



Equipped with AEM® Dryflow™ Filter  
No Oil Required!

## INSTALLATION INSTRUCTIONS

### PART NUMBER: 21-448

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2005	CHEVROLET	Cavalier Ecotec	L4-2.2L	SEE * NOTE
2005	PONTIAC	Sunfire	L4-2.2L	C.A.R.B. E.O. # D-392-28
2003-2004	CHEVROLET	Cavalier Ecotec	L4-2.2L	C.A.R.B. E.O. # D-392-28
2003- 2004	PONTIAC	Sunfire Ecotec	L4-2.2L	C.A.R.B. E.O. # D-392-28

## PARTS LIST

Description	Qty.	Part Number
Air Filter Assy. 2.75 X 5" Dry Ele.	1	21-202DK
Inlet Pipe	1	2-586
Inlet Tube	1	9-448
Hose, Silicone 2.75x3/4"	1	5-275-3/4
Hose, Hump 2.75/2.75x3.00"	1	5-575
Hose; 5/8"ID X 10"L	1	5-7010
Hose; 1/4"ID X 30"L	1	5-6030
Mount, Rubber 5/8" X 6mm	2	1228598
Grommet, 1/4"	1	784637
Zip Tie, 6 Long	3	1-113
Neoprene, 1/16" X 6" X 4" Adhes.	1	8-121-4
Neoprene, 1/16" X 4" X 2" Adhes.	1	8-126-2
Plug, 3/8" Polyethelene	1	8-147
Connector, Plastic 1/4" Straight	2	8-124
Bolt, Hex M6-1 X 25mm	1	1-2044
Washer, 6mm Soft Mount	6	08160
Nut, M6 Hex Serrated	5	444.460.04
1/2" Bnd. Hose Clamp, 2.56"-3.50"	2	9448
Hose Clamp, 1"	2	99024.032
1/2" Bnd. Hose Clamp, 2.31-3.25"	2	9444

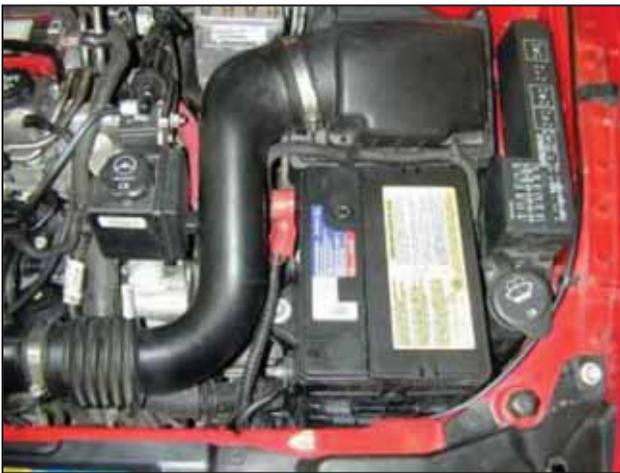
Read and understand these instructions **BEFORE** attempting to install this product. Failure to follow installation instructions and not using the provided hardware may damage the intake tube, throttle body and engine.

The AEM® intake system is a performance product that can be used safely during mild weather conditions. During harsh and inclement weather conditions, you must return your vehicle to stock OEM air box and intake tract configuration. Failure to follow these instructions will void your warranty.

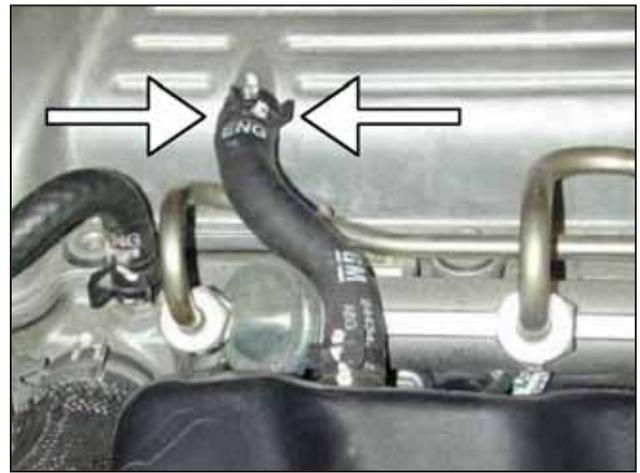
## 1. Preparing Vehicle

- a. Make sure vehicle is parked on level surface.
- b. Set parking brake.
- c. If engine has run in the past two hours, let it cool down.
- d. Disconnect negative battery terminal.
- e. Do not discard stock components after removal of the factory system.

