



AMERICAN EXPEDITION VEHICLES

## RAISED AIR INTAKE

# NEW PRODUCT

**Please visit [www.aev-conversions.com](http://www.aev-conversions.com) to view the most current installation guide available for this product.**

This is a new product and we want to make sure that you receive the latest and most accurate information based on customer feedback, product revisions and/or model year updates. We value customer feedback, so we encourage you to contact our Technical Support department if you have any suggestions on how to make the installation of this product easier or if you have any questions regarding the installation of this product. AEV's Technical Support department can be reached at [tech@aev-conversions.com](mailto:tech@aev-conversions.com) or by giving us a call at (248) 926-0256.

- 1500 2009+ 3.6L, 5.7L, 3.0L ECODIESEL
- 2500-5500 2010+ 5.7L, 6.4L
- 2500-5500 2013.5+ 6.7L W/ ACTIVE AIR

AEV30240AD

*Last Updated: 5/1/2017*



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## PLEASE READ BEFORE YOU START

TO GUARANTEE A QUALITY INSTALLATION, WE RECOMMEND READING THESE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING ANY WORK. THESE INSTRUCTIONS ASSUME A CERTAIN AMOUNT OF MECHANICAL ABILITY AND ARE NOT WRITTEN NOR INTENDED FOR SOMEONE NOT FAMILIAR WITH AUTO REPAIR.

| INCLUDED PARTS                           | QTY | REQUIRED TOOLS                   |
|--|-----|----------------------------------|
| 40306303 (ALL APPLICATIONS)              |     | 1/16" Drill Bit                  |
| Intake Body                              | 1   | 1/2" Step Bit                    |
| Hardware Kit                             | 1   | 1" Hole Saw                      |
| Air Box Seal (Diesel w/ Active Air only) | 1   | Air or Electric Cut-off Wheel    |
|  |     | Die Grinder with Carbide Bit     |
| 40306311 (3.6, 5.7, 6.4, 3.0 EcoDiesel)  |     | Flexible Straight Edge           |
| Adapter Elbow SM                         | 1   | Center Punch                     |
| Adapter Elbow LG                         | 1   | De-burring Tool                  |
| Adapter Flange                           | 1   | Touch-up Paint or Rust Inhibitor |
| Hardware Kit                             | 1   | Rivet Tool                       |
|  |     | Masking Tape                     |
| 40306303 (OPTIONAL)                      |     | Common Hand Tools                |
| Air Ram Head                             | 1   |                                  |
| Clamp                                    | 1   |                                  |
| Christmas Tree Fastener                  | 1   |                                  |
| 40306140 (OPTIONAL)                      |     |                                  |
| Pre-Filter Head                          | 1   |                                  |



## A. TRUCK PREPARATION

1. Clean the vehicle including the fender liner area.
2. Remove the right front fender liner.
  - a. Remove the six (6) screws from around the fender lip.
  - b. Remove the two (2) inner screws holding the fender liner.
  - c. Remove the three (3) plastic push pins.
  - d. Remove fender liner.

**NOTE:** It is not necessary to remove the factory fender flares.

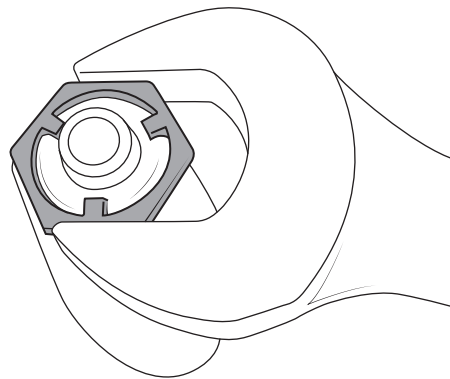
## B. PREPARE TEMPLATE

A full-size template is included with your AEV Raised Air Intake kit. If you need to download another template from the AEV website, print it on 11x17 paper and use the 1" square scale to ensure it is printed at 100%.

1. Trim on the dotted lines for the door line and fender line.
2. Using a sharp razor blade, VERY CAREFULLY cut along the dotted lines to remove the hole for the factory antenna location.

## C. REMOVE ANTENNA

1. Remove the antenna mast.
2. Use the supplied tool and a 1 1/16 in wrench to remove the antenna nut (Fig. 1).



*Figure 1*

3. Remove the plastic antenna base.
4. Push the Antenna mount and cable through the hole in the fender.

## D. TAPE TEMPLATE TO TRUCK

1. The template is primarily located using the factory antenna hole, use the two trimmed edges to achieve the best fit.
2. Tape in place so that the template sits flat on the surface of the vehicle everywhere with no wrinkles (Fig. 2).

