



**2008-10 Ford Power Stroke 6.4L  
Edge Evolution Programmer  
Installation Instruction & Manual**

**P/N: 15004**

*(Will not work on vehicles larger than the F-550)*



**READ IMPORTANT SAFETY INFORMATION IN THIS MANUAL**



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Manual Version 9

# IMPORTANT SAFETY INFORMATION

## SAFETY TERMS

Throughout this User Guide (hereafter referred to as User Manual or Manual) you will see important messages regarding your safety or the protection of your vehicle. These messages will be designated by the words **WARNING** or **CAUTION**.



**WARNING** indicates a condition that may cause serious injury or death to you, your passengers or others nearby. Pay careful attention to these Warning messages, and always comply with them. They could save a life.

**CAUTION** indicates a condition that could cause damage to your vehicle. It is important to install and operate your EDGE product in conformance with instructions in this Manual. Caution messages alert you to particularly important things to watch for to keep your vehicle operating the way you want it to.

The Edge product you have bought is a high-performance product. As such, it does present some risks of which you should be fully aware. Do not use this product until you have carefully read all the following safety information and the Owner Agreement.



**Misapplication or misuse of this product could lead to a serious or fatal accident. Comply with all safety information below, and in your vehicle owner's manual. Follow safety, installation and operating instructions in this User Manual to assure proper use.**

## SAFETY GUIDELINES

1. Do not exceed legal speed limits on public roadways. Use any enhanced speed capabilities of this product only in closed circuit, legally sanctioned racing environments expressly for this purpose. Loss of control from speeding on a public road could seriously injure you, your passengers, or others on the roadway.
2. Select a position on the windshield or dashboard to mount the device where it will not impair your view. You must be able to see the road, traffic, and pedestrians without interference. Be sure your mounting location meets state and local laws regarding placement of devices on the windshield or dashboard.
3. Do not operate the device while driving. Perform all adjustments or changes while stopped. Changing a setting while under way can interfere with your attention to roadway conditions.
4. "Stacking" performance-enhancing devices or other improper installation could cause powertrain failure on the road. Other products may have features incompatible with your Edge device. Follow all installation and operating instructions, and don't stack products.
5. Some modifications may affect other parts of your vehicle. For example, if you remove/adjust the speed limiter in your vehicle, be sure your tires and other components are rated for the increased speeds they will have to withstand. Not doing so can lead to loss of vehicle control. Modify the speed limiter only for use in closed circuit, legally sanctioned racing environments, not for use on public roadways.
6. Do not use the Performance Tests feature to break any traffic laws. Perform these tests only where they are legal and safe.

7. Some features may not function on all vehicle models. Check a newly-installed device for all features you intend to use. Do not rely on their working without checking first.

**NOTE:** *Dispose of this product consistent with local codes. Return to your electronics supplier for proper handling.*

## 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](http://www.edgeproducts.com/product_registration.php)

### 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. 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.

**Caution: 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***

**IMPORTANT:** *Read all Safety, Warranty, and Installation Instructions before installing this product. Read through these instructions completely so that you understand each step prior to installation.*

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:*** *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.

We *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 rendered useless. 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 Performance 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 Performance Program**



*Do not exceed your vehicle's max GVWR as outlined in the vehicle's owner's manual. Doing so may result in loss of vehicle control and cause bodily injury.*

This setting not only provides improved transmission shifting, but will also modify the fuel timing and fuel injection strategies to improve the performance of your vehicle. You should see an improvement in fuel economy as well as added horsepower and torque. When towing a heavy load such as a boat or camper, we recommend you using this setting.

## **Race Performance Program**

We recommend that you not tow with this program. We also strongly recommended that you make appropriate modifications to your transmission, to run the program on a regular basis. The transmission strategy is modified to take advantage of the increased engine performance by providing quicker, firmer shifts.

## **Extreme Performance Program**

This is the highest performance setting for the *Evolution*. The fuel injection and fuel timing strategies are aggressively tuned to extract the maximum performance from your vehicle without sacrificing drivability or durability. The transmission strategy is modified to take advantage of the increased engine performance by providing quicker, firmer shifts.

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

## Power Gains

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.

POWER LEVEL	TOTAL HP GAIN	TOTAL TQ GAIN
Economy-Lvl 1	25	55
Towing-Lvl 2	40	75
Race-Lvl 3	60	130
Extreme-Lvl 4	100	200



**WARNING** *Do not combine, or “stack” chips (modules) to gain more horsepower. The chips could be incompatible and result in powertrain failure or create dangerous conditions (such as adverse running conditions, high idle, DTC codes, etc.) leading to a serious or fatal accident.*

## 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 of the *Evolution* is the ability to determine your quarter mile times as well as your 0-60 times, and has a unique Christmas tree starting sequence.



**WARNING** *Do not use the Performance Tests feature to break any traffic laws. Perform these tests only where they are legal and safe.*

## Alerts

If you would like to know when a certain parameter, such as transmission temperature, reaches a certain value you could 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

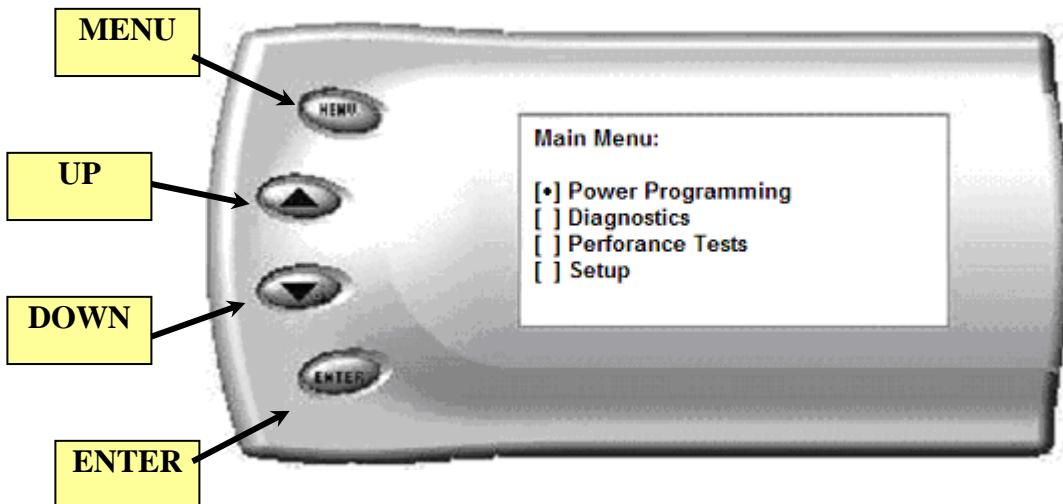
While programming your vehicle, you have the option to customize our tuning. You can change your tire size value which can correct your odometer readings that result from changing tire sizes.

