the Phenolic block and push (while rocking back and forth) the nose drive assembly back on to the supercharger plenum until it bottoms out.
12. Reinstall the 8 nose drive bolts, but do not tighten them yet. Use an X-pattern starting from the center and alternate to the right and left. Torque them to 16 ft.-lbs.
13. Remove any sealing residue from the top grooves of the plenum and clean the plenum cover sealing surface.
14. Apply Toyota sealant in the top groove of the plenum and install the cover.

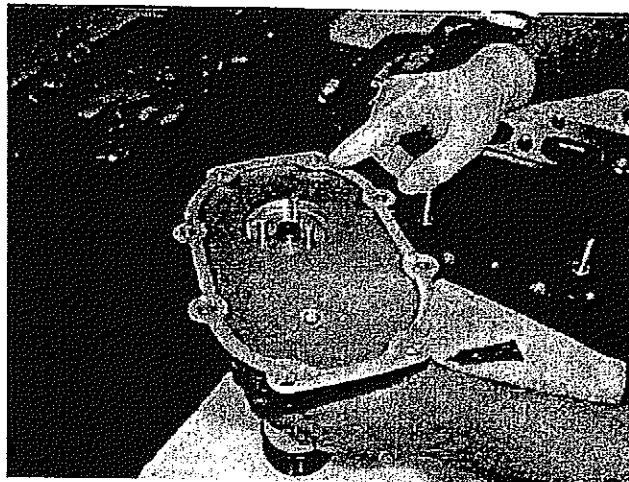


Figure 22

NOTE: Complete the following step within 15 minutes of applying the sealant.

15. Replace the plenum cover bolts, but do not tighten them yet. Refer to the pattern in Figure 17 to uniformly and gradually tighten them. Torque the bolts to 16-18 ft.-lbs.

Section IV – Installation Procedure

1. Apply a thin layer of Ultra copper sealant to both sides of the intake gaskets.
2. Uncover the intake ports and install the gaskets.

NOTE: Allow the surfaces to “tack” before installing the gaskets.

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

3. Use two people to carefully set the TRD supercharger manifold into the vehicle. Plug in the auxiliary injector connector(s). Place the manifold on the intake manifold gaskets.

CAUTION: To avoid coolant leakage, do not hit the steel heat riser pipe or coolant sensor plug on the crossover manifold.

4. Check the supercharger manifold to be sure it sits flat on the intake gaskets. Install the OE manifold 6 bolts and 4 nuts. Uniformly tighten the bolts and nuts in several passes. Torque to 18 N-m (13 ft-lbf).
5. Install the factory passenger's-side fuel delivery pipe spacers (Figure 23).

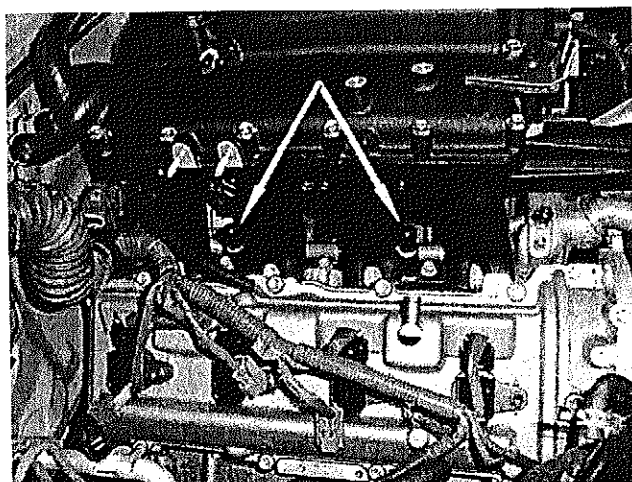


Figure 23

6. Install 4 insulators, 4 injectors and the passenger's-side fuel delivery pipe (Figure 24). Use the factory fuel delivery pipe nuts. Torque to 7.5 N-m (66 in.-lbf).

NOTE: Refer to the factory repair manual for the installation instructions of the fuel injectors, insulators, and O-rings. The insulators and O-rings are classified as "non-reusable parts" by Toyota.

