READ THIS IMPORTANT NOTICE BEFORE INSTALLING THE TRD SUPERCHARGER SYSTEM.

The TRD Supercharger System requires a special calibration that needs to be installed into the OEM ECU. The supercharger calibration is unique for each model variation and cannot be interchanged.

NOT ALL MODELS ARE ELIGIBLE FOR A SUPERCHARGER SYSTEM!

Do not install the TRD Supercharger System until the OE vehicle calibration ID can be verified, and a Supercharger Calibration exists for your vehicle.

*Ensure you have the latest set of installation instructions. The latest set of instructions can be downloaded through TIS, or may be obtained through your local Toyota Dealer. Check the OE Calibration ID of the vehicle that will have a TRD Supercharger System installed. Refer to T-SB-0012-13 "Techstream ECU Flash Reprogramming Procedure". Verify that a Supercharger Calibration exists before proceeding with the installation. Compare the OE Calibration ID with the Supercharger Calibration chart near the end of these instructions.

If the OE calibration IS NOT LISTED in the Target Calibration ID table, DO NOT INSTALL THE SUPERCHARGER SYSTEM!

Calibrations not listed on the Target Calibration ID Table will result in a "No Flash" condition!

Refer to ASG or your Toyota Dealer for updated information regarding available supercharger calibrations.

WARNING! – DO NOT INSTALL THE TRD SUPERCHARGER CALIBRATION FILE INTO A VEHICLE THAT WILL NOT HAVE A SUPERCHARGER SYSTEM INSTALLED.

Installation of the TRD Supercharger calibration file is NON-REVERSABLE! Installation of a TRD supercharger calibration into a non-supercharged equipped vehicle will result in multiple malfunction codes. A supercharger calibration cannot be removed once the ECU has been programmed.

Replacement of the ECU will be required if an OE calibration is needed.

Neither Toyota Motor Sales, USA, Inc. nor TRD will honor any warranty claim in which a non-supercharged vehicle was unintentionally programmed with a supercharger calibration.

TRD supercharger systems are only calibrated to operate on PREMIUM Gasoline (91 Octane or higher Unleaded Fuel) R+M / 2 method.

Use of Flex-Fuels or Gasoline with more than 10% Ethanol is not approved.

Emissions Compliance Information:

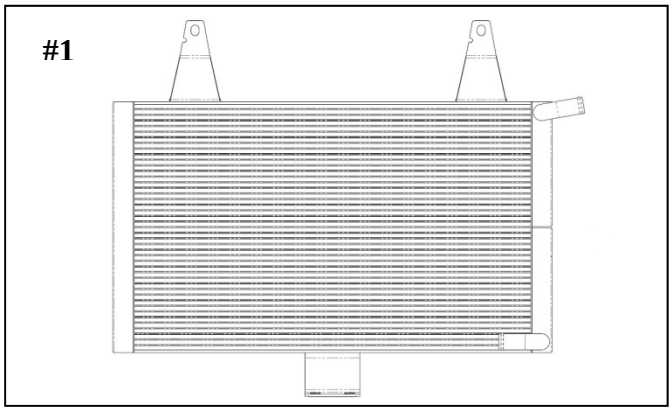
A new process has been implemented. No longer is the Emissions Label included in the Supercharger Fit Kit.

If your state requires an Emissions Compliance Label, one may be ordered through your Toyota dealer or the Toyota Materials Distribution Center (MDC) 310-468-9800 or MDC@toyota.com

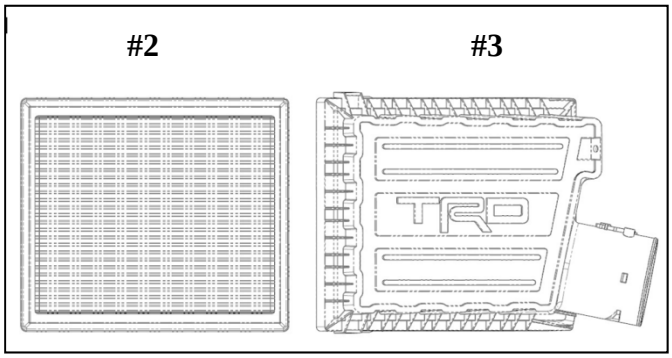
This TRD Supercharger Kit has received 50-State Emissions Compliance via the California Air Resources Board (CARB). Not all states require the Emissions Compliance Label but TRD does recommend ordering one. To receive the proper Supercharger Emissions Compliance Label for this TRD Supercharger kit, please order MDC label part number **00602-34155**. Proof of ownership may be required.

TUNDRA FIT KIT: PTR29-34140

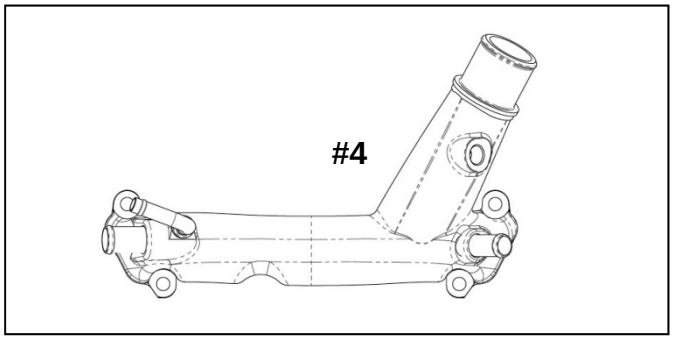
Item	Qty	Description
1	1	Low Temperature Radiator (LTR)
2	1	TRD Air Filter (PTR03-34140)
3	1	Air Box Lid
4	1	Coolant Crossover Manifold
5	1	Hardware Bag “A”
6	1	Hardware Bag “B”
7	1	Hardware Bag “C”
8	1	Hardware Bag “D”
9	1	8 Rib Belt
10	1	Hardware Bag “E”
11	1	Hardware Bag “F”
12	1	Hardware Bag “G”
13	1	Hardware Bag “H” Literature Kit



TRD Air Filter & Air Box Lid

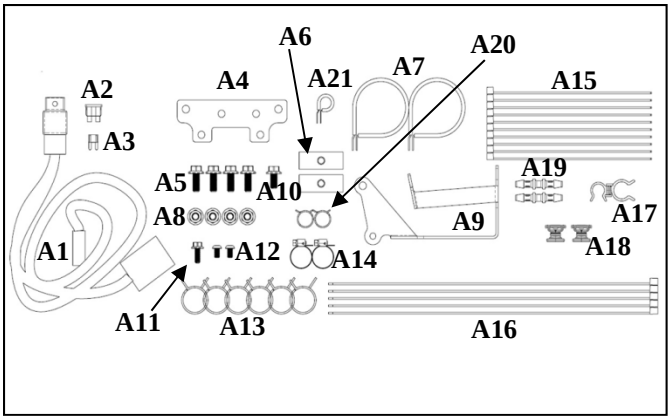


Coolant Crossover Manifold



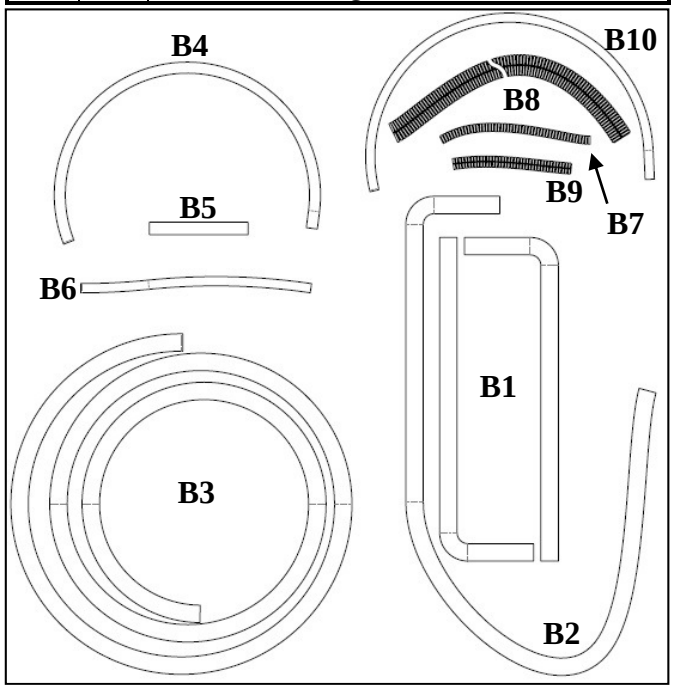
Hardware Bag “A” Contents

Item	Qty	Description
1	1	Intercooler Pump Wire Harness Assembly
2	1	15 Amp ATC Fuse
3	1	10 Amp Mini Fuse
4	1	Intercooler Pump Bracket
5	4	8mmx1.25x20mm Hex Head Flange Bolt
6	2	8mm TK Rectangular Body Nut
7	2	Adel #36 Clamp w/8mm Hole
8	4	8mm Hex Flange Nut
9	1	Reservoir Bracket
10	1	8mmx1.25x16mm Hex Head Flange Bolt
11	1	6mmx1.0x16mm Hex Head Flange Bolt
12	2	6mmx1.0x10mm Socket Head Bolt
13	6	1.063” OD Wide-Band Spring Hose Clamp
14	2	#10 Screw Hose Clamp
15	10	7.5” Long Tie Wrap
16	5	15” Long Tie Wrap
17	1	0.6”/0.7”OD Dual Swivel Hose Clip
18	2	Swivel Spacer
19	2	5/16” Hose Mender
20	2	0.65” OD Wide-Band Spring Hose Clamp
21	1	Adel #8 Clamp



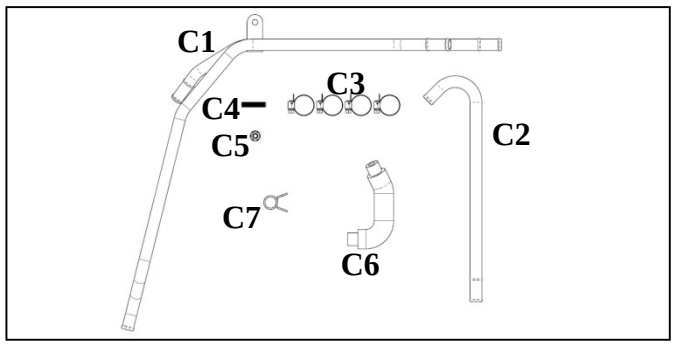
Hardware Bag "B" Contents

Item	Qty	Description
1	2	¾" Coolant Hose, 4" x 18" Long w/90° End
2	1	¾" Coolant Hose, 4" x 60" Long w/90° End
3	1	¾" Coolant Hose, 48" Long
4	1	11/32" x 26" Long DOT Brake Vacuum Hose
5	1	½" x 6" Long Coolant Hose
6	1	5/16" x14" Long Heater Hose
7	1	3/8" x 9" Long Wire Split Loom
8	1	1" x 84" Long Wire Split Loom
9	1	½" x 6" Long Wire Split Loom
10	1	½" OD x 30" Long Mesh Sleeve



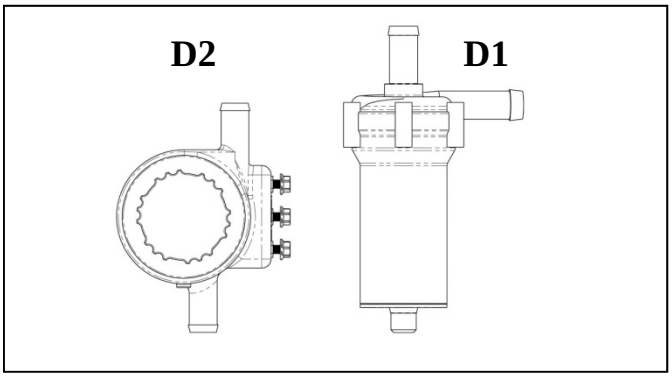
Hardware Bag "C" Contents

Item	Qty	Description
1	1	Oil Cooler Tube Manifold
2	1	Thermostat Bypass Manifold
3	4	#7 Hose Clamp
4	1	M6 x 30 mm Allen Stud
5	1	M6 Hex Flange Nut
6	1	PCV Hose
7	1	PCV Hose Clamp

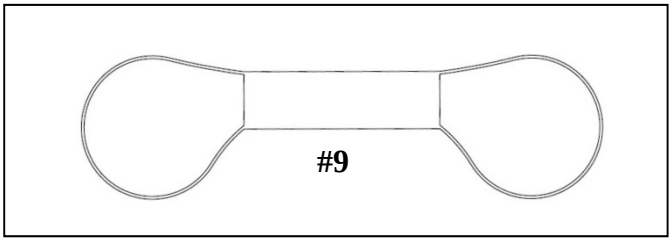


Hardware Bag "D" Contents

Item	Qty	Description
1	1	Intercooler Pump
2	1	Intercooler Res. with Cap & Bolts

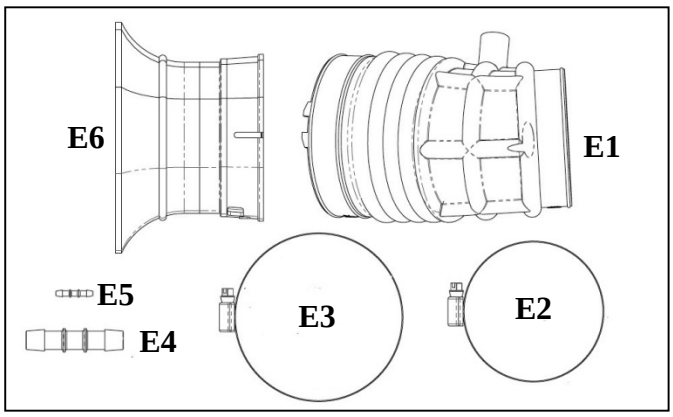


Eight Rib Drive Belt



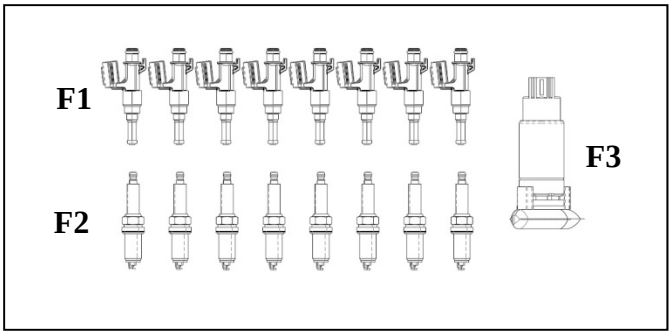
Hardware Bag "E" Contents

Item	Qty	Description
1	1	Air Inlet Rubber Coupler
2	1	#64 Hose Clamp
3	1	#66 Hose Clamp
4	1	Large Hose Mender
5	1	Small Hose Mender
6	1	Intake Flow Accelerator



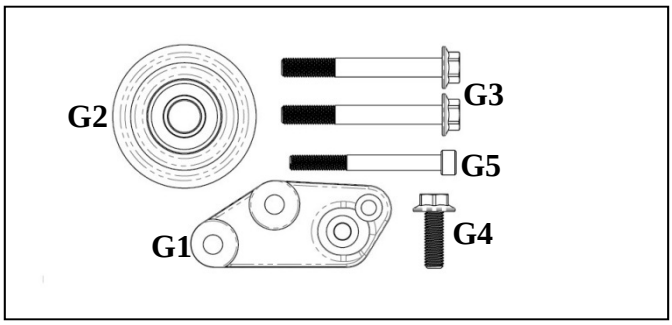
Hardware Bag "F" Contents

Item	Qty	Description
1	8	Fuel Injectors, - High Flow
2	8	Spark Plugs, Denso IKH-22
3	1	Fuel Pump, Denso 23209-YWF01



Hardware Bag "G" Contents

Item	Qty	Description
1	1	Idler Bracket
2	1	Dayco #89016 Flat Steel 76mm Idler
3	2	10mm x 1.25 x 85mm Hex Head Flange Bolt
4	1	10mm x 1.25 x 30mm Hex Head Flange Bolt
5	1	8mm x 1.25 x 80mm Allen Socket Head Bolt



Envelope "H" Contents

Item	Qty	Description
1	2	Sticker, TRD Supercharged
2	2	Sticker, TRD Development
3	2	Sticker, Premium Fuel Warning
4	2	Sticker, TRD Red TRD Logo
5	1	Warranty certificate, TRD
6	1	Warranty Registration Card
7	1	Mirror Hanger, S/C Noise
8	1	Label, Vacuum and Belt Routing
9	1	Installation Instructions

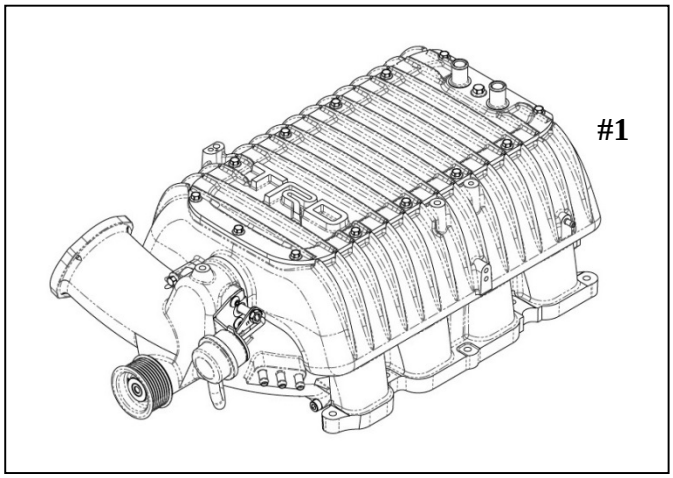
Additional Items Required For Installation

Item	Qty	Description
1	1	Main Supercharger Assembly, P/N PTR29-00140
2	2	Water Outlet Gasket, P/N 16341-38030

Kit Contents (MAIN SUPERCHARGER KIT)

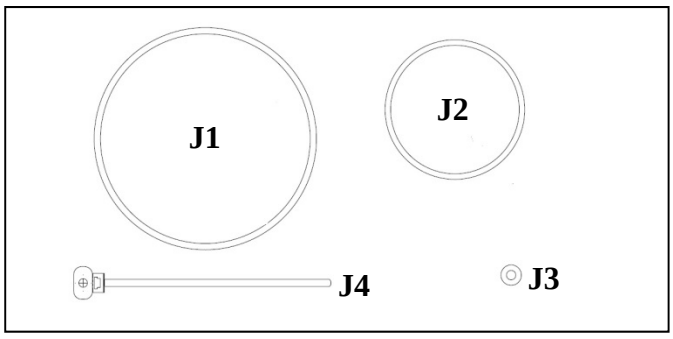
P/N PTR29-00140

Item	Qty	Description
1	1	Main Supercharger Assembly, P/N PTR29-00140
2	1	Hardware Bag "J" – SEE BELOW



Hardware Bag "J" Contents

Item	Qty	Description
1	1	Fuel Pump Module O-Ring
2	1	Throttle Body O-Ring
3	1	Fuel Pump Discharge O-Ring
4	1	Wire Harness Clip **(Not used for 2014 MY)**



Conflicts

TRD Performance Air Intake System for N/A Engines: PTR03-34070, PTR03-34090, PTR03-34100 **Check P/N's**

Recommended Tools

Personal & Vehicle Protection	**Notes**
Safety Glasses	
Fender Blankets	
Protective Gloves	
Special Tools	**Notes**
Toyota T.I.S. Techstream	Version 9.00.026 or Later
GR8 Battery Charger	
Fuel Pump Retainer SST	P/N 09808-14020
Hoist Bracket	P/N PTR25-34070
Installation Tools	**Notes**
Mechanic's Hand Tools	Combo wrenches & sockets
½" & 3/8" Torque Wrenches	
12mm - 6pt 3/8 drive Swivel Socket	Craftsman #43203 or equivalent
Special Chemicals	**Notes**
Anti-Seize Assembly Lube	For Spark Plugs

General Applicability

All Tundras with 3UR-FE 5.7L V-8 Engine Gasoline Fuel Only (Not for use on-Flex Fuel Engines (FFV))

Recommended Sequence of Application

Item #	Accessory
1	Not Applicable

*Mandatory

Vehicle Service Parts (may be required for reassembly)

Item #	Quantity Reqd.	Description
1	1 Gallon*	Toyota Pre-Mix Antifreeze Coolant
2	As Required	Form In Place Gasket (FIPG), P/N 00295-00103

* Additional coolant will be required if the original coolant is not saved and reused.

Legend

STOP: Damage to the vehicle may occur. Do not proceed until process has been complied with.

OPERATOR SAFETY: Use caution to avoid risk of injury.

CAUTION: A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.

TOOLS & EQUIPMENT: Used in Figures calls out the specific tools and equipment recommended for this process.

REVISION MARK: This mark highlights a change in installation with respect to previous issue.

SAFETY TORQUE: This mark indicates that torque is related to safety.

NOTE: **THIS SUPERCHARGER SYSTEM IS NOT COMPATIBLE WITH FLEX-FUEL VEHICLES (FFV).**

Recommended Installer Skill Level:

Expert Technician or higher.

Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

This document covers such items as:-

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, rechecking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Please see your Toyota dealer for a copy of this document.

1. Installation Review and Vehicle Preparation.

(a) Review the entire instruction instructions provided before beginning the installation.

(b) Review the parts list/kit contents to ensure that all parts are present before beginning the installation. If any items are missing contact Technical Support at **(800) 688-5912** before proceeding.

(c) Remove any low-octane fuel from the vehicle. Ensure that ONLY **91 octane or higher** unleaded gasoline is used.

(d) Place the vehicle onto a vehicle hoist.

(e) Protect the vehicle with protection blankets over the fenders and front of the vehicle.

(f) Disconnect and remove the battery.

(g) When draining the cooling system into a clean container in Step 3, save this coolant as it will be reused.

CAUTION: To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot. Thermal expansion will cause the hot engine coolant and steam to blow out from the radiator.

(h) All parts that are removed and not reused should be saved for the customer, i.e., **"discard" means to save for the customer.**

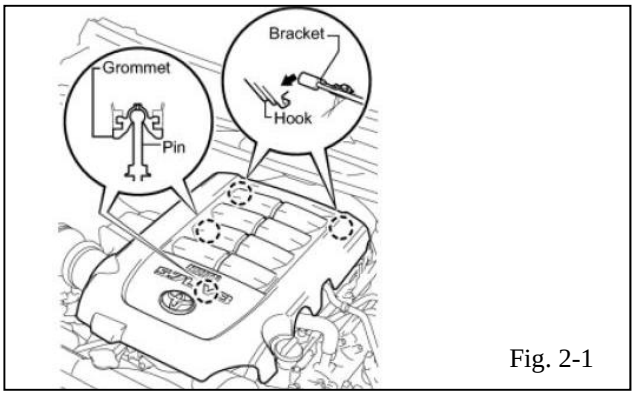


Fig. 2-1

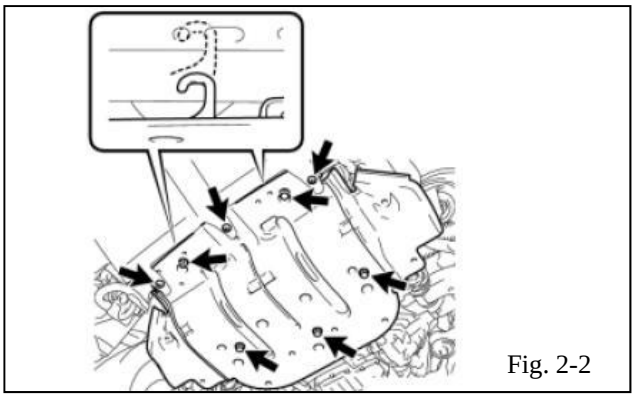


Fig. 2-2

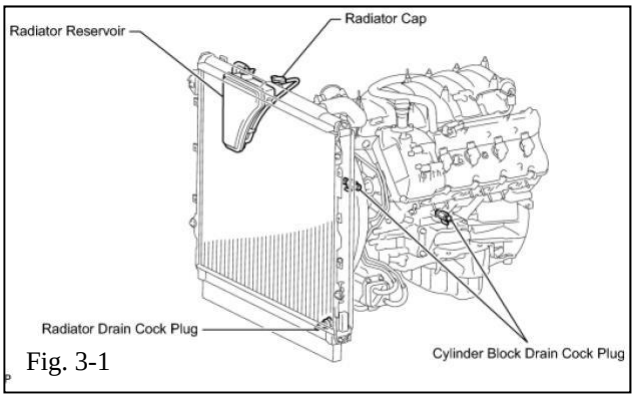


Fig. 3-1

2. Remove the engine cover.

(a) Remove the engine V-bank cover by lifting the front of the cover and pulling away from the firewall (Fig. 2-1). Discard these parts.

(b) If installed, remove the No. 1 engine under cover (Fig. 2-2) by removing the 3 screws and 5 bolts. Save these parts for reuse.

3. Drain the Engine Coolant.

CAUTION: Do not remove the radiator cap while the engine and radiator are still hot. Pressurized hot engine coolant and steam may be released and cause serious burns.

(a) Loosen the radiator drain cock plug (Fig. 3-1).

(b) Remove the radiator cap. Drain the coolant from the radiator into a clean container so it can be reused (Fig. 3-1).

(c) Loosen the 2 cylinder block drain cock plugs (Fig. 3-1). Drain the coolant from the engine and save it for reuse.

(d) Tighten the 2 cylinder block drain cock plugs.

Torque: 13 N-m (10 ft-lbf)


Fig. 4-1

4. Remove the Hood Sub-Assembly.

(a) Use a screwdriver to release the 2 clips and remove the hood support assembly (Fig. 4-1).

HINT: Tape the screwdriver tip before use.

CAUTION: Remove the hood support assembly while supporting the hood by hand.

(b) Remove the 4 bolts and the hood.

