



2007.5-09 GM Duramax 6.6L LMM
Edge Evolution Programmer
Installation Instructions & Manual

P/N: 25003



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Manual Version 7

THIS IS A HIGH PERFORMANCE PRODUCT. USE AT YOUR OWN RISK.

Do not use this product until you have carefully read the following agreement.

This sets forth the terms and conditions for the use of this product. THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE BUYER HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

DISCLAIMER OF LIABILITY

Edge Products, LLC, MSD Ignition, and their successors, distributors, jobbers, and dealers (hereafter **SELLER**) shall in no way be responsible for damage resulting from incorrect use of this product. The BUYER/USER assumes all responsibility for any damage resulting from the use or misuse of this product. THE BUYER HEREBY WAIVES ALL LIABILITY CLAIMS.

The **BUYER** acknowledges that he/she is not relying on the **SELLER's** skill or judgment to select or furnish goods suitable for any particular purpose and that there are no liabilities which extend beyond the description on the face hereof and the **BUYER** hereby waives all remedies or liabilities, expressed or implied, arising by law or otherwise, (including without any obligations of the **SELLER** with respect to fitness, merchantability and consequential damages) or whether or not occasioned by the **SELLER's** negligence.

The **SELLER** disclaims any warranty and expressly disclaims any liability for personal injury or damages. The **BUYER** acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and the **BUYER** agrees to indemnify the **SELLER** and to hold the **SELLER** harmless from any claim related to the item of the equipment purchased. Under no circumstances will the **SELLER** be liable for any damages or expenses by reason of use or sale of any such equipment.

The **SELLER** assumes no liability regarding the improper installation or misapplication of its products.

It is the installer's responsibility to check for proper installation and if in doubt, contact the manufacturer.

LIMITATION OF WARRANTY

Edge Products, LLC, MSD Ignition, (hereafter "**SELLER**") gives Limited Warranty as to description, quality, merchantability, fitness for any product's purpose, productiveness, or any other matter of **SELLER's** product sold herewith. The **SELLER** shall be in no way responsible for the product's open use and service and the **BUYER** hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by **SELLER** and **BUYER**.

The Warranty is Limited to one (1) year from the date of sale and limited solely to the parts contained within the product's kit. All products that are in question of Warranty must be returned shipping prepaid to the **SELLER** and must be accompanied by a dated proof of purchase receipt. All Warranty claims are subject to approval by Edge Products Inc.

Under no circumstances shall the **SELLER** be liable for any labor charged or travel time incurred in diagnosis for defects, removal, or reinstallation of this product, or any other contingent expenses.

If the **BUYER** sends back a failed unit that is out of warranty and chooses to buy a refurbished unit, the refurbished unit will only carry a 60 day warranty. If the **BUYER** purchases a new unit at a predetermined discounted rate, it will have the standard 1 year warranty.

Under no circumstances will the **SELLER** be liable for any damage or expenses insured by reason of the use or sale of any such equipment.

IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT, THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN SIXTY (60) DAYS FROM DATE OF PURCHASE FOR A FULL REFUND.

IMPORTANT INFORMATION ABOUT YOUR VEHICLE'S WARRANTY — PLEASE READ!

Many of our customers ask, “Will your product void my vehicle’s manufacturer’s warranty?” While the answer is straightforward from a legal standpoint, it’s important to educate our customers (and all aftermarket consumers) on some industry realities and offer some common sense precautions to minimize your risk. Edge is committed to providing quality products that are safe to use. Our products do not cause damage to a vehicle when used as intended. *Please keep in mind that towing in anything higher than the towing level and hard driving in race or extreme performance levels is not recommended.*

Consumers of aftermarket products are protected by the Federal Magnusson-Moss Warranty Act. The Act states that if something breaks on your vehicle and you take it in for warranty repair, the dealer must honor your warranty unless whatever modifications you have added to your vehicle actually caused the problem in question.

However, the reality is that many dealerships have been known to void warranties on vehicles that use aftermarket products as a matter of policy. This applies in particular to those aftermarket products that produce horsepower, such as performance enhancement “chips,” modified intake manifolds, or aftermarket exhaust systems, regardless of product brand.

You have strong legal protection as a consumer in regard to your vehicle’s warranty. However, Edge strongly recommends you always disconnect and remove your module/programmer and monitor when you take your vehicle to a dealer for warranty work. In addition, leaving the product connected may affect dealer diagnostic analysis and CAN tool functions. Edge makes every effort to produce product that can be easily removed. **Note:** *Even if you remove your unit, your dealer can detect the use of any programmer—even if the unit has been removed.*

Thank you for purchasing the *Evolution* by Edge Products, LLC. The *Evolution* programmer has been developed and produced from the highest quality materials available to ensure the best performance for years to come. If you have any concerns or questions, please contact us.

Note: *This warranty is void for any new products purchased through auction websites. Warranty is valid only for new products purchased through Authorized Dealers (proof of purchase required for all warranty claims).*

Before installing this EDGE product, the Evolution unit must be updated. The Fusion software required for updating your product on your computer is included in this package as a CD. Follow the instructions located in the Fusion Section at the back of this Manual.

All Edge modules and programmers are built to operate with OEM calibrations. When you take your vehicle to a service center they may, by your request or otherwise, update your vehicles calibrations. Therefore it is important that you return your vehicle to stock before taking it in for service. Edge updates its active products (i.e. those currently being manufactured) to work effectively with updated OEM calibrations. However, this process can take some time as Edge is not always made aware of calibration changes made by the OEM. In the case of discontinued products, Edge cannot ensure that your unit will work effectively if you take your vehicle to a dealership and you are given, by your request or otherwise, a new calibration.

Programming your vehicle may expose existing defects in your vehicle's PCM that could disable your vehicle. It is advised that you do not program your vehicle in remote locations in case of vehicle failure.

If you have used another tuner/programmer on your truck, you will need to program your truck back to stock before using the Evolution.

Failure to return to stock may result in PCM failure or engine damage.

About the Evolution

Congratulations on purchasing the *Evolution* by Edge Products, LLC, the leader in truck performance and power gain technology. The following manual contains information and instructions on the proper use of the *Evolution*. Please read carefully before proceeding to program your vehicle.

Note: *Read the product disclaimer and the Getting Connected section before programming your vehicle.*

Note: *At the back of this manual, we have included commonly used acronyms. This should help while using the Evolution.*

Stock Program

The *Evolution* automatically makes a backup of your stock program from your PCM before writing a new program onto your PCM. This assures that you will have the stock program if/when you desire to reprogram your vehicle to its original stock program.

It is ***strongly*** recommended prior to returning your vehicle to a service center or emissions check that you return your vehicle's computer to the stock program. In the event that the service center re-flashes your vehicle's computer (a common practice) and you have NOT returned it to stock, your *Evolution* programmer will be not work properly. If this happens, call our technical support at (888) 360-EDGE and they can help you recover your *Evolution* for a small fee. Follow the steps included in this manual for returning your program to stock.

Economy Program

This setting is the lowest level setting. It has been specifically tuned for optimum fuel economy, we recommend using this level for daily driving.

Towing Program

This setting is tuned specifically for towing. This level is recommended for most towing situations. **Warning:** *Do not exceed your vehicle's max GVWR as outlined in the vehicle's owners manual.*

Performance Program

This setting is a high performance level, and is not recommended for towing.
***Speed limiter is automatically removed in this program.**

Extreme Program

This is the highest setting for the *Evolution*. The fuel injection and timing strategies are aggressively tuned to extract the maximum performance from your vehicle without sacrificing drivability or durability. ***Speed limiter is automatically removed in this program.**

Due to the high performance nature of this setting, towing or hauling heavy loads is not recommended.

***CAUTION!**

Your Evolution programmer has the ability to remove/adjust your vehicle's factory speed limiter. Removal/adjustment of the factory speed limiter is intended for use at a closed circuit, legally sanctioned racing environment. Even if racing in a legally sanctioned racing environment, it is your responsibility to ensure your tires and other vehicle components are rated to travel at increased speeds with the speed limiter removed/adjusted. If you remove/adjust the speed limiter during highway driving, it is your responsibility to obey all driving laws, including adhering to posted speed limits. Removing/adjusting the speed limiter for purposes inconsistent with the product's intended function, as stated herein, is a violation of the product's intended use and invalidates the product's warranty. Edge Products is not responsible for, or liable for the consequences of improper product use.

Power Levels

The following power gains are representative of an actual test vehicle. These gains were measured on a Super Flow Dyno at an altitude of 4400 Ft. above sea level, and represent power delivered to the rear wheels of the test truck. The only modification made to the test truck was the addition of the Evolution. Power gains may vary somewhat on a different vehicle or in different geographic settings.

- **Economy – 30 HP 60 TQ**
- **Towing - 50 HP 90 TQ**
- **Performance - 75 HP 150 TQ**
- **Extreme - 80 HP 200 TQ**

Hot Unlock Code

To unlock additional features for your Evolution you will need to visit www.edgeproducts.com and download the **Hot Unlock** waiver form. (http://www.edgeproducts.com/product_images/customer_support_article-pdf-32.pdf)

You will find this form in the sub-menu Hot Unlock Form, located on the home page of the website. Once you completely fill out the form, you will fax it to the number listed on the Hot Unlock Form. The Hot Unlock option costs \$100.00.



The Unlocking of your Evolution allows the following features:

- **3 Additional power levels**
 - **Hot 1 100 HP 215 TQ**
 - **Hot 2 115 HP 230 TQ**
 - **Hot 3 130 HP 250 TQ**
- **Manual Regeneration (Forced regeneration. See following Regeneration Note and Active/Passive regeneration sections.)**

IMPORTANT REGENERATION NOTE!!

Forced regeneration: The forced regeneration requires that you enter a PIN every time you want to set the truck into a regeneration cycle to clean the DPF filter. Your truck will go into a regen cycle on its own periodically, however should you need to clean out the filter for any reason, the forced regen is always an option. This option should be used with caution as well as used sparingly due to the elevated idle, and the large amount of fuel that will be used. In order for the forced regen to start, the truck must be up to operating temperature (160°+). Once the regeneration period starts, the trucks idle will slowly elevate to 2500 RPMs. The idle will hold steady at 2500 RPMs for the duration of the regeneration, during which time the exhaust vapors will be extremely hot. So use extreme caution during this period. Once the Forced regeneration period is completing, the idle will then fall back to idle speed.

