



# ***SHORT RAM SYSTEM***

Installation Instructions for:  
Part Number 22-633  
2004-2005 Saturn Ion Redline

**ADVANCED ENGINE MANAGEMENT INC.**

2205 126<sup>TH</sup> Street, Unit A Hawthorne, CA. 90250

Phone: (310) 484-2322 Fax: (310) 484-0152

[www.aempower.com](http://www.aempower.com)

Instruction Part Number: 10-7057

2004 Saturn Ion Redline 2.0L S/C C.A.R.B. E.O. #pending

2005 Saturn Ion Redline 2.0L S/C C.A.R.B. E.O. #pending

Cold Air Intake Systems that are pending CARB approval are illegal in California except on racing vehicles which may never be used on public highways.

© Copyright 2005

**Congratulations!** You have just purchased the finest Air Induction & Filtration system for your car at any price!

The **AEM** Short Ram Air Intake System is the result of extensive development on a wide variety of cars. It is the most advanced short pipe air intake system on the market. Each system is specifically engineered for its application. All **AEM** Short Ram Air Intake Systems deliver maximum performance gains through lightweight, all-aluminum, mandrel-bent tubing that is tuned in both length and diameter. The aluminum will not crack in extended use like plastic. The tube length and diameter are matched for each specific engine to give power over a broad RPM range. Unlike plastic systems that use a continually diverging cross-section, we take advantage of the acoustical energy in the inlet duct to promote cylinder filling during the intake valve-opening event. Every intake is coated with a high-gloss, heat-reducing Zirconia based powder coating. This special blend of powder coating helps reduce heat penetration, which in turn reduces the temperature of the inlet air charge. The cooler inlet air temperature translates to more power during the combustion process because cool air is denser than warm air. The filter element has also been extensively developed. An integral part of all our filter elements is a built-in velocity stack. This velocity stack is specifically engineered to improve the aerodynamic efficiency of the intake system. We have seen airflow gains on a flow bench of 12-15% by using this velocity stack. The air mass flow to the engine is increased because of the increased airflow and reduced inlet temperature, which translates to more power.

**Bill of materials for: 22-633**

Quantity	Part Number	Description
1	2-6331	Intake Pipe
1	21-2110	3.25" x 5" Air Filter
1	5-315	3" x 1.5" Straight Coupler
1	5-320	3.0"/3.25" Hose Adapter
3	103-BLO-4820	#48 Hose Clamp
1	103-BLO-5220	#52 Hose Clamp
2	99024.032	1" Hose Clamp
2"	65116	Hose 1/2" ID
1	1-115	11.25" Zip Tie
1	10-922E	Emblem, CAS/SRS
1	10-7057	Instructions
2	10-922S	AEM Silver Decal
1	10-400W	White License Plate Frame

