

EVOLUTION

**2006-2007 GM Duramax 6.6L LLY / LBZ
Edge Evolution Programmer
Installation Instructions & Manual**

OLD P/N: EEC1000

NEW P/N: 25002



TABLE OF CONTENTS

DISCLAIMER OF LIABILITY	4
LIMITATION OF WARRANTY	4
Product Registration	6
Why register? Benefits of product registration:	6
<i>About the Evolution</i>	7
Stock Program	7
Economy Program	8
Towing Program	8
Performance Program	8
Extreme Program	8
Power Levels	8
<i>Hot Unlock Code</i>	9
<i>Features</i>	9
PIDs	9
Diagnostics	10
0-60 and Quarter Mile time	10
Alerts	10
Records	10
Custom Options	10
<i>Display and Keypad</i>	11
<i>Getting Connected</i>	12
Installing the EGT Probe	12
<i>Installing the Evolution</i>	15
<i>Power Programming</i>	20
<i>Custom Options</i>	21
Tire Size	22
Speed Limiter	24
<i>Diagnostics</i>	24
Retrieving Codes	24
Clearing Codes	25
Injector Balance Rates	26
Tech Support	26

<i>Evolution</i>	<i>06 LBZ & LLY Duramax</i>
<i>Performance Testing</i>	26
<i>Setup</i>	28
Changing the Display View	28
Two Function Bar Graph Display Sample	29
Two Function Digital Display Sample	30
Three Function Digital Display Sample	30
Four Function Digital Display Sample	30
Changing the Variables on the Screen	30
<i>Changing the Backlighting</i>	33
Adjusting the Backlight Color	33
Adjusting the Backlight Brightness	35
Adjusting the Contrast	35
<i>Alerts</i>	36
<i>Records</i>	38
<i>Reset Evo Settings</i>	39
<i>Fusion® PC Software</i>	40
Internet Connection Required to Update	40
Possible Programming Errors	43
<i>Troubleshooting/Tips</i>	43
<i>Commonly Used Acronyms</i>	45
Technical Support:	45

©2007, Edge Products
All rights reserved.

Edge Products
1080 South Depot Dr.
Ogden, UT 84404
888-360-3343

www.edgeproducts.com

Manual Version 13

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 90 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 THIRTY (30) 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).*

Product Registration

Please take the time to register your product. To register your product, follow the instructions at this link. http://www.edgeproducts.com/product_registration.php

Why register? Benefits of product registration:

- **Your Safety** – registering your product allows us to know exactly which product you have and provide important product updates to you that improve the quality and/or safety of the product
- **Enhanced Features** – almost all Edge products are easily updated via the internet. We are constantly adding new features and improvements to our product that we know you will want to enjoy
- **Confirmation of Ownership** – provides a record in case of product loss, theft, or required warranty work. When you call us for support our team will already have much of the information they need to help you!
- **Improved Product Development** – helps us better understand you (our customers) and design products that meet your needs
- **Special Offers** – allows us to inform you about special offers on accessories and/or new products that fit your vehicle and enhance your driving experience
- **AND...**
- **Extended Warranty Plan Opportunity** – within the first 90 days of ownership, Edge offers the option to buy a 1-year warranty extension to all customers who register their product!

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.

Warning: The Evolution employs carefully modified strategies that are designed to be utilized on unmodified (stock) vehicles only.

Many aftermarket components such as cold air intake (CAI) kits, exhaust systems, and throttle body spacers as well as forced induction systems (turbochargers, superchargers, nitrous oxide, etc) alter the calculated airflow characteristics of the engine. In addition, mechanical modifications to the engine such as displacement changes, camshaft modification, and cylinder head modification may alter calculated airflow characteristics.

Using any of these modifications (either alone or in any combination) in conjunction with the Evolution is **NOT RECOMMENDED** as it may cause an excessively lean condition which could result in engine damage.

Edge Products will not be responsible for any damages caused by using the Evolution on a vehicle that has been modified from a stock configuration.

If you have used another tuner/programmer on your vehicle, you will need to program back to stock and remove the device before using the Edge Products Device.

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. When towing a heavy load, we recommend you using this setting. **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, not recommended for towing.

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.

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

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 –	25 HP	60 TQ
Towing -	45 HP	135 TQ
Performance -	65 HP	175 TQ
Extreme -	100 HP	220 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 85 HP 200 TQ (Power Economy)**
 - **Hot 2 125 HP 250 TQ**
 - **Hot 3 150 HP 275 TQ**

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)

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.

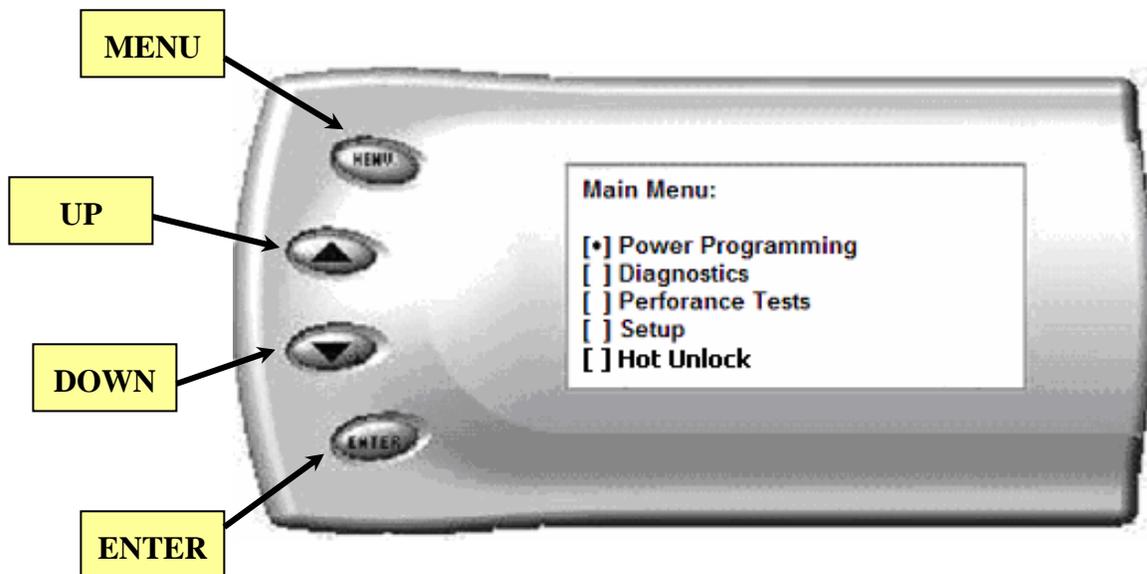
Custom Options

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.*

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.)
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.

