



NOTE: Unless this product has been identified with a CARB # it is only legal in California for racing vehicles which may never be used upon a highway

BD ENGINE BRAKE, INC.

Plant: Unit A10-33733 King Rd, Abbotsford, BC, Canada V2S 7M9

US Shipping: 88-446 Harrison St, Sumas, WA 98295 US Mailing: PO Box 231, Sumas, WA 98295

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BD Power
1-800-887-5030
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BD X Power Chip - 1999-up *PowerStroke*

CAUTION - *When vehicle is serviced at a FORD or authorized Dealership it is recommended that you remove this chip. This is to prevent a 'soft code' from being read when a scanner is hooked up to the ECM. This code only occurs when the chip is connected to the ECM and is not present when removed.*

ECM REMOVAL

Disconnect ground terminals on batteries. On the firewall by the driver's side fender well and to the right of the Main Wire Harness Bulk Head, you will find a connector plug with a bolt in the center, remove bolt (10mm head) and slide off the plug. From the inside of the left front wheel well remove some of the inner fender bolts so you can remove the computer from the firewall. From inside the cab, locate the plastic box behind the Parking/Emergency Brake Pedal, this houses the ECM. Remove the mounting bolts (7mm head) holding the plastic cover to the metal support bracket and remove cover. **CAUTION: Do not lose the metal strap that slides through the slot on the bottom screw hole gusset.**

The computer can now be removed.

Pry out the plastic plug from the rear of the box with a screwdriver and expose the circuit board. Remove the six cap screws (5.5mm) on the cover of the box and pull the box apart.

NOTE: There is a plastic spacer that supports the circuit board in the box. It is not attached and will be loose when you pull the box apart. **DO NOT LOSE THE PLASTIC SPACER**

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PREPARATION

With the circuit board exposed, clean the grease off the contacts on both sides of the board with a tissue or clean cloth. **There is a clear covering on the contacts** that will have to be gently cleaned off. With the supplied scouring pad, rub off the rubber insulation as well as the tin/aluminum tracing until the copper connections can easily be seen. Care must be taking to ensure that all the connections are clean, most importantly the **outside connectors**.

Once the covering is removed and you have exposed the shiny connectors, clean the connectors (both sides) with Q-Tip and alcohol (non-residue) or contact cleaner. Failure to clean the terminals correctly can result in a film from the covering being transferred to the contacts on the chip, making the chip **not perform properly**.

INSTALLATION



Secure the chip to the box with a couple pieces of clear shipping tape or duct tape. Ensure that the chip is completely square or flat with the edge of the ECM. Push the box back into its place and screw the connecting plug back onto it on the firewall. Reconnect ground terminals on the batteries, and make sure the truck starts up as normal. If not, the connectors may have not been cleaned properly.

To facilitate the chip, the rear of the plastic housing will either have to be left off, slightly modified or pressed on. You can use tie wraps in place of the mounting bolts to secure the cover if you choose not to press the cover on. Save the bolts and black plug to return truck to a stock condition.

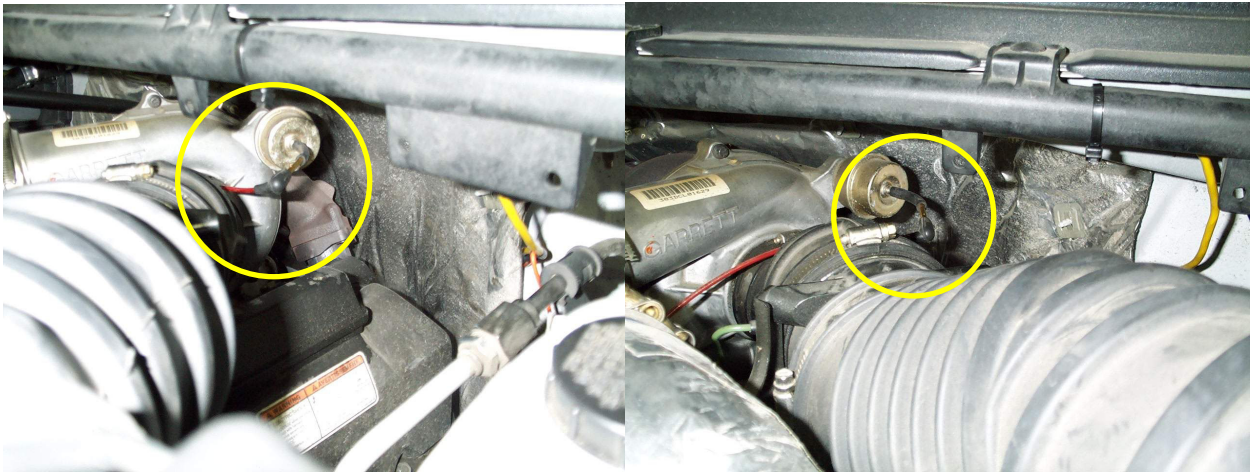
For installation of the boost tube, locate the red air line connected to the wastegate of the turbo. Place the boost tube in between of the wastegate and the air line, and reattach to wastegate. We have found that vehicles using the boost tube, consistently run cooler with more boost.

