

DIABLOSPORT™

PREDATOR™



FORD GAS

www.diablosport.com

DiabloSport, LLC.

Predator Satisfaction Guarantee/ Return Policy

All DiabloSport products have a guarantee of satisfaction. If in the first 30 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. 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 does not have a performance tune remaining in it.



Predator Revisions:

In an effort to keep the Diablosport Predator at the forefront of technology, Diablosport will offer revisions to the Predator when necessary. Updates are available via the web or you can return the Predator for a revision update. Please contact Diablosport for a Return Merchandise Authorization Number (RMA) and an address to ship to. Predators shipped without an RMA number clearly on the outer box will be refused. The updates will be provided free of charge. The customer is responsible for all freight expenses.

Predator Reflash Policy

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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 , 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.



IMPORTANT PLEASE READ

TUNE INFORMATION

DiabloSport Performance - For stock to mildly modified applications - NOT FOR USE WITH SMALLER UPPER AND/OR LARGER DIAMETER LOWER PULLEY APPLICATIONS

AFTERMARKET PARTS

Use of the DiabloSport Predator with aftermarket products is at the owners risk; some aftermarket products create rich or lean conditions based on design by the products manufacturer. It is impossible to test every possible product so please proceed with caution when using any product related to adding airflow like throttle bodies, filters and cold air intake kits or boost in the form of pulleys, or blower upgrades, changes in exhaust systems or exhaust components, even rear end gear changes (which make rate of acceleration changes can affect air fuel ratio). Customers with these modifications may need a custom tune from Diablosport one of its CMR dealers. DiabloSport recommends the use of a dyno and air fuel meter to monitor data when adding aftermarket products to make the proper tune changes with Predator.

***Premium grade unleaded fuel must be used for all PREDATOR applications; AMOCO, MOBIL, SUNOCO fuels are recommended.**

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Preparing to install
the Diablosport
Performance Tune

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OBD II Diagnostic Port Location

Please read through the manual before installing any tune into your vehicle - failure to follow proper instructions can result in a damaged or disabled ECU (Engine Control Unit).

User must ensure that the original Ford Factory Tune is in the vehicle's ECU before installing the DiabloSport tune. (Ford dealer reflashes are the same as Factory Tune).

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

99-03 Ford F150/F250 OBD-II Port Location

Driver center console side.



98-04 Mustang OBD-II Port Location

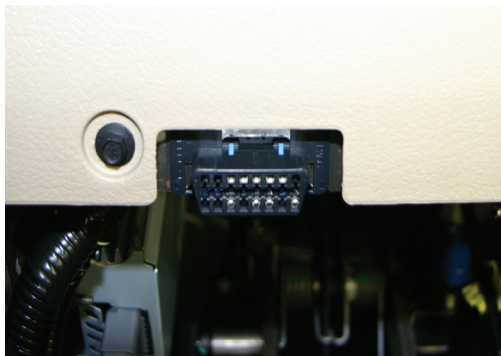
Driver center console side.



OBD II Diagnostic Port Location

2005 Mustang OBD-II Port Location

Driver center console side.



2004-05 F150 OBD-II Port Location

Driver center console side.



U7146-Will cover the following:

1998-2004 GT 4.6L 2valve

2001 Bullit 4.6L 2valve

2003-2004 Mach 1 4.6L 4valve

1998-2001 Cobra 4.6L 4valve

2003-2004 Mercury Marauder (added in revision r42d & later)

(2003-2004 Cobra is only supported on U7142)**U7140-**Will cover the following:

2005 4.6L 3valve Mustang

U7151-Will cover the following:

2004 5.4L 3valve F150 Truck

U7153-Will cover the following:

1999-2003 5.4L F-150, F-250, F-350

1999-2003 4.6L F-150

1999-2003 V8 Excursion

1999-2002 V8 Expedition

1999-2002 V8 Navigator

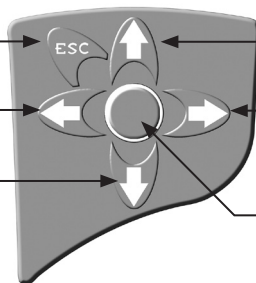
(1999-2004 Lightning / Harley is only supported on U7158)



ESC Key: Jump back to previous menu or jump to top of menu selection.

Left arrow: Set gauge value left

Down arrow: Scroll down the menu



Up arrow: Scroll up the menu

Right arrow: Set gauge value right

Enter Key/Continue: Select the highlighted item

Preparing the Vehicle for Tune Installation

Very important!

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

- 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 Aftermarket accessories* wired or plugged into the vehicle that can cause a substantial voltage drop. Please contact DiabloSport if you are uncertain about the effect of 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 any 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 into diagnostic port.
- Do not unplug the Predator while it is installing the DiabloSport Performance Tune or the Original Backup.

*Important Note:

All electronic aftermarket add-on parts can create a potential power draw.

- tachometer
- electrical fans
- shift light
- audio/video equipment.
- gauges
- trailer/ tow accessories.

Any change in voltage during flash programming procedures WILL interrupt the writing process.

Please disconnect or disable any such add on part.

In the event of such an occurrence, unplug the tool, wait 5 seconds and then plug it back in. The tool will recognize that a interrupted writing error has occurred and will automatically install the original back up. The vehicle is now in its original state. Please attempt to locate the voltage draw before Predator is used again.

Please feel free to contact DiabloSport directly at any time with questions related to this process. 561-908-0040

IT IS NOT NECESSARY TO CONTACT THE VEHICLE MANUFACTURER SHOULD SUCH ERRORS OCCUR. ANY AND ALL COSTS RELATED TO SUCH ACTIONS ARE THE RESPONSIBILITY OF THE END USER - NOT DIABLOSPORT OR ITS DEALERS.



Installing the DiabloSport Performance Tune



Installing the Performance Tune

Predator contains several predefined DiabloSport Tunes. These are thoroughly tested and approved by DiabloSport. You have a choice of either installing the DiabloSport Tune “as-is” into your vehicle, or customizing it to your personal taste.

If you are satisfied with your factory tuned vehicle and only have a desire to modify a parameter or two (example: change gear ratio), you might want to read the chapter ‘Customizing the Factory Tune’.