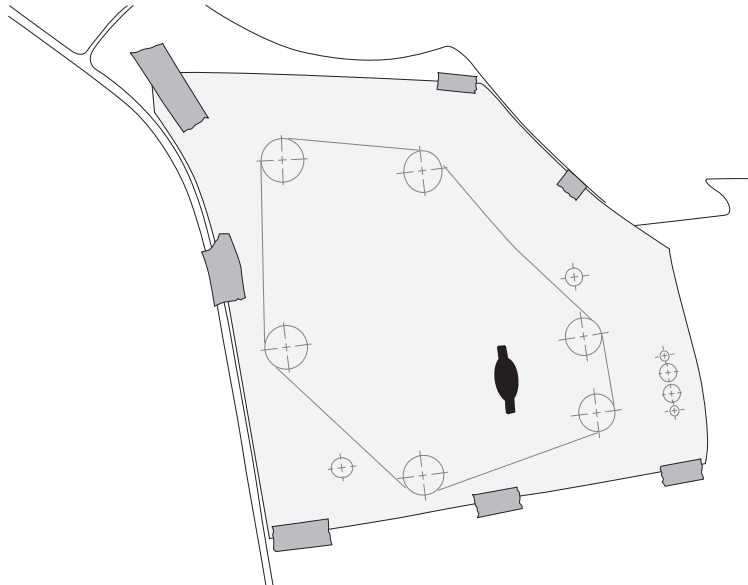


Figure 2

## E. MARKING HOLES

1. Use a center punch to mark all 22 center points.
2. Drill all 22 center marks with a 1/16" drill bit (Fig. 3).
3. You can now remove the template. NOTE: It is a good idea to mask off surrounding areas to protect paint.

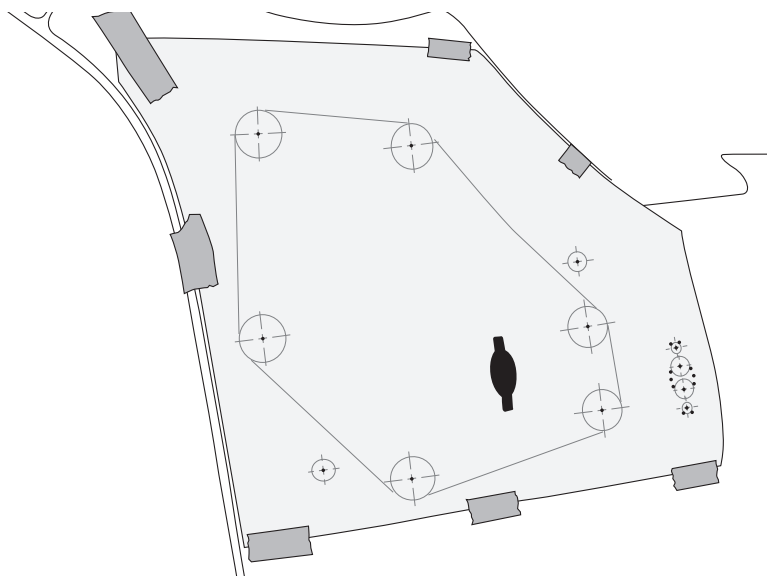


Figure 3

## F. DRILLING HOLES

1. After all 22 holes are drilled with a 1/16" bit, continue to drill the two (2) 9/32" holes and the four (4) 1/2" holes with a step bit (Fig. 4 Left).
2. Drill all six (6) 1" holes with a hole saw very carefully (Fig. 4 Right).
3. De-bur all hole edges using a de-burring tool.



Figure 4

## G. CUTTING THE INTAKE HOLE

1. Use a flexible straight edge and felt marker or painter's masking tape to mark the main hole. Go from tangent to tangent (Fig. 5).

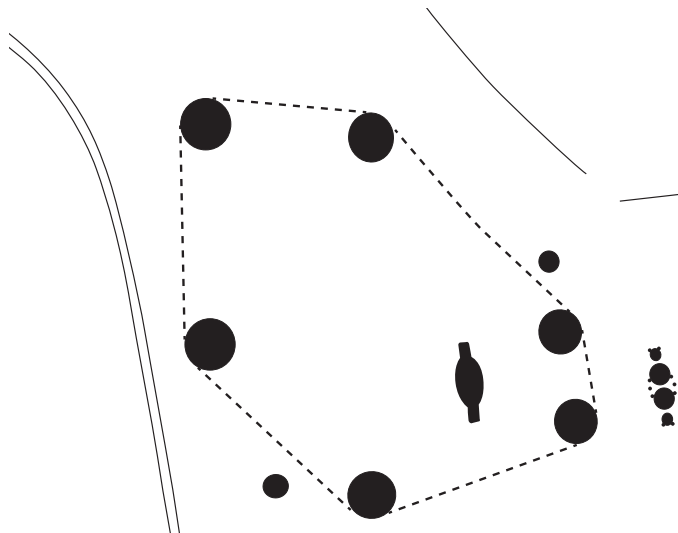


Figure 5

2. Using air saw or an electric or air powered abrasive cut-off wheel, carefully cut on lines to make one large cut-out. NOTE: Be sure to wear proper safety equipment including gloves and eye protection. Always cover any exposed window glass or painted surface to protect from sparks.
3. Use touch-up paint or rust inhibitor on all bare metal edges.



## H. CUTTING NEW ANTENNA HOLE

1. Use a combination of cut-off wheel, air saw, or die grinder with carbide bit to cut the straight and elliptical portions of the antenna hole (Fig. 6).
2. Square up all ends using a hand file and de-burr all edges.
3. Use touch-up paint or rust inhibitor on all bare metal edges.