- a. The Evolution will display several PIDs as the truck is manually regenerating.
 - i. (ECT)- Engine Coolant Temp- F°
 - ii. (Stat)-DPF Status- On/Off
 - iii. (INH)-DPF Inhibit Reason- Represented with a number
 - iv. (DPFP)-DPF pressure- PSI
 - v. (Soot)-Soot Mass -Grams
 - vi. (EGT-1)-Stock Exhaust Gas Temp Sensor.-F°
 - vii. (EGT2)-Stock Exhaust Gas Temp Sensor-F°
 - viii. (Fuel)-Fuel Remaining % of fuel left in the tank (readings may vary from that of the fuel gauge)
- b. The **PIN** to activate the manual regeneration is: **3343**. Each time you would like to activate the manual regeneration period you must enter this code.

***** CAUTION *****

Exhaust temperature(EGT) will be greater than 300 C/572 F during service regeneration. To prevent injury or property damage do the following:

- 1) Park the vehicle outdoors away from people, other vehicles, and combustible materials.
- 2) Do not leave the vehicle unattended.
- 3) Do not connect any shop exhaust hoses to the vehicle's tailpipe.

Due to the elevated engine temperatures during this procedure, it is best to open the hood and keep the front of the vehicle clear of anything that would impede air flow through the radiator.

This procedure can be interrupted at any time in an emergency by switching off the ignition or pressing the brake.

***** Before proceeding *****

- 1) Check coolant and oil level before and after the procedure.
- 2) Engine and exhaust system damage can occur if used improperly.
- 3) Do not initiate service mode if non-DPF faults are present.
- 4) Oil changes may be necessary after running this service mode.
- 5) Do not leave the vehicle unattended.

***** STEPS *****

- 1) Apply the parking brake.
- 2) Start the engine.
- 3) Transmission in park/neutral.
- 4) This procedure can take up to 30 minutes.
- 5) Test completed when engine idle returns to normal.

Active Regeneration

Your vehicle is equipped with a diesel particulate filter (DPF). This filter is used in conjunction with a diesel oxidation catalyst. Together they work to reduce the amount of harmful exhaust emitted from the tailpipe. As soot builds up in the DPF it will begin restricting the filter. The soot that gathers is automatically purged in one of two ways: Passive Regeneration & Active Regeneration. Both methods occur automatically and require no action on your part. During either of these regeneration methods, you may notice an increase or change in the exhaust noise & increased EGT.

Passive Regeneration

Passive Regeneration occurs when the exhaust temperature (EGT) reaches an appropriate level in order to oxidize or burn soot to clean the DPF. This method happens as a result of normal engine operating conditions, typically when the engine reaches an EGT high enough to burn off the soot (i.e. heavy towing, high load conditions etc.)

If EGT's do not get hot enough to cause Passive Regeneration, then your truck's engine-control system automatically initiates an active regeneration.

During active regeneration, the DPF is cleaned by raising the exhaust temperature to a point where the soot is burned away. This is accomplished through various engine actions which raise the EGT's in the oxidation catalyst/DPF system to an appropriate high level where the soot is burned off. After the soot is burned off, the EGT's and back-pressure (restriction) fall back to normal levels.

HOW DOES THE EVOLUTION AFFECT THE DPF?

The Evolution utilizes aggressive fueling strategies in order to achieve horsepower gains. The added fueling may cause more instances of Passive Regeneration. Additionally, depending on your settings/driving style, you may also see Active Regeneration occur more often than you would with a stock vehicle.

In order to minimize the number of times that your vehicle will initiate Active regeneration;

- Avoid towing in levels higher than the Towing level.

Important Note: *It is the customer's responsibility to watch for and ensure complete regeneration cycles. Edge Products' devices do not adversely affect the regeneration cycle of your vehicle. Any vehicle exhaust- and emission-system issues are the sole responsibility of the vehicle owner and the OEM. No DPF warranties are expressed or implied.*

Features

PIDs

The *Evolution* allows the user to view up to 4 PIDs at one time. PIDs identify an address in memory which contains vehicle operating information a driver may wish to monitor. (See the *Set Up* section)

Scrolling PIDs

Once in the PID display screen you can press the ENTER button to enter scrolling PIDs mode. When you are in this mode an asterisk will be displayed in the upper right corner. You can then scroll through the PIDs by using the UP and DOWN arrow keys. You can always scroll back to your customized screen or once you have scrolled through all of the PIDs you will return to your customized screen. Press the ENTER again to exit the Scrolling PID mode.

Diagnostics

The *Evolution* is also a powerful diagnostics tool. You can view any diagnostic trouble codes (DTCs) your vehicle may have, which in turn allows you to fix them. It will also allow you to turn off that annoying "Check Engine" light when the problem has been addressed (no more expensive trips to the dealer for a diagnostics scan).

0-60 and Quarter Mile time

Another feature often only found on the Edge Product monitors, is the ability to determine your quarter mile times as well as your 0-60 times, and has a unique Christmas tree starting sequence.

Alerts

If you would like to know when a certain parameter, such as transmission temperature, reaches a desired value you can set an alert to that value. When the preset value is reached, the *Evolution's* screen will flash red and display the triggered alert and the current value for that particular alert parameter. Please note that Alerts may flash only if that parameter is being actively displayed on the *Evolution* monitor.

Records

While driving, the *Evolution* will automatically record the highest values of some parameters. These records can be viewed and reset at any time. Please note that some parameters may record only if that parameter is actively displayed on the *Evolution* monitor.

NOTE: *For both Alerts and Records, some truck types and years may flash alert and record peak parameter values even when not displayed on the Evolution monitor.*

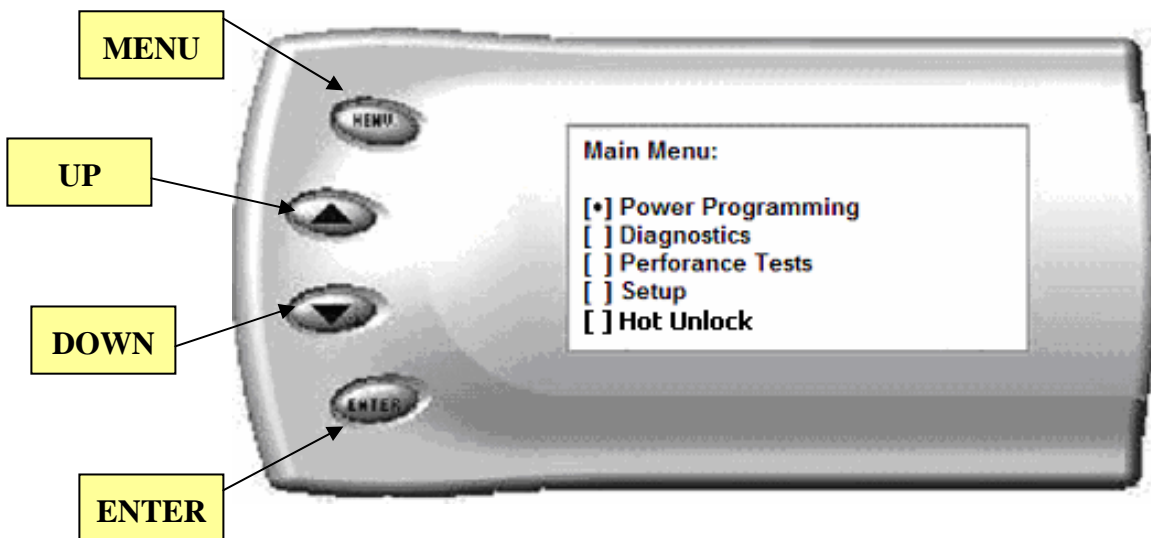
Custom Options

While programming your vehicle, you have the option to customize our tuning. For example, you can change your tire size value which can correct your odometer readings that result from changing tire sizes.

Refer to the *Custom Options* section for a complete list and description of options that are available. These can be changed while programming your vehicle.

Display and Keypad

The following picture is a sample *Evolution* screen. Great effort has gone into making the *Evolution* programmer very simple to use. The [UP] and [DOWN] arrow keys are used to scroll through options on the screen. The [ENTER] key is used to select desired options from a menu or move to the next screen. The [MENU] key is used to enter the Main Menu from the parameter display or return to the previous screen. This version of the *Evolution* also has the option to change the backlighting color of the display to a wide range of colors.



NOTE: *The evolution uses a LCD display which has inherent limitations in operating temperature. If your screen is black, blank, or distorted and the temperature is above 158 degrees F (70 degrees C), please allow the device to cool and then it should work correctly. At extremely low temperatures the display will update very slowly. Again wait for the device to warm to normal operating temperatures for the screen to function properly.*

NOTE: *If you activate Hot Unlock, the screen view menu will show Manual Regeneration.*

Getting Connected

Installing the EGT Probe

TIP: *One effective way to avoid metal fragment contamination in your engine manifold is to apply grease in the tip of the drill bit and threads of your tap tool when drilling/tapping the hole in your manifold. Reduce pressure on the drill when the drill breaks through the manifold wall to reduce risk of pushing metal chips into the manifold.*

TIP: *See figure B and C for access and finished installation pictures.*

CAUTION: *Wear eye protection and protective clothing when performing this operation, to protect from getting metal chips in your eyes. Also, since exhaust manifolds can be very hot, allow the engine to cool before drilling. Make sure the park brake is set when working under the vehicle.*

1. Obtain a 1/8" National Pipe Tap (NPT) available from your hardware store. Drill a 21/64" (5/16" optional) hole through the manifold wall, and then use the pipe tap to cut the threads. Follow the instructions provided with the tap. The pipe tap is tapered, so you will only want to turn the tap until the bottom threads of the tap are slightly deeper than flush with the inside of the exhaust manifold wall. Use caution not to tap too deep since this would cause the thermocouple fitting and probe to seat too deep. (*See Figure A. Do not drill the hole in the middle of the manifold.*)
2. Now that the manifold has been drilled and tapped, remove the fitting from the Thermocouple and install by tightening the tapered thread end into the manifold with a 9/16" end wrench. (Ideally the tip of the fitting would be less than or flush with the inside of the exhaust flow path.) Tighten the fitting so that it is securely seated. Then install the probe into the fitting, and tighten the top nut of the fitting just tight enough to keep the probe firmly mounted. hole (*see figure A-1*) Make sure that the probe cable is positioned to allow best path and minimal bending, for cable routing to the top of the engine compartment.