Before you install any tune into your vehicle, when you use the Predator for the first time, it will read the Original Factory Tune out of your vehicle and permanently store it in its memory. This process takes a minute or two. For safety reasons, there is no way to overwrite this backup and therefore the Predator becomes ‘married’ to, and only to, your vehicle until original backup is restored.

If there is ever a need to send the Predator back to DiabloSport, for any reason, the Original Backup must be put back into your vehicle, as described in the section ‘Reinstalling the Original Factory Backup’, otherwise your Predator will not be accepted back by the reseller. To find out, which tune was last written to your vehicle, go to ‘Predator Options / Show Last Tune Written’ in the Predator.

DiabloSport Performance Tunes

DiabloSport Performance is designed to add power and torque for a stock to mildly modified vehicle.

87 Octane Performance is designed to add power and torque for a stock to mildly modified vehicle using 87 octane.

Factory Hp Tune is a adjustable factory tune with NO performance tuning.

Note: Performance tunes may vary from predator to predator.

NOTE: WHEN CHANGING HP TUNES, THERE IS NO NEED TO RESTORE FACTORY TUNE BEFORE INSTALLING A NEW(DIFFERENT) HP TUNE. YOU WILL BE PROMPTED TO RESET PARAMETERS PRESS YES OR NO AS YOU DESIRE.

***Premium grade unleaded fuel must be used for all predator applications; AMOCO, MOBIL, SUNOCO fuels are recommended.**

Installing the Diablosport Tune for the First Time

The very first time the Predator is used on a vehicle it will automatically create a backup of the original factory tune.

(Installing the DiabloSport Performance Tune)

1. Plug the Predator into the Diagnostic Port of the vehicle, located under the driver's side dash.

2. The first screen you will see is the startup screen with the name of the vehicle the predator supports (i.e.: lightning)

3. Performance tune should be three choices:

- **Performance Tune**

- **Diagnostics**

- **Options**

4. Select "Performance Tune" by pressing the "Continue" key

5. Disclaimer will appear, - read & press "Continue"

6. Turn engine ON. DO NOT START Vehicle- press "continue"

(If selecting "modify Tune" see the section on changing parameters)

7. Highlight the tune you would like to install by using arrow keys. Press "enter" to continue

8. Verification of the tune will appear. If this is correct, Highlight "Choose" & press "Enter".

9. The original Backup will now be saved. "press enter to continue".

10. Follow the prompts to turn on & off the ignition (do not start the car at any time) press "enter" if prompted.

11. A status bar will show progress on the backup process. This might take several minutes.

12. When completed, a message saying "Original Backup has been saved" will be displayed. Press "Continue".

13. At this point you have the option of installing the Diablo tune or modifying a tune. Highlight the appropriate choice by using the arrow keys & press Enter.

14. Follow the prompts to turn on & off the ignition (do not start the car at any time) press "enter" if prompted.

15. The tune should now be writing. Do not interrupt this process or ECM damage can occur.

16. When the Process is complete, the Message " {xxxxxx} tune is now in vehicle. You may drive it now. Please unplug the tool"

Unplug the predator from the Diagnostic port. Cycle the key, and start the vehicle. You are now able to enjoy the force of the Predator!!



Modifing Parameters

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Modifying Parameters

Modify Tune Procedures

1. When selecting the "Modify tune" function, a disclaimer will appear. Read and press "Enter" to continue.
2. The "modify Performance Tune menu will appear. You will have 2 choices:

- **Modify Parameters**

- **Reset all Parameters**

3. Highlight the appropriate choice by using the arrow keys & press "Enter"

4. In the "Modify Parameters" Menu the following choices will appear:

- | | |
|------------------|-------------------|
| • Axle | • Spark Advance |
| • Fuel Base | • Tire Size |
| • Idle Speed | • OBD II |
| • Rev Limit | • RPM Shift Point |
| • Shift Firmness | |

5. Highlight the appropriate choice by using the arrow keys & press "Enter"

6. Modify the appropriate parameter by using the arrow keys & press "Enter" to continue. [These parameters should only be changed is you have a understanding of tuning. Engine or ECM damage can occur without proper knowledge.]

7. Verification will display "Are you sure?" press "Enter" to continue

8. The display "this change will take effect next time you install the tune" will appear – Press "Continue"

9. Use the "ESC" key to go back through the menus and either continue to change parameters or go to the "install tune now?" menu. Press "Enter " to continue.

10. The tune should now be building. Do not interrupt this process or PCM damage can occur.

11. Follow the prompts to turn on & off the ignition (do not start the car at any time) press "enter" if prompted

12. The tune should now be writing. Do not interrupt this process or ECM damage can occur.

During programming do not touch any buttons or open and close doors, the theft light will blink rapidly and on some vehicles the electric fans will come on during programming.

13. Follow the prompts to turn ON & OFF the ignition (do not start the car at any time) press "Enter" if prompted

14. When the process is complete, the Message " {xxxxx} tune is now in vehicle. You may drive it now. Please unplug the tool" Unplug the predator from the Diagnostic port. Cycle the key, and start the vehicle. You are now able to enjoy the force of the Predator!!

Modify Parameter Section

To adjust parameters, select parameter group, then select specific parameter, adjust parameter as desired then press enter button and follow prompts.

Once desired parameters have been modified, press “ESC” to exit out of main modify parameters menu, you will automatically be prompted to install tune.

NOTE If tune is not installed at the prompt the adjusted parameters will not be lost, they will be saved, just not installed in the vehicle.

To reset parameters, simply press “Reset Parameters” button.

When switching from Performance Tune, Factory HP tune or Custom tune you will be prompted to keep or discard adjusted parameters.

Parameter Adjustments

Fan

Fan high speed ECT 1 ON

Fan low speed ECT ON

Fan high speed ECT 2 ON

Fan low speed ECT OFF

Fan high speed ECT OFF

NOTE: When adjusting fan settings, keep the factory spread of the on and off values. We recommend that you lower / raise all on / off settings by the same value.

Fuel Base

Fuel Table = WOT fuel table, adjusts fuel at wide-open throttle only, Predator allows for a + / - 15% adjustment which equates to a 1 point plus or minus on a air/fuel scale.

NOTE: This adjustment should only be done with proper monitoring devices, such as air/fuel meter.

NOTE: OBD-II adjustments are to be done on off-road vehicles only! Not for street use, off-road vehicles only.

