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AEM

AIR BYPASS VALVE

Installation Instructions:

20-400s, 20-401s, 20-402s & 20-403s



WARNING:

This installation is not for the mechanically challenged! If you are not mechanically inclined or do not understand the procedure please do not attempt the installation, and refer the installation to a reputable mechanic.

This installation requires metal cutting and fabrication skills and tools. If you do not have the proper tools or experience then refer the installation to a reputable mechanic.

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Instructions Part Number: 10-260

C.A.R.B. E.O. #D-392-22

Bypass Valves that are pending CARB approval are illegal in California except on racing vehicles which may never be used on public highways.

Refer to the last page of the instructions for a list of approved applications

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The AEM air bypass valve is **ONLY** compatible with genuine AEM intake systems. You must ensure that the valve is installed in the correct location for your vehicle and that the rubber soft mount that was originally supplied with the AEM intake is properly installed. The structural integrity of the valve depends on correct installation. Use of the AEM Air Bypass Valve in conjunction with any other system is neither recommended nor warranted and may result in, among other things, malfunction of the AEM Air Bypass Valve.

The AEM Air Bypass Valve is **NOT TO BE USED ON TURBO or SUPERCHARGED** engines. Use of the AEM bypass valve on engines with these modifications, will void any warranty of the valve and reduce the performance of the vehicle.

The AEM Air Bypass Valve can be used in nitrous applications where the fogger nozzle is installed in the intake pipe only when the nozzle is installed in between the bypass valve and the throttle body.

AEM has developed an Air Bypass Valve for its Cold Air Induction Systems. This valve installs on the intake pipe along the same axis as the throttle body and eliminates the chance of water ingestion should the filter element become wet from rain, hail, sleet, snow, flood or any other scenario where the filter element could encounter or become completely submerged in water. The Air Bypass Valve is designed to open when the filter element becomes completely submerged in water thereby preventing terminal engine damage. The Air Bypass Valve is available in three sizes to fit every AEM intake system diameter. It's crafted from mineral reinforced polycarbonate, which has outstanding corrosion resistance properties. The AEM Air Bypass Valve is manufactured and assembled in the U.S.A. and is patent pending.

There is a foam filter around the bypass valve. **Do not remove it.** This filter is required for proper operation of the valve while it is active.

The foam spring inside the diaphragm provides the proper tension for the valve diaphragm. **Do not remove this foam spring.**

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

If you are installing a Cold Air System (CAS) and an Air Bypass Valve onto a vehicle that has never had a CAS installed on it before then **DO NOT** cut the inlet pipe until a mounting location for the Air Bypass Valve has been determined. This requires that the CAS be installed first in order to determine a good mounting location for the Air Bypass Valve.

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.
- e) Jack up vehicle and support it with properly rated jack stands.
- f) Determine a good mounting location for the Air Bypass Valve.

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- i) Do not mount the bypass valve between the throttle body and pipe because the vehicle performance will suffer. Additionally, the valve will break at the seam due to high shear forces from engine rocking.
 - ii) On engines that have an air flow meter, do **NOT** install the bypass valve between the throttle body and the air flow meter.
 - iii) Try to position the Air Bypass Valve as high as possible on the pipe.
 - iv) Position the Air Bypass Valve on a straight section of the inlet pipe.
 - v) Make sure that there is at least 1" of clearance around the circumference of the Air Bypass Valve. For 2^{1/2}" diameter inlet pipes there should be at least 2^{1/4}" of clearance from the outside edge of the pipe. For 2^{3/4}" diameter inlet pipes there should be at least 2^{1/8}" of clearance from the outside edge of the pipe. For 3" diameter inlet pipes there should be at least 2" of clearance from the outside edge of the pipe.
 - vi) On the later Neon engines with an AEM Cold Air Intake there is a small section of straight tubing after the throttle body **DO NOT** install the bypass valve in this section of piping.
- g) Cut the template from the end of these instructions and wrap it around the pipe at the point where the Air Bypass Valve is going to be located. Use clear tape to hold the paper on the pipe. The template is used as a guide for when you cut the pipe.