## 2. Removal of stock system



a. Stock airbox system installed.



b. Pinch the spring clamp and pull the breather hose off of the valve cover.



c. Pull the vacuum hose off of the inlet pipe, if equipped. Pull the IAT sensor out of the pipe. Remove the rubber grommet and save for later use.



d. Release the hose clamp located at the throttle body.



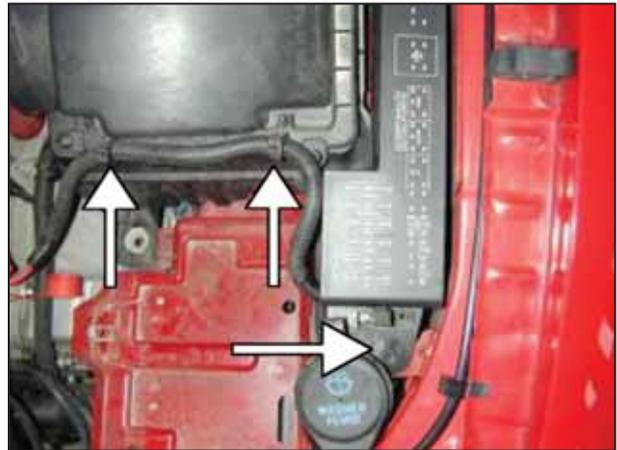
e. Release the hose clamp securing the inlet tube to the airbox.



f. Release the inlet tube from the throttle body and airbox, then remove the inlet tube from the engine bay.



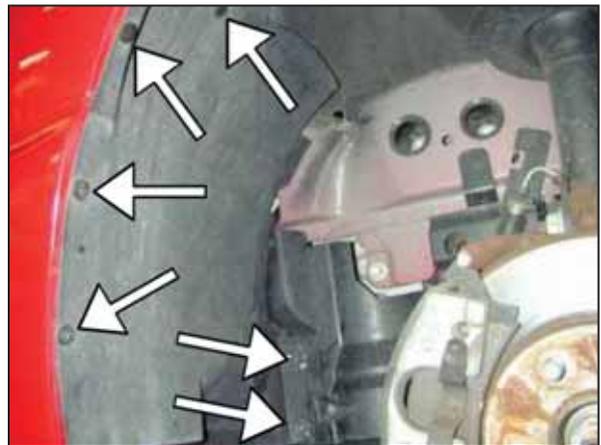
g. Loosen the battery hold down bolt and remove the battery.



h. Release the two wire ties on the airbox. Remove the fuse box fastener.



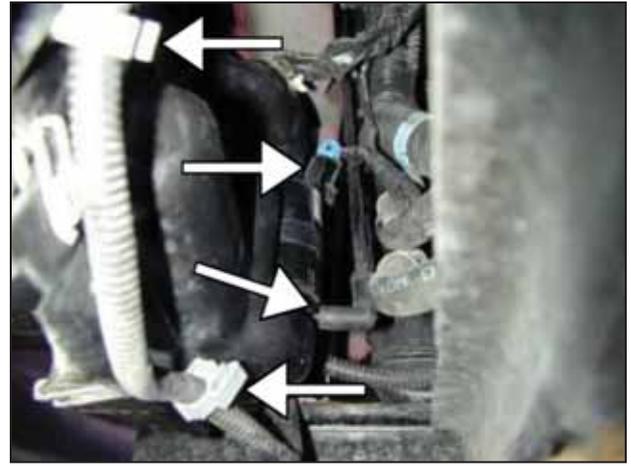
i. Remove the airbox from the vehicle.