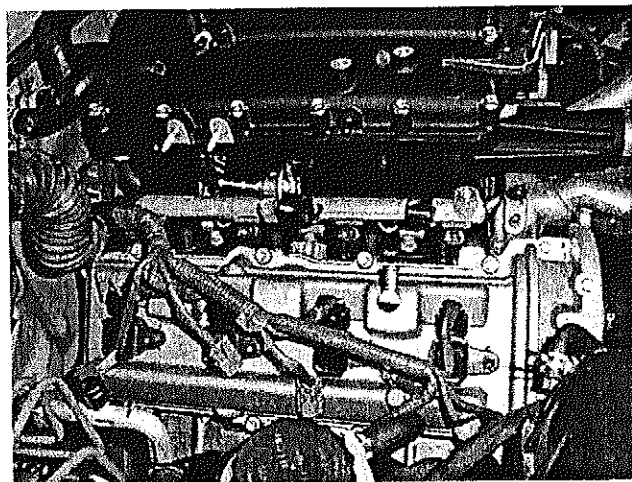


Figure 24

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

7. Install the factory fuel return hose on the fuel pressure regulator. Use the factory hose clamps to secure the hose (Figure 25).

NOTE: Be sure to position the hose clamps with the ears ("tang") up.

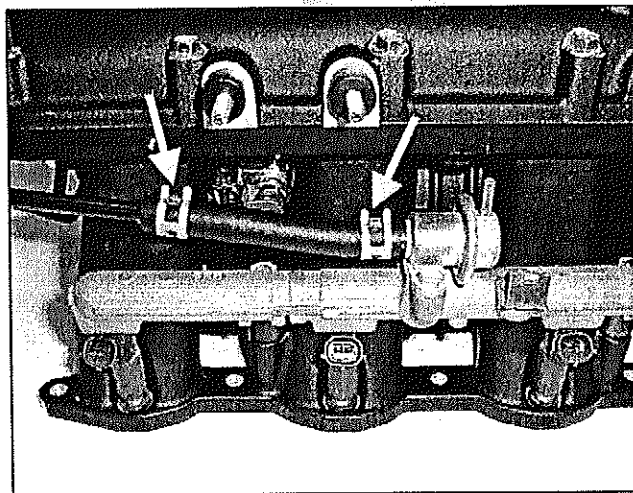


Figure 25



8. Install the supercharger bypass actuator assembly (Arrow A, Figure 26). Use nuts and spacers removed previously.

NOTE: Check that the bypass actuator rod does not interfere with the factory fuel return hose (Arrow B, Figure 26). Verify the shaft engagement into the actuator slot.

9. Connect the 4 passenger's-side injector connectors to the fuel injectors.
10. Connect the coolant sensor connectors to the coolant sensors.

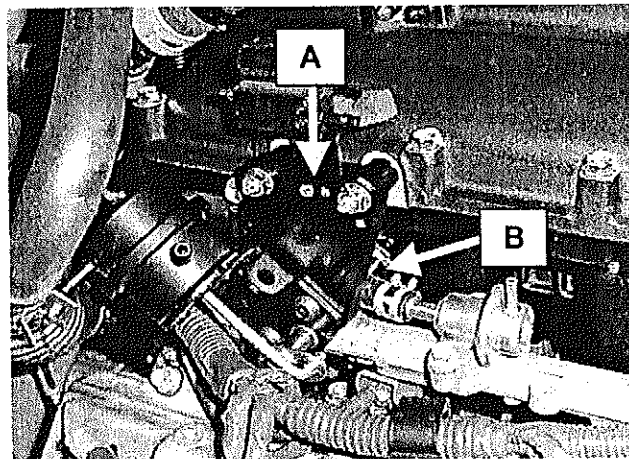


Figure 26

SC-4RN-015-A, SC-LCX-010-A, SC-LXX-010-A, SC-SEQ-011-A, SC-TUN-018-A
4Runner (2003-2004)
Land Cruiser/LX470 (1998-2004)
Sequoia (2001-2004)
Tundra (2000-2004)

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

STOP

11. Check the passenger's-side wire loom clearance to the bypass actuator assembly, linkage and rod. The wire loom should clear all bypass actuator components (Figure 27). If the wire loom is too close to any bypass actuator components, adjust the loom by removing and repositioning the cable ties. Additional cable ties may be necessary to secure the wire loom away from the bypass actuator assembly.

