JUICE ATTITUDE

1998.5-2002 Dodge Cummins 5.9L 24 Valve

Edge Juice and Attitude
Installation Instructions and Manual

OLD P/N's: EJD3500WAM / EJD3500AWAM / EJD3500BWAM
NEW P/N's: 30100 / 30101

EDGE PRODUCTS

Table of Contents

DISCLAIMER OF LIABILITY ____ *4*

LIMITATION OF WARRANTY ____ *4*

About the Dodge VP44 Juice ____ *7*

Supplied Items: ____ **7**

Tools Required: ____ **7**

Juice Modules ____ *Error! Bookmark not defined.*

Connector Descriptions ____ *8*

Juice Installation Instructions ____ *10*

Connecting to Power ____ **10**

Routing the Turbo Timer Cable ____ **12**

MAP Sensor Connection ____ **13**

Connecting the *Posi-Tap® Connector to the VP 44 Injection Pump Wire ____ **14**

VP 44 Pump Detailed View ____ **14**

Connecting the Ground Wire ____ **20**

"Lift Pump" Fuel Pressure Sensor Installation ____ **20**

Data Link Connection ____ **24**

Boost Elbow Installation ____ **24**

Connecting the Transmission Temp Sensor (Automatic Transmission) ____ **25**

Connecting the Transmission Temp Sensor (Standard Transmission) ____ **26**

EGT Probe Installation ____ **27**

Final Inspection and Operation ____ *28*

Edge Attitude Monitor ____ *29*

About the Attitude ____ *30*

Power Gains ____ *31*

Dodge VP44 Attitude Getting Connected ____ *32*

Changing the Display View ____ *35*

Two Function Bar Graph Display Sample ____ **36**

Two Function Digital Display Sample ____ **36**

Three Function Digital Display Sample ____ **36**

Four Function Digital Display Sample ____ **37**

Changing Variables on the Screen ____ *38*

Adjusting the Backlight ____ *41*

Juice Configuration ____ *42*

Max EGT Set point ____ **43**

Max Boost Set point ____ **44**

Low Boost Fueling Adjustment 46
Turbo Cool Down Setup 48
Cold Engine Protection 49
Tire Size 49
Truck Model Year 50
Alerts 51
Records 54
Performance Tests 55
Hot Unlock Code 57
Troubleshooting Guide 58
Technical Support 59

© 2007, Edge Products
All rights reserved.
Edge Products
1080 South Depot Dr.
Ogden, UT 84404
(801) 476-3343
www.edgeproducts.com
Manual Version 7

THIS IS A HIGH PERFORMANCE PRODUCT. USE AT YOUR OWN RISK.

Do not use this product until you have carefully read the following agreement.

This sets forth the terms and conditions for the use of this product. The installation of this product indicates that the BUYER has read and understands this agreement and accepts its terms and conditions

DISCLAIMER OF LIABILITY

Edge Products, and its successors, distributors, jobbers, and dealers (hereafter **SELLER**) shall in no way be responsible for the product's proper use and service. THE **BUYER** HEREBY WAIVES ALL LIABILITY CLAIMS.

The **BUYER** acknowledges that he/she is not relying on the **SELLER's** skill or judgment to select or furnish goods suitable for any particular purpose and that there are no liabilities which extend beyond the description on the face hereof and the **BUYER** hereby waives all remedies or liabilities, expressed or implied, arising by law or otherwise, (including without any obligations of the **SELLER** with respect to fitness, merchantability and consequential damages) or whether or not occasioned by the **SELLER's** negligence.

The **SELLER** disclaims any warranty and expressly disclaims any liability for personal injury or damages. The **BUYER** acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and the **BUYER** agrees to indemnify the **SELLER** and to hold the **SELLER** harmless from any claim related to the item of the equipment purchased. Under no circumstances will the **SELLER** be liable for any damages or expenses by reason of use or sale of any such equipment.

The **SELLER** assumes no liability regarding the improper installation or misapplication of its products.
It is the installer's responsibility to check for proper installation and if in doubt, contact the manufacturer.

LIMITATION OF WARRANTY

Edge Products, (hereafter "**SELLER**") gives Limited Warranty as to description, quality, merchantability, fitness for any product's purpose, productiveness, or any other matter of **SELLER's** product sold herewith. The **SELLER** shall be in no way responsible for the product's open use and service and the **BUYER** hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by **SELLER** and **BUYER**.

The Warranty is Limited to one (1) year from the date of sale and limited solely to the parts contained within the product's kit. All products that are in question of Warranty must be returned shipping prepaid to the **SELLER** and must be accompanied by a dated proof of purchase receipt. All Warranty claims are subject to approval by Edge Products.

Under no circumstances shall the **SELLER** be liable for any labor charged or travel time incurred in diagnosis for defects, removal, or reinstallation of this product, or any other contingent expenses.

If the **BUYER** sends back a failed unit that is out of warranty and chooses to buy a refurbished unit, the refurbished unit will only carry a 60 day warranty. If the **BUYER** purchases a new unit at a predetermined discounted rate, it will have the standard 1 year warranty.

Under no circumstances will the **SELLER** be liable for any damage or expenses insured by reason of the use or sale of any such equipment.

IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT: THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN SIXTY (60) DAYS FROM DATE OF PURCHASE FOR A FULL REFUND.

THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE BUYER HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

AFTERMARKET PRODUCTS AND YOUR VEHICLE'S WARRANTY

Many of our customers ask, "Will your product void my vehicle manufacturer's warranty?" While the answer is straightforward from a legal standpoint, we also want to educate our customers (and after-market consumers) on some industry realities and offer some common sense precautions to minimize your risk.

Consumers of aftermarket products are protected by The Federal Magnusson-Moss Warranty Act. The Act states that if something breaks on your car and you take it in for warranty repair, the dealer must honor your warranty unless they can prove that whatever modifications you have added to your car actually caused the problem. Please keep in mind that towing in anything higher than level two and hard driving in levels four and five are not recommended.

While as a consumer, you have strong legal protection with regards to your vehicle's warranty, there is also a practical reality that different automotive manufacturers and dealers have greatly varying views on aftermarket products, in particular those that produce horsepower, such as performance enhancement chips, modified intake manifolds, or aftermarket exhaust systems. There are dealers and manufacturers out there that will use the presence of a horsepower upgrade to void your vehicle's warranty. They will do this regardless of whose product you are using. Any aftermarket company that does not acknowledge this is misleading you.

The bottom line is that while the law protects the consumer and provides for enforcement of the warranty, it is very difficult for most people to hire an attorney and fight a voided warranty. Edge recommends that you **always disconnect and remove your module and monitor when you take your vehicle to a dealer for warranty work** in order not to interfere with Diagnostic equipment.

This warranty is void for any new products purchased through auction websites. Warranty is valid only for new products purchased through Authorized Dealers (proof of purchase required for all warranty claims).

All Edge modules and programmers are built to operate with OEM calibrations. When you take your vehicle to a service center they may, by your request or otherwise, update your vehicles calibrations. Therefore it is important that you return your vehicle to stock before taking it in for service. Edge updates its active products (i.e. those currently being manufactured) to work effectively with updated OEM calibrations. However, this process can take some time as Edge is not always made aware of calibration changes made by the OEM. In the case of discontinued products, Edge cannot ensure that your unit will work effectively if you take your vehicle to a dealership and you are given, by your request or otherwise, a new calibration.

About the Dodge VP44 Juice

Supplied Items:

1. Edge Juice Module
2. Main Wiring Harness
   To Engine Compartment- Black to Ground; Gray to Fuel Injection Pump; Map Sensor Connection; Data Link Connection.
   Inside Cab - Yellow to Fuse Number 9 (engine)
3. Fuel Injection Pump Connector
4. Four Wire Ties
5. Two Velcro Strips
6. One Hose Clamp
7. One 90° Brass Fitting
8. Two Male Spade Fuse Connector

Tools Required:

Knife
2-3 ft. of wire (fishing)
Pliers (needle nose)
Phillips Screwdriver
Flat tip Screwdriver
3/8” Drive Torque Wrench
1/2” Wrench
3/8” Drive Ratchet & Sockets
1/4” Socket
5/16” Socket
7/16“ Deep Well Socket and Ratchet
10 mm Socket
13 mm Socket