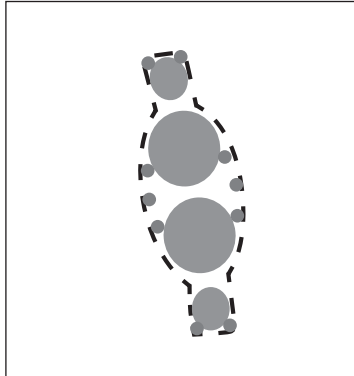


Figure 6



- 6.7L ACTIVE AIR CONTINUE WITH STEP I
- 3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL SKIP TO STEP K

## I. INSTALL ANTENNA

1. Test fit the antenna base into the newly cut hole. Make adjustments as necessary.
2. Install the plastic base and antenna nut.
3. Test fit the antenna mast and be sure antenna is vertical on vehicle from both the side and front of the vehicle. Adjust as necessary.

## J. LOOSEN RIGHT FENDER

(See Figure 7)

1. Remove the three (3) bolts on top of the right fender.
2. Remove the top two (2) bolts on the right side battery tray.
3. Loosen the inside two (2) bolts at the top of the battery tray.
4. Remove the bolt at the top of the fender under the windshield trim.
5. Remove the bolt at the top of the fender in the door opening.
6. Remove the bolt inside of the fender, half way up the door opening.

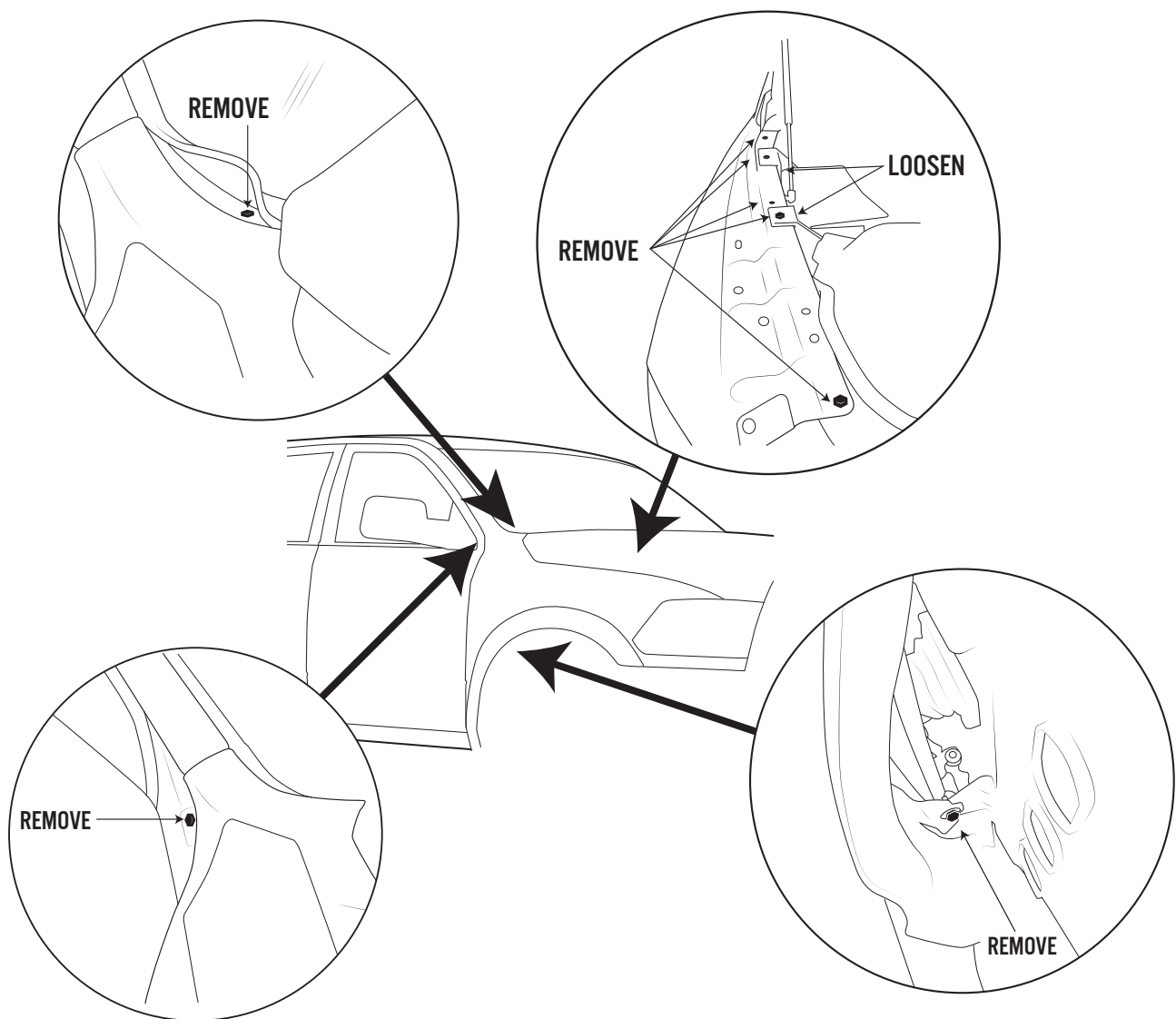


Figure 7



- 3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL CONTINUE WITH STEP K
- 6.7L ACTIVE AIR SKIP TO STEP O

## **K. REMOVE RIGHT FENDER (3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL ONLY)**

1. Disconnect the negative battery terminal.
2. Remove the upper shroud by prying the six (6) plastic push pins out (Fig. 8).