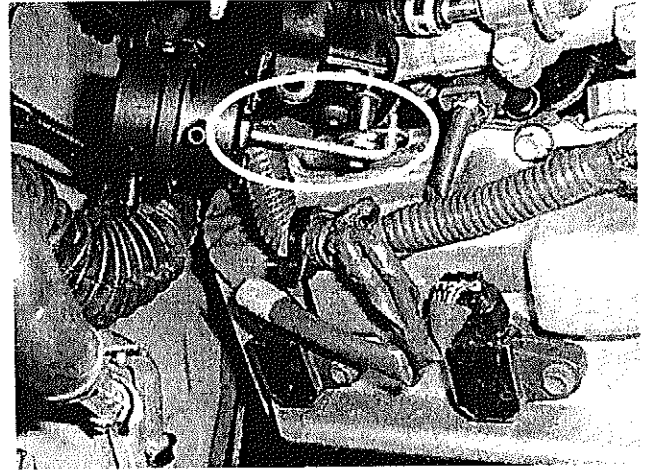


Figure 27

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

12. Install the factory driver's-side fuel delivery pipe spacers (Figure 28).

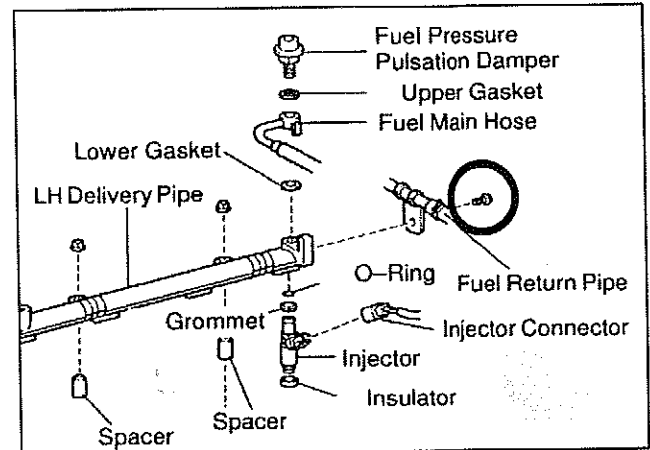


Figure 28

13. Install 4 insulators, 4 injectors and the driver's-side fuel delivery pipe (Figure 29). Use the factory fuel delivery pipe nuts. Torque to 7.5 N-m (66 in.-lbf).

NOTE: Refer to the factory repair manual for the installation instructions of the fuel injectors, insulators, and O-rings. The insulators and O-rings are classified as "non-reusable parts" by Toyota.

14. Connect the driver's-side injector connectors to the fuel injectors.
15. Attach the steel mounting clamp and secure the TRD fuel return pipe to the rear of the driver's-side fuel delivery pipe (Figure 28). Torque the factory bolt to 7.5 N-m (66in.-lbf).
16. Connect the factory fuel return pipe to the TRD fuel return pipe (Figure 28).
17. Install the lower gasket*, fuel main hose, upper gasket*, and fuel pulsation damper. Use SST # 09612-24014 (09617-24011) to tighten damper. Torque the damper to 33 N-m (24 ft-lbf) for use with SST, 39 N-m (29 ft-lbf) without SST.

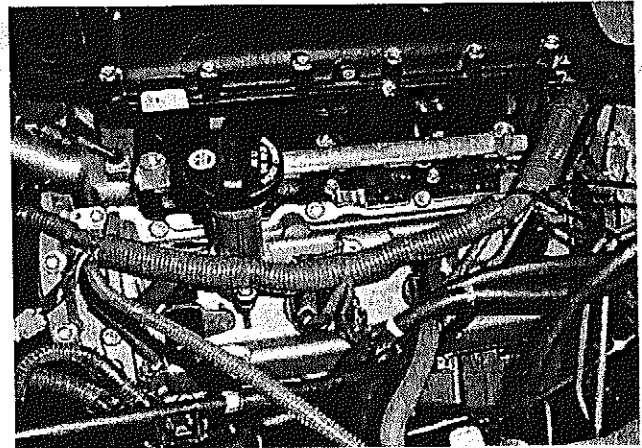


Figure 29

NOTE: * denotes a "non reusable part." Refer to the factory repair manual for installation instructions.

