



AMERICAN EXPEDITION
VEHICLES

**ELECTRONIC GEOMETRY
RECALIBRATION (EGR) MODULE
2005-07 JEEP WK/XK/WH/XH
For Superlift 4" Suspension System (Part #'s K829 & K829R)**



Installation Guide

Full color digital version of this document (in PDF format) available online at:
<http://www.aev-conversions.com/products/docs>



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PLEASE READ BEFORE YOU START

TO GUARANTEE A QUALITY INSTALLATION, WE RECOMMEND READING THESE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING ANY WORK.

Included Parts	QTY	Required Tools
EGR Module	1	T20 Torx driver
EGR Module Wiring Harness	1	#1 Screw Driver
Zip Ties	2	Razor
		Wrench/Socket (to remove negative battery terminal)
		Tape Measure
		Straight Edge



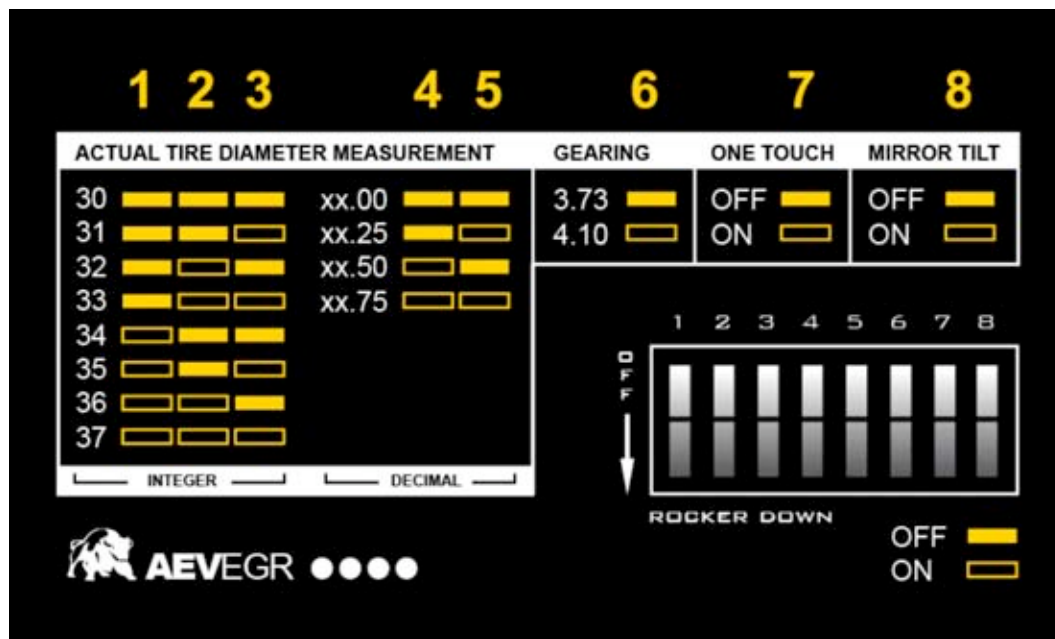
FEATURES OF THE MODULE

The AEV EGR (Electronic Geometry Recalibration) Module's primary purpose is to help the Electronic Stability Program (ESP) system work with the Superlift 4" Suspension System (Part #'s K829 & K829R) in all 2005-07 Grand Cherokees and Commanders. When used properly it will correct 95% of all low speed false activations of the system.

The AEV EGR Module allows the user to reprogram several factory parameters such as tire size and gear ratio for accurate speedometer readings. The unit also allows the activation of features such as "one touch lane change" and "reverse mirror tilt" as an added benefit.

The AEV EGR Module is first used as a programmer to set the vehicle features and parameters. It is then permanently installed in the vehicle to correct the inputs for the ESP system. This module will lock to a vehicle's VIN number but there is a "RESTORE" function that will reset the a vehicle's settings to stock and unlock the EGR Module for use in a new vehicle.