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 extreme low temperatures (32 degrees F, or 0 degrees C) 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

The *Evolution* does not need an external EGT thermocouple for this Ford Model truck. The EGT data is received through the OBDII data link port. Go to the Installing the *Evolution* Section.

## Installing the *Evolution*

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

1. With the drivers side door open, detach the weather stripping at the end of the dashboard. This will enable you to pull off the access panel that is located on the left side of the dashboard.(see figure #1 & #2).

**Figure #1****Figure #2**

2. Next, turn your ignition key to the OFF position. Locate the black diagnostic (OBDII) connector (see Figure #3) under the dash at the bottom of the access panel area. As you sit in your vehicle, it could be located right below your knee to the left of the break pedal. Sometimes the cover to this connector will be labeled "Data link."



Figure #3

3. Connect the Edge Products harness connector to the OBDII port, and route the cable up over the bar behind the OBDII cable (see Figure #3), then run the cable toward the left end of the dash. Be sure to keep it above the emergency brake release lever. Route the end of the ODBII cable up behind the dash and out between the seal trim and the side panel on the dash (shown in Figure #4). Snake it up to the A-pillar of the vehicle and replace the dashboard access panel.

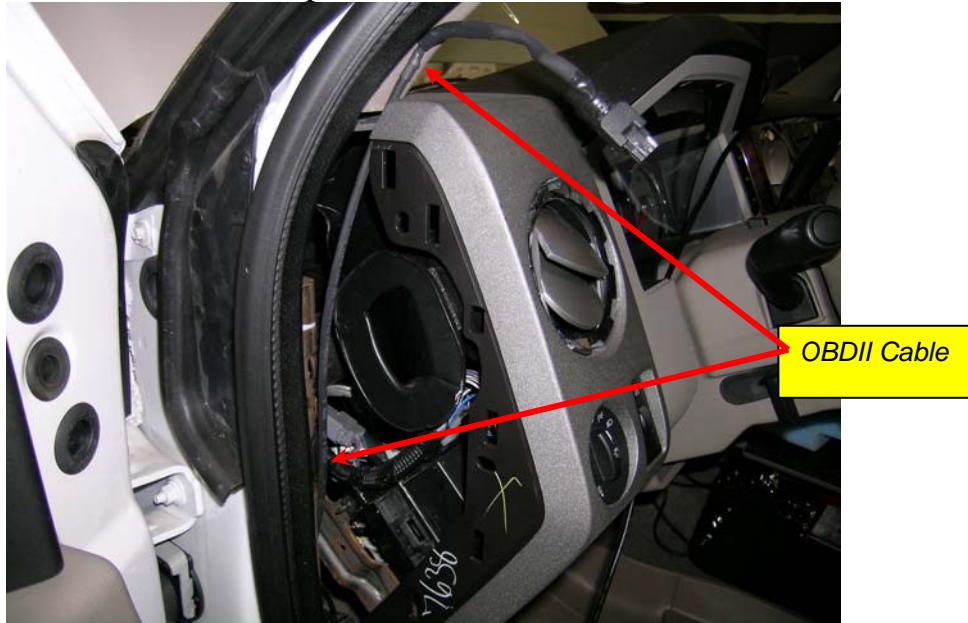


Figure #4

4. Feed roughly 4 to 6 inches of cable through the top of the dashboard. Mount the Pod onto the dashboard (shown in Figure #5) with the end of the cable protruding through the front of the Pod.

5. To secure the Pod: Locate the brackets and the pod in your 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.

**TIP:** *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. This will help you avoid repositioning the brackets after the tape has adhered.*

6. Clean the pod location on the dash with hot soapy water and rinse, or use 70% Isopropyl alcohol. Thoroughly dry the dash. 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.
7. After the pod is secure, insert and seat the rubber gasket into the Pod opening. Disconnect the cable at the OBDII port, and attach the *Evolution* to the cable end which is protruding from the Pod.



