

Preparation

Cartridge Heater Kit PN: PK5A4-89J16
(Electrical cables sold separately – see below)

Cartridge Heater Kit Contents:

Item #	Qty Reqd.	Description
1	1	Cartridge Heater
2	1	Grease Pack

Hardware Bag Contents:

Item #	Qty Reqd.	Description

Additional Items Required for Installation:

Item #	Qty Reqd.	Description
1	2	*Armored Ext. Cable PK5A4-89J21
2	1	*Armored Inlet Cable PK5A4-89J30
3	1	*Home Power Cable PK5A4-89J40
4	1	*Ground Screw 90119-A0429

*Mandatory

Conflicts:

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Recommended Tools:

Personal & Vehicle Protection	Notes:
Safety Glasses	
Safety Shoes	
Fender Protector	
Kevlar Sleeves + Gloves	Arm protection
Special Tools:	Notes:
Installation Tools	Notes:
Ratchet	3/8" Drive
Long Extension	3/8" Drive
Socket	10 mm, 21mm 3/8" Drive
Side Cutter	
Flashlight	
Hole Saw	15/16" or 24.0mm
Pilot Drill Bit	1/8"
Drill	
File	Small round
Marker	
Ruler	
Trim Removal Tool	
Torque Wrench	0-140 N-m (0-103 ft-lbf)
Utility Knife	
Pliers	Needle nose
Automotive Electrical Tape	
Wrench	10mm
Special Chemicals	Notes:

Note: Part numbers of these accessories may not be the same as the part numbers shown.

General Applicability:

2024 Tacoma Gas

Recommended Sequence of Application:

Item #	Accessory

*Mandatory

Vehicle Service Parts: (may be required for reassembly)

Item #	Qty Reqd.	Description



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.

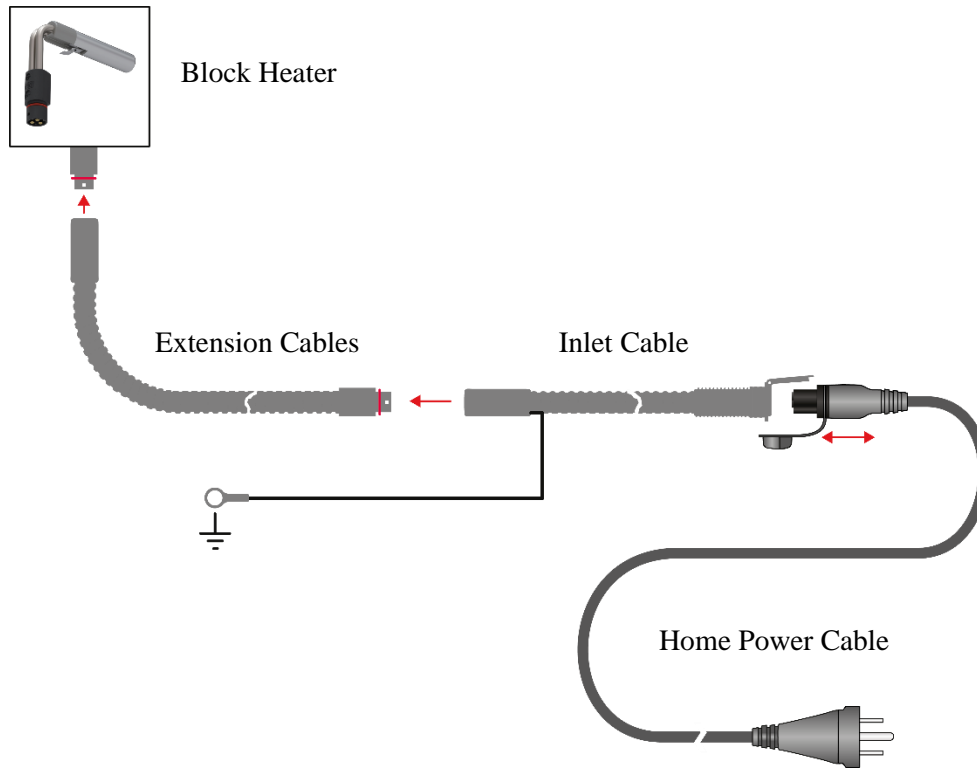


REVISION MARK: This mark highlights a change in installation with respect to previous issue.



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

System Schematic:



The installation quality of Genuine Accessories is extremely important to Toyota / Lexus. To ensure that all vehicles have the accessory installation performed correctly, the minimum technician requirement has been listed below.

Minimum Technician Certification

Step 1: Toyota Technician

[comment if any]

It is the dealer's responsibility to select technicians with the above certification level or greater who have taken/passed any required or additional training to perform this accessory installation.

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 “Toyota Accessory Installation Practices” or “Lexus Accessory Installation Practices” document.

This document covers such items as:

- Installation Instructions
- Safety
- Vehicle Protection
- Vehicle Disassembly/Reassembly
- Electrical Component Disassembly/Reassembly
- Use of Special Chemicals
- Temperature
- Torque Recheck
- Window Label Installation
- TPMS Check

Please refer to ETAS for a copy of this document.

PRECAUTIONS FOR INSTALLATION:

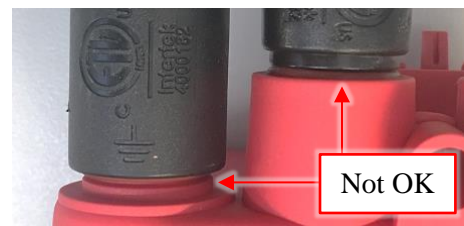
Contents indicated by  and  in this manual must be carefully followed during the installation. If they are ignored, functions of the accessory maybe hindered, as well as personal injury or damage to the vehicle may result. Always carry out the installation as instructed.

When the vehicle parts are removed, keep all tapping screws, bolts and nuts organized so that the re-assembly will proceed correctly.




Do **NOT** remove vehicle parts except for those that are specified in the manual.


NOTE: Pictures depicted in this Installation Manual may not reflect the current model and model year vehicle.

Ensure that all intermediate connections are fully seated and that the cables are routed away from hot, sharp, and fluid carrying components.



Always use heat transfer grease on block heater cartridge as specified.

- Legend:**
-  Visible Block Heater Cables
 -  Hidden (Behind Components) Block Heater Cables
 -  Other Components (Clips and Fasteners, Etc.)

 10mm Wrench.



Step 1

Place the transmission in Park and set the Parking Brake then open the hood shown in Figure 1-1.



