



Equipped with AEM® Dryflow™ Filter  
No Oil Required!

## **INSTALLATION INSTRUCTIONS**

**PART NUMBER:**

**21-491B (Blue Finish)**

**21-491C (Gun Metal Grey Finish)**

**21-491P (Vacuum Metalized Chrome-VMC)**

**21-491R (Red Finish)**

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2005-2008 MAZDA 6 L4-2.3L C.A.R.B. E.O. # D-670-15

Excludes 2005 MY LEV II SULEV 5TKXV02.3NG1, 2006 MY LEV II SULEV 6TKXV02.3NG2, 2007 MY LEV II SULEV 7TKXV02.3NH1, 2008 MY LEV II SULEV 8TKXV02.3NH2 model year vehicles

AEM® bypass valves are not compatible with this intake system (part number 21-491)  
DO NOT attempt to install an AEM bypass valve on this intake system!

Some intake systems are not legal for sale or use on any pollution controlled motor vehicle in California or states adopting CA emission procedures. See [AEMIntakes.com](http://AEMIntakes.com) for CARB status on each part for a specific vehicle.

## PARTS LIST

| Description                          | Qty. | Part Number |
|--------------------------------------|------|-------------|
| Element Parts Kit 2.75 X 5" Dry Ele. | 1    | 21-202DK    |
| Inlet Pipe                           | 1    | 2-414       |
| Hose, Silicone 2.75x3" Blk.          | 1    | 5-275       |
| Decal, Vacuum Hose                   | 1    | 10-920      |
| Mount, Rubber 1" X 8mm               | 1    | 1228560     |
| Zip Tie, 6 Long                      | 1    | 1-113       |
| Zip Tie, 8" Tree Push-Mnt.           | 1    | 1-127       |
| Vacuum Cap, 1/4                      | 1    | 8-131       |
| Bolt, Socket 8-32 X 5/16 SS          | 2    | 1-2023      |
| Washer, 8mm Soft Mount               | 1    | 559960      |
| Washer, 6mm Soft Mount               | 1    | 08160       |
| Nut, M8 Hex Serrated                 | 1    | 444.460.08  |
| 1/2" Bnd. Hose Clamp, 2.31-3.25"     | 2    | 9444        |
| 1/2" Bnd. Hose Clamp, 2.56"-3.50"    | 1    | 9448        |

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

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

## 2. Removal of stock system



a. Factory air box system installed.



b. **NOTE: 2007-2008 model year vehicles do not have vacuum solenoid. Proceed to step c.**

Release the green plug on the vacuum solenoid located next to the air box.



c. Unplug the MAF sensor from the wiring harness. Unclip the wiring harness from the back of the air filter housing.



d. **NOTE: 2007-2008 model year vehicles do not have vacuum solenoid. Proceed to step e.**

Pull the vacuum hose off of the air box nipple.



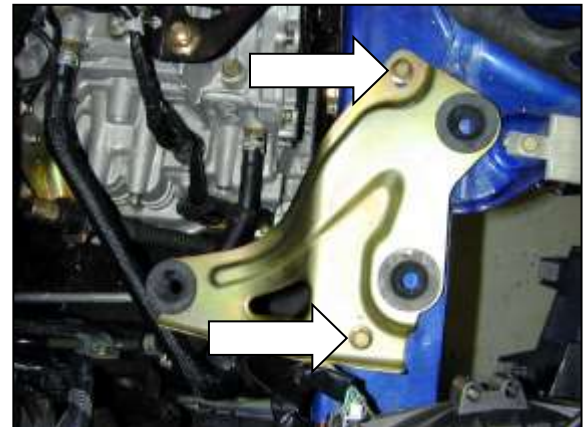
e. Remove the plastic crankcase breather hose by pinching the blue connector and pulling on the hose.