PROGRAMMING KEY (USE FOR REFERENCE)

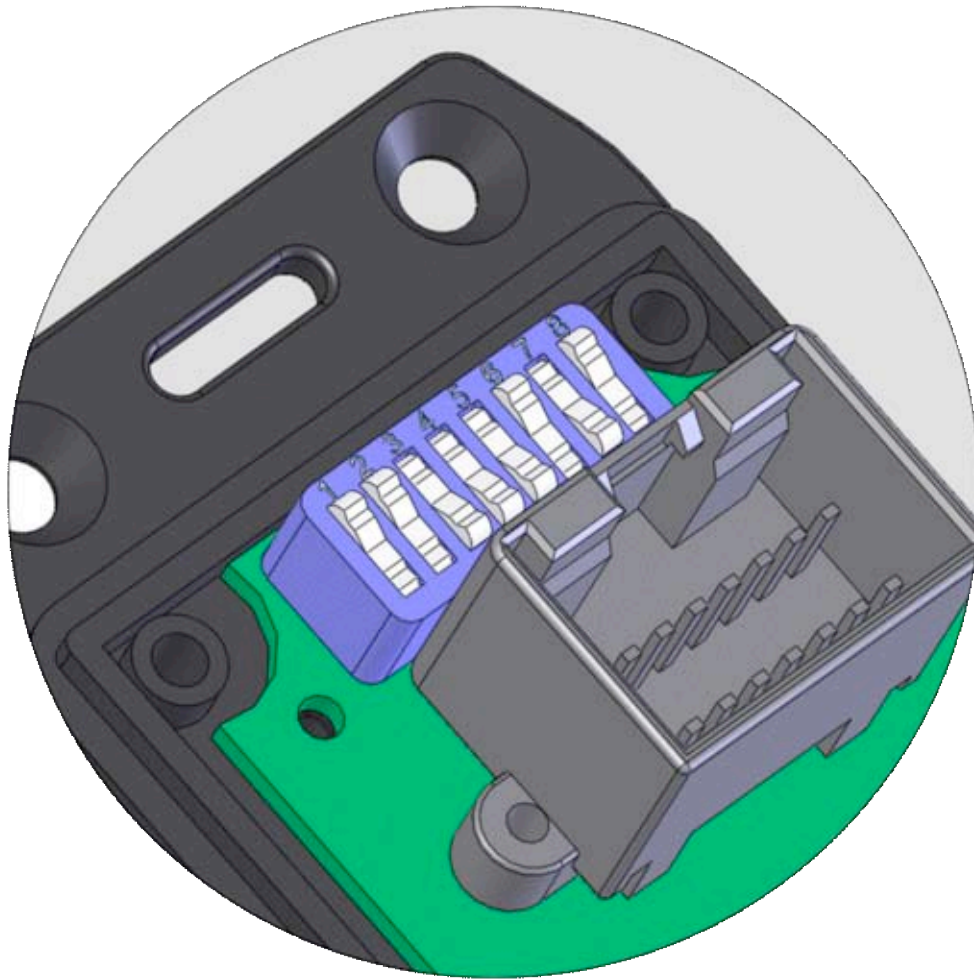


(Figure AA)



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SETTING THE MODULE TO PROGRAM YOUR VEHICLE



EXAMPLE SWITCH CONFIGURATION (31.75" tire, 3.73 Gears, One Touch ON, Mirror Tilt OFF)

(Figure A)

The EGR Module uses a bank of DIP switches to determine what settings are programmed into the vehicle. To access the DIP switches, use a razor blade to cut the decal along the dotted line on each side of the module. Remove the 4 screws that attach the cover of the EGR Module using a #1 Phillips screwdriver.



TIRE SIZE

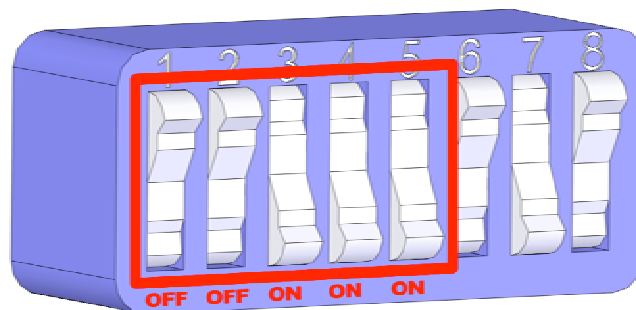
Before setting the DIP switches you will need to measure your actual tire size (not the size advertised). This will need to be done on the vehicle at normal pressure. Using a tape measure and a straight edge, measure the front tire as shown.



(Figure B)

Set the first five DIP switches based on actual tire size. For example, a 285-70R17 tire may measure 31.75" tall when mounted on the vehicle. The first three DIP switches set the tire size integer; the fourth and fifth switch sets the fractional decimal size.

Using the reference chart on page 3 (the same chart found on the decal on the back of the module) an example 31.75" tall tire will require setting the first five DIP switches to **OFF, OFF, ON, ON, ON**.