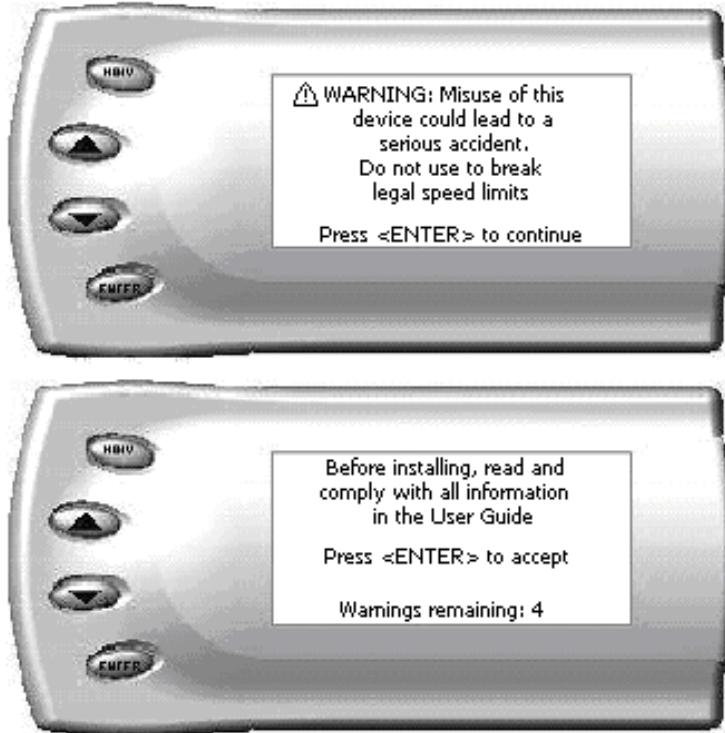
**Figure #5**

8. Insert the *Evolution* into the Pod. Any excess cable may be stuffed behind the *Evolution* or may be pulled back through the dash to eliminate slack. The result of the installation is shown in Figure #6. Be sure to use the supplied cable ties to secure any excess cable underneath the dash to prevent the cable interfering with proper e-brake or pedal operation.

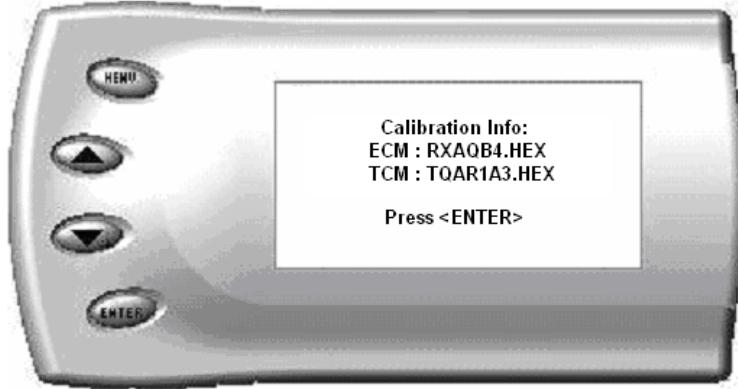


Figure #6

9. With the Pod and *Evolution* securely in place, re-connect the OBDII to the plug, and turn the ignition key ON. The *Evolution* logo will display followed by a warning and compliance directive. To indicate you accept and acknowledge the warning and compliance, press the [ENTER] button



10. After pressing [ENTER], the following screen will be displayed:



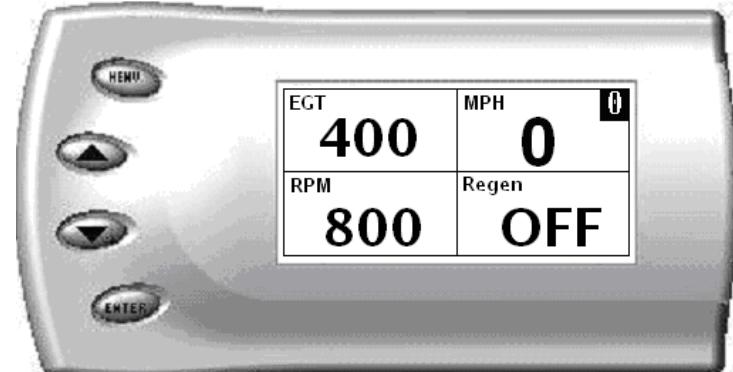
This screen shows the calibration info of the truck that the *Evolution* is currently connected to.

**Note:** *If no calibration information is shown, disconnect from the OBDII plug and reconnect after 5 seconds. When you come to the screen again, the code should be available.*

**Note:** *When first programming the vehicle, take a minute to write down your HEX file in the provided table below. This may be useful if you ever need to contact Edge Products Technical support.*

Truck Hex Code

11. After pressing [ENTER], the main display will come up.



**Note:** *Parameters and values might vary from what is shown..*

12. There are five boxes that will be displaying information about your vehicle. 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 *Race* (Level 3).
- 4** – Vehicle has been programmed to *Extreme* (Level 4)

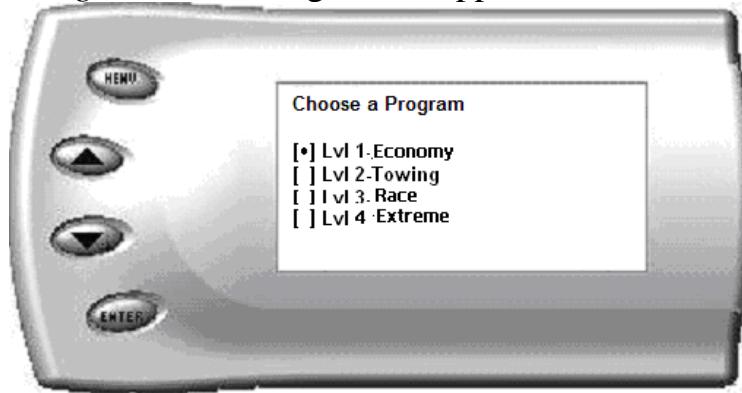
The other four boxes can show up to 4 PIDs (Parameter IDs) of your vehicle. By default, they are your vehicle's RPM, MPH, EGT and Regeneration status. Optional parameters and display formats may be selected in the *Changing Display* section of this manual.

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

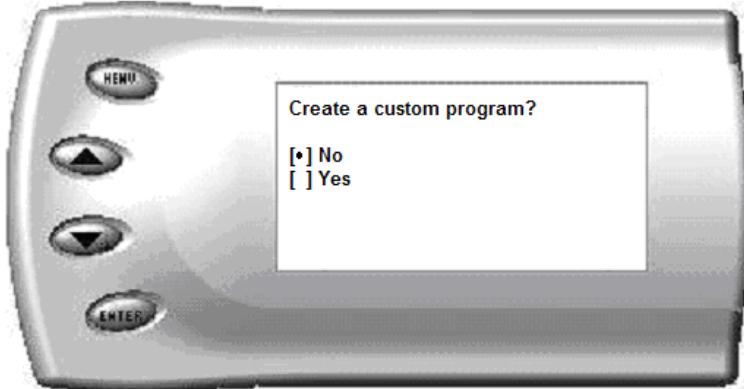
## Power Programming

**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 screen that will follow. After confirming, the screen below will appear:



