



SHORT RAM SYSTEM

Installation Instructions

Kit Part Numbers:

22-400, 22-401, 22-402, 22-403, 22-404,
22-405, 22-406, 22-407, 22-408, 22-411,
22-413, 22-415, 22-416, 22-417, 22-430

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Instructions Part Number: 10-224

Check for C.A.R.B. E.O. #'s at last page of instructions

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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 particular 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 air mass flow to the engine is increased because of the increased airflow and reduced inlet temperature, which translates to more power.

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

Note: The asterisks denote special instructions for specific cars. Reference the end of the instruction manual for the list of cars that these instructions pertain to.

1) Getting started

- a) Make sure vehicle is parked on a level surface.
- b) Set parking brake.
- c) Disconnect negative battery terminal.
- d) If engine has run within the past two hours let it cool down.

2) Removing the stock air inlet system

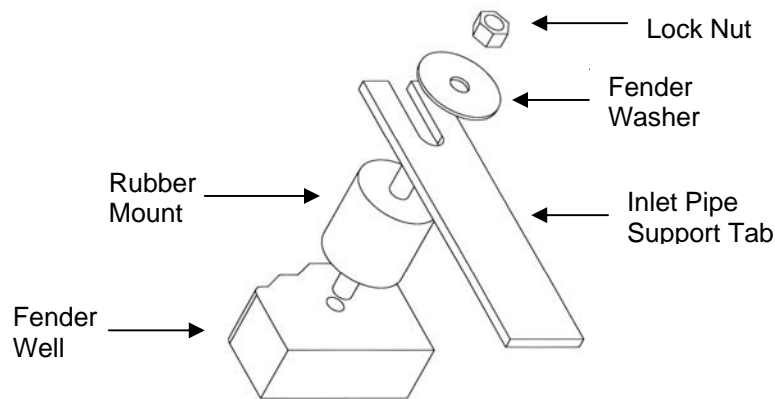
- a) Disconnect breather hose and any vacuum lines (if they are present) from the air inlet tube.
- b) * Drain about 1 gallon of coolant from the cooling system. **CAUTION: Be sure that the vehicle is completely cooled off before attempting this procedure. Not allowing the vehicle to cool off could result in serious burns.** Disconnect the water bypass hose from throttle body or the fast idle thermo valve, where equipped, located at the lower portion of the throttle body. Disconnect the opposite side of the water bypass hose, which runs to either the intake manifold or the water outlet neck. Remove the entire water bypass hose and breather hose assembly from the vehicle. Remove the entire water bypass hose and breather hose assembly from the vehicle. Disconnect the intake air bypass control valve hose where applicable.
- c) Loosen and remove the air inlet tube from the throttle body.
- d) Loosen and remove the stock air box from the vehicle. **Note: It is not necessary to remove the stock resonator from inside the fenderwell.**

3) Installing the Short Ram Air Intake System

- a) Check to see that the inside of the **AEM** inlet pipe and air filter are clean and free from any obstructions.
- b) ** Some applications use an Inlet Air Temperature (IAT) sensor. If your application uses this sensor, then one of the rubber grommets that are included in the kit must be installed in the pipe.

Install the ½" I.D. rubber grommet into the corresponding hole. Be sure that it is fully seated so as to prevent an air leak.

- c) *** Some applications use vacuum lines that are connected to the stock air inlet pipe. If this is the case in your application, then the smallest of the rubber grommets must be installed into the pipe. Be sure that these are properly seated so as to avoid an air leak.
- d) **** Some applications retain the O.E. PCV breather pipe. If the O.E. PCV pipe lines up with a hole then install the 3/8" I.D. grommet into the hole. If the O.E. PCV pipe lines up with a nipple then move to the next step.
- e) Install one black connector hose on the throttle body end of the inlet pipe. That is the end closer to the breather nipple, or the end that is closest to the hole for the IAT sensor.
- f) Install two hose clamps on the connector hose and just snug them down on the hose.
- g) Slide the throttle body end of the inlet pipe onto the throttle body.
- h) Gently tighten the hose clamps so that the pipe can still be rotated.
- i) Some applications have a support tab that is welded onto the inlet pipe. If your application does not have a support tab then skip this step.
 - i) The support tab on the inlet pipe will line up with a threaded hole on the inner fender well. Install the rubber isolator mount and attach the air inlet tube onto the rubber mount. Install the large fender washer and the lock nut onto the isolator mount stud and snug it down. **Failure to install the rubber mount will void all warranties of the Cold Air System.** Below is a diagram of how the rubber mount should be installed.