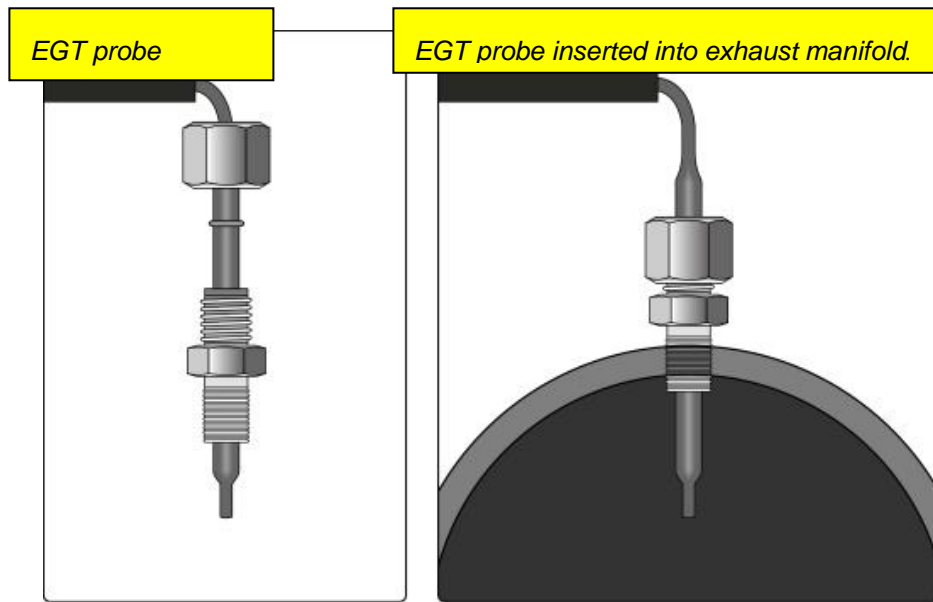


Figure A

Figure A-1



Tip: Pulling back the wheel splash guard provides easy access to the exhaust manifold for tapping the EGT cable.

Figure B



The EGT thermocouple installed into the drilled and tapped exhaust manifold

Figure C

3. Run the thermocouple wire along the top of the fire wall. There are three small black clips on the top of the fire wall, slide a zip tie behind each clip and secure the Thermocouple cable with the zip ties, this will hold the cable up and out of the way of moving engine parts. (See Figure D)



Slide the supplied zip ties behind these clips and secure the thermocouple wire.

Figure D

4. You will need to run the connector side of the thermocouple through the fire wall and connect it to the OBDII connector. Use the main grommet on the firewall (*as shown in figure E*).

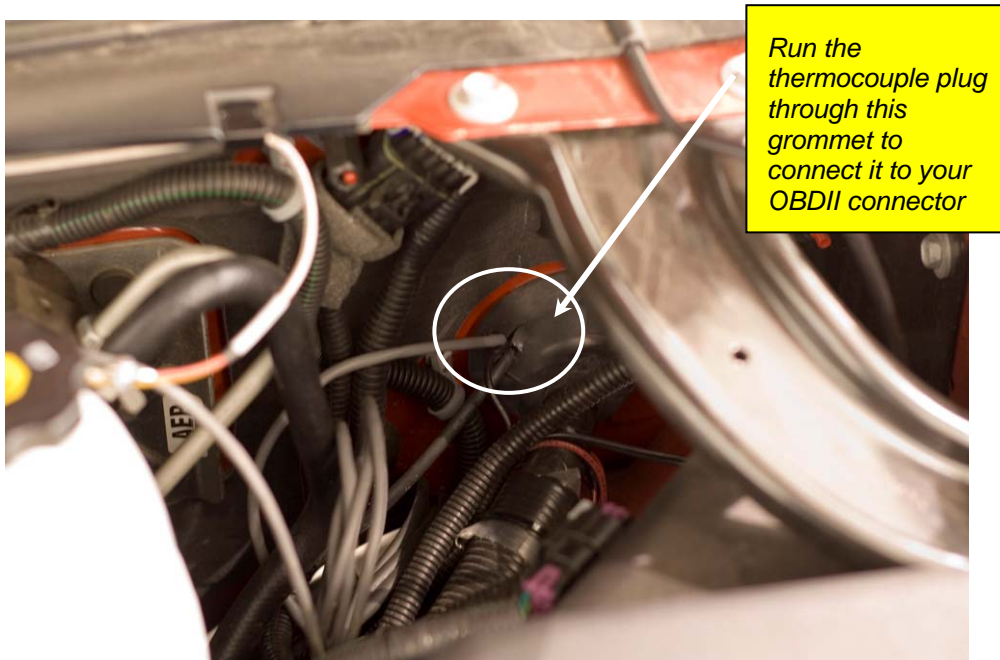


Figure E

5. Run the cable up under the dash and secure it with the supplied Zip ties. After the supplied OBDII connector cable is installed, connect the end of the thermocouple cable to the port on the right side of the OBDII connector (*as shown in Figure F*).

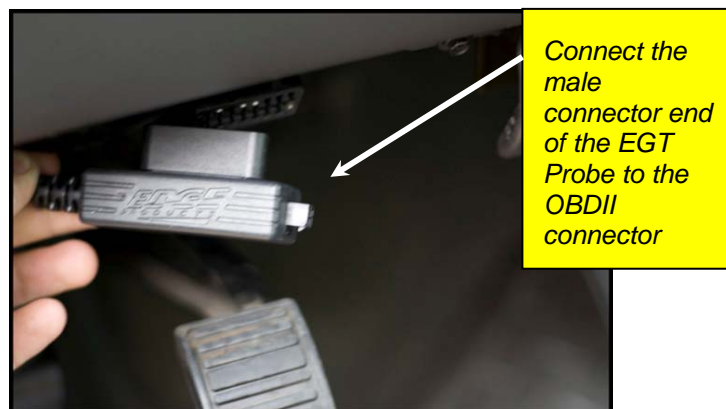


Figure F

Installing the Evolution

The *Evolution* programmer connects to the diagnostic port of your vehicle. Follow these steps to install the *Evolution*:

1. Begin by turning your ignition key to the OFF position. Locate the black diagnostic (OBDII or cover may say Data Link) connector. (*Figure #1*) It is located directly to the left of the E-brake release handle. (As you sit in your vehicle, located under the dash above the brake pedal)



Figure #1

2. Open the driver's side door, and remove the access panel on the left side of the dashboard (*Figure #2*). Pull the end of the OBDII cable outwards (*shown in Figure #3*). Remove two Torx screws using a #15 torx bit, and snake the cable behind the panel with the vent, up to the A-pillar. Replace the screws, and access panel. The cable will protrude from the dashboard up along the A-pillar and be able to move freely when pulled (*Figure #4*).



Figure #2



Figure #3



Figure #4

3. With roughly 8 to 10 inches of cable fed through the dashboard, set the Pod onto the dashboard (*shown in Figure #5*) with the end of the cable protruding through the front of the Pod. Remove the Dash Bezel by sliding your fingers behind it and pulling firmly toward the steering wheel. Slide the tab on the bottom of the pod behind the bezel, and snap the bezel back into place.



Figure #5

4. To secure the pod: Remove bracket kit and pod from the *Evolution* box. Note that the brackets are numbered and will be placed in the appropriate numbered locations inside the pod. The double sided tape on the bracket is attached to the inside pod surface over matching numbers.

NOTE: Be sure to check the position of the brackets while the Pod is resting in its desired location on the dash prior to attaching them to the Pod with the double sided tape over the matching numbers.

Clean the pod location on the dash with hot soapy water and rinse, or use 70% Isopropyl alcohol. Make sure dash is completely dry. Attach the supplied Velcro to the bottom of the mounting brackets in the pod. Leave the protective backing on the bottom piece of Velcro, and test fit the pod so you have an idea of where you want it. Once you have determined the appropriate positioning, remove the backing paper from the Velcro, place the pod in it's desired location, and firmly press down on the brackets (through the front of the pod) to secure the Velcro in place.

5. Insert the rubber gasket into the Pod, and connect the Evolution to the cable (*Figure #6*).



Figure #6

6. Any excess cable may be stuffed behind the *Evolution* or may be pulled back through the dash to eliminate slack. (*Final installation is shown in Figure #7*) Be sure to use the supplied cable ties to secure any excess cable underneath the dash to prevent the cable interfering with proper pedal operation.



Figure #7

7. With the Pod and *Evolution* securely in place, turn the ignition key ON, and then plug the cable into the OBDII connector (*Figure #8*).

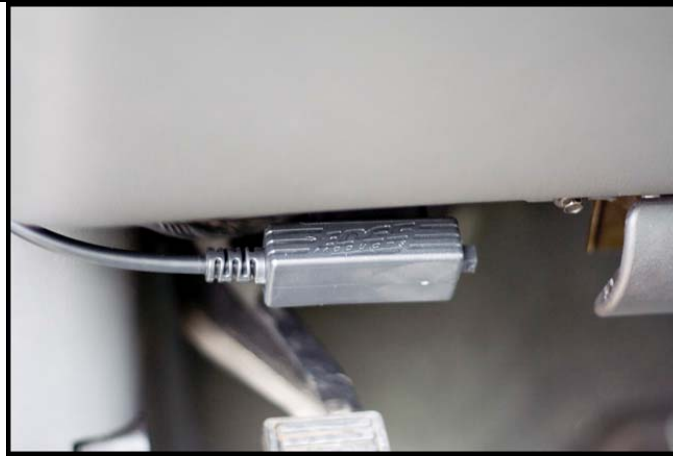
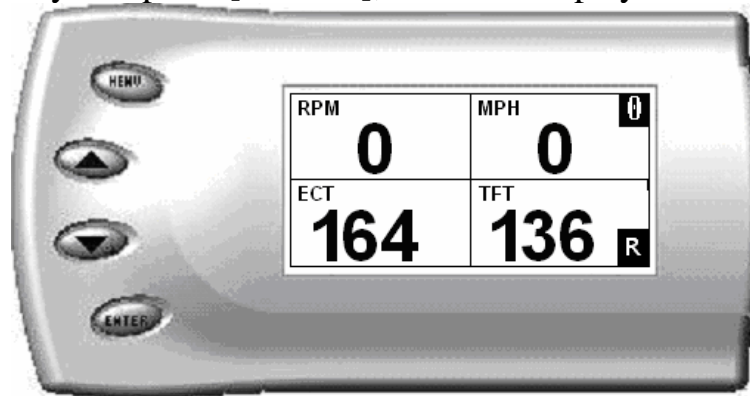


Figure #8

Note: *Unplug the OBDII connector if the truck will be sitting for a long period of time. This will eliminate unnecessary power draw.*

8. After pressing [ENTER], a disclaimer screen will be displayed, read this screen carefully and press [ENTER], the main display will come up.