Figure 1-1

Locate the battery as shown in Figure 1-2.




Figure 1-2



Figure 1-3

Disconnect the negative ground terminal from the 12V Battery as shown in Figure 1-3.

 *Negative terminal torque: 5.4 N-m (48 in-lbf)*

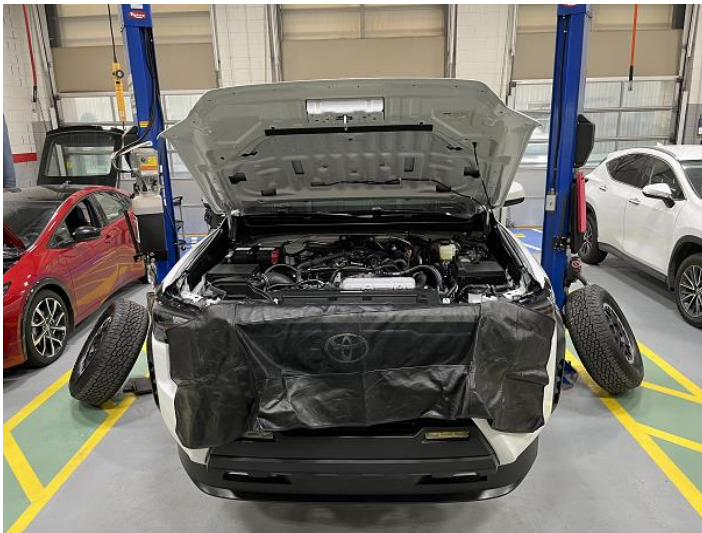


Figure 2-1

Step 2

Add protection to front of vehicle as shown in Figure 2-1.

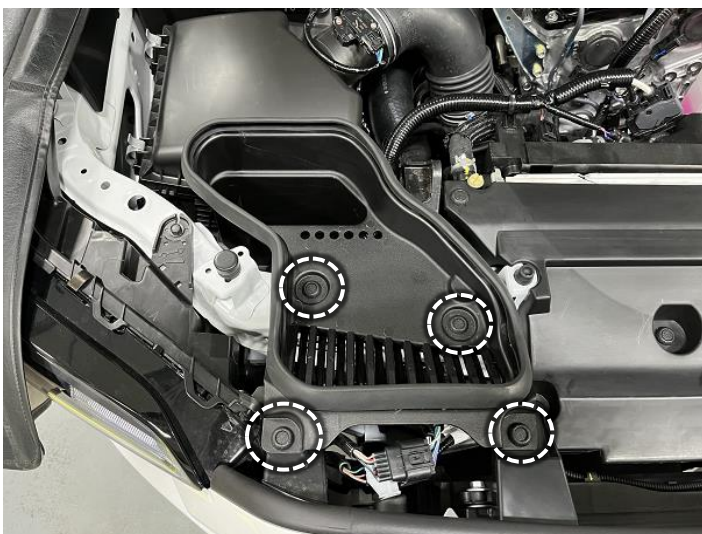




Figure 3-1

 Clip removal Tool

Step 3

Remove the 4 clips securing the intake resonator and remove the resonator from the vehicle as shown in Figure 3-1

Clips x 4: 

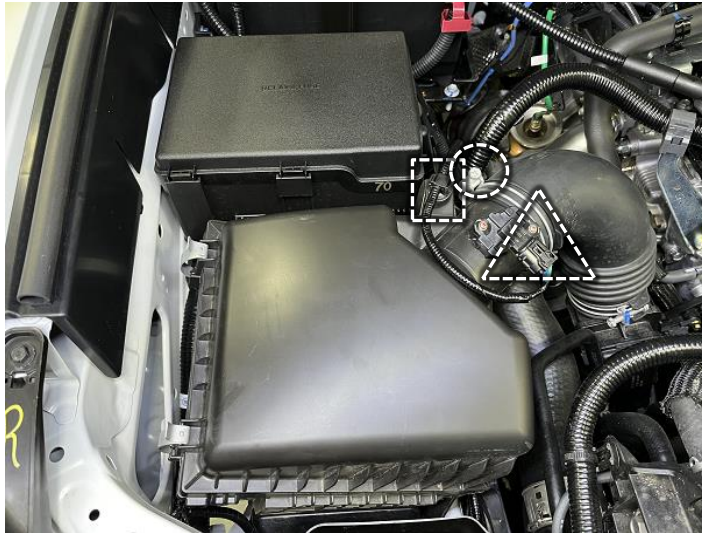



Figure 4-1


 10mm Socket, Ratchet, Clip Removal Tool

Step 4


Unclip the MAF wire harness from the airbox.

Clip x 1: 

Disconnect MAF sensor connector.

Disconnect x 1: 

Loosen clean air duct clamp and remove the upper airbox.

Bolt x 1: 

Refer to Figure 4-1.



Figure 5-1

Step 5

Remove the lower half of the airbox by pulling up to dislodge it from the grommets and remove the entire airbox.

Refer to Figures 5-1 and 5-2



Figure 5-2




Figure 5-3

Obtain the 1m block heater cable (PK5A4-89J21) and feed it down the left side of the engine as shown in Figure 5-3.



Figure 6-1

 21mm Socket, Ratchet, Extension, Needle Nose Pliers.

Step 6

Lift vehicle on hoist.

Remove both front wheels and remove rear LH splash shield shown in Figure 6-1.



Figure 6-2

Disconnect the connector shown in figure 6-2.

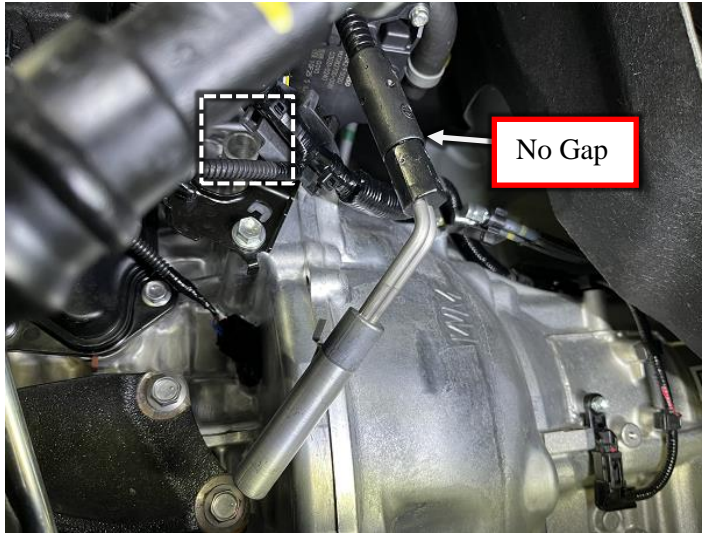


Figure 6-3

Locate the engine block heater cavity and obtain block heater cartridge PK5A4-89J16.