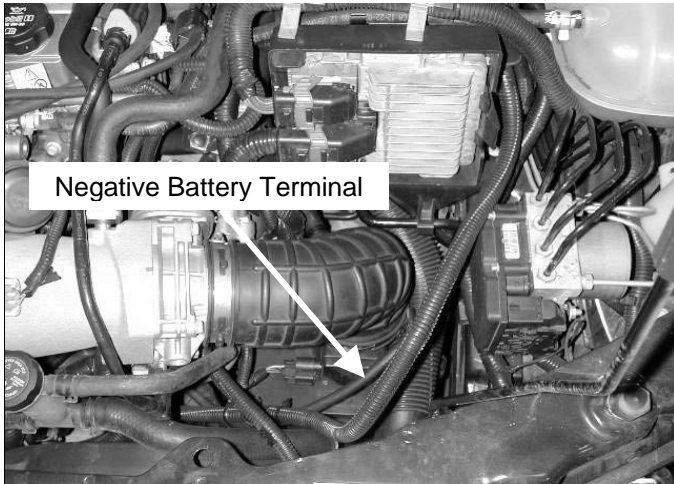
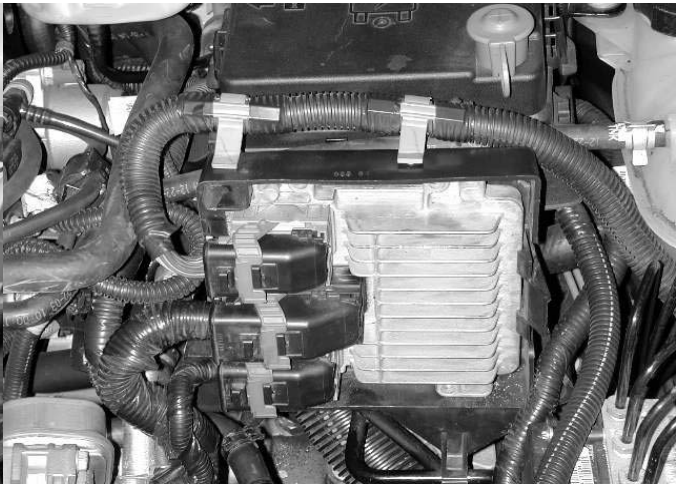
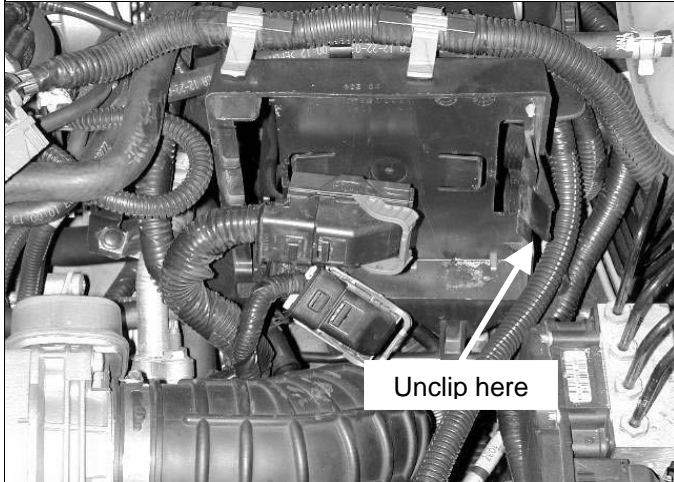

Read and understand these instructions **BEFORE** attempting to install this product.

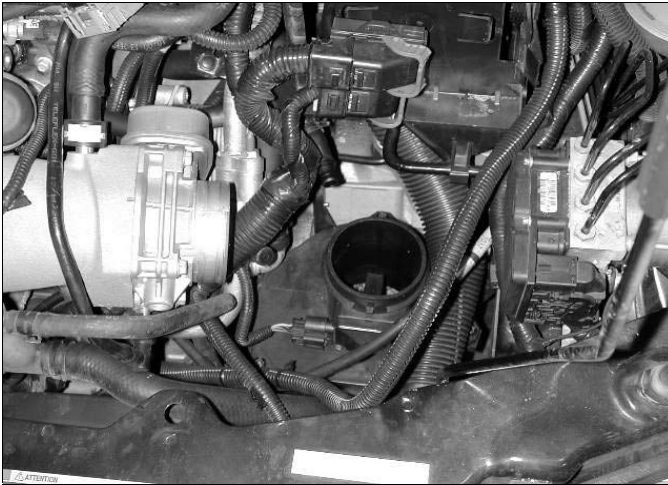
**Note:** This inlet pipe kit requires the removal and reinstallation of emissions related components. If you are not familiar with the installation and/or the operation of these components then please refer this installation to a qualified professional.