Note: *Parameters and values might vary.*

9. There are six boxes that will display information about your vehicle. The black box in the lower right hand corner displays an “R” to indicate when the truck is in a regeneration cycle. When the cycle is complete, this black box will disappear. The black box in the top right corner displays which power level is currently programmed onto your vehicle.

- 0** – Vehicle is currently at stock.
- 1** – Vehicle has been programmed to *Economy* (Level 1).
- 2** – Vehicle has been programmed to *Towing* (Level 2).
- 3** – Vehicle has been programmed to *Performance* (Level 3).
- 4** – Vehicle has been programmed to *Extreme* (Level 4).

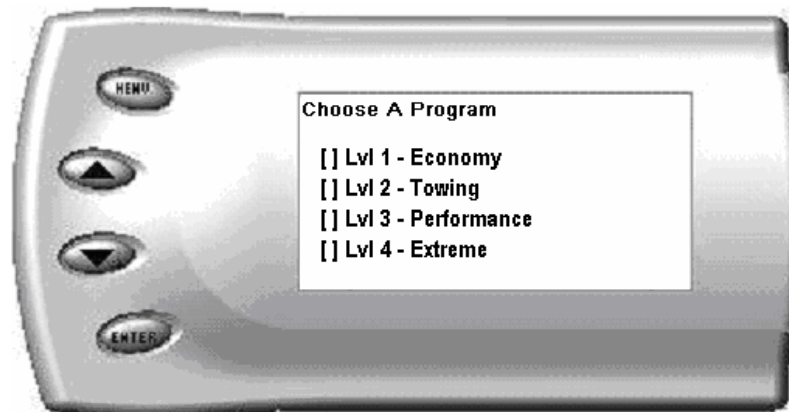
The other four boxes can show up to 4 PIDs (Parameter IDs) of your vehicle. By default, they are your vehicle's RPM, BST (boost), TFT (transmission fluid temperature), and EGT (exhaust gas temperature). Optional parameters and display formats may be selected in the *Changing Display* section of this manual.

10. From this display, press [MENU] to select and use other features of the *Evolution*. The display backlight brightness can also be controlled from this display by using the [UP] and [DOWN] arrow keys.

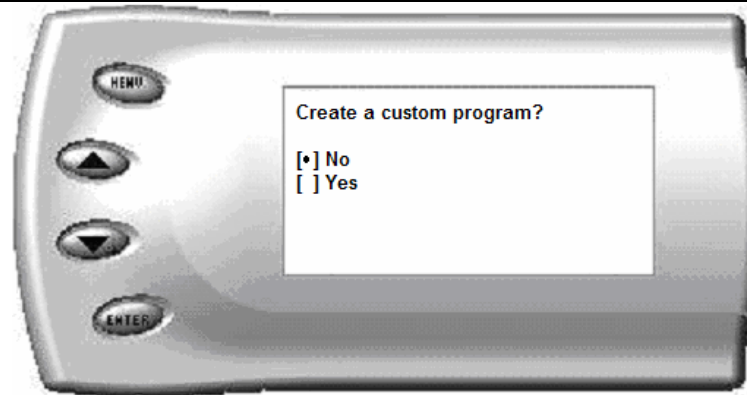
Power Programming

"Caution: Vehicle manufacturers do not recommend vehicle programming in extreme temperature. Please see the service manual of your vehicle to ensure that programming is being done in accordance to the original equipment manufacturers specifications."

From the main screen, press [MENU] to enter the main menu. Then select *Power Programming*. The following screen appears:



1. Select the level that best meets your needs. For more information about each level, read the *About the Evolution* section in this manual. Confirm your selection by pressing [ENTER] on the following screen. After confirming, the evolution will prepare the stock files, save the stock files, and then the screen below will appear:

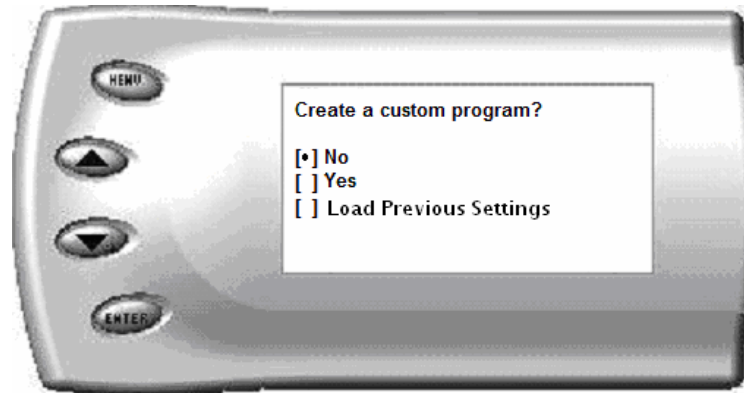


2. You have the option to change certain parameters of the level you chose. If you would like to learn more about what parameters are available and how to use them, then read the *Custom Options* section in this manual. To use the standard program without customizing options, simply press [ENTER] (choose NO).
3. The *Evolution* will ask you to make sure the engine is off and the key is on.
4. During the first use, the *Evolution* will read the original calibration from your PCM and then build all the necessary programs. This will take several minutes. This step is skipped during all further programming operations.
5. The *Evolution* will erase your PCM and then write the selected calibration (level) onto the PCM. This will also take several minutes. If at any time you receive an error message, refer to the *Troubleshooting* section at the back of this manual for further instructions.
6. When the *Evolution* is done programming, continue to follow the directions on the screen. The following screen will appear and you can press [ENTER] or [MENU] to return to the Main Menu:



Custom Options

When preparing to program your vehicle, you will have the option to change certain parameters. Choosing YES when prompted to “Create a custom program?” will load the *Custom Options* menu. (after original custom options loaded, future changes will allow you to *Load Previous Settings* options.)



Custom Options are provided to allow for flexibility based on driver preferences. Any option customization done by the user is not warranted by Edge Products. Please use at your own discretion.

The following customizable options are available:

Tire Size

The *Evolution* has the ability to correct for changes in tire size. If you have changed your tires to a different size the PCM will miscalculate vehicle speed which can affect shifting as well as the speedometer. Correcting the tire size will allow the PCM to accurately calculate vehicle speed and odometer readings. You will not need to change the value displayed if you are running factory size tires. If you choose to change your tire size, four formats are available for you to use. You only need to choose one format.

P-METRIC – This is one of the most common formats used. The tire size will be printed on the tire.

Example: 275 / 75 R16

ENGLISH – This looks much like the P_METRIC format. The first number will represent the height of the tire in inches

Example: 35 x 20 R17

HEIGHT – Some tires only have the height of the tire in inches.

Example: 35.5”

CIRCUMFERENCE – The most accurate way of entering in your tire size will be to measure the circumference of your tire. You may also measure your tire’s circumference by marking your tire and rolling it one complete revolution and measuring the distance in millimeters.

After choosing to set your tire size, the follow screen appears:



The numbers on this screen represent the circumference (in mm) of your tire size. The default value the *Evolution* displays is the current value stored in the PCM. Adjust the tire size by pressing the [UP] and [DOWN] arrow keys.

The following table will help you determine your tire circumference by matching your tire size with the common sizes listed. For example, if your tire size is 285/ 65-18, the value (circumference) you enter into the *Evolution* is 2600. You may also use the formula provided to determine your approximate tire circumference. Finally, you may also measure your tire’s circumference by marking your tire and rolling it one complete revolution and measuring the distance in inches or millimeters. If you measure in inches, multiply the distance by 25.4 to convert to mm. (ex. 91.3 inches x 25.4 = 2319 mm). The Evolution supports tire sizes ranging from 2000mm to 3500mm in increments of 1mm.

Width	Ratio	Rim	Circumference	Tire Size	
265	70	16	2441mm	33	2632mm
275	70	16	2485mm	35	2792mm
305	70	16	2617mm	37	2951mm
215	75	16	2289mm	38	3031mm
245	75	16	2430mm		
265	75	16	2524mm		
285	75	16	2618mm		
295	75	16	2666mm		
305	75	16	2713mm		
315	75	16	2760mm		
325	75	16	2807mm		
265	70	17	2521mm		
285	75	17	2698mm		
315	75	17	2840mm		
275	65	18	2559mm		
285	65	18	2600mm		
285	60	18	2510mm		
325	60	18	2660mm		

Circumference Equation:

$$[(\text{width} * \text{ratio} * 0.02) + (\text{rim} * 25.4)] * 3.1415$$

Steps:

1. Multiply **Width**, **Ratio** and **0.02**
2. Multiply **Rim** and **25.4**
3. Add Step #1 with Step #2
4. Multiply Step #3 with **3.1416**
5. The result will be the circumference of your tire in mm.

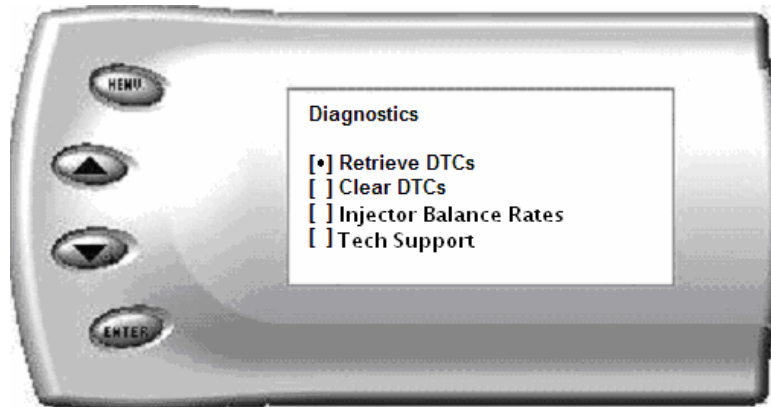
Note: if your tire size is not listed use the above formula

Note: Setting the tire size larger than 2900 mm may result in an ABS Warning light and the disabling of your ABS System.