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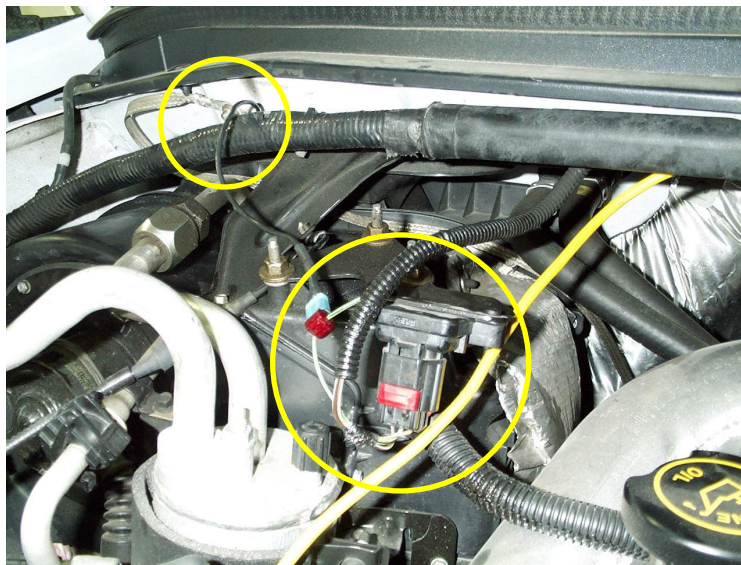
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To install the electronic boost cut-off, locate the map sensor located on the passenger side of the engine compartment near the rear. Attach the ScotchLok to the center wire (Light Green/Black trace) and connect the other end to the chassis ground nearby. This device prevents the SES light (high boost code) from appearing.



When starting the truck for the first time after the installation be sure to observe the "wait to start" light on the dash. If this light does not appear and disappear as it would normally, all the connections must be rechecked. That includes making sure that the ECU was properly cleaned.

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1994-97 PowerStroke

Installation Instructions

NOTE: IF YOUR TRUCK HAS A COMPUTER REFLASH OR UPGRADE, YOU WILL REQUIRE A CHIP DESIGNED FOR THAT UPGRADE (IE: 95 REFLASHED TO 97 SPECS REQUIRES A 97 CHIP).

***WARNING** - When vehicle is serviced at a FORD or authorized Dealership it is recommended that you remove this chip. This is to prevent a 'soft code' from being read when a scanner is hooked up to the ECM. This code only occurs when the chip is connected to the ECM and is not present when removed.*

On the firewall, right by the driver's side fender well and just to the right of the Main Wire Harness Bulk Head, you will find a connector plug with a bolt in the center. Remove the bolt and slide off the plug. From the inside of the left front wheel well remove some of the inner fender bolts so you can remove the computer from the firewall.

Some techs access this from inside the cab, remove the driver's side kick panel, then unbolt the Park/Emergency Brake support bracket and push the bracket and brake assembly to one side, exposing the ECU box. Pull the box out.

Locate the plastic plug on the rear of the box and pry this plug out with a screwdriver to expose the circuit board. Remove the six cap screws (5.5mm) on the cover of the box and pull the box apart.