### 1) Getting started

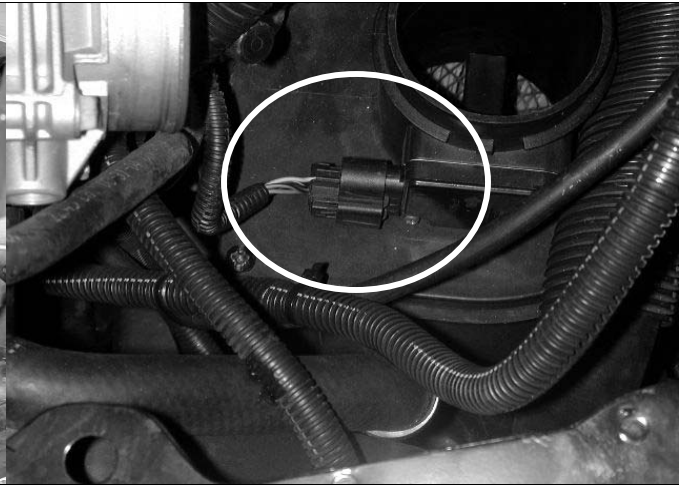
- a) Make sure vehicle is parked on a level surface.
- b) Set parking brake.
- c) Make sure you have the anti-theft code for the radio.
- d) Disconnect the negative battery terminal in the engine compartment.
- e) If engine has run within the past two hours let it cool down.

### 2) Removing the stock air inlet system

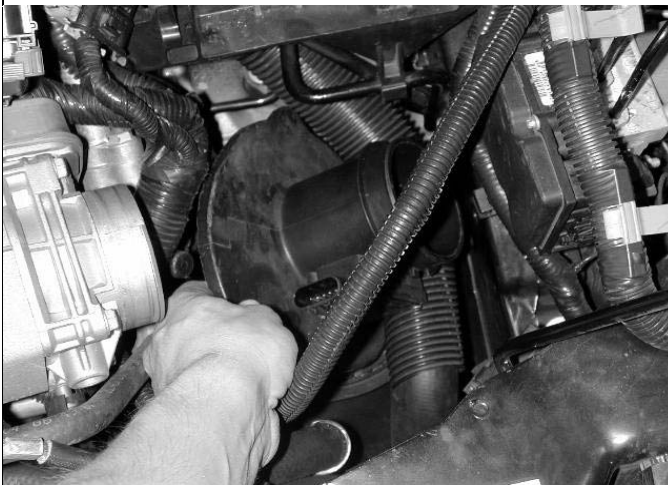
 <p>Negative Battery Terminal</p>	
<p>a) Before removing any of the O.E. components, <b>label each individual part so that no components become mixed up during the installation process.</b></p>	<p>b) Be sure the battery is disconnected, then disconnect the main harness from the ECU. This is done by releasing the lock down and pulling on the wire side of the 3 plugs.</p>
 <p>Unclip here</p>	
<p>c) Remove the ECU from the housing by unclipping it on the driver's side.</p>	<p>d) Using pliers, remove the retaining clamp from the breather hose attached to the air inlet tube. Disconnect the breather hose from the inlet tube.</p>



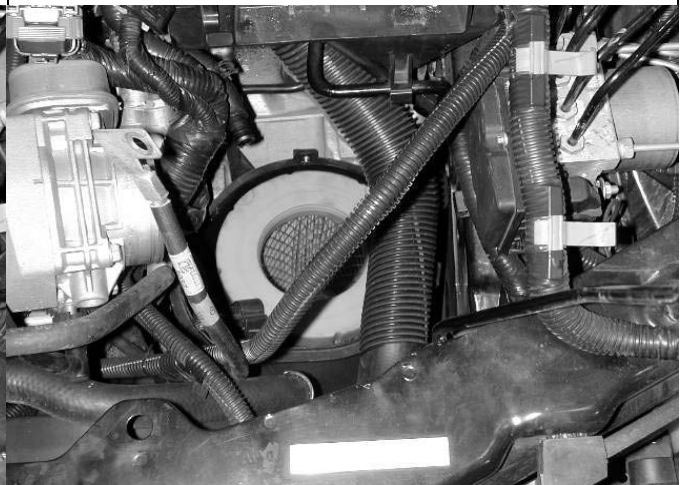
e) Loosen the hose clamps on the throttle body and the stock air filter housing. Remove the air inlet tube.