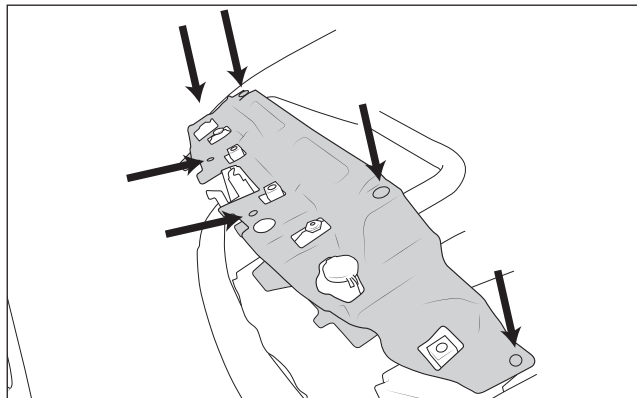


Figure 8

3. Remove the bolt behind the headlight. (Refer to Figure 9 for steps 3–8)
4. Remove the two lower fender bolts at the pinch seam.
5. Remove the bolt inside of the fender, half way up the door opening.
6. Remove the bolt at the top of the fender under the windshield trim.
7. Remove the bolt at the top of the fender in the door opening.
8. Remove the three (3) bolts on top of the right fender and carefully remove the fender.





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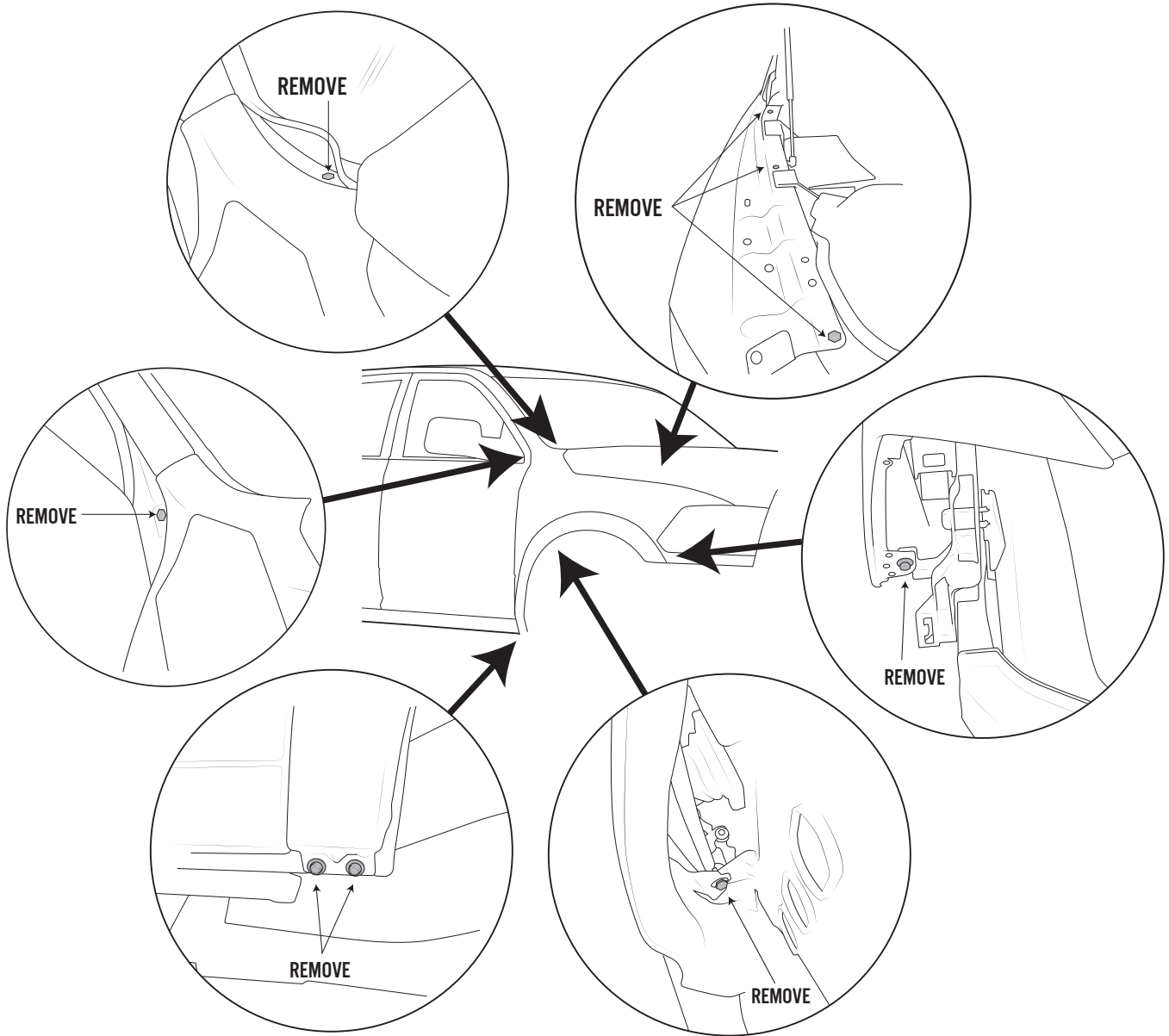


