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.COM

ASSEMBLY INSTRUCTIONS

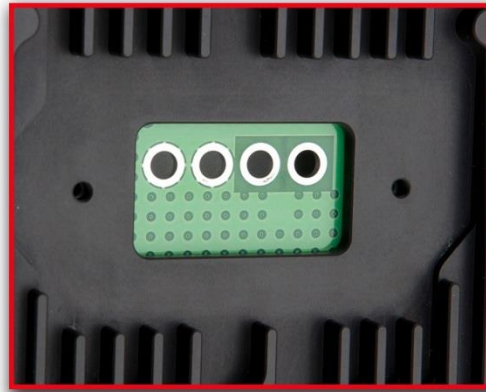
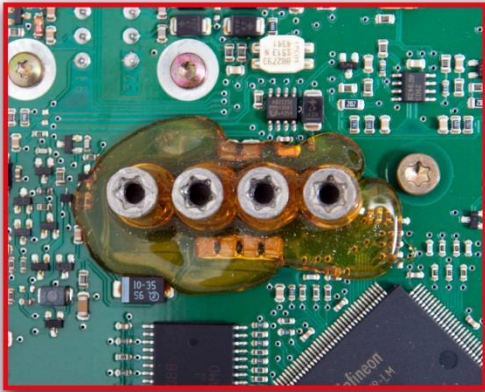
**FUEL INJECTION CONTROL MODULE (FICM)
POWER SUPPLY
2003-2007 F-SERIES 6.0L
2003-2010 E-SERIES 6.0L
NAVISTAR VT365 AND LCF 4.5L DIESEL**

**NEAL TECHNOLOGIES, INC.
UPDATED 1/23/2014**

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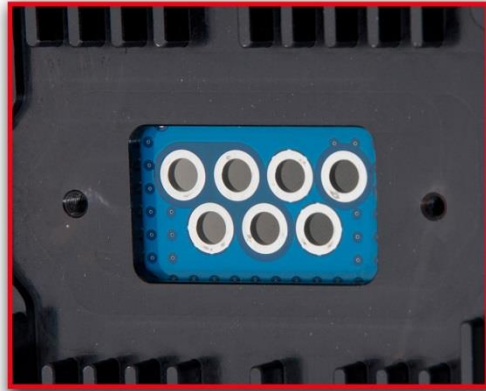
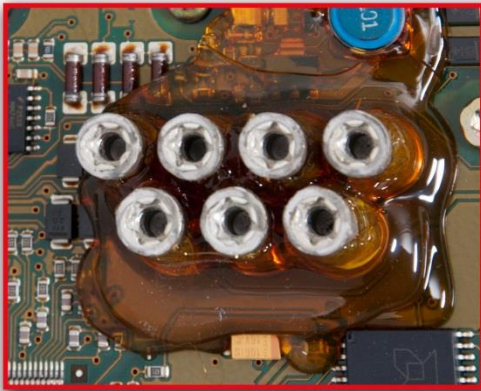
WARNING!

A 4-pin power supply is compatible **ONLY** with a 4-pin logic board.



4 - Pin to 4 - Pin ONLY

A 7-pin power supply is compatible **ONLY** with a 7-pin logic board.



7 - Pin to 7 - Pin ONLY

**Mismatching and installing the wrong versions of FICM
will destroy the ENTIRE FICM!**

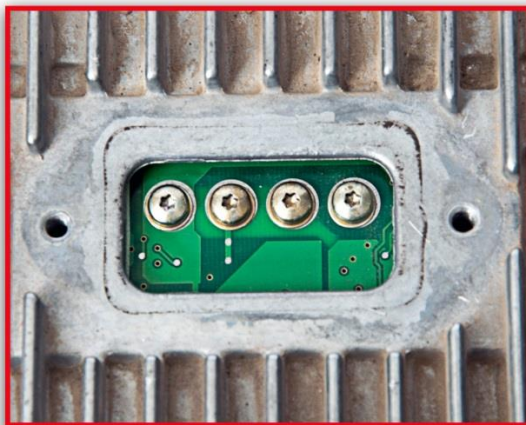
Please call if you are not sure PRIOR to installation.

Thank you for purchasing the **Bullet Proof Diesel Fuel Injection Control Module (FICM)** power supply. Please read and understand all of the instructions prior to beginning the replacement of your FICM power supply. Call us if you have any questions.

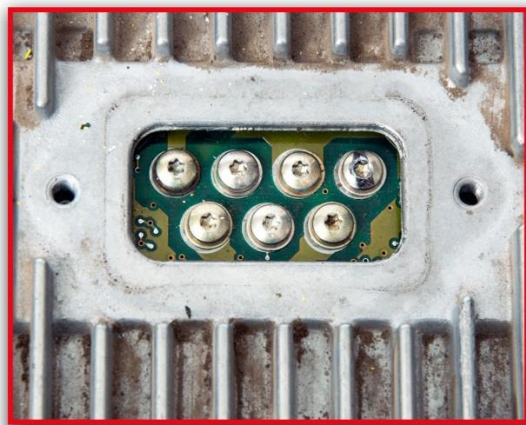
The Original Equipment (OE) FICM power supply is part of the complete FICM assembly. The FICM assembly consists of two circuit boards; the logic board and the power supply board, contained within a (two piece) cast aluminum housing. This housing is mounted, in most cases, over the driver's side engine valve cover.