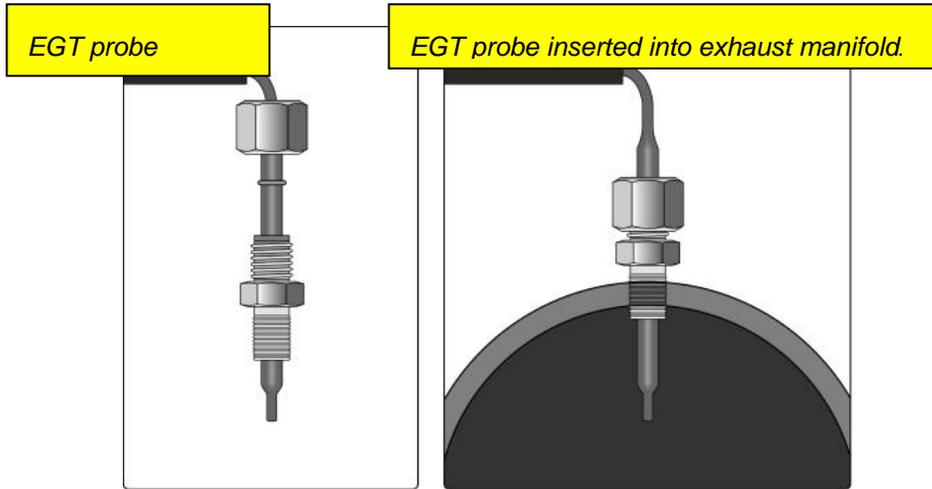


Figure A

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)

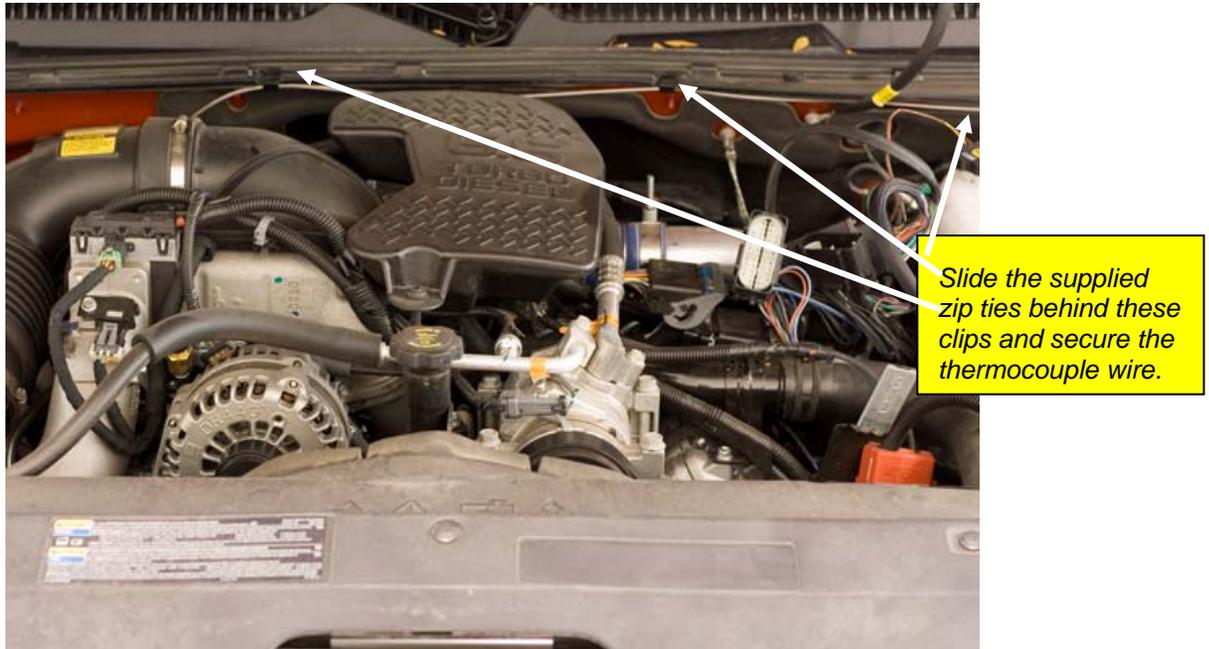


Figure D

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).

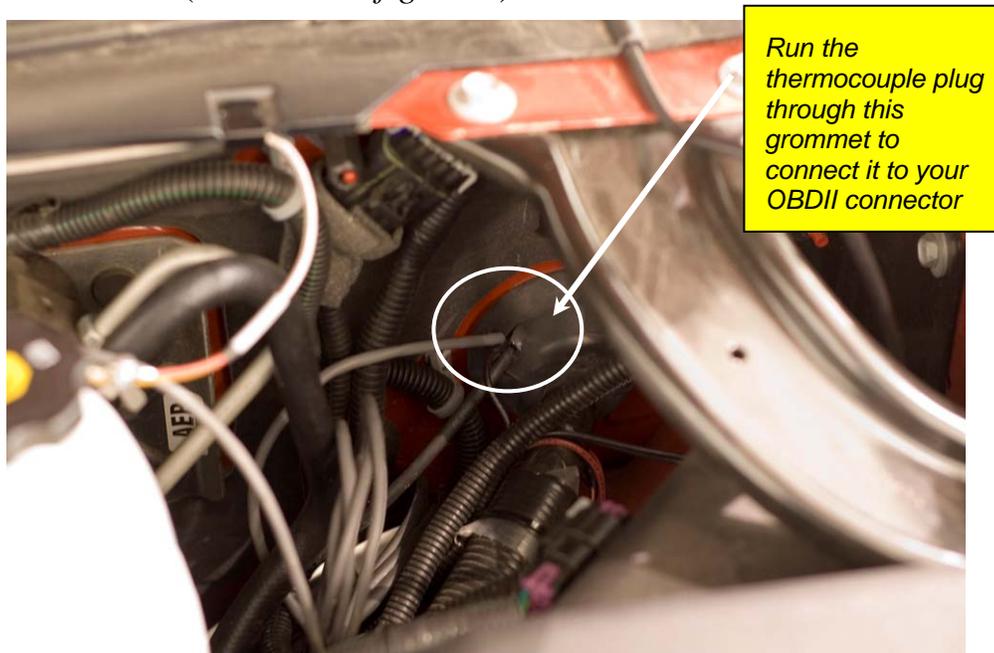


Figure E

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)