Figure 9

## L. ENGINE COMPARTMENT PREPARATION (3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL ONLY)

1. Remove Plastic Shroud (Fig. 10).

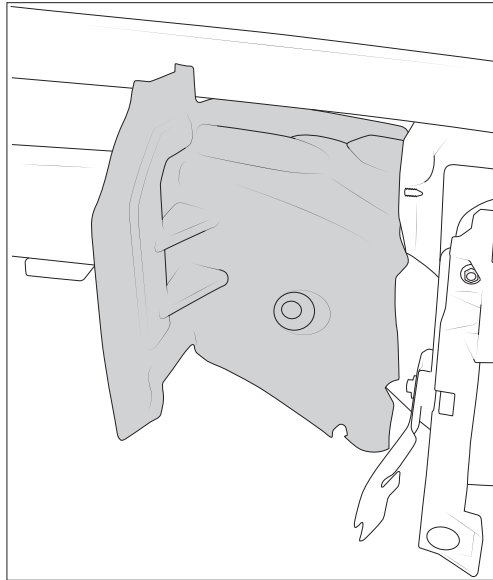


Figure 10

2. Remove the PCM and mounting bracket.
  - a. Unplug the two connectors attached to the PCM (Fig. 11).

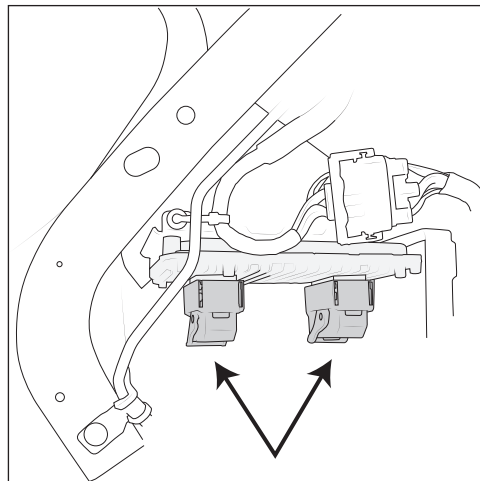


Figure 11

- b. Disconnect the 34 way connector on top of the PCM bracket.
- c. Unbolt the ground wire from the fender rail.
- d. Disconnect all wiring and hoses from the PCM bracket.
- e. Remove the PCM and mounting bracket. Note: It is not necessary to remove the PCM from the bracket.

3. Remove the factory air box.
  - a. Unplug the MAF sensor.
  - b. Disconnect the air tube from the air box.
  - c. Remove the two bolts holding the air conditioning line to the air box (Fig. 12).
  - d. Remove the clips holding the air conditioning lines to the air box (Fig. 13).
  - e. Pull the air box up to remove it. Be careful not to damage the air conditioning lines.

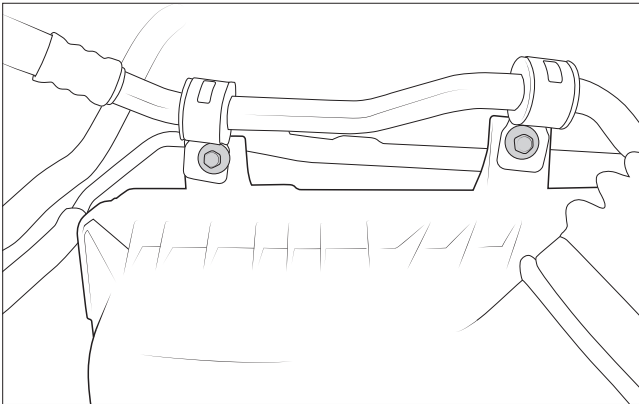


Figure 12

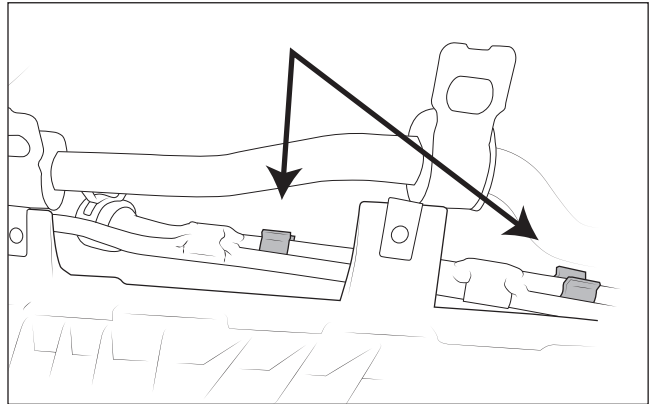


Figure 13

## M. AIR BOX MODIFICATION (3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL ONLY)

1. Remove the air box cover and air filter.
2. Remove the air inlet tube (Fig. 14).
3. Position the AEV air inlet flange to the air box and mark the holes (Fig. 15). **NOTE:** 3.6L and 5.7L air boxes have a smaller inlet hole. These should be enlarged using the AEV inlet flange as a guide.