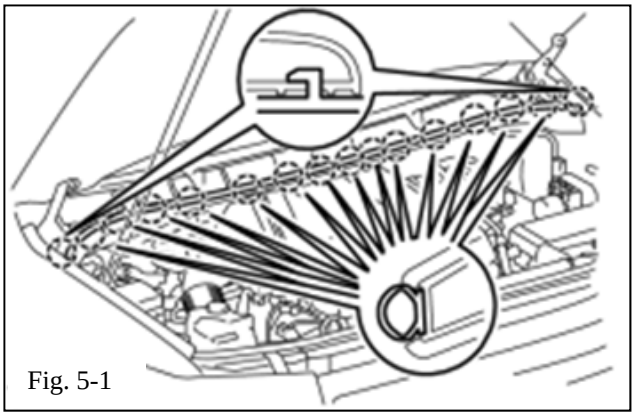


Fig. 5-1

5. Remove the Wiper Motor & Link Assembly.

(a) Use a clip remover to detach the 16 claws and remove the cowl top seal (Fig. 5-1).

(b) Use a clip remover to detach the claw and remove the cowl LH side seal. Repeat for the RH side.

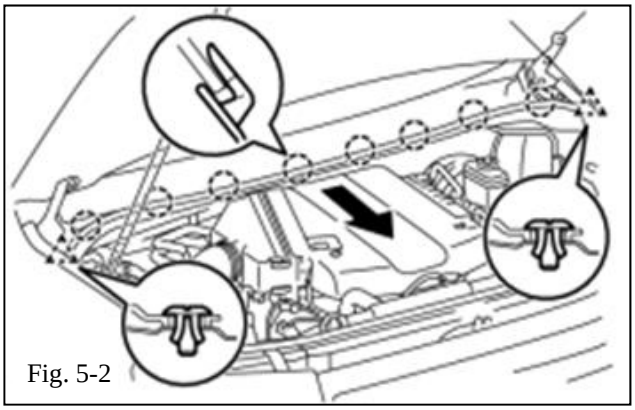


Fig. 5-2

(c) Remove 2 clips and 8 claws and remove the top ventilator louver sub-assembly (Fig. 5-2).

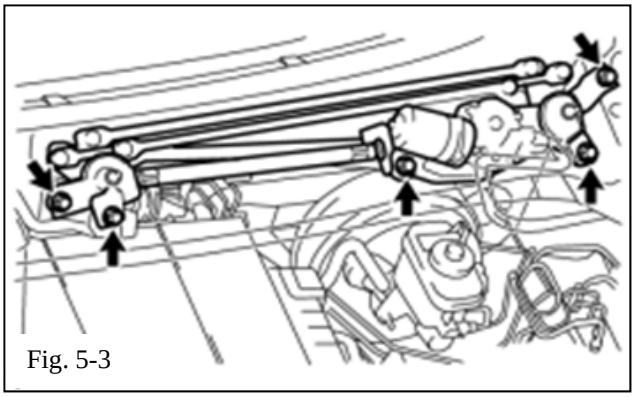


Fig. 5-3

(d) Disconnect the electrical connector, 1 nut and 4 bolts, and then remove the wiper motor and link assembly (Fig. 5-3).

6. Remove the Cowl Top Outer Panel Sub-Assembly.

(a) Disconnect the washer hose and detach the 2 wire harness clamps (Fig. 6-1).

(b) Remove the 2 bolts and the cowl top outer sub-assembly (Fig. 6-1).

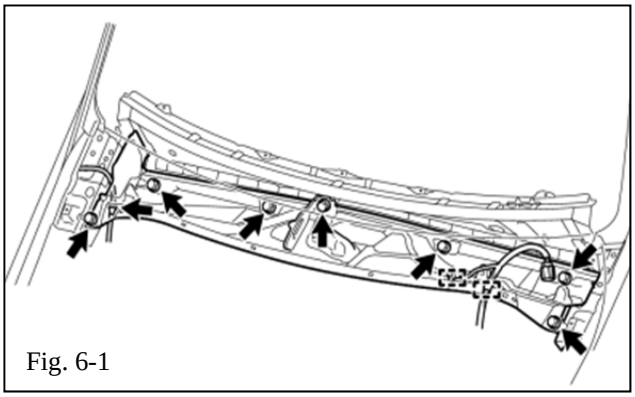


Fig. 6-1

7. Remove the Radiator Grill Sub-Assembly.

(a) Put protective tape around the radiator grill sub-assembly (Fig. 7-1).

(b) Remove the 4 screws and 2 clips (Fig. 7-1).

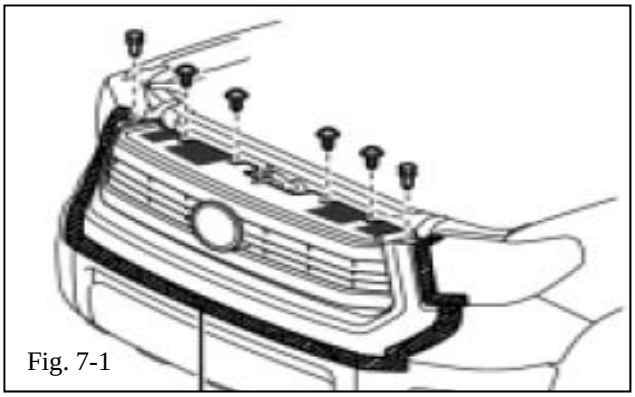


Fig. 7-1

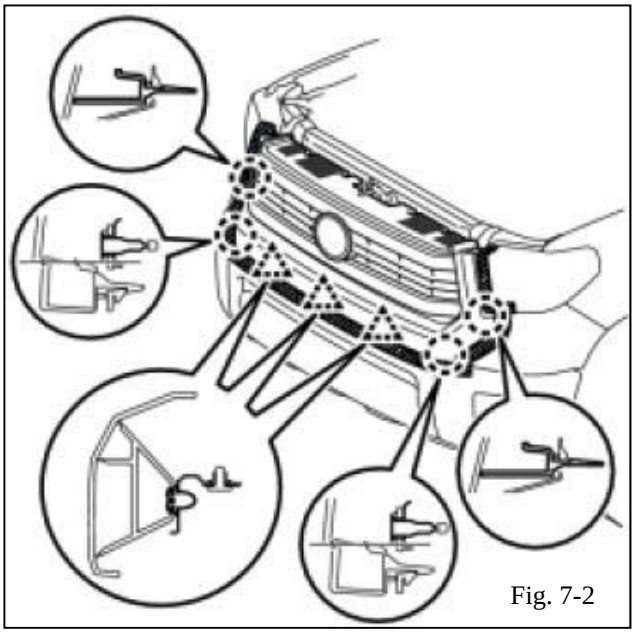


Fig. 7-2

(c) Detach the 4 claws and 3 clips and remove the radiator sub-assembly (Fig. 7-2).

8. Remove the Front LH End Panel.

(a) Put protective tape around the LH front end panel (Fig. 8-1).

(b) Remove the 2 screw and 2 clips (Fig. 8-1).

(c) Detach the 3 claws and remove the front LH end panel (Fig. 8-1).

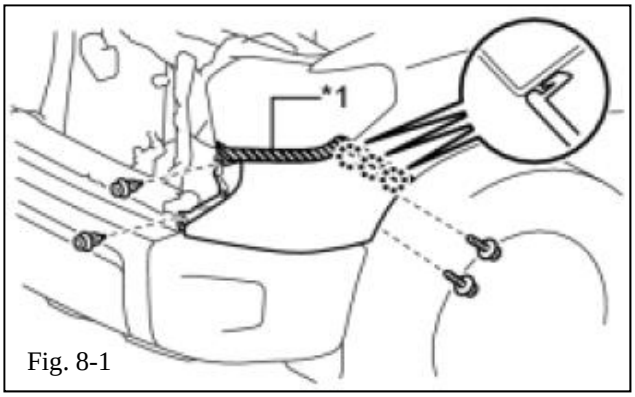


Fig. 8-1

9. Modify the LH Radiator Side Deflector.

(a) Use a clip remover to remove the 3 clips and disconnect the radiator side deflector LH (Fig. 9-1).

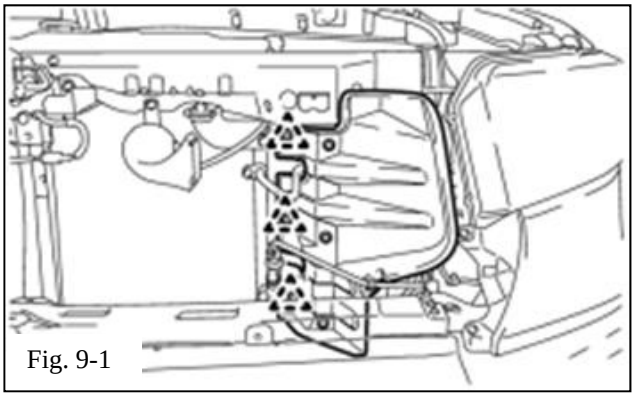


Fig. 9-1

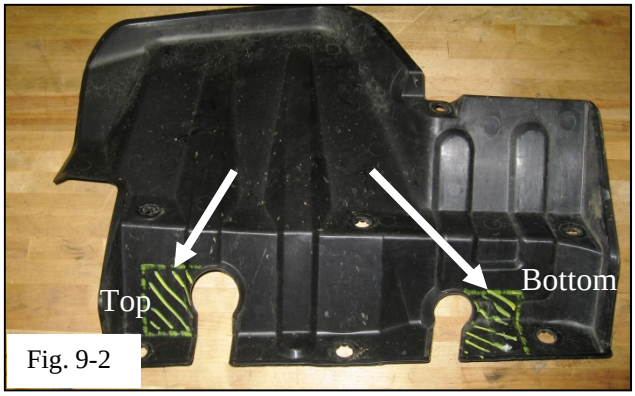


Fig. 9-2

(b) Mark and trim the LH radiator side deflector (Fig. 9-2).

(c) Reinstall the LH radiator side deflector.

10. Remove the Fan and Shroud.

(a) Remove the upper radiator hose.

(1) Mark the radiator end of this hose with a marker or tape.

(2) This hose will be reinstalled inverted and the mark will help identify the ends.

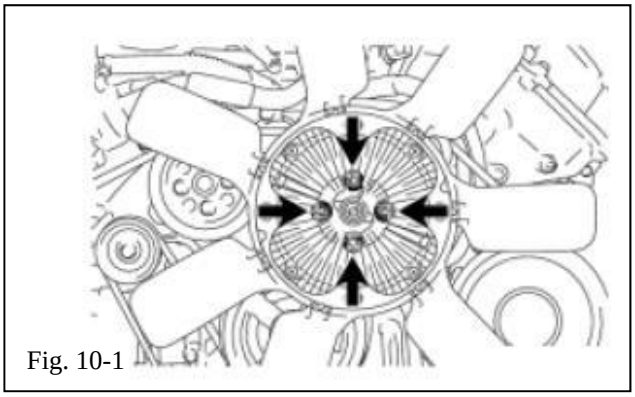


Fig. 10-1

(b) Loosen the 4 nuts holding the fluid coupling fan (Fig. 10-1).

(c) Remove the fan/generator V-rib belt. Discard this belt as it will be replaced by a new belt.

(d) Disconnect the reservoir hose from the upper radiator tank.

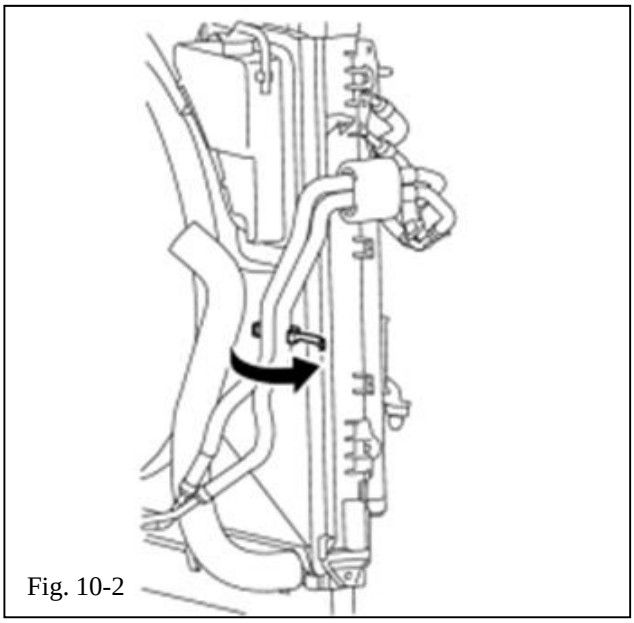


Fig. 10-2

(e) For vehicles with a condenser with an integrated oil cooler: Detach the claw to open the No. 1 hose clamp on the side of the fan shroud (Fig. 10-2).

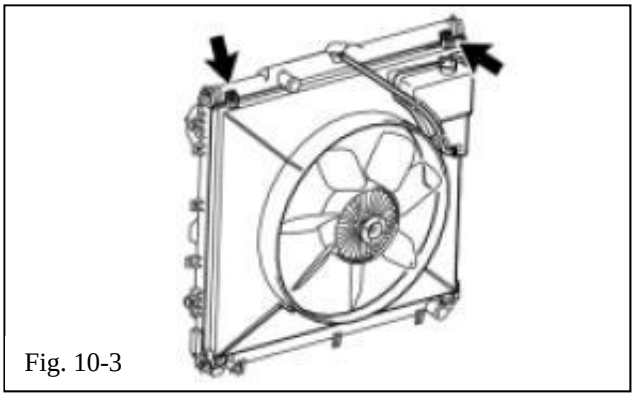


Fig. 10-3

(f) Remove the 2 bolts retaining the fan shroud (Fig. 10-3).

(g) Remove the 4 nuts of the fluid coupling fan, and then remove the shroud together with the coupling fan. Retain these parts for reuse.

(h) Temporarily re-install the 4 nuts to keep the pulley in place (reference Fig. 10-1). Do not tighten.

CAUTION: Be careful not to damage the radiator core. It is helpful to protect the radiator core with a piece of cardboard to prevent damage during the following steps.

11. Replace the Air Cleaner Upper Lid, Filter and Inlet.

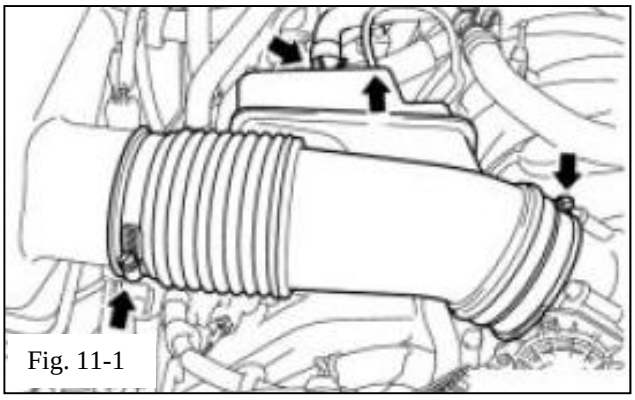


Fig. 11-1

(a) Remove the air cleaner hose.

(1) Disconnect the vacuum and ventilation hoses and loosen the 2 clamps (Fig. 11-1).

(2) Discard the hose and clamps.

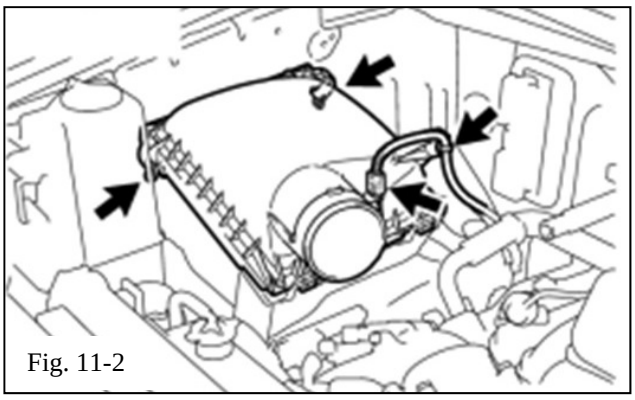


Fig. 11-2

(b) Remove the air cleaner lid.

(1) Disconnect the mass airflow (MAF) meter connector (Fig. 11-2).

(2) Use a clip removal tool to detach the wire harness clamp.

(3) Unfasten the 4 hook clamps (Fig. 11-2).

(c) Remove and discard the air cleaner element.

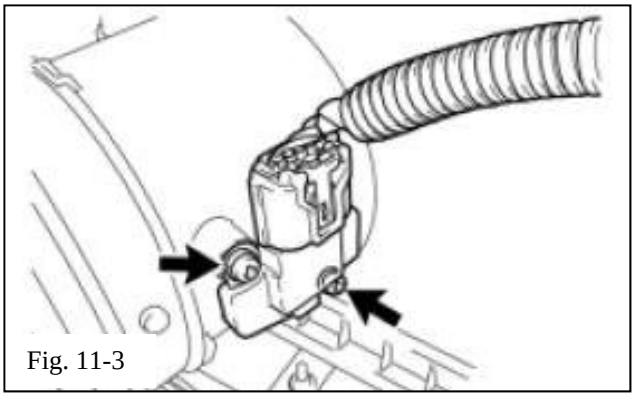


Fig. 11-3

(d) Remove the mass airflow (MAF) meter from the air cleaner lid (Fig. 11-3). Discard the air cleaner lid but retain the 2 screws.

(e) Install the mass airflow (MAF) meter in the supplied air cleaner lid (Item #3) using the OE screws (Fig. 11-3).

Torque: 1.7 N-m (15 in-lbf)

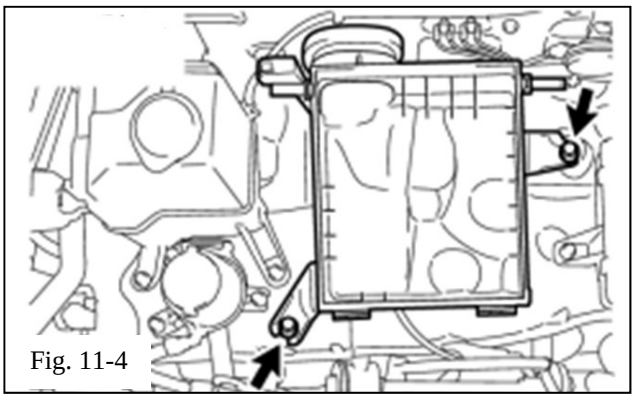


Fig. 11-4

(f) Remove the air cleaner case by removing the 2 bolts (Fig. 11-4).


Fig. 11-5

(g) Use a flat blade screwdriver to unclip and discard the air inlet tube from the air cleaner case (Fig. 11-5).

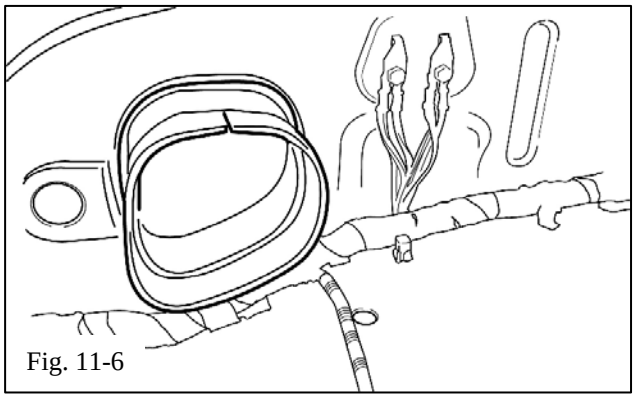


Fig. 11-6

(h) Install the new air flow accelerator (Item E6) into the opening in the inner fender panel (Fig. 11-6).

HINT: Squeeze and compress the bell mouth of the air flow accelerator in order to get it through the opening in the inner fender.

(i) Reinstall the air cleaner case using the original bolts.

(1) The inlet to the case is inserted into and snaps to the air flow accelerator.

(2) Once the two parts are snapped together, push the air flow accelerator further through the panel so the bolt holes line up.

Torque: 5.0 N-m (44 in-lbf)

12. Remove the Intake Manifold.

(a) Blow away dirt and debris that has accumulated around the intake manifold ports and the fuel injectors.

CAUTION: Wear eye protection when using compressed air.

(b) Disconnect the ventilation hose from the ventilation pipe on the cylinder head covers, LH and RH (Fig. 12-1).

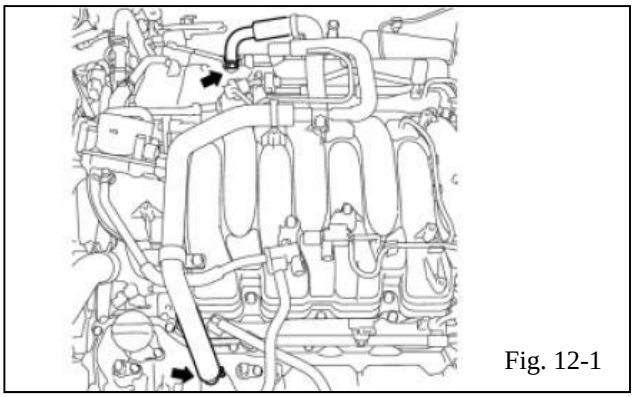


Fig. 12-1

(c) Disconnect the No. 4 water bypass hose and the throttle body connector (Fig. 12-2). Do not disconnect the No. 5 water bypass hose from the water inlet housing or the throttle body.

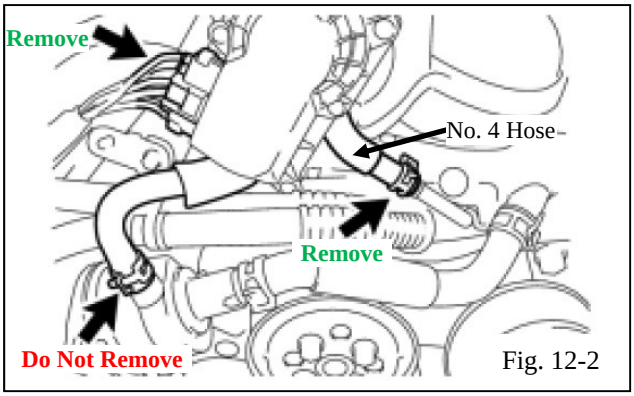


Fig. 12-2

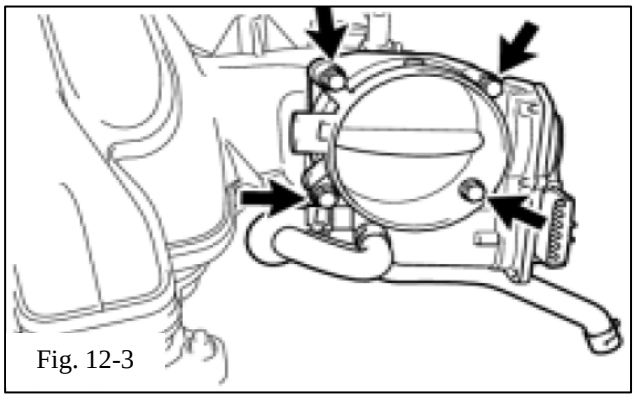


Fig. 12-3

(d) Remove the 4 bolts and remove the throttle body from the manifold (Fig. 12-3).

(1) Save these bolts and the throttle body.

(2) Discard the throttle body gasket.

(e) Remove the other end of the No. 4 water bypass hose from the throttle body and set it aside for later use.

(f) Cover the throttle body opening. Leave the throttle body connected to the No. 5 water bypass hose wrap it in a shop rag.

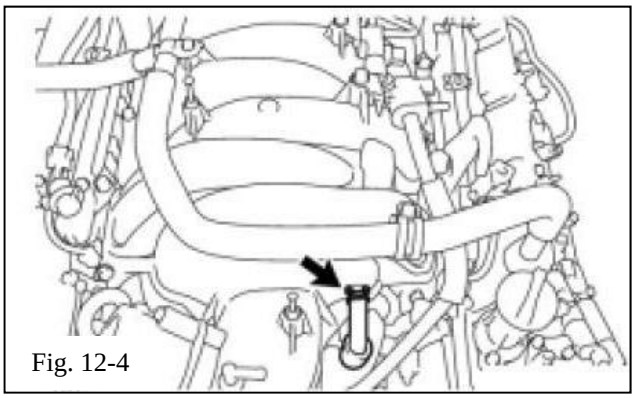


Fig. 12-4

(g) Disconnect the No. 1 ventilation hose (Fig. 12-4).

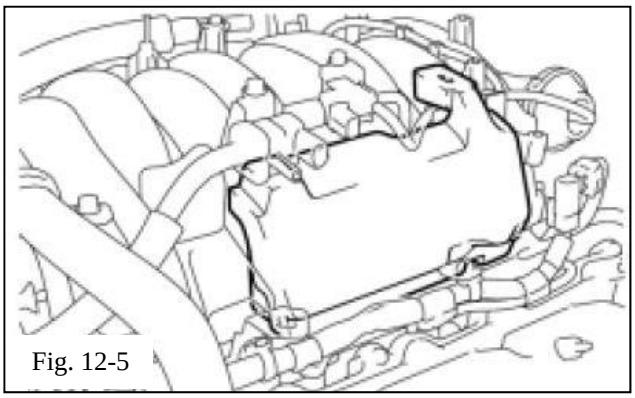


Fig. 12-5

(h) Remove the No. 1 engine cover sub-assembly (Fig. 12-5). Discard this part.

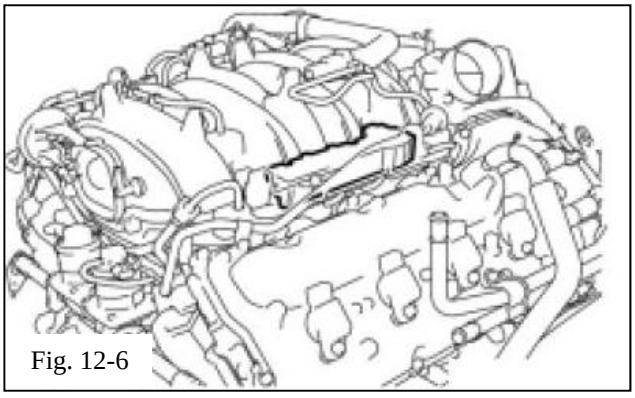


Fig. 12-6

(i) Remove the No. 3 engine cover (Fig. 12-6). Discard this part.