Diagnostics

The diagnostics scanner included with your *Evolution* is a powerful tool that allows you to view and clear diagnostic trouble codes (DTCs) on your vehicle, DTCs are the messages your vehicle's computer stores when it detects a problem with your vehicle. The "Check Engine" light on your dash is activated by the presence of most DTCs.

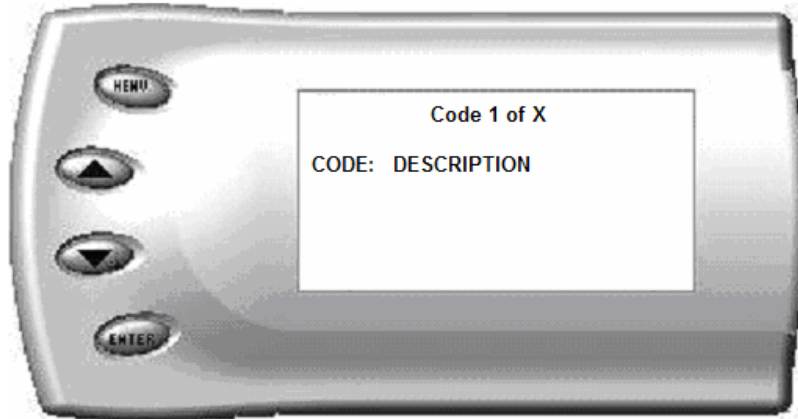
If you selected *Diagnostics* from the main menu of the *Evolution*, the screen displays the following message:



Retrieving Codes

If you want to retrieve and view the DTCs on your vehicle, select the *Retrieve* option. Make sure your ignition is in the ON position.

After selecting the *Retrieve* option, any stored DTCs will appear on the screen like the following example:



Press [MENU] to exit the DTC list and return to the previous menu.

If you have no trouble codes, the following screen will appear:



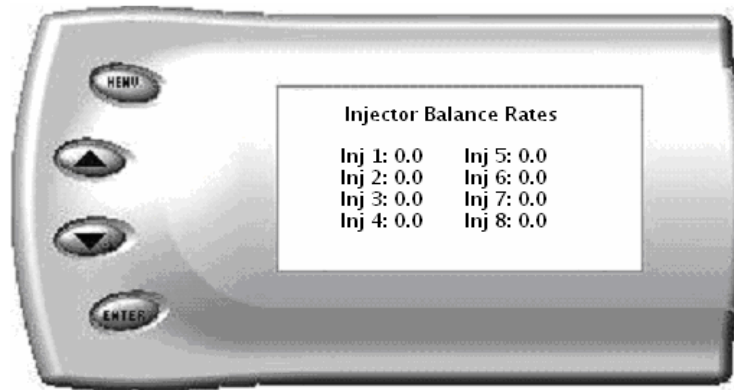
Clearing Codes

If you want to clear the DTCs on your vehicle, select the *Clear DTCs* option.

After selecting the *Clear DTCs* option, any current stored DTCs will be cleared from your vehicle and the "Check Engine" light will go out.

However, if you do not address the issue that originally caused the DTC, the DTC will set again and the "Check Engine" light will come back on. Once the DTCs have been cleared, press [ENTER] to return to the previous menu.

Injector Balance Rates



Injector balance rates can give you vital information to indicate a bad batch of fuel or possibly excessive injector wear. Balance rates should be between +4mm and -6.9mm in park or neutral.

Tech Support

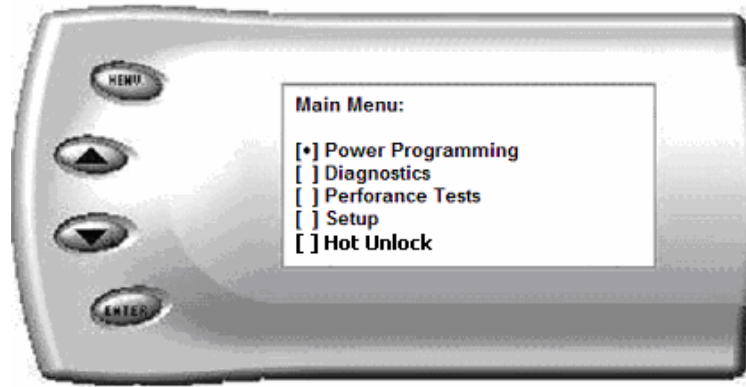
Information found in this section is normally only accessed when instructed by an Edge support person. For example, *Version Info* displays the current Bootloader, Firmware, and Calibration versions installed on your *Evolution*. Your vehicle's HEX code is also shown. Using the Fusion® software, you will be able to access online updates to ensure your *Evolution* is always up to date.

Note: *Make sure you return your vehicle to stock before attempting an update, or the PC software will not allow you to continue.*

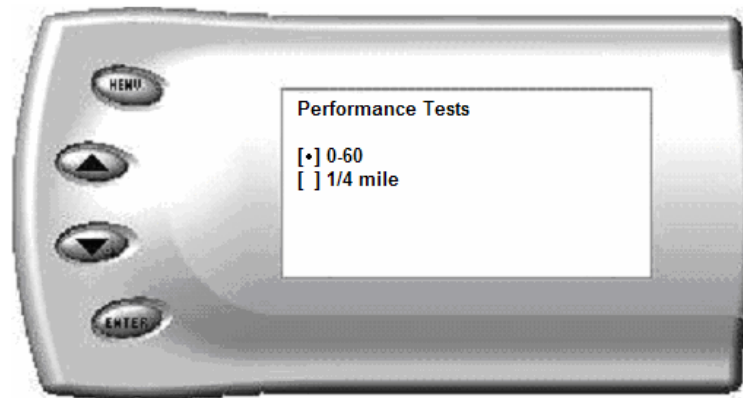
Performance Testing

The *Evolution* allows you to test the performance of your vehicle by timing the 0-60 and the quarter mile times. It is helpful to remember these might not be results you would receive from actual races. Incorrect speedometer reading and tire slippage can cause slight miscalculations in the displayed results. To run these tests, perform the following steps:

1. Press [MENU] and the *Main Menu* screen should appear:



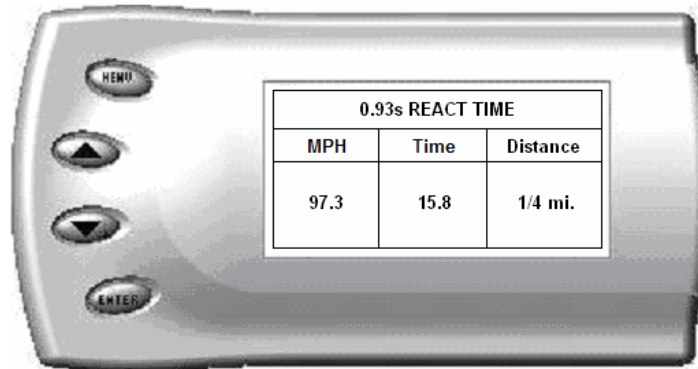
2. Select the *Performance Tests* option. The following screen appears:



3. Select the desired performance test (0-60 screen is shown below). If your vehicle is moving at this time, the *Evolution* will ask you to come to a stop.



4. For the 0-60 MPH run, press the accelerator pedal and the test automatically begins. For the ¼ mile test, you will be asked to press a key when ready. It will then cycle through a starting light sequence (Christmas tree) and tells you when to go. As you drive, the screen should be displaying your current speed. When the test is complete (the desired distance or speed is reached), the test will automatically stop and your time will be displayed on the screen as follows (quarter mile result example):



This will show how long it took you to cover 60 feet, 1/8 mile, and ¼ mile. In addition, your MPH at ¼ mile will also be shown (see the example above). The best run is stored for later viewing. You may also use the back of this manual to write down your times.

At the end of a ¼ mile run, you will see a reaction time at the top of the screen. This time begins when the final yellow light is displayed. The time between the final yellow and the green is a ½ second, so a perfect reaction time is a ½ second. The average person will see a response time of around 1 second. You'll get an "Illegal Start" message if you start before the green and your screen will turn red. You can still finish the run, but the screen will let you know that you started before the green light.

Note: Along with the best speed and time being recorded for viewing in the Records section, your most recent run data will also be stored.

5. After the test is complete, press [MENU] to return to the Performance Menu.

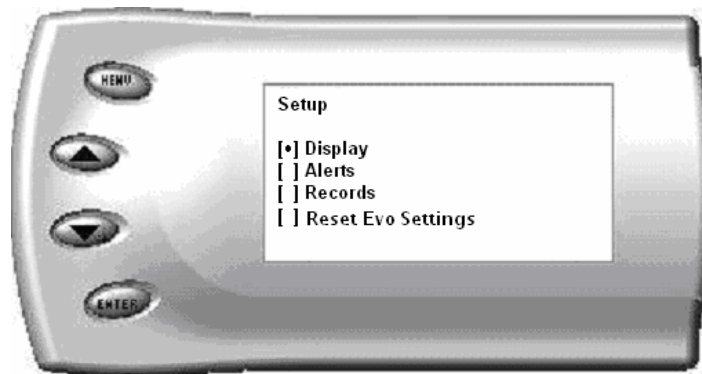
Setup

The *Evolution* gives you even more additional features. You can choose from several different parameters to monitor, how these parameters are displayed, set parameter alerts, and view the highest value that certain parameters have reached.