Silicone Sealer

Connector Descriptions

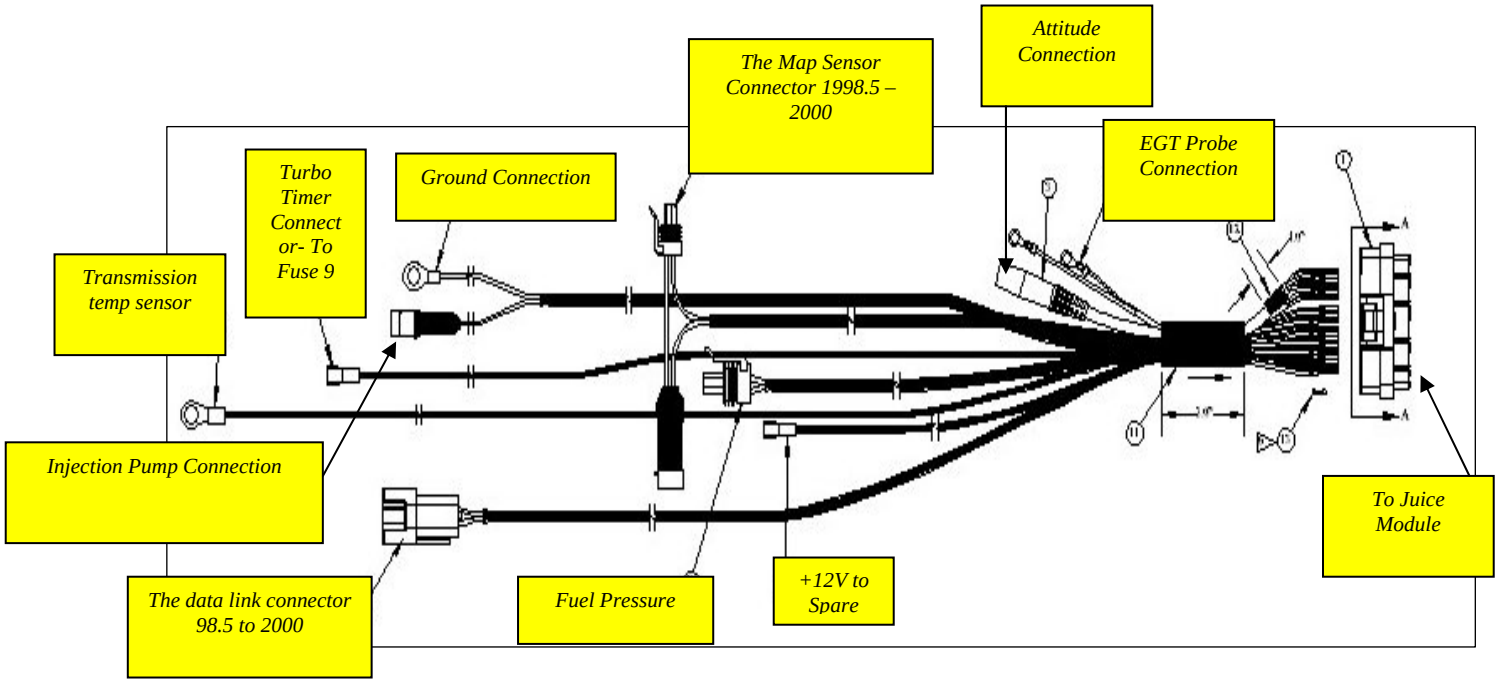


Figure 2 - Connector description 1998.5 – 2000

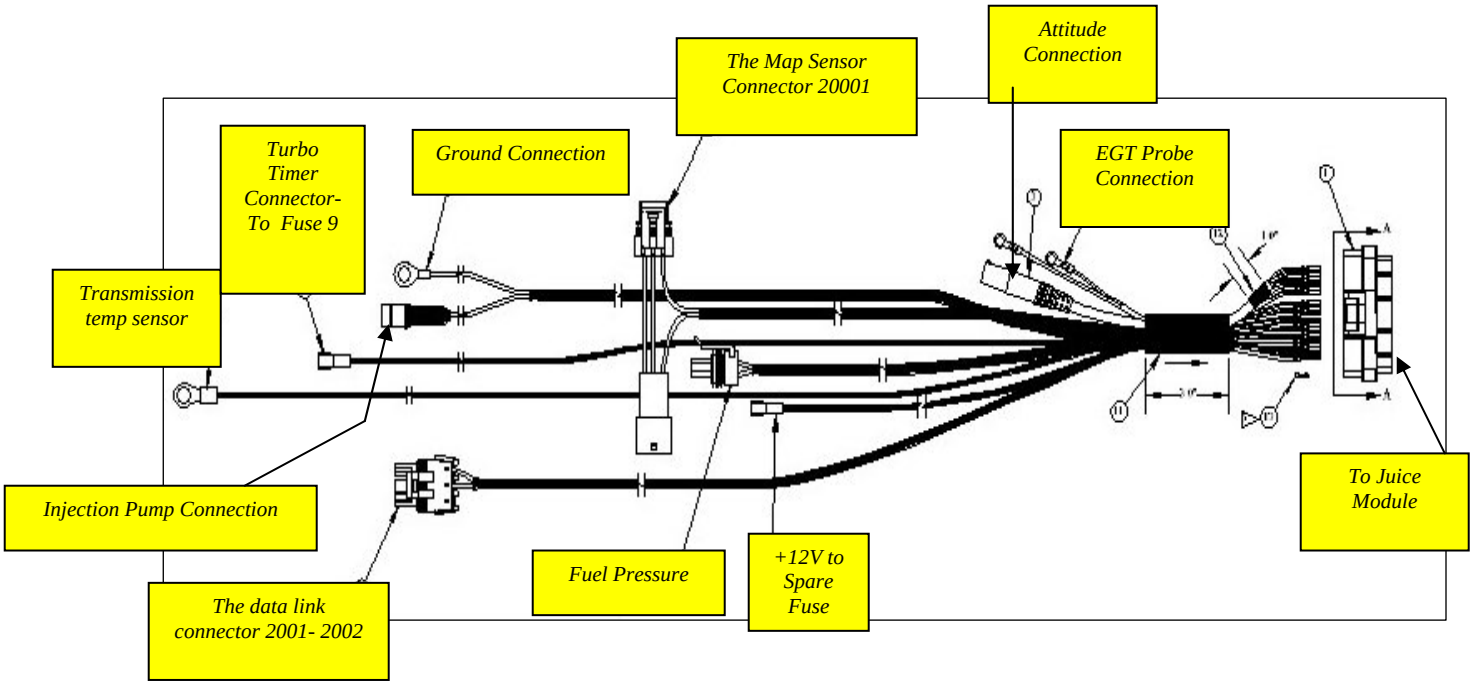


Figure 3 – Connector description 2001

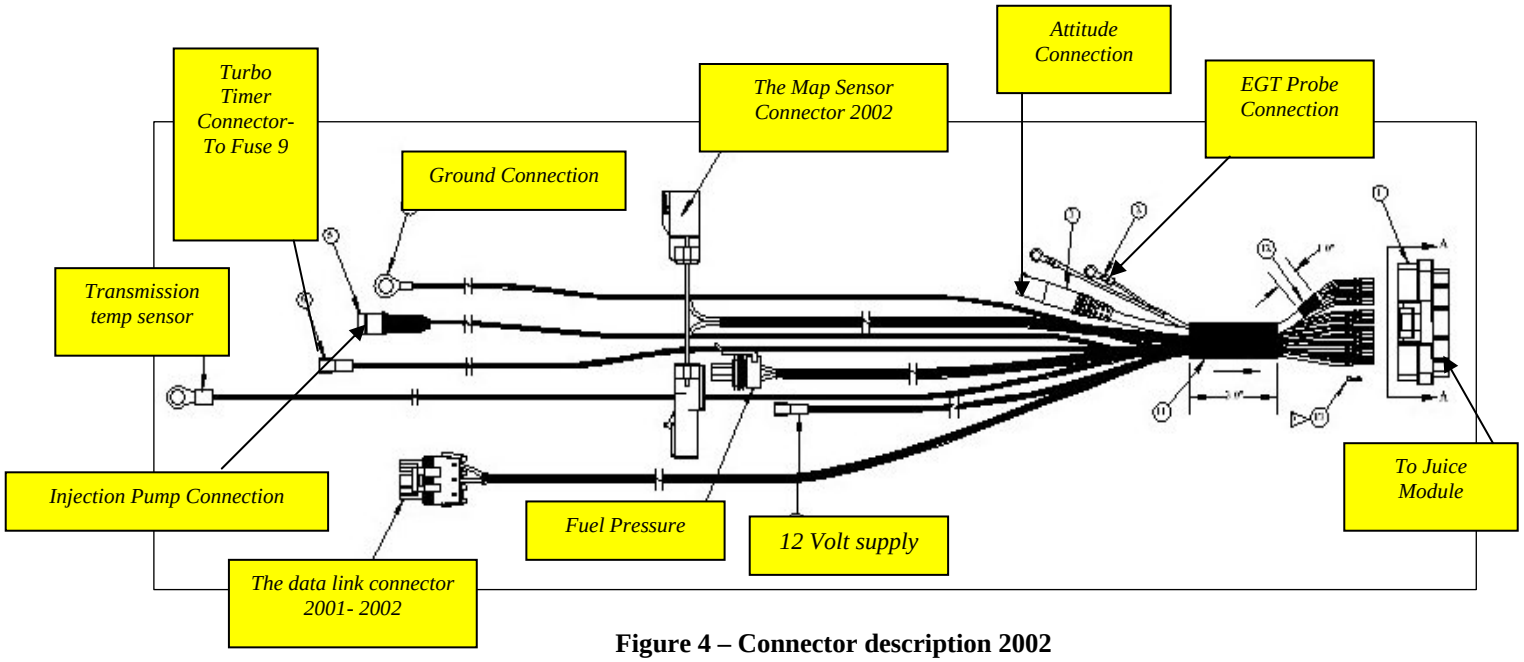


Figure 4 – Connector description 2002

Juice Installation Instructions

Connecting to Power

1. Using the ½" wrench, loosen both negative battery cable clamp fasteners, remove cables from the battery posts and set each to the side. NOTE: DO NOT reconnect until installation is complete. Connecting power may cause fault code in the ECM, which only an authorized dealer can remove.
2. Install fuse clip on fuse (Figure 5).

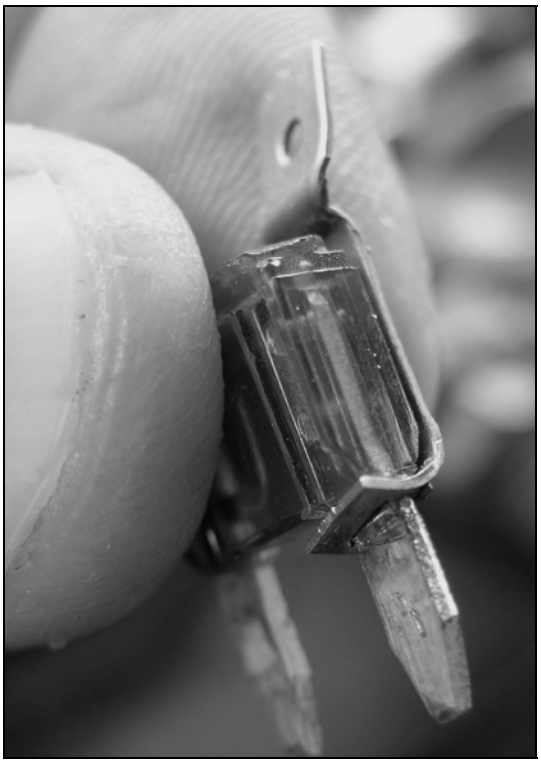


Figure 5 – Fuse tap installed on fuse

3. Connect the power cable (See Figure 6) to the "spare" fuse (15 AMP) inside the fuse panel located on the driver's side of the engine compartment. *Note: Not all trucks have a spare fuse location. If your truck does not have a spare fuse designation – Connect the fuse tap to any 15 Amp fuse such as the "Quad Light"*. Remove the fuse panel cover and the spare fuse and attach the supplied male spade fuse connector onto the terminal. Reinstall the stock fuse with connector back into the fuse panel (this may be a tight fit).