Rev Limit

Rev Limit drive = Rev limit when in gear.

Rev Limit neutral = Rev limit when in neutral, use this for manual transmission equipped vehicles.

Spark Advance

Spark Advance = WOT timing adjustment; adjust timing at wide-open throttle only. Predator allows for a + / - 10% adjustment in WOT timing.

Modifying Parameters

RPM Shift Point = Adjust the WOT shift point by RPM for each shift.

Shift Firmness = Adjust the WOT shift pressure for each shift, this allows for a firmer shift under wide open throttle, all tunes have stock settings as default.

Tire Size

Tire revs per mile = Adjust for larger/smaller tire diameter to correct speedometer to get revs per mile use overall tire diameter in inches 20168 divided by tire diameter=revs per mile.

Traction

Traction = Turn traction control on/off

NOTE: Traction control ON/OFF can be reversed in some vehicles, if turning traction OFF does not work, turn it ON in tool and it should turn traction OFF in vehicle.

OBD II

EGR = Turn EGR on/off, (ONLY USE WHEN REMOVING THE EGR).

Heater bank 1 downstream = Turn bank 1 rear oxygen sensor on/off. **Heater bank 2 downstream** = Turn bank 2 rear oxygen sensor on/off. **Hego Config** = Turn all O2's off

Axle

Axle Ratio = Adjust for different axle ratio to correct speedometer, note, numbers are in one decimal, ex. 3.5 this is the same as 3.55 and for 3.73, select 3.7, 4.10 select 4.1 etc.

Idle Speed

Drive = Idle speed when in gear

Neutral = Idle speed when in neutral, use this for manual transmission equipped vehicles.



2005 Mustang Adjustable Parameters



2005 Mustang Adjustable Parameters

The following are parameters that are exclusive to the 2005 Mustang.

Main Menu in tool appears as such :

Performance Tune Diagnostics Options

Once you select "Performance" tune you will see the usual disclaimer and then the "turn key on.....," etc the following menu will then appear.

Diablo Tunes (below).

Custom Tunes – this only appears if there is a custom tune in the tool.

If you select "Diablo Tunes" The following menu appears:

Performance Tune 87 Octane Performance Original Backup

All the Diablo Tunes and Custom Tunes can be modified using the custom parameters shown below

Axle Ratio Menu – There are two choices in this menu Axle Ratio and Tire Revs per Mile.

Tire Revs per Mile – To calculate your revolutions per mile, measure your tire diameter in inches and use it in the following formula.

Example:

20168 divided by tire diameter = revs per mile Ex 20168/26
= 775 rev/mile

The stock gear ratios on the 2005 mustang are 3.31:1 for the automatic transmission cars and 3.55:1 for the manual transmission cars. If you have changed your rear differential crown and pinion gears, (select the appropriate ratio using this parameter to correct your speedometer and shift points). Use this parameter to select the appropriate ratio to correct the gear ratio.

Cooling Fan - these temperatures are listed as fan off and fan on. To improve performance, lower all of them by 30 degrees. Remember that once the car is moving approximately 30 mph or more, that the fans will shut off. That is because once the car has a natural flow of air, the fans are no longer needed. This prevents the fan motor from "wearing out" prematurely.

Idle RPM – you can set your engines idle rpm as high as 1200 RPM and as low as 400 RPM. The automatic transmission equipped vehicles have two idle settings, Drive and Neutral. Manual transmission cars only have neutral idle RPM. The engine RPM will fluctuate with temperature. Adjusting the idle will adjust

2005 Mustang Adjustable Parameters

the base target idle speeds. Final commanded idle RPM is affected by RPM adders for temperature and closed loop fuel strategies. This parameter is more effective for tuning your vehicles idle speed than simply turning the idle stop screw on your throttle body.

Rev & Speed Limits – You can not adjust the speed limit, only disable or enable it.

Raise all rev limiters by the same amount to make sure your changes take affect. You can lower the rev limit to 3000 or raise it to 7000 rpm. There is a Rev Limit and a Rev limit Default, both should be changed by the same amount.

Spark Advance Menu

Global Spark Adjuster – this parameter will allow you to add spark advance much like you would adjust a distributor on the cars of yesteryear. You can globally add (advance) up to 4 degrees of spark timing or globally subtract (or retard) 10 degrees of spark timing.

Spark advance 2-4k – applied to 2000 to 4000 RPM ranges

Spark advance 4-7k – applied to 4000 to 7000 RPM ranges

- This is a percent adjustment to the spark table at peak loads.

Peak loads occur at WOT (wide open throttle) the maximum advance is +10% and the maximum retard is -40%.

WOT Fuel

Fuel Table 2-4k RPM

Fuel Table 4-7k RPM

These parameters allow you to adjust wide open throttle air fuel delivery by a percentage. This is accomplished by changing the Stabilized Open Loop table at loads of 75% or more.

You can lean fuel as much as 15% or richen as much as 40%. It is recommended to use a wide band air fuel ratio meter on a chassis dynamometer while adjusting air fuel ratio's at wide open throttle.

Remember that in order for your WOT fuel changes to take affect, the computer has to go to the stabilized open loop table at WOT. If you have a cold thermostat, not enough load, cold air kit, aftermarket mass air meter, or the computer is in catalyst protection mode, your changes will not take affect.

Features in the 2005 Predator

- 1) If you want to back up one menu you can simply click the left arrow.
- 2) The Predator can now hold 5 custom tunes. These tunes can be created by Chipmaster Revolution Dealer.
- 3) New software that allows you easy loading and unloading of tunes to your Predator or to your PC.
- 4) Displays Diagnostic Trouble Codes and erases them to turn the check engine light off.
- 5) Live Data Display – allows you to look at the sensors and computer real time to diagnose and tune your engine's performance.



Export/Import
Custom Tunes

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Custom Tunes

The custom tune menu is for heavily modified vehicles that require additional adjustments beyond the capability of the programmer.

This option should be handled by dealers only, as they must transfer the original tune from Predator to PC and send it to Diablosport for modifications.

Export Tune

Before exporting Extra tune, user must first go to "Troubleshooting" then "Read Extra Tune", follow prompts and complete this process.

This process will read the current tune in vehicle and save it so it can be transferred to PC.

NOTE: Traction control ON/OFF can be reversed in some vehicles, if turning traction OFF does not work, turn it ON in tool and it should turn traction off in vehicle.