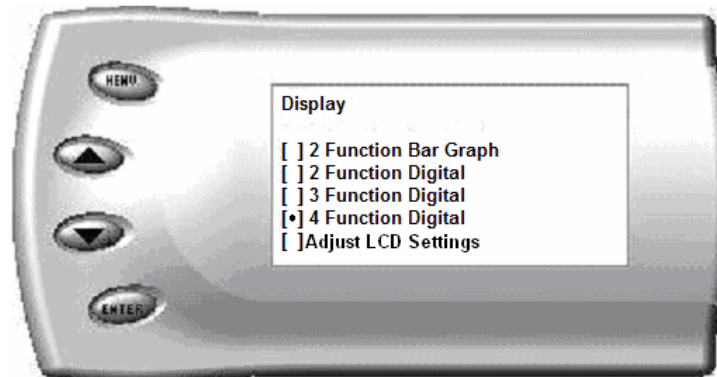
Changing the Display View

The *Evolution* allows you to view multiple engine parameters on the same screen. To select a desired view, perform the following steps:

1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:

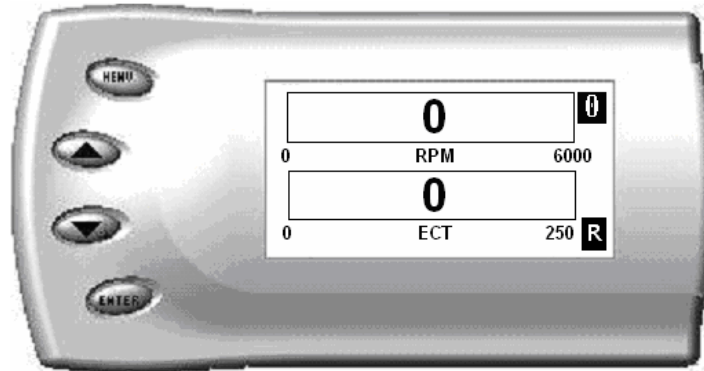


2. Select the *Display* option. The following screen appears:

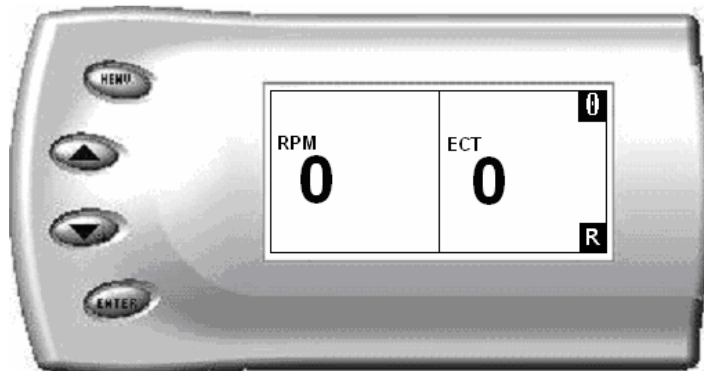


3. Select the desired viewing option by using the [UP] and [DOWN] arrows and pressing the [ENTER] key on the desired display type. Below are examples of the display options:

Two Function Bar Graph Display Sample



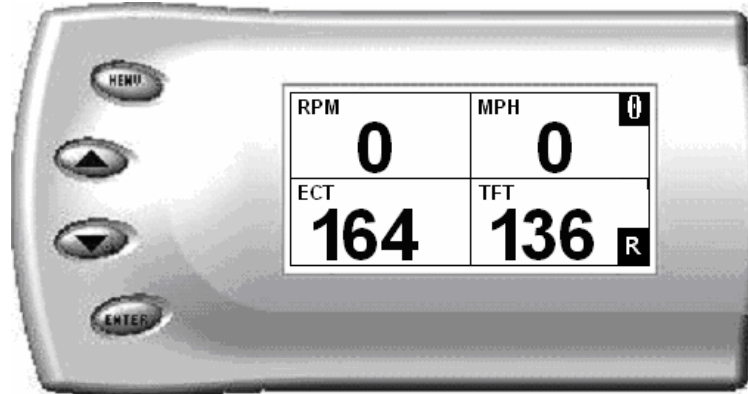
Two Function Digital Display Sample



Three Function Digital Display Sample



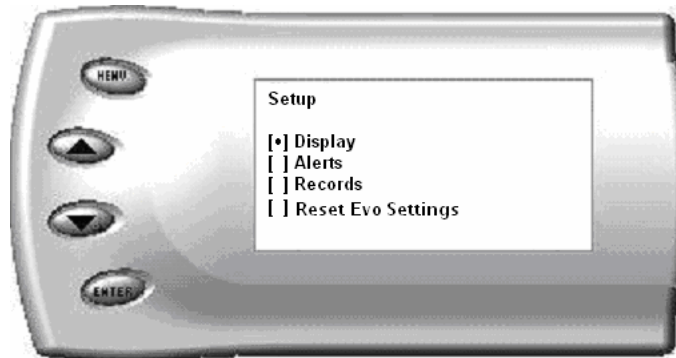
Four Function Digital Display Sample



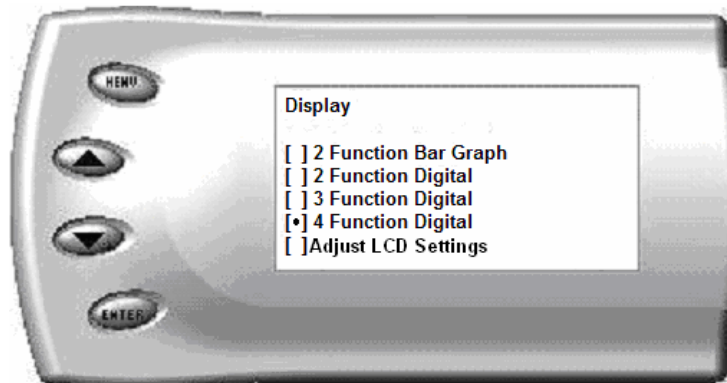
Changing the Variables on the Screen

To change the variables on the screen, perform the following steps:

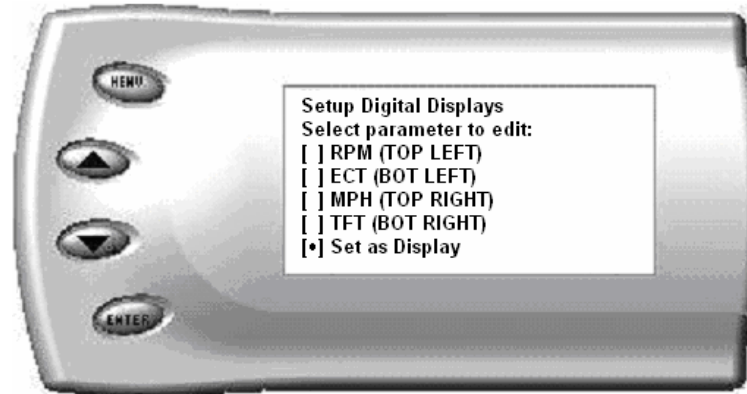
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



2. Select the *Display* option. The following screen appears:



3. Select the style which you would like the parameters to be displayed on your screen and press [ENTER]. Depending on which display you select, a screen similar to the following appears:



4. This screen lists the current parameters being displayed and their respective positions on the screen (i.e., TOP LEFT, etc.). Select the position you would like to change and press [ENTER]. A list of available parameters will be displayed. Select the parameter you would like to view and press [ENTER]. (A list of commonly used acronyms is located in the back of this manual and an in depth list of the PIDs supported follows). Once you have selected your desired parameters, select the *Set as Display* option and press [ENTER]. You will return to the *Setup* menu with your new settings saved.

Below is a list of the 22 PIDs you can display and description of each:

- RPM (Revolutions Per Minute) – *Displays current engine speed in RPM.*
- MPH (Miles Per Hour) – **Note:** *Dash display may be +/-3 MPH off from the digital display due to mechanical differences in the spring, etc. used to control the gauge.*
- ECT (Engine Coolant Temperature) – Degrees F.
- LOAD (Engine Load) – Calculated engine Load
- GEAR (Current Gear) – Current gear. A ‘lock’ symbol will appear next to the gear number once the torque converter locks.
- TFT (Trans Fluid Temperature) – Degrees F.
- BST (Boost Press) – PSI
- MAF (Mass Air Flow) – Grams Per Second
- IAT (Intake Air Temperature in manifold) – Degrees F.

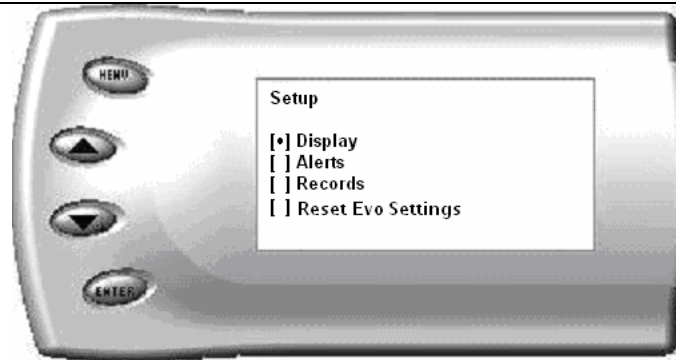
- DFRP (Desired Fuel Rail Pressure) – PSI – This is what pressure the PCM would like the fuel rail pressure to be at.
- AFRP (Actual Fuel Rail Pressure) – PSI – This is the actual pressure in the fuel rail.
- OSS (Output Shaft Speed) – RPM
- MAP (Manifold absolute Pressure) – kPa
- MIT (Main Injection Timing) – Degrees
- BAT (Battery voltage) – Volts
- CFR (Calculated Fuel Rate) – mm³
- VPOS (Turbo Vane Position) - %
- APP (Accelerator Pedal Position) - %
- IATT (Intake Air Temperature in intake tube) – Degrees F
- AAT (Ambient Air Temp) – Degrees F
- EOP (Engine Oil Pressure) – PSI
- Fuel (Fuel Tank Remaining) - %
- EGT1 (Exhaust Gas Temp) – Degrees F
- EGT2 (Exhaust Gas Temp) - Degrees F
- BARO (Barometric Pressure) – kPa
- FTMP (Fuel Temperature) - Degrees F
- DIDL (Desired Idle) – RPM
- EGT (Exhaust Gas Temperature) – Degrees F
- DPF (Diesel Particulate Filter) Regeneration Cycle: Status- On/Off
- Soot (Soot Mass) – Grams

Changing the Backlighting

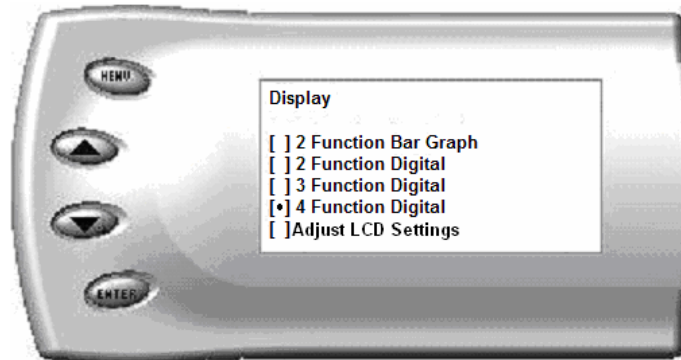
Adjusting the Backlight Color

To change the backlighting color, perform the following steps:

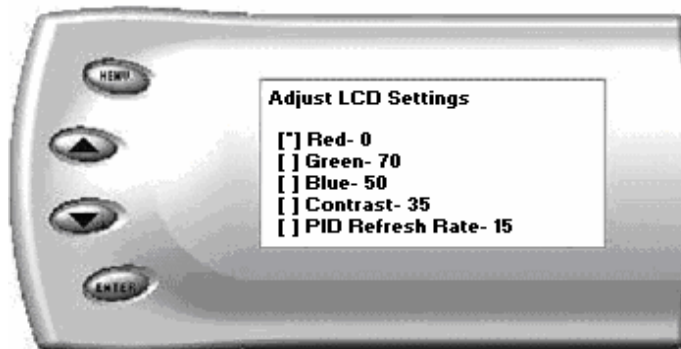
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



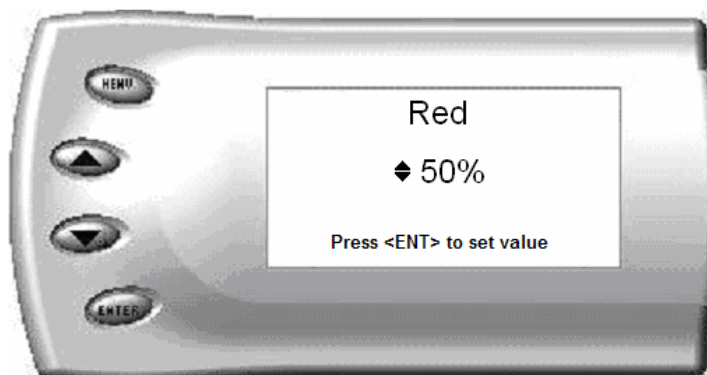
2. Select the *Display* option. The following screen appears:



3. Select the *Adjust LCD Settings* option. The following screen appears:



4. Select the color you would like to change.
5. Depending on the color you select, a screen similar to the following appears (example of Red):



6. As you adjust the percentage shown on the screen, you should notice a change in the color of the screen. Once the desired color value has been reached, press [ENTER]. If you would like to return to the previous screen and abort the current color change, press [MENU].
7. PID Refresh Rate- Adjusting the refresh rate will change how fast the information is updated on the monitor.

Adjusting the Backlight Brightness

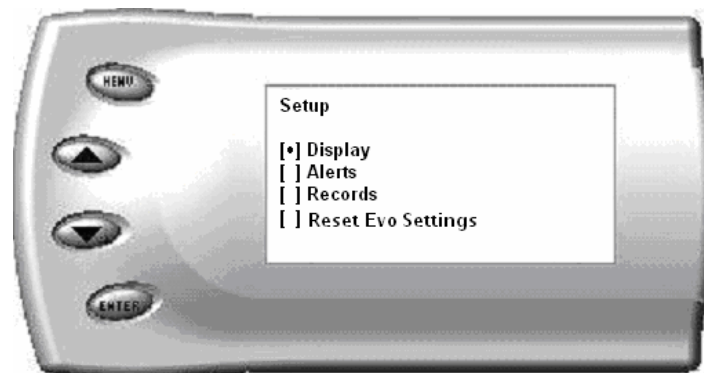
When viewing engine parameters (like the sample below) press the [UP] and [DOWN] arrow keys to adjust the brightness of the display. Each time the button is pressed the backlight will either brighten or dim by 10% of the total brightness. The default setting is 100% brightness.



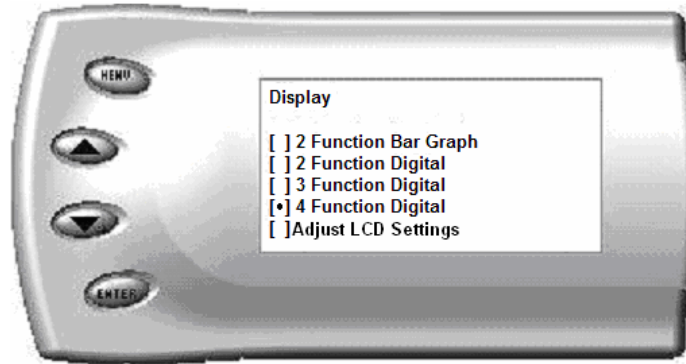
Adjusting the Contrast

To change the contrast, perform the following steps:

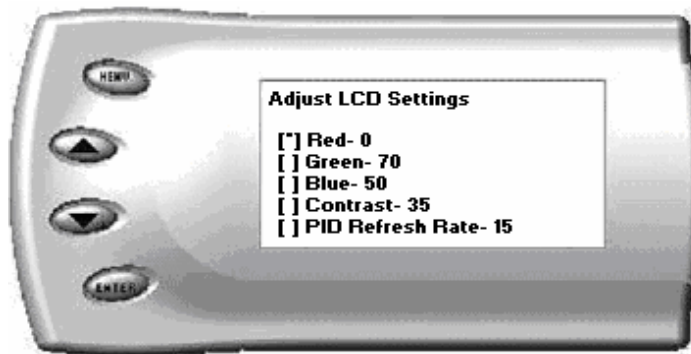
8. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



9. Select the *Display* option. The following screen appears:



10. Select the *Adjust LCD Settings* option. The following screen appears:



11. Select *Contrast*, and use the up and down arrows to adjust the contrast to where you'd like. Press [ENTER] and {MENU} to return to Main Menu.

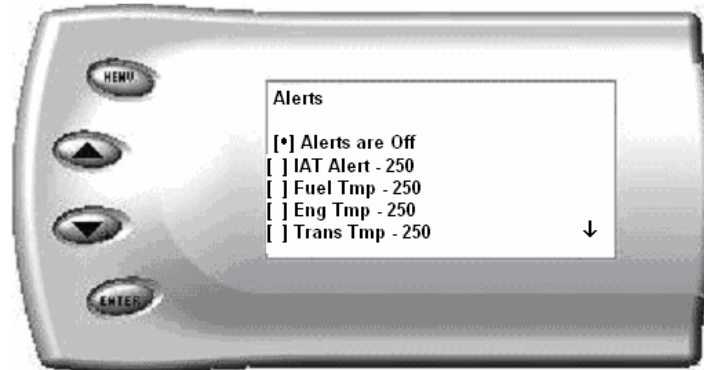
Alerts

If you would like to know when a certain parameter reaches a certain value, you can set an alert for that parameter by following these steps:

Following is a list of Alerts you may set and adjust.

- EGT Alert
- EngTmp Alert
- Boost Alert
- Speed Alert
- InjTime Alert (Injection Timing)
- RPM Alert
- FuelTmp Alert
- FRP Alert (Fuel Rail Pressure)
- TransTmp Alert
- Soot Mass Alert

1. From the *Main Menu* select the *Setup* option. Then from the *Setup* menu, select the *Alerts* option. The following screen appears:



2. By default, the alerts are off. To turn them on, select the *Alerts are Off* option and press [ENTER]. The text line will now read *Alerts are On*. To change the value of a certain alert, select the parameter you want to change and press [ENTER]. The screen similar to the following will appear:

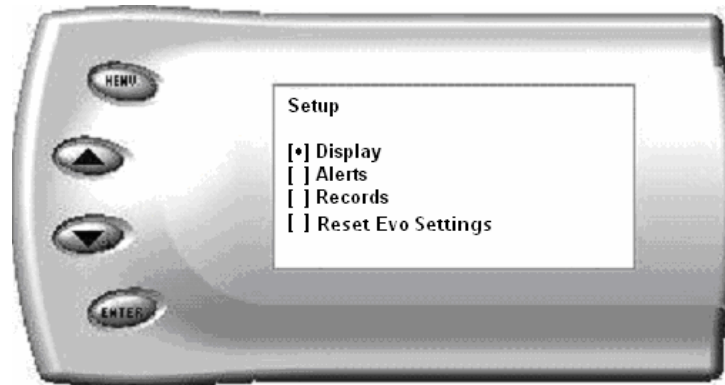


3. Press the [UP] and [DOWN] arrow keys until you have reached the desired value. Pressing [ENTER] will save the current alert value. If you would like to return to the previous screen and abort the current value change, press [MENU].
4. When alerts are On, and multiple alerts are detected, the *Evolution* will only display one. For example: if you exceed the set point for both MPH and RPM, the first alert the *Evolution* detects will be the one displayed. Pressing any button will temporarily disable the alert until the vehicle falls below the set point and then will automatically re-enable.

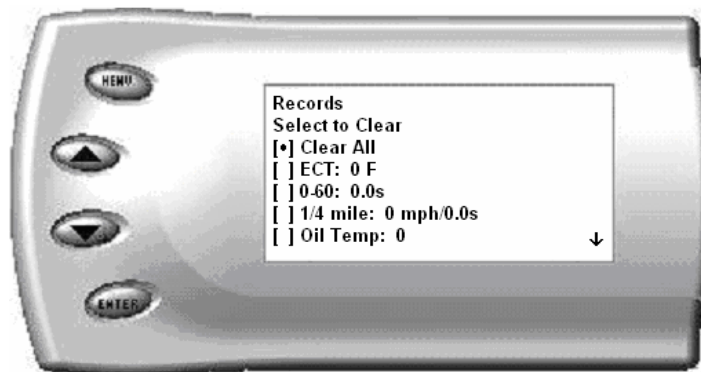
Records

The *Evolution* automatically records the highest value of some of the parameters. To view these records and to reset them, do the following:

1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



2. Select the *Records* option. The following screen appears:



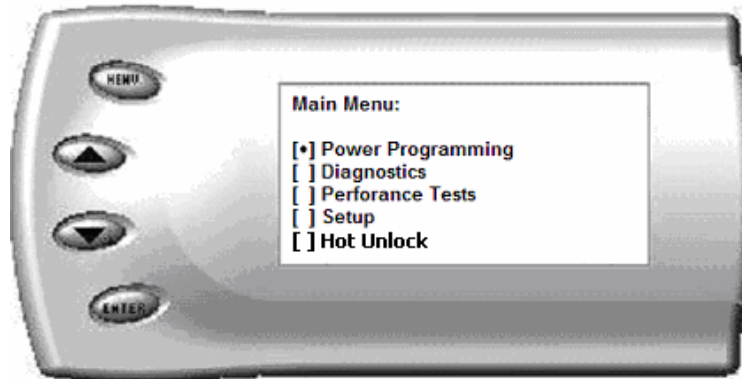
3. This is where you can view all of the current recorded high values. The arrow located at the bottom right corner of the screen indicates there are more parameters than the display can show. Use the [UP] and [DOWN] arrow keys to scroll through the list of records. If you would like to reset a single parameter, select the desired parameter and press [ENTER]. If you would like to reset all of the records, select the *Clear All* option and press [ENTER]. To exit out of this list press [MENU].