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

18. Reinstall the auxiliary injector fuel delivery pipe (Arrow A, Figure 30). Starting from the top, the correct order is TRD banjo bolt (Arrow B), gasket, auxiliary injector line, gasket, TRD front fuel pipe, gasket, and finally the factory driver's-side delivery pipe. Leave the TRD banjo bolt finger-tight at this time.

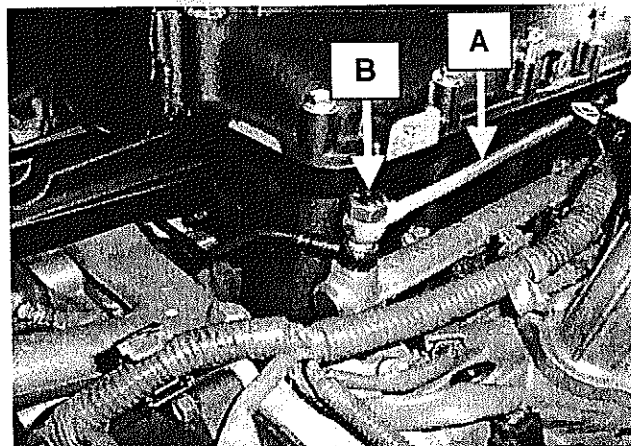


Figure 30

19. Connect the TRD front fuel pipe to the passenger's-side fuel delivery pipe by using the factory banjo bolt and the TRD gaskets (Figure 31). Finger-tighten the banjo bolt at this time.

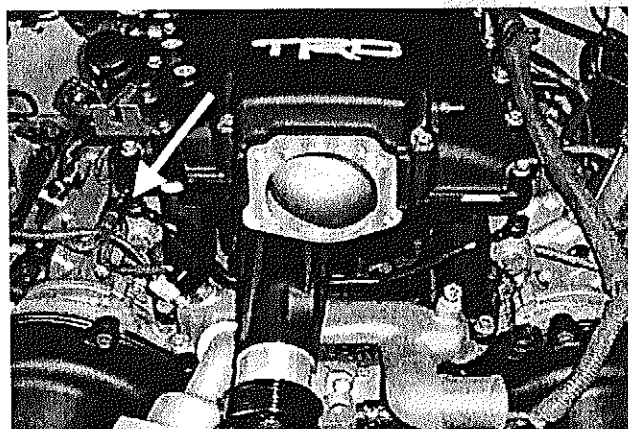


Figure 31

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

20. Attach the factory banjo bolt and TRD gaskets to secure the auxiliary injector fuel delivery line to the TRD fuel rail on the back side of the intake manifold (Figure 32). Leave the banjo bolt finger-tight at this time.

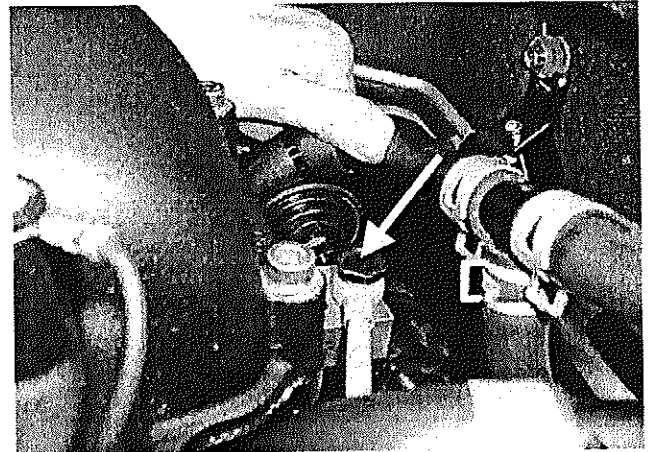


Figure 32

21. Attach the 6mm fuel pipe bolt to secure the auxiliary injector fuel line bracket to the mounting hole on the driver's-side of the TRD intake manifold (Arrow A, Figure 33). Torque the bolt to 7.5 N-m (66 in.-lbf).
- STOP** 22. Check the routing of the auxiliary injector fuel delivery line. It should be centered between the # 7 intake runner and the factory fuel damper (Arrow B, Figure 33). The line should not touch any components.
23. Torque all three fuel-line banjo fittings to 39 N-m (29 ft-lbf).

