

# DIABLOSPORT 2004



GM USER MANUAL

REV. 05.07.04

PLEASE VISIT US AT [WWW.DIABLOSPORT.COM](http://WWW.DIABLOSPORT.COM)

**PREDATOR**

***DiabloSport, LLC.***

***Predator Satisfaction Guarantee/***

***Return Policy***

All DiabloSport products have a guarantee of satisfaction. If in the first 15 days from date of purchase, you are not satisfied with the results the Predator generates in your vehicle, simply ***restore the factory tune to your vehicle*** and return the Predator to the selling dealer, and pending examination of the tool by DiabloSport, you will receive a refund from your selling dealer. ***Under no circumstances will DiabloSport accept the return of a Predator unit that has a factory tune remaining in it.***



***PREDATOR***

# End User License Agreement, Warranty and Disclaimer

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End User License Agreement,  
Warranty and Disclaimer

**THIS END USER LICENSE AGREEMENT** (the "Agreement") is an agreement between you, as the purchaser (the "Purchaser") of either the Diablo Module (the "Module") or the ToolRama hand-held computer unit (the "Unit"), and ProRama Tools, Inc., DiabloSport, LLC or ToolRama, LLC (collectively, "ToolRama"), as the manufacturer of the Product. The Product and the Unit shall be referred to collectively herein as the "Product."

**1. Acknowledgment And Acceptance Of Agreement.** If you do not agree to the terms and conditions of this Agreement, do not use the Product. Instead, promptly contact the distributor from which you purchased the Product in writing, requesting a refund of the purchase price. Any use of the Product by you will constitute your agreement to the terms and conditions contained herein.

**2. Grant Of License.** The parties hereto acknowledge that ToolRama is granting a non-transferable restricted license to Purchaser to use the Product for the sole purpose of installation in Purchaser's vehicle. ToolRama shall retain all title, ownership rights and intellectual property rights in and to the Product. Purchaser agrees that Purchaser shall not, directly or indirectly, modify, translate, reverse engineer, decompile, disassemble, or create derivative works based on the Product. Purchaser further agrees not to permit any third parties to modify, translate, reverse engineer, decompile, disassemble, or create derivative works based on the Product. **3. Disclaimer.** The Product is being sold with no warranties of any kind, express or implied. The Product is not endorsed by the manufacturer of your vehicle and there is no affiliation between ToolRama and the manufacturer of your vehicle. Installation of the Product in your vehicle or use of the Product with your vehicle may limit or void your rights under any warranty provided by the manufacturer of your vehicle, and ToolRama assumes no responsibility in such event. Any warranty not provided herein, and any remedy which, but for this provision, might arise by implication or operation of law, is hereby excluded and disclaimed. The implied warranties of merchantability and of fitness for any particular purpose herein are expressly disclaimed. **4. No Liability For Damages, Injuries Or Incidental, Special Or Consequential Damages.** Under no circumstances shall ToolRama, Inc., DiabloSport, LLC or ToolRama, LLC, or any other party related to ToolRama, be liable to Purchaser or any other person for any damage to Purchaser's vehicle, loss of use of Purchaser's vehicle, or for personal injuries suffered by any person, or for any incidental, special or consequential damages, whether arising out of negligence, breach of warranty, breach of contract, or otherwise. ToolRama's liability for any damages, loss and/or claims associated with the Product shall be limited to the price of the Product paid by purchaser. Purchaser hereby releases ToolRama from all liability, claims and

damages associated with the Products, with the sole exception of ToolRama's liability for the refund of the purchase price of the Product to Purchaser in the event that a court of competent jurisdiction determines the Purchaser suffered damages directly resulting from the malfunction of the Product. **5. Warranty.** Notwithstanding the provisions of the End User License Agreement, DiabloSport warrants the Product to be free from all defects in material and workmanship for the life of the Product. This limited warranty applies only to the original Purchaser of the Product. This limited warranty does not cover damage caused by modification, alteration, repair or service of the Product by anyone other than DiabloSport, physical abuse, misuse, use in a manner contrary to the instructions, which accompany the Product, or any damage caused by acts of God. Contacting your Distributor or Dealer may make claims for repair service or replacement of the Product pursuant to this limited warranty. The Chip will either be repaired or replaced, at the option of DiabloSport, at no cost to Purchaser, if the defective Product is covered by this limited warranty. DiabloSport's liability pursuant to this limited warranty and for any damages, loss and/or claims associated with the Product shall be limited to the price of the Product paid by Purchaser, or, at DiabloSport's option, repair or replacement of the Product. **6. State Law.** Some states do not allow limitations of implied warranties, or the exclusion or limitation of incidental, special or consequential damages, so the above limitations may not apply to you. In such states, liability shall be limited to the greatest extent permitted by applicable law. **7. Governing Law & Venue.** This Agreement shall be governed by and construed in accordance with the laws of the State of Florida, and venue for any legal proceeding or action at law arising out of or construing this Agreement shall lie in the state or federal courts of Orange County, Florida, and the parties specifically waive any other venue.