Reset Evo Settings

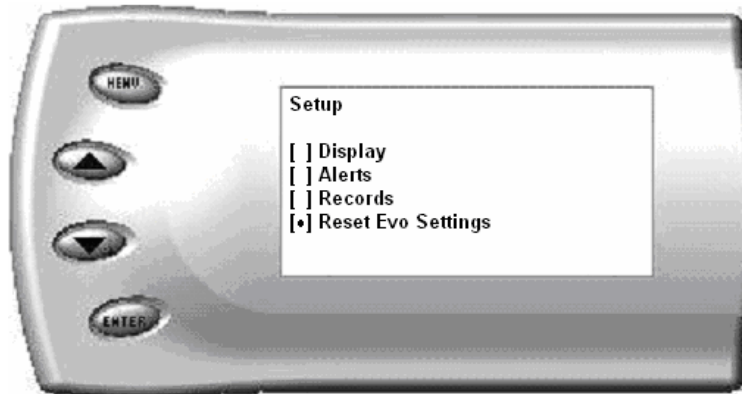
If you would like to restore the *Evolution* back to its original factory settings, follow these steps.

Note: *This will not program the vehicle back to stock power; it will only reset the Evolution display options, alerts and records back to the preset defaults from Edge Products. To reset power level, return to “Power Programming”, and select “Return to Stock”.*

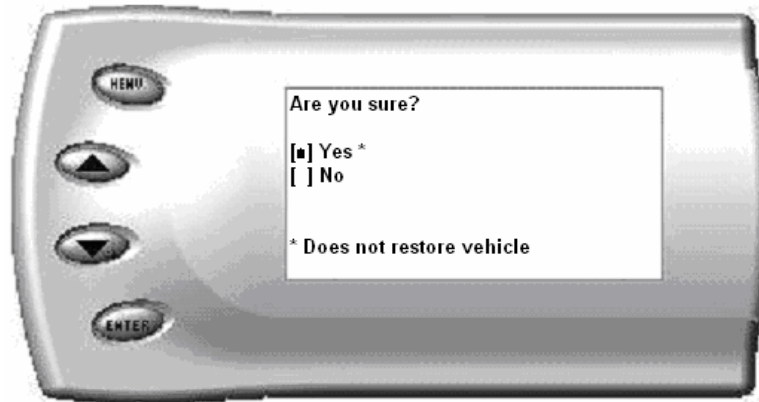
1. Enter into the *Main Menu*. The *Main Menu* screen appears as follows:



2. Select *Setup* and press *Enter*. The following screen will be shown:



3. Select *Reset Evo Settings* and press *Enter*. The following screen will be shown.



4. Select *Yes* and press *Enter*. The following screen will be shown.



5. The *Evolution* settings have now been reset to match the settings as originally purchased and supplied from Edge Products. Press [MENU] to return to the *Main Menu*.

Fusion® PC Software

Fusion® software allows the user to update their *Evolution* to the latest version of firmware and calibration files. The software can be downloaded for free from Edge Products website at www.edgeproducts.com , or the CD can be requested by calling (801) 476-3343.

Note: *Make sure you install both the SOFTWARE and the DRIVERS before hooking up the Evolution to your PC. During the installation you will be given the chance to install the drivers. Just hit the “Install” button when it asks. If you do not do this step and want to install the drivers at a later time the Driver installation can be found in the folder where Fusion was installed. This location is:*

C:\EdgeProducts\FusionClient\Evolution_Driver\CP210xVCPInstaller.exe.
Failing to do so will cause the software to not work properly with the device.

Connecting the *Evolution* to a PC is as easy as finding an open USB port, installing the supplied USB cable, attaching the *Evolution* to the cable, and running the Fusion® software. (**NOTE:** *The Evolution needs to be returned to stock on the truck before removing and performing any updates. If this is not done, the software will not allow you to continue.*)

NOTE: *If Lightning Software had previously been installed on your computer, do not use. If you have previously installed Fusion®, you do not need to reinstall. Instead, go to START on your computer tool bar, open all programs, open EDGE PRODUCTS and select Fusion. At this point you will be prompted to connect your device (Evolution monitor) to the computer. You will need to attach the supplied USB cable to an active USB port on your computer and plug into the side of the Evolution monitor*

Checking for Updates

The Fusion software will check for updates automatically each time it is started. Install the updates when prompted to keep your Fusion current.

In order to update your *Evolution* it must first be connected to your PC via a USB port. You will notice when you first connect it that it will try to connect to the Internet to make sure your stock files are all up to date on your evolution. If your computer is not connected to the Internet then you will not have this valuable function.

If your *Evolution* is not able to program your vehicle because it needs an update or a stock file does not pass the checksum test, then you must connect your computer to the Internet and then connect your Evolution to your computer. This will allow our server to update your unit and allow you to program your vehicle.

If we have not been able to verify the stock files on your vehicle, you will be asked if you want to upload those files to our server. This will allow us to make sure the *Evolution* has properly read the files and can program your vehicle with confidence that it will be done correctly.

If the files read by the *Evolution* do not match the ones that we expect we can also download the correct stock files to your *Evolution* in order to recover your vehicle if something went wrong.

Note: *If you did not return the truck to the “STOCK” programming level, the software will not allow you to update the Evolution.*

At the end of successful updates, you may exit the Fusion Software; disconnect the Evolution and cable from your computer.

Troubleshooting/Tips

Tip: Keep in mind that the *Evolution* is a high performance product and that not all vehicles deliver the exact same power output when programmed with the *Evolution*. It is recommended that you select a program that will best fit your needs. Whether towing, or traveling long distances at high speeds, choose your power level wisely and keep in mind the condition and tolerances of your vehicle when selecting a suitable power level.

- **NO DISPLAY WITH KEY ON** – If you should get no display when turning the key on, check all of your fuses and make sure your battery is fully charged. Disconnect and reconnect the OBD-II cable to ensure the *Evolution* restarts properly. If the unit restarts but fails to stay on, or fails to turn on when the key is on, there is most likely a communications issue. Contact Edge Products Technical Support for further assistance.
- **NO START** – If you experience a “No-Start” condition after programming your PCM, return to the *Power Programming* menu and select *Return to Stock*. This will allow the *Evolution* to reprogram the PCM with the factory calibration and recover the PCM. If, after reprogramming, you still have a “No-Start” condition, contact Edge Products Technical Support. A member of our support team can further instruct you on possible recovery procedures.
- **MISSING FILE** – If you have a missing file error during power programming, press [ENTER], turn off the key and follow the manual instructions to update your *Evolution* using the Fusion Software.
- **ERROR 86 or 87** – Connect the *Evolution* to the Fusion Software. Choose ‘Yes’ to the screens that the Fusion Software immediately displays. Make sure the Fusion Software can connect to the internet.

Commonly Used Acronyms

ACT = Air Charge Temp	KOEO = Key On Engine Off
ACV = Thermactor Air Control Sensor	KOER = Key On Engine Running
AOD = Automatic Overdrive Transmission	KS = Knock Sensor
APP = Accelerator Pedal Position	LOAD = Engine Load
AXOD = Automatic Overdrive Transmission	LOS = Limited Operation Strategy
BAT = Battery Voltage	LPD = Line Pressure Desired
BCM = Body Control Module	LUS = Lock-up Solenoid
BOO = Brake On/Off Switch	MAF = Mass Airflow
BP = Barometric Pressure Sensor	MAFV = Mass Airflow Sensor Voltage
CCD = Computer Controlled Dwell	MAP = Manifold Absolute Pressure
CCO = Converter Clutch Override	MAT = Manifold Air Temp
CDR = Crankcase Depression Regulator	MCU = Microprocessor Control Unit
CEL = Check Engine Light	MIL = Malfunction Indicator Light
CFI = Central Fuel Injection	MPH = Miles Per Hour
CHT = Cylinder Head Temperature	OHC = Over Head Camshaft
CID = Cylinder Identification Sensor	OSS = Output Shaft Speed
CKP = Crank Position Sensor	PCM = Powertrain Control Module
CMP = Cam Position Sensor	PFE = Pressure Feedback EGR Sensor
CPS = Crankshaft Position Sensor	PIP = Profile Ignition Pickup
DTC = Diagnostic Trouble Codes	PSPS = Power Steering Pressure Switch
ECA = Electronic Control Assembly	RPM = Revolutions Per Minute
ECM = Electronic Control Module	SES = Service Engine Soon
ECT = Engine Coolant Temp	SIL = Shift Indicator Light
EDF = Electric Drive Fan Relay	SPARK = Spark Advance/Retard
EDIS = Electronic Distributor	SPOUT = Spark Output Signal (from ECA)
EGO = Exhaust Gas Oxygen Sensor	STAR = Self Test Automatic Readout
EGR = Exhaust Gas Recirculation	TAPS = Throttle Angle Position Sensor
EGRC = EGR Control Solenoid	TCM = Transmission Control Module
EOT = Engine Oil Temperature	TFI = Thick Film Ignition System
EVP = EGR Position Sensor	TFT = Transmission Fluid Temperature
EVR = EGR Valve Regulator	TGS = Top Gear Switch
FDM = Fuel Delivery Module	THS = Transmission Temperature Switch
FPM = Fuel Pump Monitor	TPS = Throttle Position Sensor
FRP = Fuel Rail Pressure	TQC = Torque Control
HEGO = Heated Exhaust Gas Sensor	TSS = Turbine Shaft Speed
IAT = Intake Air Temperature	TTS = Transmission Temperature Switch
ICM = Integrated Controller Module	VAF = Vane Air Flow Sensor
IDM = Ignition Driver Module	VAT = Vane Air Temperature
ISC = Idle Speed Control	VCT = Variable Cam Timing
ITS = Idle Tracking Switch	VSS = Vehicle Speed Sensor
IVS = Idle Validation Switch (Diesel)	WAC = WOT A/C Cut-off Switch
KAM = Keep Alive Memory	WOT = Wide Open Throttle

Edge Products Technical Support

(888) 360-EDGE

Please have the Part Number, the Version Number and Manufacture Date prior to calling Tech Support. This will help ensure quick and accurate support.