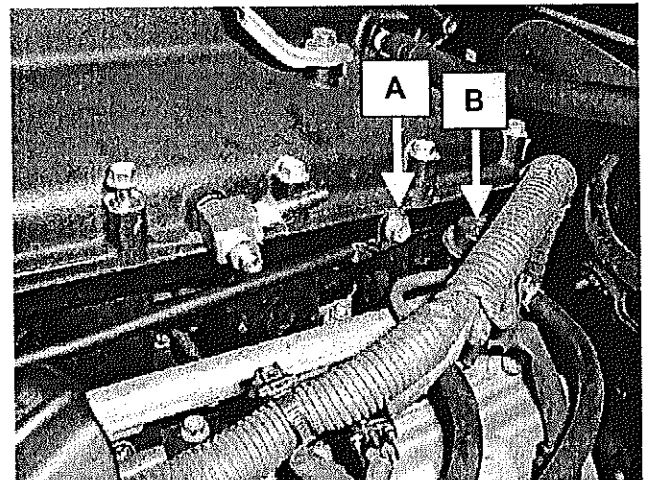


Figure 33

SC-4RN-015-A, SC-LCX-010-A, SC-LXX-010-A, SC-SEQ-011-A, SC-TUN-018-A
4Runner (2003-2004)
Land Cruiser/LX470 (1998-2004)
Sequoia (2001-2004)
Tundra (2000-2004)

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

24. Install the supercharger nose support bracket (if equipped). Adjust the nose support bracket to fit snug against the supercharger nose (Figure 34). Torque the fasteners to 18 N-m (13 ft-lbf).

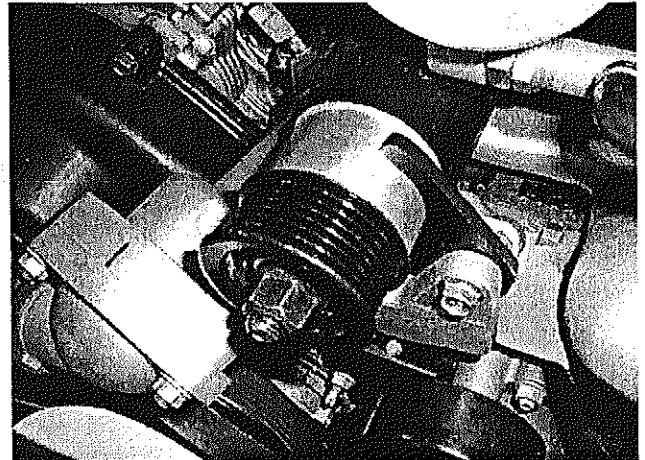


Figure 34

25. Re-use the factory throttle body gasket and install the throttle body (Figure 35). Torque the bolts to 18 N-m (13 ft-lbf).