2. After your initial tune 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 turn the key OFF and then ON. Do NOT crank the engine or possible programming failure may result.
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:



## IMPORTANT REGENERATION NOTE!!

### **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.*

*(Exhaust gas temperature). While this process is happening you will notice a fluctuation in EGT, even while maintaining a constant load. This process will occur as often as needed and is necessary for the proper operation of your vehicle's emission reduction system.*

### **Passive Regeneration**

*Passive Regeneration is 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 aggressive driving*
- *Avoid towing in levels higher than level 2*
- *Avoid short aggressive bursts of acceleration, this may cause a large build up off soot, and the short sprints may not allow a regeneration cycle to initiate.*

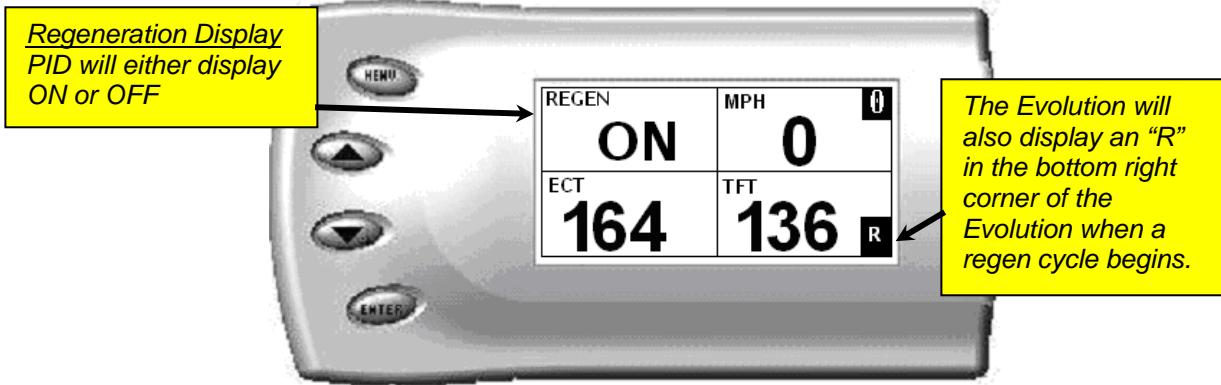
### **Benefits the Evolution has on the DPF system**

*The Evolution contains two useful features for monitoring your truck's regeneration cycle. The Evolution has a built-in audible alert notifying you when the cycled is initiated. Edge strongly recommends you monitor and display the regeneration cycle in order to allow for a proper and complete regeneration cycle. Since the release of the DPF on the 2008 6.4L Ford pickup, it has been confirmed that DPFs may clog and become unusable if owners do not allow for a complete regeneration cycle. Even then, DPFs may still become clogged and unusable under normal use, with OEM equipment or aftermarket parts installed.*

**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.*

### **Regeneration Display**

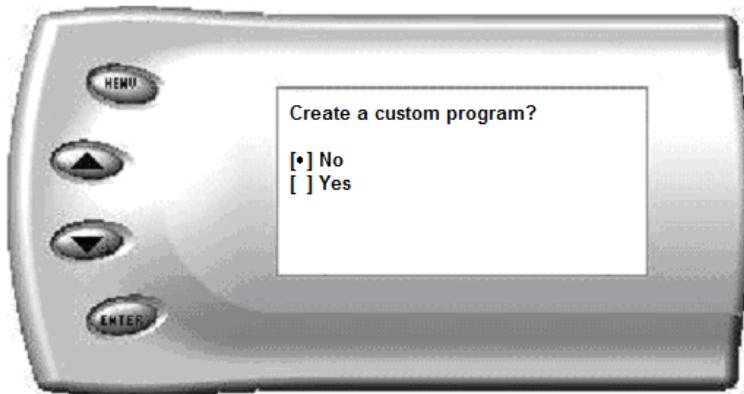
The Evolution has the ability to notify the user that the truck is currently in a regeneration cycle. To monitor the regeneration cycles of the truck, simply choose the "REGEN" variable from the *Setup Display* menu.



## Custom Options

**Note:** After creating an initial custom program, you will be able to reload the options into any future programs by selecting the “Load Previous Settings” option. From there, you can modify the values more if desired.

When programming 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.



**Note:** 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.

**Caution:** The following options are available and when adjusting the values, it is highly advised to make gradual changes as opposed to aggressive changes. This will help avoid possible powertrain damage.

### Rev. Limiter

The Rev. Limiter prevents the engine from over-revving and causing engine damage. If you set this value to 2500, you would not be able to rev the engine beyond that even with the accelerator to the floor. Setting this value higher

can help take advantage of the power generated at higher RPMs. Setting this value too high can cause damage to your engine.



**WARNING** *If you drive on public roads after adjustment of the rev limiter, you must still obey all driving laws, including adhering to posted speed limits.*

**CAUTION:** *Setting this value too high can cause damage to your engine. Adjusting the rev limiter for purposes inconsistent with the product's intended function violates the product's intended use and will invalidate the product's warranty. Edge Products is not responsible for or liable for the consequences of improper product use.*

**(Hint:** Make sure to set the Rev. Limiter at least 150 RPM higher than the highest WOT Shift Point or you may experience erratic shifting.)

## Speed Limiter

The Speed Limiter restricts the top speed of the vehicle. Factory speed limit values are generally based on the tolerances of the driveline components. The evolution will allow you to raise your speed-limiter in increments of 5 mph starting at 40 mph, and ending at 200 mph. This feature is intended for use only in a closed circuit, legally-sanctioned racing environment. Even if racing in a legally-sanctioned 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.