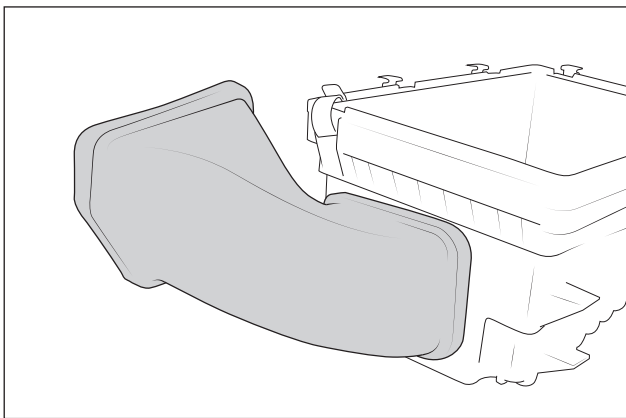


Figure 14

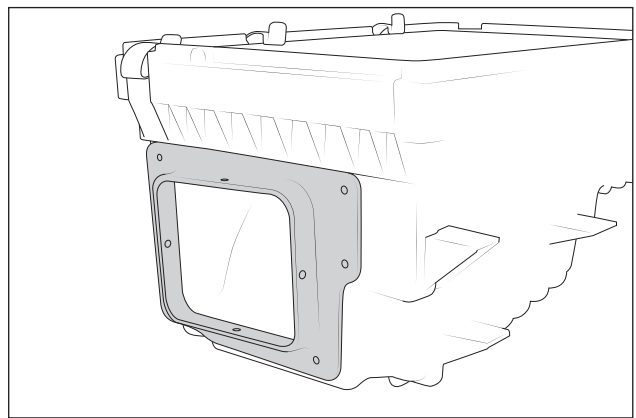


Figure 15

4. Drill the holes to 3/16".

**OPTIONAL:** Use an O<sub>2</sub>-sensor safe sealant to seal all parts of the intake system for superior water resistance. If using primarily for dust, this step is not necessary.

5. Rivet the air inlet flange to the air box with 5 supplied rivets.
6. Rivet the air inlet elbow to the air inlet flange with 4 supplied rivets (Fig. 16).
7. Trim plastic for clearance of air inlet as shown (Fig. 17).
8. Re-install the modified air box.
9. Re-install the PCM.