**DISCLAIMER** Not legal for sale or use on any pollution controlled motor vehicles. Legal in California *only* for racing vehicles which may *never* be used upon a highway.



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### ***Attention Customers:***

***Visit our web site [www.diablosport.com](http://www.diablosport.com) for the latest updates.***



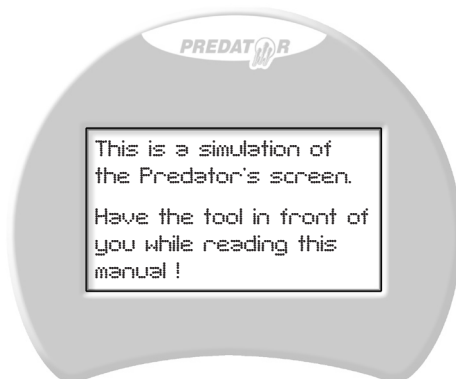


*Before Installing  
DiabloSport  
performance tune*

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## Display and Keypad description

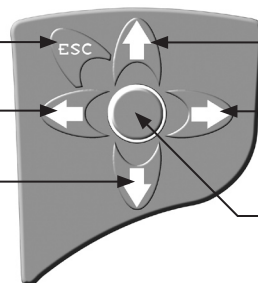
f



**ESC Key:** Scroll page back to previous page.

**Arrow left:** Scroll menu to the left.

**Arrow down:** Scroll down the menu.



**Arrow up:** Scroll up the menu

**Arrow right:** Scroll menu right  
(Use this key to view entire descriptions)

**Enter Key:** Select parameter highlighted in menu

## Before Installing DiabloSport Performance Tune

*Please read through the manual before installing tune in your vehicle, failure to follow proper instructions can result in a damaged or disabled PCM (Powertrain Control Module).*

*User **must** ensure that the factory "stock" tune is in the vehicle's PCM before installing the DiabloSport tune. GM dealer re-flashes are the same as stock factory tune.*

*Serious engine damage can occur if the Predator tune is installed over a **non-factory/aftermarket performance tune**.*

*Very important!*

*Do not perform any operations on Predator (expect live data diagnostics) while vehicle is running. The vehicle must be parked and engine OFF.*

For technical support please visit us at:  
<http://www.diablosport.com/TechSupport.php>



## Preparing Vehicle for DiabloSport Performance Tune Installation

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The vehicle **MUST** be running on 91-93 octane Super Un-Leaded/Premium grade fuel before installing DiabloSport Performance tune. Amoco, Mobil or Sunoco fuels are highly recommended. Premium fuel is not necessary for the 87 octane or the factory tune.

- Apply parking brake to de-activate daytime running lights.
- Always have all the doors closed while installing the DiabloSport Performance tune, and keep them closed until the process is complete.
- Do not activate any electrical accessories while installing the DiabloSport Performance tune. Ensure that there are no electronic devices wired or plugged into the vehicle that can cause a substantial voltage drop when activated during installation of the DiabloSport Performance tune. Please contact DiabloSport dealer if uncertain about devices that are on your vehicle.
- Certain cellular phones or radio equipment might also cause interference, please remove or turn such devices off.
- Do not try to install tune on a vehicle with a low battery voltage, charge your battery if necessary.
- Unless instructed, never turn the ignition key OFF while the Predator is plugged in diagnostic port.
- Do not unplug the Predator while it is installing the DiabloSport performance tune.
- For vehicles with On-Star please remove the following fuses in the fuse box located in the engine compartment. RADIO, RADIO AMP, & INFO

## ***Important note regarding DiabloSport Performance Tune Parameter modification***

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This feature is designed for users with extended knowledge of automotive tuning. Modifying fuel and spark parameters increases risk of detonation/pinging and can increase risk to the durability of the vehicle.