2) Removing the inlet pipe

- a) Remove the inner splashguards then remove the air filter.
- b) Remove the nut and washer from the rubber mount if your vehicle is so equipped.
- c) Loosen and remove the hose clamps at the throttle body.
- d) Remove the inlet pipe.

3) Cutting the inlet pipe.

Note: If you do not have the experience or correct tools to complete this step of the installation, then please refer this step to a qualified professional with the proper equipment.

- a) Cut the inlet pipe on both sides of the template that is wrapped around the pipe. This task is most easily completed with a band saw, but a hacksaw or tube cutter will also work. Whichever method is used, be sure that the appropriate aluminum cutting blade is installed on the cutting tool and that proper safety procedures are followed.
- b) Deburr the ends of the pipe. Use a deburring knife or a round file. Be sure not to leave any sharp edges or loose pieces of aluminum.
- c) Clean the inside of the pipe by using a rag or paper towel. Solvent may be used but do not allow the solvent to come in contact with the painted surface on the outside of the pipe. Many solvents will strip or blister the paint. Be sure that the pipe is clean. Any material that is left in the pipe will end up inside the engine and may damage the engine.

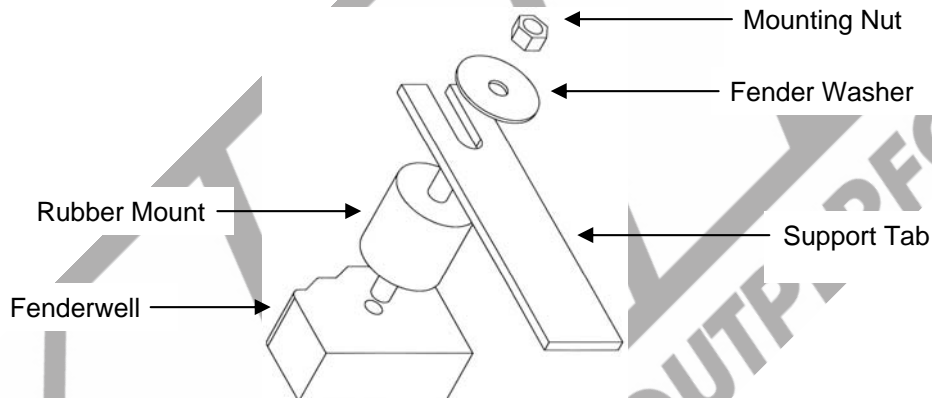
4) Installing the Air Bypass Valve

- a) Lubricate the inside surface of the valve with a small amount of soapy water or WD40.
- b) Slide the valve over one end of the inlet pipe.
 - i) Note: Inside the valve there is lip on the rubber insert. Make sure that you DO NOT install the pipe further than this lip. The end of the pipe should just contact the edge of the lip.
- c) Install and tighten one hose clamp.
 - i) **Caution: Do not over-tighten the hose clamp. Over-tightening may lead to a failure of the valve. Just tighten enough to prevent movement.**
- d) Insert the other half of the inlet pipe into the valve. Make sure that you DO NOT install the pipe further than the lip inside the valve. The end of the pipe should just contact the edge of the lip.
- e) Install and tighten the other hose clamp onto the valve.
 - i) **Caution: Do not over-tighten the hose clamp. Over-tightening may lead to a failure of the valve. Just tighten enough to prevent movement.**
- f) Push in on each diaphragm flap of the valve. Make sure that the flap does not contact the inlet pipe or the black rubber insert inside the valve. If any of the flaps contact any part of the pipe or rubber insert then readjust the valve as necessary to prevent contact.

5) Reinstalling the inlet pipe

- a) Reinstall the inlet pipe into the vehicle.
- b) If necessary readjust the rotation of the pipe to make the pipe fit correctly.
- c) Install the nut and washer over the support tab and onto the rubber mount. Refer to the picture below for correct installation.
- d) Install the air filter.
- e) Reinstall the plastic splashguards. Plastic splashguards are vital to the operation of the Air Bypass Valve, and must be installed on the vehicle to help prevent water ingestion.
- f) Tighten the hose clamps at the throttle body.
- g) Make sure that the pipe does not contact the body or any other components. Readjust the pipe if necessary.