- j) Install the air filter.
 - i) Install the **AEM** filter on to the end of the inlet tube. Push the filter on around 2 inches over the inlet pipe and install one hose clamp to secure the filter on to the inlet pipe. Once fitment is checked, you can either push the filter on to the inlet pipe more or less depending on clearances. Tighten the hose clamp after this is done.
- k) * Connect the breather hose between the valve cover and the inlet pipe using the breather hose and two clamps supplied with the kit. Connect the new supplied water bypass hose and clamps to the throttle body or the fast idle thermo valve, where equipped, and either the intake manifold or the water outlet neck disconnected earlier.
- l) ***** Connect breather hose between valve cover and the inlet pipe using the breather hose and two clamps supplied. Connect the Intake air bypass control valve hose to the exposed nipple on the pipe where applicable.
- m) ** Install the IAT sensor into the grommet that it lines up with.
- n) *** Install the short plastic connector fitting into the stock vacuum lines. Then slide the other end of the fitting into the grommet that it lines up with. Make sure that it will not leak.
- o) **** If your O.E. PCV breather pipe lines up with a grommet then slide the pipe into the grommet. If your O.E. PCV breather pipe lines up with a nipple then install the 2" long breather hose included in the kit, and secure it with the hose clamps supplied in the kit.

Note: 92-95 Civic EX/DX and 96-98 Civic EX models there will be an extra vacuum nipple on the air intake pipe. These particular models require that a 3/8" vacuum cap be installed onto this extra vacuum nipple. On 99-00 Civic EX models, the Fuel Injection Air control valve line should be connected to this vacuum nipple. 92-95 Civic EX/DX require that a rubber plug be installed into the pipe. It should be installed into the hole that is nearest to the air filter.

- p) Adjust the inlet pipe and air filter to get the best possible fit.
 - i) Be sure that the rubber mount is not stressed in any way that may lead to premature failure.
 - ii) Be sure to leave ample clearance between the filter and any surrounding components.
- q) Tighten all remaining hose clamps.
- r) * Replace coolant that was removed earlier.
- s) Start engine and perform a final inspection before driving the vehicle.

Note: Some 90-97 Honda Accords, and 92-01 Honda Preludes have an intake air resonator valve located within the O.E. resonator box. Since this part of the O.E. air intake system is not being reused upon the installation of the AEM Short Ram System, the vacuum line running from it to the intake manifold must be removed and plugged using the vacuum cap included. Simply follow the vacuum line from the resonator box to the intake manifold. Disconnect the vacuum line from the intake manifold and then install the rubber plug.

Note: On 98-02 Accord V6, and 01-03 CL models a nylon loom clamp is supplied in the kit to hold the cruise control wire. The cruise control wire is originally clamped onto the stock airbox. Since this part is removed, the nylon loom clamp must be installed to hold the cruise control wire. Wrap the clamp around the cruise control wire and fasten onto the battery hold-down using the 6mm nylock nut supplied in the kit. Also, when installing the rubber mount, the support tab will line up with a bolt on the inner fenderwell. Remove this bolt and install the rubber mount into this hole.

Note: On 98-02 Accord V6, and 01-03 CL the hose clamps used to connect the throttle body and the connector is as follows.

Accord - Install the 2.50" hose clamp on the connector hose and loosely tighten. Install a 2.75" hose clamp onto the other end of the connector hose.

3.2TL – Install the 2.75" hose clamp on the connector hose and loosely tighten. Install a 2.75" hose clamp onto the other end of the connector hose.

Note: On 98-02 Honda Accord 4 Cylinder models the adjustment of the pipe is especially critical. There is an air conditioning line that is in close proximity to the inlet air pipe. Upon installation of the inlet pipe, check the clearance between the inlet pipe and the air conditioning line. If there is not at least 3/4" clearance between the two components, then the following procedure must be followed.

1. Follow the air conditioning line towards the front of the vehicle. Behind the radiator there will be a mounting bracket for the line. Remove the bolt that connects the line to this bracket. Bend the air conditioning line bracket underneath the mounting bracket, and install the bolt from the bottom side of the bracket. By doing this the clearance between the pipe and the line is increased.
2. If there still isn't 3/4" clearance between the pipe and the air conditioning line, then apply gentle pressure to the top of the air conditioning line at the point of contact of the two components. Bend the air conditioning line so that there is at least 3/4" clearance between the pipe and the line. The air conditioning line is made of a soft alloy of aluminum, therefore you should not have to apply a great force in order to bend it. Care must be taken so as not to put a crease in the line while bending it.
3. Install the 5/8" hose over the A/C line at the point of contact between the air inlet pipe and the A/C line. Secure the hose with two zip ties.

Note: On 99-00 Honda Civic SI models the adjustment of the inlet pipe is especially critical. Be sure to check for hood clearance before closing the hood. If more hood clearance is required, simply rotate the pipe until the desired amount of hood clearance is achieved.