These parameters, as well as others in the Predator, should only be modified if necessary and only by an experienced tuner.

DiabloSport will not be held responsible for vehicles with modified parameters since we are not present to monitor the adjusted parameters; therefore we recommend that this should be left untouched by inexperienced users.

## OBD-II Diagnostic port locations

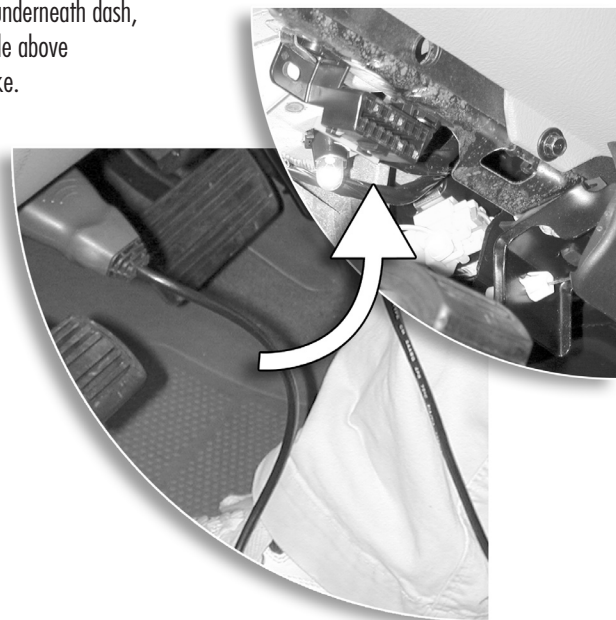
### 99-04 Corvette

Driver side underneath dash in the center, facing floor.



### 03-04 Chevrolet/GMC 1500/2500/3500 trucks Chevrolet Tahoe / Avalanche / GMC Yukon / Denali Cadillac Escalade / Escalade EXT/ESV / Hummer H2

Driver side underneath dash,  
left hand side above  
parking brake.



## Vehicles equipped with the GM OnStar system

---

*Due to the fact that the GM OnStar system sends transmissions periodically to the vehicle we suggest that the system should temporarily be disabled during the installation and modification process.*

If the OnStar system is not disabled during install or modification and the system should receive a transmission in the middle of tune install or backup, the tool will be interrupted and the process will have to be started over again.

To avoid this problem it is recommended that the OnStar system is disabled during tune install, backup and modification.

On some vehicles it is necessary to remove more than one fuse; this will be indicated by the OnStar light still lit after removal of the fuse from the engine compartment fuse panel.

To disable On-Star please remove the following fuses in the fuse box located in the engine compartment. RADIO, RADIO AMP and INFO.



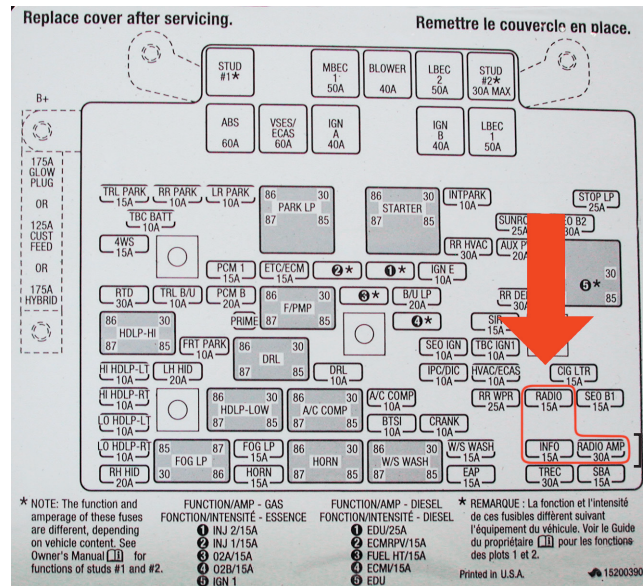
# Vehicles equipped with the GM OnStar system - Step1

## Turn the ignition OFF!

Locate the fuse panel in the engine compartment behind the battery on the driver's side. Carefully remove cover and locate the **RADIO**, **RADIO AMP**, and **INFO** fuses.

Location may vary from illustration - consult your user manual.

Remove the fuse with the ignition OFF.