**WARNING** *If you drive on public roads after removal or adjustment of the speed limiter, you must still obey all driving laws, including adhering to posted speed limits. To drive at racing speeds on public roads seriously endangers you, your passengers, and others nearby. Driving at high speeds with inadequate tires or other components can lead to serious or fatal injury.*

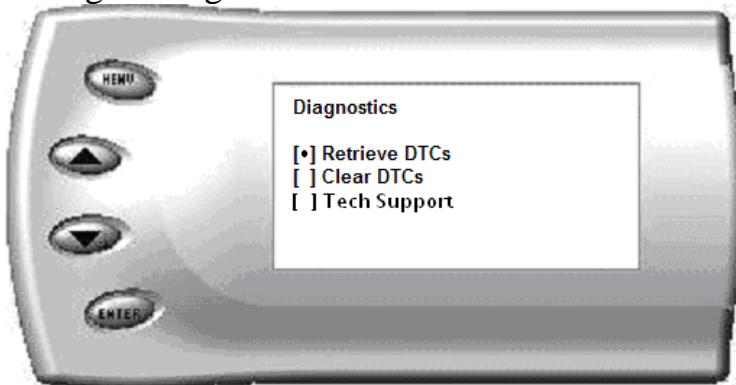
**CAUTION:** *Removing/adjusting the speed limiter for purposes inconsistent with the product's intended function violates the product's intended use and will invalidate the product's warranty. Edge Products is not responsible for or liable for the consequences of improper product use.*

**(Hint:** This value may be lowered in fleet situations or situations where young drivers are present.)

## 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.

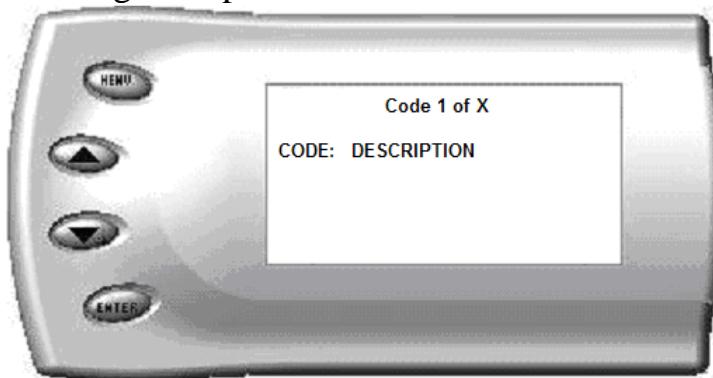
If you selected *Diagnostics* from the main menu of the *Evolution*, the screen displays the following message:



### Retrieving Codes

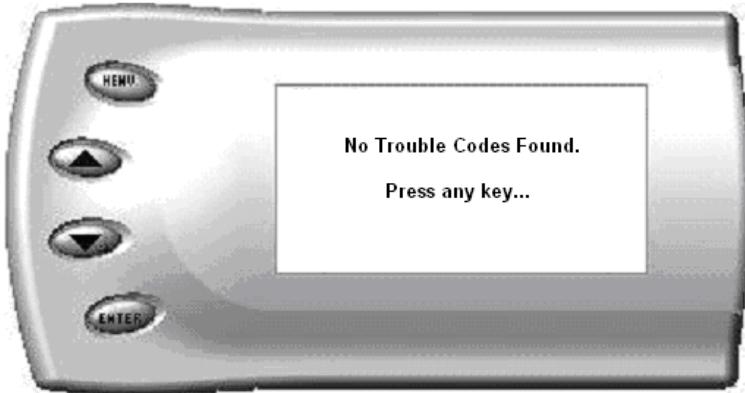
If you want to retrieve and view the DTCs on your vehicle, select the *Retrieve* option. Make sure your ignition is in the ON position.

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.

**CAUTION:** *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. If a trouble code is set repeatedly and does not clear, the user must take action to define and correct the problem. Failure to correct the problem could result in powertrain damage. The user must become familiar with the codes and the potential problems if left uncorrected.*

**WARNING** *Some Codes are set as a result of using aftermarket products. Some trouble codes may have safety implications. Do not clear codes unless you are familiar with the code and concerns if not corrected. Use only when necessary, and address all trouble code warnings.*

## Tech Support

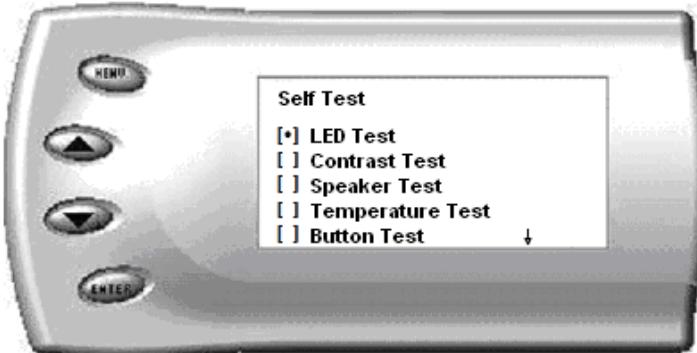
Information found in this section is normally only accessed when instructed by an Edge support person. For example, *Version Info* displays the current Bootloader, Firmware, and Calibration versions installed on your *Evolution*. Your vehicle’s HEX code is also shown. Using the Fusion® software (see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

## Self Test Mode

The evolution has the ability to run through a series of self tests to make sure that it is functioning correctly. The evolution has the ability to run through a series of self tests to make sure that it is functioning correctly. Self test is accessed from the *Diagnostics* screen by selecting *Tech Support* from the next menu. Press [ENTER] to continue as instructed on the screen, and then select *Tech Support Tools*.



At the *Tech Support Tools* menu, select *Self Test* and press [ENTER]. The following screen appears. This screen contains various tests you may run to insure that the hardware and software of the Evolution are functioning correctly. You may also be asked by a tech support representative to initiate one of these tests to help isolate a problem you could possibly have.



After the test is complete, press [MENU] repeatedly to return to the *Diagnostics* and *Main Menu* Screens.