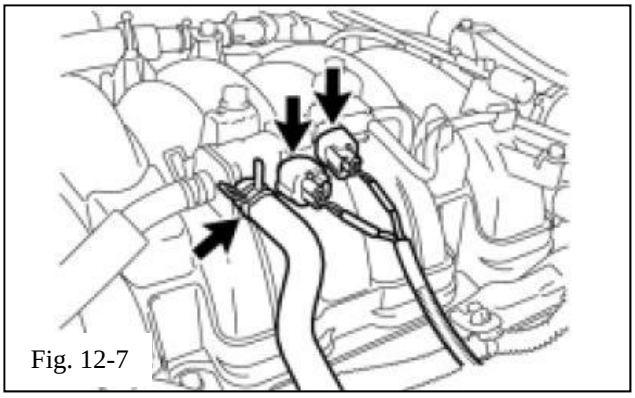


Fig. 12-7

(j) Disconnect the purge VSV connector, the hose from the VSV, and the ACIS connector (Fig. 12-7).

(1) Disconnect the purge line hose from the body of the purge valve.

(2) Disconnect the purge hose from the front of the intake manifold, but leave it connected to the front of the purge valve.

(3) Unbolt the purge valve and set it and the bolt aside for now.

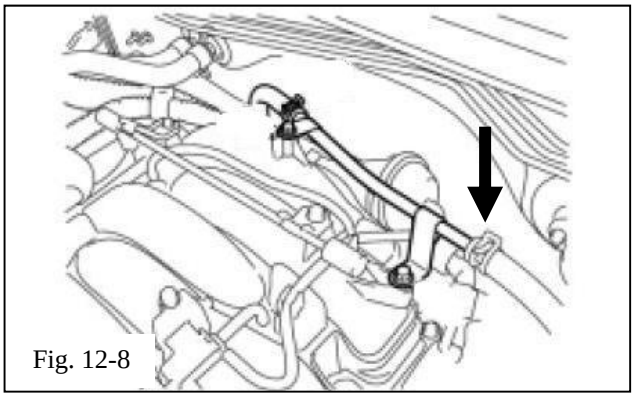


Fig. 12-8

(k) Remove the brake booster vacuum hose from the manifold pipe and the brake booster (Fig. 12-8). Save the clamps, but discard the hose.

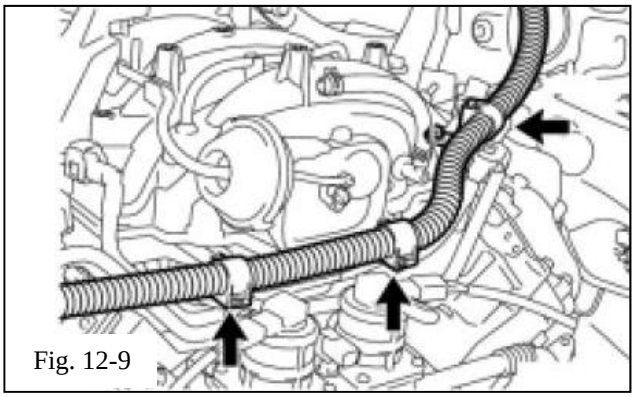


Fig. 12-9

(l) Disconnect the 3 wire clamps from the 3 wire harness brackets (Fig. 12-9).

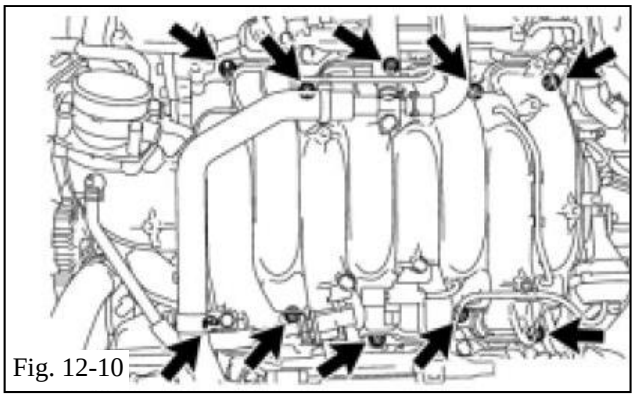


Fig. 12-10

(m) Use a 12mm 6 point 3/8” drive swivel socket to remove the 2 nuts, 8 bolts and the intake manifold (Fig. 12-10).

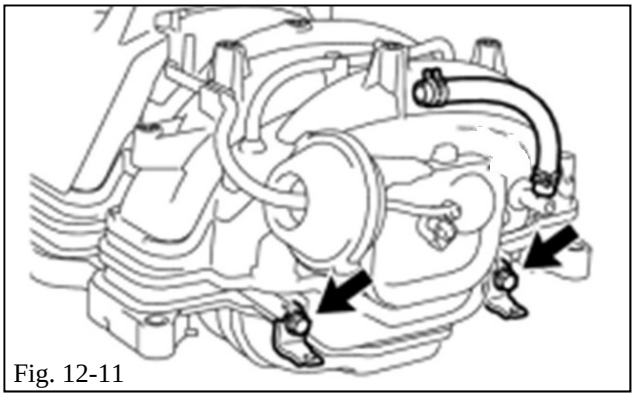


Fig. 12-11

(n) Remove the 2 harness clips from the back of the intake manifold. These will be reused in Step 18(b) (Fig. 12-11).

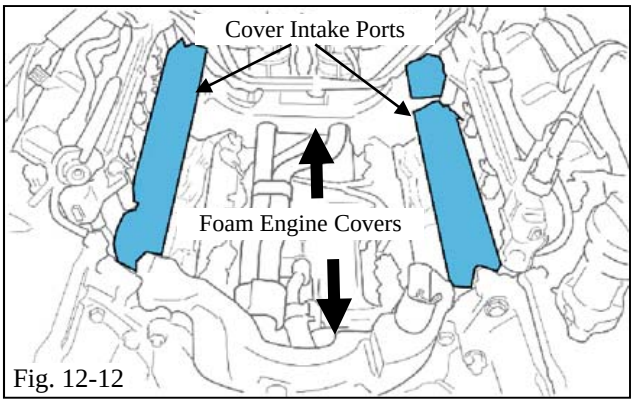


Fig. 12-12

(o) Clean and cover the intake ports to prevent debris from entering the engine and then remove and discard the 2 foam engine covers that are under the intake manifold (Fig. 12-12). Blow away any debris that may be in the engine valley.

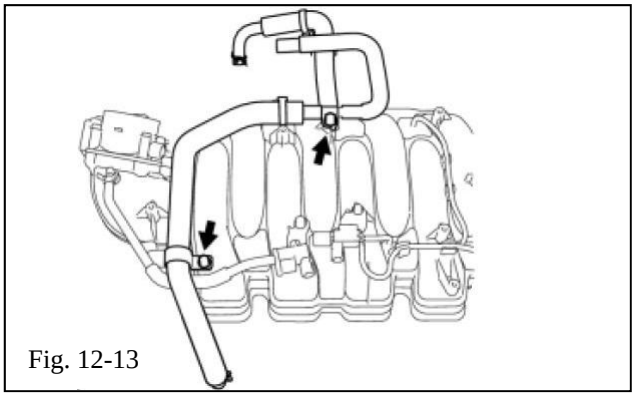


Fig. 12-13

(p) Remove the 2 bolts and the ventilation hose from the intake manifold (Fig. 12-13). Set the hose aside for later reuse.

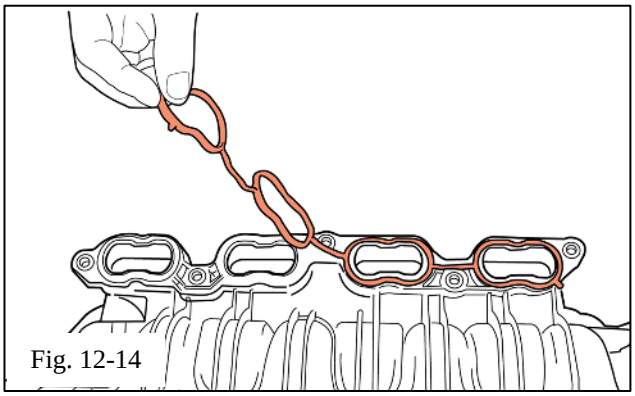


Fig. 12-14

(q) Carefully remove the gaskets from the bottom of the intake manifold (Fig. 12-14).

(1) Clean and set them aside as they will be reused in Step 18(a).

(2) Discard the intake manifold and the remaining attached parts.

CAUTION: Be careful not to damage the gaskets. If the gaskets appear to be worn or damaged, replace them with new ones (Qty 2: Toyota P/N 17171-38010 or 17171-0S010 or equivalent superseded part).

13. Remove the Coolant Crossover Manifold.

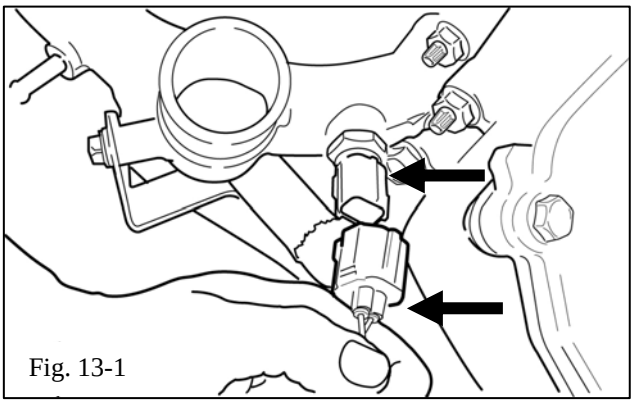


Fig. 13-1

(a) Unplug the water temperature sensor, remove it and set it aside (Fig. 13-1).

CAUTION: Do not misplace the copper sealing washer.

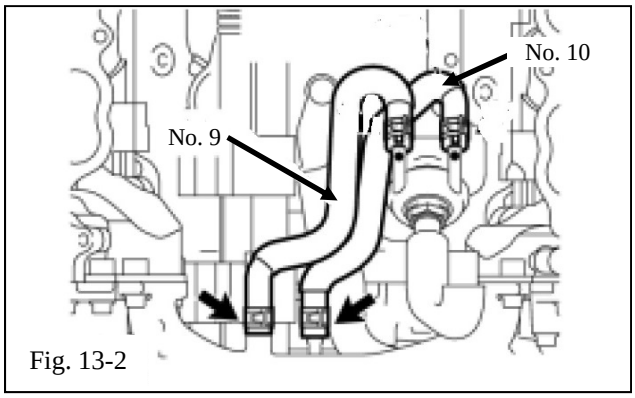


Fig. 13-2

(b) Remove the No. 9 and No. 10 hoses from the coolant crossover manifold (Fig. 13-2).

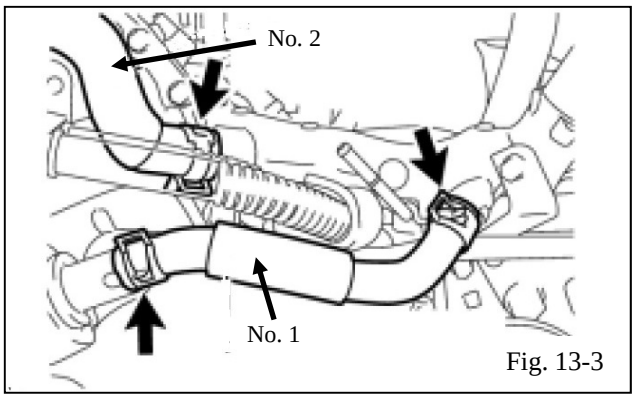


Fig. 13-3

(c) Remove the No. 1 hose and discard it (Fig. 13-3).

(d) Disconnect the No. 2 water bypass hose from the coolant crossover manifold (Fig. 13-3).

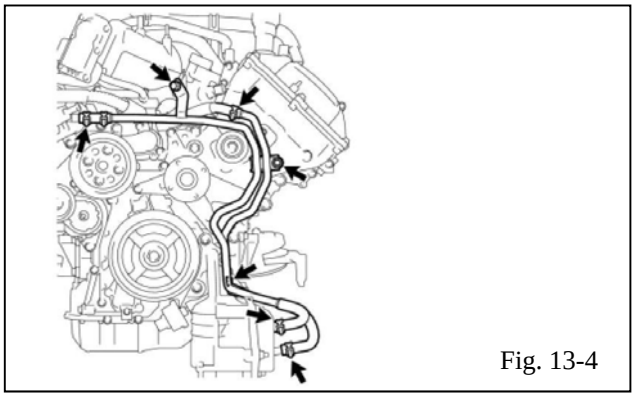


Fig. 13-4

(e) Remove the 3 bolts and 4 hoses and then remove the No. 2 water bypass pipe assembly (Fig. 13-4).

HINT: When the lower hoses are disconnected, they will be full of coolant. Drain this coolant into a clean container for reuse.

(f) Remove and save the hoses from the hard bypass pipe assembly. Discard the No. 2 hard bypass pipe assembly.

(g) Remove the 4 nuts, front coolant crossover manifold and 2 gaskets (Fig. 13-5).

(1) Retain the nuts and gaskets.

(2) Discard the coolant crossover manifold.

(3) Clean the gaskets and mating surfaces on the engine.

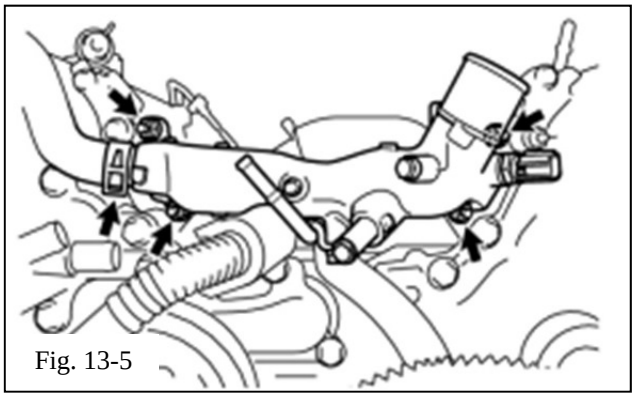


Fig. 13-5

14. Install the Coolant Crossover Manifold.

(a) Carefully inspect the gaskets removed from the coolant crossover manifold. If the gaskets are worn or aged in any way, replace them with new gaskets: Toyota P/N 16341-38030 (QTY 2) or an equivalent superseded part.

⚠ **NOTE: No FIPG is required or recommended on new gaskets.**

(b) If the coolant crossover manifold gaskets are to be re-used, apply a very LIGHT coat of Toyota FIPG (Form in Place Gasket) to both sides of the gaskets and place them over the studs on the engine.

⚠ **NOTE: Excess FIPG may cause future cooling system problems.**

(c) Slide the new supplied coolant crossover manifold (Item #4) over the studs and secure it with the previously removed 4 nuts (Fig. 14-1).

Torque: 21N-m (15ft-lbf)

(d) Install the water temperature sensor (Fig. 14-1).

Torque: 20N-m (14ft-lbf)

(e) Reconnect the wire harness.

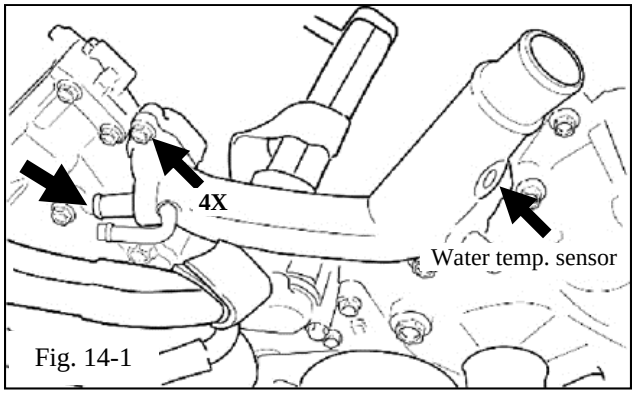


Fig. 14-1

15. Install the Idler Pulley.

(a) Remove the 2 M10 bolts and the M8 bolt from the engine timing chain cover and fan bracket (Fig. 15-1). Discard these 3 bolts.

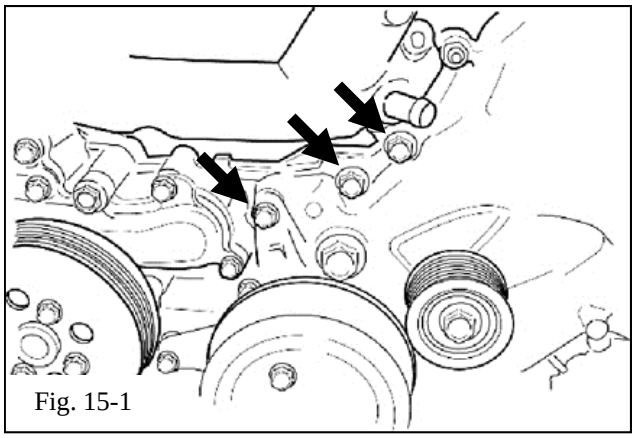


Fig. 15-1

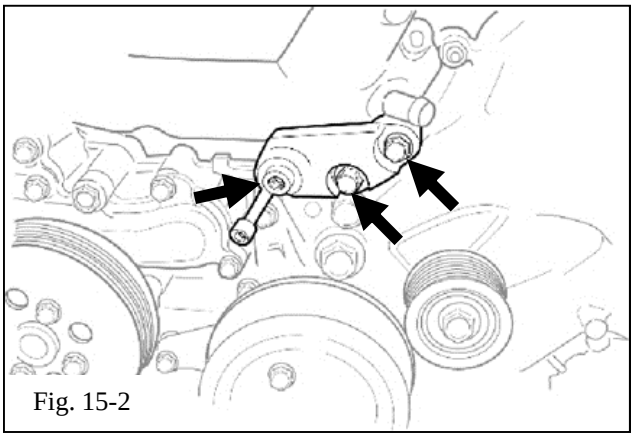


Fig. 15-2

(b) Bolt the idler pulley bracket (Item G1) to the front engine timing chain cover using the 2 supplied M10 bolts (Item G3) and the M8 Allen socket head bolt (Item G5) (Fig. 15-2).

Torque: M10 Bolts 47 N-m (35 ft-lbf)

M8 Bolt 23 N-m (17 ft-lbf)

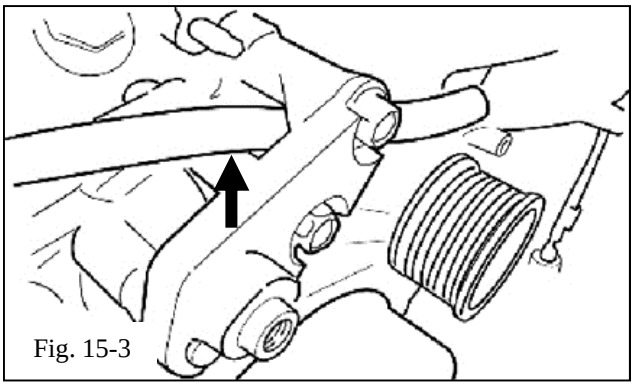


Fig. 15-3

(c) Route the No. 6 water bypass hose between the two legs of the idler pulley bracket (Fig. 15-3).

NOTE: Fig. 15-3 does not show the mesh sleeve on the No. 6 water bypass hose. Make sure the mesh sleeve extends down between the legs of the bracket.

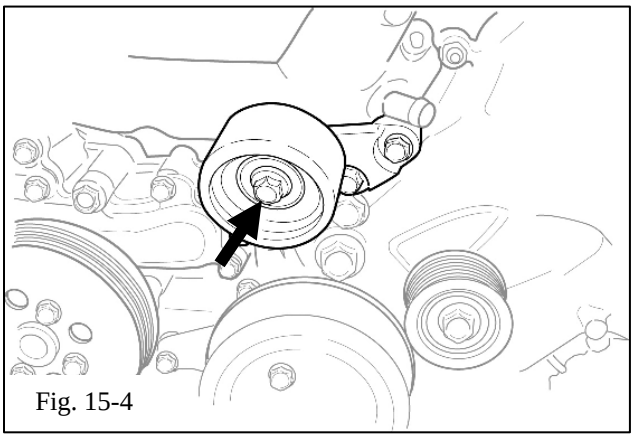


Fig. 15-4

(d) Bolt the idler pulley (Item G2) to the idler pulley bracket with the M10 x 30 bolt (Item G4) (Fig. 15-4).

16. Install the Water Hoses.

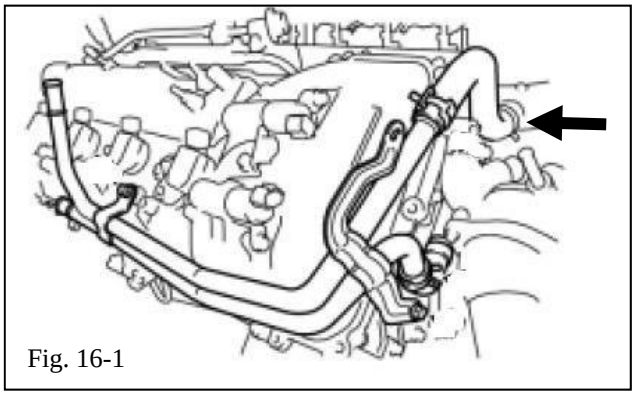


Fig. 16-1

(a) Reconnect the No. 2 water bypass hose to the water bypass joint using the original clamp (Fig. 14-1 & Fig. 16-1).

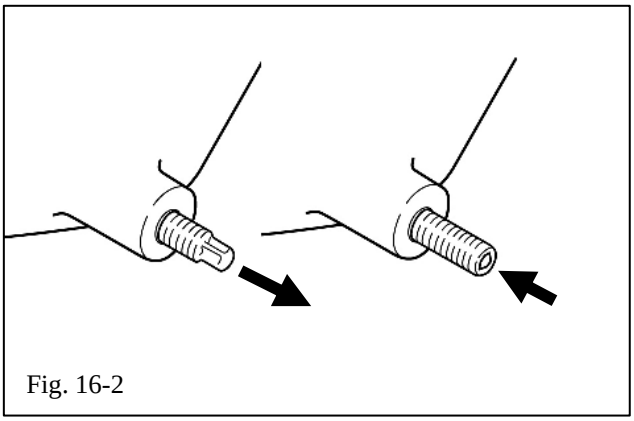


Fig. 16-2

(b) Unclip the wire harness from the stud on the front of the timing cover on the driver side of the engine (Fig. 16-2).

(c) Use an E-6 Torx socket to remove the stud and discard it (Fig. 16-2).

(d) Use a 3 mm Allen socket to install the M6 x 30 mm Allen stud (Item C4) (Fig. 16-2).

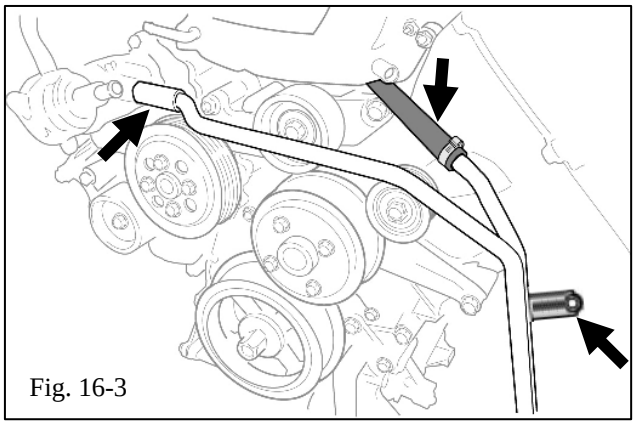


Fig. 16-3

(e) Attach the hoses removed in Step 13(f) to the oil cooler hard coolant lines (Item C1) using the OE clamps (Fig. 13-4 & Fig. 16-3).

(f) Mount the oil cooler hard coolant lines (Item C1) to the M6 x 30 mm Allen stud using the supplied M6 nut (Item C5) (Fig. 16-3). Leave the nut finger tight for now.

NOTE: For clarity, some parts normally on the engine are not shown.

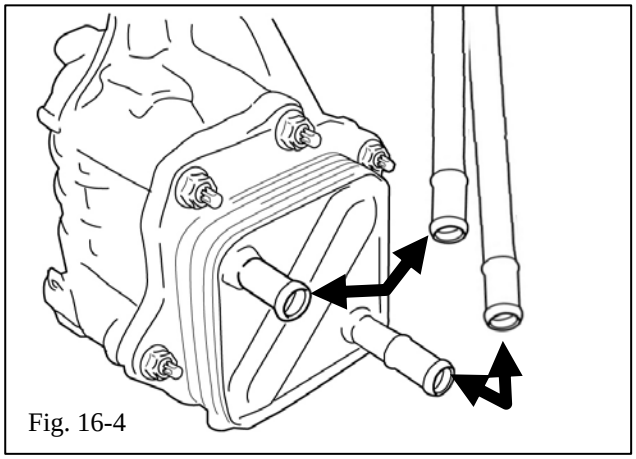


Fig. 16-4

(g) Attach the OE coolant hoses from the oil cooler to the lower ends of the hard coolant lines (Fig. 13-4 & Fig. 16-4). Secure both ends of these hoses with the OE clamps.

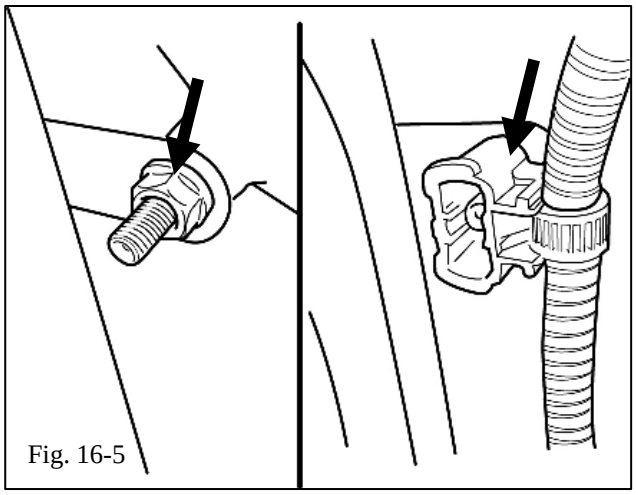


Fig. 16-5

(h) Tighten the M6 nut and reattach the wire harness clip (Fig. 16-5).