*Installing  
a Tune  
into a vehicle*

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## *Tune Descriptions*

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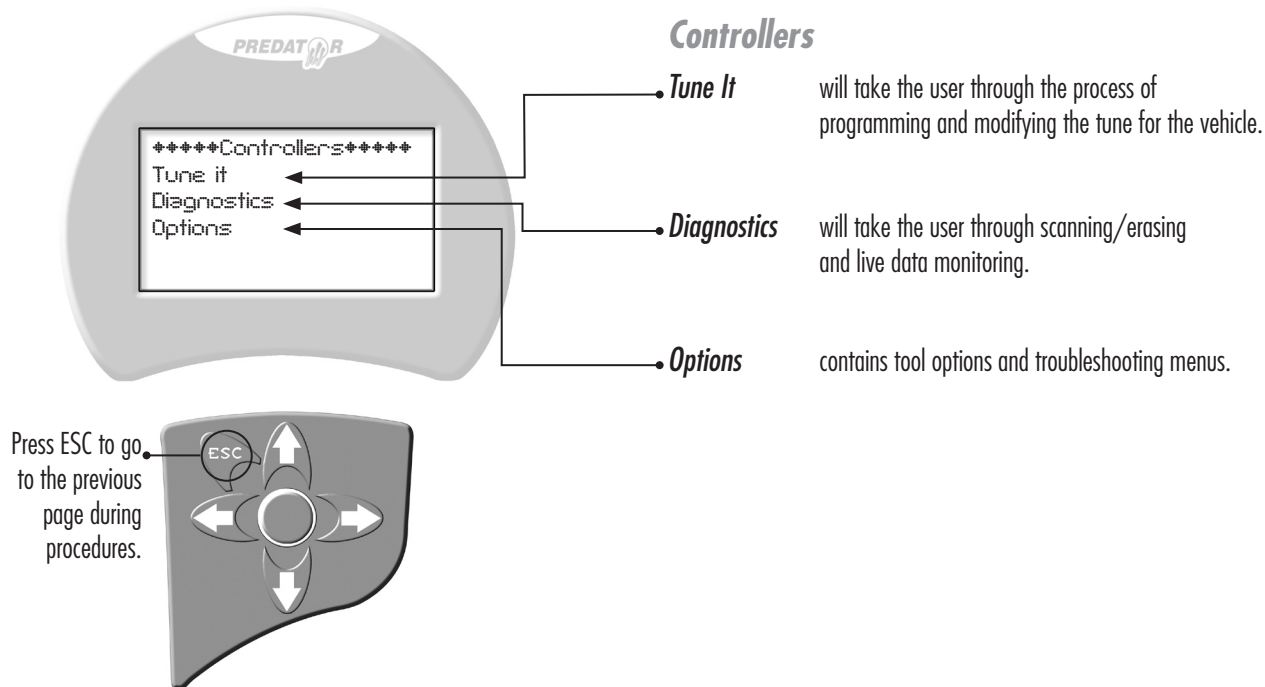
***Performance Tune:*** Designed to add power and torque using premium fuel ONLY.

***87 Octane Tune:*** Designed to add power and torque using mid to low grade fuels.

***Factory Tune:*** Allows end user to modify adjustable parameters utilizing the factory tune.

## Installing the tune into the vehicle

- Locate the OBD-II diagnostic port on your vehicle. (see reference pictures in Section “viii” and “ix”)
- Connect the Predator into vehicle’s diagnostic port and turn the ignition key to ON position (**DO NOT start the engine**); the following screen will be displayed:



## Installing the tune into the vehicle

Select "Tune It", read and follow the instructions and accept the disclaimers:

You will be asked to select transmission type for your vehicle, please do so.

```
***Transmission Type***
Automatic
Manual
```

The tool will automatically back up the factory/stock tune. Please wait until completed. Programming the vehicle takes about 30 seconds.

```
***Vehicle Data Backup***
Please wait...
Saving vehicle data
XX % completed
```

During the backup process the gauges might sweep and various messages will be displayed in the message center. This is normal so do not be alarmed.

```
Backup 100%

Press Any Key to
continue
Vehicle Data Backup
```

***Once backup is complete please follow the key ON and key OFF procedures.***

Vehicle Data Backup is now complete. Press any key to continue installing a performance tune.

```
*****Performance*****
Install Performance
Modify Performance
Restore Saved Data
Troubleshooting
```

Select "Install Performance"...