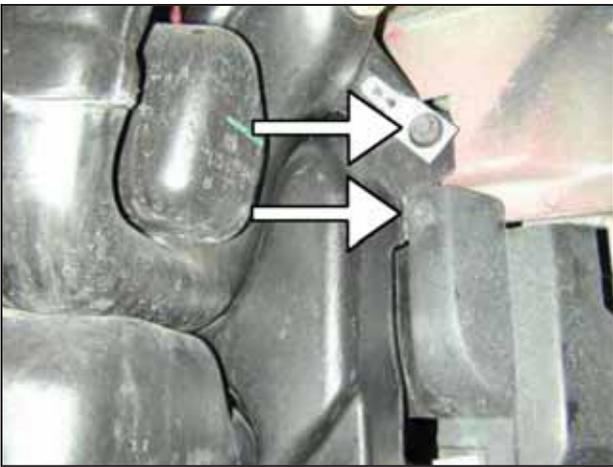
j. Raise the front of the vehicle with a jack. Refer to your owner's manual for proper jack and jack stand placement to properly support vehicle. Support your vehicle using properly rated jack stands before wheel removal or while working under the vehicle.  
**NEVER WORK UNDER A VEHICLE WITHOUT USING JACK STANDS.**  
Remove the driver side wheel. Remove the screws and plastic retainers securing the fender liner to the wheel well.



k. Remove the screws and plastic retainers that secure the lower fender liner.



l. Release the wire ties, unplug the washer motor and pull the hose from the washer motor. Be sure to capture the washer fluid in a clean container.



m. Remove the two screws inside the fender well that secure the washer bottle to the vehicle.



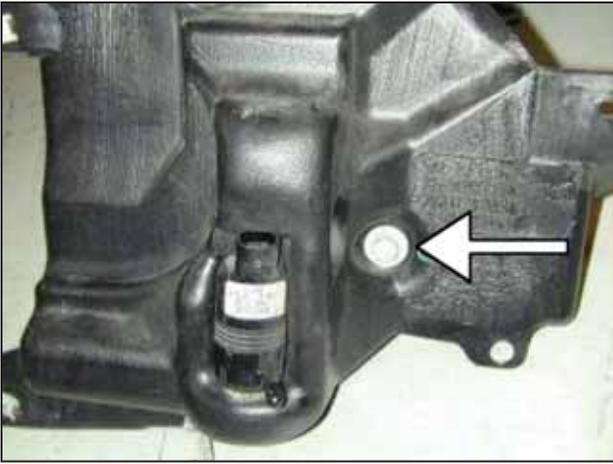
n. Near the front of the vehicle, locate the screw securing the washer bottle to the vehicle. Remove the screw.



o. Remove the screw that secures the washer bottle to the vehicle.



p. Release the snorkel from the vehicle by pulling it towards the outer fender.



q. Remove the washer bottle/airbox assembly from the vehicle. Release the bolt that secures the washer bottle to the lower airbox assembly. The washer bottle assembly will be reinstalled in a later step.



r. Secure the clutch reservoir to the wiring harness with the supplied zip tie as shown.  
**NOTE: It is highly recommended that the reservoir be secured with a AEM® clutch reservoir kit, part number 20-445.**

### 3. Installation of AEM® Intake System

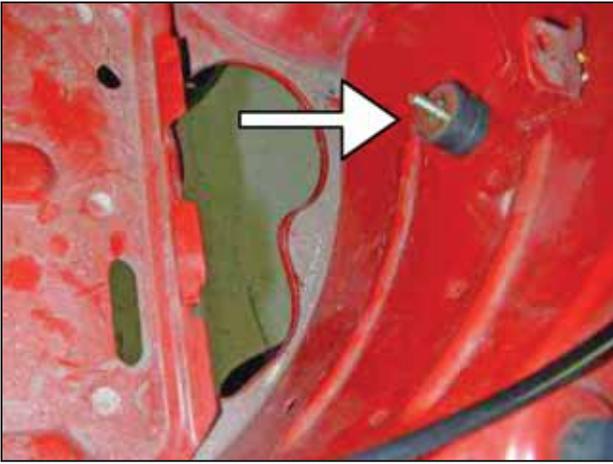
a. When installing the intake system, do not completely tighten the hose clamps or mounting hardware until instructed to do so.