Custom Tune

The Custom tune menu is for heavily modified vehicles that require additional adjustments beyond the capability of the programmer.

This option should be handled by dealers only, as they must transfer the original tune from the Predator to PC and send it to Diablosport for modifications.

To export the extra tune or original backup, just connect the predator via serial cable to PC and then power Predator on.

Predator go to "options" then "custom tune" then select "export custom tune".

Select either "Original Backup" or "Extra Tune", click "continue" on the following screen.

Then in software, click "Get File", enter a file name and select proper folder to save the file in and click "OK" A status bar should appear in the bottom left corner.

NOTE: Name the file appropriately with .frg as file type. Make sure you note where you save the file on your PC so you will be able to find it after operation is completed.

Import Tune

- 1)** On the Predator, go to " Options " then to " Custom Tune " Click " Yes " on the following screen, you want to overwrite extra tune.
- 2)** Then, in software, click "Send File" , select the file and click "OK"
- 3)** Once transfered, the predator will process the tune and ensure that it is correct.
- 4)** Plug the predator into vehicle and instead of the normal tunes you will now have "Custom Tune" there instead. Select Custom Tune and install or modify/ install the tune as usual.

Erase Custom Tune

Use this command to erase the custom tune in the predator and go back to default Diablosport tune.

Options/Custom Tune then you will see a message saying "This option is for dealers and expert users only". Hit (Continue)

Go to "Erase Custom Tune"

Important Hardware For Custom Tunes/Updates

Hardware required: 12V DC 1.0A Power Supply DB-9 9-Pin Serial Cable Extension (Radio Shack part # 26-117B) or on Windows XP computers you can use a Serial to USB cable (Radio Shack part # 26-183)





Re-installing the
Original Backup

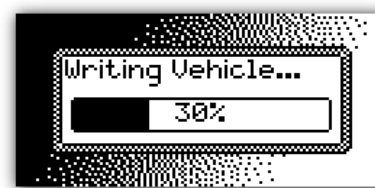
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Re-installing the Original Backup

There are three occasions when one needs to re-install the Original Factory Tune back into the vehicle:

- Going to the dealer for vehicle maintenance or repair.
- Returning the Predator to an Authorized Diablosport Dealer.
- Using the Predator on another vehicle.

To restore Original Backup go to Performance Tune and then select Original Backup.



When the Predator starts to write the Original Backup into your vehicle, a progress bar will indicate the status of writing. Follow all instructions on the Predator screen. The complete process will take about 1 minute.

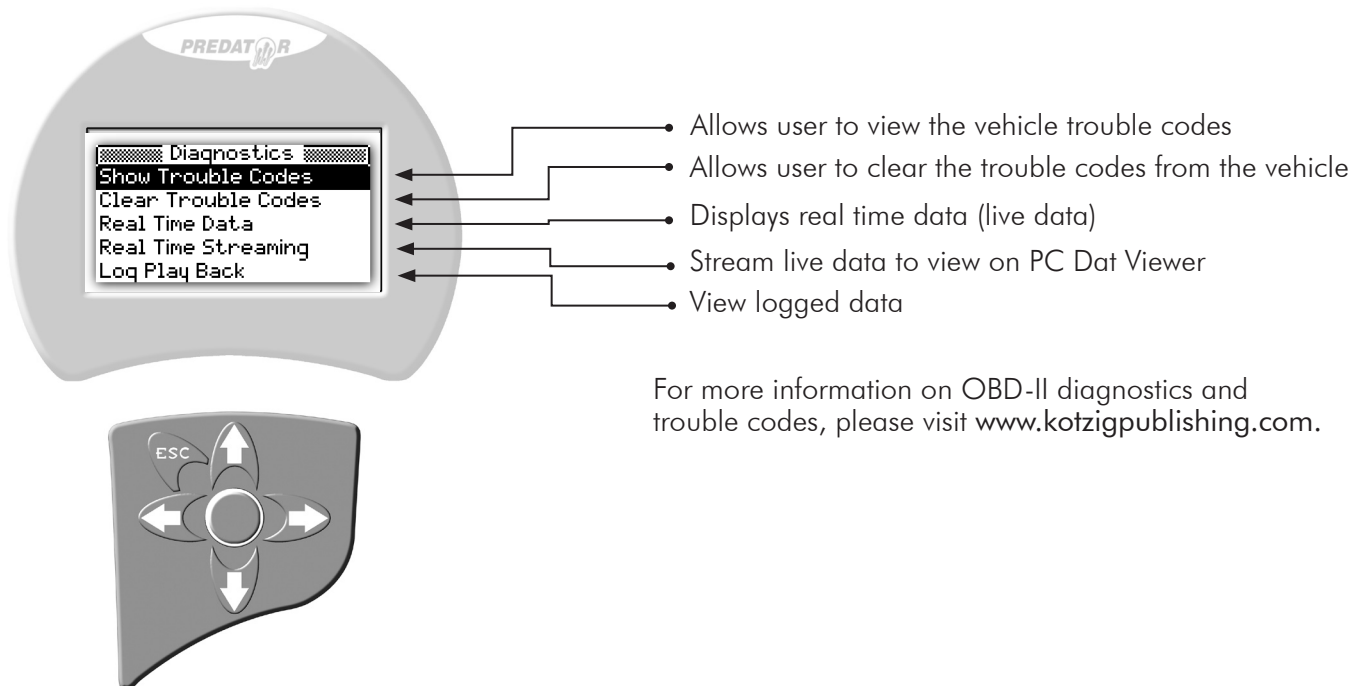


Vehicle Diagnostics

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Vehicle Diagnostics

Select the "Diagnostics" item from the main menu of the Predator, then press the Enter key.



For more information on OBD-II diagnostics and trouble codes, please visit www.kotzignpublishing.com.

Diagnostics

Show Trouble Codes = Display any stored trouble codes in memory.

Clear Trouble Codes = Delete any stored trouble codes in memory.

Real Time Data = View real time data, this section is set up in groups of parameters to view.

NOTE: If switching tool from one vehicle to another vehicle you must go into the options menu and press live table reset

Each group (when selected) allows user to show specific values or all values in the group. To see specific values choose "Show Select" then based on what sample rate you would like choose "Slow" or "Fast". The next screen will show all parameters available. Highlight and press the ENTER (circle) button next to value you would like to display, once completed press "ESC" button.