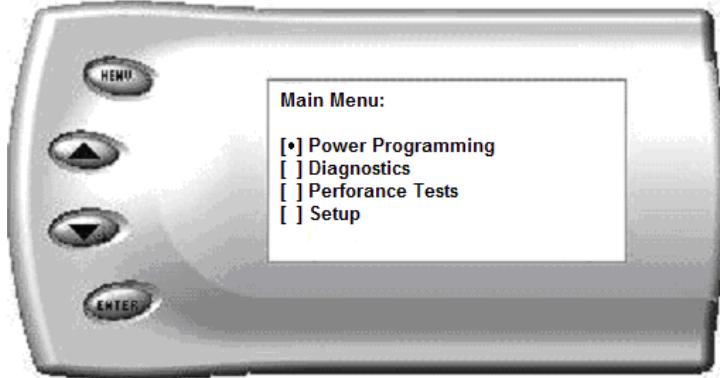
## Performance Testing

**WARNING** *Do not use the Performance Tests feature to break any traffic laws. Perform these tests only where they are legal and safe.*

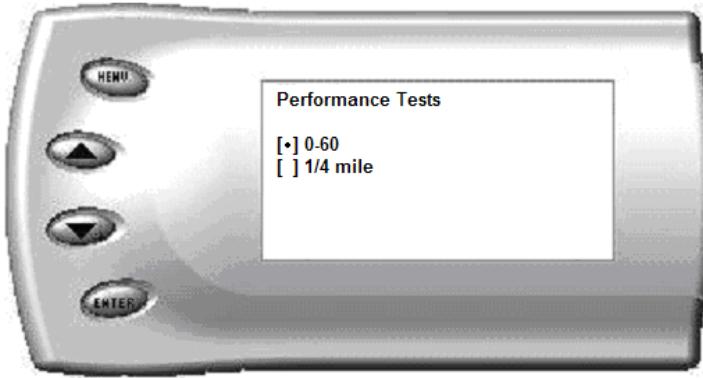
The *Evolution* allows you to test the performance of your vehicle by timing the 0-60 and the quarter mile times. It is helpful to remember these might not be results you would receive from actual races. Incorrect speedometer

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:

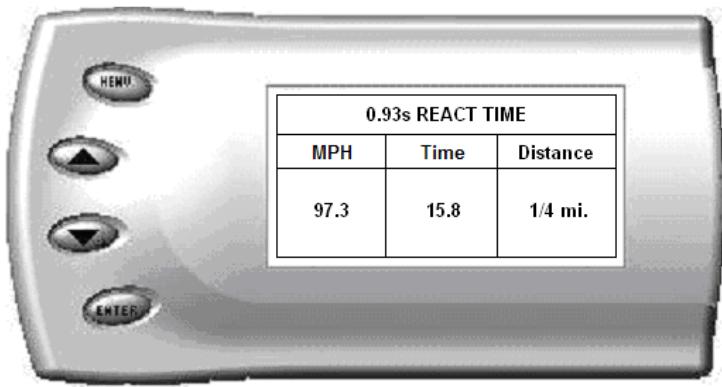


3. Select the desired performance test (0-60 screen is shown below). If your vehicle is moving at this time, the *Evolution* will ask you to come to a stop.



4. For the 0-60 MPH run, press the accelerator pedal and the test automatically begins. For the  $\frac{1}{4}$  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.

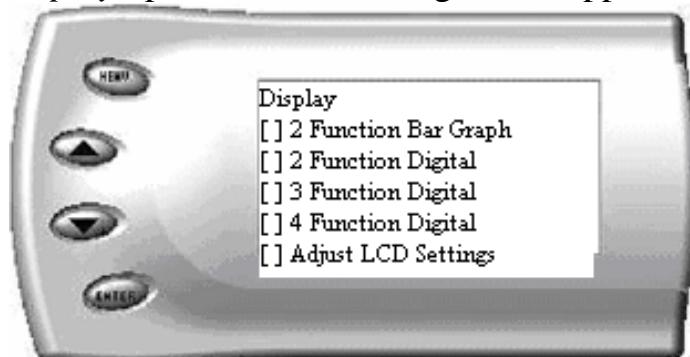
## Changing the Display View

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:

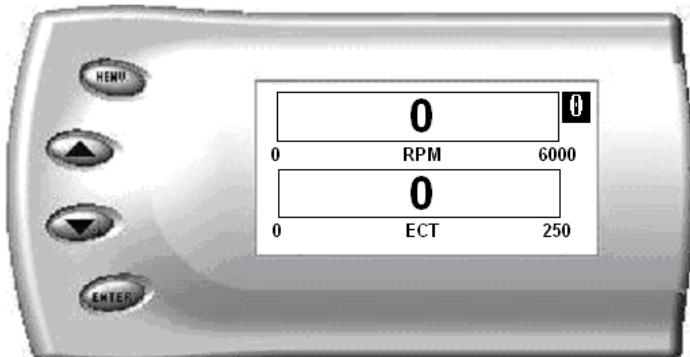


2. Select the *Display* option. The following screen appears:



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:

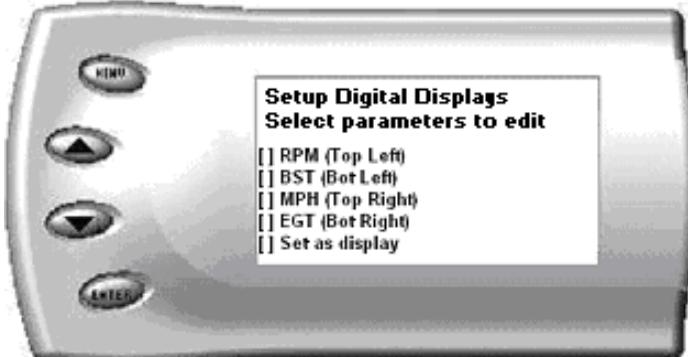
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



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 13 PIDs you can display and description of each:

- RPM (revolutions per minute) – (Engine speed)
- MPH (Vehicle Speed) (miles per hour) – **Note:** MPH will read “0” unless you enter a tire size into the Evolution, even with stock tires.
- BST (Boost Pressure) - PSI
- EGT (Exhaust Gas Temp) – Degrees F.
- ECT (engine coolant temperature) – Degrees F.
- EOT (Engine oil temperature) – Degrees F.
- TFT (Transmission fluid temperature) – Degrees F.
- IAT (Intake air temperature) – Degrees F.
- LOAD (Engine Load) – Calculated engine Load
- BARO (Barometric pressure) – PSI
- BAT (Battery voltage)
- DTC (Diagnostic trouble code count)
- DPF Regeneration (Diesel Particulate Filter Regen cycle)

## Changing the Backlighting

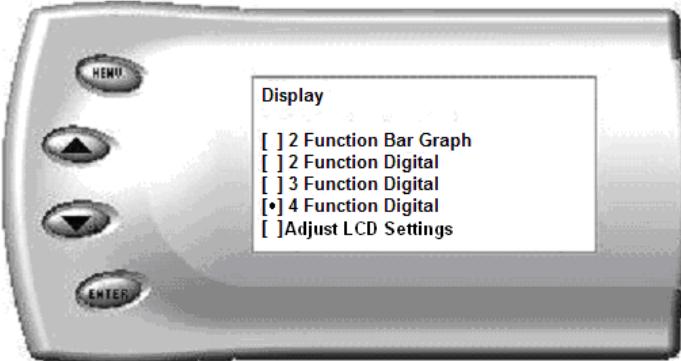
### Adjusting the Backlight Color/Contrast

To change the backlighting color, perform the following steps:

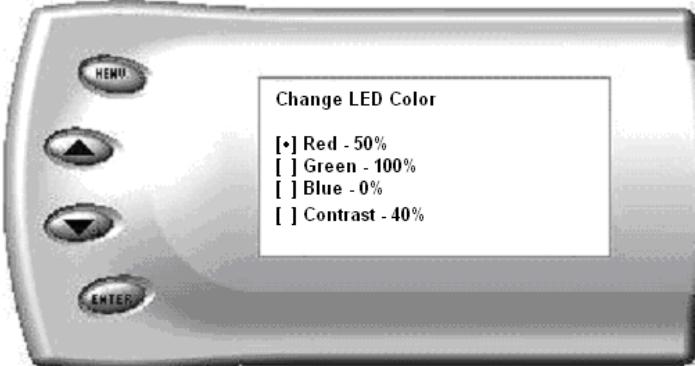
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



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].

## 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.



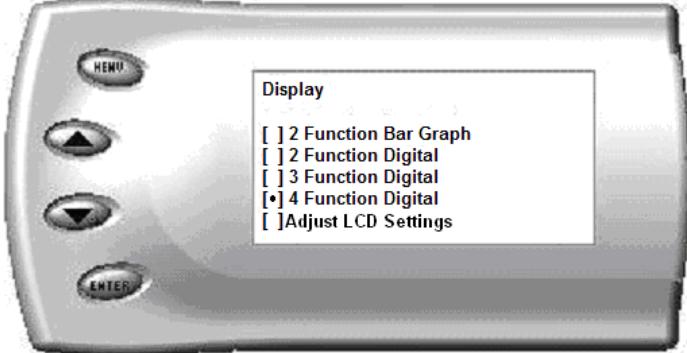
## Adjusting the Contrast

To change the contrast, perform the following steps:

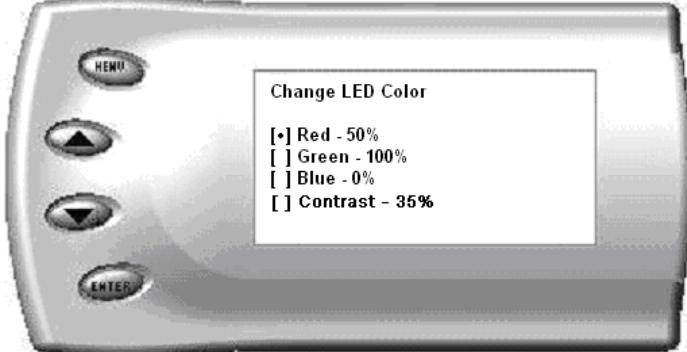
1. From the *Main Menu* select the *Setup* option. The *Setup* screen appears as follows:



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



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



4. Select *Contrast*, and use the up and down arrows to adjust the contrast to where you'd like.

## 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:

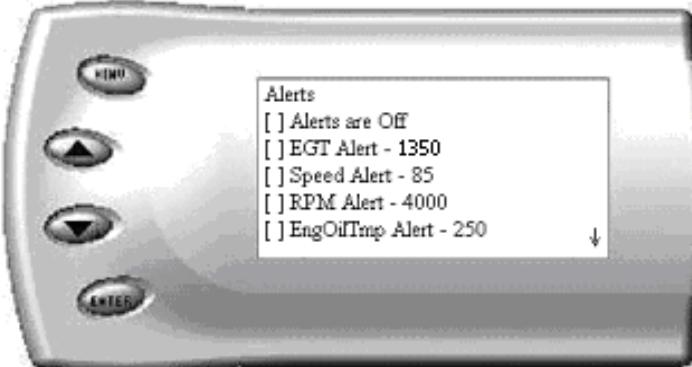
Following is a list of Alerts you may set to adjust:

- EGT Alert
- Speed Alert
- RPM Alert
- EngOilTmp Alert
- EngTmp Alert
- TransTmp Alert
- DTC Alert
- Regen Alert

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



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



3. 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:



4. Press the [UP] and [DOWN] arrow keys until you have reached the desired value. Pressing [ENTER] will save the current alert value and return you to the Alerts screen. If you would like to change another parameter, select that parameter and repeat the steps.
5. If you would like to return to the previous screen and abort the current value change, press [MENU].
6. 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.