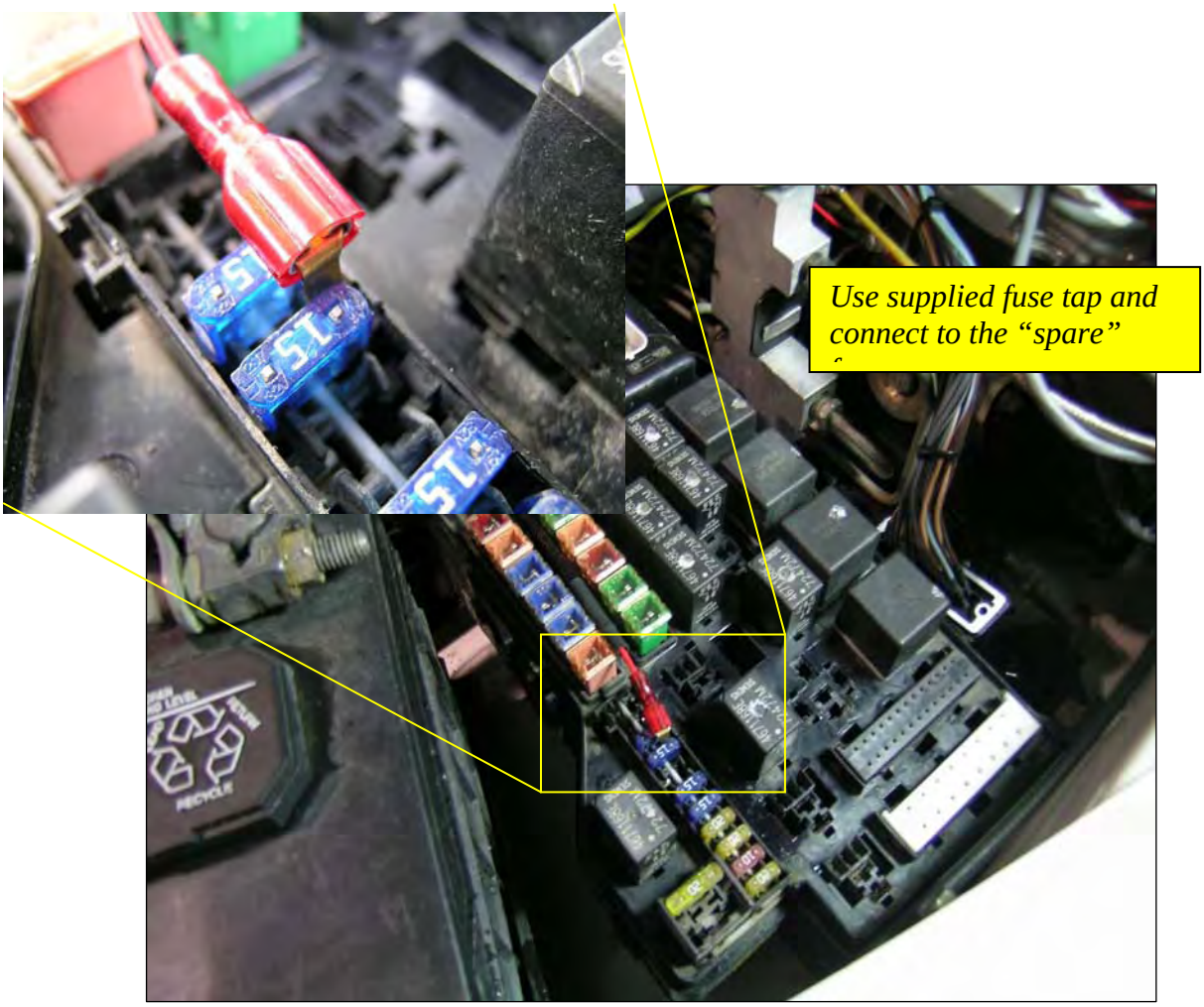


Figure 6 – Power wire attachment to spare fuse location

Routing the Turbo Timer Cable

1. The Turbo-Timer cable routes from the engine compartment to inside the cab - Cut a 1/2” slit in the firewall grommet. Automatics- easy access is the clutch hole grommet located to the left of the firewall brake hole. Manuals or Automatics- Use the large vehicle wiring harness grommet on the firewall. Fish the supplied cable through the slit from the engine compartment into the cab. Route the supplied yellow wire up into the fuse panel fuse #9 (Engine) on the driver side of the dash board. (You must open the door to access this panel.) - See Figure 7

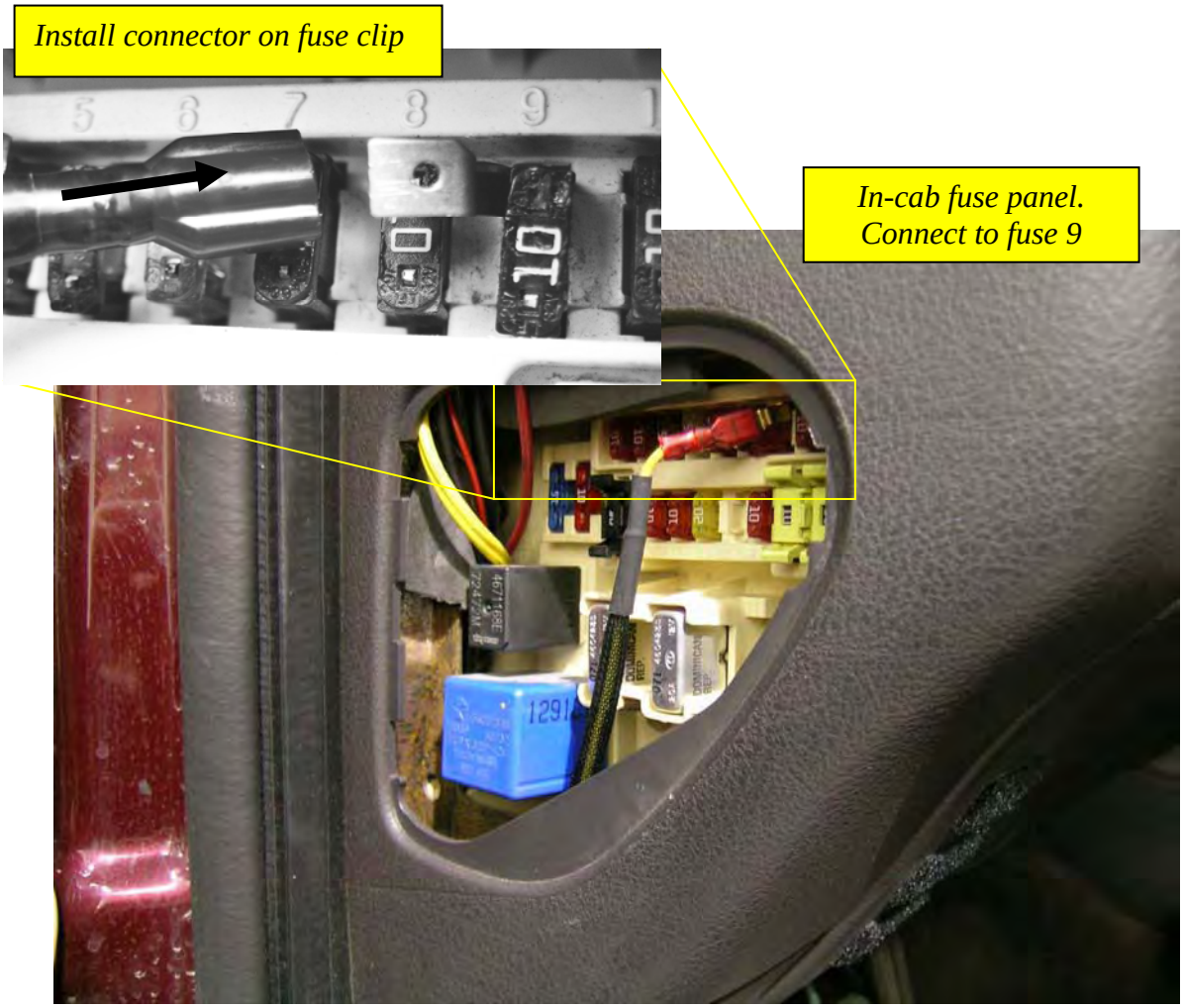


Figure 7 – Connection of the turbo-timer keep alive tap inside cab fuse box

MAP Sensor Connection

1. Disconnect the stock wiring harness from the boost sensor located to the rear of the fuel filter housing near the top of and on the engine block. Plug the supplied MAP sensor connector into the boost sensor and the engine wiring harness connector into the supplied MAP sensor connector. The MAP sensor shown in the image is for a 2001, the 1998.5-2000 are a different sensor but in the same location. See figure 8 and 9.