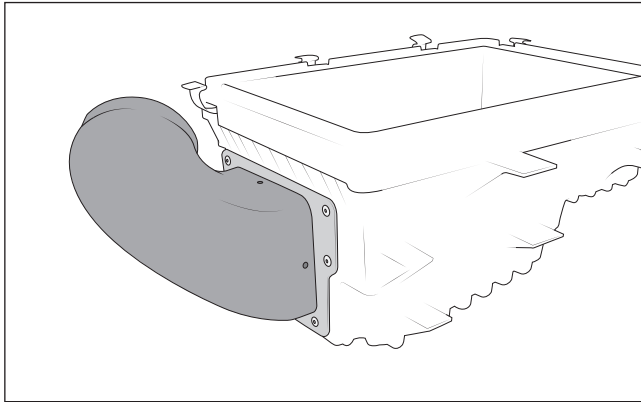


Figure 16

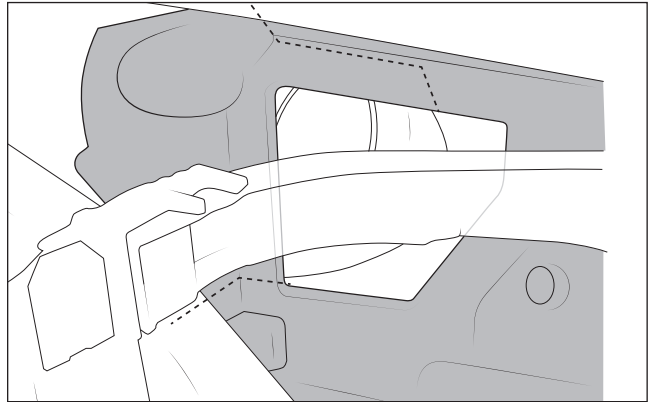


Figure 17

10. Install the adhesive foam pads to the extension tube as shown (Fig. 18).

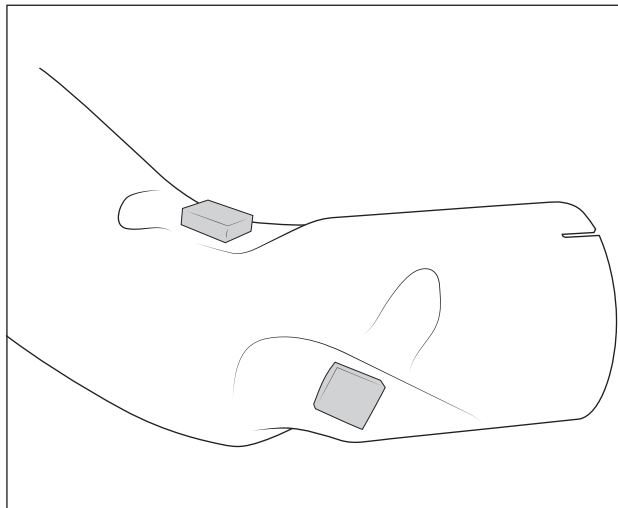


Figure 18



11. Install the extension tube as shown (Fig. 19). Leave loose at this time.

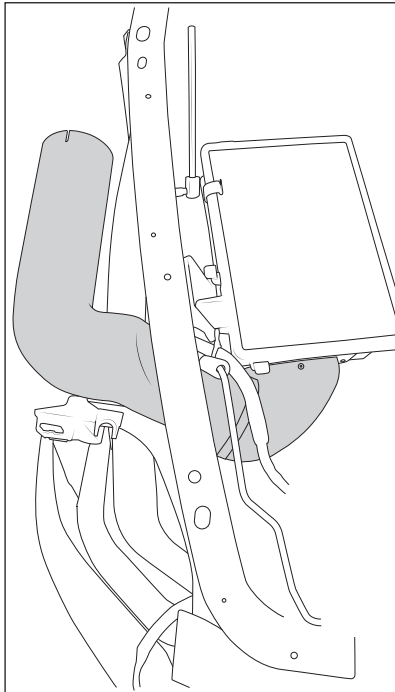


Figure 19

12. Attach the fender with the two lower pinch seam bolts and the bolt behind the headlight. Use one bolt at the top to help hold the fender.
13. Tighten the two bolts at the pinch seam and the bolt behind the headlight.

NOTE: Make sure to line up the witness marks in the paint with the washer on the bolts. This will align the fender back to its original location.

## **N. INSTALL ANTENNA (3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL ONLY)**

1. Push the antenna base through the hole.
2. Install the plastic base and antenna nut.
3. Test fit the antenna mast and be sure antenna is vertical on vehicle from both the side and front of the vehicle. Adjust as necessary.

## **O. INSTALL A-PILLAR MOUNT**

1. Gently slide the top of the fender out about one inch.
2. Pre-Install the hose clamp onto the factory air inlet tube, or AEV extension tube (GAS/3.0 ECO-DIESEL).

3. Install two adhesive foam squares to the Intake body where it will contact the A-pillar (Fig. 20).

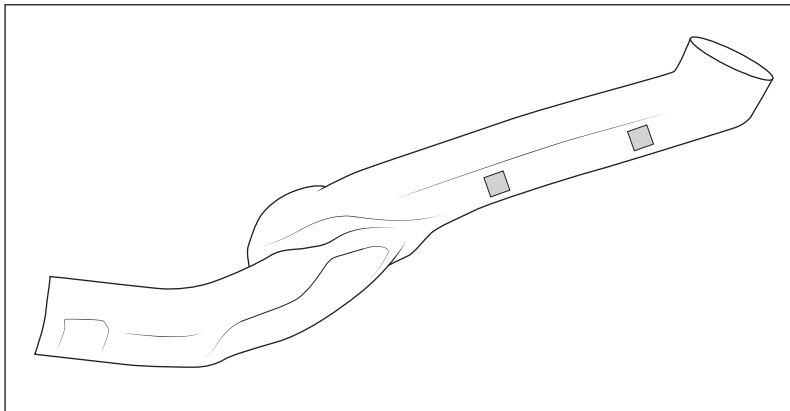


Figure 20

4. Install the Intake body. Use a helper to guide the Intake body past the antenna and into the factory air inlet tube, or AEV extension tube (GAS/3.0 ECO-DIESEL).
5. Loosely install the 8 mm bolts through the fender and into the Intake body, install the BOTTOM bolt first. Snug them but DO NOT TIGHTEN at this time.
6. Gently push the fender back into place. Be sure the intake body is aligned properly and mark the upper holes on the A-Pillar using a felt tip pen through the intake body.
7. Remove the intake body.
8. Center punch and carefully drill holes to 1/2". Use touch-up paint or rust inhibitor on bare metal.
9. Install rubber well-nuts by inserting into the 1/2" hole (Fig. 21).