Connect the block heater cord to the heater cartridge ensuring there is no gap between the connectors.



Failure to correctly connect the cable and heater may result in damage to the heater cartridge and or the vehicle.

Refer to Figure 6-3

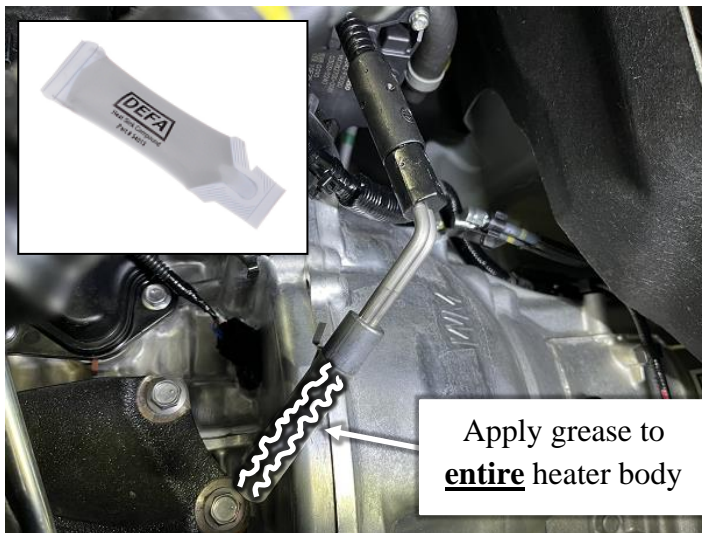


Figure 6-4

Apply the supplied thermal paste to the entire engine heater cartridge body as shown in Figure 6-4.



Failure to apply the thermal grease may result in damage to the heater cartridge and or the vehicle.

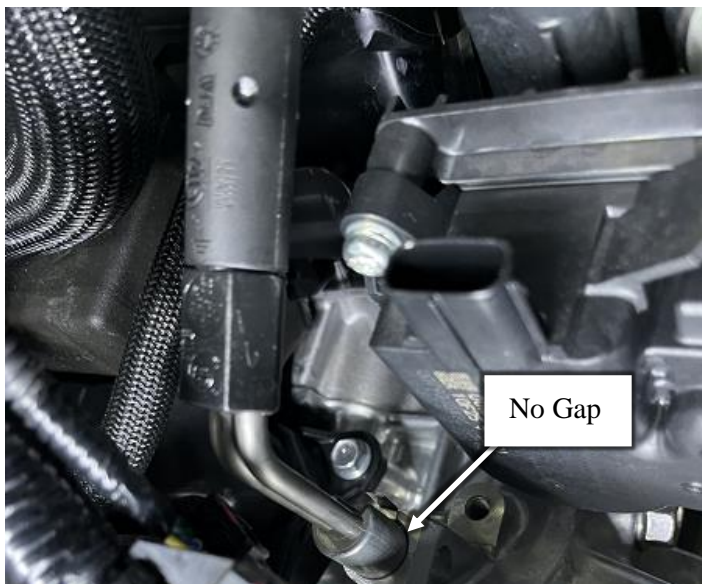


Figure 6-5

Insert the heater cartridge into the engine block. Ensure the cartridge is fully inserted and clip is fully seated as shown in Figure 6-5.



Failure to fully insert the heater into the engine cavity may result in damage to the heater cartridge and or the vehicle.



Figure 6-6

Reconnect the connector shown in Figure 6-6.

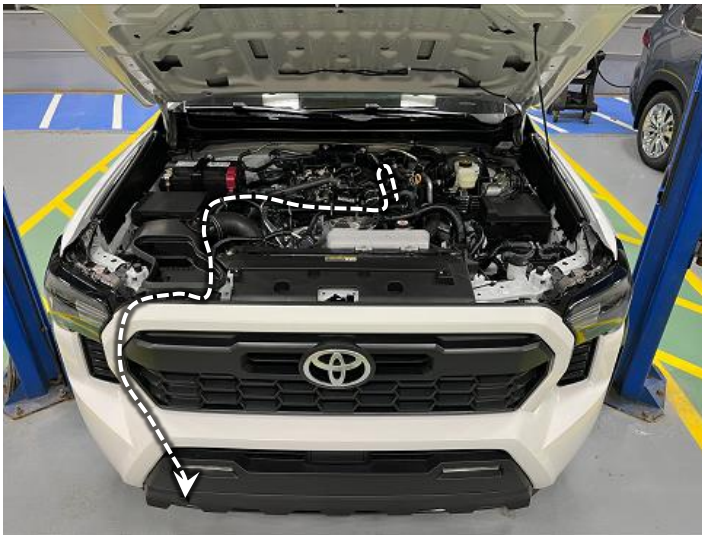



Figure 7-1

 Flush-Cut Side Cutters

Step 7

General block heater cord routing is shown in Figure 7-1.



CAUTION:

Avoid routing the accessory wire harnesses and cables near:

- Sharp edges or objects
- Fluid carrying components
- Hot surfaces
- Moving components and surfaces
- Always follow the specified routing path and attachment scheme as outlined in this manual.



Figure 7-2

Curl a zip tie as shown in Figure 7-2.

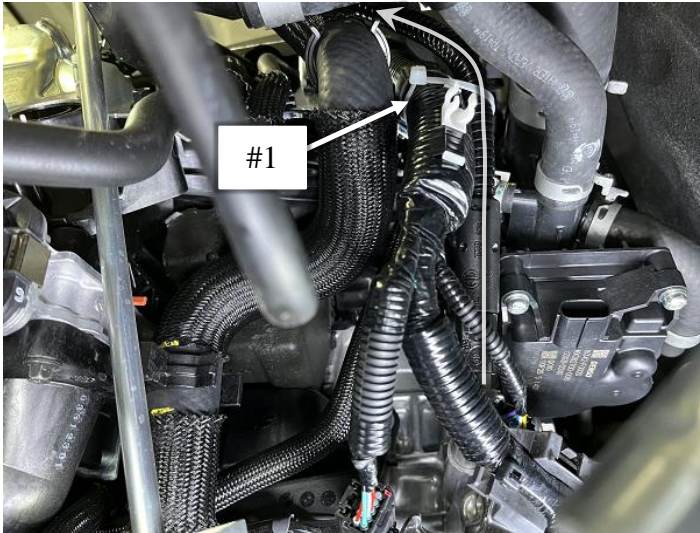


Figure 7-3

Secure the block heater cable to the engine wire harness using zip tie #1 as shown in Figure 7-3.