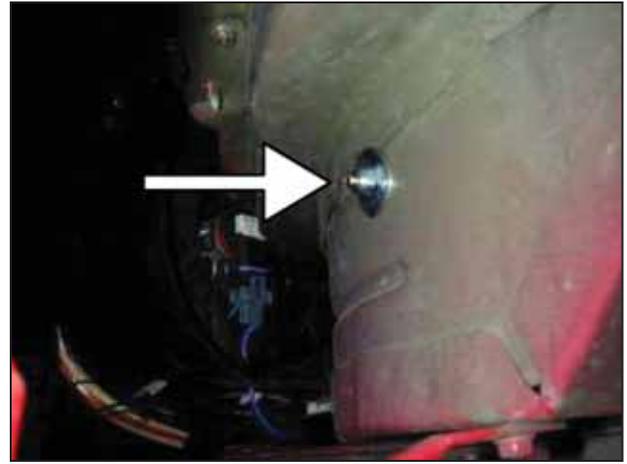
b. Insert the supplied plug into the hole near the long bracket on the intake pipe as shown.  
**NOTE: See Step "3x" for more information!**



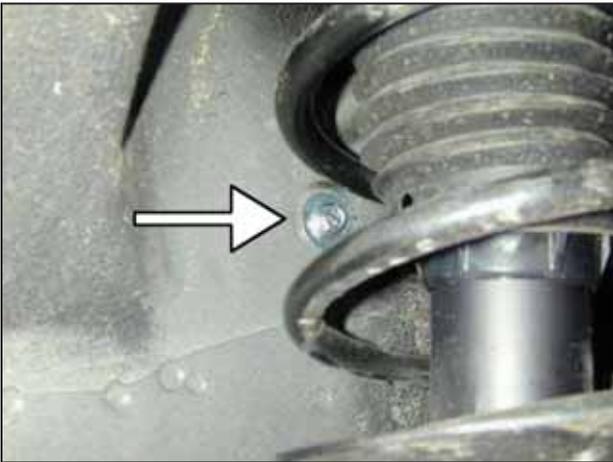
c. Apply the supplied 4" x 6" neoprene patch as shown.



d. Install the rubber mount from inside the engine bay as shown.



e. Secure the other end inside the fender with the supplied washer and lock nut.



f. Install the supplied bolt and washer through the hole in the fender well located near the strut tower. Secure the other side with a washer and lock nut.



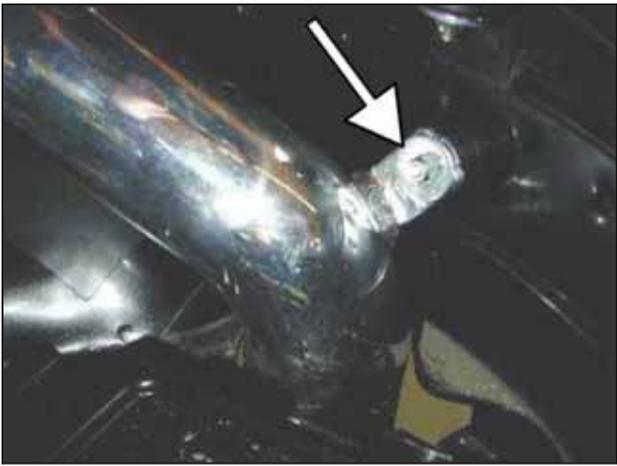
g. Place the intake pipe in engine bay as shown. Do not tighten any bolts or nuts.