Torque: 10 N-m (7 ft-lbf)

(i) Take the supplied ½" coolant hose (Item B5) and cut one 2¾" length and one 3" length. Discard the extra leftover hose.

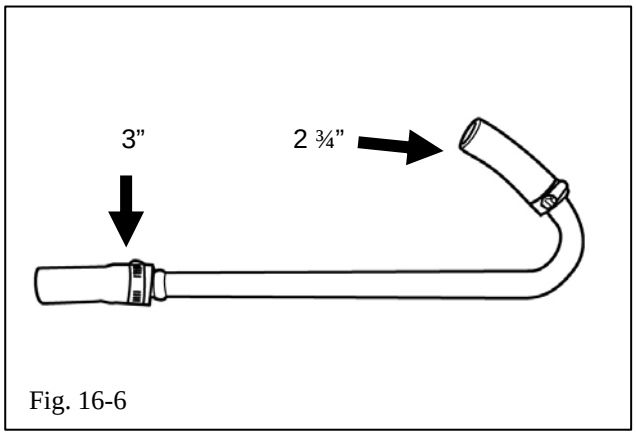


Fig. 16-6

(j) Slide the 2¾" length onto the short leg of the "J" shaped thermostat bypass manifold (Item C2) and the 3" length of hose onto the longer leg (Fig. 16-6). Secure them with the supplied clamps (Item C3).

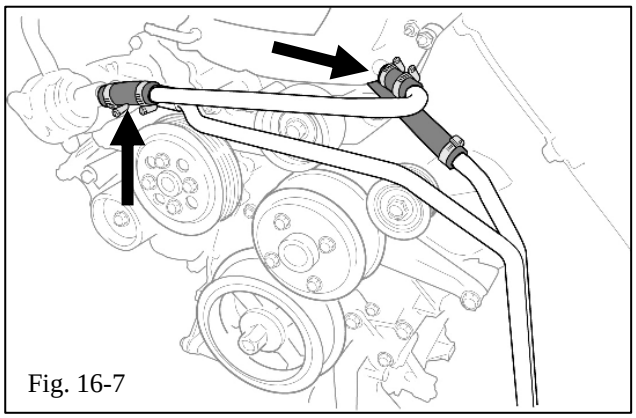


Fig. 16-7

(k) Slide a supplied screw clamp (Item C3) on each end of the “J” shaped bypass manifold (Item C2) and attach it to the thermostat housing and the coolant crossover manifold (Fig. 16-7). Ensure the tube fits comfortably without any kinks and tighten the screw clamps.

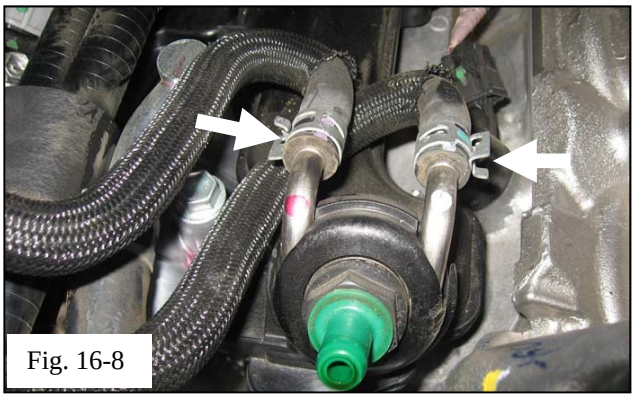


Fig. 16-8

(l) Make certain the hose clamps on the water bypass hoses No. 9 & No. 10 are oriented as shown in Fig. 16-8.

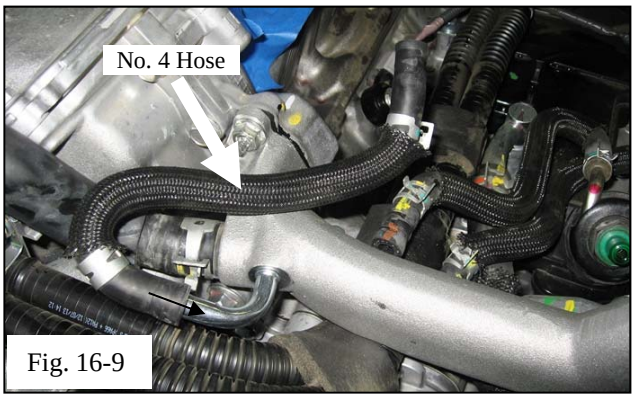


Fig. 16-9

(m) Install the No. 4 water bypass hose (Fig. 16-9). This hose was removed in Step 12(c).


Fig. 16-10

(n) Remove and save the OE clamp and then trim the free end of the hose (Fig. 16-10).

Fig. 16-11

(o) Use a 5/16” hose mender (Item A19) and the OE clamps to connect hose No. 4 & No. 9 (Fig. 16-11).

(p) Cut the 30” long mesh sleeve (Item B10) into three pieces: one 14” long and two 8” long.

(q) Slide the 14” piece of mesh sleeve over the 5/16” heater hose, Item B6.

Fig. 16-12

(r) Use the remaining 5/16” hose mender (Item A19) and clamp (Item A20) to connect one end of the heater hose to the free end of hose No. 10 (Fig. 16-12). Leave the other end of the heater hose free for now.

(s) Orient the hose clamps as shown and then secure the two hose assemblies with 2 tie wraps (Item A15) (Fig. 16-12).

17. Remove the Fuel Injectors.

CAUTION: The fuel system is under high pressure. Use safety glasses and fuel-compatible gloves to prevent personal injury.

(a) Unplug the No. 6 and No. 7 wire harness connectors from the RH and LH fuel rail harnesses (Fig. 17-1).

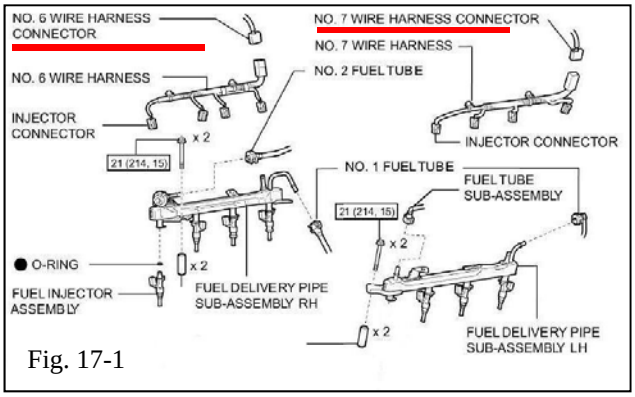


Fig. 17-1

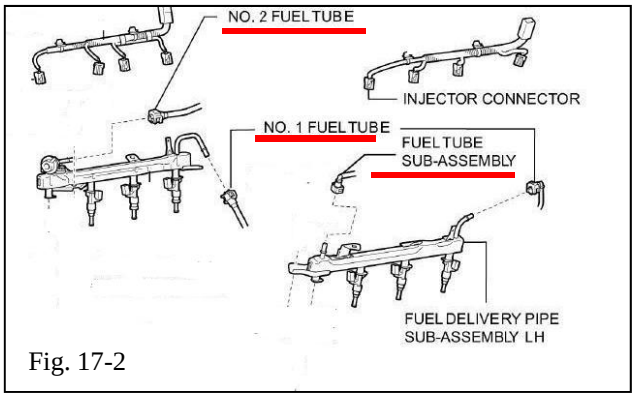


Fig. 17-2

(b) Disconnect the No. 2 fuel tube from the fuel pressure regulator (Fig. 17-2). Place shop rags around the fitting to prevent fuel spray and to absorb any fuel that comes out of the line.

(c) Disconnect the No.1 fuel tube from the back of each fuel delivery pipe sub-assembly (Fig. 17-2).

(d) Disconnect the fuel tube sub-assembly from the front of the LH fuel delivery pipe sub-assembly (Fig. 17-2). Use shop rags to absorb any fuel as each connector is disconnected.

(e) Unbolt and remove the fuel delivery pipe sub-assemblies. Retain the four bolts (Fig. 17-3).

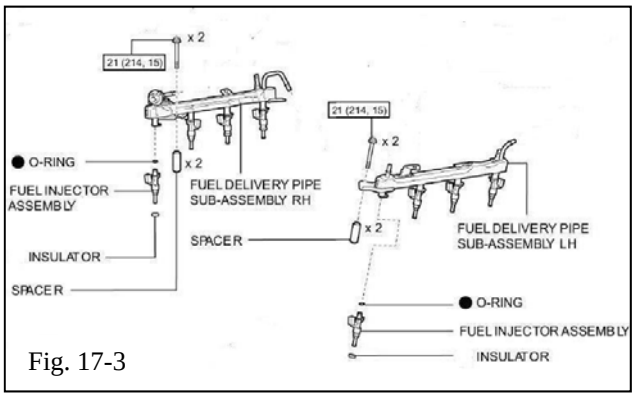


Fig. 17-3

CAUTION: The fuel delivery pipe sub-assemblies have fuel in them which must be drained into an approved disposal container.

NOTICE: When removing the delivery pipes, hold the pipes by the ends and pull them straight upwards.

(f) Remove and retain the four spacers.

(g) Remove the eight insulators from either the intake manifold or from the injectors.

(1) Clean the insulators and inspect them for damage and wear.

(2) If any damage or wear is evident, replace all 8 insulators with new parts (Toyota P/N 23291-23010 or equivalent superseded part).

(h) Install the insulators into the cylinder heads.

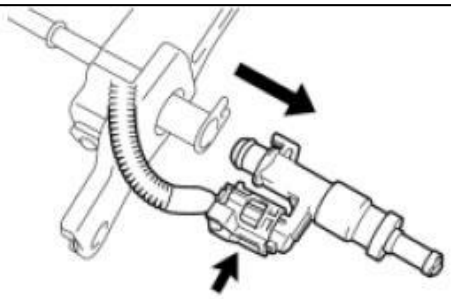


Fig. 17-4

(i) Remove the fuel injectors from the fuel delivery pipes (Fig. 17-4).

(1) As each injector is removed, disconnect the injector connector (Fig. 17-4).

(2) Discard the injectors.

(j) Cover all eight injector ports in the cylinder heads and all open fuel lines to prevent debris contamination.

18. Prepare to Install the Supercharger.

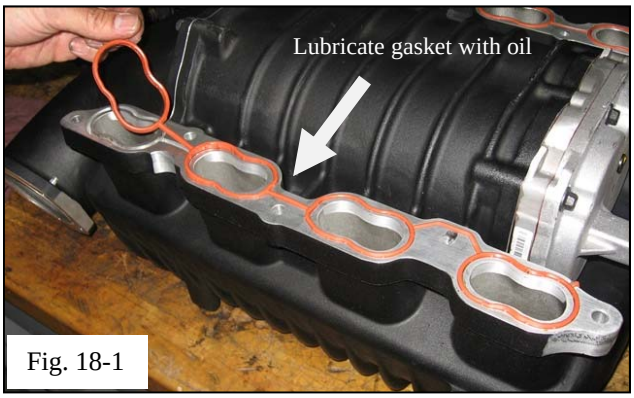


Fig. 18-1

(a) Coat the intake manifold gaskets removed in Step 12(q) with a light film of oil and install them on the bottom of the supercharger (Fig. 18-1).

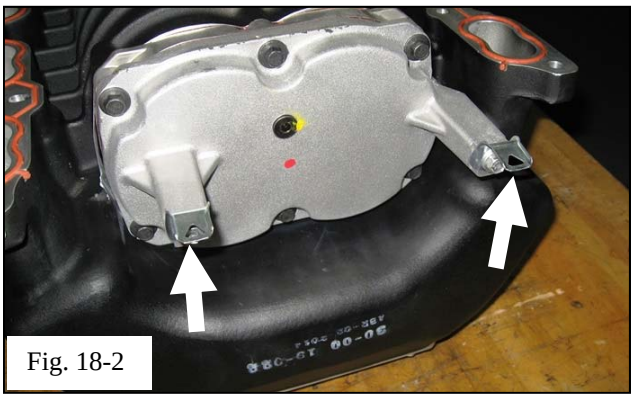


Fig. 18-2

(b) Install the wire harness clips removed in Step 12(n) onto the cast bosses on the back of the supercharger (Fig. 18-2).

Torque: 10 N-m (7 ft-lbf)

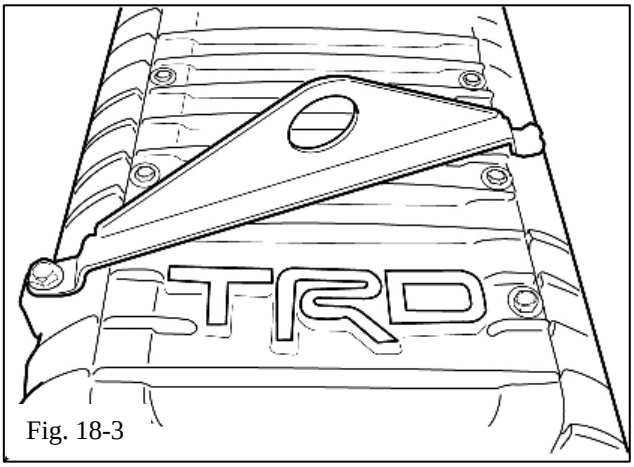


Fig. 18-3

(c) Attach the TRD hoist bracket to the top of the supercharger with the M8 bolts that are part of the hoist bracket kit (Fig. 18-3).

Torque: 21 N-m (15 ft-lbf)

NOTE: This bracket is not part of the kit and needs to be ordered separately, P/N PTR25-34070.

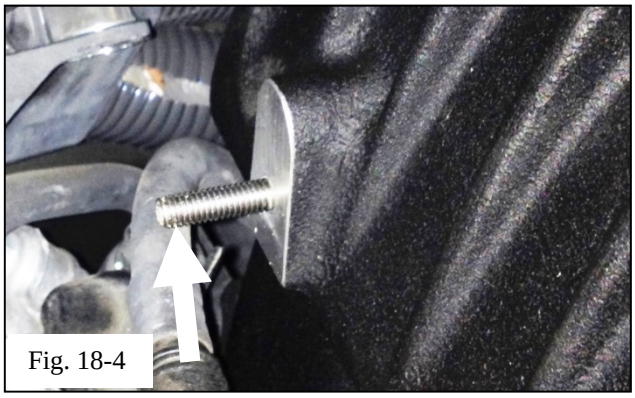


Fig. 18-4

(d) On the rear RH corner of the supercharger is a M6 Allen head threaded stud that is only used on 2013 MY and earlier Tundras. Remove and discard this stud (Fig. 18-4).

19. Install the Supercharger Housing.


Fig. 19-1

(a) Install the new vent hose (Item C6) with the supplied clamp (Item C7) (Fig. 19-1).

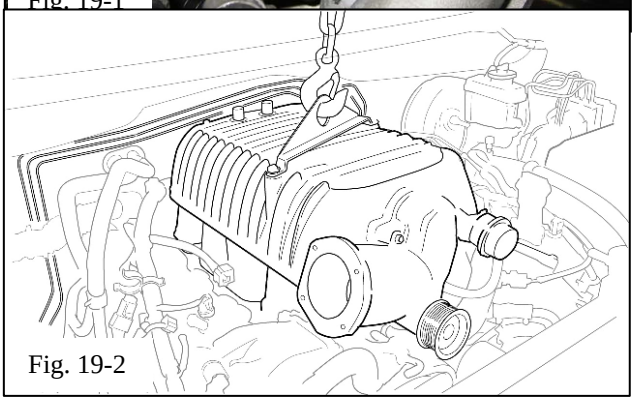


Fig. 19-2

(b) Use an engine hoist to lift the supercharger by hooking the hoist to the hoist bracket bolted to the top of the supercharger (Fig. 19-2).

(c) Remove the tape covering the intake ports in the cylinder heads (refer to Fig. 12-12). Make sure the surface is clean.

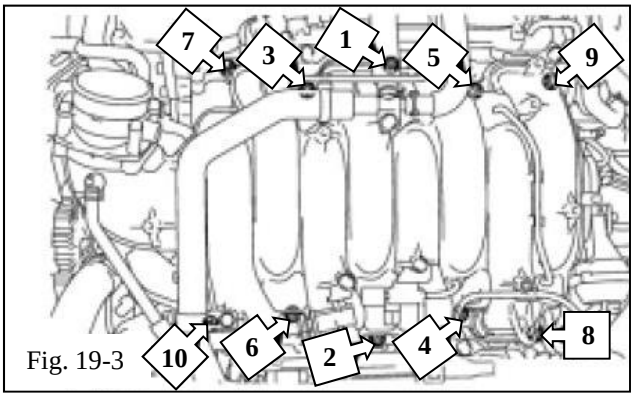


Fig. 19-3

(d) Carefully position the supercharger main housing on the intake ports (refer to Fig. 12-12 and Fig. 19-2). Do not pinch the No.1 ventilation hose.

(e) Uniformly bolt the supercharger housing in place using the OE intake manifold fasteners removed in Step 12(m) (2 nuts + 8 bolts (Fig. 19-3). Follow the tightening sequence in the figure.

Torque: 21 N-m (15 ft-lbf)

(f) Remove the hoist bracket. Save the hoist bracket and the 2 M8 bolts for future installations.

(g) Clip the factory wire harness into the harness clips behind the supercharger (refer to Fig. 18-2).

20. Install the Fuel Injectors.

(a) The new supplied fuel injectors (Item F1) have a shorter nose than the original injectors (Fig. 20-1).

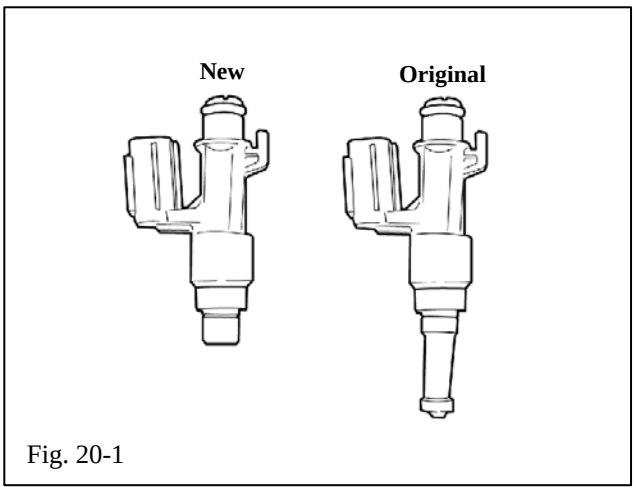


Fig. 20-1

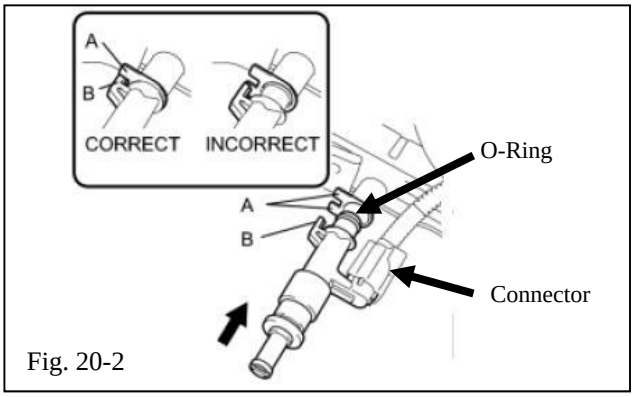


Fig. 20-2

(b) Connect the injector connector (Fig. 20-2).

(c) Apply a light coat of gasoline or spindle oil onto the upper injector O-ring and install the injector to the fuel delivery pipe (Fig. 20-2).

NOTICE:

- **Make sure that no scratches or foreign matter exist in or around the insertion hole of the delivery pipe.**
- **When inserting the injector, be careful not to damage the O-ring.**
- **Attach the part of the injector labeled B between the parts of the delivery pipe labeled A.**

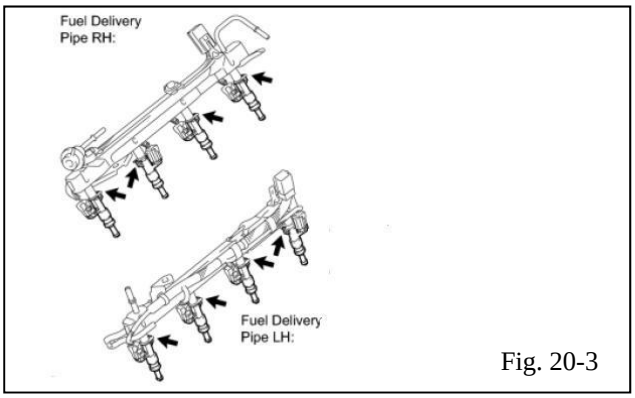


Fig. 20-3

(d) Check to see that each injector is installed to the delivery pipe facing the direction shown (Fig. 20-3).

(e) Apply a light coat of oil to the ID of the insulators in the cylinder heads.

(f) Install the 2 delivery pipe spacers and make sure the 4 insulators are in place in each cylinder head.

(g) Install the 2 delivery pipes (with injectors) to the cylinder heads.

(h) Install the 2 bolts on each side (Fig. 20-4).

Torque: 21 N-m (15 ft-lbf)

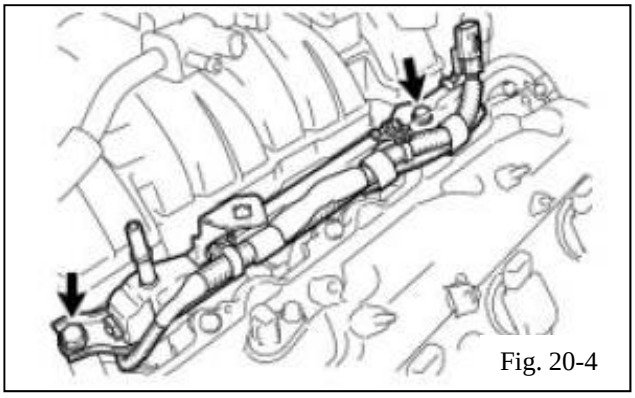


Fig. 20-4

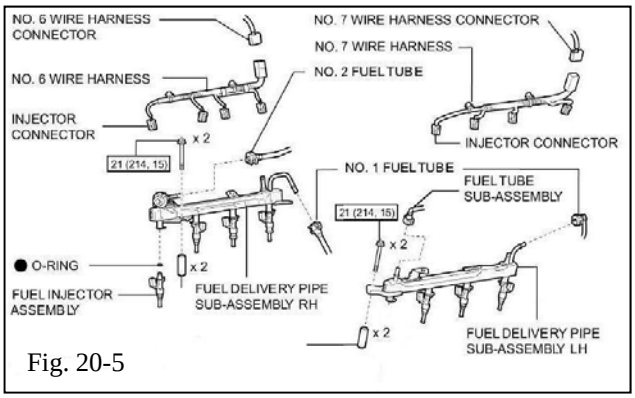


Fig. 20-5

(i) Reconnect the No. 6 and No. 7 wire harness connectors (Fig. 20-5).

(j) Connect the 4 fuel line connectors, 2 per side (Fig. 20-5).

21. Install the Vacuum Hoses.

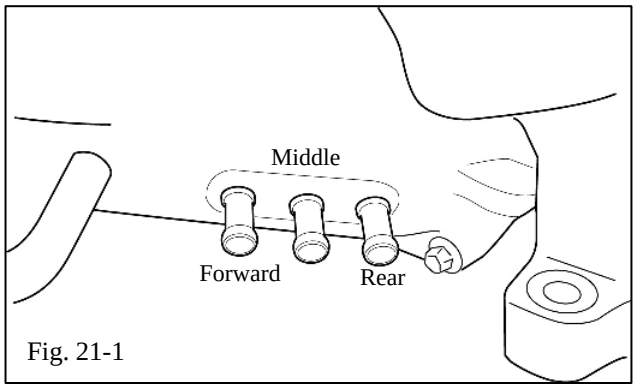


Fig. 21-1

(a) The supercharger housing has three barbs at the front (Fig. 21-1). These will be referred to in subsequent steps as the “forward,” “middle,” and “rear” barbs.


Fig. 21-2

(b) Attach the No. 1 ventilation hose to the forward barb (Fig. 21-1 & Fig. 21-2) using the OE clamp.

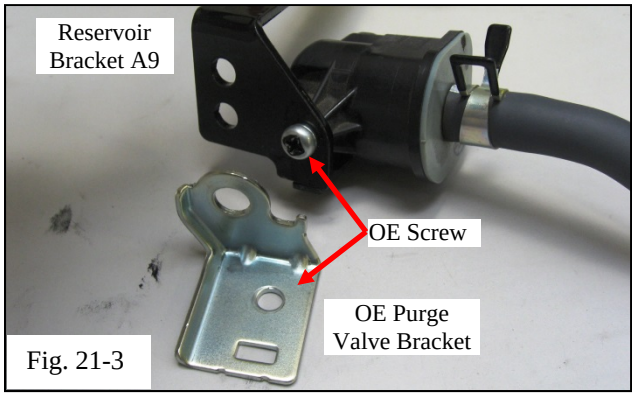


Fig. 21-3

(c) Remove the purge valve (VSV) from the OE bracket and mount it onto the reservoir bracket (Item A9) using the OE screw (Fig. 21-3).

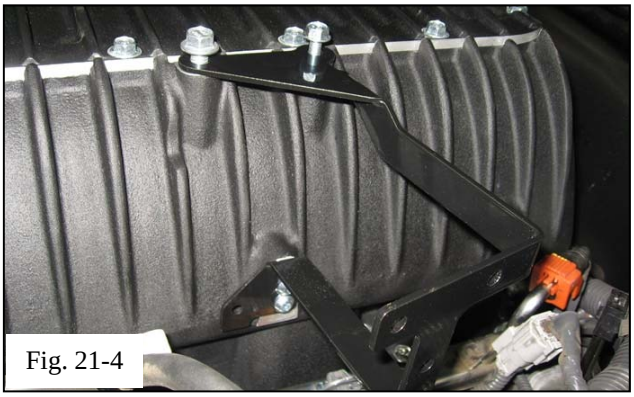


Fig. 21-4

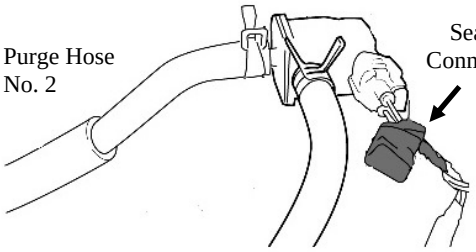


Fig. 21-5

(d) Mount the reservoir bracket (Item A9) to the driver's side of the supercharger using the supplied button head screws (Item A12), 8mm hex head bolt (Item A10) and 6mm hex head bolt (Item A11) (Fig. 21-4).