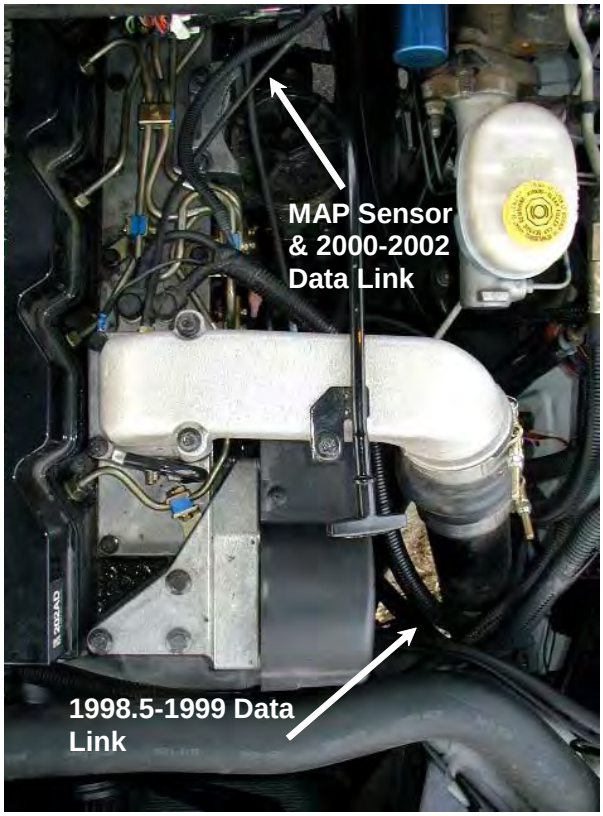


Figure 8

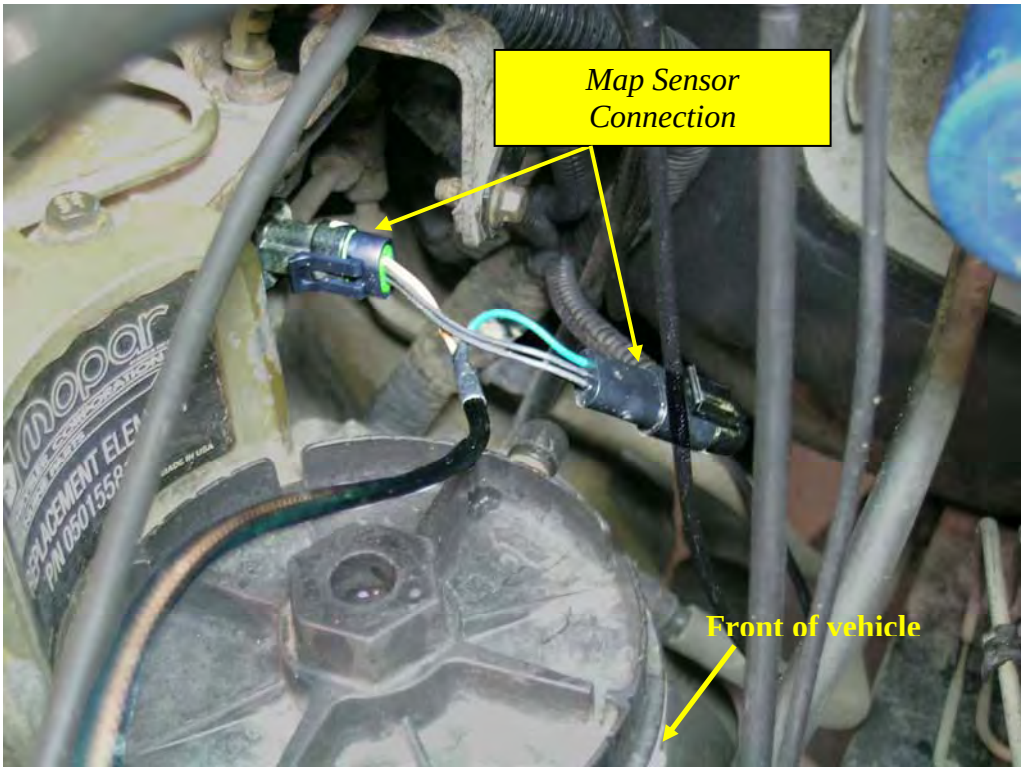


Figure 9

Connecting the *Posi-Tap® Connector to the VP 44 Injection Pump Wire

NOTE: Although attaching the Juice cable to the VP 44 pump control wire is optional; not tapping into the VP 44 pump prevents the Juice module from increasing the output of the Cummins engine to it's full potential and will result in limited horsepower and torque gains.

Unbolt the casting that attaches to the Throttle Position Sensor (TPS) housing to expose the injection pump and the associated control wire.

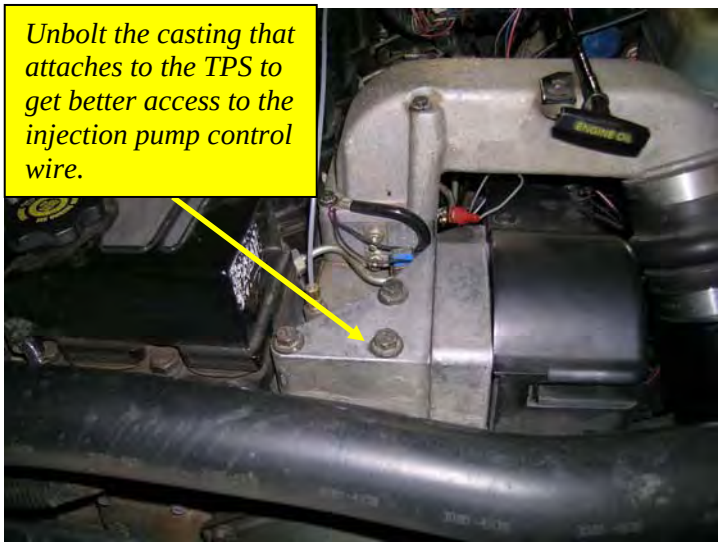


Figure 10 – Throttle Position Housing

VP 44 Pump Detailed View

Before connecting the Juice to the Bosch VP 44 high pressure pump we will try to show how and where to attach the Posi-Tap® connection. The pictures below are of a Bosch VP 44 pump that has been removed from a truck. This is the same pump used on Cummins engines for model year trucks from 1998 ½ to 2002.

The VP 44 is the injection pump that supplies each injector with a metered amount of fuel. The Juice module will control the pump directly under varying criteria determined by load conditions and power level selection. In order to control the pump more directly, the Juice module needs to be electrically attached to the VP 44 pump. In order to attach the juice module to the VP 44 pump, the control wire must be pierced with a wire from the Juice harness.

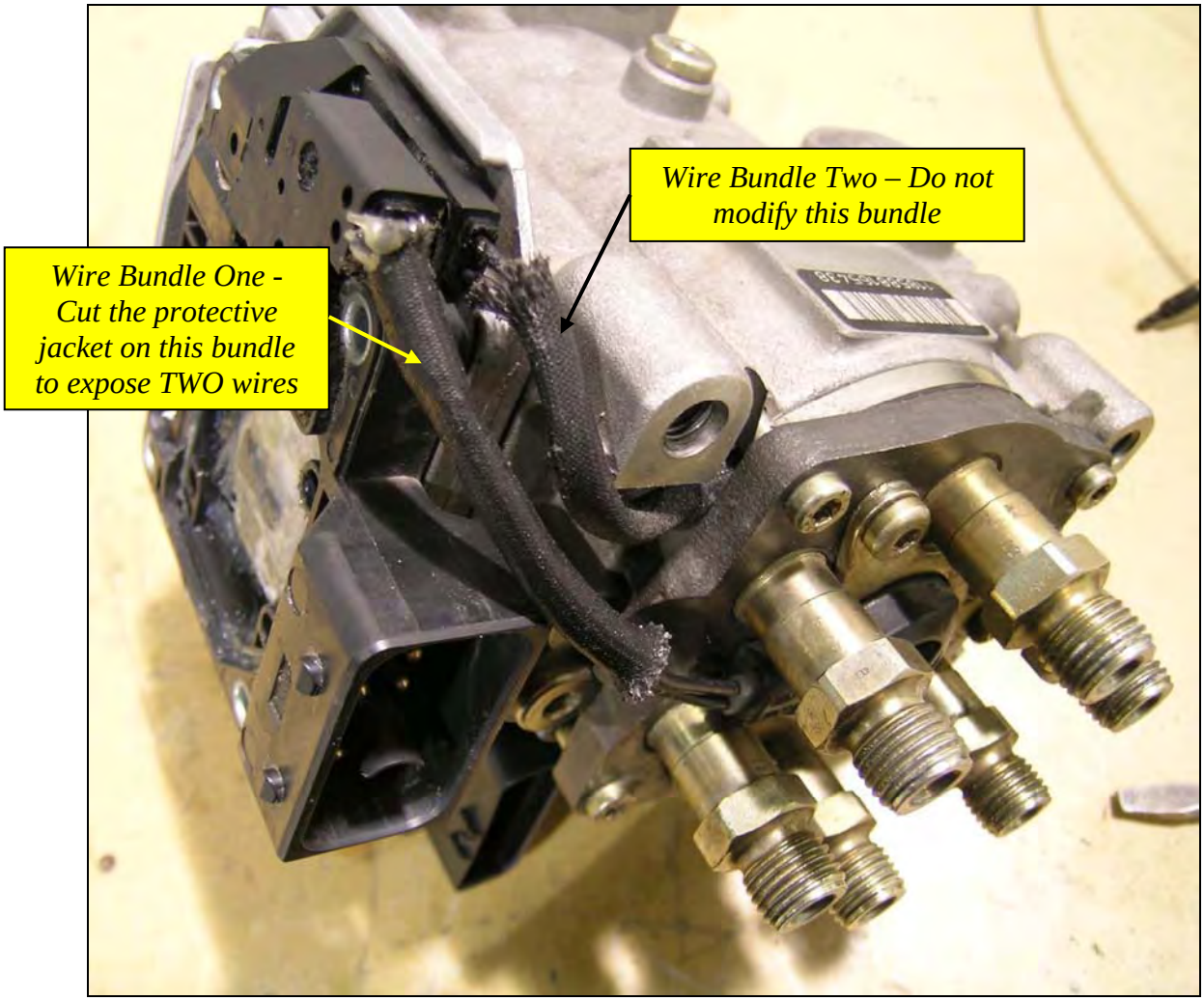


Figure 11 – VP 44 Fuel Pump

There are two wire bundles visible on the outside of the injection pump. The wire bundle most visible when the Throttle Position Sensor is removed is the wire bundle that we will be dealing with when we attach the Juice to the pump.

Both bundles contain two wires each which are underneath the protective jacket. About an inch of the jacket covering wire bundle number one (Figure 11) must be cut back to expose the control wires.