Cut off the end of the zip ties flush with the head of the zip tie.

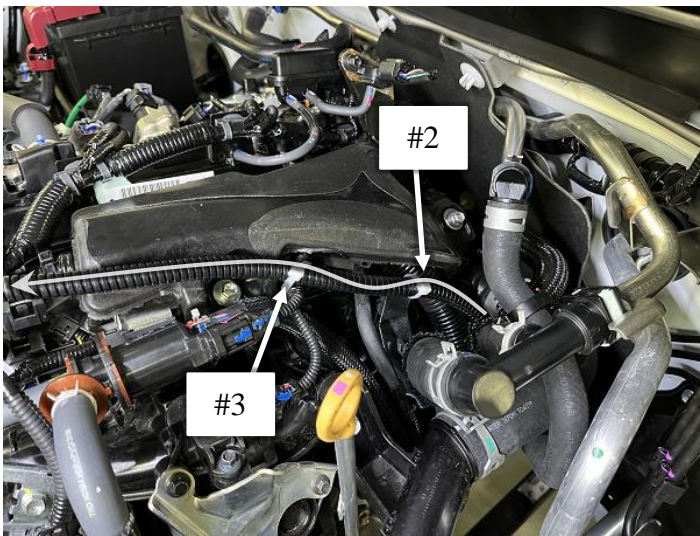


Figure 7-4

Lower the vehicle to the ground. Route the block heater cable along the vehicle wire harness and secure it to the vehicle wire harness using zip ties #2 and #3 as shown in Figure 7-4.

Cut off the end of the zip ties flush with the head of the zip tie.

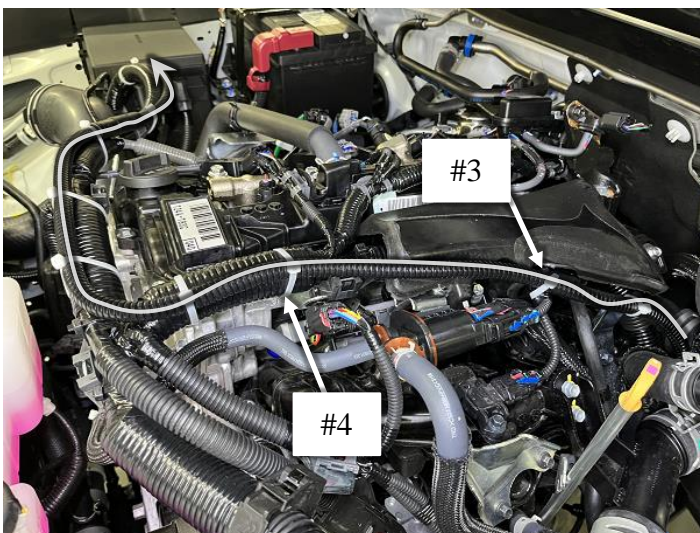


Figure 7-5

Continue routing the block heater cable along the vehicle wire harness and secure it to the wire harness using zip ties #4 through #6 as shown in Figures 7-5. And 7-6.

Cut off the end of the zip ties flush with the head of the zip tie.

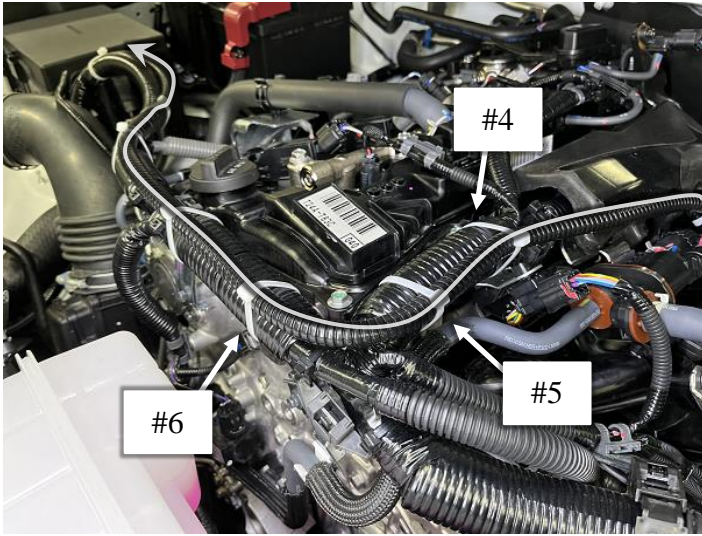


Figure 7-6

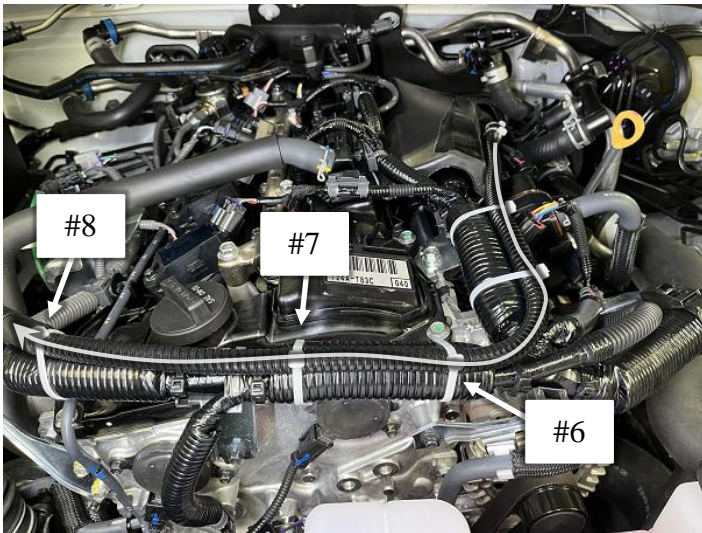


Figure 7-7



Figure 8-1

Continue routing the block heater cable along the engine wire harness and secure it to the wire harness using zip ties #7 and #8 as shown in Figure 7-7.