NOTE: For clarity, the VSV is not shown in the figure.

Torque: M8 Bolt 20N-m (15 ft-lbf)

M6 Bolt 10 N-m (84 in-lbf)

(e) Connect the electrical connector to the purge valve.

(1) The valve has 2 connectors and only 1 will fit.

(2) The ACIS connector is no longer used and should be sealed with electrical tape and secured to the main harness (Fig. 21-5).

(f) Reconnect purge hose No. 1to the body of the purge valve with the OE clamp (Fig. 21-5).

Fig. 21-6


Fig. 21-7

(g) Before purge hose No. 2 can be attached to the rear barb, it needs to be shortened approximately 3” (Fig. 21-6 & Fig. 21-7).

HINT: Mark and check the length before cutting the hose.

(h) Take one of the two 8” long mesh sleeves cut in Step 16(p) and slide it on purge hose No. 2, taping the ends in place with electrical tape (Fig. 21-7).

(1) The mesh should start 1” from the end of the hose.

(2) Attach the hose to the rear barb (Fig. 21-7).

Fig. 21-8

(i) Slide the remaining 8” piece of mesh sleeve onto the 11/32” x 26” hose (Item B4), taping the ends in place with electrical tape (Fig. 21-8).

(1) The mesh should start 1” from the end of the hose.

(2) Connect the brake booster to the center barb using the previously removed OE clamps from Step 12(k).

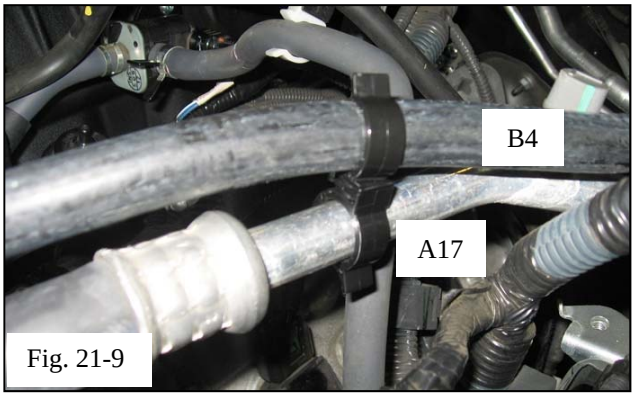


Fig. 21-9

(j) Connect the brake vacuum hose (Item B4) to the AC hard line with the swivel hose clip (Item A17) (Fig. 21-9).

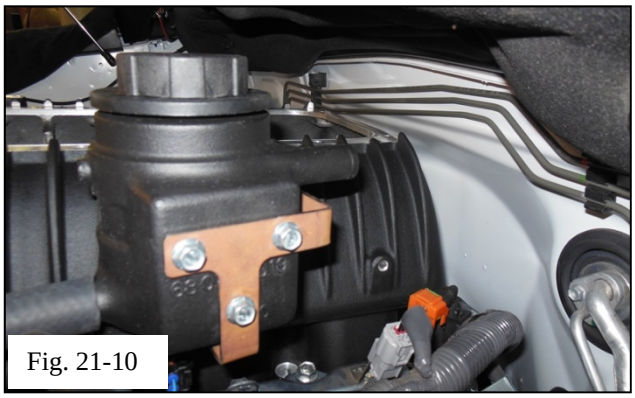


Fig. 21-10

(k) Mount the reservoir (Item D2) to the reservoir bracket (Item A9) using the 3 bolts that came preinstalled in the reservoir (Fig. 21-10).

Torque: 10 N-m (84 in-lbf)

22. Install the Throttle Body.

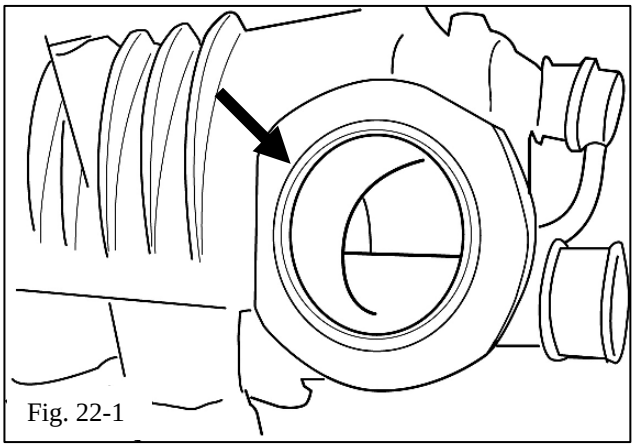


Fig. 22-1

(a) Install the supplied throttle body O-ring (Item J2) in the groove on the nose of the supercharger housing (Fig. 22-1).

(b) Rotate the throttle body 180° from the OE position so that the connector is toward the rear of the vehicle.

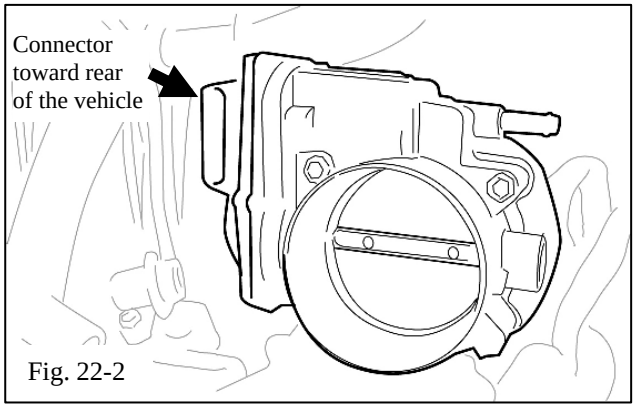


Fig. 22-2

(c) Fasten the throttle body to the supercharger housing with the 4 OE bolts (Fig. 22-2).

Torque: 21 N-m (15 ft-lbf)

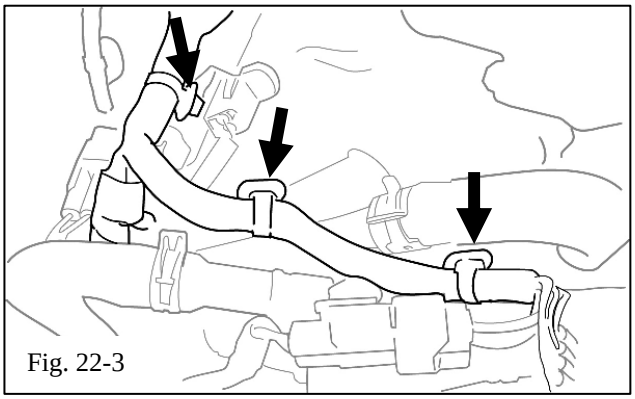


Fig. 22-3

(d) Unclip the 3 wire harness clips (Fig. 22-3).

(e) Remove the 3 clips from the wire harness using a small flat blade screwdriver to release the lock tabs.

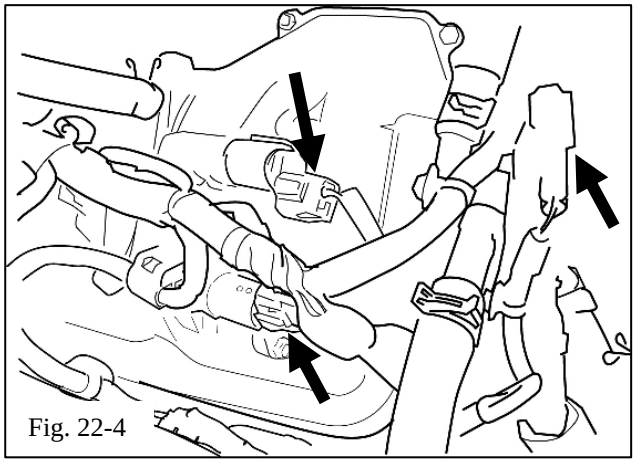


Fig. 22-4

(f) Unplug the 2 VVT sensors and the front air injection connector (Fig. 22-4).

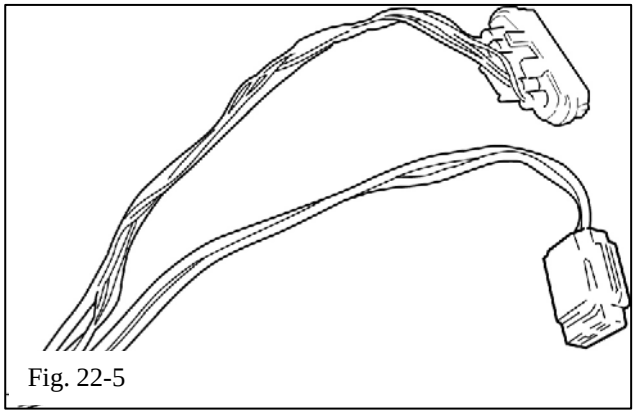


Fig. 22-5

(g) Open the wire harness and remove the wire loom wrap up to the junction where the wire loom that contains the throttle and air injection wires branch out from the main harness (Fig. 22-5).

(h) Separate the throttle motor wires from the air injection wires (Fig. 22-5).

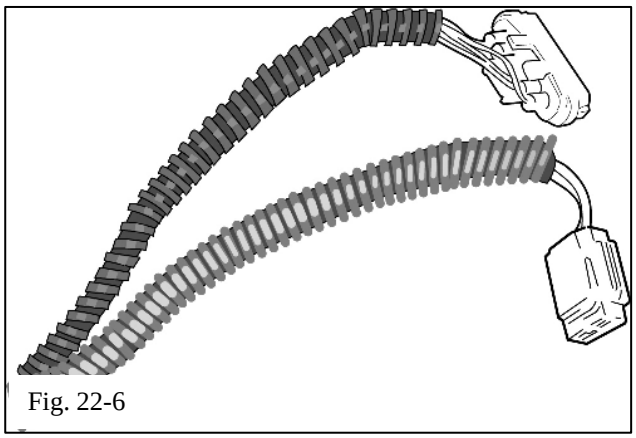


Fig. 22-6

(i) Install a 9” length of the supplied 3/8” convoluted tube (Item B7) over the exposed throttle motor wires and secure it with electrical tape (Fig. 22-6).

(j) Reinstall the original wire loom wrap over the air injection wires and secure it with electrical tape (Fig. 22-6).

(k) Tape the rest of the harness closed.

(l) Attach the 3 clamps back onto the harness and clip them to their mounting brackets.

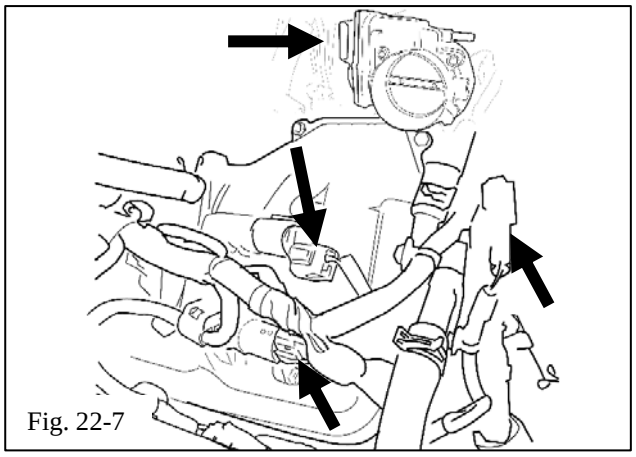


Fig. 22-7

(m) Plug in the throttle body connector, the air injection connector, and the 2 VVT sensors (Fig. 22-7).

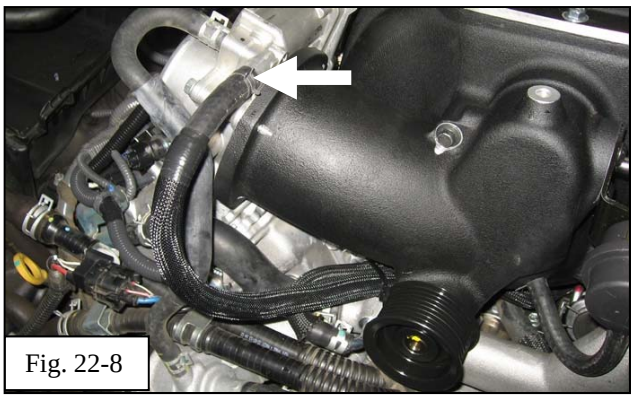


Fig. 22-8

(n) Install the free end of the 5/16” heater hose onto the front facing barb of the throttle body. Secure it using the remaining spring clamp (Item A20) (Fig. 16-12 & Fig. 22-8).

23. Install the Belt, Fan & Fan Shroud, and the Radiator Hose.

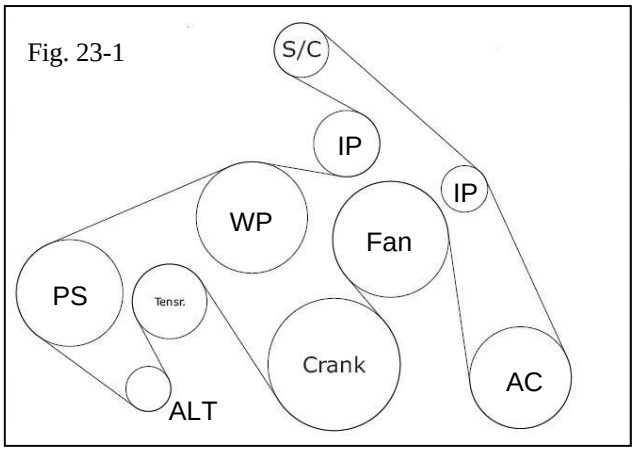


Fig. 23-1

(a) Install the supplied drive belt (Item #9) following the outlined belt routing (Fig. 23-1). Ensure the belt is completely on all of the pulleys.

(b) Remove anything covering the radiator used for core damage prevention.

(c) Remove the 4 nuts temporarily holding the fan pulley in place.

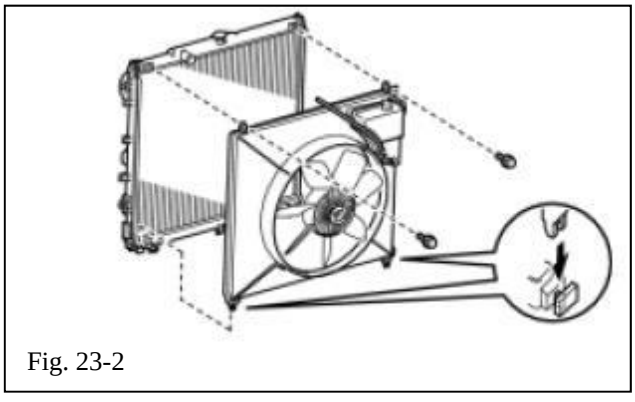


Fig. 23-2

(d) Lower the fan and shroud together. Clip the fan shroud into the lower radiator mounting tabs (Fig. 23-2).

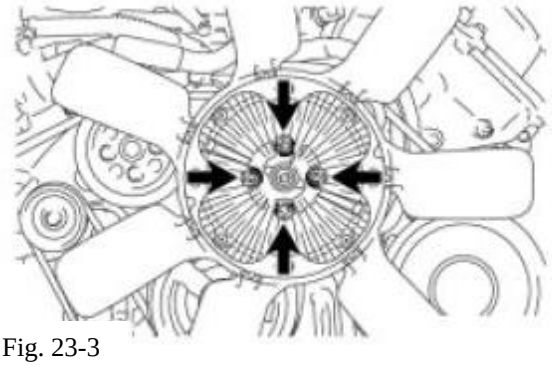


Fig. 23-3

(e) Bolt the fan clutch to the fan pulley using the 4 OE nuts (Fig. 23-3).

Torque: 21 N-m (15 ft-lbf)

(f) Install the fan shroud using the 2 OE bolts (Fig. 23-2).

Torque: 6.5 Nm (58 in-lbf)

(g) Install the upper radiator hose.

(1) The radiator side of this hose should have been marked during removal in Step 10(a)(1).

(2) The marked side will now attach to the coolant crossover manifold and the other (unmarked) side to the radiator.

(3) Secure it using the OE spring clamps.

(h) Connect the coolant overflow hose to the upper radiator tank.

24. Replace the Spark Plugs.

Fig. 24-1

(a) Unplug and remove all 8 coils (Fig. 24-1).

(b) Blow out any debris from the spark plug holes. Wear eye protection.

(c) Remove and discard all 8 spark plugs.

(d) Apply a small amount of anti-seize to the threads of the new supplied spark plugs (Item F2).

(e) Install all 8 spark plugs (Plug Gap: 0.032”).

Torque: 18 N-m (13 ft-lbf)

(f) Reinstall all 8 coils.

Torque: 9 N-m (80 in-lbf)

(g) Reconnect the 8 coil connectors.

25. Install the Vent Hoses.

(a) The ventilation hose assembly is shown as removed from the intake manifold (Fig. 25-1).

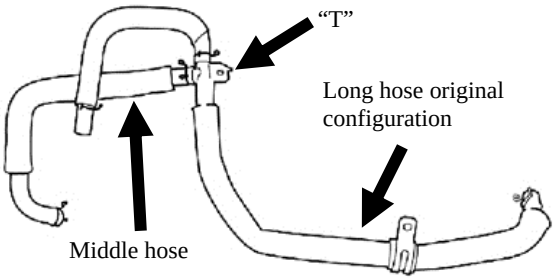


Fig. 25-1

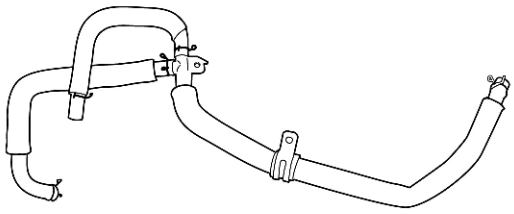


Fig. 25-2

(1) Remove the long hose from the "T", flip it end for end, and reconnect it to the "T" (Fig. 25-2).

(2) Remove the clamp from the long hose, rotate it, and then reinstall it so it points toward the front of the engine (Fig. 25-2).

(b) Mount the ventilation hose assembly to the supercharger with the OE bolts

(1) The M6 bolt attaches the "T" to the RH side of the supercharger housing (Fig. 25-3).

Torque: 10 N-m (84 in-lbf)

(2) The M8 bolt attaches the clamp on the long hose to the front of the supercharger housing (Fig. 25-3).

Torque: 21 N-m (15 ft-lbf)

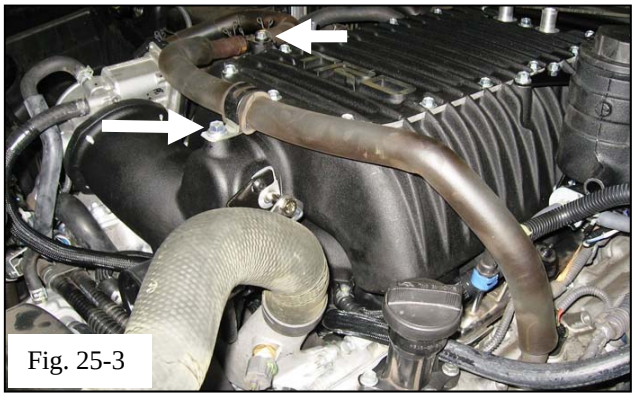


Fig. 25-3

(c) Connect the loose end of the long hose to the LH cam cover (Fig. 25-3).

(d) Remove the middle hose from the “T” and trim it so that it will neatly fit between the “T” and the RH cam cover.

(1) Trim 1” off the end that attaches to the “T” (Fig. 25-4).

(2) Trim the other end so that 2” remains from the trimmed end to the bottom of the longer leg (Fig. 25-4).

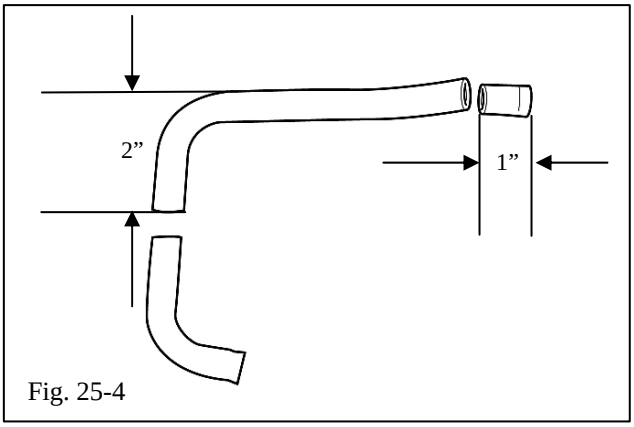


Fig. 25-4

(e) Trim the insulation to provide enough room for the clamps (Fig. 25-5).

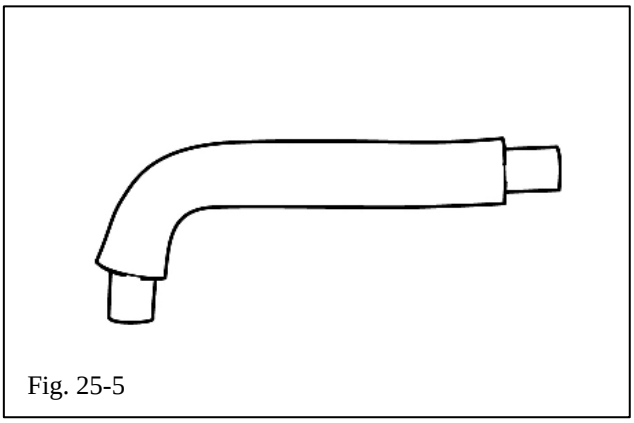


Fig. 25-5

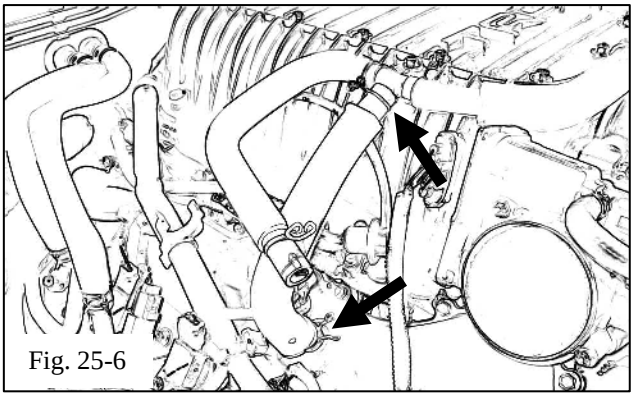


Fig. 25-6

(f) Attach the modified middle hose to the “T” fitting and the RH cam cover (Fig. 25-6).

(g) Leave the remaining hose connected to the “T” fitting loose for now (Fig. 25-6).

26. Install the Air Inlet.

(a) Place the screw clamps (Items E2 & E3) on each end of the air box lid to throttle body rubber bellows (Item E1). Leave the screw clamps loose for now.


Fig. 26-1

(b) Place the supplied air filter (Item #2) in the air box base (Fig. 26-1).

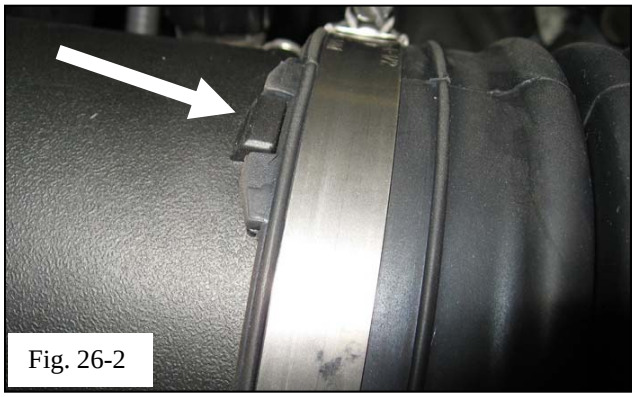


Fig. 26-2

(c) Attach the inlet bellows to the air box lid (Item #3).

(1) Position the inlet hose so that alignment tabs correctly clock the orientation (Fig. 26-2).

(2) Tighten the hose clamp.

Torque: 4 N-m (35 in-lbf)

Fig. 26-3

(d) Connect the lid/bellows assembly to the inlet of the throttle body.

(1) Snap the lid to the air box base (Fig. 26-3).

(2) Tighten the hose clamp.

Torque: 4 N-m (35 in-lbf)

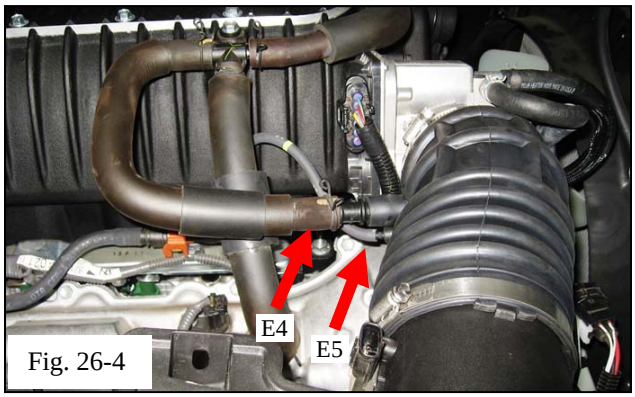


Fig. 26-4

(e) Connect the vent hose and fuel pressure regulator hose to the air inlet bellows (Fig. 26-4).

(1) Use the large hose mender (Item E4) for the vent hose (Fig. 26-4).

(2) Use the small hose mender (Item E5) for the fuel pressure regulator hose (Fig. 26-4).