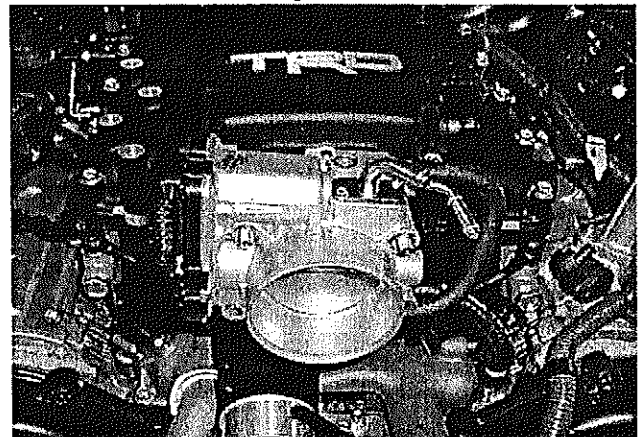


Figure 35

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

26. Connect the throttle control motor / throttle position sensor connector to the throttle body (Figure 36).

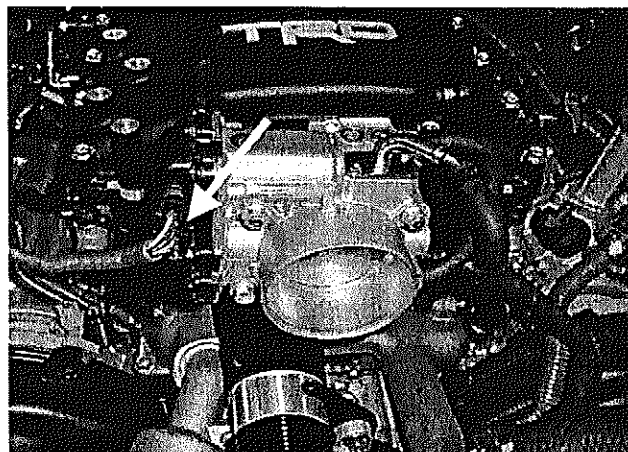


Figure 36

27. Install the TRD drive belt. Use the belt routing shown in Figure 37.

NOTE: Replace the belt in the same orientation as it was removed. Verify the condition and replace it if necessary. Tundra trucks use a 2700mm long, 6-rib belt (00602-17141-441). 4Runner, Land Cruiser, LX470 and Sequoia SUV's use a 2630mm long, 6-rib belt (00602-17620-433).

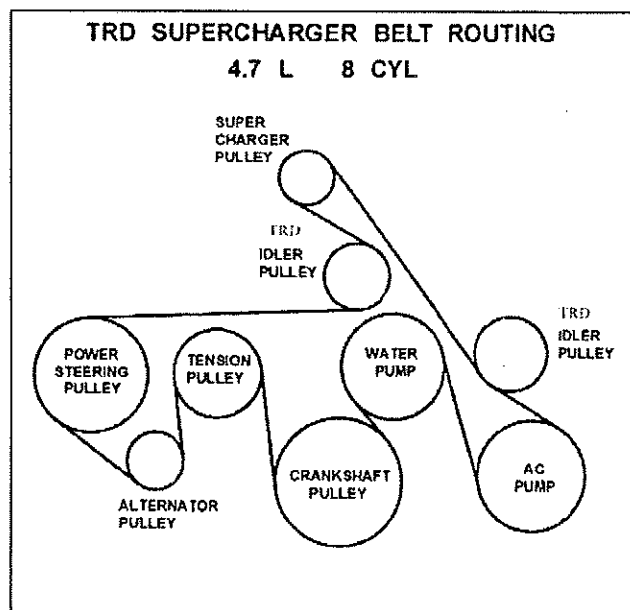


Figure 37

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

28. Connect the rubber hose from the vacuum brake booster to the 3/8" brass barb in the supercharger plenum cover. (Arrow A, Figure 38).
29. Attach the EVAP VSV assembly. Torque the bolts to 16 N-m (12 ft-lb; Arrows B & C, Figure 38). Then Connect the EVAP hose to the forward end of the supercharger plenum (Arrow D, Figure 38).
30. Install the PCV valve hose (Arrow E, Figure 38).

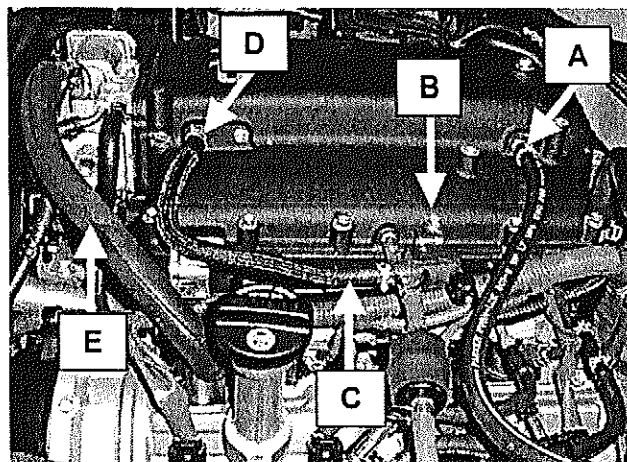


Figure 38

31. Install the factory breather hose on the passenger's-side cam cover. Connect it to the cam cover only at this time (Figure 39).