Cut off the end of the zip ties flush with the head of the zip tie.

 Flush-cut Side Cutters

Step 8

Obtain the 1.0m block heater extension cable (PK5A4-89J21) and connect it to the 1.0m extension cable.

Ensure no gaps in the inline connection.



Failure to correctly connect the cables may result in damage to the heater cartridge and or the vehicle.

Refer to Figure 8-1.

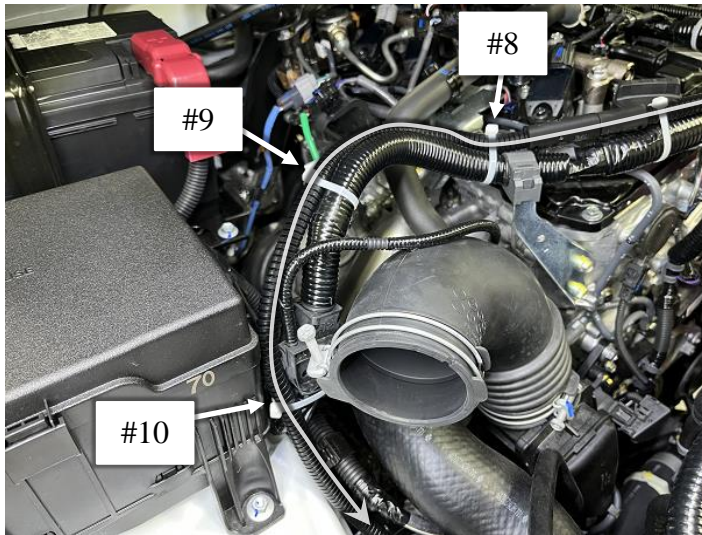


Figure 8-2

Route the block heater cable down towards the lower airbox section and secure it to the wire harness using zip ties #9 and #10 as shown in Figure 8-2.

Cut off the end of the zip ties flush with the head of the zip tie.




Figure 8-3

Continue routing the block heater cable as shown in Figure 8-3.



Figure 9-1

 Utility Knife, Kevlar Gloves

Step 9

Obtain the 0.8m armored inlet cable (PK5A4-89J30).

Carefully grip the cable in a vise with soft jaws installed and cut-out the rectangular drain hole in the inlet cable as shown in Figures 9-1 and 9-2.



CAUTION:

Knife blade may be extremely sharp – work carefully to prevent injury. Wear Kevlar gloves when working with sharp tools. Extend blade the minimum amount required to cut the drain hole.



Figure 9-2

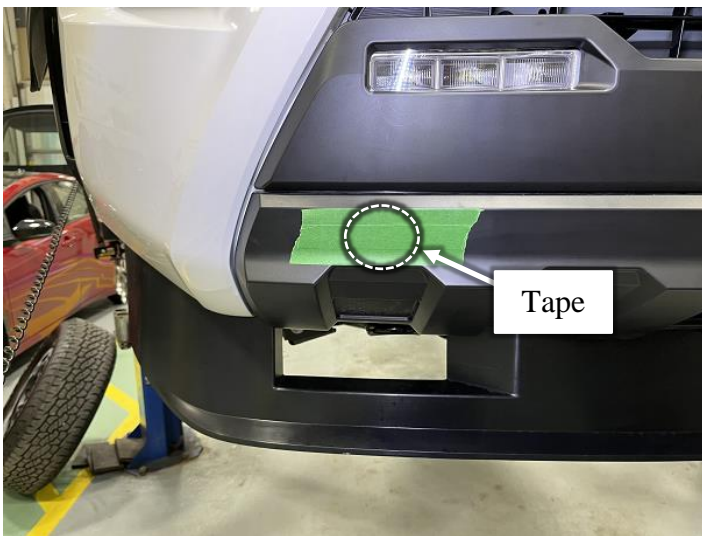



Figure 10-1

 Drill, 15/16” or 24mm Hole Saw, 1/8” Drill Bit, Marker, Masking Tape, Ruler, Round File.

Step 10

Raise vehicle and locate the area on the lower bottom RH side of the front bumper and apply tape as shown in Figure 10-1.

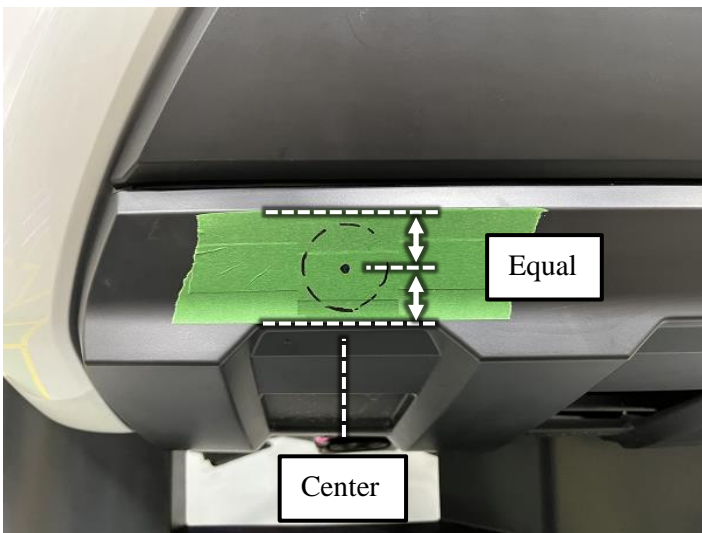


Figure 10-2

Mark off equal lengths from top and bottom of bumper features to the center of the bumper plug location and center it in the lower bumper feature as shown in Figure 10-2.



Figure 10-3

Using a hole saw, drill a 15/16" or 24mm hole in the marked location then remove the masking tape. Refer to Figures 10-3 and 10-4.



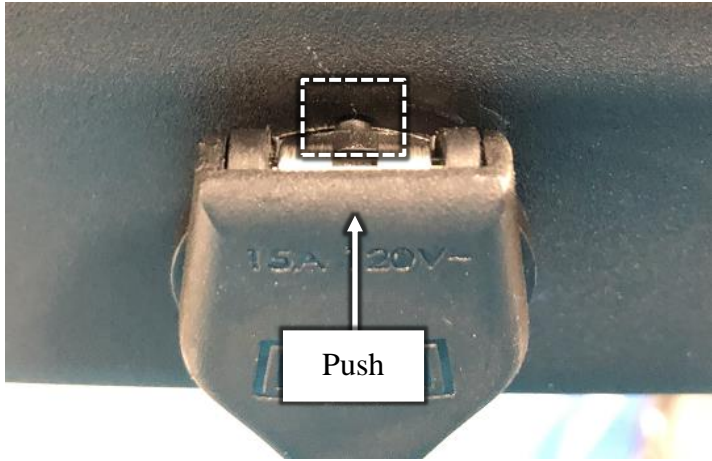
Figure 10-4



Figure 10-5

Obtain 0.8m armored inlet cable (PK5A4-89J30) and insert the armored inlet cord. Align parallel to styling line.

