

DIESEL

PERFORMANCE JUST GOT BETTER!



BD POWER ULTRA TUNER



ULTRA X-TUNER POWER PROGRAMMER **Ford 6.4L Powerstroke Installation Instructions**

1054871	Ford 6.4L Powerstroke F250 / F350 / F450	2008+
----------------	---	--------------

***** READ THIS MANUAL COMPLETELY BEFORE INSTALLING THIS PRODUCT *****

UNLESS AN EO# IS LISTED, THIS PRODUCT IS LEGAL IN CALIFORNIA FOR RACING VEHICLES ONLY, WHICH MAY NEVER BE USED UPON A HIGHWAY.

BD Engine Brake Inc
A10 – 33733 King Rd, Abbotsford, BC, Canada V2S 7M9
Ship: #88 – 446 Harrison St, Sumas, WA 98295 Mail: PO Box 231, Sumas, WA 98295
Ph: 604.853.6096 Fax: 604.853.8749 Internet: www.bd-power.com

TABLE OF CONTENTS

Pre-Installation3

Module Layout.....4

Installation5

 Main Menu Screen.....5

 Programming Your Vehicle6

 Speed Limiter.....6

 Measuring Tire Size7

Returning To Stock.....7

DTC Function (Diagnostic Trouble Code)8

Recovery Mode9

Setting Screen Contrast / Backlight.....9

Tuner Updates.....9

Troubleshooting / Technical Support10

Pre-Installation

Thank you for choosing BD Power's **Ultra X-Tuner**. The **Ultra X-Tuner** is set up specifically for your Ford 6.4L Powerstroke diesel. The Ultra X-Tuner houses specialized databases that contain optimally calibrated, individual vehicle application, performance programs which tune both the engine & transmission (automatic only). Top speed limiter removal (for race use) and selectable tire height (for correcting speedometer & shift points) are also available for use.

The Ultra X-Tuner includes the following features:

- **Internet Updateable** – Supports web updates via BD's update site
- **Built-In DTC Definitions** – No lookup manual needed
- **Built-In Help Screens** – Reduces need for manual look-up
- **USB Communications** – Connects to any PC (Windows XP/2000 or higher) with USB
- **Customs Application Upgradeable** – Download Custom performance programs
- **Multiple Tuning Levels** – User Selectable Tuning Types
- **Increased User Options** – Allows users more control
- **Ergonomically Designed Case** – Fits well in the hand
- **Large, soft key Buttons** – For easy operation
- **Permanently mounted cable** – No assembly required
- **Backlight Screen** – Easy to view day or night.

There are four power programs available for this tuner:

TOW/PERFORMANCE – Mid-range engine & transmission performance program. If you are a light tower (up to 8000lbs.) and would like a mixture between the two and performance programs, then select this option.

TRANSMISSION – Selects optimum tuning for your transmission. With this option you can safely tow/haul up to the OEM's maximum towing limit.

STOCK – Restores the stock engine and transmission program.

POWER LEVEL	H.P. GAINED	TORQUE GAINED
Performance	80hp	150 lbs-ft
Tow/Performance	55hp	110 lbs-ft
Stock	0	0

Periodically your dealer may flash your truck's computer if there is an issue with your truck when it is in for servicing (or even if there isn't a problem). Therefore, you should always revert your truck back to stock before bringing it back to the dealer for ANY work, because if your dealer flashes a new program over the modified "tuned" program from the Ultra X-Tuner, then your tuner will have to be reflashed at our factory.

Module Layout



The layout of the BD Ultra X-Power tuner is pretty straightforward. The module consists of a graphical LCD display, 3 selection buttons (notice the relation to the placement on the screen) and an OBD-II communications cable, hardwired into the module.

Installation

Make sure that your vehicle is in the key off/engine off position before you plug in the Ultra X-Tuner.

Connect the communications cable that came with the downloader into the top of the Ultra X-Tuner and the other end into the OBD II port (see diagram above). The OBD II port is the diagnostic port located underneath the dash on the driver's side of the vehicle.



OBDII Port

Main Menu Screen

The downloader will boot up with a BD logo and proceed to the main menu. From here you can decide which option you would like to select:

TUNER SETUP – Displays current firmware/database info numbers for the tuner, changes contrast & backlight options.