DATA LOGGING

All live data groups can be data logged.

When specifying parameters to view you will be asked to choose "Slow" or "Fast" rate.

Fast rate will sample the values at a higher rate and will be able to log data for about 45min, the more parameters you select the lower the granularity for values will be, we recommend no more than 8 for best sample rate.

Slow rate will sample at a slower rate and will be able to log data for about 1 hr 30min, when choosing to view all values the default rate is slow.

Once the proper sample rate is selected, the next screen will ask "DATALOG" yes or no, select "YES" and the data logging will start.

To stop data logging, press the "ESC" button.

Log Playback

To view the logged values, go back to main diagnostic menu and select "Log Play Back".

Top right hand corner will display the total time data logged.

Top left hand will display elapsed time.

Top Center will display progress bar and mode of view.

Vehicle Diagnostics

Show Trouble Codes = Display any current trouble codes

Clear Trouble Codes = Delete any current trouble codes

Real Time Data = View real time data, this section is set up in groups of parameters to view.

NOTE: When switching tool from one vehicle to another vehicle you must go into the options menu and press live table reset

Each group (when selected) allows user to show specific values or all values in the group, to see specific values choose "Show Select" then based on what sample rate you would like choose "Slow" or "Fast" the next screen will show all parameters available, highlight and press the enter button next to value you would like to display, once completed press "ESC" button.

You will now be asked if you wish to data log (record data) or just view the parameters without data log.

Data Logging

All live data groups can be data logged.

When specifying parameters to view you will be asked to choose "Slow" or "Fast" rate.

Fast rate will sample the values at a higher rate and will be able to log data for about 45min, the more parameters you select the lower the granularity for values will be, we recommend no more than 8 for best sample rate.

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Once the proper sample rate is selected, the next screen will ask "DATALOG" yes or no, select "YES" and the data logging will start.

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Log Playback

To view the logged values, go back to main diagnostic menu and select "Log Play Back".

Top right hand corner will display the total time data logged

Top left hand will display elapsed time.

Top Center will display progress bar and mode of view.

To start viewing data press the enter button, to pause press enter button.

While paused you can use the left and right arrow keys to move forward or backward in the log file, once desired point is reached press enter key to start displaying values from that specific point.

Live Data Parameter Definitions

To exit out of the data log press the "ESC" button.

Log Upload to PC.

You can also upload the log file into PC and view it with our live streaming data viewer.

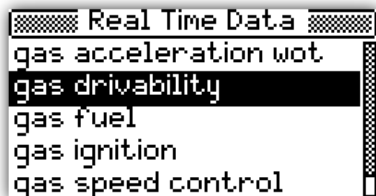
To upload the log file to pc you must have the data view software to upload and to view the data.

Real Time Streaming

This option allows you to stream live data directly to your PC into the data view software.

Set up the software on your PC and ensure that you have the right COM port enabled then press "Real Time Streaming" button to view the values.

To obtain a copy of our data viewer, please visit our web site www.DiabloSport.com



Live Data Groups

Gas Acceleration WOT = Contains parameters that are commonly viewed during dyno tuning and wide open throttle runs.

Gas Drivability = Contains parameters that are commonly viewed during drivability testing and monitoring.

Gas Fuel = Fuel related parameters

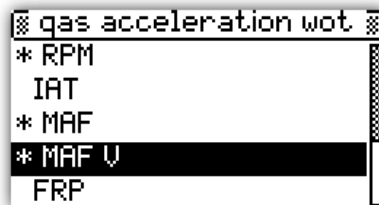
Gas Ignition = Ignition related parameters

Gas Speed Control = Vehicle speed related parameters

Gas Trans = Transmission related parameters

Real Time Streaming = View real time data on PC

Log Play Back = View logged data



Live Data Parameter Definitions

IGNITION CONTROL

Acronym	Definition
KS1	KNOCK SENS IN BANK 1-
KS2	KNOCK SENS IN BANK 2-
MILF	MALF INDICATE LMP OUT FAULT DET
MIL	MALF IND LMP
OCTADJ	OCTANE ADJ CTRL-OPEN TO RETARD
PIP	PROFILE IGN PICKUP
RDEF	REAR WINDOW ELECTRIC DEFROST IN
SPRKADV	DESIRED IGN SPARK TIMING
ECT	ENG COOLANT TEMP
ECT V	A/C BLOWER MOTOR OUTPUT SPEED 2
MISF	ENG MISFIRE STATUS
RPM	ENG RPM
VPWR	VEH PWR VOLT
VREF	VEH REF VOLT
PERDEL1	CYL 1 CHANGE ROTATIONAL VEL
PERDEL2	CYL 2 CHANGE ROTATIONAL VEL
PERDEL3	CYL 3 CHANGE ROTATIONAL VEL
PERDEL4	CYL 4 CHANGE ROTATIONAL VEL
PERDEL5	CYL 5 CHANGE ROTATIONAL VEL
PERDEL6	CYL 6 CHANGE ROTATIONAL VEL
PERDEL7	CYL 7 CHANGE ROTATIONAL VEL
PERDEL8	CYL 8 CHANGE ROTATIONAL VEL
OCTADJS	SOFTWARE OCTANE ADJUST
MFFRPM	ENGINE RPM AT TIME OF MISFIRE

MFFLOAD	ENGINE LOAD AT TIME OF MISFIRE
MFFVS	VEHICLE SPEED AT TIME OF MISFIRE
MFFIAT	INTAKE AIR TEMP AT TIME OF MISFIRE
MFFSOAK	ENGINE-OFF SOAK TIME AT TIME OF MISFIRE
MFFRNTM	ENGINE RUNNING TIME AT TIME OF MISFIRE
MFFTP	THROTTLE POSITION AT TIME OF MISFIRE
MFFTCNT	# OF DRIVE CYCLES AT TIME OF MISFIRE
MFFPNP	IN DRIVE AT TIME OF MISFIRE
RPMDSD	DESIRED IDLE RPM