Refer to Figure 10-5.



Firmly press the socket against the bumper to make a depression with the anti-rotation tab. Remove cable from bumper.

Refer to Figures 10-6 and 10-7.

Figure 10-6



Figure 10-7

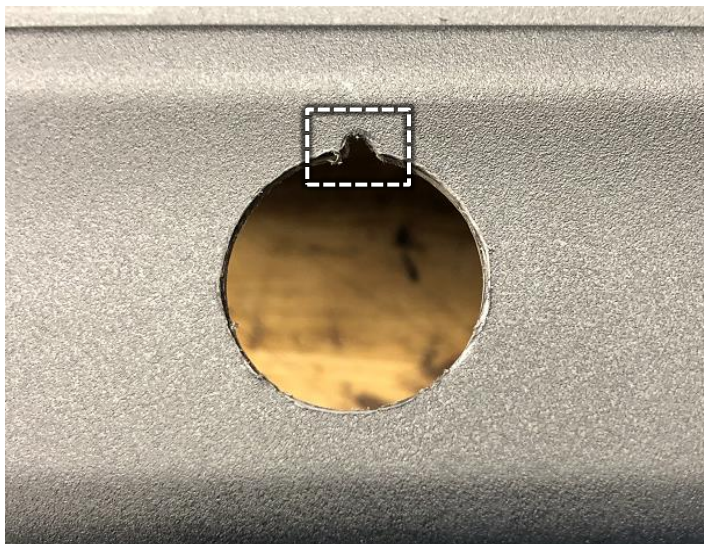


Figure 10-8

Using a small round file, remove the depression from the front bumper as shown in Figure 10-8.



Figure 11-1

 10mm Socket, Extension, Torque Wrench, Flush Cut Side Cutters, Electrical Tape.

Step 11

Feed the armored inlet cable through the bumper opening and route the cable towards the R-FR wheel well.

Assemble the large red O-ring, 3-pronged washer, and nut onto the cable as shown in Figure 11-1.

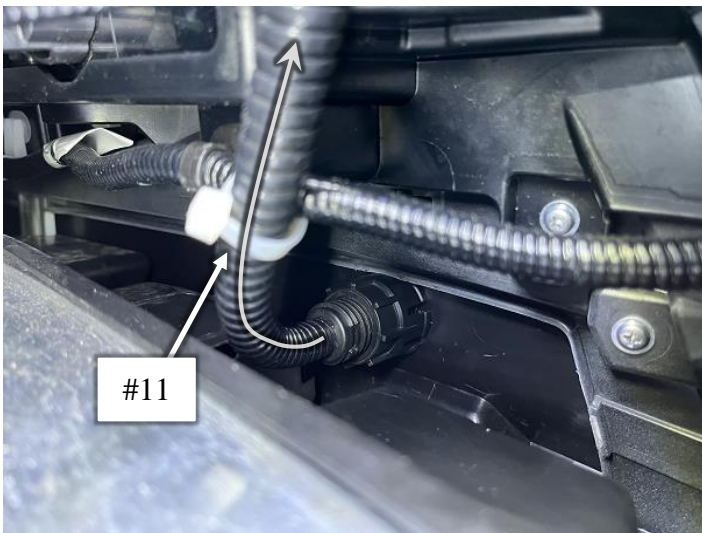


Figure 11-2

Tighten the nut firmly onto the inlet cable socket and secure the inlet cable to the vehicle wire harness using zip tie #11 as shown in Figure 11-2.

Cut off the end of the zip ties flush with the head of the zip tie.



Figure 11-3

Route the armored inlet cable upward and secure it to the vehicle wire harness using zip ties #12 to #15

Refer to Figures 11-3 through 11-6.

Cut off the end of the zip ties flush with the head of the zip tie.