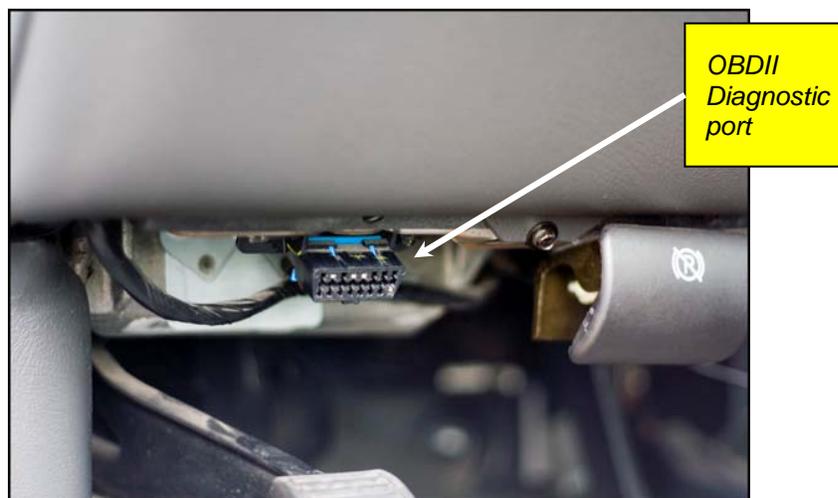


Figure #1

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 ODBII 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 should be placed in the appropriate numbered locations inside the pod. Use the permanent double sided tape to secure the brackets to the inside of the pod, be sure that the numbers match.

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.*

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.

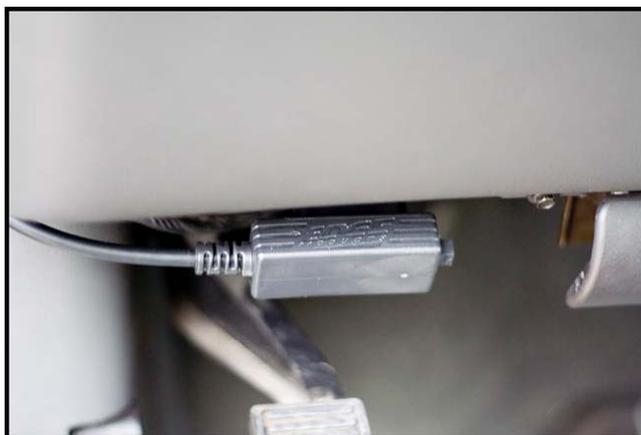
5. Insert the rubber grommet into the Pod, and connect the Evolution to the cable (*Figure #6*).

**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*). Use 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 five boxes that will be displaying information about your vehicle. The black box in the top right corner displays which 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).

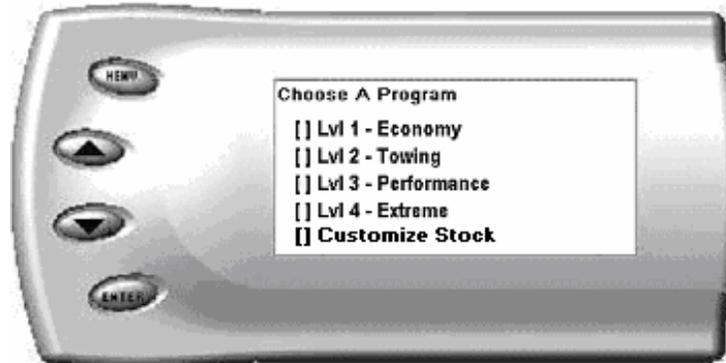
The other four boxes can show up to 4 PIDs (Parameter IDs) of your vehicle. By default, they are your vehicle's RPM, BST (boost), TFT (transmission fluid temperature), and EGT (exhaust gas temperature). Optional parameters and display formats may be selected in the *Changing Display* section of this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

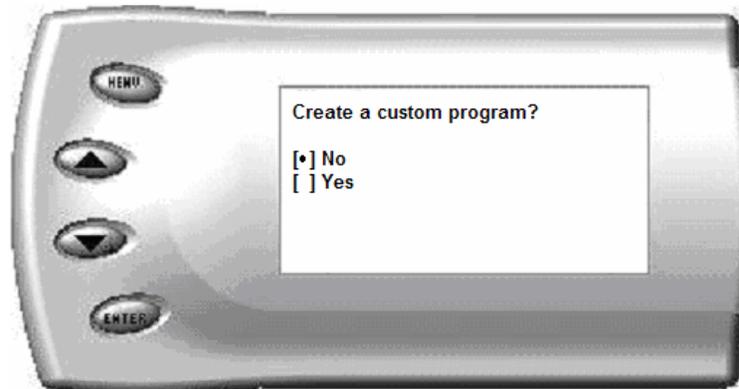
Power Programming

"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:

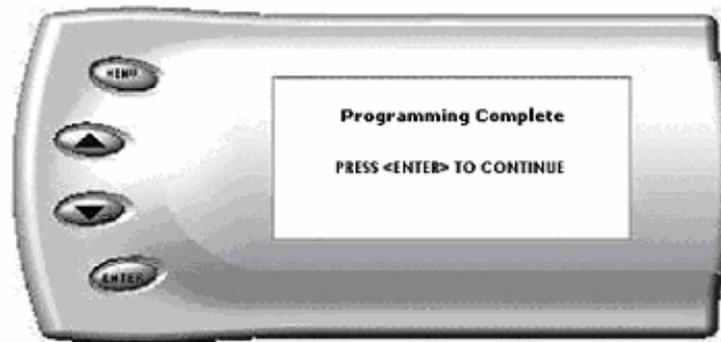


1. Select the level that best meets your needs. For more information about each level, refer to the *About the Evolution* section in this manual. Confirm your selection by pressing [ENTER] on the following screen. After confirming, the evolution will prepare the stock files, save the stock files, and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