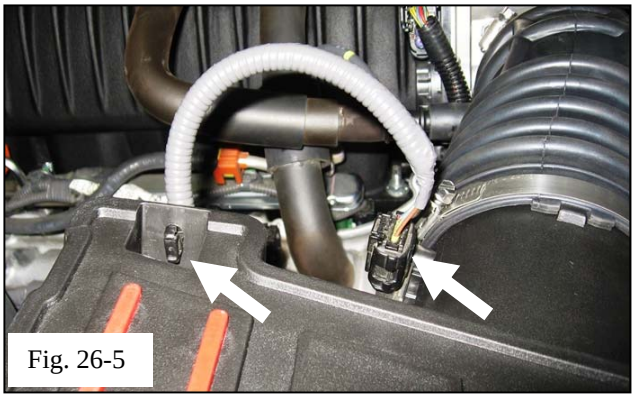


Fig. 26-5

(f) Plug in the mass airflow (MAF) sensor and clip the harness to the air box lid (Fig. 26-5).

27. Prepare to Install the Intercooler.

(a) Remove the low pitch horn.

(1) Disconnect the low pitch horn connector.

(2) Unbolt and remove the low pitch horn (Fig. 27-1).

(3) Set the horn and bolt aside for reuse.

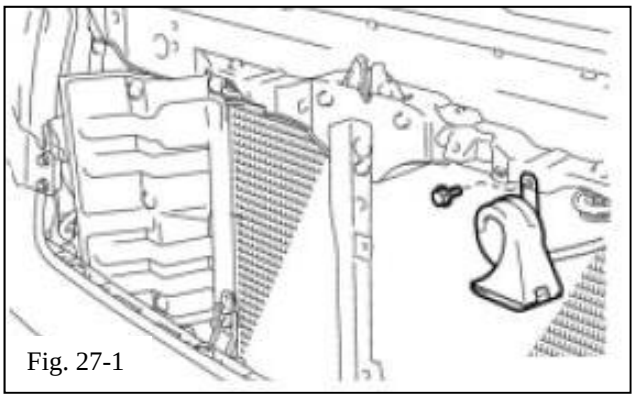


Fig. 27-1

(b) Remove the high pitch horn.

(1) Disconnect the high pitch horn connector.

(2) Unbolt and remove the high pitch horn (Fig. 27-2).

(3) Set the horn and bolt aside for reuse.

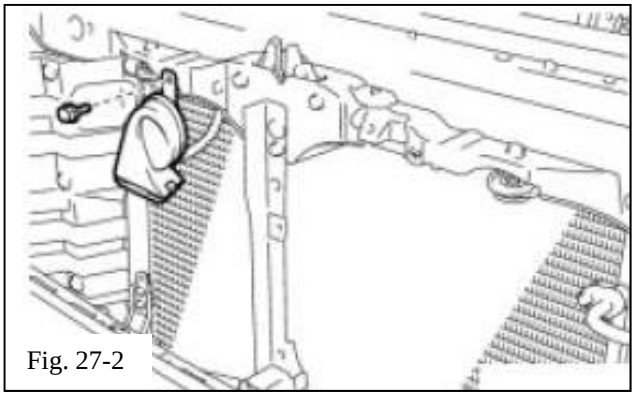


Fig. 27-2

(c) Disconnect the connector and detach the clamp (Fig. 27-3).

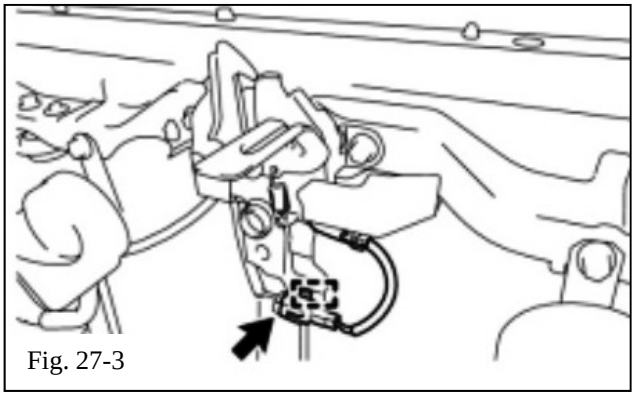


Fig. 27-3

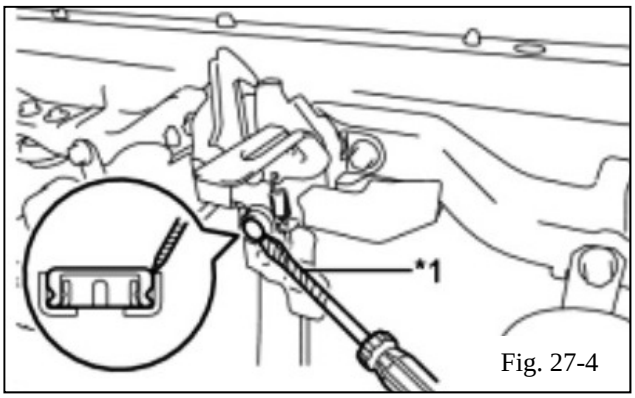


Fig. 27-4

(d) Use a screw driver to remove the hood lock cap (Fig. 27-4).

HINT: Tape the screwdriver before use.

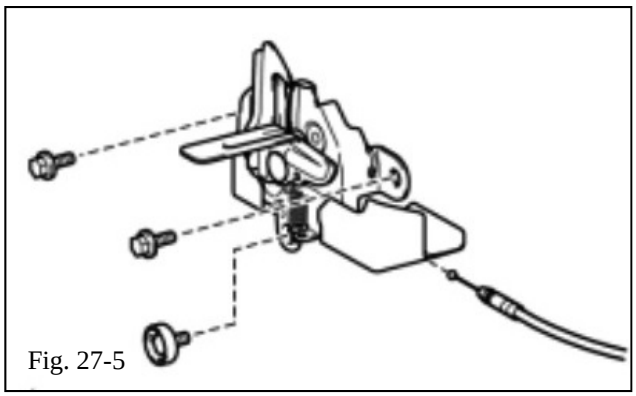


Fig. 27-5

(e) Remove the hood lock assembly.

(1) Remove the 2 bolts and the hood lock bolt (Fig. 27-5).

(2) Disconnect the hood lock assembly from the control cable (Fig. 27-5).

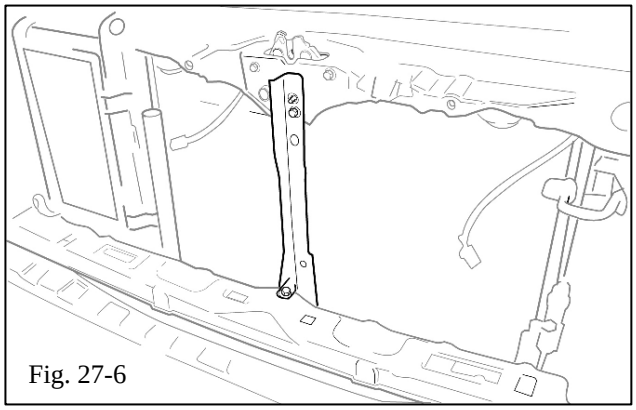


Fig. 27-6

(f) Remove the radiator support brace by removing the 2 bolts (Fig. 27-6). Retain the brace and the bolts for reuse.

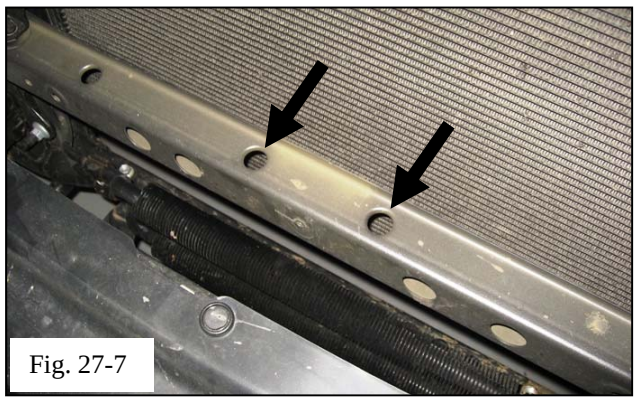


Fig. 27-7

(g) With the radiator support brace removed, two large stamped holes are visible (Fig. 27-7). They will be used to attach the intercooler pump mount.

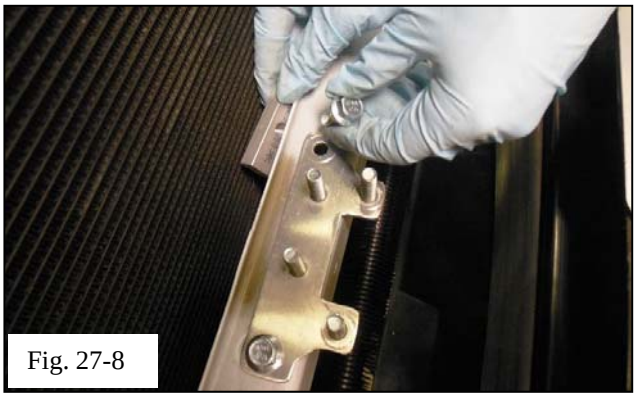


Fig. 27-8

(h) Mount the intercooler pump bracket (Item A4) to the lower radiator support with 2 rectangular body nuts (Item A6) and 2 M8 nuts (Item A5) (Fig. 27-8). Leave the bolts finger tight for now.

HINT: The threaded holes in the nut plates are chamfered on one side. Place the chamfer up to make starting the bolts easier.

28. Install the Intercooler.

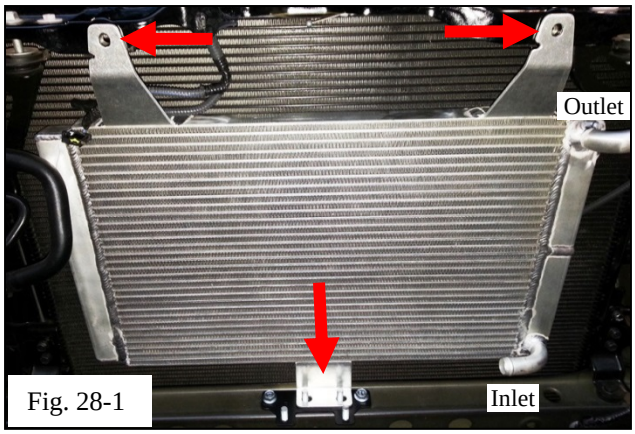


Fig. 28-1

(a) Set the intercooler low temperature radiator (LTR, Item #1) in front of the A/C condenser (Fig. 28-1).

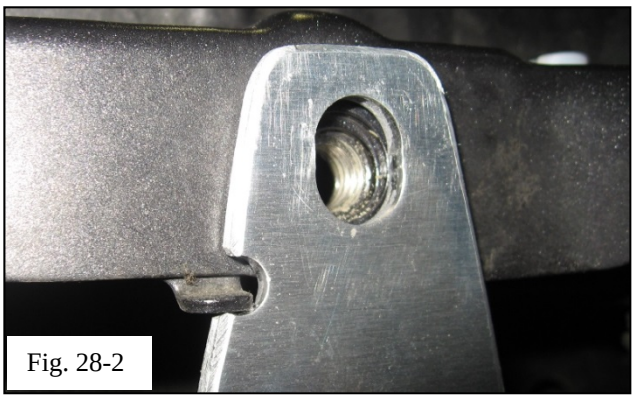


Fig. 28-2

(1) Align the upper mounting tabs with the horn mounting holes (top, Fig. 28-1 & Fig. 28-2).

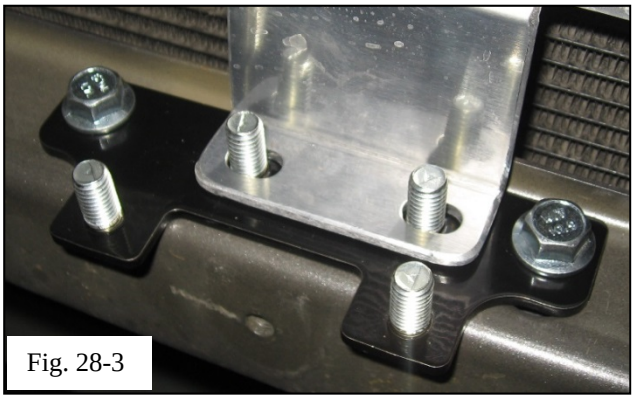


Fig. 28-3

(2) Align the two rear M8 studs on the pump mounting bracket (Fig. 28-3).

(3) Notice that the inlet and outlet of the LTR are on the driver's side of the vehicle (Fig. 28-1).

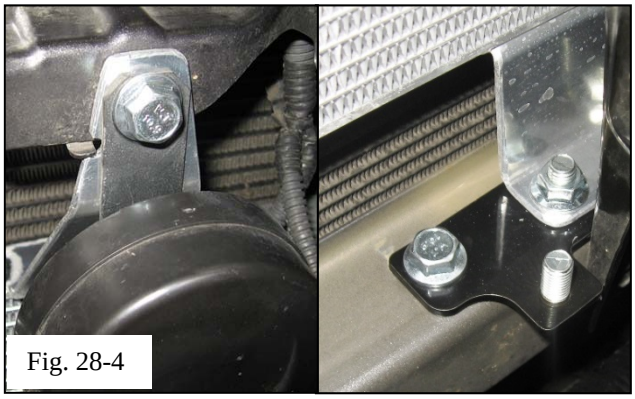


Fig. 28-4

(b) Secure the low temperature radiator by reattaching the horns with the M8 Bolts (Item A5) and M8 Hex Nuts (Item A8) (Fig. 28-4). Leave them finger tight for now.

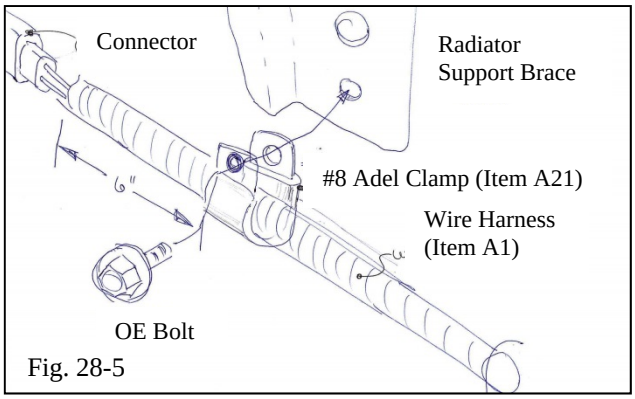


Fig. 28-5

(c) Lay the intercooler pump wire harness assembly (Item A1) out on a table and place the #8 Adel clamp (Item A21) 6" from the end of the convoluted tubing on the connector end (Fig. 28-5).

(d) Replace the radiator support brace removed in Step 27(f).

(1) Place the OE bolt in the upper mounting holes of the brace but do not tighten it yet.

(2) Use the remaining OE bolt to secure the lower end of the brace by placing it through the Adel clamp.

(3) The harness connector should be on the passenger side of the vehicle with the remainder of the harness stretched out across the bumper toward the driver's side.

(4) Tighten all bolts and nuts.

Torque: M8 Bolt 20 N-m (15 ft-lbf)

M6 Bolt 8 N-m (71 in-lbf)

(e) Install the intercooler pump (Item D1) to the pump bracket (Item A4) using the 2 #36 Adel clamps (Item A7) and 2 M8 nuts (Item A8). The pump outlet should be on the driver's side and angled up and back 45° (Fig. 28-6).

Torque: M8 Bolt 20 N-m (15 ft-lbf)

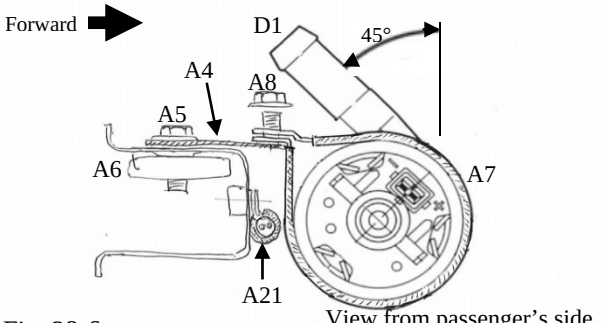


Fig. 28-6 View from passenger's side looking toward driver's side

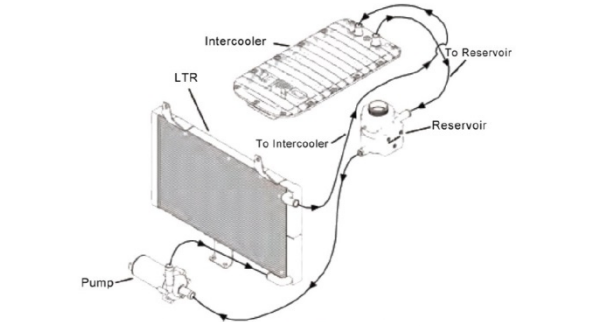


Fig. 28-7 Intercooler schematic

(f) The following 4 steps will plumb the intercooler system (Fig. 28-7).

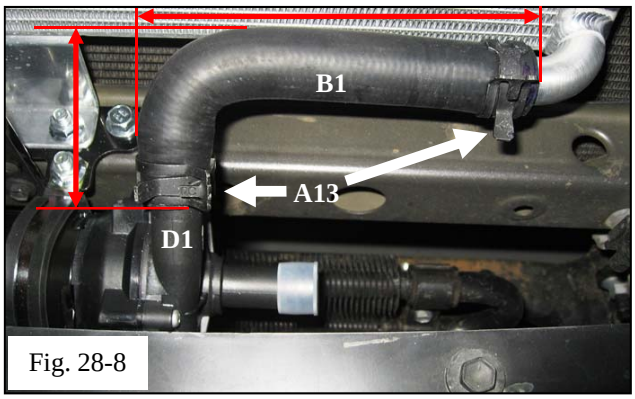


Fig. 28-8

(g) Mark and cut a 4" x 18" section of molded hose (Item B1) so that it connects the pump outlet with the lower inlet on the LTR (Fig. 28-8).

(1) Secure the hose with 2 #10 hose clamps (Item A13) (Fig. 28-8).

(2) The approximate lengths of the two legs are 2.38" and 6.0."

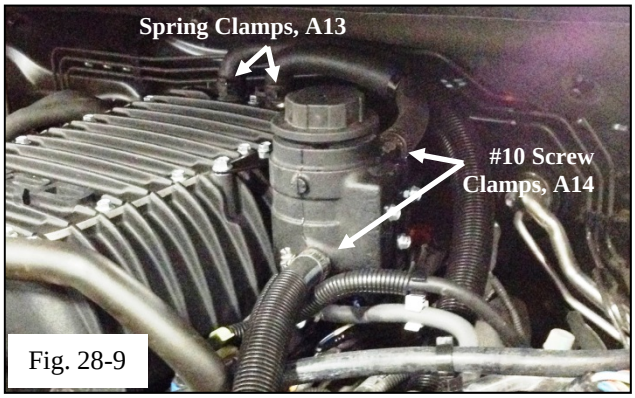


Fig. 28-9

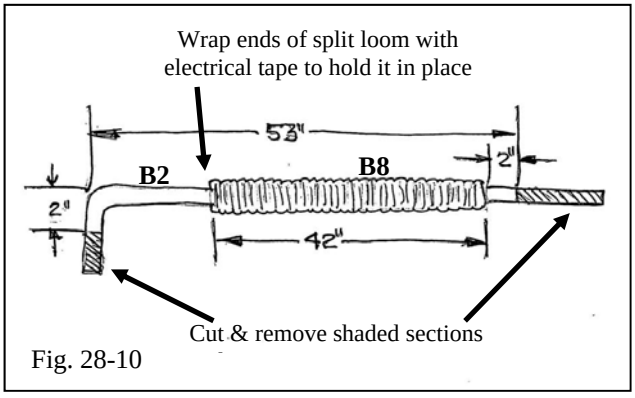


Fig. 28-10

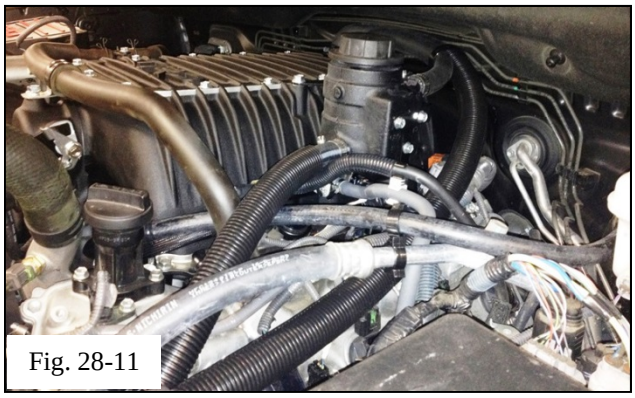


Fig. 28-11

(h) Cut and discard 2” from the short leg of the remaining 4” x 18” hose (Item B1).

(1) Secure this short leg to the driver’s side nipple on the intercooler lid with a spring clamp (Item A13) (Fig. 28-9).

(2) Route the long leg to the reservoir inlet, mark and cut, and then secure it with a #10 screw clamp (Item A14) (Fig. 28-9).

NOTE: Spring clamps (Item A13) are used to secure all coolant hose ends except at the reservoir where #10 screw clamps (Item A14) are used.

(i) Trim the 4” x 60” hose (Item B2) to 2” x 53” (Fig. 28-10).

(1) Cut a 42” length of 1” split loom (Item B8) and apply it to the hose 2” from the straight end (Fig. 28-10).

(2) Wrap the ends of the split loom with electrical tape to hold it in place (Fig. 28-10).

(3) Attach the short leg of the hose assembly to the passenger side nipple on the intercooler lid using a spring clamp (Item A13) (Fig. 27-9).

(4) Route the long leg through the top cutout in the LH radiator side shield (refer to Fig. 9-2) and attach it to the upper outlet on the LTR with a spring clamp (Item A13) (Fig. 28-11).

Fig. 28-12

(j) Secure the 2 hoses coming from the intercooler lid together with a 7.5” tie wrap (Item A15) (Fig. 28-12).

(k) Place the remaining 42” of 1” split loom (Item B8) on the 48” long straight hose (Item B3).

(1) Connect one end to the lower outlet of the reservoir with a #10 screw clamp (Item A14) (Fig. 28-11).

(2) Route the other end down through the bottom cut out in the LH radiator side shield (refer to Fig. 9-2) and connect it to the pump inlet with a spring clamp (Item A13) (Fig. 28-13).

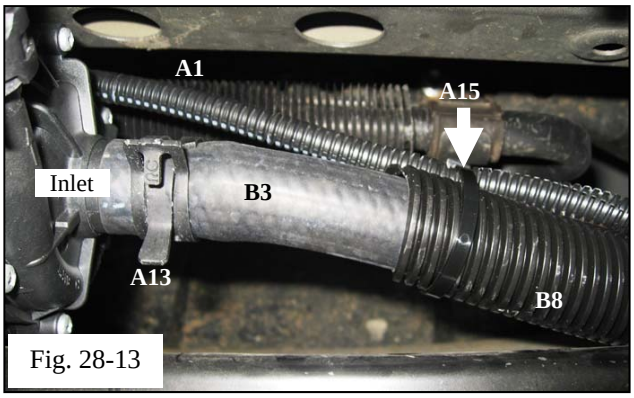


Fig. 28-13

(l) Secure the pump wire harness (Item A1) to the coolant hose assembly with a tie wrap (Item A15) (Fig. 28-13).

(m) Plug the electrical connector into the pump (Fig. 28-14).

Fig. 28-14

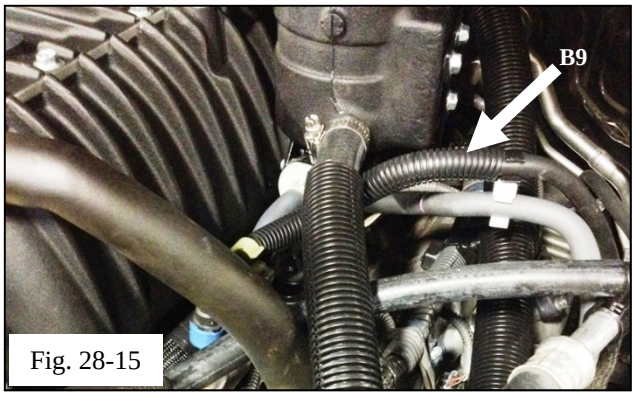


Fig. 28-15

(n) Place the ½” X 6” split loom (Item B9) over the fuel line (Fig. 28-15).

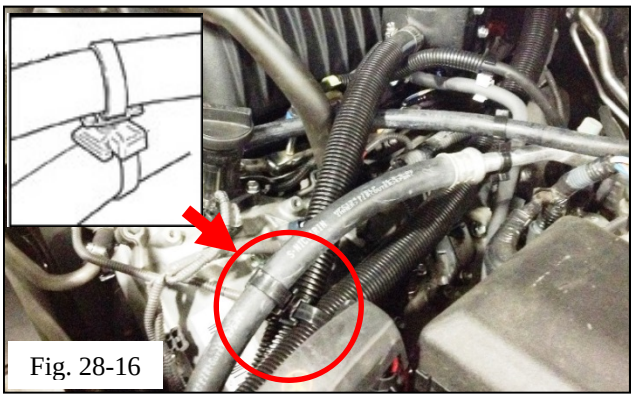


Fig. 28-16

(o) Use 2 swivel spacers (Item A18) and 4 tie wraps (Item A16) to mount the two coolant hoses and the AC line together (Fig. 28-16).

NOTE: The insert shows how 2 lines are coupled. Do this twice so all three lines are tied together.

29. Install the Electrical Wiring.

(a) Route the free end of the pump wire harness (Item A1) toward the driver's side of the vehicle and up under the headlight to the back of the battery tray (Fig. 29-1 through Fig. 29-3).

(1) The circle in Fig. 29-1 shows where the harness will pass under the headlight back into the engine compartment.

(2) Use tie wraps (Item A15) to secure the harness.