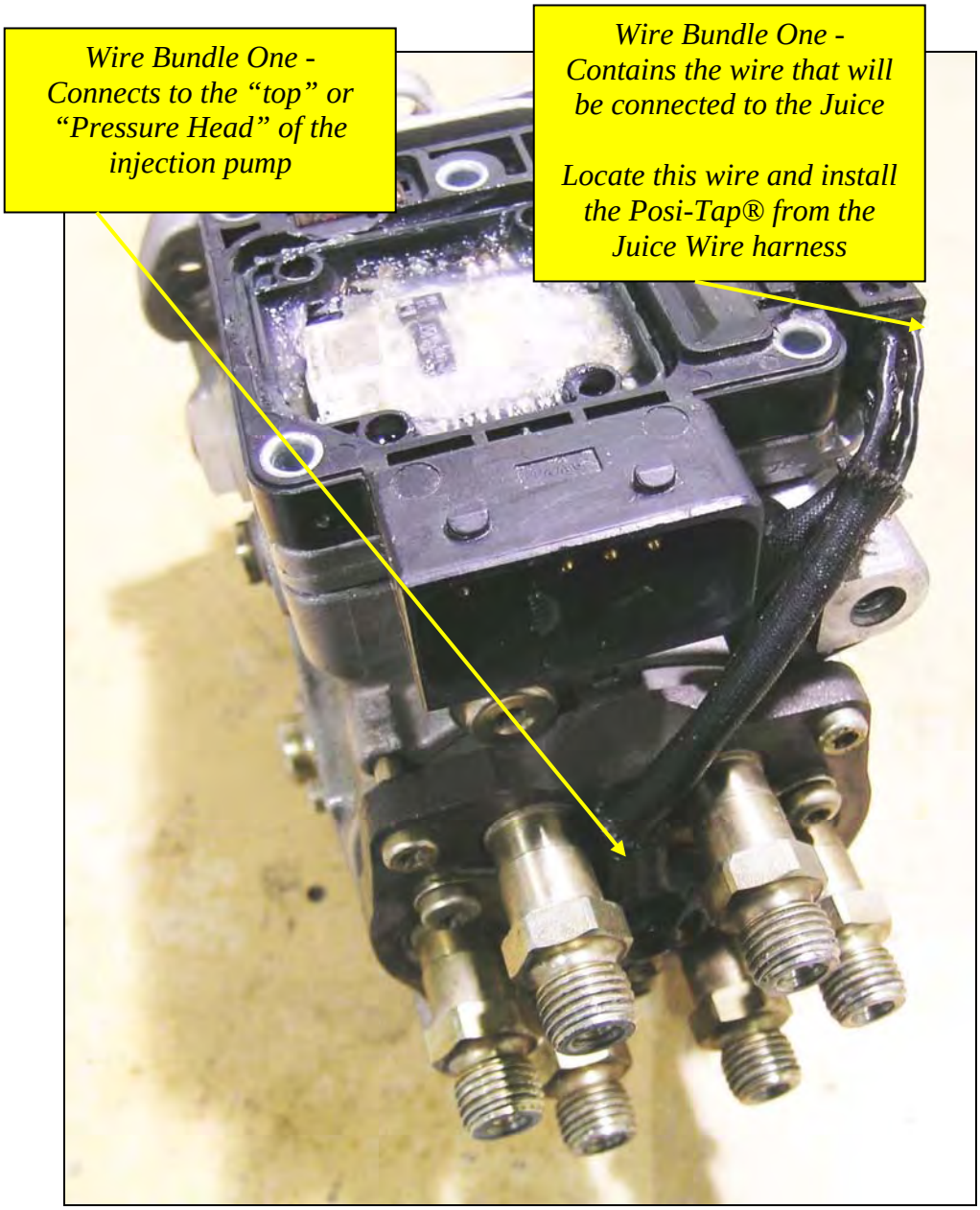


Figure 12 – Wire bundle one detailed view

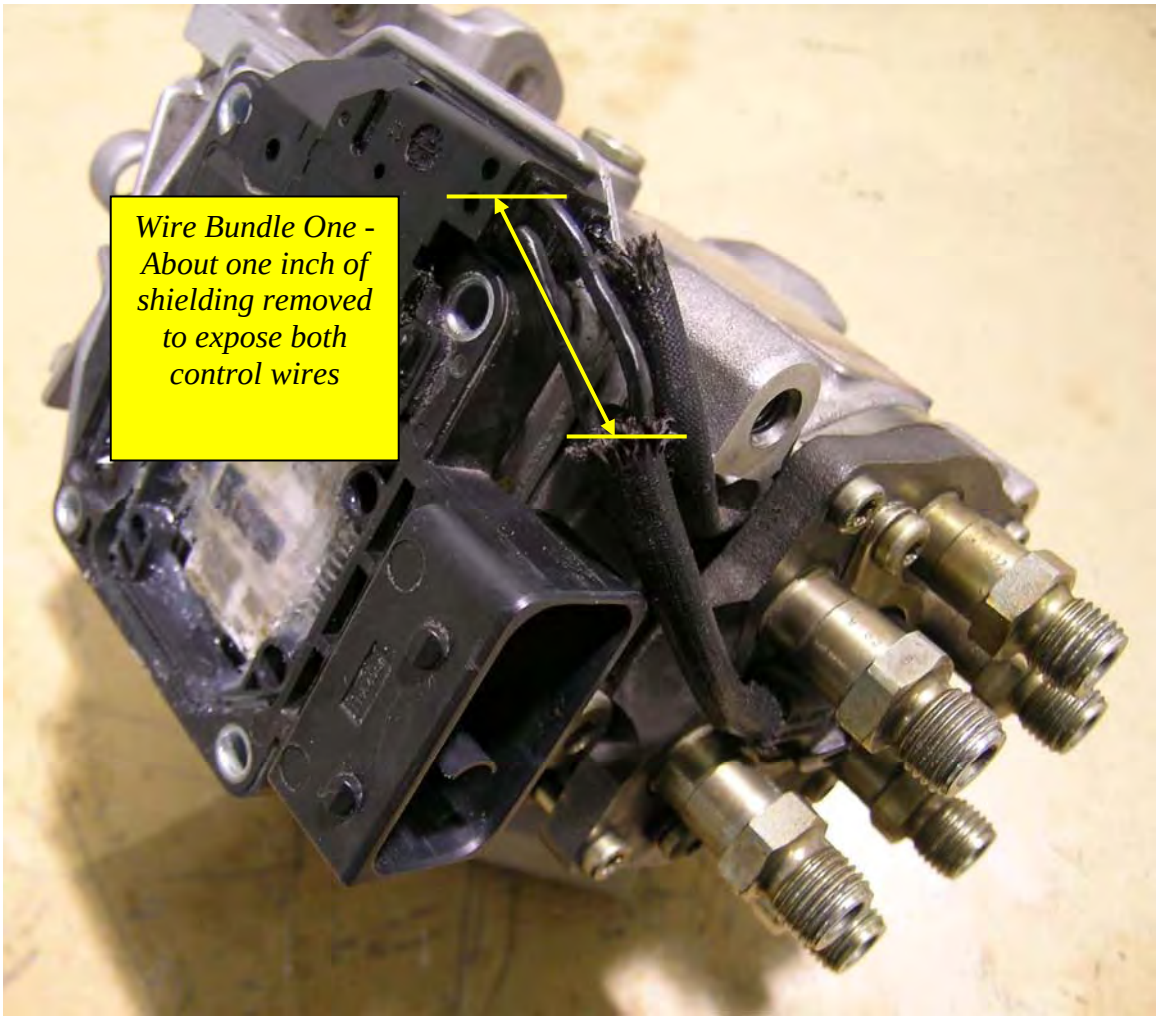


Figure 13 – Cut the woven shielding back by about one inch

Using a sharp knife or razor carefully slice back the insulation that covers both pump wires contained in wire bundle number one (see figure 11 - 14 to identify wire bundle number one).

Locate the TOP injection pump wire identified in Figure 12 and 14 (This will be the wire on the top closest to the enging block when the pump is installed on the truck). After exposing the injector control wires in bundle one, unscrew the “top” of the *Posi-Tap* and place the wire to be tapped in the slot provided in the cap of the *Posi-Tap*. Place a single drop of RTV Silicone Sealer in the CAP of the *Posi-Tap*. There should be enough silicone sealer
so that when the cap is installed on the *Posi-Tap* body some of the sealer is pushed out around the edges of the wire.

The silicone sealer will provide a water tight seal when the body of the wire tap is screwed to the cap of the *Posi-Tap* device. When the body of the tap is inserted through the wire insulation the insulation will act as a wiper to remove the sealer from

the pin inside the *Posi-Tap* and the pin will make a good connection with the wire inside the insulation.

Once the silicone sealer is installed in the cap, pre-twist the body of the *Posi-Tap* counter clockwise (looking at the pointed end of the *Posi-Tap* located on the wire harness) with about seven full turns. This will pre-load the wire so that when the body of the *Posi-Tap* is installed on the cap, the wire will not remain twisted in the wire harness.

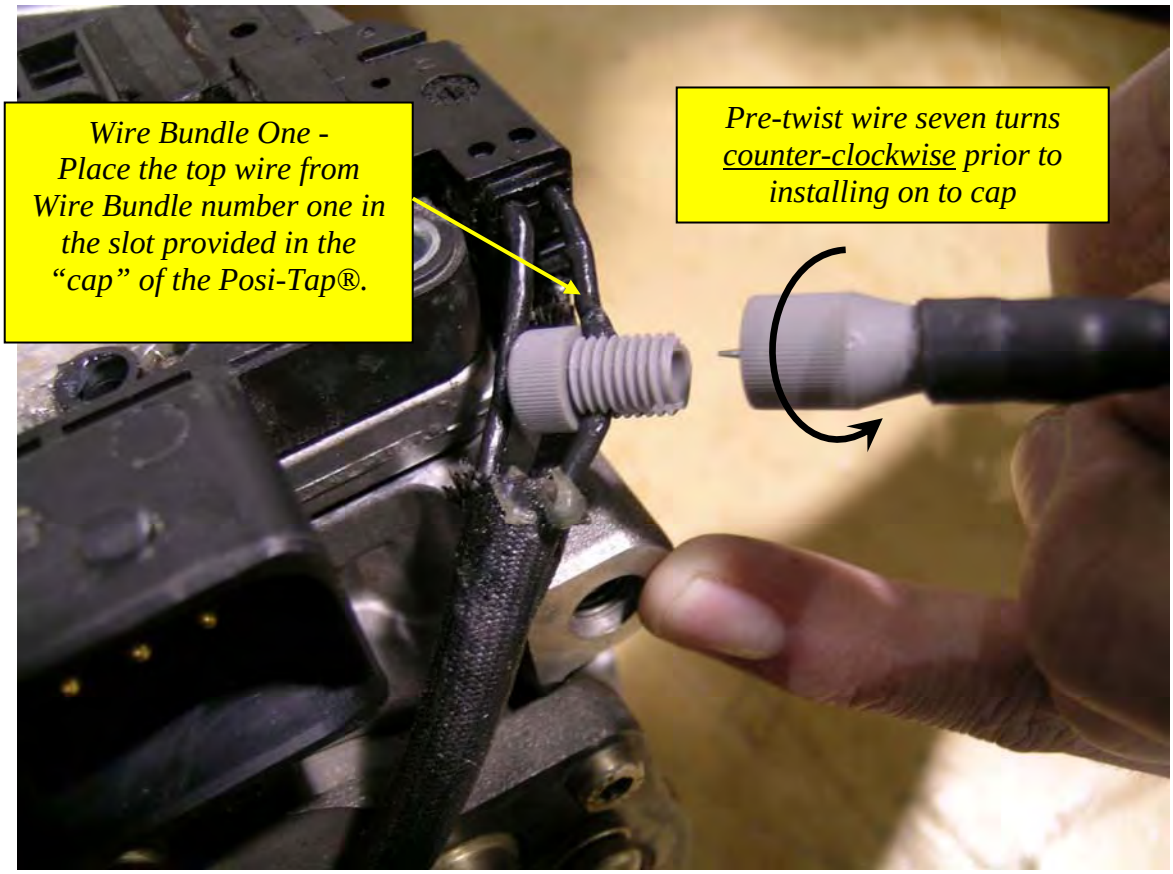
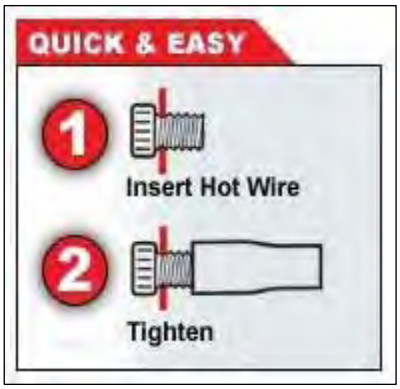


Figure 14 – Installing *Posi-Tap*® on to the VP 44 control wire

Figure 11 - *Patent #5,228,875 5,695,369 5,868,589 Jap 2881414, Aus 708700 Tia 103534 and others pending.