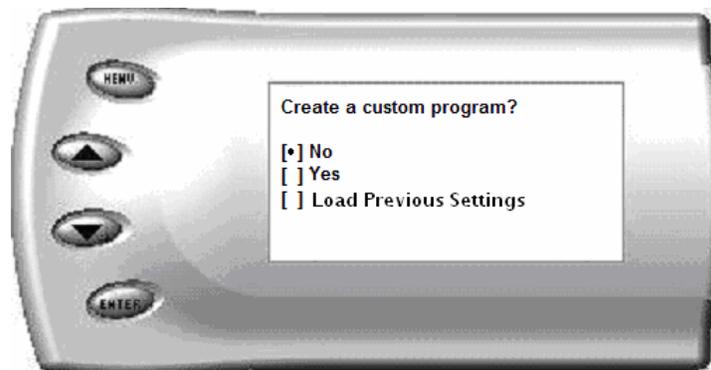
2. You have the option to change certain parameters of the level you chose. If you would like to learn more about what parameters are available and how to use them, then read the *Custom Options* sections in this manual. To use the standard program without customizing options, simply press [ENTER] (choose 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.

<u>Width</u>	<u>Ratio</u>	<u>Rim</u>	<u>Circumference</u>	<u>Tire Size</u>	
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:

$[(width * ratio * 0.02) + (rim * 25.4)] * 3.1415$

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.

When adjusting the following values, it is highly advised to make gradual changes as opposed to aggressive changes. This will help avoid possible engine or transmission damage.

Speed Limiter

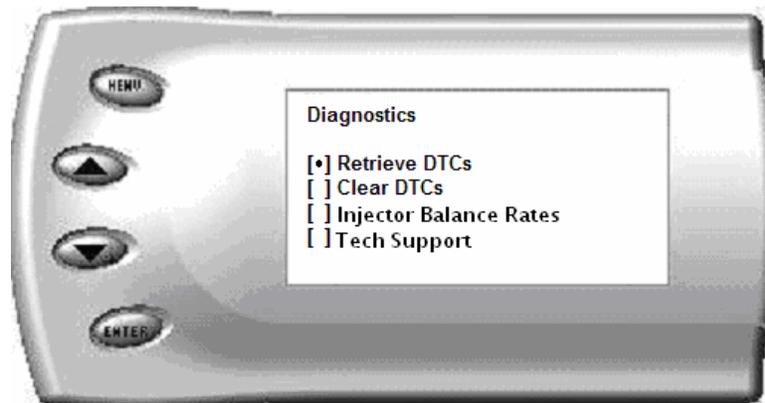
CAUTION! *Your Evolution programmer has the ability to remove/adjust your vehicle's factory speed limiter. Removal/adjustment of the factory speed limiter is intended for use at a closed circuit, legally sanctioned racing environment. Even if racing in a legally sanctioned racing environment, it is your 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.*

The evolution will allow you to raise your speed-limiter in increments of 5 mph starting at 40 mph, and ending at 200 mph.

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

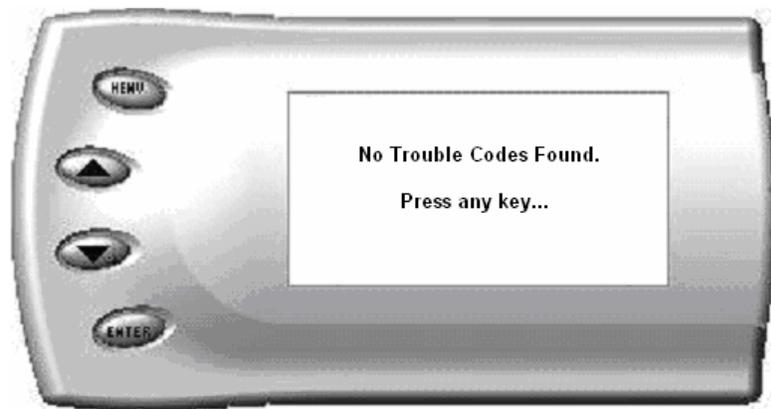
If you want to retrieve and view the DTCs on your vehicle, select the *Retrieve* option. Make sure your ignition is in the ON position.

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:



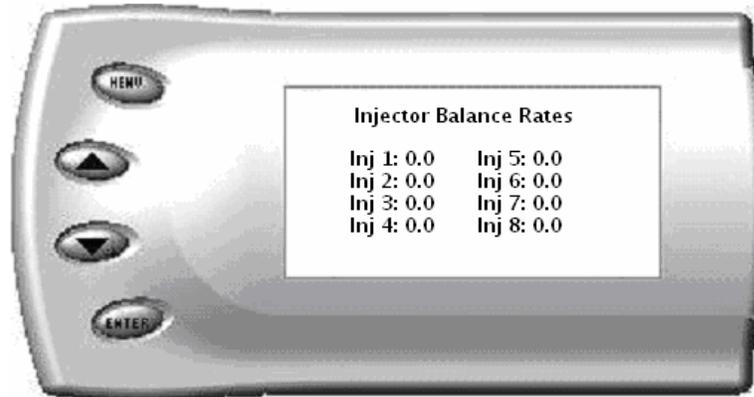
Clearing Codes

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

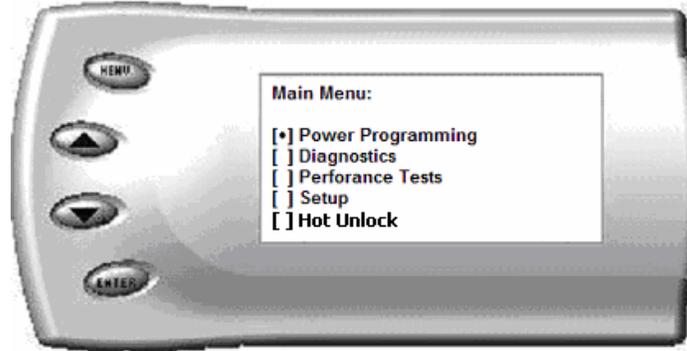
Information found in this section is normally only accessed when instructed by an Edge support person. For example, *Version Info* displays the current Bootloader, Firmware, and Calibration versions installed on your *Evolution*. Your vehicle's HEX code is also shown. Using the Fusion® software, you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