SPEED CONTROL

CANCEL	NO PID DEFN
COAST	NO PID DEFN
RESUME	NO PID DEFN
SCCS_F	NO PID DEFN
SC_F	NO PID DEFN
SC_HW_F	NO PID DEFN
SCINT_F	NO PID DEFN
SC_NONE	NO PID DEFN
SC_OFF	NO PID DEFN
SC_ON	NO PID DEFN
SET/ACL	NO PID DEFN
SCCS	SPD CTRL SW
SCCS	SPD CTRL SW
VPWR	VEH PWR VOLT
CRUISE	VEH SPD CTRL STATUS
REVERSE	TRANS REV SW IN

TRANS CONTROL

AP	NO PID DEFN	CCS	COAST CLUTCH SOL PRES
APPS1	NO PID DEFN	CCSA	COAST CLUTCH SOL PRIMARY CKT MONITOR
APPS2	NO PID DEFN	CCSF	COAST CLUTCH SOL-FAULT
APPS3	NO PID DEFN	GEAR	COMMANDED GEAR(USE IN DRIVE)
BARO_V	NO PID DEFN	CHT	CYL HEAD TEMP(DEGREES)
CCL_ON	NO PID DEFN	CHT V	CYL HEAD TEMP(VOLT)
CFCIL	NO PID DEFN	EPC V	ELECT PRES CONT TRANS SHIFT-VOLTS
CFCILF	NO PID DEFN	EPC	ELECTRONIC PRES CONT TRANS SHIFT CMD
CKPLWP	NO PID DEFN	EPC	ELECTRONIC PRES CONT TRANS SHIFT CMD
CPP/TCS	NO PID DEFN	ECT	ENG COOLANT TEMP
PBA_SW	NO PID DEFN	ECT V	A/C BLOWER MOTOR OUTPUT SPEED 2
PCA	NO PID DEFN	RPM	ENG RPM
PCB	NO PID DEFN	MILF	MALF INDICATE LMP OUT FAULT DET
PCC	NO PID DEFN	MIL	MALF IND LMP
RPS	NO PID DEFN	MAF	MASS AIR FLOW RATE
SW4X4L	NO PID DEFN	MAF V	MASS AIR FLOW SENS VOLT
TCASE	NO PID DEFN	ODS	"OVERDRIVE DRUM SPD(GEAR=1,3,4)"
TIREREV	NO PID DEFN	O2S11	O2 SENS BANK 1 UPSTREAM
BARO	BARO PRES SENS	O2S21	O2 SENS BANK 2 UPSTREAM
BARO_P	BARO PRES SENS	TR FREQ	TRANSMISSION RANGE FREQUENCY
BPP/BOO	BRK PEDAL POS/BRK SW ON/OFF	PTO	PWR TAKE-OFF STATUS
LOAD	CALC ENG LOAD	TR DC	TRANSMISSION RANGE DUTY CYCLE
TSS	CALC TURBINE SPD	4X4L	REQUESTED 4X4 IN
CPP/PNP	CLUTCH PEDAL POS/PARK NTRL POS SW	SS1A	SHIFT SOL 1 PRIMARY CKT MONITOR HIGH
CCS	COAST CLUTCH SOL 3/2 TIMING PRES	SS2A	SHIFT SOL 2 PRIMARY CKT MONITOR HIGH
		SS3A	SHIFT SOL 3 PRIMARY CKT MONITOR HIGH

Live Data Parameter Definitions

SS1	SHIFT SOL 1 COMMANDED ON	TAR_LRN	TRANSAXLE RATIO LEARNED
SSA	SHIFT SOL 1 COMMANDED ON	TCS	TRANS CTRL SW
SS1F	SHIFT SOL 1 OUT FAULT DET	TFT	TRANS FLUID TEMP
SS2	SHIFT SOL 2 COMMANDED ON	TFT	TRANS FLUID TEMP
SSB	SHIFT SOL 2 COMMANDED ON	TFT V	TRANS FLUID TEMP-VOLT
SS2F	SHIFT SOL 2 OUT FAULT DET	OSS	TRANS OUT SHAFT SPD
SS3	SHIFT SOL 3 COMMANDED ON	OSS_SRC	TRANS OUT SHAFT SPD
SSC	SHIFT SOL 3 COMMANDED ON	TRANRAT	TRANS RATIO
SS3F	SHIFT SOL 3 OUT FAULT DET	TSS/ISS	TURBINE/IN SPD SENS
SS4	SHIFT SOL 4 COMMANDED DUTY CYCLE	VPWR	VEH PWR VOLT
SSD	SHIFT SOL 4 COMMANDED DUTY CYCLE	VREF	VEH REF VOLT
TCCRAT	TCC RATIO(TSS/ENG RPM)	VSS	VEH SPEED SENS
TP V	THROT POS BEFORE FMEM SUB	SS4	SHIFT SOL 4 COMMANDED ON
TP MODE	THROT POS MODE	EPC	ELECTRONIC PRES CTRL SOL B
TCCF	TORQ CONV CLUTCH OUT FAULT DET	EPCDC	ELECTRONIC PRES CTRL SOL A
TCCA	TORQ CONV CLUTCH OUT MONITOR	PSB	INJECTOR CTRL PSI DESIRED
TCCA	TORQ CONV CLUTCH PRIMARY CKT MONITOR	PSC	EGR DESIRED POSITION
TCC	TORQ CONV CLUTCH SOL DUTY CYCLE COMD	PCE_F	MISFIRE COUNT CYL #5 (LOW WORD)
TCCMACT	TORQ CONV MOD ACTUAL	PCF_F	MISFIRE COUNT CYL #6 (LOW WORD)
TCCMCMD	TORQ CONV MOD COMMANDED	PCG_F	MISFIRE COUNT CYL #7 (LOW WORD)
TCILF	TRANS CTRL IND LMP OUT FAULT	PCD	MISFIRE COUNT CYL #8 (LOW WORD)
TCIL	TRANS CTRL IND LMP STATUS	PCE	MISFIRE COUNT CYL #1 (HIGH BYTE)
TR V	TRANS RANGE SENS-ANALOG	PCF	MISFIRE COUNT CYL #2 (HIGH BYTE)
TR D	TRANS RANGE SENS-DIGITAL	PCG	MISFIRE COUNT CYL #3 (HIGH BYTE)
TR	TRANS RANGE SENS INDICATED GEAR POS	SSE	SHIFT SOL 5 COMMANDED ON
TR	TRANS RANGE SENS INDICATED GEAR POS	GEARTOP	HIGHEST GEAR PERMITTED