EXAMPLE SETTING FOR 31.75" TIRE

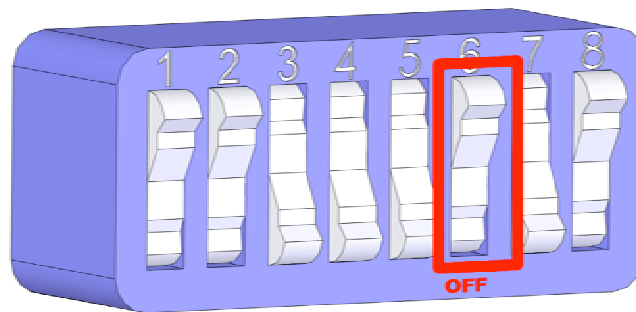
(Figure C)



GEARING

The sixth DIP switch sets the user's choice for gearing. For 3.73 gear ratio, the sixth switch would be set to **OFF**. For 4.10 ratio, the DIP switch would be set to **ON**. By default, all stock Grand Cherokee and Commander vehicles have a 3.73 gear ratio.

NOTE: While most WKs and XKs have 3.73 gears, there are a few that have 3.07 or 3.55. Although it is listed on the programming instructions as 3.73, the way the programming works is that the module only changes the programming if you select 4.11 otherwise the module leaves the programming unchanged, so if you have 3.07s it will stay at 3.07, not change to 3.73.

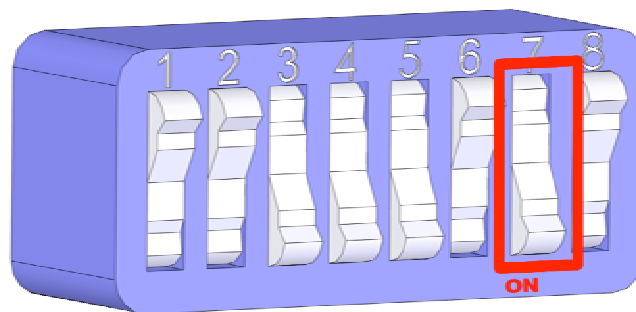


EXAMPLE SETTING FOR 3.73 GEARING

(Figure D)

ONE TOUCH LANE CHANGE

The seventh DIP switch controls the “One Touch Lane Change” parameter. This feature enables the driver to partially press the turn signal switch once to have the turn signal light up three times. This feature, if presently installed from the factory, can also be turned off. To configure, set the seventh DIP Switch to **ON** to turn the feature on, and **OFF** to turn the feature off.



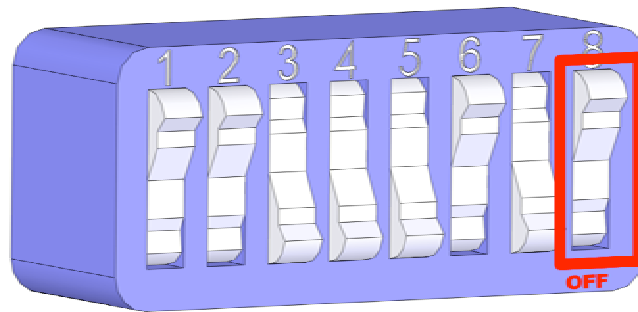
EXAMPLE SETTING FOR ONE TOUCH LANE CHANGE “ON”

(Figure E)



MIRROR TILT

The eighth DIP switch controls the “Mirror Tilt” feature. This feature automatically turns the side view mirrors down when the vehicle is put into reverse that helps rearward visibility in situations like parallel parking. To control the “Mirror Tilt” feature, set the seventh DIP Switch to **ON** to turn the feature on, and **OFF** to turn the feature off.



EXAMPLE SETTING FOR MIRROR TILT “ON”

(Figure F)

Once you are done with the DIP switch settings, replace the cover so that the label is lined back up on the sides where the razor was used to cut the decal. Replace the screws and tighten with the screwdriver.



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PROGRAMMING THE VEHICLE

Install the wire harness included by plugging in the end that is labeled PROGRAMMING into the top programming port on the EGR Module. The programming port is identified by the thick yellow decal surrounding the connector. The 3rd plug will remain disconnected. NEVER PLUG THE OTHER END INTO THE EGR MODULE AT THE SAME TIME. PERMANENT DAMAGE TO THE EGR MODULE MAY OCCUR.