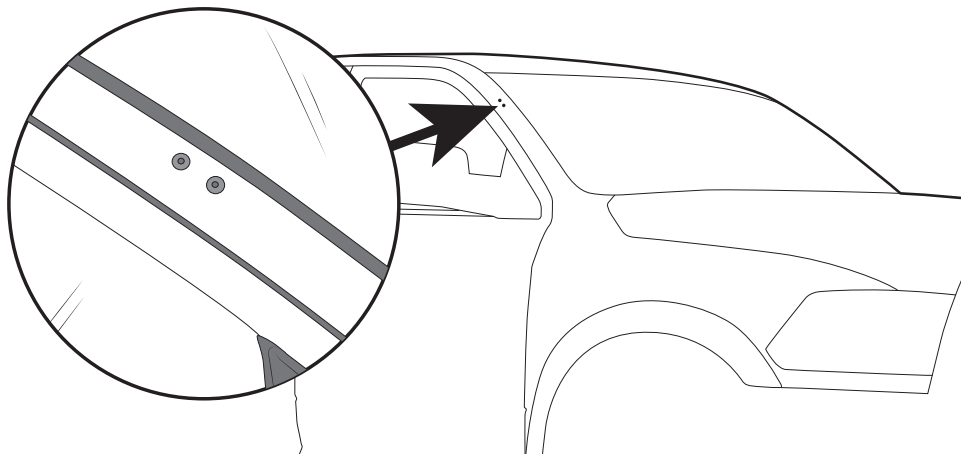


Figure 21



- 6.7L ACTIVE AIR CONTINUE WITH STEP P
- 3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL SKIP TO STEP Q

## P. INSTALL INTAKE BODY

1. With a helper, re-install the Intake body through the fender and into the factory air intake tube.
2. Gently push the fender back into place and tighten or re-install all fender and battery tray hardware.
3. Loosely install the 8 mm bolts into the Intake body through the fender. Begin with the bottom bolt. Use BLUE thread lock compound.
4. Loosely install the 6 mm bolts and washers to the upper A-Pillar well-nuts.
5. Tighten all hardware when the best fit is achieved.
6. Remove the factory air box.
7. Remove the factory foam seal that sits between the inner fender and the airbox.
8. Clean the surface and install the AEV supplied seal onto the inner fender (Fig 22).

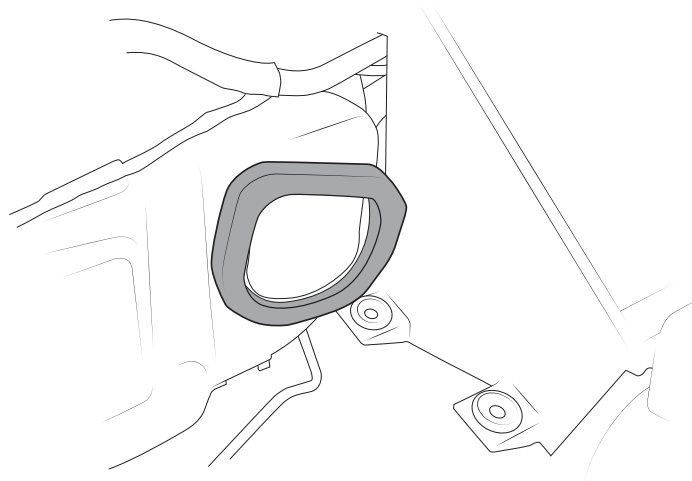


Figure 22

9. Reinstall the air box and secure with original hardware.
10. Tighten hose clamp to the factory air intake tube.
11. Re-install the fender liner using included push pins and re-using factory bolts.



- 3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL CONTINUE WITH STEP Q
- 6.7L ACTIVE AIR SKIP TO STEP R

## Q. INSTALL INTAKE BODY (3.6L, 5.7L, 6.4L, AND 3.0L ECODIESEL ONLY)

1. With a helper, re-install the Intake body through the fender and into the factory air intake tube.
2. Gently push the fender back into place and tighten or re-install all fender and battery tray hardware.
3. Loosely install the 8 mm bolts into the Intake body through the fender. Begin with the bottom bolt. Use BLUE thread lock compound.
4. Loosely install the 6 mm bolts and washers to the upper A-Pillar well-nuts.
5. Tighten all hardware when the best fit is achieved.
6. Reinstall the air box and secure with original hardware.
7. Tighten both hose clamps to the air intake tube.
8. Re-install everything in the engine compartment.
9. Re-install the fender liner using included push pins and re-using factory bolts.

## R. INSTALL OPTIONAL AIR RAM

1. Slide the supplied hose clamp over the Intake Body.
2. Attach the Air Ram and adjust so it is forward facing.
3. Mark the hole location on the Intake body and drill a 5/16" hole (Fig 23).
4. Install the push pin.
5. Slide the hose clamp up around the Air Ram and tighten.

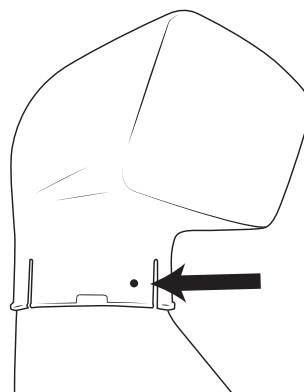


Figure 23





## S. INSTALL OPTIONAL HIGH DUST FILTRATION SYSTEM

1. Slide the supplied hose clamp over the Intake Body
2. Install the High Dust Filtration System. This must be installed with the vent to the rear of the vehicle (Fig. 24).
3. Slide the hose clamp up around the High Dust Filtration System and tighten.

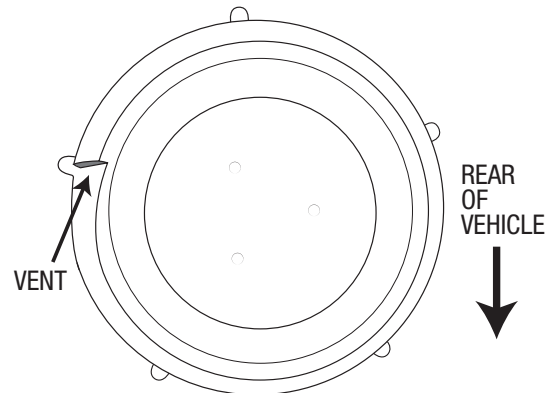


Figure 24