Diagram showing correct installation of soft mount assembly:



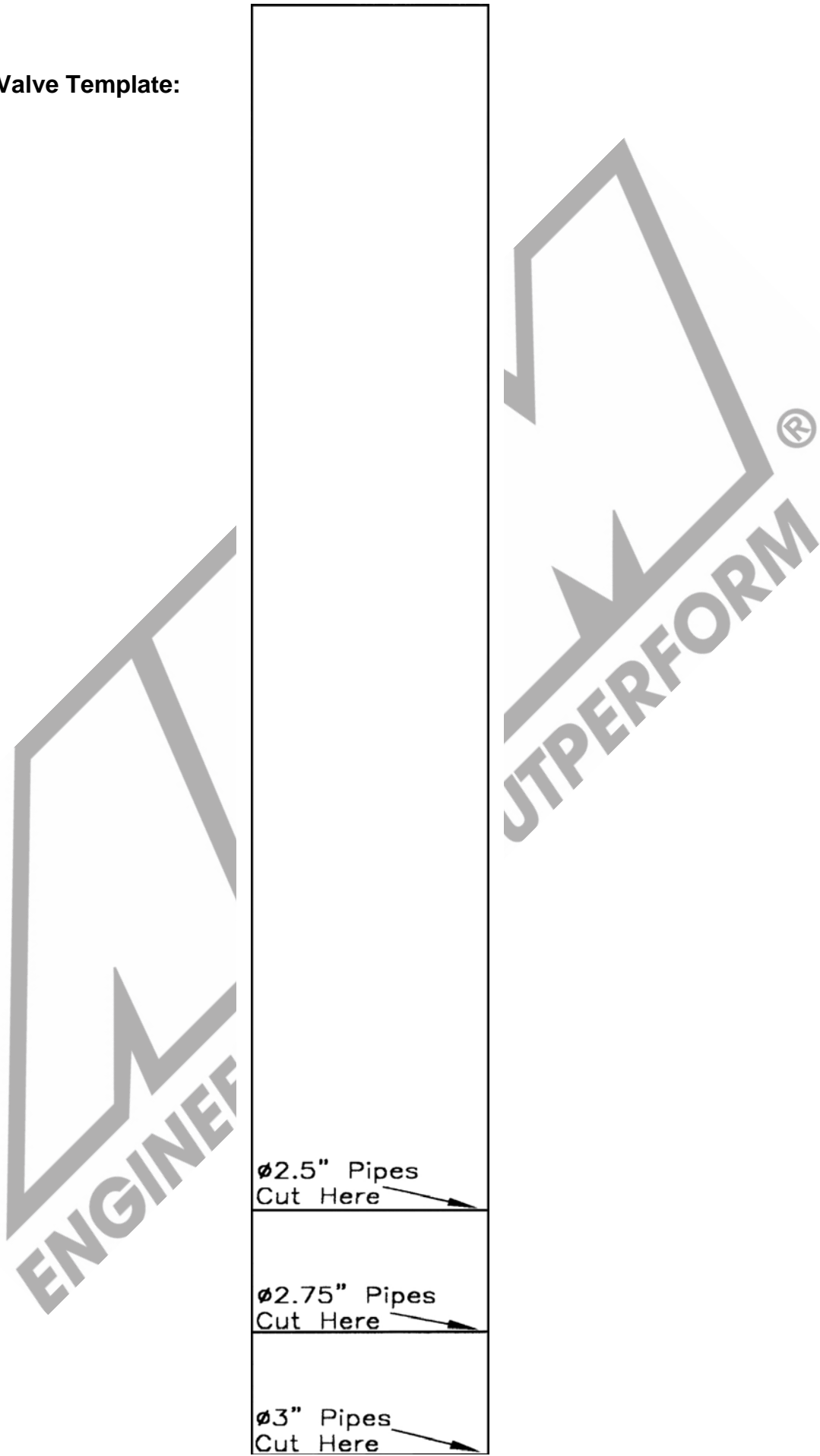
Installing the Air Bypass Valve may, in some circumstances, cause a very minimal reduction in the increase of horsepower given by the Cold Air System. During non-rainy conditions, or race competitions a straight piece of silicon hose can be installed in place of the Air Bypass Valve, which can be purchased from your local AEM distributor.