1. Set the DIP switches to the appropriate settings for the vehicle.
2. Turn the vehicle's ignition key to the ON position. (ENGINE NOT RUNNING)
3. Plug the OBDII connector on the EGR Module wiring harness into the vehicles OBDII port under the instrument panel. After a moment the vehicles horn will "honk" telling the user that the vehicle has been successfully programmed, if there is no honk, check switches, retry process. If there is still no "honk", please contact AEV via email at: tech@aev-conversions.com.



(Figure G)



INSTALLATION OF THE MODULE

Once the vehicle has been programmed, the EGR Module turns into a “stay-in” unit that needs to be installed under the instrument panel.

1. Disconnect and isolate the negative battery terminal.
2. Remove the three (3) T20 Torx screws holding the lower steering column cover to the upper steering column cover. Remove the lower steering column cover carefully.

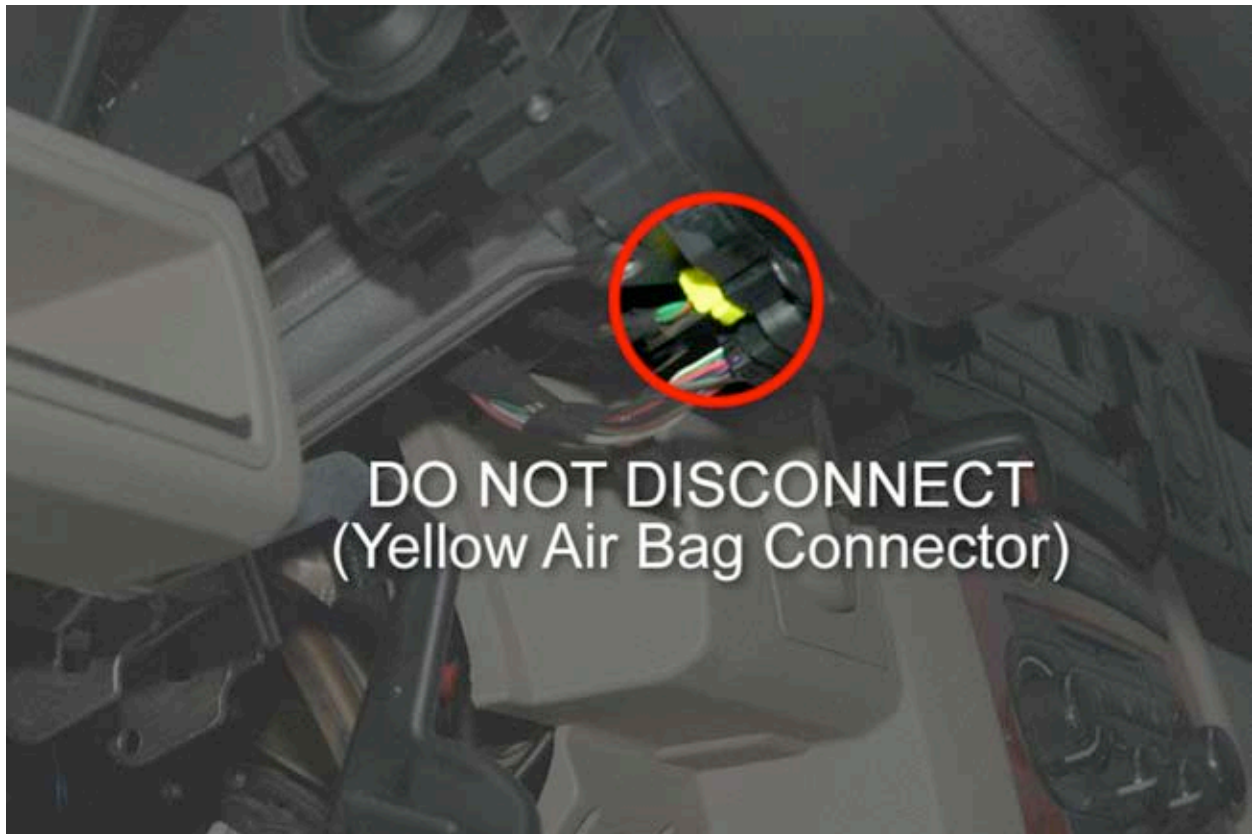


(Figure H)



(Figure I)

3. Remove the knee board under the steering column. This panel can be disconnected at the bottom if desired.
4. Locate the Air Bag Connector. **DO NOT DISCONNECT.**