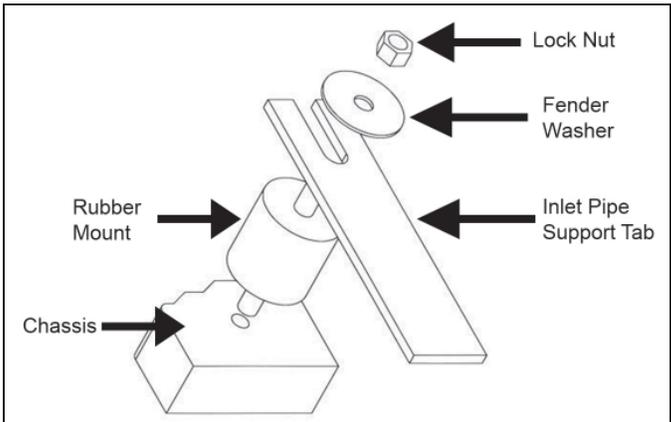
h. Affix the 2" x 4" neoprene patch to protect the intake pipe as shown. It may be easier to mark the pipe, remove it from the vehicle and then apply the patch.



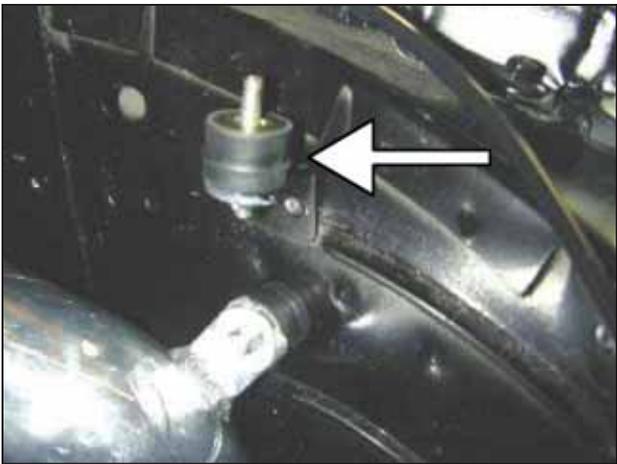
i. Ensure the neoprene patch protects the intake pipe from the fender metal.



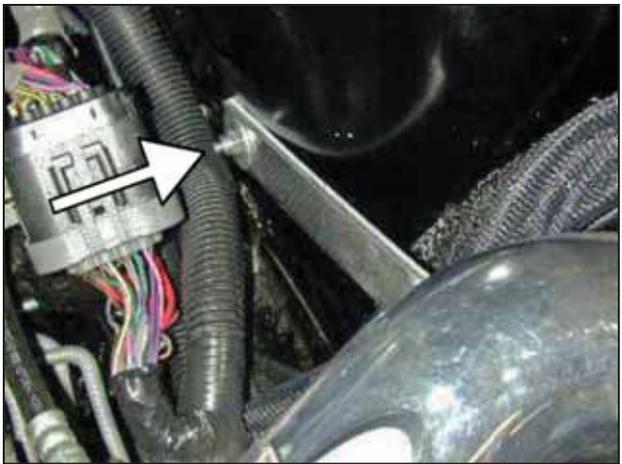
j. Secure the mounting tab of the intake pipe under the nut and washer as shown. Refer to the following diagram for proper rubber mount installation.



k. Proper installation of the rubber mount assembly.



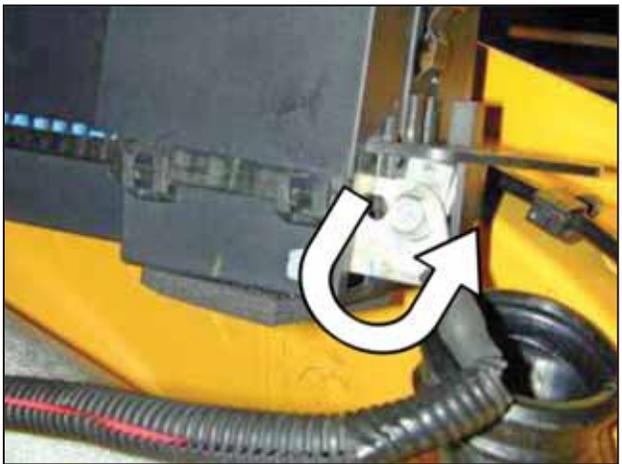
l. Install the second rubber mount to the fuse box tab.



m. Slide the intake pipe's bracket under the nut and washer of the assembly that was installed in step 3f.



n. Secure the fuse block to the rubber mount with a lock nut and washer. Confirm that all wires are routed correctly.