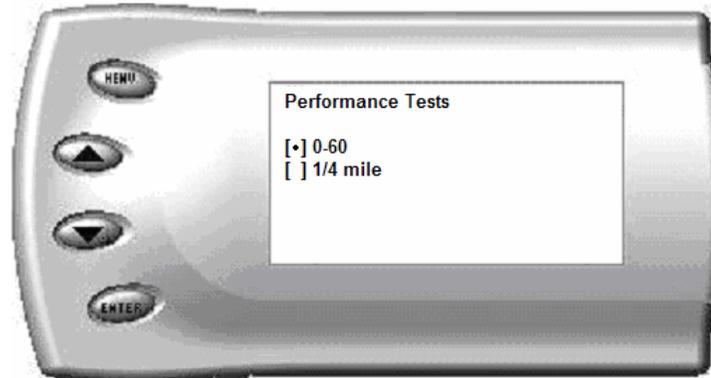
Performance Testing

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:



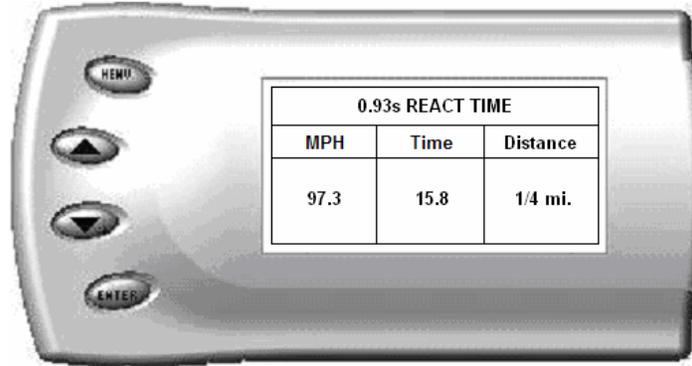
2. Select the *Performance Tests* option. The following screen appears:



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 1/4 mile. In addition, your MPH at 1/4 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 1/4 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 1/2 second, so a perfect reaction time is a 1/2 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.

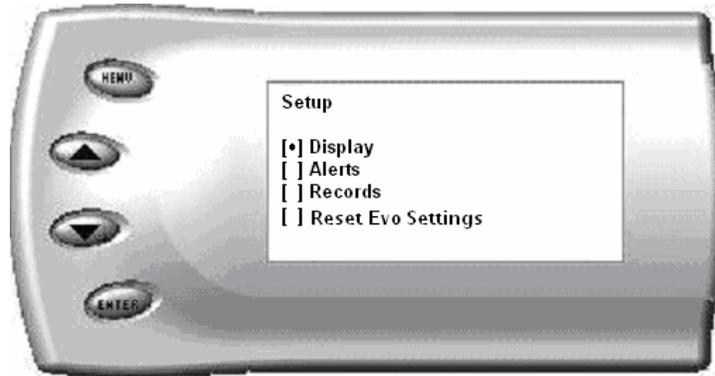
Setup

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.

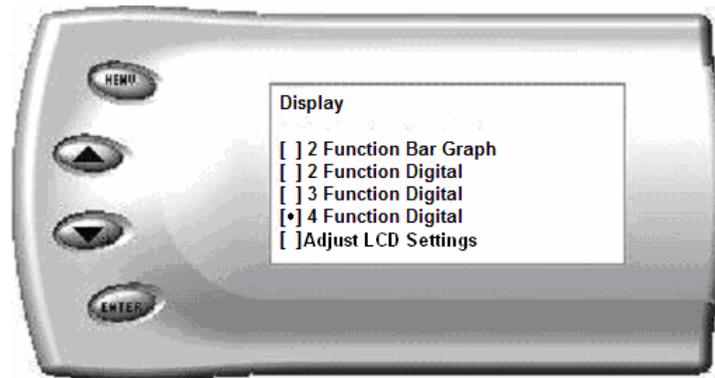
Changing the Display View

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:

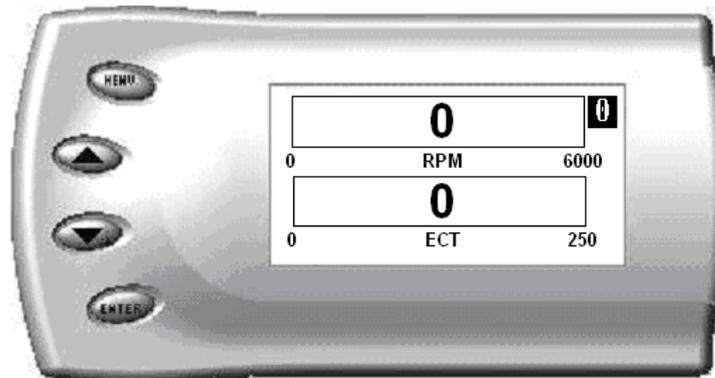


2. Select the *Display* option. The following screen appears:

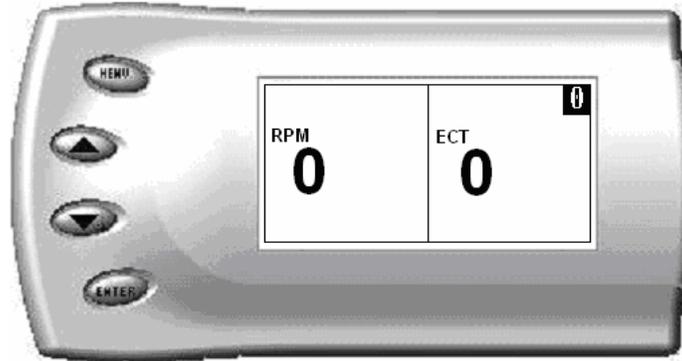


3. Select the desired viewing option by using the [UP] and [DOWN] arrows and pressing the [ENTER] key on the desired display type. Below are examples of the display options:

Two Function Bar Graph Display Sample



Two Function Digital Display Sample



Three Function Digital Display Sample



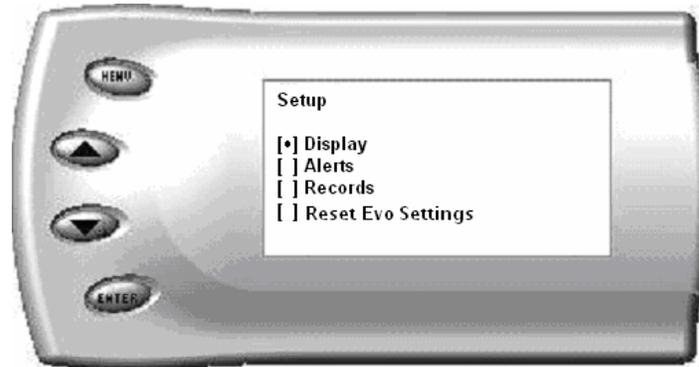
Four Function Digital Display Sample



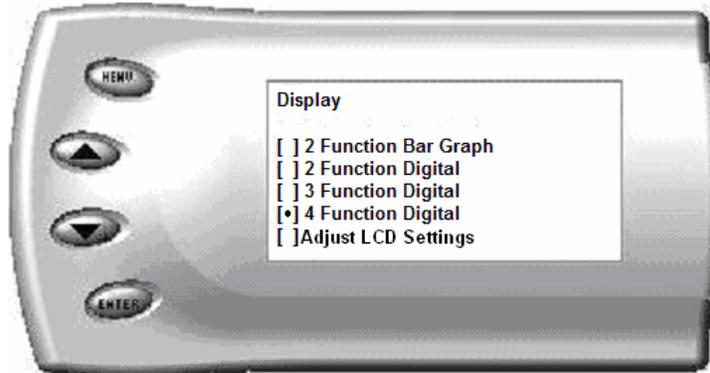
Changing the Variables on the Screen

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 23 PIDs you can display and description of each:

- RPM (Revolutions Per Minute) – Engine speed.
- 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.
- MAP (Manifold absolute Pressure) - kPa
- MIT (Main Injection Timing) - Degrees
- BAT (Battery voltage) - Volts
- CFR (Calculated Fuel Rate) – mm³
- VPOS (Turbo Vane Position) - %
- Throttle Percent (Accelerator Pedal Position) - %
- IATT (Intake Air Temperature in intake tube) – Degrees F

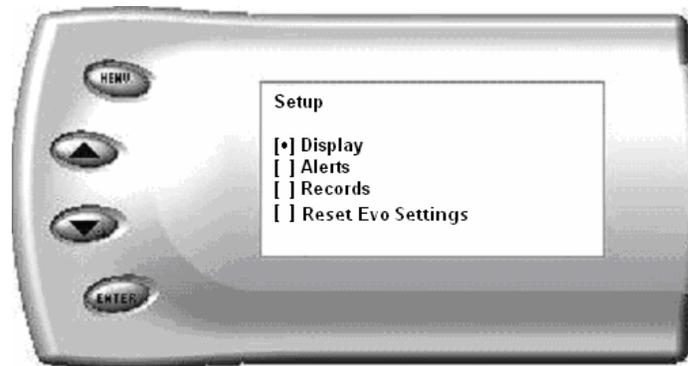
- BARO (Barometric Pressure) - kPa
- FTMP (Fuel Temperature) - Degrees F
- DIDL (Desired Idle) - RPM
- EGT (Exhaust Gas Temperature) – Degrees F
- OSS (Output Shaft Speed) - RPM

Changing the Backlighting

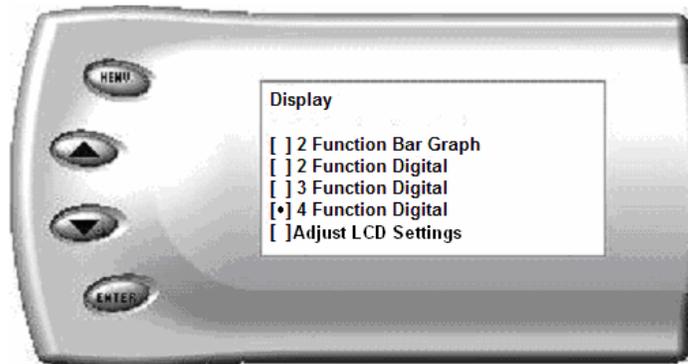
Adjusting the Backlight Color

To change the backlighting color, perform the following steps:

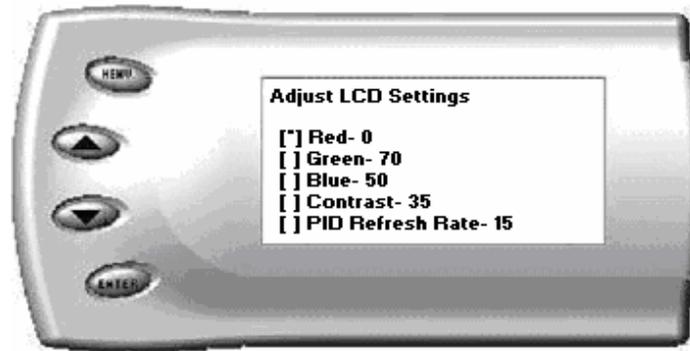
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



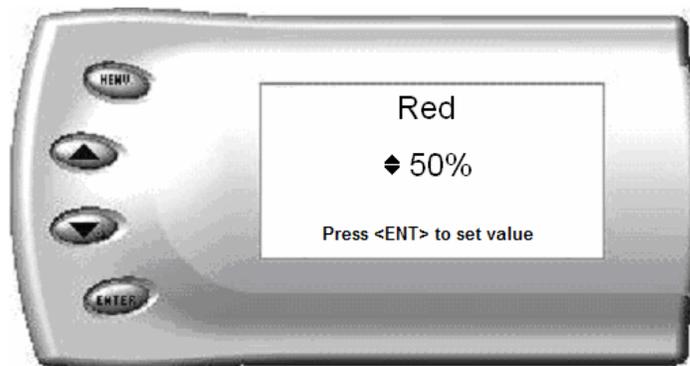
2. Select the *Display* option. The following screen appears:



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

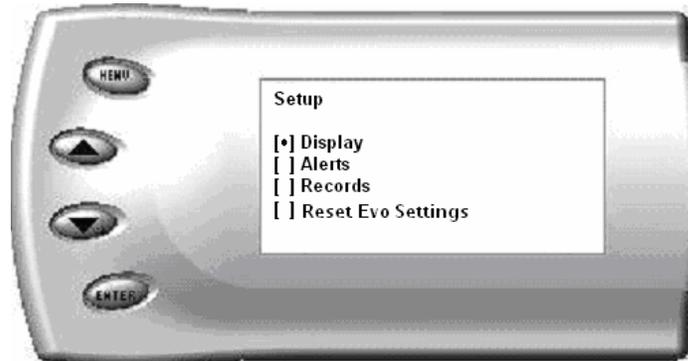
When viewing engine parameters (like the sample below) press the [UP] and [DOWN] arrow keys to adjust the brightness of the display. Each time the button is pressed the backlight will either brighten or dim by 10% of the total brightness. The default setting is 100% brightness.



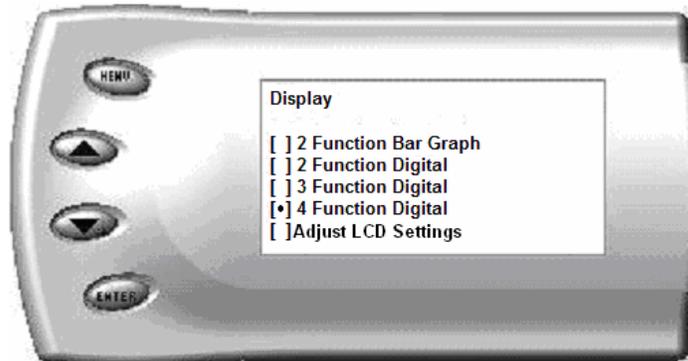
Adjusting the Contrast

To change the contrast, perform the following steps:

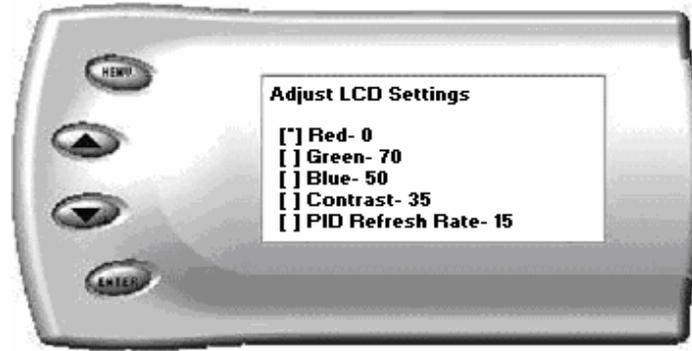
8. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



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.

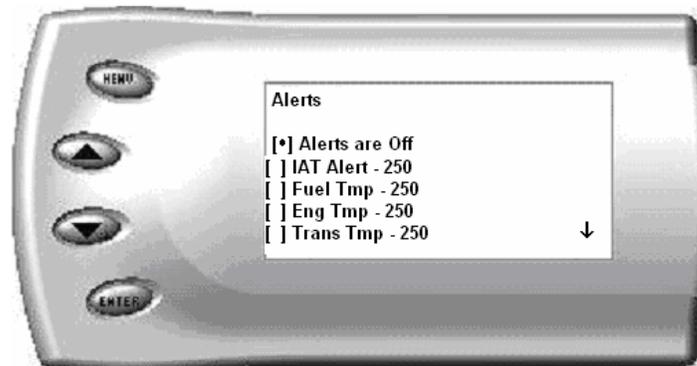
Alerts

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

1. From the *Main Menu* select the *Setup* option. Then 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:



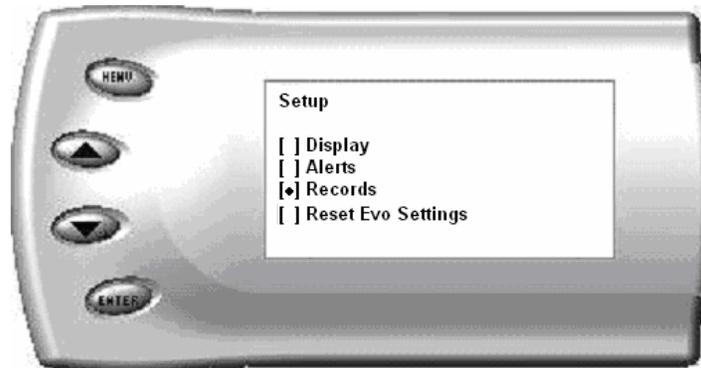
3. Press the [UP] and [DOWN] arrow keys until you have reached the desired value. Pressing [ENTER] will save the current alert value. If you would like to return to the previous screen and abort the current value change, press [MENU].

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.

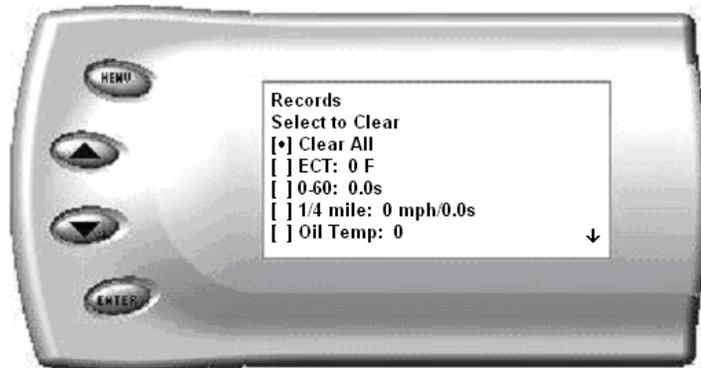
Records

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:



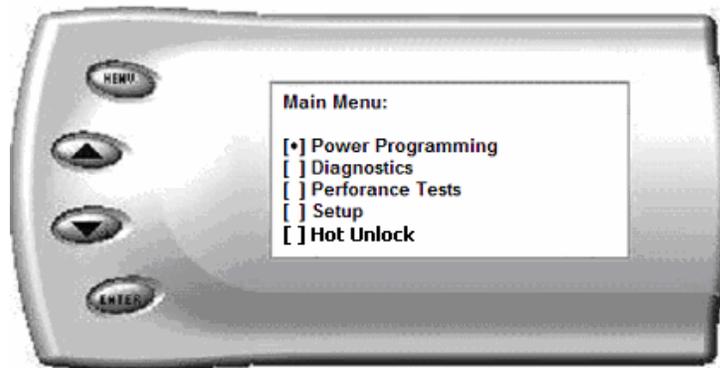
3. This is where you can view all of the current recorded high values. The arrow located at the bottom right corner of the screen indicates there are more parameters than the display can show. Use the [UP] and [DOWN] arrow keys to scroll through the list of records. If you would like to reset a single 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

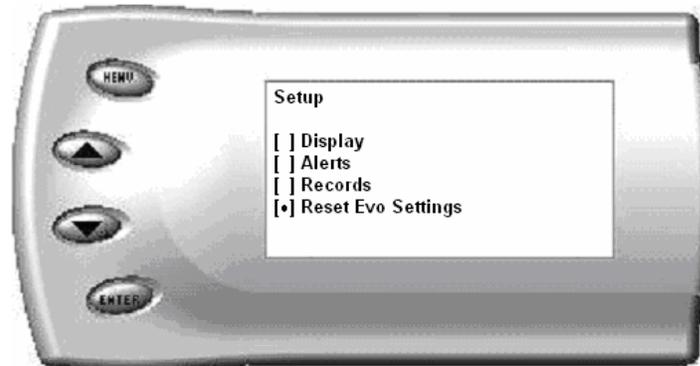
If you would like to restore the *Evolution* back to its original factory settings, follow these steps.

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”.*

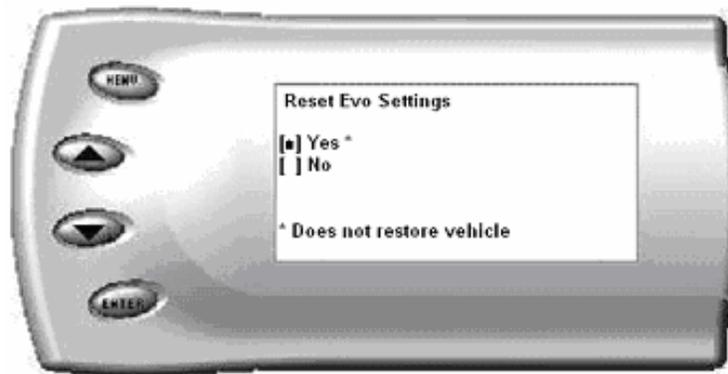
1. Enter into the *Main Menu*. The *Main Menu* screen appears as follows:



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

Internet Connection Required to Update

Fusion® Software allows the user to update their device to the latest version of firmware and calibration files. This software is included on the disc provided with your device. It can also be downloaded for free from Edge Products web site at www.edgeproducts.com, or the CD can be requested by calling 888-360-EDGE (3343).

Note: *Be sure to install both the SOFTWARE and the DRIVERS that come included in the download or on the disk before you connect your device to your PC. During the installation you will be prompted to install the drivers, choose yes.*

For step by step installation instructions please copy this link into your web browser

http://www.edgeproducts.com/product_images/product_update-file-11.pdf

Once you've successfully installed the Fusion Software and Drivers, click on the Fusion icon on your PC desktop. You may be prompted for a Fusion login. If you have not yet created an account, click on "Create a New User" and you will be taken to a webpage to create your login information. After entering your information, a password will be sent to the email address you provide. Please be sure that your email account does not block emails from "edgeproducts.com". Upon receiving the password, enter your email address and password into the login screen. You'll be prompted to connect the device to launch the update. After connecting the device, you'll see the following screen. Click yes to continue with the update.

Note: *Be sure to return your vehicle to stock before connecting the device to Fusion.*

Note: *If the USB connector you received has 2 plugs, it is recommended that you plug both USB connectors into the computer before connecting the device to the other end to ensure proper operation.*



After you've selected yes on the previous screen the Fusion software will go through the steps in order to update the device. Once it's completed you'll see the following screen



Click OK and the update will be completed. You'll now have the latest Firmware, and Calibration on your device.



When your device is connected to Fusion, the Device Model, Level, Bootloader, Firmware, Calibration and Serial Number are all displayed at the bottom of the screen. These numbers will be useful to quickly view the state of your device, and whether or not it is currently programmed to a vehicle.

MODEL: The model number for your device

LVL: The currently programmed level

BOOTLOADER: The bootloader version currently on your device

FIRMWARE: The firmware version currently on your device

CALIBRATION: The calibration version currently on your device

SERIAL NUMBER: The serial number assigned to your device

Possible Programming Errors

Update Required

Fusion is designed to help the development team at Edge Products support new vehicle calibrations. When you connect your device to the vehicle, the first step it takes is identifying your vehicle's stock file. If the stock file isn't currently supported the device will display a screen alerting you that the stock file is not yet supported, and prompt you to press a button/touch the screen in order to read and save the stock file. Once the device has saved the stock calibration, it will prompt you to connect the device to Fusion. Fusion will ask you if you want to upload your vehicle's stock files to our server. Choosing yes will upload the files to the server, and alert the development team. This will help the development team at Edge Products provide support for your vehicle's calibration as quickly as possible.

Non Stock condition

During programming, the device will read the stock file on your vehicle and compare it to a corresponding stock file that has been verified by Edge Products. If there is a mismatch the device will alert you, and display this message,

“Non-stock condition detected. This is most likely because your vehicle has been programmed with a competitive product. It is recommended that you return your vehicle to a stock condition with the product that changed it. Alternatively, you can plug your device into the internet update system and it will load the necessary files onto your device to return your vehicle to stock.”

If you don't have the competitive product that programmed your truck, connect the device to Fusion where you'll be prompted to download the correct stock files. Once downloaded, simply connect the device to your vehicle, and the device will program the verified stock files to your vehicle.

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 40 or 39** – 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

Technical Support:

888-360-3343

To expedite your support call, please have your Vehicle Information, Part Number, Serial Number, and Date of Manufacture ready prior to calling Technical Support. The *Edge Products* information is found on the label located on the bottom of the device.