Press "Enter".

Please wait until installation is complete. This may take several minutes...

```
***Data Uploading***
Please wait...
Writing data
xx% completed
```

During the installation process the gauges might sweep and various messages will be displayed in the message center. This is normal so do not be alarmed.

After installation is complete the Predator will prompt you to:

```
Upload 100%

Press Any Key to
continue
Installing Performance
```

Once install is complete, please follow the key ON and key OFF procedures.



*Restoring  
factory/stock  
tune*

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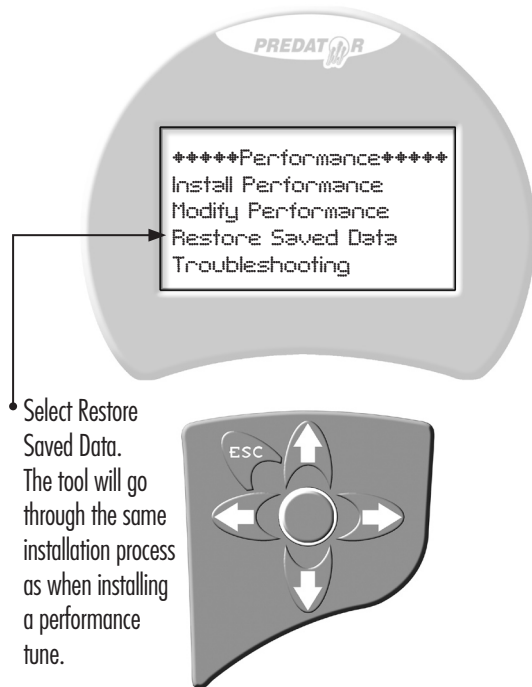
## Restoring the factory/stock tune

*We recommend restoring the stock tune whenever the vehicle goes in for service.*

*The stock tune can be re-installed at any time using the "restore" feature. This feature will take the DiabloSport tune out and reset the computer to stock. The DiabloSport tune will be saved in the Predator.*

*After a restoring saved data the tool will unlock and can be used on other vehicles, if you decide that you want to put the Performance Tune back into vehicle the Predator will perform another backup.*

Plug the tool into the diagnostic port, select "Tune It" and go through the same steps as installing a DiabloSport tune. (Refer to install instructions). After the transmission selection you should see the following screen:



- Select Restore Saved Data. The tool will go through the same installation process as when installing a performance tune.

Follow all the steps, and once you see this screen, your vehicle has been restored back to stock tune:

File is successfully  
installed  
Press any key





*Modifying  
Parameters*

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## **Caution:**

*DiabloSport will not be held responsible for vehicles with modified parameters since we are not present to monitor the adjusted parameters; therefore we recommend that **this should be left untouched by inexperienced users.***

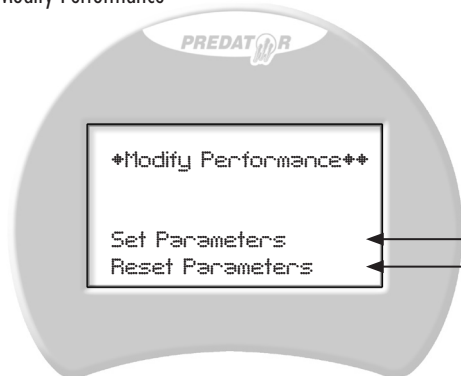
Whenever DiabloSport Performance Tune parameters are adjusted, especially power enrichment and spark parameters, it is very important to monitor the vehicle's timing and air/fuel ratio to check for detonation/pinging, to ensure the vehicle is operating within safe parameters.

***Do not perform any operations on the Predator (expect live data diagnostics) while vehicle engine is running. The vehicle must be parked and engine OFF.***

## Modifying Parameters

*This feature is designed for users with extended knowledge of automotive tuning. Modifying fuel and spark parameters increases risk of detonation/pinging and can increase risk to the durability of the vehicle. These parameters, as well as others in the Predator, should only be modified if necessary and only by an experienced tuner.*

Select "Modify Performance"

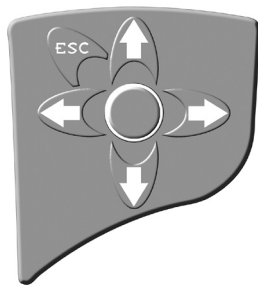


• **Modify parameters**

allows user to adjust parameter settings

• **Reset parameters**

allows user to reset parameters back to original DiabloSport Performance tune. Using the reset feature will reset **ALL** modified parameters back to the original DiabloSport Performance tune.