Warning: Under normal driving conditions the Air Bypass Valve will eliminate the chance of water ingestion. However if the vehicle becomes submerged in deep enough water, not even the stock air inlet system will prevent engine damage.

For Technical Inquiries
Please E-Mail Us At
tech@aempower.com

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Air Bypass Valve Template:



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AEM's State of California Air Resources Board E.O. #'s

Product / Part #	Manufacturer/Model	Year	Engine #	Engine Size	C.A.R.B. E.O. #
Bypass Valve					
Acura					
20-402s	21-416 CL	2001-2003	J32A1	3.2L VTEC	D-392-22
20-403s	21-419 CL Type-S Automatic	2001-2003	J32A2	3.2L VTEC	D-392-22
20-403s	21-509 CL Type-S Manual	2003	J32A2	3.2L VTEC	D-392-22
20-401s	21-402 Integra All	1990-1993	B1(7/8)A1	1.7L VTEC& 1.8L	D-392-22
20-401s	21-403 Integra Exc. GSR & Type-R	1994-2001	B18B1	1.8L	D-392-22
20-402s	21-404 Integra GSR	1994-2001	B18C1	1.8L VTEC	D-392-22
20-403s	21-412 Integra Type R	1997-1998, 2000-2001	B18C5	1.8L VTEC	D-392-22
20-402s	21-416 TL	2000-2003	J32A1	3.2L VTEC	D-392-22
20-403s	21-419 TL Type-S	2002-2003	J32A2	3.2L VTEC	D-392-22
Chevy					
20-402s	21-447 Cavalier	1998-2002		2.2L	Pending
20-402s	21-448 Cavalier	2003		2.2L	Pending
Chrysler					
20-402s	21-432 Sebring Coupe LXi	2001-2003		3.0L	D-392-22
Dodge					
20-401s	21-421 Neon SOHC 5 Speed	1993-1999		2.0L SOHC	D-392-22
20-401s	21-420 Neon DOHC 5 Speed	1995-1999		2.0L DOHC	D-392-22
20-401s	21-422 Neon 5 Speed	2000-2003		2.0L SOHC	D-392-22
20-401s	21-424 Neon R/T & ACR	2001-2003		2.0L SOHC	D-392-22
20-402s	21-432 Stratus Coupe R/T	2001-2003		3.0L	D-392-22