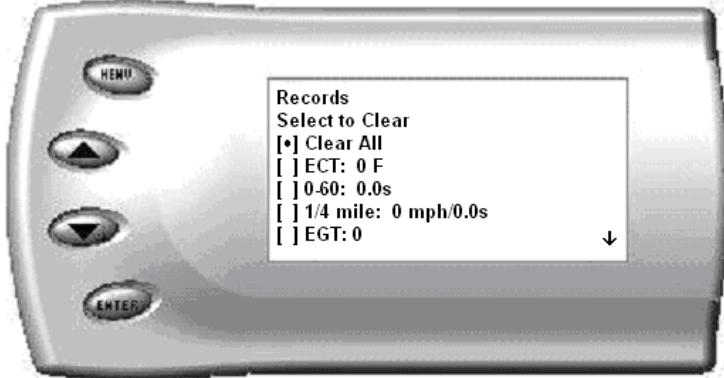
## Records

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:



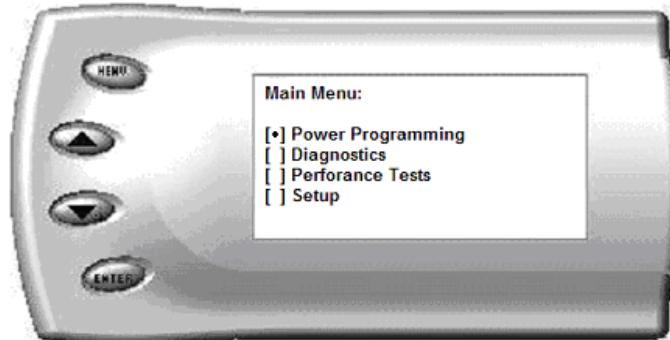
3. This is where you can view all of the current recorded high values. The arrow located at the bottom right corner of the screen indicates there are more parameters than the display can show. Use the [UP] and [DOWN] arrow keys to scroll through the list of records. If you would like to reset a single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

## Restore 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 program the vehicles power level back to stock, you will need to go into “Power Programming”, and select “Return to Stock”, or power level 0.*

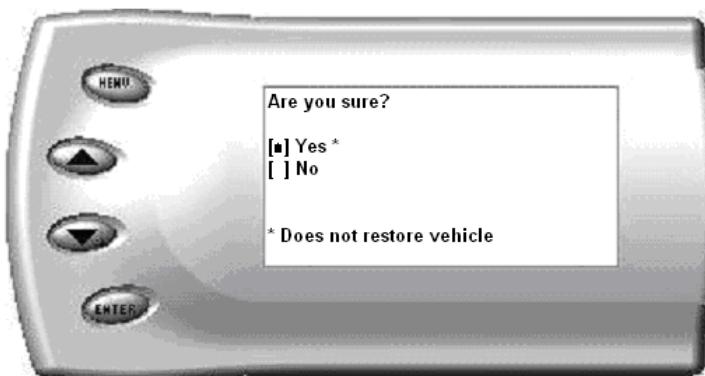
1. Enter into the *Main Menu*. The *Main Menu* screen appears as follows:



2. Select *Setup* and press [ENTER]. The following screen will be shown:



3. Select *Restore 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*.

## Tire Size

From the *Main Menu*, select *Setup* and press *Enter*. The following screen will be shown:



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 *Evolution* to accurately calculate vehicle speed. **You will need to enter in a tire size, if you would like to display MPH.** To change your tire size, two formats are available for you to use; you will 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

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	<b>Circumference Equation:</b> [(width * ratio * 0.02) + (rim * 25.4)] * 3.1415
295	75	16	2666mm	<b>Steps:</b>
305	75	16	2713mm	1. Multiply <b>Width, Ratio</b> and <b>0.02</b>
315	75	16	2760mm	2. Multiply <b>Rim</b> and <b>25.4</b>
325	75	16	2807mm	3. Add Step #1 with Step #2
265	70	17	2521mm	4. Multiply Step #3 with <b>3.1416</b>
285	75	17	2698mm	5. The result will be the circumference of your tire in mm.
315	75	17	2840mm	<b>Note:</b> if your tire size is not listed use the above formula
275	65	18	2559mm	
285	65	18	2600mm	
285	60	18	2510mm	
325	60	18	2660mm	

## 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. It can be downloaded for free from Edge Products web site at [www.edgeproducts.com](http://www.edgeproducts.com).

**Note:** Be sure to install both the SOFTWARE and the DRIVERS that come included in the download 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](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:* 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 failure.

*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.

- **ERROR CODE 0xF1 (AFTER PCM READ)** – If you are receiving this error code right after the *Evolution* reads your PCM, check for updates using the Fusion® software. If the problem continues, go to the *Utilities* menu and select *Read Stock Calibration*. Then call tech support to take steps to create a new calibration for your vehicle.
- **ERROR CODE 0xF1 (IN CUSTOM MENU)** – If you are receiving this error code while trying to configure your custom options, disconnect from the OBDII connector, turn the key to the ON position, and plug the *Evolution* back in. After getting to the main screen (past Intro and Disclaimer), wait 15 seconds. This will give your unit time to load parameters it needs to perform the custom changes. You should now be able to perform your custom changes.
- **TROUBLE CONNECTING TO THE FUSION SOFTWARE** – If you are having trouble connecting to the Fusion software, the first thing to check is whether or not you have HotSync on your computer. HotSync is software used to sync your PDA/Palm to your computer. If you do have HotSync on your computer, follow these steps:



1. Right click on the HotSync icon that looks like this:
2. You will get a menu that looks like this:



3. By default the Local Serial will have a check by it, uncheck Local Serial. Once you have done this, you will need to restart your computer.

If the problem persists after restarting your computer, please call Edge Products Technical Support.

## Warranty Information

### LIMITED 1 YEAR WARRANTY

Edge Products, LLC, (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.

THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE **BUYER** HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.  
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

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 Magnuson-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 disconnect 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 for the Ford 6.4L Powerstroke Diesel®. 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).*

## Commonly Used Acronyms

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

## 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.