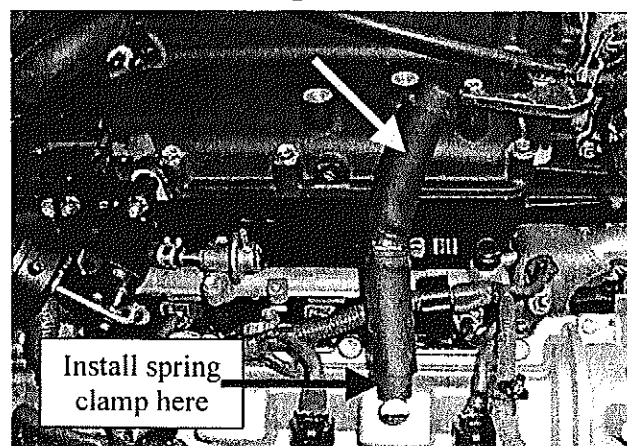


Figure 39

SUPERCHARGER DRIVE ASSEMBLY REPLACEMENT

32. Connect the bypass actuator hose. It should be attached to the lower port of the boost actuator and the front (plastic) nipple on the solenoid (Arrow A, Figure 40).
33. Connect the factory power steering idle-up hose to the hose nipple on the supercharger plenum (Arrow B, Figure 40).
34. Connect the fuel pressure regulator hose to the regulator only at this time (Arrow C, Figure 40).
35. Connect the hose from the rear port of the actuator solenoid to the brass fitting on the side of the supercharger (Arrow D, Figure 40).
36. Connect the supplied hose from the upper port of the bypass actuator to the steel hose nipple in the supercharger plenum (Arrow E, Figure 40).
37. Connect the EVAP canister hose to the factory steel line that is secured on the supercharger plenum cover (Arrow F, Figure 40).
38. Install the intake air tube.
39. Reattach the A/C suction hose bracket.
40. Connect the cam cover breather hose (Arrow A), fuel pressure regulator hose (Arrow B), and power steering idle-up hose (Arrow C) to the hose nipples on the intake air connector (Figure 41).
41. Connect the MAF connector to the MAF sensor. Insert the MAF sensor wire loom clip into the mount on the intake air connector (Arrow D, Figure 41).
42. Attach the negative battery cable to the battery.
43. Start the vehicle and immediately check for any fuel or coolant leaks.

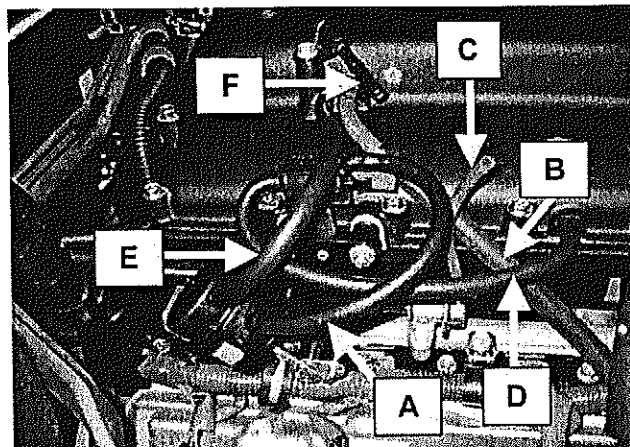


Figure 40

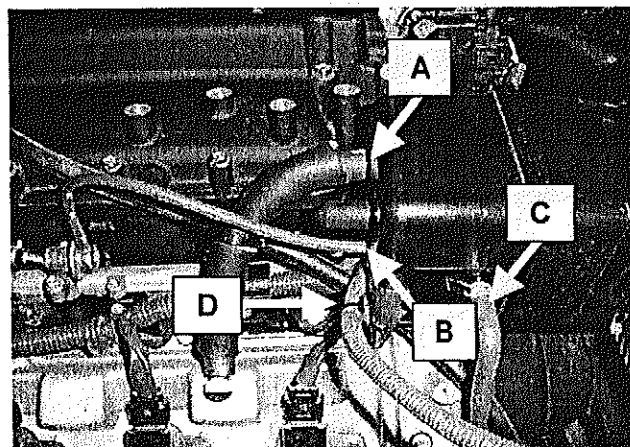


Figure 41