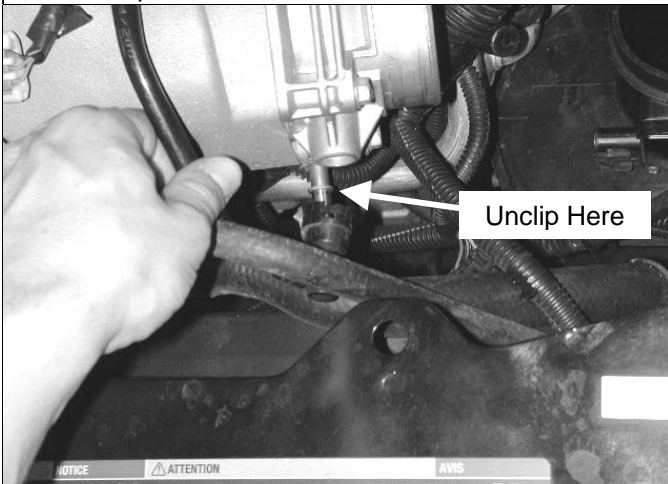
f) Unclip the Mass Air Flow (MAF) sensor wiring harness from the sensor.



g) Remove the three screws securing the stock air box lid. Lift up on the lid and rotate it in order to separate the lid from the stock air filter.



h) Remove the stock air filter from the air filter housing.



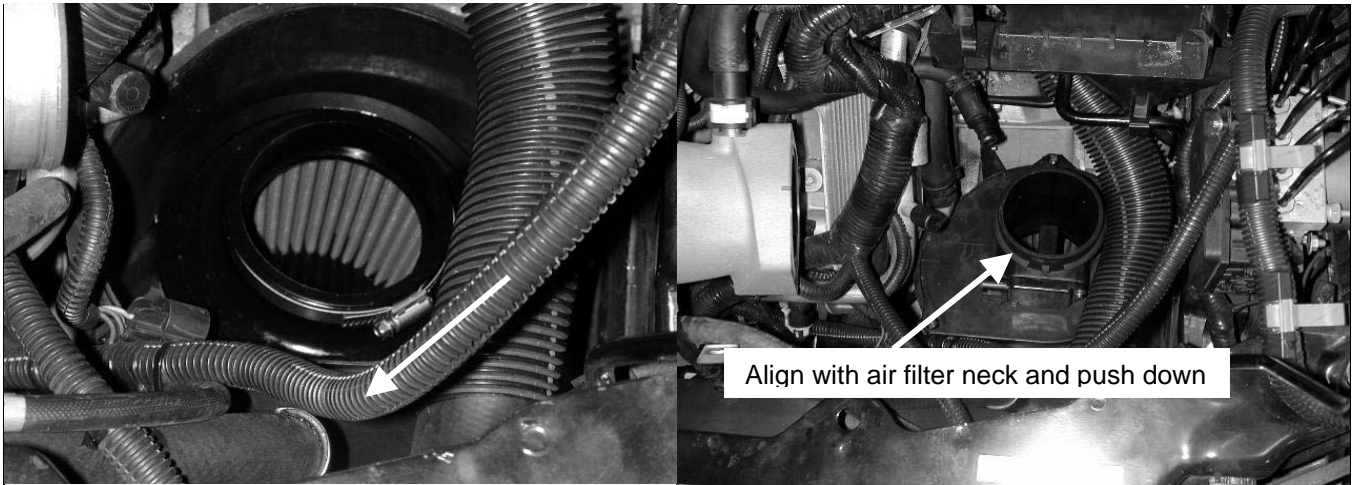
i) Unclip the idle air hose from the throttle body. Remove the four bolts securing the throttle body to the intake manifold.



j) Unplug the throttle body wiring harness from the bottom side of the throttle body.