The logic circuit board is mounted to the side of the FICM assembly that also has the vehicle interface wire harness connectors. All programming and logic functions of the FICM reside within the logic circuit board. This part of the FICM assembly will remain with the vehicle, therefore no additional programming of the FICM is needed to facilitate a proper repair.

There are two types of FICM logic boards; a 7-pin (or screws) and a 4-pin. To find out what version you have, you must remove the two Torx #20 screws from the screw cover plate, and count the number of Torx #10 screws found underneath.



4 - Pin



7 - Pin

The FICM power supply circuit board is located in the recessed half of the FICM assembly. The function of this circuit board is to convert 12 volts DC into 48 volts DC. The 48 volts is what the logic circuit board uses to actuate the fuel injectors.

Fuel Injection Control Module (FICM) Install

Introduction

Bullet Proof Diesel offers two options for FICM power supply replacement; the 4-phase and the 6-phase. Both versions have been designed to exceed OE specifications in both functionality and reliability. Both versions include the all billet aluminum recessed power supply housing.

The 4-phase power supply is a heavy duty power supply for the direct replacement of the OE FICM power supply. It is available in the 48 volt configuration only. It is offered as a high quality solution at a lower price than the ultra-heavy duty 6-phase FICM.

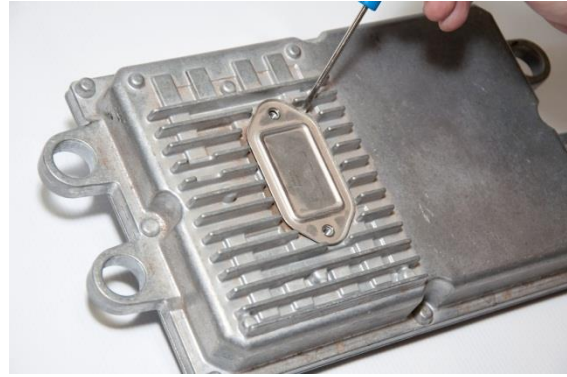
The 6-phase power supply is the ultimate high performance FICM power supply. It comes preset at 48 volts, but can be set to 53 volts or 58 volts by the end user. While we have no information supporting negative consequences of running higher than OE FICM voltages (other than setting a trouble code for high FICM voltage), please note that selecting a higher voltage may have **unforeseen consequences. Do so at your own risk.**

The design of our 4-phase and 6-phase circuits provide a cleaner, more stable current and voltage output than the OE FICM power supply. The Bullet Proof FICM – even at 48 volts - has been shown to increase fuel economy, eliminate injector sticking, improve cold drivability and cold weather starts. The billet aluminum housing offers considerable gains in heat removal from the FICM over the OE cast housing.

Installation Stage 1: Remove FICM from Vehicle

Installation Stage 2: Disassembling the Original Equipment (OE) FICM

1. Remove the 2 (M4 x 0.7) inspection cover plate Torx #20 screws.

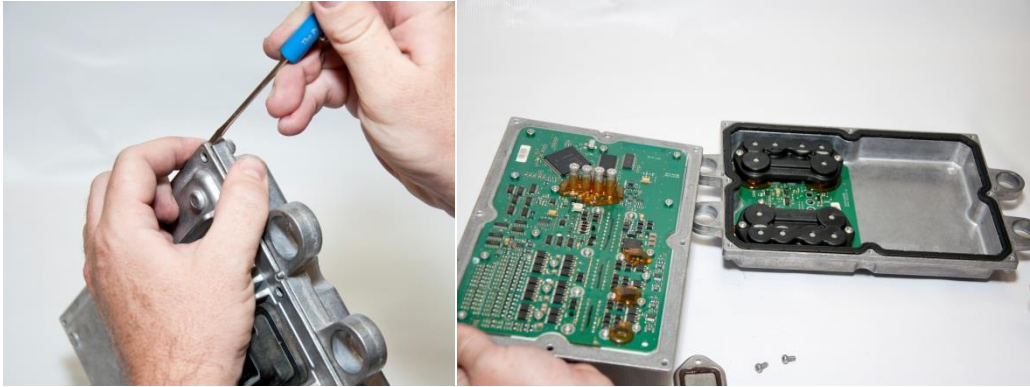


2. Once the inspection cover plate is removed, remove the exposed (#6-40) Torx #10 screws. (4 shown)



3. Turn the FICM over and remove the 8 (M4 x 0.7) Torx #20 screws that hold the FICM case together.

- Once the screws have been removed, **CAREFULLY** pry the two halves apart:



- Locate and remove the FICM gasket:

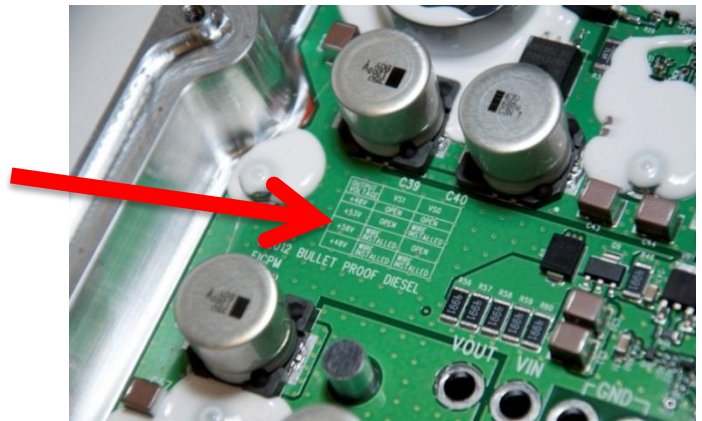


***Note:** The gasket may be adhered to either side of the FICM case. You will reuse this gasket.

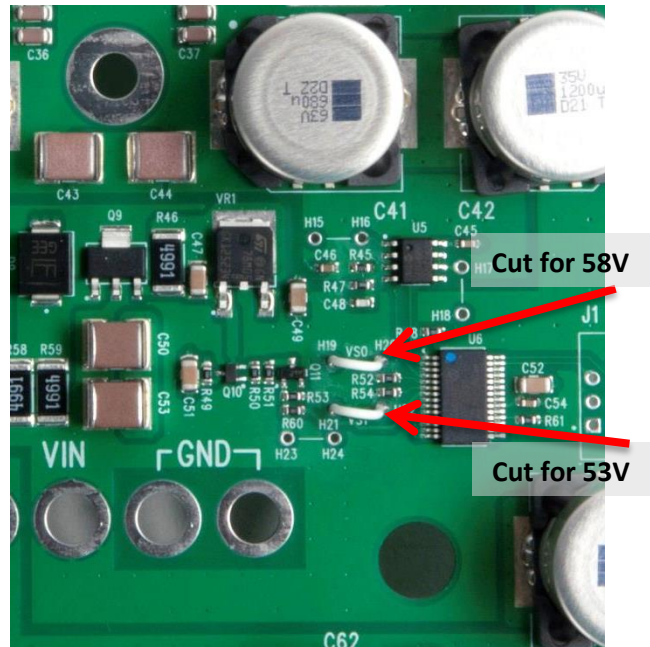
Installation Stage 3: Selecting the FICM Voltage (6-phase only)

***Note:** The Bullet Proof Diesel FICM comes set at 48 volts. The following steps are only necessary if a 53 volt or 58 volt FICM is desired. Exceeding OE voltage may have unforeseen consequences. Do so at your own risk.

- Locate the voltage selection chart on the FICM power supply board:



2. Locate voltage selection wires:
3. Based on voltage selection chart, clip appropriate wire for 53 or 58 volts.



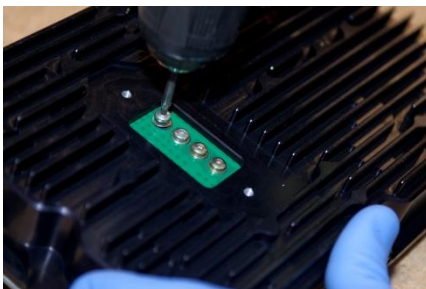
Installation Stage 4: Assemble New FICM



1. Place gasket in new Bullet Proof Diesel FICM case. (6-phase FICM shown)



2. Place stock logic board on Bullet Proof Diesel power supply, and install the 8 (M4 x 0.7) Torx #20 screws. Tighten to 2 Nm (18 inch-pounds).



3. Turn FICM over and install the 4 (#6-40) Torx #10 screws. Tighten to 1 Nm (9 inch-pounds).

***Note: Do not over tighten.**

Installation Stage 5: Testing FICM Voltage

1. Re-install the FICM on vehicle. Make sure the electrical connections are firmly in place.
2. Using a digital volt ohm meter (DVOM), test the FICM output. This is done by measuring the voltage at the moment the ignition key is turned on, but without cranking the engine, during the initial injector cycle. DO NOT SHORT CIRCUIT! Doing so will void the warranty.



***Note:** If volt meter does not read the correct voltage, contact Bullet Proof Diesel before moving on to the next step. The voltage specs are 48 volts \pm 1 volt. On the 6-phase power supply, the voltage specs are \pm 1 volt of the selected output voltage. Not all scan tools or data monitors will display actual FICM voltage. This manual method must be done prior to calling for tech support as it will be the first question we ask you.

Installation Stage 6: Finishing Installation

1. Install the inspection cover plate. Tighten to 2 Nm (18 inch-pounds).



2. Re-install all of the parts removed from the vehicle during the disassembly process. Do not start the vehicle until the re-assembly is complete.