Live Data Parameter Definitions

OSCGEAR	COMMANDED GEAR BY OSC	EFTB	ENG FUEL TEMP BANK 2
OSCTCC	TORQUE CONVERTER BY OSC	EFTB V	ENG FUEL TEMP BANK 2-VOLT
TCSS	TRANS CASE SPD SENSOR	MISF	ENG MISFIRE STATUS
CPP_SRC	CLUTCH PEDAL POSITION	RPM	ENG RPM
TR_SRC	"TRANSMISSION RNGE SENSOR, NO FMEM"	EGR	EXHAUST GAS RECIRC SENS IN
TSS_SRC	"TURBINE SHAFT SPD, NO FMEM"	EGRVP	EXHAUST GAS RECIRC VALV POS
TCS_FLG	TRANSMISSION CNTRL SW FLAG	LOOP	FEEDBACK FUEL CTRL STATUS
PC1_F	PRES CNTRL FLT	FF	FLEX FUEL SENS-FREQ
PC2_F	PRES CNTRL FLT	FFFM	FLEX FUEL SENS ON/OFF
PC3_F	PRES CNTRL FLT	CAS GND	FP GND/SIG RET DIFF
RPMDSD	DESIRED IDLE RPM	FLI	FUEL LVL IN
ISS_SRC	INT SHAFT SPD	FLI V	FUEL LVL IN-VOLT
FUEL CONTROL		FPA	FUEL PUMP CTRL PRIMARY CKT MON
AP	NO PID DEFN	FP	FUEL PUMP DUTY CYCLE
APPS1	NO PID DEFN	FP M	FUEL PUMP MONITOR DUTY CYCLE
APPS2	NO PID DEFN	FPM	FUEL PUMP MONITOR ON/OFF
APPS3	NO PID DEFN	FPF	FUEL PUMP OUT FAULT DETECTED
EGR_TPV	NO PID DEFN	FRP	FUEL RAIL PRES SENS
PBA_SW	NO PID DEFN	FRP V	FUEL RAIL PRES SENS-VOLT
TIREREV	NO PID DEFN	FSVF	FUEL SOL FAULT DETECTED
BARO	BARO PRES SENS	FSV	FUEL SOL VALV
LOAD	CALC ENG LOAD	FSVM	FUEL SOL VALV-MONITOR
DPFEGR	DIFFE PRES FEEDBK EXHAUST GAS RECIRC	FTP V	FUEL TANK PRES-VOLT
ECT	ENG COOLANT TEMP	FTP	FUEL TANK PRES PURGE MONITOR
ECT V	A/C BLOWER MOTOR OUTPUT SPEED 2	INJ1F	INJ 1 OUT FAULT DETECTED
EFTA V	ENG FUEL TEMP BANK 1-VOLT	INJ10F	INJ 10 OUT FAULT DETECTED

Live Data Parameter Definitions

INJ2F	INJ 2 OUT FAULT DETECTED	HTR12	O2S HTR BK 1 DNSTREAM
INJ3F	INJ 3 OUT FAULT DETECTED	HTR11	O2S HTR BK 1 UPSTREAM
INJ4F	INJ 4 OUT FAULT DETECTED	HTR22	O2S HTR BK 2 DNSTREAM
INJ5F	INJ 5 OUT FAULT DETECTED	HTR21	O2S HTR BK 2 UPSTREAM
INJ6F	INJ 6 OUT FAULT DETECTED	HTR22F	O2S HTR BK 2 DNSTREAM OUT FAULT DET
INJ7F	INJ 7 OUT FAULT DETECTED	HTR12F	O2S HTR BK 1 DNSTREAM OUT FAULT DET
INJ8F	INJ 8 OUT FAULT DETECTED	HTR12A	O2S HTR BK 1 DNSTREAM PRIM CKT MON
INJ9F	INJ 9 OUT FAULT DETECTED	HTR12CM	O2S HTR BK 1 DNSTREAM PRIM CKT MON
ICP	INJ CTRL PRES	HTR11A	O2S HTR BK 1 UPSTREAM PRIM CKT MON
FUELPW1	INJ PULSE WIDTH-BANK ONE	HTR11CM	O2S HTR BK 1 UPSTREAM PRIM CKT MON
FUELPW2	INJ PULSE WIDTH-BANK TWO	HTR11F	O2S HTR BK 1 UPSTREAM OUT FAULT DET
FUELPW	INJ PULSE WIDTH-SINGLE BANK ENG	HTR22A	O2S HTR BK 2 DNSTREAM PRIM CKT MON
IAT	INTAKE AIR TEMP	HTR22CM	O2S HTR BK 2 DNSTREAM PRIM CKT MON
IAT V	INTAKE AIR TEMP-VOLT	HTR21F	O2S HTR BK 2 UPSTREAM OUT FAULT DET
LONGFT1	LONG TERM FUEL TRIM-BANK 1	HTR21A	O2S HTR BK 2 UPSTREAM PRIM CKT MON
LONGFT2	LONG TERM FUEL TRIM-BANK 2	HTR21CM	O2S HTR BK 2 UPSTREAM PRIM CKT MON
LFPF	LOW SPD FUEL PUMP FAULT DETECTED	HTRX1	O2S UPSTREAM HTR CTRL
TPREL	LOWEST IDLE THROT POS	O2S12	TRACTION MTR TEMP
MILF	MALF INDICATE LMP OUT FAULT DET	O2S11	O2 SENS BANK 1 UPSTREAM
MIL	MALF IND LMP	O2S22	O2 SENS BANK 2 DNSTREAM
MAP	MANIFOLD ABSOLUTE PRES	O2S22SV	O2 SENS BANK 2 DNSTREAM
MGP	MANIFOLD GAUGE PRES	O2S21	O2 SENS BANK 2 UPSTREAM
MAF	MASS AIR FLOW RATE	PSP	PWR STEER LOAD PRESENT
MAF V	MASS AIR FLOW SENS VOLT	PSP V	PWR STEER LOAD PRESENT-VOLT
MFDES	MASS FUEL DESIRED	RDEF	REAR WINDOW ELECTRIC DEFROST IN
HTRX2	O2S DOWNSTREAM HTR CTRL	SHRTFT1	SHORT TERM FUEL TRIM-BANK 1