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Ford					
20-401s	21-450 Focus	2000-2003		2.0L Zetec	D-392-22
Honda					
20-401s	21-407 Accord All	1990-1993	F22A(1/4/6)	2.2L	D-392-22
20-401s	21-408 Accord All	1994-1997	F22B(1/2)	2.2L & 2.2L VTEC	D-392-22
20-401s	21-415 Accord 4 Cyl.	1998-2002	F23A(1/4/5)	2.3L VTEC	D-392-22
20-402s	21-416 Accord V6	1998-2002	J30A1	3.0L VTEC	D-392-22
20-401s	21-511 Accord 4 Cyl.	2003	K24A4	2.4L I-VTEC	D-392-22
20-403s	21-510 Accord V6	2003	J30A4	3.0L I-VTEC	D-392-22
20-401s	21-400 Civic 4WD/EX/SI	1988-1991	D16A6	1.6L	D-392-22
20-401s	21-400 Civic CRX SI	1988-1991	D16A6	1.6L	D-392-22
20-401s	21-401 Civic DX/EX/LX/SI	1992-1995	D15B7 & D16Z6	1.5L & 1.6L VTEC	D-392-22
20-401s	21-401 Civic Del Sol S/SI	1993-1995	D15B7 & D16Z6	1.5L & 1.6L VTEC	D-392-22
20-401s	21-411 Civic Del Sol VTEC	1994-1995	B16A3	1.6L VTEC	D-392-22
20-401s	21-413 Civic CX/DX/LX	1996-2000	D16Y7	1.6L VTEC	D-392-22
20-401s	21-409 Civic EX	1996-1998	D16Y8	1.6L VTEC	D-392-22
20-401s	21-414 Civic EX	1996-2000	D16Y8	1.6L VTEC	D-392-22
20-402s	21-417 Civic SI	1999-2000	B16A2	1.6L VTEC	D-392-22
20-401s	21-502 Civic DX/LX Manual Trans.	2001-2003	D17A1	1.7L	D-392-22
20-401s	21-500 Civic EX Manual Trans.	2001-2003	D17A2	1.7L VTEC	D-392-22
20-401s	21-418 CRV All	1997-1998	B20B4	2.0L	D-392-22
20-402s	21-405 Prelude S, SI, VTEC	1992-1996	F22A1 & H2(2/3)A1	2.2L, 2.3L & 2.2L VTEC	D-392-22
20-403s	21-406 Prelude All	1997-2001	H22A4	2.2L VTEC	D-392-22
20-403s	21-504 S2000	2000-2003	F20C1	2.0L VTEC	D-392-22
Hyundai					
20-403s	21-520 Tiburon	1997-2001		2.0L	D-392-22
Infiniti					
20-403S	21-548 G35	2003		3.5L V6	Pending
Mitsubishi					
20-401s	21-430 Eclipse GS	1995-1999	420A	2.0L	D-392-22
20-402s	21-433 Eclipse RS, GS	2000-2003	4G64	2.4L	D-392-22
20-402s	21-432 Eclipse GT	2000-2003	6G72	3.0L	D-392-22
20-402s	21-434 Lancer	2002-2003	4G64	2.4L	D-392-22

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Nissan						
20-402s	21-547 350Z	2003	VQ35DE	3.5L V6		D-392-22
20-403S	21-547 350Z	2003		3.5L V6		Pending
20-402s	21-546 Altima 2.5L 4 Cyl.	2002-2003		2.5L		D-392-22
20-402s	21-545 Altima 3.5L V6	2002-2003		3.5L V6		D-392-22
20-403s	21-544 SE-R	2002-2004		2.5L		D-392-22
20-403s	21-544 SE-R Spec V	2002-2004		2.5L		D-392-22
Pontiac						
20-402s	21-448 Sunfire	2003		2.2L		Pending
Saturn						
20-401S	21-632 Ion	2004		2.2L		Pending
20-400s	21-630 S-Series Manual	1991-1999		1.9L DOHC		D-392-22
20-400s	21-630 S-Series Manual	1995-1999		1.9L SOHC		D-392-22
20-400s	21-631 S-Series	2000-2002		1.9L DOHC		D-392-22
Scion						
20-400s	21-566 XA	2004		1.5L		D-392-22
20-400s	21-566 XB	2004		1.5L		D-392-22
Toyota						
20-403s	21-565 Camry V6	1992-1993	1MZ-FE	3.0L V6		Pending
20-403s	21-565 Camry V6	1994-1996	1MZ-FE	3.0L V6		D-392-22
20-402s	21-563 Celica GT	2000-2003	1ZZ-FE	1.8L		D-392-22
20-402s	21-564 Celica GT-S	2000-2003	2ZZ-GE	1.8L		D-392-22
20-402s	21-469 Corolla CE, S, LE	2003		1.8L		D-392-22
20-402s	21-469 Matrix XR	2003		1.8L		D-392-22
20-402s	21-466 Matrix XRS	2003		1.8L		D-392-22
20-401s	21-462 MR2 Spyder	2000-2003	1ZZ-FE	1.8L		D-392-22
Volkswagen						
20-402s	21-492 Golf 2.0L	1999.5-2003		2.0L		D-392-22
20-402s	21-492 Jetta 2.0L	1999.5-2003		2.0L		D-392-22

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