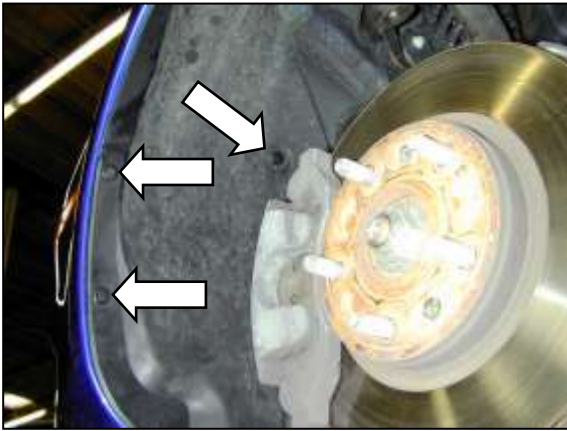
g. Gently pull the air filter housing up and out of the engine bay.



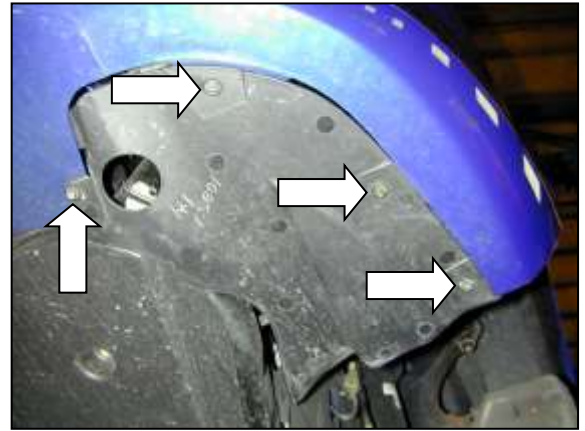
f. Loosen the hose clamp at the throttle body. Unhook the hoses from the bottom of the inlet hose. Pull the inlet hose off of the throttle body.



h. Remove the air filter housing mount by removing the two bolts securing it to the chassis.



i. 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 front driver side wheel. Release the three plastic rivets securing the fender liner.



j. Remove the four screws on the bottom of the fender liner.



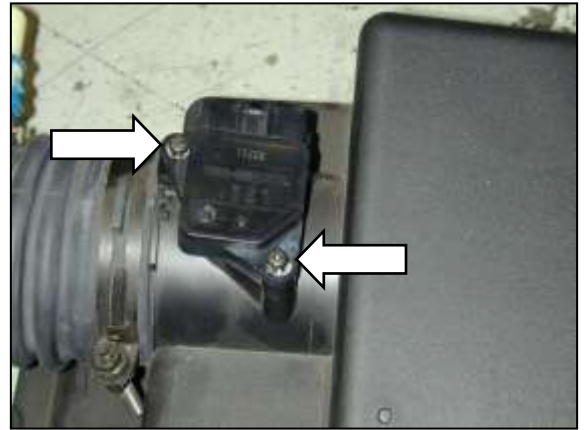
k. Move the fender liner so the lower resonator becomes accessible.



l. Remove the three nuts that secure the lower resonator to the chassis.



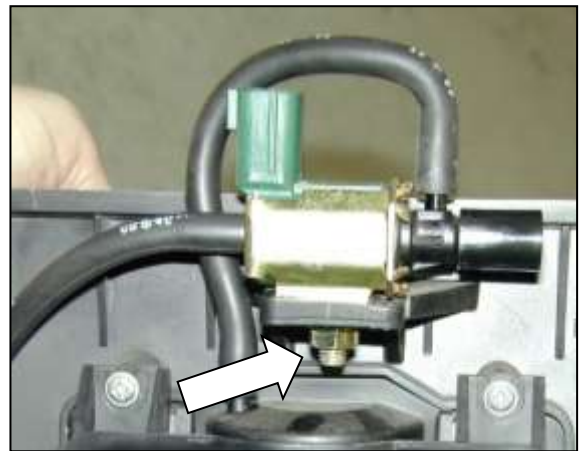
m. Remove the lower resonator.



n. Remove the stock MAF sensor from the air filter housing. Be careful not to damage the MAF sensor.



o. Carefully remove the blue plastic clip from the stock intake hose nipple. This can be done by gently prying the two tabs up and over the retaining ring with a small object such as a paperclip



p. **NOTE: 2007-2008 models do not have vacuum solenoid. Proceed to step q.** Remove all the vacuum lines connected to the vacuum solenoid on the air filter housing. Remove the vacuum solenoid from the air filter housing by removing the nut securing it.