o. Loosen the bolt securing the positive lead on the fuse block. Rotate the wire counter-clockwise as shown.  
**NOTE: After the fuse block installation, check and ensure that the lead does not contact the intake pipe.**



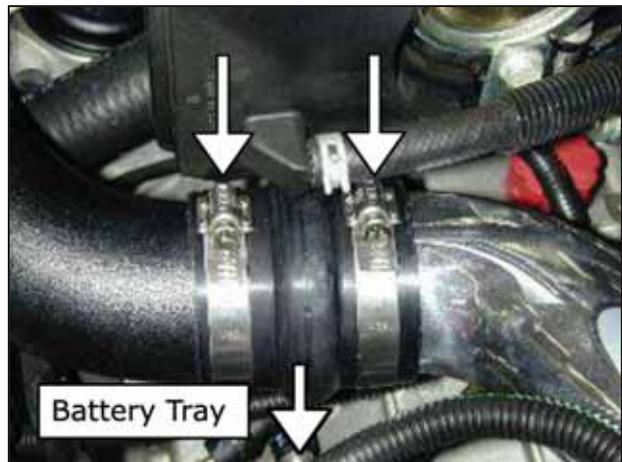
p. Install the hump hose onto the end of the intake pipe. Do not tighten the hose clamps.



q. Install the short  $\frac{3}{4}$ " gasket hose onto the throttle body.



r. Install the stock grommet into the hole of the intake pipe. Place the end of the pipe over the throttle body.



s. Mate the two pipes together using the supplied hump hose. Orient the hose clamp screws so they do not contact the battery and are still accessible.



t. Install the IAT sensor in the intake pipe.



u. Install the supplied breather hose as shown.



v. Place the air filter onto the end of the intake pipe and secure.



w. Replace the battery. Reinstall the washer bottle without the lower airbox assembly.



x. If your vehicle has a nipple on the stock throttle body airbox, replace the plug installed on the intake pipe in step "3b." with the supplied 1/4" grommet.



y. Insert the two supplied barbed fittings into the ends of the supplied 1/4" hose. Plug the lower end of the factory fuel pressure regulator hard line into one of the barbed fittings. Zip tie the barbed fitting onto the wiring harness with the supplied zip tie.



z. Route the 1/4" hose to the rear of the aluminum pipe under the brake master cylinder. Zip tie the 1/4" hose to the power steering hose, as shown.



aa. Insert the second barbed fitting into the grommet of the intake pipe.

#### 4. Reassemble Vehicle

- a. **Washer Bottle:** Fill the washer bottle with the windshield washer fluid that was drained in step 2l.
- b. **Fender liner:** Install the fender liner and any hardware that was removed in steps 2j through 2k.  
**NOTE: Failure to install the fender liner will result in diminished performance and increase the potential for engine damage due to water ingestion in rainy conditions.**
- c. **Wheel:** Install the driver side wheel using the factory torque specification (see owner's manual).
- d. Position the inlet pipes for the best fitment. Be sure that the pipes or any other components do not contact any part of the vehicle. Tighten the rubber mount, all bolts, and hose clamps.
- e. Check for proper hood clearance. Re-adjust pipes if necessary and re-tighten them.
- f. Inspect the engine bay for any loose tools and check that all fasteners that were moved or removed are properly tightened.
- g. Reconnect negative battery terminal and start engine. Let the vehicle idle for 3 minutes. Perform a final inspection before driving the vehicle.

#### 5. CARB Sticker Placement

- a. The C.A.R.B. exemption sticker, (attached), must be visible under the hood so that an emissions inspector can see it when the vehicle is required to be tested for emissions. California requires testing every two years, other states may vary.

#### 6. Service and Maintenance

- a. It is recommended that you service your AEM® Dryflow™ filter every 20,000 miles for optimum performance. Use AEM Dryflow cleaning kit part # 21-110.
- b. Use aluminum polish to clean your polished AEM® intake tube.
- c. Use window cleaner to clean your powder coated AEM® intake tube. **(NOTE: DO NOT USE aluminum polish on powder coated AEM intake tubes).**