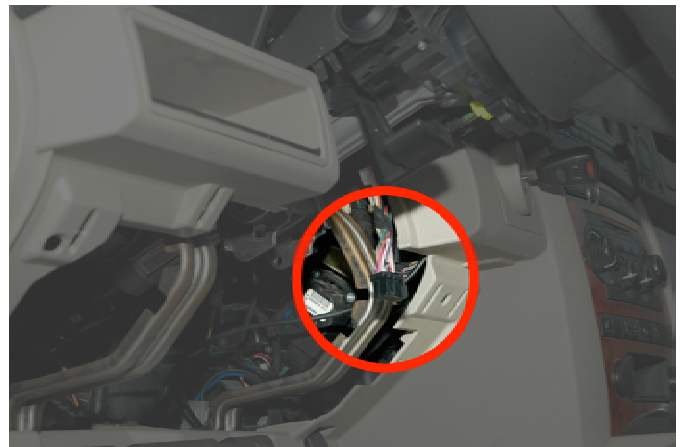


(Figure J)

5. Disconnect the larger black Steering Control Module (SCM) located next to the smaller yellow air bag connector.



(Figure K)



(Figure L)



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6. Install the non-programming end of the AEV EGR Module harness into the SCM. Then install the 16-way connector from the vehicle into the empty AEV EGR Module port.



(Figure M)

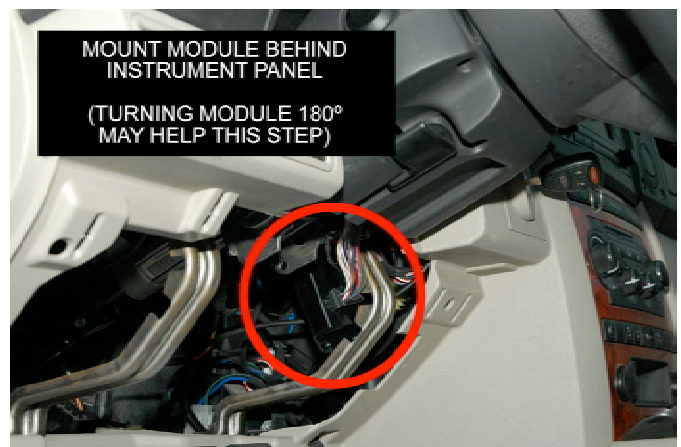


(Figure N)

7. Mount the AEV EGR Module behind the instrument panel support using the provided cable ties. Some vehicles may benefit from removing a portion of the factory electrical tape in order to create additional slack in the wiring between the airbag and SCM connectors. This will allow the module to mount up and out of the way. Fasten the remaining, disconnected (and unused) OBDII connector to the harness to prevent additional movement and/or rattle.



(Figure O)



(Figure P)



8. Replace the steering column and knee board covers.



(Figure Q)

9. The AEV EGR Module is now installed and the vehicle is ready for a test drive.

If the ESP/BAS light REMAINS illuminated while driving, the module is not working properly. Go back through the INSTALLATION instructions to be certain that all steps were followed correctly.

The AEV EGR Module helps correct up to 95% of slow speed activations of the factory ESP system caused by installation of the Superlift 4" Suspension system. Please note that you may still notice an occasional small activation when there is significant low speed body roll (similar to what occurs during a very tight U-turn).



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RESTORE MODE

On initial programming, the vehicle data is stored and the AEV EGR Module locks to the VIN of each vehicle and stores the vehicle's original values.

To RESTORE the EGR Module to the factory state, set the DIP switches to:
ON, ON, ON, ON, ON, OFF, ON, ON.

Repeat the original programming process using the wire harness and plugging in the end that is labeled PROGRAMMING into the top programming port on the EGR Module. The programming port is denoted a thick yellow border. The 3rd plug will remain disconnected. NEVER PLUG THE OTHER END INTO THE EGR MODULE AT THE SAME TIME. PERMANENT DAMAGE TO THE EGR MODULE MAY OCCUR.

1. Turn the vehicle's ignition key to the ON position. (ENGINE NOT RUNNING)
2. Plug the OBDII connector on the EGR Module wiring harness into the vehicles OBDII port under the instrument panel. After a moment the vehicles horn will "honk" telling the user that the vehicle has been successfully restored, if there is no honk, check switches, retry process. If there is still no "honk", please contact AEV via email at tech@aev-conversions.com.



(Figure R)



A M E R I C A N E X P E D I T I O N
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COMMENTS OR QUESTIONS?

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