## Modifying Parameters - Parameters Explanation

<b>Axle Ratio</b>	Adjust only if different gears are installed, and where necessary. Corrects speedometer and transmission for gear changes. For Corvette (y-car), please read addendum to manual for instructions.	<b>Shift Time</b>	Allows user to adjust the time delay between shift commitments, i.e. quickness of the shift.  When adjusting to a negative percentage, the shift adaptation will be shorter, hence a quicker shift.  Positive adjustment will yield a longer and slower shift.
<b>Cooling Fans</b>	Allows user to change temperatures where cooling fans go on and off. (Applies only to vehicles with electric fans) "On" temperature <b>MUST</b> be higher than "OFF" temperature for proper operation of fans. We recommend that you adjust the ON/OFF values with the same factory spread between ON and OFF value for best operation.		
<b>WOT Fuel</b>	Adjust only if vehicle is running rich or lean <b>as verified by an air/fuel meter</b> . The WOT Fuel is separated into 2 sections for different RPM ranges 2000rpm to 4000rpm, and 4000rpm to 7000rpm and allows for a 20% increase and decrease in fuel delivery. A 20% change equates to about a 2-3 point change in the air fuel ratio, these values are all relative to what the actual fuel table values are and will vary from vehicle to vehicle.	<b>Performance Shift</b>	Applies to automatic transmissions with TOW/HAUL mode. Adjusting Parameters in the Performance section will apply only when the TOW/HAUL mode is activated.
<b>WOT Spark</b>	The WOT Spark is separated into 2 sections for different RPM ranges 2000rpm to 4000rpm, and 4000rpm to 7000rpm and allows for a 15% increase(advance) and a 20% decrease(retard) in timing. A 20% change in timing equates to about 4 degrees and a 15% change equates to about 3 degrees, these values are all relative to what the actual timing values are and will vary from vehicle to vehicle.	<b>Upshift (MPH)</b>	Allows user to adjust at what MPH the shift should take place. ★
<b>Normal Shift Time</b>	Applies to automatic transmissions without TOW/HAUL mode.	<b>Upshift (RPM)</b>	Allows user to adjust at what RPM the shift should take place. ★
		<b>Downshift (MPH)</b>	Allows user to adjust at what MPH the downshift should take place.

## Modifying Parameters - Parameters Explanation

**Idol** Adjust idle, the values are amount of RPM add or subtract, so if you put the scale to 100, you will add 100 RPM's to your current idle speed.

**Shift Pressure** Allows user to adjust the firmness of the shift action.

**Rev Limit** Allows user to adjust Rev Limit

**Actual Wheel size:** Enter the actual tire size; tire width, aspect ratio and wheel size. ★★

MPH upshift, downshift and rev limit adjustment for Corvettes with Axel Ratio change:

Only necessary when putting 3.42 or larger gears:

For 3.42 Gears set the following parameters:

1-2 Upshift MPH 41  
2-3 Upshift MPH 80  
3-4 Upshift MPH 130  
2-1 downshift 36  
3-2 downshift 79  
4-3 downshift 118

For 3.73 Gears set the following parameters:

1-2 Upshift MPH 35  
2-3 Upshift MPH 65  
3-4 Upshift MPH 126  
2-1 downshift 34  
3-2 downshift 58  
4-3 downshift 115

Rev limits @ 6480

Rev Limits ON @ 6479

★and ★★ Go to next page for NOTES →

## Modifying Parameters - Important information regarding DiabloSport Performance Tune Parameter modification

★ *NOTE: The shift point functions work in conjunction with each other, based on load. Use the RPM shift point function for WOT (wide open throttle) shifts, and MPH shift point function for part throttle shifts. The vehicle WILL shift at whichever point it reaches first! This is dictated by load on the vehicle, RPM vs MPH.*

★★ *NOTE: Adjust only if speedometer is off due to the increase or decrease in tire size. The factory GM PCM can only calculate up to a certain tire size before it will disable the traction control system, however, it WILL correct the speedo but the traction control system will be turned off permanently. Traction Control will function once the tire size is restored to factory.*

Select "Tune It", go through and **read carefully** the disclaimers...