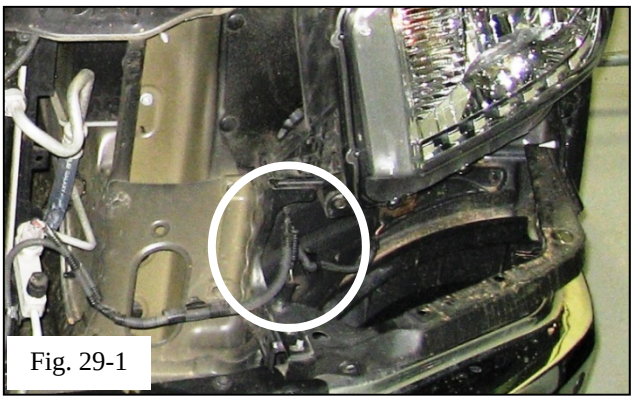


Fig. 29-1

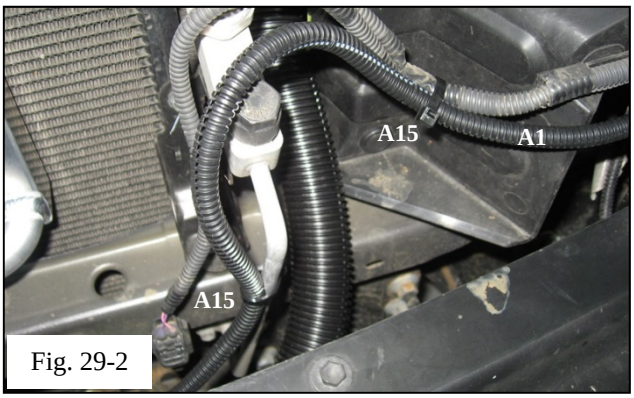


Fig. 29-2

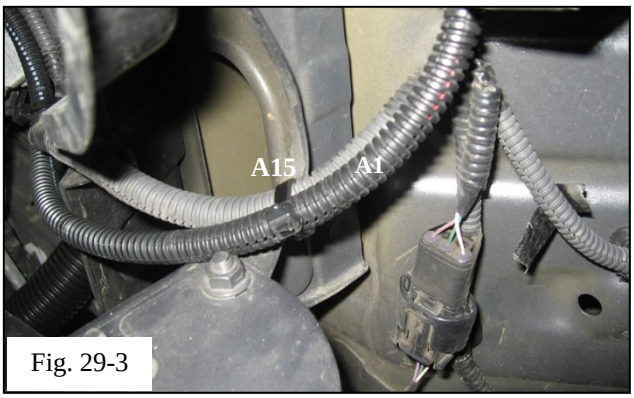


Fig. 29-3

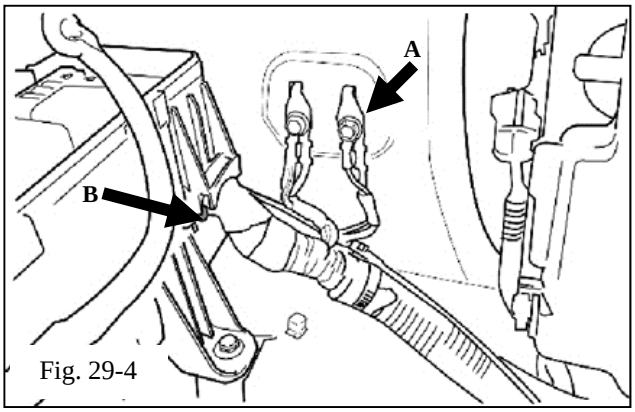


Fig. 29-4

(b) Remove bolt “A” and screw it into the fuse/relay assembly that is part of the wire harness (Item A1) (Fig. 29-4 & Fig. 29-5).

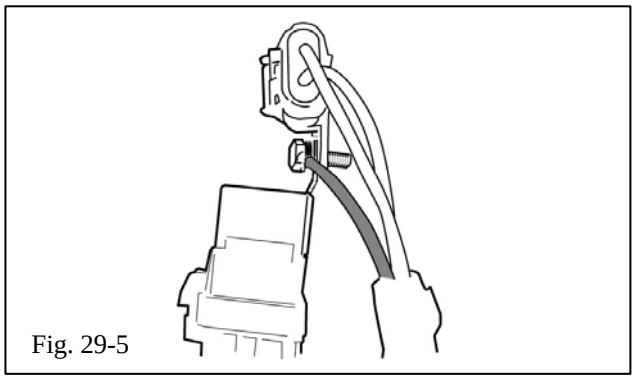


Fig. 29-5

(c) Make sure the bolt goes through the black ground wire eyelet first, then the metal bracket of the relay, and finally the fuse bracket as shown (Fig. 29-5).

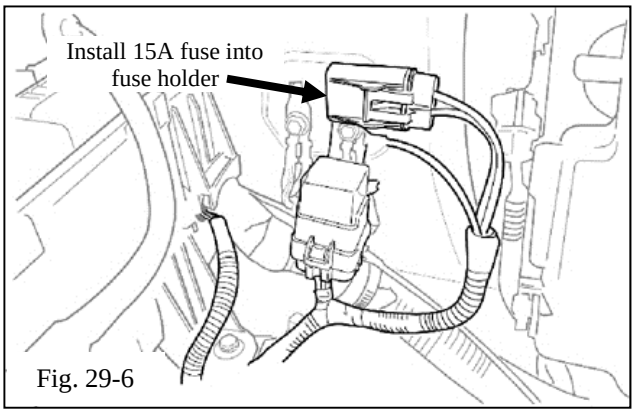


Fig. 29-6

(d) Install the 15A fuse (Item A2) into the fuse holder (Fig. 29-6).

(e) Reinstall the ground bolt, with the assembly now attached, back into grounding point “A” (Fig. 29-4 & Fig. 29-6).

Torque: 10 N-m (88 in-lbf)

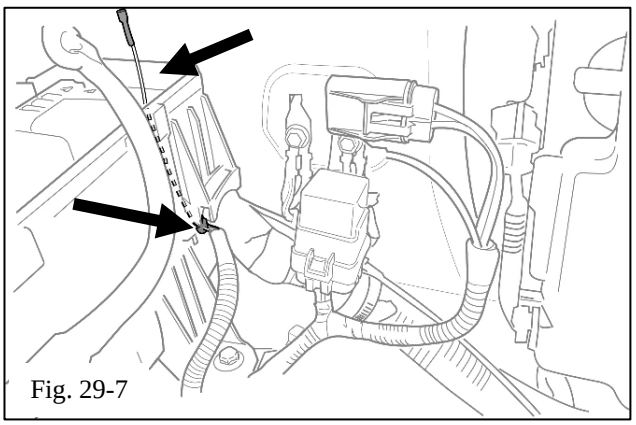


Fig. 29-7

(f) Route the yellow wire of the relay wire harness (Item A1) into the vehicle fuse box through opening “B” (Fig. 29-4 & Fig. 29-7).

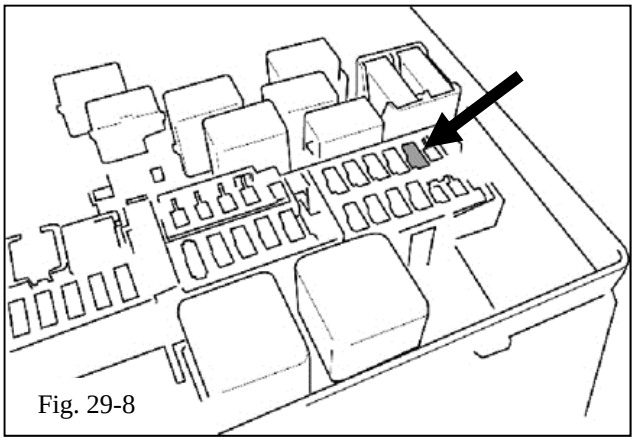


Fig. 29-8

(g) Remove the 10 amp ignition fuse (Fig. 29-8 & Fig. 29-9).

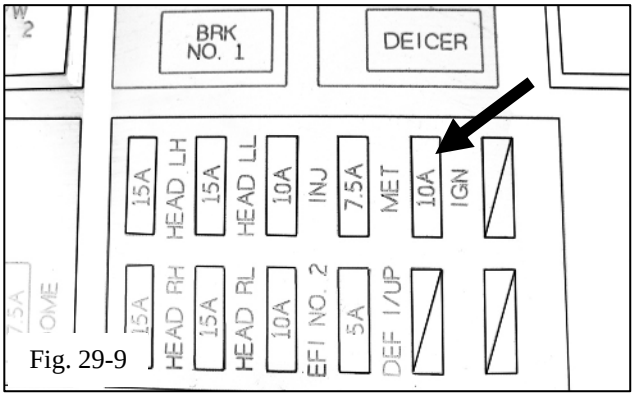


Fig. 29-9

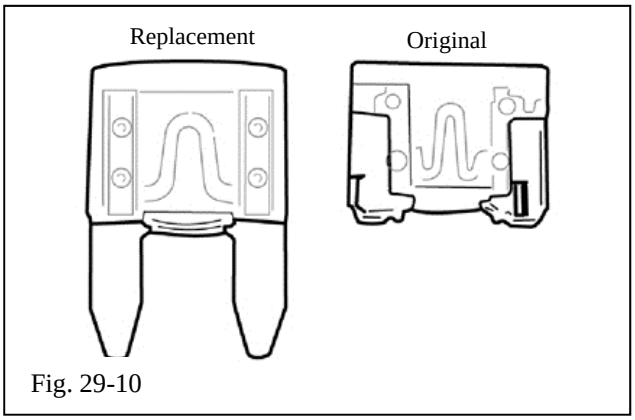


Fig. 29-10

(h) The original (removed) fuse and the new replacement fuse (Item A3) are shown in Fig. 29-10).

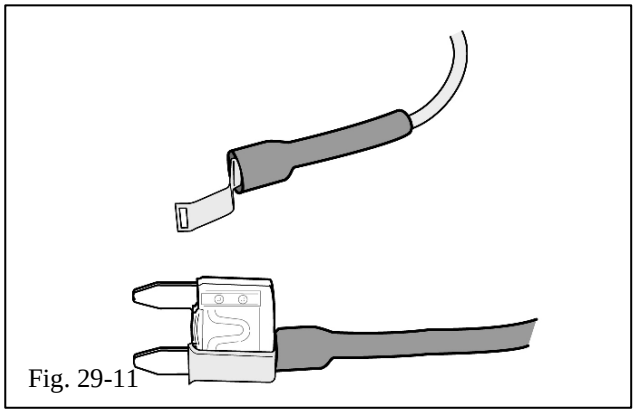


Fig. 29-11

(i) The yellow wire that was routed into the vehicle fuse box has a fuse tap on the end. Connect the fuse tap onto the new replacement fuse (Fig. 29-11).

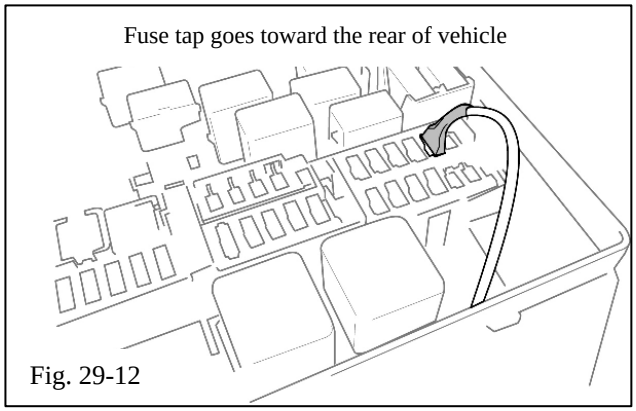


Fig. 29-12

(j) Insert the new fuse connected to the yellow wire in place of the removed fuse. **The yellow wire side of the fuse goes toward the rear of the vehicle** (Fig. 29-12).

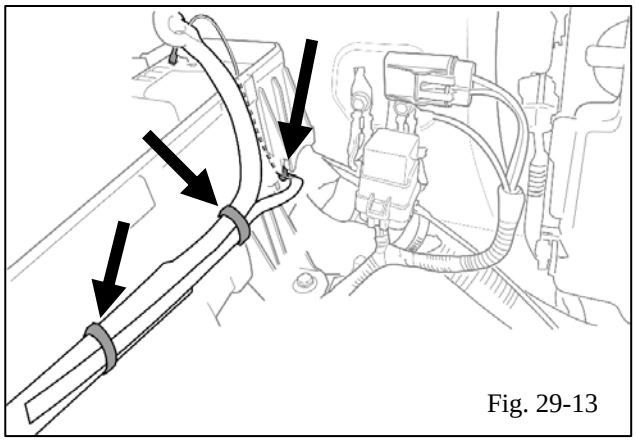


Fig. 29-13

(k) Route the main length of the relay wire harness along the battery ground cable and secure it using the short tie wrap (Item A15) (Fig. 29-13).

(l) Add a short tie wrap (Item A15) at the end of the cover over the yellow wire as shown (Fig. 29-13).

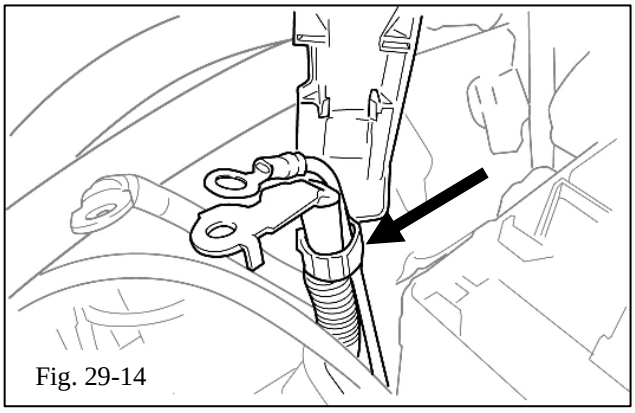


Fig. 29-14

(m) Route the red B+ wire of the relay wire harness up to the main battery B+ terminal and secure it with the plastic cover that clips to the cable (Fig. 29-14).

(n) Reinstall all of the parts removed in Steps 4 through 8 (Hood, Wiper Motor & Link, Cowl Top Outer Panel, Radiator Grille and Front LH End Panel).

30. Remove the OE In-Tank Fuel Pump Assembly.

(a) Discharge the fuel system pressure.

(b) Remove the fuel tank cap.

(c) If required, remove the fuel tank protector by removing the 2 bolts & 2 nuts (Fig. 30-1).

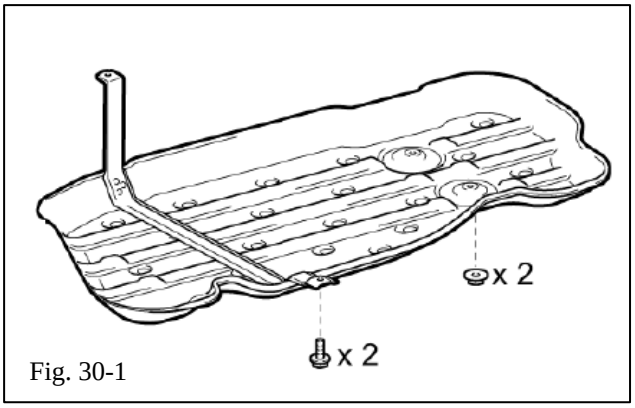


Fig. 30-1

(d) Disconnect the fuel tank feed and return tube sub-assemblies.

(1) Lift up the cover to detach the lock claw (Fig. 30-2).

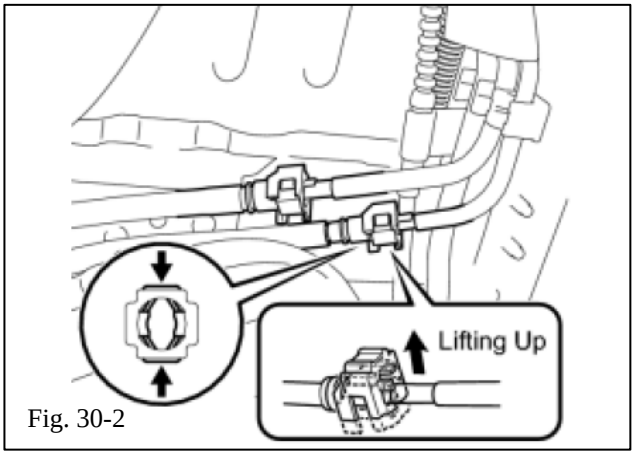


Fig. 30-2

(2) Pinch and pull the main tube connector to disconnect it from the pipe (Fig. 30-3).

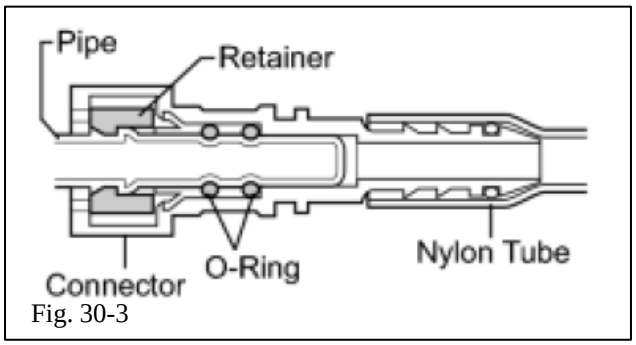


Fig. 30-3

NOTE: Do not force, bend or use tools when separating the tubes. Make sure all mating surfaces are clean. Do not kink the nylon fuel lines. If any kinks or other damage occurs during removal or installation of the fuel lines, replacement of the damaged fuel line is REQUIRED.

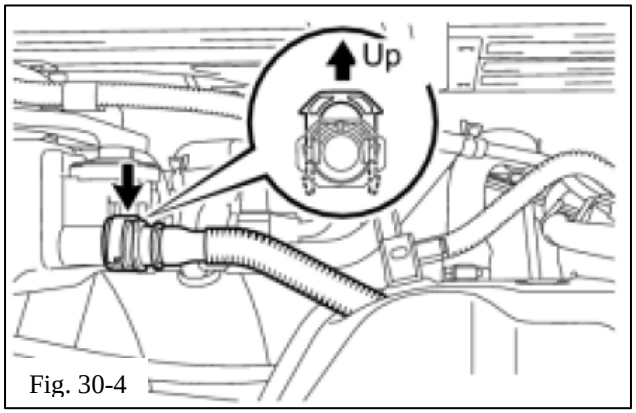


Fig. 30-4

(e) Pull up on the retainer clip to disconnect the vent line hose (Fig. 30-4).

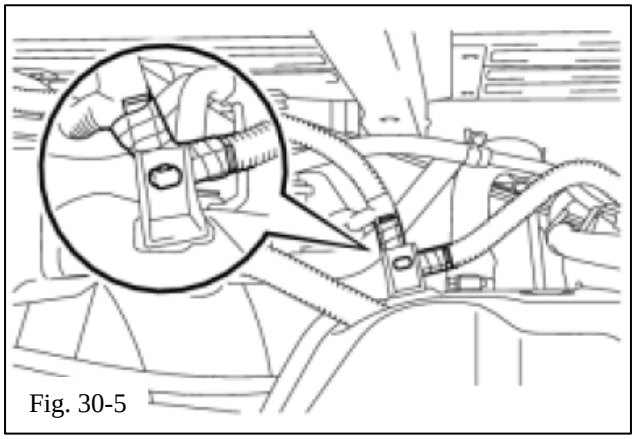


Fig. 30-5

(f) Disconnect the wire harness from the fuel tank (Fig. 30-5).

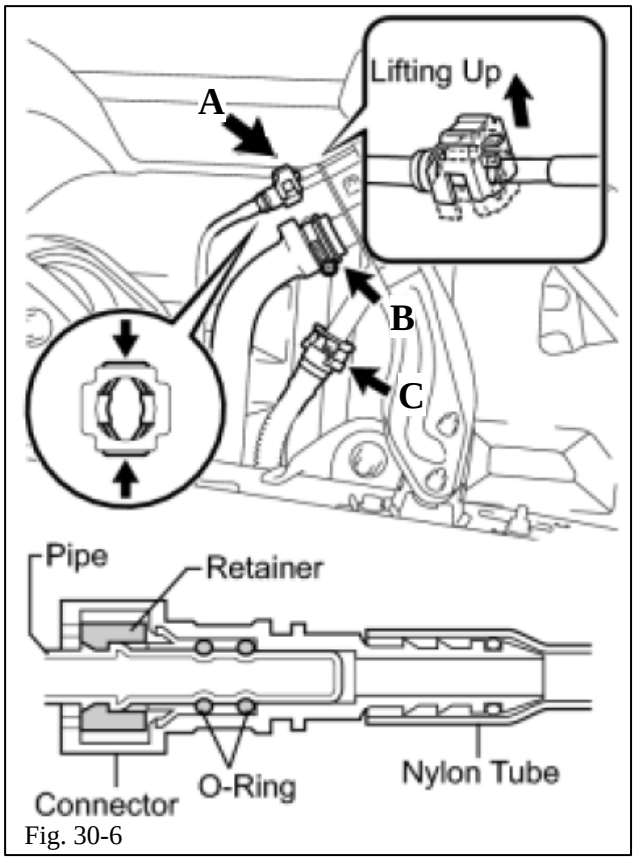


Fig. 30-6

(g) Disconnect the fuel tank breather tube “A” from the inlet pipe (Fig. 30-6).

(h) Disconnect the fuel tank to filler pipe hose “B” from the inlet pipe (Fig. 30-6).

(i) Disconnect the outlet canister hose “C” from the inlet pipe (Fig. 30-6).

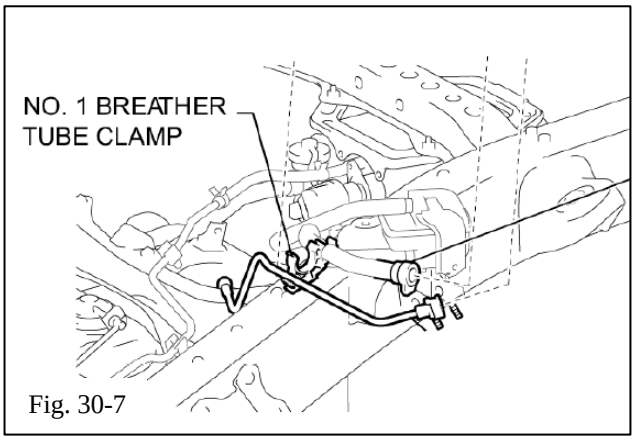


Fig. 30-7

(j) Detach the breather tube, filler pipe hose and outlet canister hose from the No. 1 breather tube clamp (Fig. 30-7).

(k) Set a mission jack underneath the fuel tank.

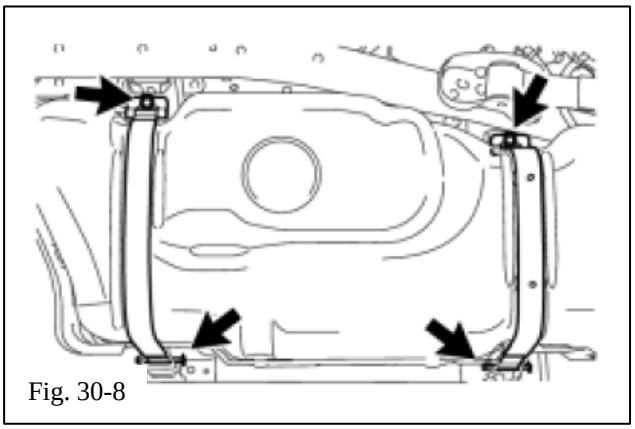


Fig. 30-8

(l) Remove the 2 bolts, 2 clips, 2 pins and 2 fuel tank bands (Fig. 30-8).

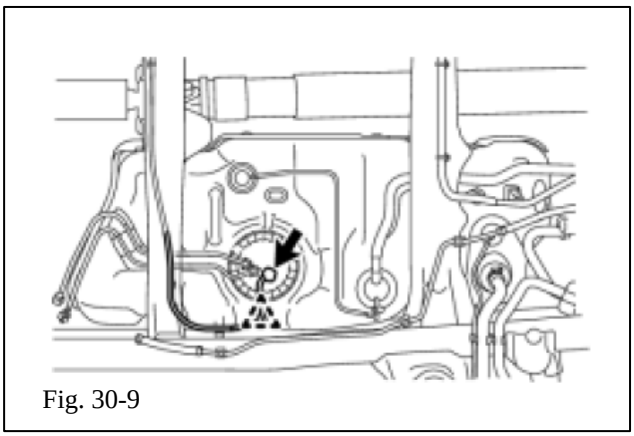


Fig. 30-9

(m) Slowly lower the fuel tank and disconnect the fuel pump connector (Fig. 30-9).

(n) Slowly continue to lower the fuel tank to access the fuel pump assembly.

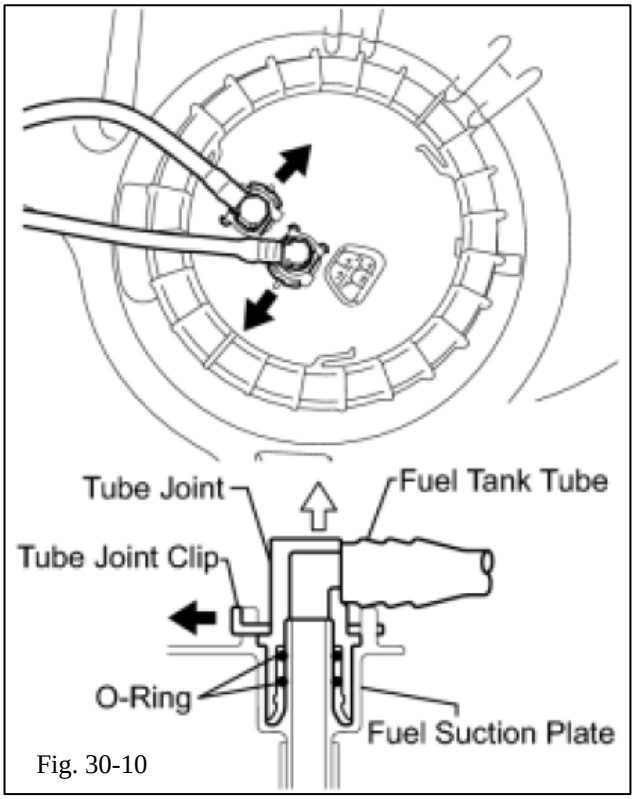


Fig. 30-10

(o) Remove the 2 joint clips on the fuel tank tubes and then remove the tubes (Fig. 30-10).