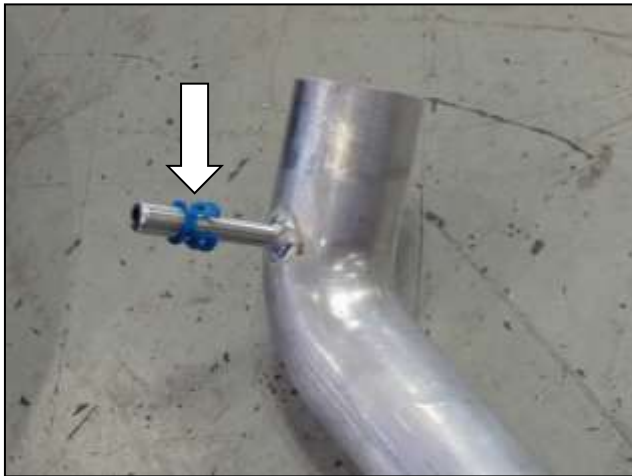
q. **NOTE: 2007-2008 models do not have vacuum solenoid. Proceed to step r.** Pull the vacuum hose off of the nipple on the intake manifold as shown.



r. Factory air box system removed

### 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. Install the plastic breather hose clip onto the AEM® intake pipe.



c. Install the previously removed MAF sensor into the inlet pipe using the two supplied bolts.



d. Install the supplied tree mount zip-tie into the bracket with the 1/4" hole on the pipe.



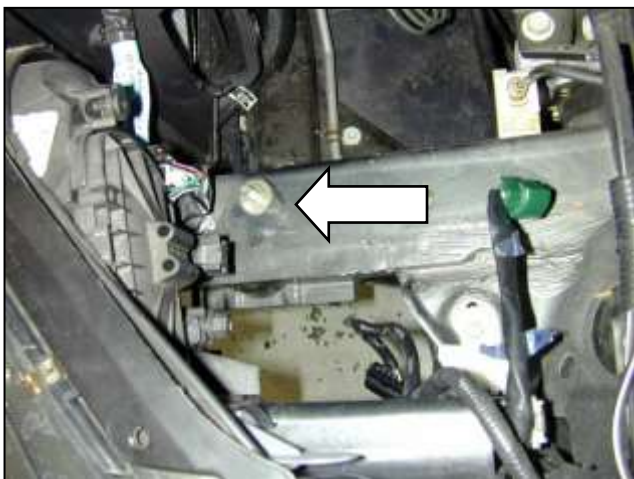
e. **NOTE: 2007-2008 models do not have vacuum solenoid. Proceed to step 3g.**  
Attach the vacuum solenoid to the intake pipe using the supplied flat washer and the previously removed nut.



f. Cover the open nipple exposed during step 2q with the supplied vacuum cap.



g. Attach the silicone coupler to the throttle body using the supplied #44 hose clamp.



h. Install the supplied rubber mount into the front threaded hole where the air filter housing mount was secured.



i. Check that the inside of the AEM® upper intake pipe is free and clear of any debris. Slide the pipe into the hole where the lower resonator was located and align the mounting bracket with the rubber mount previously installed in step 3h.



j. Slide the pipe into the silicone coupler on the throttle body and secure using a #44 hose clamp.



k. Secure the pipe bracket to the rubber mount using a flat washer and 8mm nut.



l. Route the MAF sensor harness through the hole where inlet pipe is located. From underneath the vehicle, plug the MAF harness into the MAF sensor mounted on the inlet pipe.