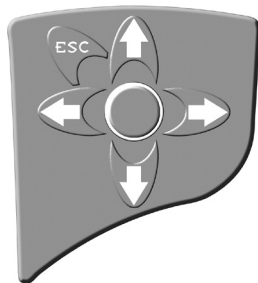
DiabloSport will not be held responsible for vehicles with modified parameters since we are not present to monitor the

adjusted parameters; therefore we recommend that this should be left untouched by inexperienced users.

♦♦Modify performance♦♦  
Press Enter if you understand and agree  
else Esc to quit

## Modifying Parameters

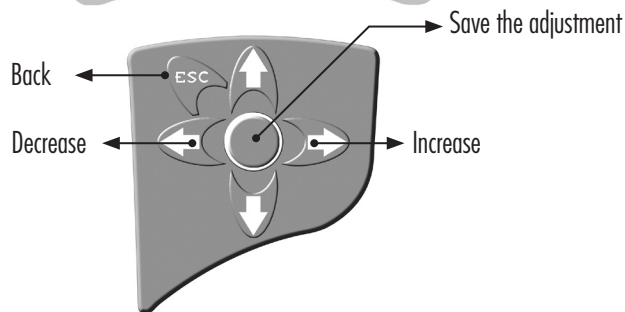
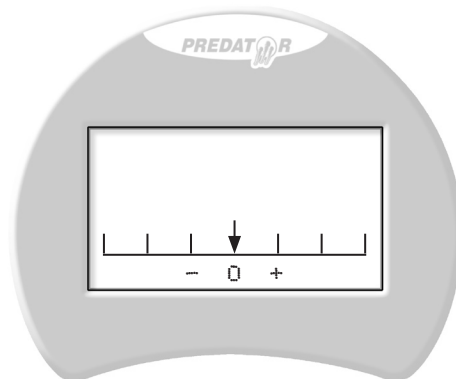
...until you get to this screen:



Once the desired parameter has been selected, its current value will be shown.

Press "Enter" to save the adjustments.

Make desired adjustments and select "Enter" to save. The new value will be displayed. Press "ESC" to return to Set Parameters menu. Adjust other parameters if desired using the same steps as above.



For custom tunes please visit  
<http://www.diablospport.com/CustomTuning.php> for more information.



## *Modifying Parameters*

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Once desired adjustments are completed, press “ESC” while in Set Parameters screen.

```
****Data uploading****  
Install modified  
performance file?  
Press 'Enter' for Yes  
Press 'Esc' for No
```

Press “Enter” to upload the new adjusted tune.  
The Predator will continue and install tuned file.



*Diagnostic Section*

**PREDATOR**

## *Diagnostic Section - How to check and erase the SES light.*

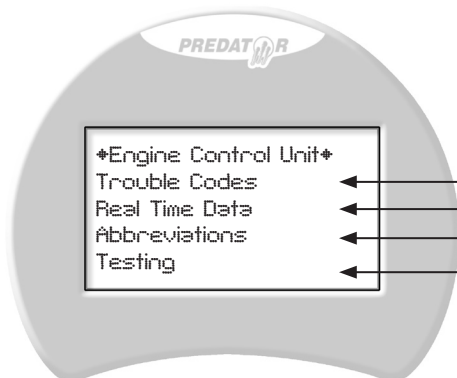
The diagnostic features on this tool can check and erase SES (Service Engine Soon) light as well as monitor live data from sensors supported.

Select "Diagnostics" from main menu.

```
***Transmission Type**  
Automatic  
Manual
```

## Diagnostic Section - How to check and erase the SES light.

Select your transmission type, then press "Enter".

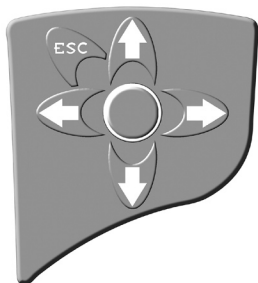


• **Trouble Codes:** Allows user to view and erase trouble codes

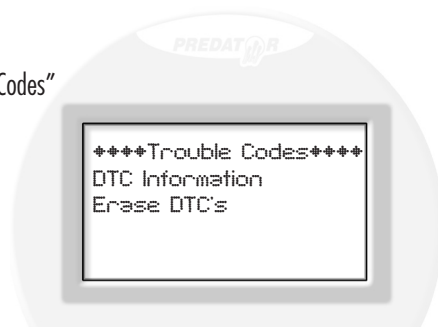
• **Real Time Data:** Displays live data