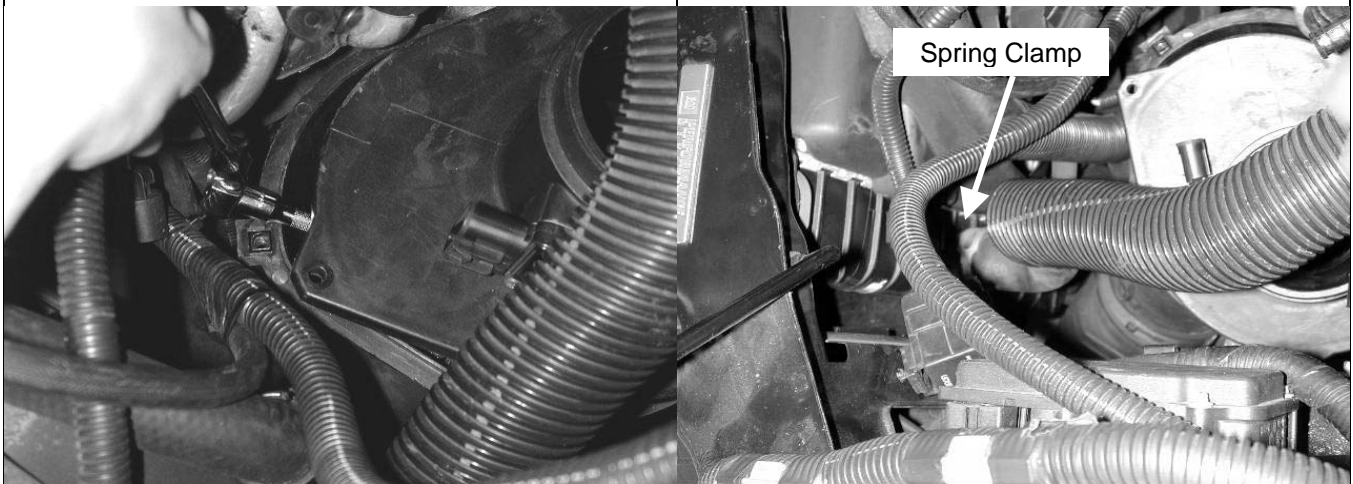
### 3) Installing the AEM SRS Intake

When installing the Short Ram Intake System, DO NOT completely tighten the hose clamps or mounting tab hardware until instructed to do so later in these instructions.



a) Check to be sure the **AEM** filter is free from any foreign objects. Set filter in the stock air filter housing. Be sure to angle the hose clamp towards the center of the grill as shown.

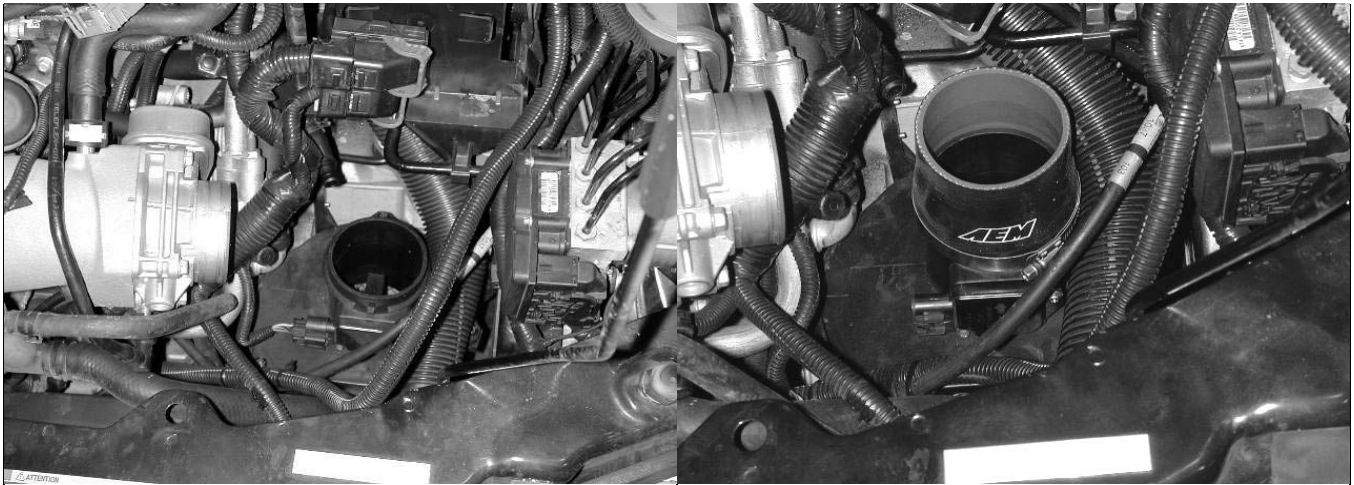
b) Install the air box lid by sliding it under the radiator hose and aligning the air box inlet tube with the air filter neck. Push down on the air box lid once it is aligned.