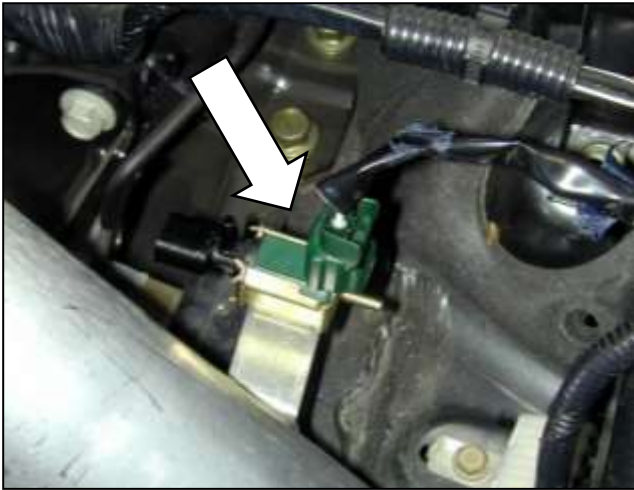
m. Secure the headlight wiring harness to the inlet pipe using the previously installed tree mount zip-tie. Secure the MAF harness to the headlight harness with the other zip-tie.



n. Install the AEM<sup>®</sup> air filter on to the end of the inlet tube. Push the air filter over the inlet pipe until the stop in the air filter is reached. Install and fully tighten one #48 hose clamp to secure.



o. Plug the plastic breather hose onto the nipple on the intake pipe.



p. **NOTE: 2007-2008 models do not have vacuum solenoid. Proceed to step 4.**  
Plug in the vacuum solenoid harness.



Factory air box system installed



AEM® intake system installed

#### 4. Reassemble Vehicle

- a. **Fender liner:** Install the fender liner and any hardware that was removed in steps 2i 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.**
- b. **Wheel:** Install the driver's side wheel using the factory torque specification (see owner's manual).
- c. 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.
- d. Check for proper hood clearance. Re-adjust pipes if necessary and re-tighten them.
- e. Inspect the engine bay for any loose tools and check that all fasteners that were moved or removed are properly tightened.
- f. Reconnect negative battery terminals and start engine. Let the vehicle idle for 3 minutes. Perform a final inspection before driving the vehicle.
- g. Please note that AEM® bypass valves will not work with this application (part number 21-491). The use of a bypass valve could have adverse effects on the performance of the system.

## 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<sup>®</sup> 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<sup>®</sup> intake tube.
- c. Use window cleaner to clean your powder coated AEM<sup>®</sup> intake tube. **(NOTE: DO NOT USE aluminum polish on powder coated AEM intake tubes).**

For technical inquiries  
e-mail us at  
sales@aemintakes.com  
or  
call us at  
800.992.3000

### AEM Air Intake System Warranty Policy

AEM<sup>®</sup> warrants that its intake systems will last for the life of your vehicle. AEM will not honor this warranty due to mechanical damage (i.e. improper installation or fitment), damage from misuse, accidents or flying debris. AEM will not warrant its powder coating if the finish has been cleaned with a hydrocarbon-based solvent. The powder coating should only be cleaned with a mild soap and water solution. Proof of purchase of both the vehicle and AEM intake system is required for redemption of a warranty claim.

This warranty is limited to the repair or replacement of the AEM part. In no event shall this warranty exceed the original purchase price of the AEM part nor shall AEM be responsible for special, incidental or consequential damages or cost incurred due to the failure of this product. Warranty claims to AEM must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser of product and is nontransferable. Improper use or installation, use for racing, accident, abuse, unauthorized repairs or alterations voids this warranty. AEM disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by AEM. Warranty returns will only be accepted by AEM when accompanied by a valid Return Merchandise Authorization (RMA) number. Credit for defective products will be issued pending inspection. Product must be received by AEM within 30 days of the date RMA is issued.

If you have a warranty issue, please call (800) 992-3000 and our customer service department will assist you. A proof of purchase is required for all AEM warranty claims.

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