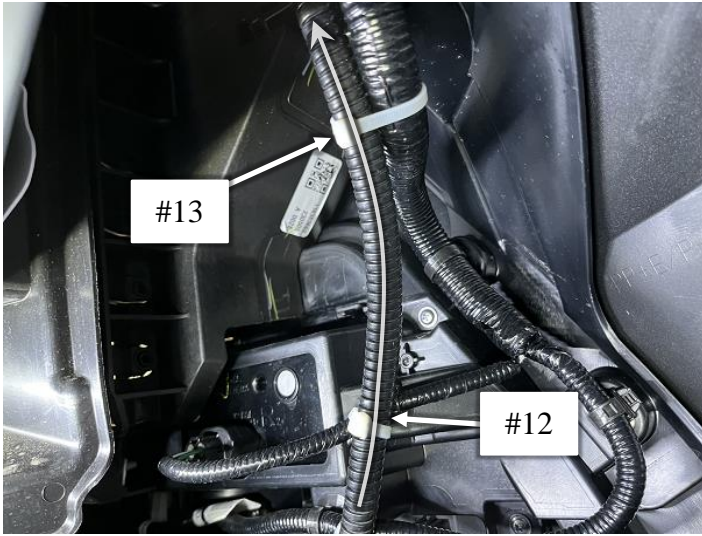


Figure 11-4

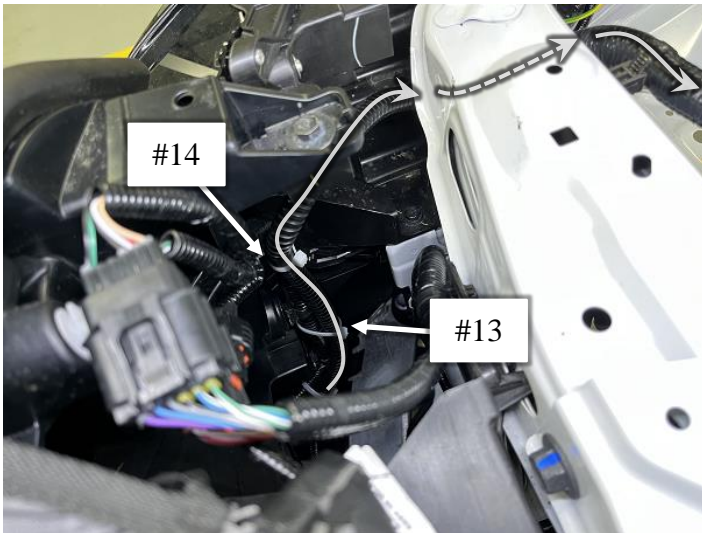


Figure 11-5

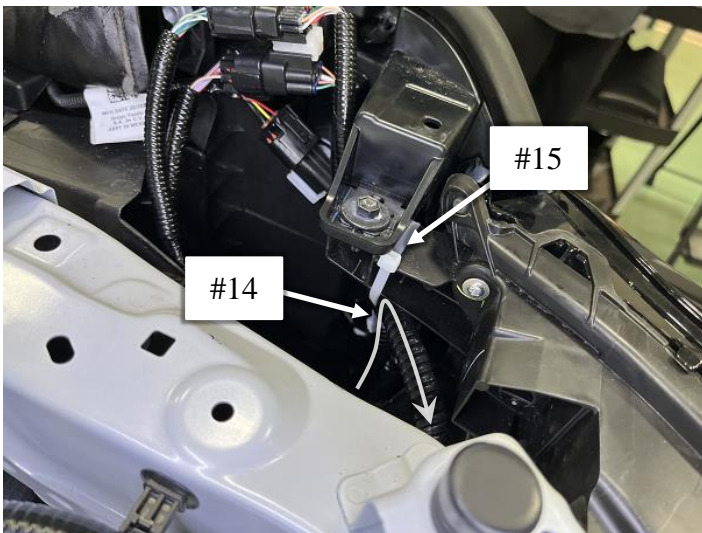


Figure 11-6

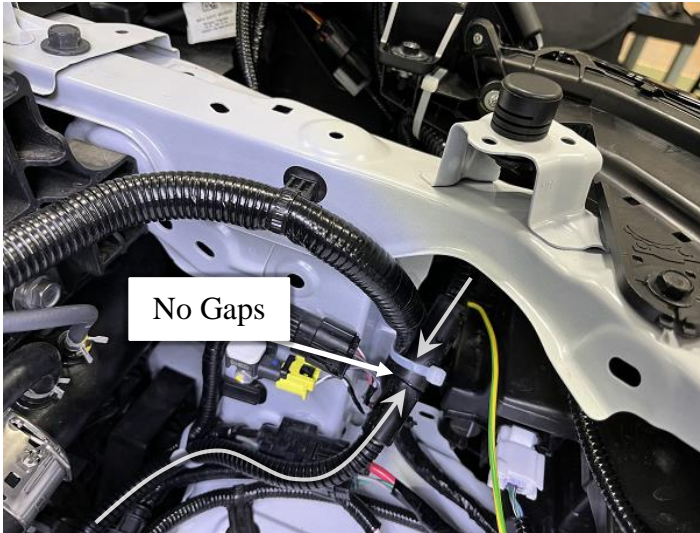


Figure 11-7

Connect the block heater cable and inlet cable together ensuring no gaps in the connection.



Failure to correctly connect the cables may result in damage to the heater cartridge and or the vehicle.

Refer to Figure 11-7.

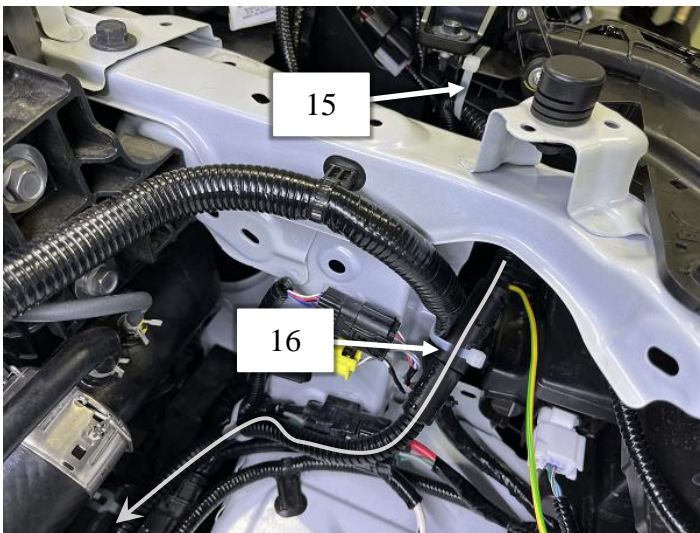


Figure 11-8

Secure using zip tie #16 as shown in figure 11-8

Cut off the end of the zip ties flush with the head of the zip tie.

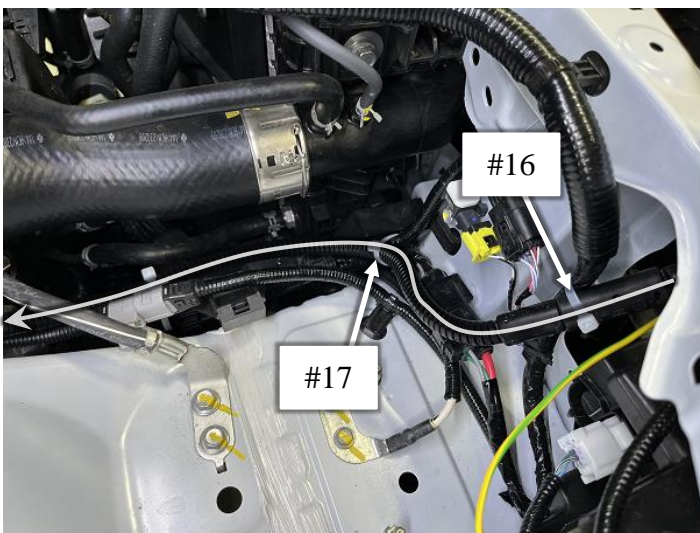


Figure 11-9

Route and secure the inlet and block heater cable using zip ties #17 through #19 according to Figures 11-9 and 11-10.

Cut off the end of the zip ties flush with the head of the zip tie.