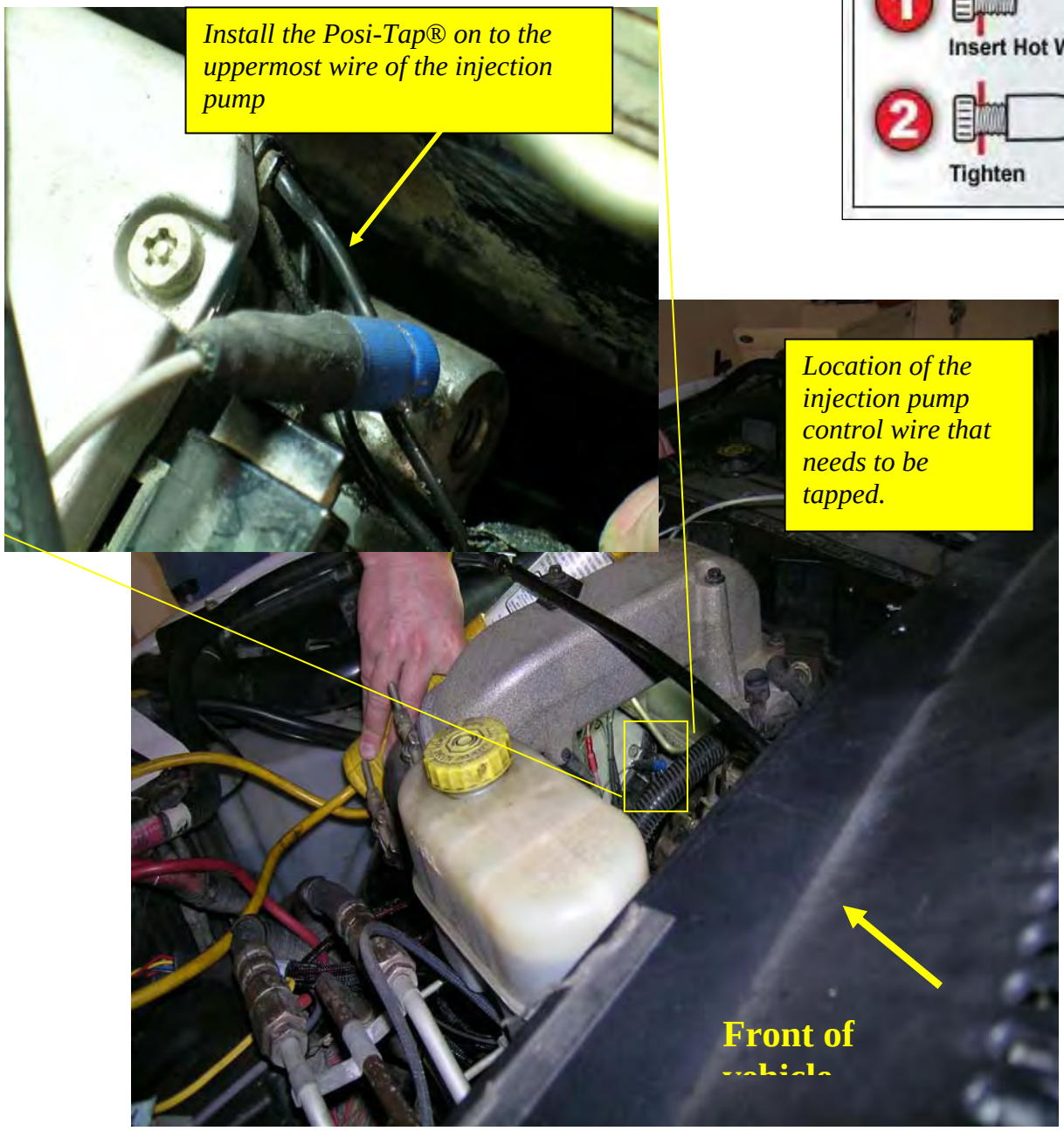


Figure 16 – Completed installation of the *Posi-Tap*®

Connecting the Ground Wire

Connect the Ground wire to the NEGATIVE side of the battery by connecting the terminal to the battery as shown below.

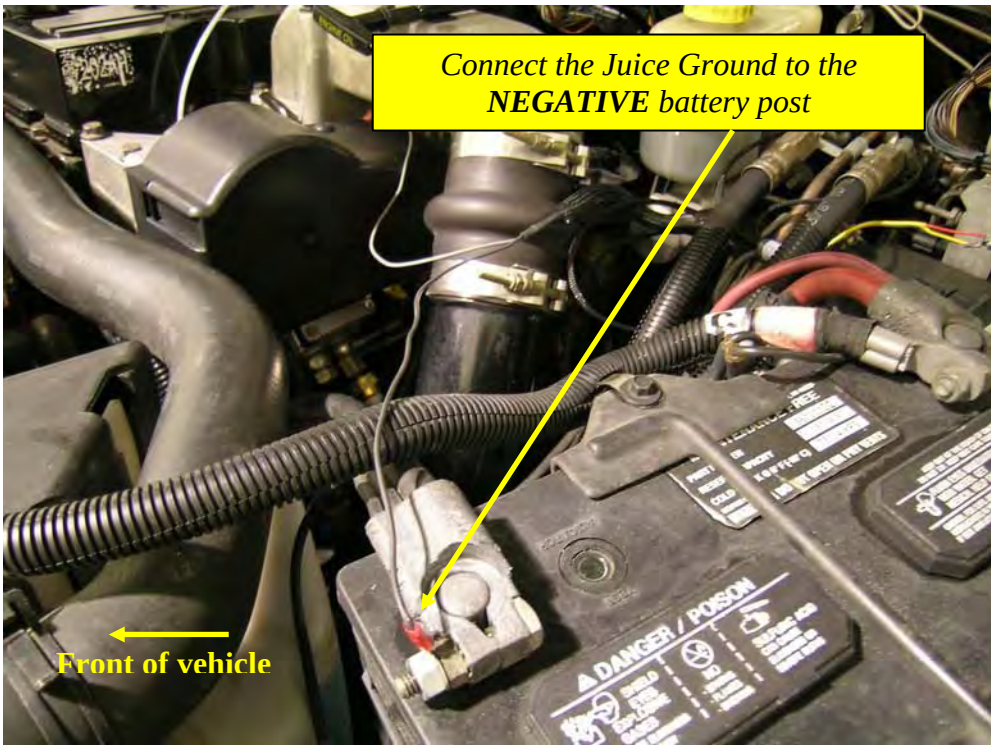


Figure 17 – Connect the ground lead of the Juice Module to the Negative side of the battery

"Lift Pump" Fuel Pressure Sensor Installation

Important Note: ***If you lack experience or tools to bleed the fuel system take the truck to an experienced mechanic for installation of the fuel pressure sensor!***

The fuel system on the Cummins engine is comprised of several components. Two of the major components are the **LIFT** pump which pumps fuel from the fuel tank to the Bosch VP-44 **high pressure injector pump** that pressurizes the fuel to the correct pressure and then directs fuel to the injectors.

The fuel that is pumped to the injectors also acts as a lubricant for the Bosch VP-44 high pressure pump. A loss of fuel pressure to the high pressure pump may result in permanent damage to the high pressure pump.

A fuel pressure sensor has been added to the Juice / Attitude combination to alert the driver to the possibility of damage to the high pressure pump if a loss of pressure is detected.

A pressure sending unit is to be placed between the lift pump and the high pressure pump which is then monitored by the Juice / Attitude combination. This allows continuous monitoring of the fuel pressure from the LIFT pump. The fuel pressure can be displayed directly on the Attitude and a Low Fuel Pressure alert can be set on the Attitude to alert the driver to loss of pressure to the high pressure pump – It is recommended that the pressure not drop below 10psi at idle and not drop below 4psi while driving.

In order to insert the fuel pressure sensor, the Test Port Fitting must be removed from the VP 44 housing (See figure 18) and replaced with a banjo bolt (provided) that allows the pressure sensor to be coupled to the fuel line. ***Connect the Fuel Pressure Sensor to the Banjo Bolt before installing the assembly.***