NOTE: There is a plastic spacer that supports the circuit board in the box. It is not attached and will be loose when you pull the box apart.

DO NOT LOSE THE PLASTIC SPACER.

With the circuit board exposed, clean the grease off the contacts on both sides of the board with a tissue or clean cloth. **There is a clear covering on the contacts** that will have to be gently cleaned off.

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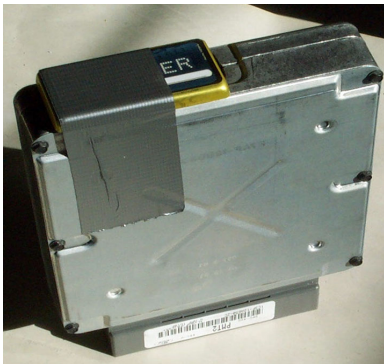
With the supplied scouring pad, rub off the rubber insulation as well as the tin/aluminum tracing until the copper connections can easily be seen. Care must be taking to ensure that all the connections are clean, most importantly the **outside connectors**.

Once the covering is removed and you have exposed the shiny connectors, clean the connectors (both sides) with Q-Tip and alcohol (non-residue) or contact cleaner. Failure to clean the terminals correctly can result in a film from the covering being transferred to the contacts on the chip, making the chip not perform properly.

Reassemble the box with the plastic spacer back in place, and six cap screws tightened. Firmly and evenly push the X Power Chip (do not force) into the slot and over the connectors so that the edges of the chip line up with the edges of the ECM box, almost flush.

If there is any large over lap at all, the chip is 180 degrees out and must be turned around. If installed 180 degrees out and the ECU is connected to the plug the chip will be permanently damaged.

On later years, the ECU box has a dimple (or indent) on the back that prevents the chip from being pushed right up to the box and not remaining straight. If this occurs, you may want to add a small spacer (piece of firm rubber or wood) to keep the chip straight when pushed in.



Secure the chip to the box with a couple pieces of clear shipping tape or duct tape. Push the box back into its place and screw the connecting plug back onto it on the firewall. Make sure the truck up starts up as normal. If not, the connectors may not have been cleaned properly. Depending on which method used to remove the box, reattach the Parking/Emergency Brake bracket and driver's side Kick Panel or the inner fender bolts.

Note: Do not attach a boost fooler wire to the MAP sensor to any 94-97 PowerStrokes.

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BD ENGINE BRAKE INC **Limited Warranty Statement**

BD Engine Brake Inc. (BD) warrants to the original purchaser that any parts purchased shall be free from defects in material and workmanship. A defect is defined as a condition that would render the product inoperable. This warranty does not cover deterioration of plating, paint or any other coating. BD liability is limited to the repair or replacement, at BD's option, of any warrantable product returned prepaid with a complete service history and proof of purchase to the factory. A valid proof of purchase is a dated bill of sale. Repaired or replaced product will be returned to the customer freight collect and on a like for like part number basis. Accepted warranty units, which have been replaced, become the sole property of BD.

A Return Material Authorization (RMA) number obtained in advance from a BD customer services representative must accompany product returned for warranty determination. BD will be the final authority on all warranty decisions.

This warranty shall not apply to any unit which has been improperly stored or installed; subjected to misapplication, improper operating conditions, accidents, or neglect; or which has been improperly repaired or altered or otherwise mistreated by the owner or his agent.

This warranty shall terminate at the end of 12 months in service with the original user. Labor cost incurred by the removal and replacement of a BD product, while performing warranty work, will be the responsibility of the vehicle owner, in no case does the obligation of BD Diesel Performance exceed the original purchase price of the product as indicated on the original bill of sale.

Except as set forth in this warranty, BD disclaims any implied warranty, including implied warranties of merchantability and fitness for a particular purpose. **BD also disclaims any liability for incidental or consequential damages including but not limited to, repair labor, rental vehicles, hotel costs or any other inconvenience costs.** This warranty is in lieu of all warranties or guarantees either expressed or implied and shall not extend to any customer or to any person other than the original purchaser residing within the boundaries of the continental US or Canada.

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