c) This step is complicated so take your time. Using a 90 degree pick, slide the pick into the hole on the top of the housing and under the lip on the filter. Pull up on the filter until it is all the way on the air box inlet tube. **Be careful not to damage the MAF sensor.** Tighten the hose clamp on the filter by lifting up on the air box lid as shown.

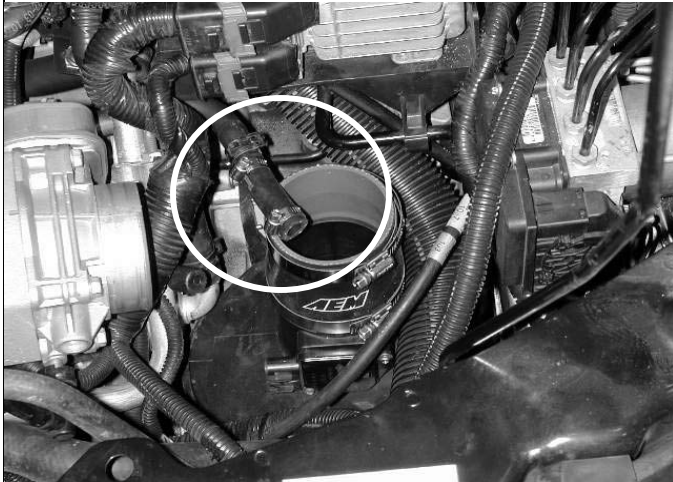
d) If step 3c is too complicated or you do not have the proper tools, the radiator hose can be removed. To do this, the radiator must first be drained according to the procedures in the factory service manual. **Be sure the vehicle has had ample time to cool.** Compress the spring clamp holding the hose onto the radiator and pull the hose off the radiator. Once the hose is moved out of the way, there is room to install the air box lid from the top of the vehicle.





e) Plug the throttle body back in and install the four bolts securing it to the intake manifold. Connect the idle air hose to the nipple.

f) Reinstall the three screws to secure the air box lid. Install the reducing couple onto the air box outlet tube. Secure the coupler using a #52 hose clamp as shown.



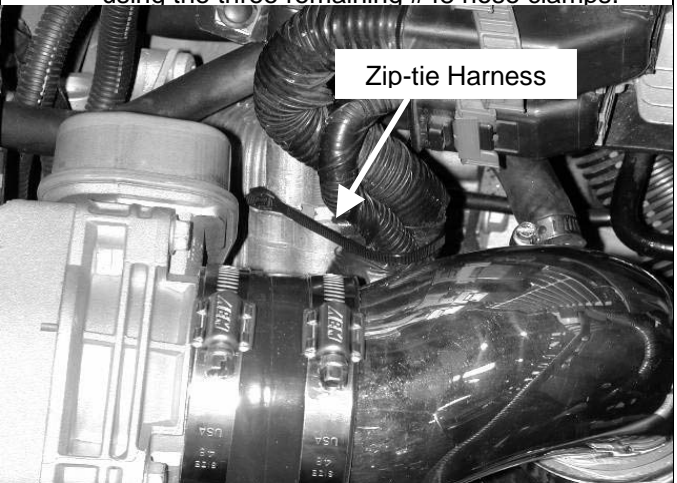
g) Using the supplied 1/2" hose, attach the hose to the stock plastic barb fitting on the previously removed breather hose. Secure using the supplied 3/4" hose clamps.