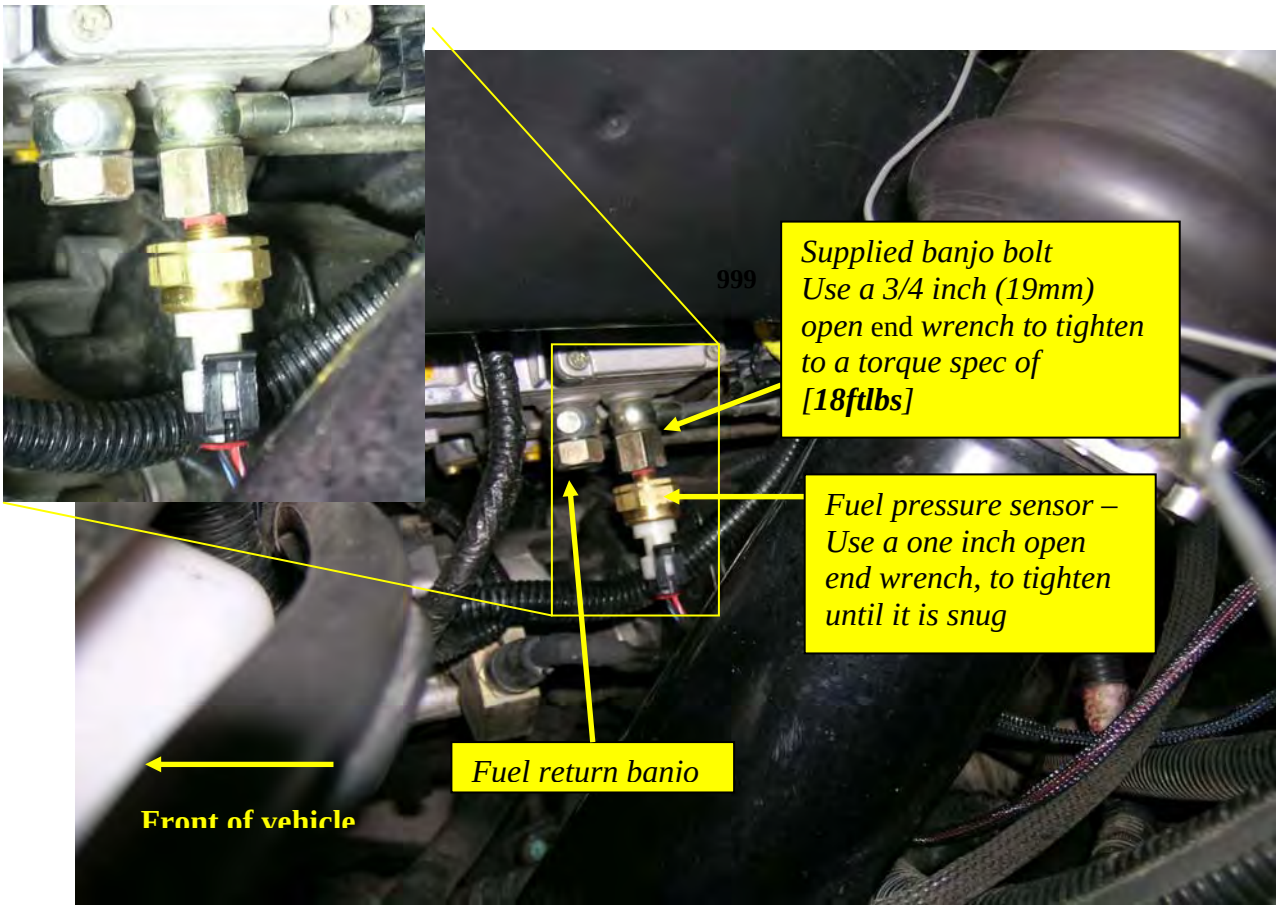


Figure 18 – Installation of fuel pressure sensor

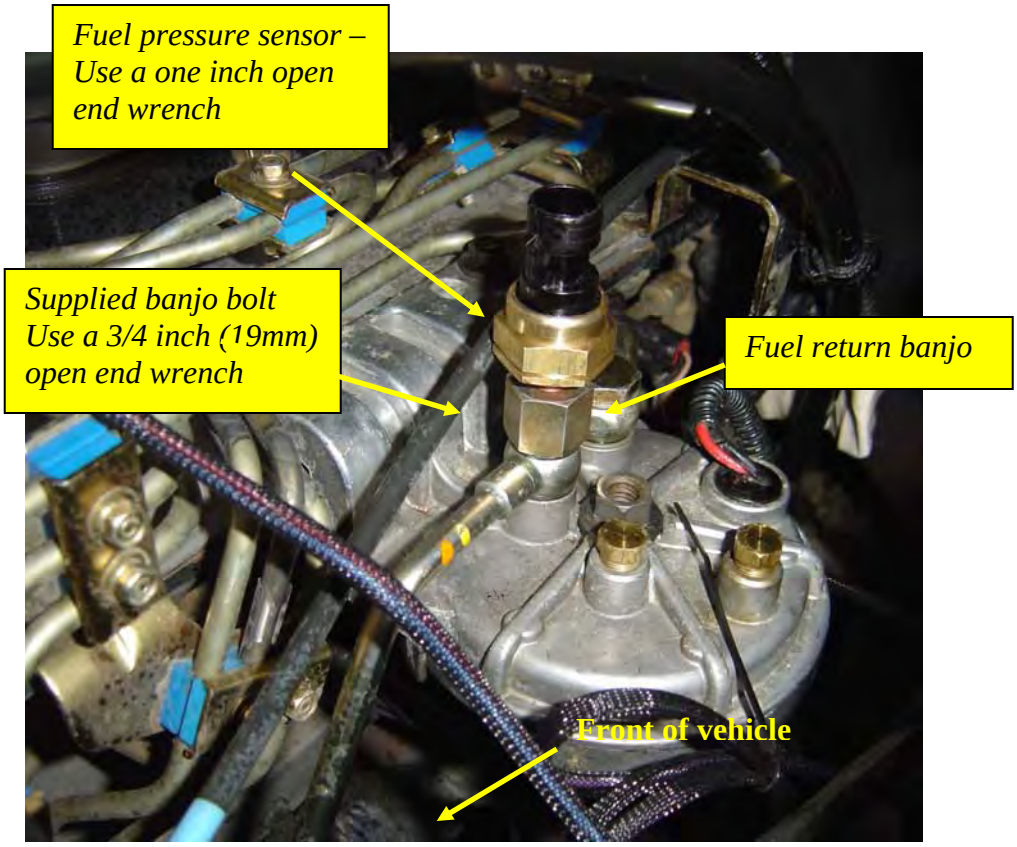


Figure 19 – Fuel pressure sensor model year 98.5 only

When the Test Port Fitting is removed, fuel can drain out of the VP 44 pump (especially applicable to model year 2000 to 2002) and air can enter the line or enter the VP 44 pump.

In order to minimize the amount of air that is let into the fuel system, pre-install the fuel pressure sensor onto the supplied banjo bolt before removing the stock banjo fitting from the pump. Prior to removing the stock banjo bolt from the fuel system, Pre-install one washer with integral neoprene seal onto the supplied banjo bolt.

Remove the stock banjo bolt from the VP 44 pump and replace with the supplied banjo bolt with the pre-installed neoprene washer and fuel pressure sensor. As quickly as possible install the banjo bolt through the fuel line and install the other supplied neoprene washer onto the banjo bolt and thread it into the VP 44 pump. Tighten to the appropriate torque specifications (18 ft-lbs).

FAILURE TO REMOVE AIR FROM THE FUEL SYSTEM MAY RESULT IN DAMAGE TO THE VP 44 FUEL PUMP

IT IS CRITICAL THAT THE AIR INTRODUCED INTO THE FUEL LINE BE REMOVED FOR THE FUEL SYSTEM TO OPERATE PROPERLY.

Use this bleeding procedure at the end of the installation. Trying to bleed the fuel system half way through the installation could cause a check engine light.

In order to remove the air from the system, loosen BUT DO NOT REMOVE the overflow valve banjo fitting that connects to the return line. Place a shop rag or towel around the banjo fitting to catch excess fuel.

- Turn the ignition key to CRANK position and quickly release the key to the ON position. DO NOT START THE ENGINE! The fuel lift pump will operate for up to 25 seconds. Once this procedure is complete, tighten the return line banjo fitting to 24 Nm (18 ft-lbs.) torque.

- Attempt to start the engine – The engine may be very noisy or run erratic for a few minutes. Keep an eye on the fuel pressure as displayed on the Attitude. If the pressure drops below four 4psi, or the engine quits running, re-bleed the return line of the VP 44 pump. If the engine still does not start, remove and check the fuel filter. If the filter is dirty or damaged, replace the filter.

CAUTION:

- Do not engage the starter motor for more than 30 seconds – Allow two minutes between cranking intervals.
- Although it is rare, on occasions the LIFT pump may fail to prime after the banjo bolt has been replaced signifying a possibility of a worn pump. In this rare instance the LIFT pump should be replaced.

Reinstall the throttle bracket onto the fuel injection pump using the three bolts. Using the torque wrench and 13mm socket, torque these bolts to 18 ft-lbs.

Data Link Connection

The Data Link connector is located in different locations based on the year of the truck:

- 98.5 - 99 the triangle shaped connector is located on the drivers side of the engine in the wiring harness near the power steering pump.
- 2000 - 2002 the three pronged flat connector is located on top of the fuel lift pump that is located on the driver's side of the engine directly below the MAP sensor. Note: on some 2001 trucks the connector is located on the drivers side of the engine in the wiring harness near the power steering pump.

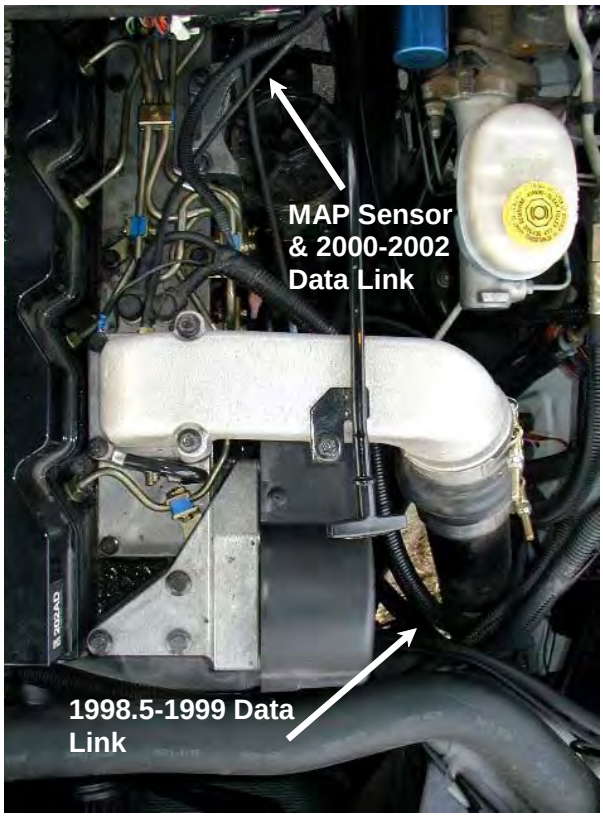


Figure 20

Replace the protective plug on the truck data link with the corresponding data link connector on the *Juice* harness (Figure 20).

Boost Elbow Installation

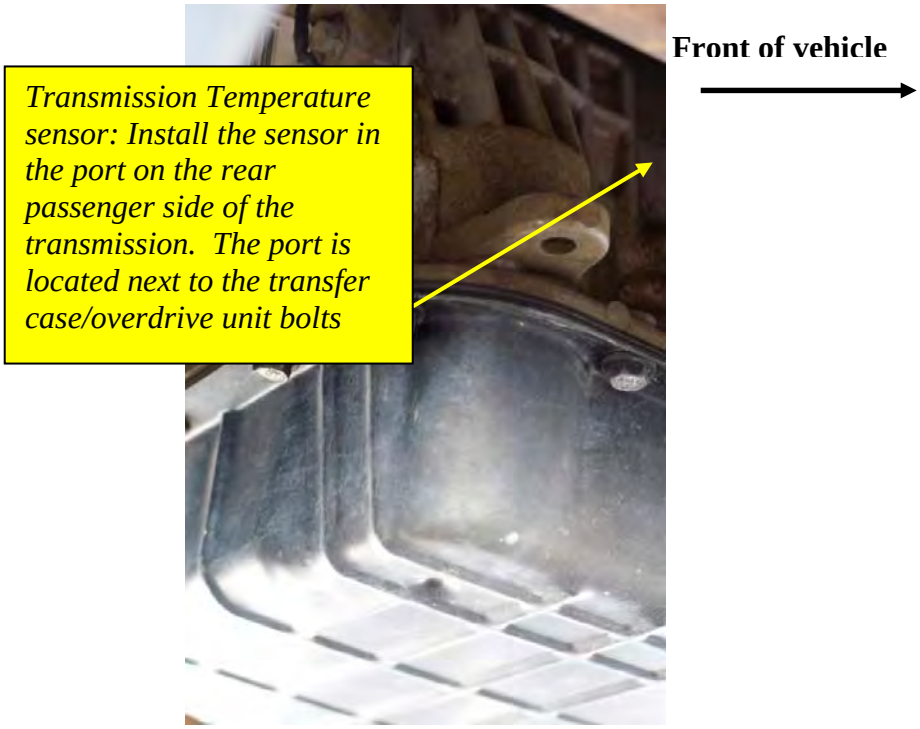
1. Using the 5/16" socket, loosen the two clamps securing the air induction hose to the air filter housing and the turbo inlet. Remove the hose and set it aside.
2. Using the pliers, remove the crimp style clamp from the hose on the brass fitting located on the now exposed lower front side of the turbocharger. Remove the hose from the brass fitting and dispose of the crimp style clamp.
3. Using the 7/16" wrench, unscrew the stock brass fitting out of the turbocharger housing. Using the 7/16" wrench, install the supplied brass fitting, tighten-be careful not to over-tighten. Slip the supplied hose clamp onto the stock hose, install the stock hose onto the supplied brass fitting and tighten the hose clamp with the ¼" socket. Reinstall the stock air hose onto the air filter housing and turbocharger inlet. Using the 5/16" socket, tighten both clamps securely.