TUNING – Select this option to download a power program, remove the vehicle's speed limiter, to adjust transmission shifting or to return the program to stock.

DIAGNOSTICS – Select this option to view and erase diagnostic trouble codes.



The layout of the main menu is as follows:

- Tuner Setup
 - About
 - Set Screen Contrast
 - Set Screen Backlight
- Tuning
 - Read Vehicle
 - Change Settings
 - View Settings
 - Program Vehicle
- Diagnostics
 - Diagnostic Codes (Read/Clear DTC's)
 - Data Logging

Programming Your Vehicle

Select the **Tuning** option from the main menu with the enter key as described on the tuner.

Select **Read Vehicle**. This option will read the stock engine and transmission program currently loaded into your PCM and save a copy into the tuner. This information will be used to revert your truck back to stock in the future if desired. When the tuner loads the “Read Vehicle” menu, select **Read Stock**.

This option will take roughly 5 minutes to complete.

Once complete, choose the **Change Setup** option. In the Change Setup menu, select **Power Level**. From here you can choose your power level – Tow / Tow-Performance / Performance. Select “Save” once you have chosen your power level, and then press “Exit”, or,

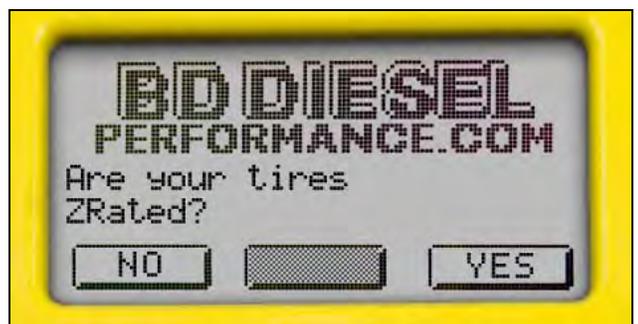


If you wish to change the speed limiter / tire size options, then read the section below. Otherwise, click on **Program Vehicle**. This will begin the tuning data processing.

Speed Limiter

The downloader gives racing enthusiasts the option to remove the OEM speed limiter/governor. This allows the vehicle to reach speeds in excess of where the OEM speed limiter was set (most trucks are set below 100mph/140kmh). By selecting “**Yes**” to remove the speed limiter you agree that your vehicle has the appropriate tires, suspension and any other necessary modifications rated for speeds in excess of 140mph.

Select **Options** from the **Change Setup** menu and select “**Change Speed Limiter**”. If your tires are Z-Rated (rated for use in excess of 120mph), then select Yes.



THIS MODIFICATION IS INTENDED FOR RACE PURPOSES ONLY AND SHOULD **NEVER** BE USED ON A PUBLIC ROAD OR HIGHWAY.

If you wish to raise the speed limiter, then hit "Save" with the **Raised** option selected. If you wish to retain the stock setting, hit "Next" until the description changes to **Stock**.



Measuring Tire Size

When using the tuner to input a bigger-than-stock size tire (for fixing erroneous speedometer values), then your tire must be measured for the proper calculations to be used.

Measure the tire vertically with a tape measure. It may help to have a tool with a flat edge (i.e. a ruler) resting on top of your tire for a more accurate reading. Measure your vehicle's tire (**in inches**) and round it up to the nearest quarter of an inch. When measuring the tire, both the tire and rim must be included.

This option can be found in the **Change Setup / Options / Tire Height** menu.

Returning To Stock

This option is for when you are taking your vehicle in for a diagnostic service, or just want your settings to be back to the OEM specifications.

Plug in the Ultra X-Tuner and select the **Tuning** option from the main menu, and then select **Change Setup**, and then select **Power Level**.

This will bring up the power selection menu. On the displayed list, select **Stock** and hit Enter.



The tuner will then ask you to confirm that you would like to return to stock. Hit Yes if you would like to continue. At this point, it will re-load your stock program back into your truck.



When the load is finished, the Ultra X-Tuner will have returned the vehicle to the stock power level, as well as the speed limiter and the transmission shift patterns.