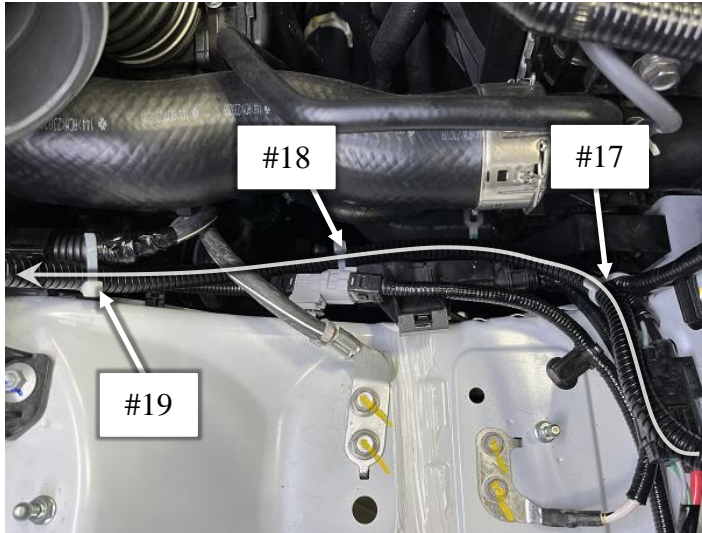


Figure 11-10

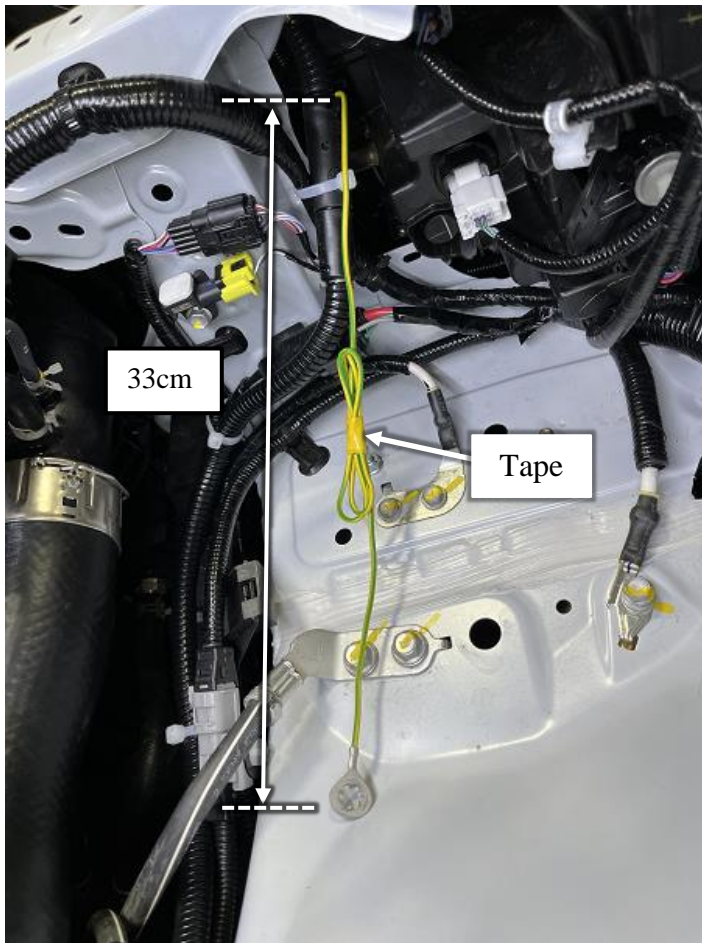


Figure 11-11

Bundle the ground wire to the specified length and secure it with two rounds of electrical tape as shown in Figure 11-11.

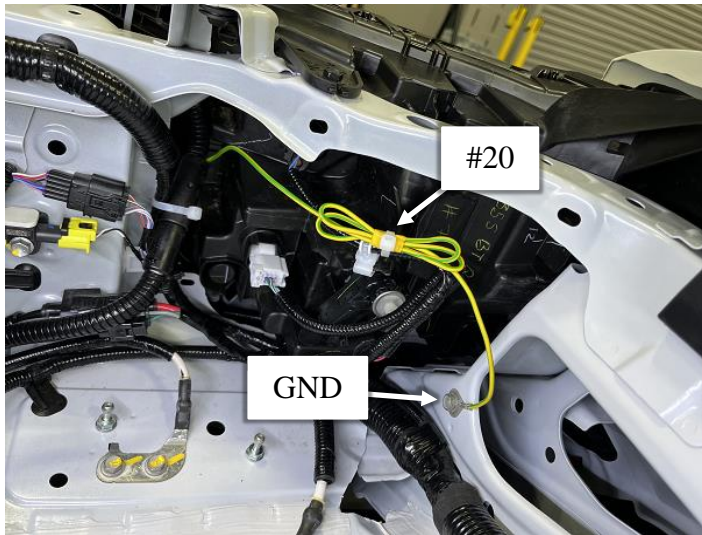



Figure 11-12

Using required ground bolt 90119-A0429, secure the ground eyelet to the vehicle body.

Secure the ground wire bundle to the vehicle wire harness using zip tie # 20.

Refer to Figure 11-12.

 *GND bolt torque: 8.0 N-m (71 in-lbf)*

Cut off the end of the zip ties flush with the head of the zip tie.

 Side Cutters, 21mm Sockets, Torque Wrench, Extension, Ratchet

Step 12

Cut the excess zip tie material flush with the head of the zip ties.

Reinstall the side splash shield and both front wheels shown in Figure 6-1.


Reinstall lower air box as shown in Figure 5-2.

Install air filter element and upper air box cover and tighten worm clamp as shown in Figure 5-1.

Connect MAF, and clip MAF wiring harness to the airbox as shown in Figure 4-1.

Reinstall intake resonator as shown in Figure 3-1.

Connect negative battery cable as shown in Figure 1-3.

 *Negative terminal torque: 5.4 N-m (48 in-lbf)*

Remove any vehicle protection that was used.



Place the 2.5m home power cable (PK5A4-89J40) on the passenger seat for the customer.

Installation is now complete.

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

Check:	Look For:
<p><u>Accessory Function Checks</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Make sure the Cartridge Heater is fully inserted into the engine cavity. <input type="checkbox"/> 2. Make sure the Block Heater Cable connections are fully assembled (cartridge heater and inline connections). <input type="checkbox"/> 3. Make sure the Cartridge Heater (body only, not terminals) and engine block cartridge hole is coated with thermal transfer grease supplied in the kit. <input type="checkbox"/> 4. Make sure the Block Heater Cable routing does not interfere with any moving, heated, or fluid carrying components. 	
<p><u>Vehicle Function Checks</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Start the engine and check for any abnormal sounds. 	