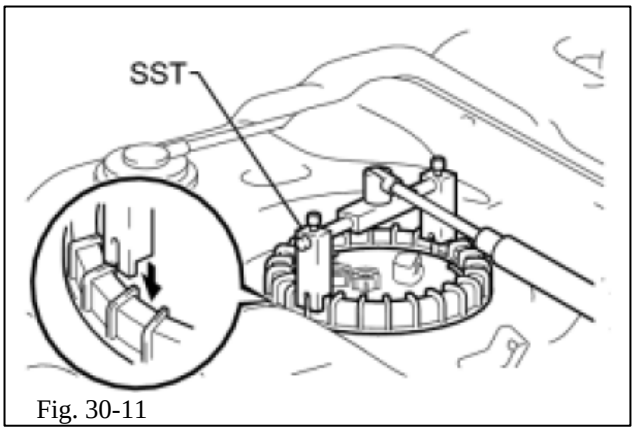


Fig. 30-11

(p) Use a SST to loosen and remove the fuel pump retainer ring (Fig. 30-11).

SST: 09808-14020

(09080-01410)

(09080-01420)

(09080-01430)

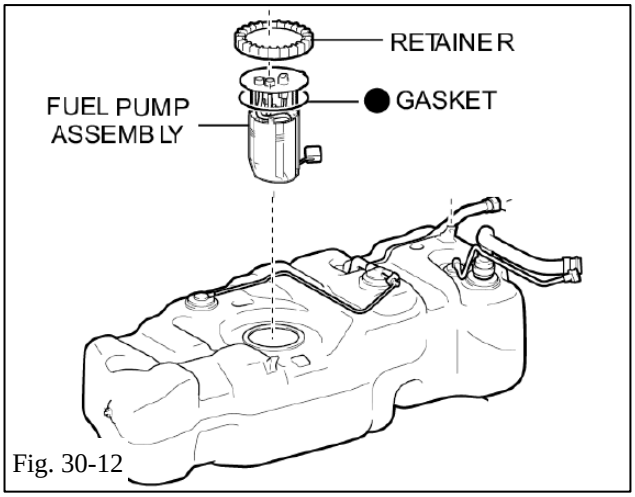


Fig. 30-12

(q) Remove the fuel pump assembly from the fuel tank (Fig. 30-12).

31. Remove the OE Fuel Pump from the Fuel Pump Assembly.

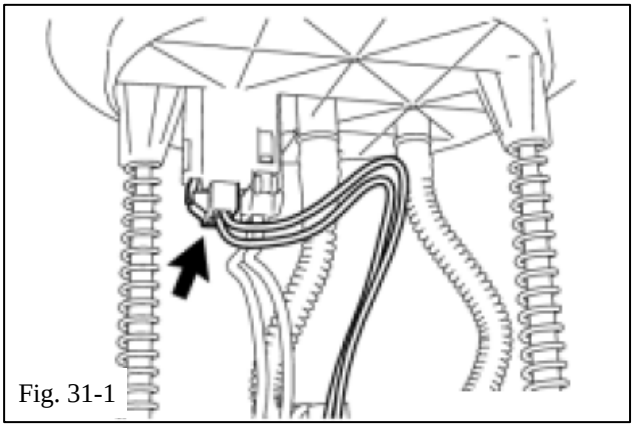


Fig. 31-1

(a) Disconnect the fuel sender gauge connector (Fig. 31-1).

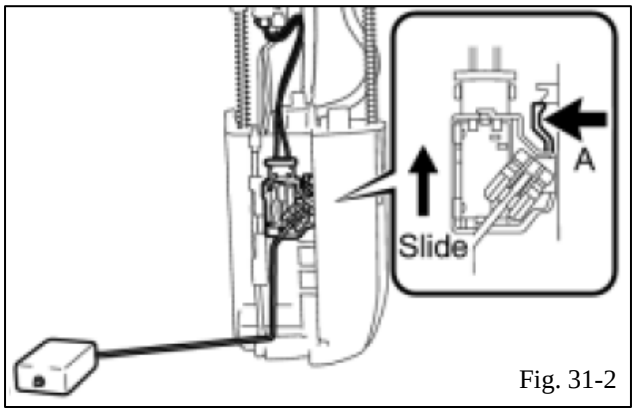


Fig. 31-2

(b) Press down on the sender gauge claw labeled "A" and slide the sender gauge upward to remove it (Fig. 31-2).

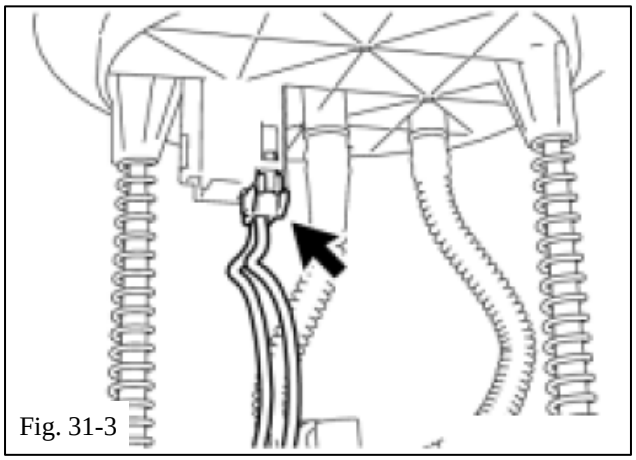


Fig. 31-3

(c) Disconnect the fuel pump connector (Fig. 31-3).

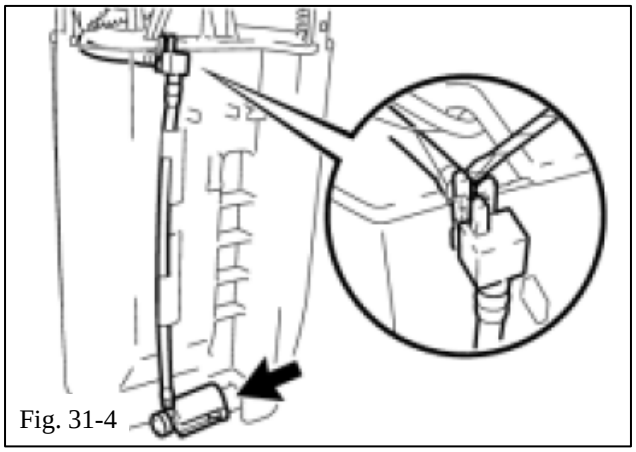


Fig. 31-4

(d) Use a small screwdriver to detach the claw on the end of the tube from the claw hole. Disconnect the tube from the 2 clamps (Fig. 31-4).

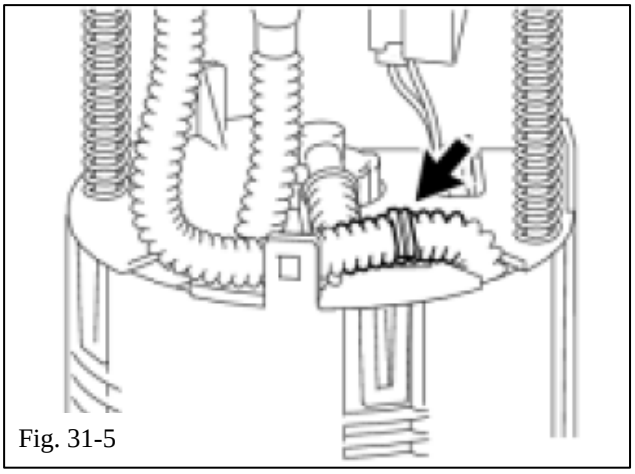


Fig. 31-5

(e) Disconnect the fuel tube (Fig. 31-5).

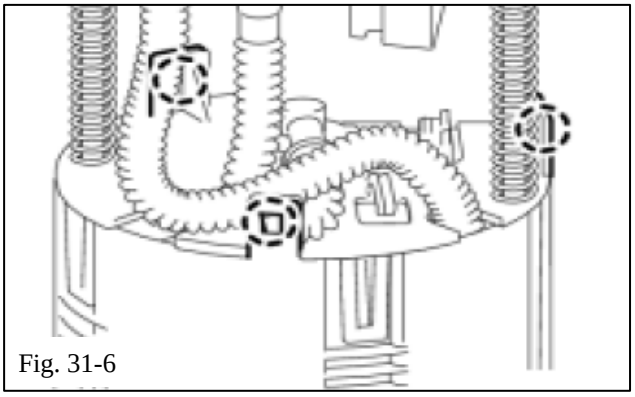


Fig. 31-6

(f) Use a small screwdriver to detach the 3 claws from the claw holes (Fig. 31-6).

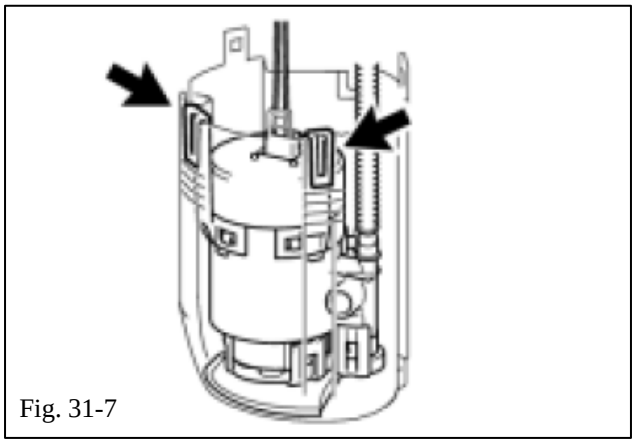


Fig. 31-7

(g) Use a small screwdriver to detach the 2 claws from the claw holes and remove the sub tank (Fig. 31-7).

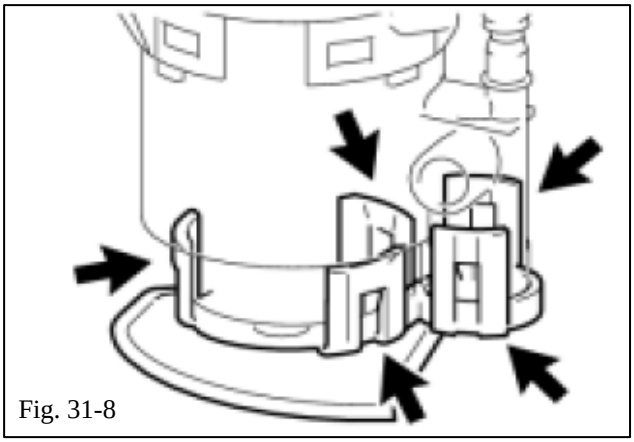


Fig. 31-8

(h) Use a small screwdriver to detach the 5 claws from the claw holes and disconnect the fuel pump from the suction plate with filter (Fig. 31-8).

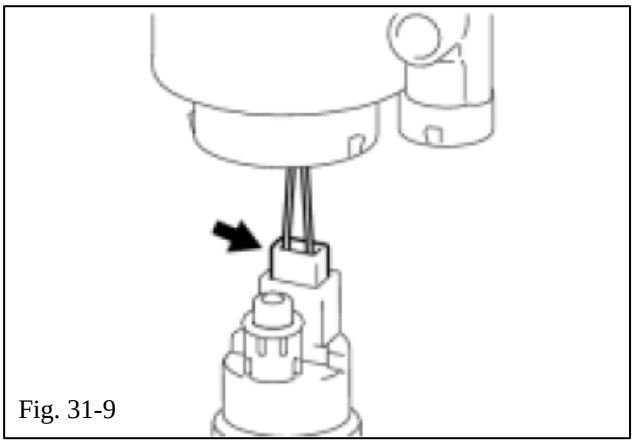


Fig. 31-9

(i) Disconnect the fuel pump harness from the fuel pump (Fig. 31-9).

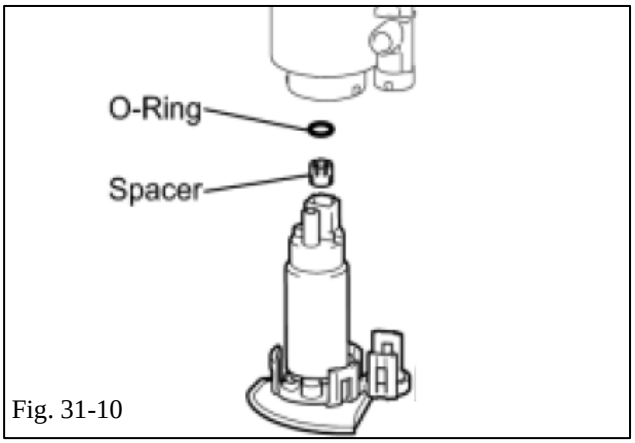


Fig. 31-10

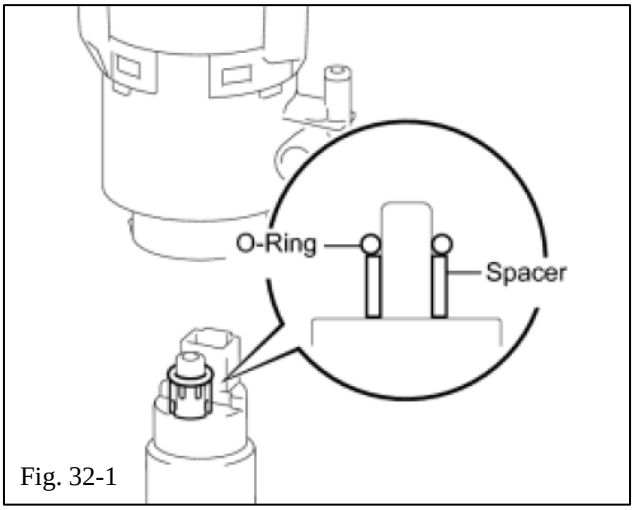


Fig. 32-1

(j) Remove the fuel pump discharge O-ring and spacer from the fuel pump (Fig. 31-10).

NOTE: The old O-Ring can be discarded. A new fuel pump discharge O-Ring is included in the installation kit (Item J3). The spacer will be reused with the new fuel pump.

32. Install the New Fuel Pump into the Fuel Pump Assembly.

(a) Apply a light coat of gasoline to the new O-ring (Item J3). Install the spacer and O-ring onto the supplied fuel pump(Item F3) (Fig. 32-1).

NOTE: Make sure the new O-ring and spacer are installed as shown. Reversal of the O-ring and spacer will result in low fuel system pressure, causing possible engine damage.

(b) Install the new fuel pump into the fuel pump assembly in the exact opposite order used to remove the OE pump in Step 31.

33. Reinstall the Fuel Pump Assembly and Fuel Tank.

(a) Reinstall the fuel pump assembly and fuel tank in the exact opposite order that was used to remove it in Step 30.

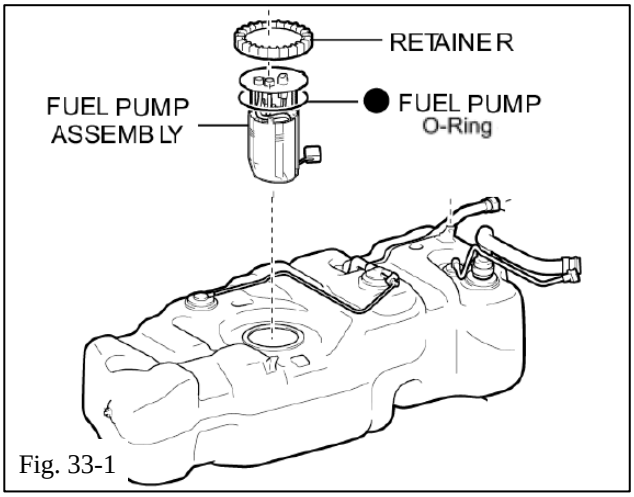


Fig. 33-1

(b) Make sure to use the new fuel pump module O-Ring (Item J1) supplied in the kit when installing the fuel pump assembly into the fuel tank (Fig. 33-1).

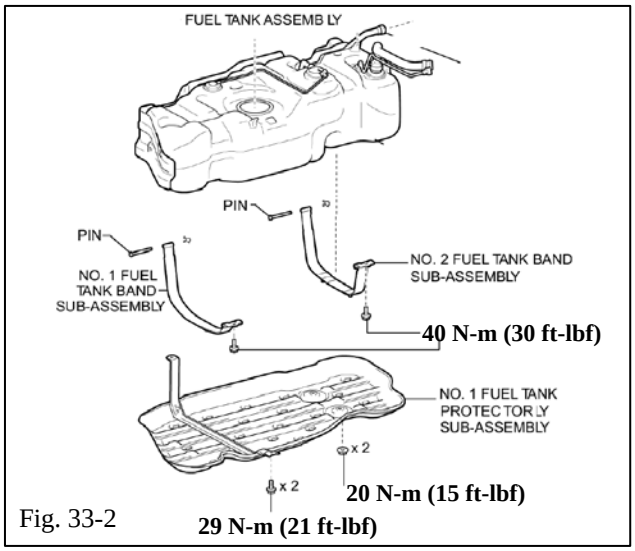


Fig. 33-2

(c) When reinstalling the fuel tank assembly, use the torque specifications indicated in Fig. 33-2.

34. Prepare for Vehicle Start-up.

(a) Pour the coolant saved in Step 3 into the radiator until it is full.

(1) Use of improper coolant may damage the engine cooling system.

(2) Use Toyota Super Long Life Coolant or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrate, and non-borate coolant with long-life hybrid organic acid technology.

(3) New Toyota vehicles are filled with Toyota Super Long Life Coolant (color is pink, premixed ethylene glycol concentration is approximately 50% and freezing temperature is -35°C (-31°F)). When replacing and/or adding coolant, Toyota Super Long Life Coolant is recommended.

NOTICE: Do not substitute plain water for engine coolant.

(b) Check the coolant level inside the radiator by squeezing the inlet and outlet radiator hoses several times by hand. If the coolant level goes down, add coolant.

(c) Install the radiator cap.

(d) Slowly pour coolant into the radiator reservoir until it reaches the FULL line.

(e) **FILL THE INTERCOOLER RESERVOIR:** Fill the intercooler reservoir with the same coolant as the vehicle radiator.

(f) Reinstall and connect the battery.

Torque: 5.4 N-m (48 in-lbf)

(g) Once the intercooler reservoir is full and will not take any more coolant, turn the ignition key to ON, **but do not start the engine**.

(1) The intercooler pump will run and purge air from the intercooler system.

(2) Continue to add coolant to the intercooler reservoir until it is full.

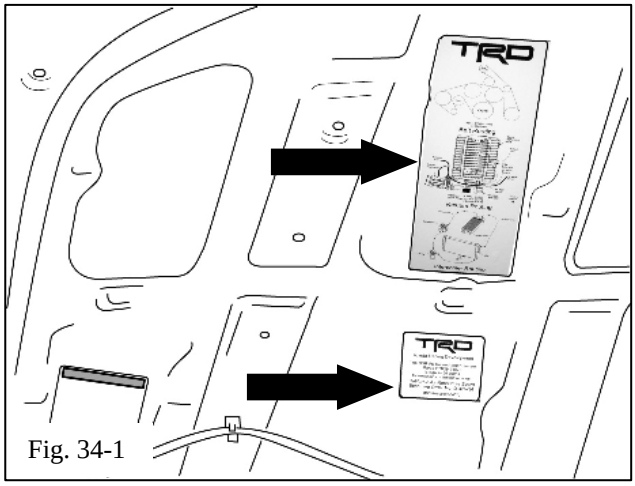


Fig. 34-1

(h) Place the new vacuum and belt routing label (Item H8) and CARB EO Emissions label (Item H9) on an open area on the underside of the hood (Fig. 34-1).

(1) Clean the area of any dirt and contaminants.

(2) **DO NOT cover any OE labels.**

(3) Place the CARB OE Emissions label near the vacuum and belt routing label.

(4) **If your state requires an Emissions Compliance Label, one may be ordered through your Toyota dealer or the Toyota Materials Distribution Center (MDC) 310-468-9800 or MDC@toyota.com.**

(i) Install the **Premium Fuel Only** decals (Item H3).

(1) Place one decal on the dash near the fuel gauge.

(2) Place one decal near the fuel filler cap.

(j) **Prime the fuel system.**

(1) Prime the fuel lines and fuel rails before attempting to start the engine for the first time.

(2) Failure to do so will cause hard-starting for the first few tries and may trigger false MIL lights.

(3) Use the TIS Techstream to connect to the vehicle and select the “ENG and ECT” ECU from the list of ECUs.

(4) Select “Active Test” from the menu selection on the left of the screen.

(5) Select the test “Control the Fuel Pump/Speed” from the list of tests and click “OK.”

(6) The screen will show a data list and a small window that tells the status of the fuel pump. Initially, the fuel pump will be “OFF”. Turn the fuel pump on and let it run for about 3 minutes. You can use this time to check for any fuel system leaks.

(7) When priming is complete, exit the test and prepare for ECU re-flashing.

NOTE: The fuel system priming function was written for use with TIS Techstream v9.00.026. If you do not have TIS Techstream, then consult with the manufacturer of the scan tool you are using to perform the fuel priming function.

35. Re-flash the ECU.

(a) The proper procedure to re-flash the ECU (Engine Control Unit) is explained in Technical Service Bulletin T-SB-0012-13, titled “Techstream ECU Flash Reprogramming Procedure” located on TIS. (Toyota Information System).

(b) Download your correct vehicle ECU Calibration Update (see table below) from TIS into the Toyota Techstream using the TIS Calibration Update Wizard.

(c) Follow the re-flashing procedure outlined in T-SB-0012-13.

NOTE: Use Techstream v9.00.026 or later.

NOTE: The GR8 Battery Charger MUST be used in Power Supply Mode to maintain battery voltage at 13.5 volts while flash reprogramming the vehicle.

For details on how to use the GR8 Battery Charger please refer to the GR8 Instructions Manual located on TIS, Diagnostics-Battery.

NOTE: The vehicle WILL NOT operate properly without this ECU update.

Model	Engine	Year	Drive	Tow Package	Target Calibration	SC Calibration
Tundra	**3UR-FE 5.7L V-8**	**2014**	**2WD**	**NO**	30CL0000	**3YWF7800**
				YES	30CL1000	**3YWF7900**
			4WD	**NO**	30CL0001	**3YWF7801**
				YES	30CL1001	**3YWF7901**

36. Test and Evaluate.

(c) **IMPORTANT:** Check the serpentine belt drive systems for correct alignment on ALL pulleys before starting the engine.

(d) Start the engine and let it idle.

(e) Check the fuel system for any leaks.

(f) Check the coolant system for any leaks.

(1) Set the A/C system as follows:

Fan Speed	Any setting except OFF
Temperature	Toward Warm
A/C Switch	OFF

(2) Maintain the engine speed at 2,000 to 2,500 rpm and warm up the engine until the cooling fan operates.

(3) Squeeze the inlet and outlet radiator hoses several times by hand while warming up the engine.

(g) Check the air intake system to ensure no leaks are present and for tightness of the clamps.

(h) Stop the engine and wait for the coolant to cool down.

(i) Carefully remove the radiator cap and check the coolant level inside the radiator and add coolant if necessary. Reinstall the radiator cap.

(j) Check the coolant level inside the radiator reservoir. If it is below the full level, add coolant.

(k) Check the coolant in the intercooler reservoir and add coolant if necessary.

(l) Test drive the vehicle. If everything is okay, park and proceed with the next step. If not, troubleshoot as necessary.

(m) Use the Techstream diagnostic to check for ECU error codes.

(n) Place the supercharger noise mirror hanger card (Item H7) on the inside rearview mirror.

(o) Complete and mail the warranty registration card (Item H6).

NOTE: The installation of the supercharger is not complete until this card has been returned to TRD.

(p) Place all removed factory hardware, components, and this instruction sheet into the original TRD box and give it to the customer or place it in the vehicle cargo compartment.

(q) **IMPORTANT:** Review with the customer/end-user that the supercharger will make a slight noise at idle that increases as the throttle is opened and that this is normal.

(r) **IMPORTANT:** Review with the customer/end-user that it is it is imperative that only **91octane or higher fuel** be used after the supercharger is installed. Performance will suffer and engine damage is possible otherwise.

(s) Place this copy (or a clean copy) of supercharger installation instructions into the glove box for future owner use or reference.

(t) **your state requires an Emissions Compliance Label, one may be ordered through your Toyota dealer or the Toyota Materials Distribution Center (MDC) 310-468-9800 or MDC@toyota.com.**

(u) This TRD Supercharger Kit has received a 50-State Emissions Compliance via the California Air Resources Board (CARB). Not all states require the Emissions Compliance Label but TRD does recommend ordering one. To receive the proper Supercharger Emissions Compliance Label for this TRD Supercharger kit, please order MDC label part number **00602-34155** which will apply to 2005-2014 Toyota Tundra with 5.7L V-8 Gasoline Only engines. Proof of product purchase or ownership may be required.

Checklist - these points **MUST** be checked to ensure a quality installation.

Check:	Look For:
Accessory Function Checks	
☐ Proper fuel used	Use 91 octane unleaded fuel (R+M /2)
☐ All fluid levels & leaks	Inspect engine cooling system and supercharger cooling system for proper fluid type and level
☐ Serpentine belt alignment	Inspect serpentine drive belts for proper alignment, tension, and clearance from engine compartment items.
☐ Fuel line connections	Inspect all fuel rails, injectors, injector seals, pressure regulator, and fuel line connectors for leaks
☐ Engine fan clutch clearance	Inspect engine fan clutch for free movement and clearance from radiator
☐ Engine ECU re-flash	Ensure the proper calibration file was used for the vehicle
Vehicle Function Checks	
☐ Fuel leaks	No Fuel leaks are present
☐ Coolant leaks	No coolant leaks are present
☐ Drive test	Vehicle starts up easily, no DTC trouble codes are present, and drivability is smooth and predictable; place copy of installation instructions into glove box for customer use and reference
Vehicle Appearance Check	
☐ After accessory installation and removal of protective cover(s), perform a visual inspection.	Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMS Accessory Quality Shipping Standard.)