Live Data Parameter Definitions

SHRTFT2	SHORT TERM FUEL TRIM-BANK 2	MFFSOAK	ENGINE-OFF SOAK TIME AT TIME OF MISFIRE
TCCRAT	TCC RATIO(TSS/ENG RPM)	MFFRNTM	ENGINE RUNNING TIME AT TIME OF MISFIRE
TP MODE	THROT POS MODE	MFFTP	THROTTLE POSITION AT TIME OF MISFIRE
VPWR	VEH PWR VOLT	MFFTCNT	# OF DRIVE CYCLES AT TIME OF MISFIRE
VREF	VEH REF VOLT	MFFPNP	IN DRIVE AT TIME OF MISFIRE
VSS	VEH SPD SENS	PSP_V	POWER STEERING PRES SENSOR
MAP_V	MAP VOLT	O2S11FM	EGO11 FLT
PERDEL1	CYL 1 CHANGE ROTATIONAL VEL	RPMDSD	DESIRED IDLE RPM
PERDEL2	CYL 2 CHANGE ROTATIONAL VEL	REARFT1	RR FUEL TRIM BANK 1
PERDEL3	CYL 3 CHANGE ROTATIONAL VEL	REARFT2	RR FUEL TRIM BANK 2
PERDEL4	CYL 4 CHANGE ROTATIONAL VEL	O2S21FM	EGO 21 FLT
PERDEL5	CYL 5 CHANGE ROTATIONAL VEL		
PERDEL6	CYL 6 CHANGE ROTATIONAL VEL		
PERDEL7	CYL 7 CHANGE ROTATIONAL VEL		
PERDEL8	CYL 8 CHANGE ROTATIONAL VEL		
IAT2 V	INTAKE AIR TEMP 2-VOLT		
IAT2	INTAKE AIR TEMP 2		
OL	OPEN LOOP FUEL STATUS		
O2S11SV	BANK 1 UPSTREAM HEGO VOLT		
O2S21SV	BANK 2 UPSTREAM HEGO VOLT		
FF	FLEX FUEL-ALCOHOL CONTENT		
FF_LRN	FLEX FUEL-ALCOHOL CONTENT LEARNED		
MFFRPM	ENGINE RPM AT TIME OF MISFIRE		
MFFLOAD	ENGINE LOAD AT TIME OF MISFIRE		
MFFVS	VEHICLE SPEED AT TIME OF MISFIRE		
MFFIAT	INTAKE AIR TEMP AT TIME OF MISFIRE		



Troubleshooting
&
Options

PREDATOR 

Troubleshooting Section

1. My Predator will not power up when I plug it into the OBDII port. Why?

A: Make sure that the cigarette lighter fuse in your vehicle is functional. You may also want to try plugging the Predator into any other vehicle with an OBDII port to see if it powers up. If it does not, please return to point of purchase for a warranty exchange.

2. My Predator lights up, but nothing happens.

A: Please return your Predator to point of purchase for warranty exchange.

3. My Predator says "Invalid license, tune in the vehicle does not match the last tune written," and it will not install a tune.

A: Please call technical support at (561)908-0040.

4. My Predator is flashing a CAL_ID, and saying call technical support what should I do.

A: Check your Predator for the latest revision update. Look on the top of the main menu of the Predator after it boots up to see your revision information. Check the number after the word "Predator" and verify that it matches the latest revision on our website www.diablosport.com

5. How do I update my Predator to the latest revision?

A: Please go to our website www.diablosport.com and take a look at the "downloads section" where you will find all the necessary information on getting the latest revision update.

6. My vehicle is shifting really hard, why?

A: Make sure you give your vehicle at least 4-5 cold starts with the tune installed before you begin driving it with heavy gas. This is because your transmission needs to learn how to shift with the new tune in the vehicle.

7. My Predator says "FEATURE NOT SUPPORTED ON THIS VEHICLE," What do I need to do?

A: Check your Predator for the latest revision update. Look on the top of the main menu of the Predator after it boots up to see your revision information. Check the number after the word "Predator" and verify that it matches the latest revision on our website www.diablosport.com

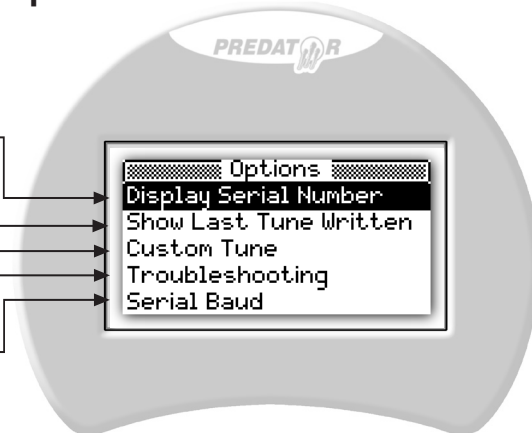
8. The Predator says "VEHICLE NOT IN DATABASE" what should I do?

A: Check your Predator for the latest revision update. Look on the top of the main menu of the Predator after it boots up to see your revision information. Check the number after the word "Predator" and verify that it matches the latest revision on our website www.diablosport.com. If you update your Predator and you are still displaying this message, please call technical support at (561)908-0040.

The options menu is mainly for use by your DiabloSport Dealer.

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

- This option shows the Predator serial number
- Displays the name of the last tune written to the vehicle
- Brings up the submenu for Custom Tunes from DiabloSport
- Brings up the Troubleshooting submenu
- Alter the serial port baud rate



Options Menu

Display Serial Number = Show the Predators serial number

Show Last tune Written = Display the last tune written to vehicle

Custom Tune = Custom tune menu, see Custom Tunes section

Troubleshooting = See Troubleshooting section

Serial Baud = Set the serial baud rate of communications for Predator.

NOTE: When switching tool from one vehicle to another vehicle you must go into the options menu and press live table reset.

Troubleshooting Menu

Show Calibration ID = Display the hex code on the vehicle

Show VIN = Show vehicles VIN number

Read Extra Tune = Reads the tune in the vehicle for export to PC

Restore Original Backup = Restores the original tune and resets the tool for use on another vehicle.

Log Upload = Upload data log file to PC, see Diagnostics section.

Live Table Reset = Reset this when Predator is used on a different vehicle.

Verification = This is a troubleshooting feature and should only be used with the supervision of Diablosport tech support.

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