- * 94-00 Acura Integra GSR, 88-91 Honda Civic/CRX, 94-97 Accord, 96-00 Honda Civic DX
90-93 Acura Integra, 92-96 Honda Prelude
- ** 96-00 Honda Civic
- *** 90-93 Honda Accord, 94-95 Honda Accord, 90-93 Acura Integra
- **** 92-95 Honda Civic, 93-97 Civic Del Sol S/SI, 94-95 Civic Del Sol VTEC, 96-00 Honda Civic EX, 99-00 Civic SI, 97-01 Honda Prelude, 98-01 Honda Accord, 94-00 Acura Integra non-VTEC, 90-93 Honda Accord, 01-03 CL 3.2L
- ***** 95-99 Mitsubishi Eclipse

C.A.R.B. E.O. #'s and Applications

- 22-400 1988-1991 Honda Civic D16A6 C.A.R.B. E.O. #D-392-6
- 22-400 1988-1991 Honda Civic CRX D16A6 C.A.R.B. E.O. #D-392-6
- 22-401 1992-1995 Honda Civic DX/LX/EX/SI D15B7 & D16Z6 C.A.R.B. E.O. #D-392-6
- 22-401 1994-1997 Honda Civic Del Sol D15B7, D16Z6 & D16Y8 C.A.R.B. E.O. #D-392-6
- 22-401 1996-1999 Honda Civic EX D16Y8 C.A.R.B. E.O. #D-392-6
- 22-401 2000 Honda Civic EX D16Y8 C.A.R.B. E.O. #D-392-11
- 22-402 1990-1993 Acura Integra B18A1 C.A.R.B. E.O. #D-392-6
- 22-403 1994-1998 Acura Integra Exc. GSR & Type-R B18B1 C.A.R.B. E.O. #D-392-6
- 22-403 1999-2000 Acura Integra Exc. GSR & Type-R B18B1 C.A.R.B. E.O. #D-392-11
- 22-403 2001 Acura Integra Exc. GSR & Type-R B18B1 C.A.R.B. E.O. #D-392-12
- 22-404 1994-1998 Acura Integra GSR B18C1 C.A.R.B. E.O. #D-392-6
- 22-404 1999-2000 Acura Integra GSR B18C1 C.A.R.B. E.O. #D-392-11
- 22-404 2001 Acura Integra GSR B18C1 C.A.R.B. E.O. #D-392-12
- 22-405 1992-1996 Honda Prelude S, SI, VTEC F22A1, H22A1, & H23A1 C.A.R.B. E.O. #D-392-6
- 22-406 1997-1998 Honda Prelude H22A4 C.A.R.B. E.O. #D-392-6
- 22-406 1999-2001 Honda Prelude H22A4 C.A.R.B. E.O. #D-392-11
- 22-407 1990-1993 Honda Accord F22A1, F22A4, & F22A6 C.A.R.B. E.O. #D-392-6
- 22-408 1994-1997 Honda Accord F22B1 & F22B2 C.A.R.B. E.O. #D-392-6
- 22-411 1994-1995 Honda Civic Del Sol VTEC B16A3 C.A.R.B. E.O. #D-392-6
- 22-413 1996-1998 Honda Civic CX/DX/LX D16Y7 C.A.R.B. E.O. #D-392-6
- 22-413 1999-2000 Honda Civic CX/DX/LX D16Y7 C.A.R.B. E.O. #D-392-11
- 22-415 1998-1999 Honda Accord F23A1, F23A4, & F23A5 C.A.R.B. E.O. #D-392-11
- 22-415 2000-2001 Honda Accord F23A1, F23A4, & F23A5 C.A.R.B. E.O. #D-392-11 & D-392-21
- 22-415 2002 Honda Accord F23A1, F23A4, & F23A5 C.A.R.B. E.O. #D-392-18 & D-392-21
- 22-416 2001 Acura CL 3.2L J32A1 C.A.R.B. E.O. #D-392-11
- 22-416 2002-2003 Acura CL 3.2L J32A1 C.A.R.B. E.O. #D-392-18
- 22-416 1998-1999 Honda Accord J30A1 C.A.R.B. E.O. #D-392-6
- 22-416 2000-2001 Honda Accord J30A1 C.A.R.B. E.O. #D-392-11
- 22-416 2002 Honda Accord J30A1 C.A.R.B. E.O. #D-392-18
- 22-417 1999 Honda Civic SI B16A2 C.A.R.B. E.O. #D-392-6
- 22-417 2000 Honda Civic SI B16A2 C.A.R.B. E.O. #D-392-11
- 22-430 1995-1997 Mitsubishi Eclipse 2.0L Non-Turbo C.A.R.B. E.O. #D-392-6
- 22-430 1998-1999 Mitsubishi Eclipse 2.0L Non-Turbo C.A.R.B. E.O. #D-392-11

Excludes 2001 MY LEV II SULEV 1HNXV02.3BF9 & 2002 MY LEV II SULEV 2HNXV02.3FK6

Addendum

22-405: Some Prelude's are equipped with a starting air valve. There is a vacuum line that runs from the starting air valve to the air inlet pipe. During the installation of the **AEM** Cold Air System or the **AEM** Short Ram System, this vacuum line should be removed. Install a vacuum foam filter onto the exposed nipple of the starting air valve.

22-408: Some models are equipped with a Fuel Injection Air (FIA) Control system. If your model is so equipped it will have a vacuum line that runs from the FIA Control valve to the air inlet pipe. During installation of the **AEM** Cold Air System or the **AEM** Short Ram System, this vacuum line should be removed. Install a vacuum foam filter onto the exposed nipple of the FIA Control valve.

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