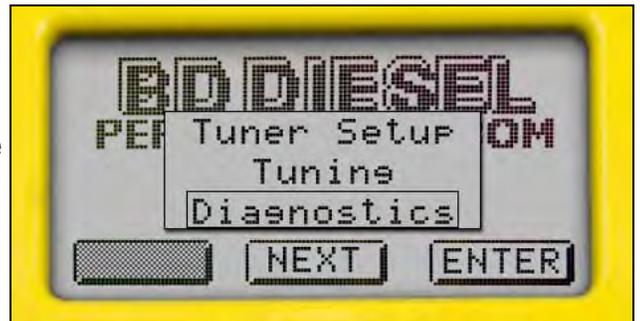
DTC Function (Diagnostic Trouble Code)

The DTC function will display all diagnostic trouble codes set on your vehicle. This function will also allow you to read and erase trouble codes from your vehicle's ECU.

Read DTCs reads and displays Diagnostic Trouble Codes from the connected vehicle.
Clear DTCs clears current Diagnostic Trouble Codes from the connected vehicle.

Both options are for live vehicle diagnostics. An active vehicle connection to the tuner is required. Vehicle DTC's, if present, will be displayed along with a full text description, when available.

To access this menu, select **Diagnostics** at the main menu and hit Enter.



If you want to read the DTC's currently in your system, select **Read DTCs** and then hit Enter.

If you want to Clear DTCs currently in your system, select **Clear DTCs** and then hit Enter.



Re-occurring Diagnostic Trouble Codes you may encounter:

CODE	Definition	Reason
<u>P0603</u>	Internal Control Module CAM Error	Both codes are time delayed codes which may erase over time, but cannot be erased by the Ultra X-Tuner.
<u>P1000</u>	OBDII Monitor Checks Not Complete – More Driving Required)	

Recovery Mode

In the event of a status message during a programming sequence, the Ultra X-Tuner will attempt to recover the vehicle to the original stock program. It is necessary to carefully follow the screen prompts, possibly requiring multiple “Ignition OFF” and “Ignition ON” sequences to correctly return the vehicle to stock settings.

When the recovery is completed, your vehicle is returned to factory stock. You are now able to start your vehicle normally. You may not attempt to use the Ultra X-Tuner to program your vehicle again or to program another vehicle (the tuner is now reset and not locked to a vehicle). Follow the on-screen prompts. In the event that recovery is unsuccessful, or for any reason the Ultra X-Tuner fails to complete its programming cycle, a status message will be displayed on the unit. Please make note of the message displayed and contact BD Diesel Performance technical support department.

Setting Screen Contrast / Backlight

The Ultra X-Tuner’s screen contrast and backlight level can be changed to the user’s preference. Select **Tuner Setup** from the main menu.

Select either “Set Contrast” or “Set Backlight”, depending on which option you would like to change.

Settings range anywhere from 0-100%.



Tuner Updates

If the dealer flashes a new program onto your computer that is newer than the database in the tuner, then the tuner will have to be updated. This is done by visiting <http://xtuner.bd-power.com/> through your preferred internet browser and clicking on the “Ultra X-Tuner” link. Follow the screen prompts to install and update the software.

Troubleshooting / Technical Support

Complaint:

Solution:

<p><u>Ultra X-Tuner screen is blank when plugged into the vehicle.</u></p>	<ol style="list-style-type: none"> 1. The diagnostic port may share power with the cigarette lighter fuse. Check the owner manual for location and replace if it is blown. 2. Check the pin connectors in the OBDII port. Make sure that none of the pins have been pushed out of the connector body. (Note: Typically not all connector pins are present). 3. Try plugging the tuner into another supported vehicle and verify the tuner status.
<p><u>Ultra X-Tuner flashes “Tuner Requires an Update” message after visit to the dealer and/or reflash.</u></p>	<p>The Ultra X-Tuner does not have the necessary calibration files that coincide with your truck’s new update, so an update for your tuner is necessary.</p> <p>Refer to the section “updating your tuner” on page xx for updating instructions.</p>
<p><u>Unsupported application.</u></p> <p>If the vehicle or engine type is not currently supported by the Ultra X-Tuner, the following error message may be displayed:</p> <p><i>“This application is currently unsupported. Call us if incorrect. Call BD POWER and use Code #E-36.”</i></p>	<p>Check the year, model and engine model to verify that the Ultra X-Tuner being used is correct for the application. If not, return it to the dealer that it was purchased from for the correct tuner. If the application matches up, then phone BD POWER for an RMA number to send in the tuner for inspection.</p>
<p><u>Non-Stock File Application.</u></p> <p>If the Ultra X-Tuner has checked your stock file and cannot match it to a stock file, the following message will be displayed:</p> <p><i>“Vehicle File is Not Stock... Call BD Power! Use Code #E-43.”</i></p>	<p>This may be because another programmer has been previously used to reprogram the vehicle. The vehicle that this tuner is going on MUST be stock before trying to program with the Ultra X-Tuner.</p>