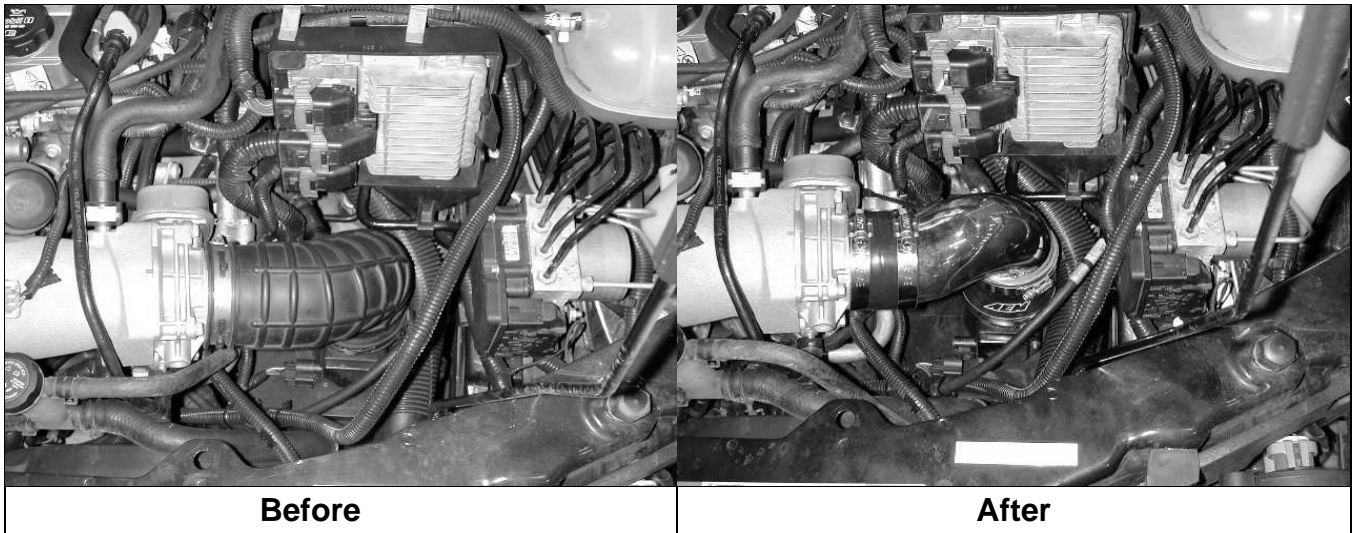
h) Install the supplied 3" straight coupler onto the intake pipe end opposite the nipple. Place the nipple side of the intake pipe into the reducer coupler installed in step 3f. Rotate the pipe around to align the 3" coupler with the throttle body. Slide the coupler over the throttle body and secure using the three remaining #48 hose clamps.



i) Install the 1/2" hose onto the AEM intake pipe nipple and secure with the 3/4" hose clamp.



j) reinstall the ECU and reconnect harness. Use the supplied zip tie to secure harness wires as shown.



#### **4) Re-assemble the vehicle**

- a) If Step 3d was performed, reconnect the coolant hose to the radiator and refill the radiator coolant. Again, be sure to follow the procedures set by the factory service manual.
- b) Inspect the engine bay for any loose tools and check that all fasteners that were moved or removed are properly tight.
- c) Reconnect the negative battery cable.
- d) Start the vehicle and check for proper operation of all the components that were removed.

**For Technical Inquiries  
E-Mail Us At  
[tech@aempower.com](mailto:tech@aempower.com)**