• **Abbreviations:** Displays the abbreviations used in live data

• **Testing:** This menu is used for troubleshooting only



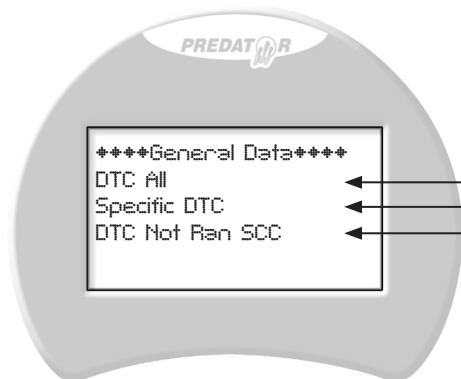
Select "Trouble Codes"



## Diagnostic Section - How to check and erase the SES light.

To view the specific trouble code, select "DTC information".

**DTC** stands for Diagnostic Trouble Code.



• **DTC All:**

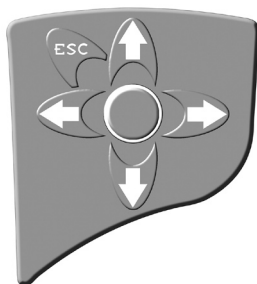
View all DTC's

• **Specific DTC:**

Enter DTC to view status

• **DTC Not Ran SCC:**

Displays what DTC tests where not performed during the DTC check



**NOTE:** "DTC Not Ran SCC": DTC Not Ran Since Code Cleared. Because the PCM performs tests of modules during driving cycles, some modules are not tested at the time the "DTC All" command is performed. This feature displays what modules were excluded during the "DTC All" test. This information always bases itself from last "Erase DTC's" command performed.

Select "DTC All" to view all DTC codes; once viewed, press ESC twice then select "Erase DTC's", your SES light should now turn off as long as the problem is fixed.



*Monitoring  
Real Time Data*

**PREDATOR** 

## *Monitoring Real Time Data*

Real time data is just what it implies: the Predator will display an array of sensor input values as the engine is running.

- Select "Diagnostics" from the main screen.
- Select "Real Time Data"
- Monitor desired parameters

**NOTE:** Only values supported by the vehicle model will be displayed.

### ***Abbreviation***

If you select "Abbreviations", you will be able to look through a list of all the abbreviations that may be used during the live data session.

### ***Troubleshooting Menu under the Tune It menu:***

**Save Current Data:** This will read whatever tune is in vehicle and save it for upload to PC, use this for custom tunes. Please see our website for more information on custom tunes.

**Build Diablo tune:** This will erase a custom tune and set the DiabloSport tunes back to default tunes.

**Return to Factory Stock:** Restore saved data.



*Options Section*

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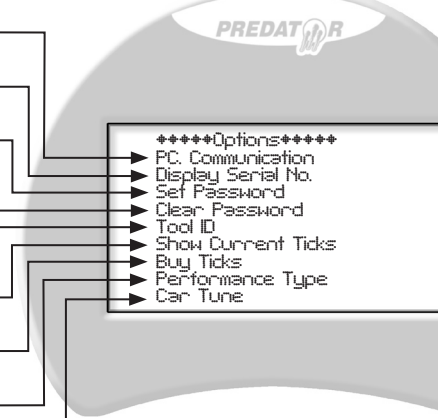




The options menu is mainly for the DiabloSport Predator Dealer.

It contains functions for up- and downloading of tunes into the tool; tick purchases as well as specific tool identification.

When you select "Options" the following screen will be displayed:

- This option is used to upload/download info to the PC
    - This option shows the tools serial number
    - This option is used to set a security password
  - This option is used to clear the security password
  - This option is used when user gets files from dealer
  - This option displays the amount of ticks available
    - This option is used to buy more ticks
      - Performance tune information
      - Last tune written to the vehicle
- 
- The diagram shows a Predator tool with a screen displaying the 'Options' menu. The menu is titled '\*\*\*\*\*Options\*\*\*\*\*' and lists the following options: 'PC: Communication', 'Display Serial No.', 'Set Password', 'Clear Password', 'Tool ID', 'Show Current Ticks', 'Buy Ticks', 'Performance Type', and 'Car Tune'. Lines connect the descriptive list on the left to the corresponding menu items on the screen.

[illegible]



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