<p><u>Locked VIN Number.</u></p> <p>If the Ultra X-Tuner programming is in a vehicle, then the tuner is “locked” to that vehicle – meaning that no other vehicle can be programmed with that tuner. If you try and use the programmer you will receive this message:</p> <p><i>“Locked VIN is mismatched! Not the original vehicle / program. Call BD POWER! Use Code #E-37.”</i></p>	<p>Return the original vehicle back to stock before using the Ultra X-Tuner on another vehicle, or purchase an additional Ultra X-Tuner for use on a second vehicle.</p>
<p><u>Not original Program ID.</u></p> <p>If the Ultra X-Tuner is “VIN locked” to a vehicle and that vehicle has been updated at the dealership to a different Box Code (ID Number) without first using the tuner to return the vehicle to stock, the following message will be displayed:</p> <p><i>“Not the original Program ID. Not the Original Vehicle/Program. Call BD POWER! Use Code #E-38.”</i></p>	<p>The Ultra X-Tuner can only be unlocked if it is able to return the “Vin Locked” vehicle to stock. Since a dealership has replaced the Ultra X-Tuner’s programming in the truck with updated stock tuning, you will need to update your tuner online with a re-flash.</p>
<p><u>Checksum Error.</u></p> <p>If the Ultra X-Tuner is “VIN locked” to a vehicle and that vehicle has been updated at the dealership to the same Box Code (ID Number) without first using the tuner to return the vehicle to stock, the following message will be displayed:</p> <p><i>“Not the original Program Checksum. Not the Original Vehicle/Program. Call BD POWER! Use Code #E-39.”</i></p>	<p>The Ultra X-Tuner can only be unlocked if it is able to return the “Vin Locked” vehicle to stock. Since a dealership has replaced the Ultra X-Tuner’s programming in the truck with stock tuning, you will need to update your tuner online with a re-flash.</p>
<p><u>Upload Error.</u></p> <p>If the Ultra X-Tuner cannot detect if the ignition is in the on position, the following message will be displayed:</p> <p><i>“Problem with uploading! Please retry. Call BD POWER! Use Code #E-XX.” (XX= a two digit number).</i></p>	<p>Make sure that the ignition is ON (with the vehicle OFF). Retry again. It is possible that your vehicle’s battery charge is low. Please check and correct, if necessary.</p>

Ignition ON Error.

If the Ultra X-Tuner cannot detect that the ignition is in the ON position, the following messages will be displayed:

“Cannot Detect Ignition On. Please Retry. Call BD POWER! Use Code #E-31.”

Make sure that the ignition key is turned completely forward in the ON position. **(DO NOT START THE VEHICLE).**

Communications Error

If the Ultra X-Tuner loses communication, the following message will be displayed:

“Communications Error!!! Please retry. Call BD POWER! Use Code #E-XX.”

Make sure that the ignition is ON (but DO NOT start the vehicle!). Retry again. It is possible that your vehicle's battery charge is low. Please check and correct if necessary. If it still fails, then contact BD Power. The Ultra X-Tuner will have to be returned to BD.

If you encounter any other problems with this product, or have technical questions about it, please phone the BD Diesel Performance Technical Hotline at (800) 887-5030 between 8:00am – 5:00pm, Monday to Friday, Pacific Standard Time (PST). As an alternative, you can also post on our technical forum located at <http://bd-power.com/forum>.