Note: On 2001+ vehicles with automatic transmissions, the turbo waste gate is a solid line and does not have a brass elbow to be replaced.

Connecting the Transmission Temp Sensor (Automatic Transmission)

Unbolt the stock plug from passenger side rear of the transmission using a 7/16 inch (11mm) wrench (see Figure 21). Note: A small amount of transmission fluid will leak from the outlet. Apply Teflon tape to the threads of the transmission temperature sensor. Using a ½ inch wrench, thread the Edge Products transmission oil temp sensor and connect the cable using the supplied nut. From the top of the engine, route the transmission temperature sensor along the factory wiring harness and over the top of the transmission and secure with supplied wire ties.

Figure 21 – Automatic Transmission Temperature Sensor



Connecting the Transmission Temp Sensor (Standard Transmission)

NOTE: When the Power Take-Off (PTO) plate is removed **ALL** of the gear lube from the transmission will drain out – Ensure that you have the CORRECT replacement oil prior to removing the PTO plate. See the Dodge service manual for replacement gear lube type.

1. Using a 14 mm wrench, remove the lowest bolt on the PTO cover plate and drain the transmission fluid.
2. Unbolt the remaining five bolts to the PTO cover plate and remove it completely.
3. Using a 5/ 16" or 21/64" drill bit, drill a hole in the PTO cover plate in the location shown in figure 22. Using a 1/8" NPT tap, thread the hole in the PTO cover plate. Apply Teflon tape or pipe thread sealant to the transmission temperature sensor and thread it into the PTO cover plate.
4. Clean the surface of the PTO cover plate and transmission and apply an automotive gasket silicone to the plate surface that will come in contact with the transmission.
5. Re-attach the plate cover to the transmission and connect the sensor cable to the sensor.
6. Refill the transmission with fluid. (Contact your Chrysler dealer for correct fluid and fluid amount).

Figure 22 – Manual Transmission Temperature Sensor Location

EGT Probe Installation

1. **The EGT probe must be mounted before the turbo for the *Juice* safety features to operate properly.** Using a 5/ 16" or 21/64" drill bit, drill a hole in the exhaust manifold as shown in figure 23. Use a 1/8" NPT tap to thread the hole.
2. Once the hole is drilled and tapped, run the motor at idle for 10 to 15 seconds to clear the few remaining shavings from the manifold.
3. Screw the provided threaded adapter into the manifold and tighten it with a 9/16" end wrench. Slide the EGT probe through the threaded adapter and into the exhaust manifold. Tighten the EGT sensor with a 5/8" end wrench (*see figure 24*).
4. Slide the provided heat shrink over the red and yellow wires of the EGT cable. Connect the red wire of the probe to the red wire on the *Juice* module with the nut and bolt. Using a heat gun, or a lighter, shrink the tubing. Repeat the same steps for the yellow wire.

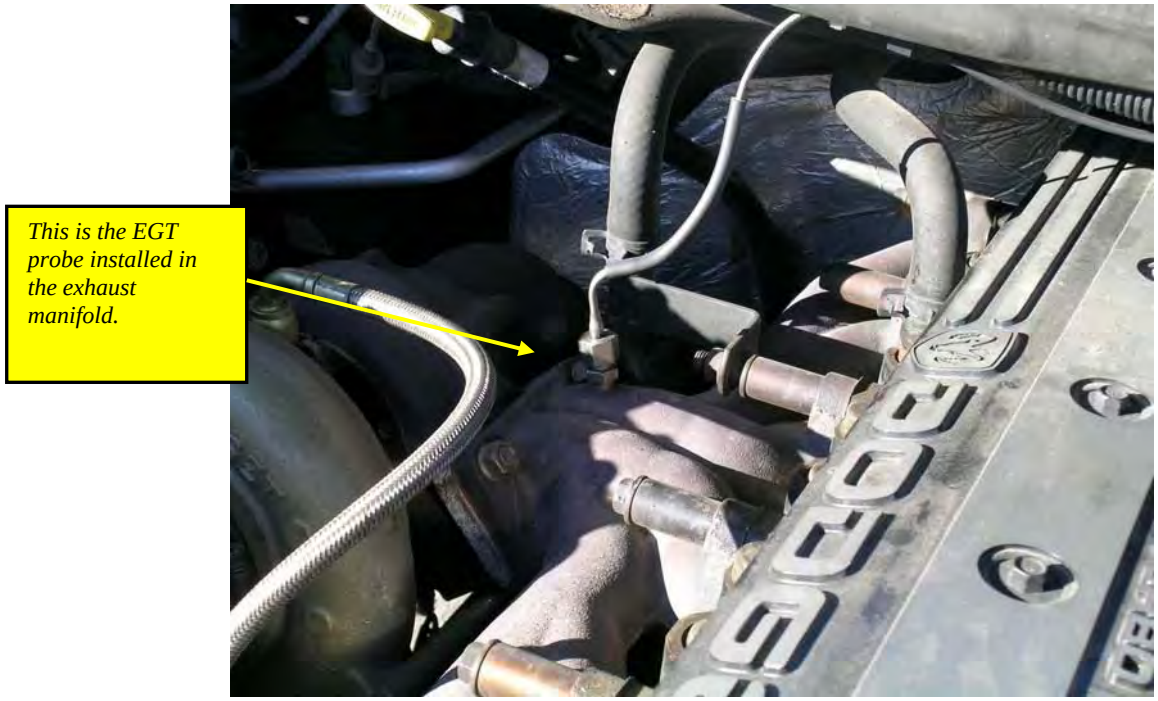


Figure 23 – EGT probe location

Final Inspection and Operation

1. Recheck all connections, fittings and fasteners for proper installation.
2. Using the supplied wire ties, secure the wiring harness from possible damage.
3. Reconnect both negative battery cables. Using the ½" wrench, tighten both fasteners securing the cable clamps to the battery posts.
4. Turn the ignition key on. The *Attitude* should light up and display the user agreement screen.
5. Bleed the fuel system as described in the "Lift Pump" Fuel Pressure Sensor Installation section.
6. Start the engine and inspect the fuel pressure and transmission temperature sensors for leaks. If the engine does not start, try to bleed the fuel system again.
7. If the check engine light appears, proper connections may not have been made to the MAP sensor.
8. If the *Juice* does not function as described above, check the trouble shooting guide at the end of this manual, or contact Edge Products technical support center 888-360-EDGE.

1998.5-2002 Dodge Ram Cummins 5.9L 24 Valve
Edge Attitude Monitor
Installation Instructions and Manual

OLD P/N: EAD3500
NEW P/N: 33000

About the Attitude

The *Attitude* allows you to monitor the performance of your vehicle's vital engine components and output values. The following parameters can be displayed on the main *Attitude* screen:

- Backdown %
- Engine Control Module Voltage
- EGT (exhaust gas temperature)
- Engine Coolant Temp*
- Engine Oil Pressure (98.5 - 2001)
- Fuel Pressure (Pressure of the fuel "lift pump")
- Fuel Temperature (Measured in the VP44 injector pump)
- Intake Air Temp
- Engine Load % (Only on later models)
- Module Temperature (Internal temperature of Juice module)
- RPM
- Speed MPH
- Throttle %
- Transmission Temp
- Turbo Boost Pressure

**** Note –*** Because of limitations on the stock computer systems on these trucks, we can only display up to 204° Engine Coolant Temp (ECT).

Power Gains

The following power gains are representative of an actual test vehicle. These gains were measured on a Mustang Dynamometer at an altitude of 4400 ft above sea level, and represent power delivered to the rear wheels of the test truck. The only modification made to the test truck was the addition of the Edge Juice module. Power gains may vary between trucks and atmospheric density.

Horsepower	***Torque***
Level 0: Stock	Stock
Level 1: 40 HP	150 ft-lbs Torque
Level 2: 60 HP	200 ft-lbs Torque
Level 3: 80 HP	250 ft-lbs Torque
Level 4: 100 HP	300 ft-lbs Torque
Level 5: 120 HP	350 ft-lbs Torque

Warning: It is strongly advised that you do not combine, or "stack" chips to gain more horsepower.

Dodge VP44 Attitude Getting Connected

The *Attitude* monitor connects under the hood to the Edge *Juice* module. Follow these steps to install the *Attitude*:
1. Place the *Attitude* monitor on the dash of the vehicle approximately where you would like to mount it. The *Attitude* cable can be routed through the same grommet in the fire wall that was used for the turbo timer cable. Connect the *Attitude* to the Edge *Juice* module by snapping together the cables with the green connections. Secure any excess cable to prevent entanglement with moving engine parts.
2. Determine where you want to mount the *Attitude* mounting bracket and insert it into the dashboard. The bracket fits well in the seam of the dash board by separating the seam slightly and sliding in the bottom portion of the bracket until it snaps into place *(see figure 1 and 2)*. The following pictures demonstrate how to best mount the Attitude with the new bracket.

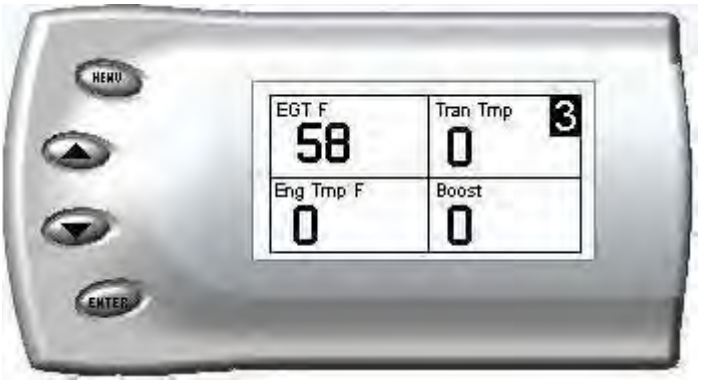
Supplied attitude bracket shown in figure 1 and 2

Figure 1

Figure 2

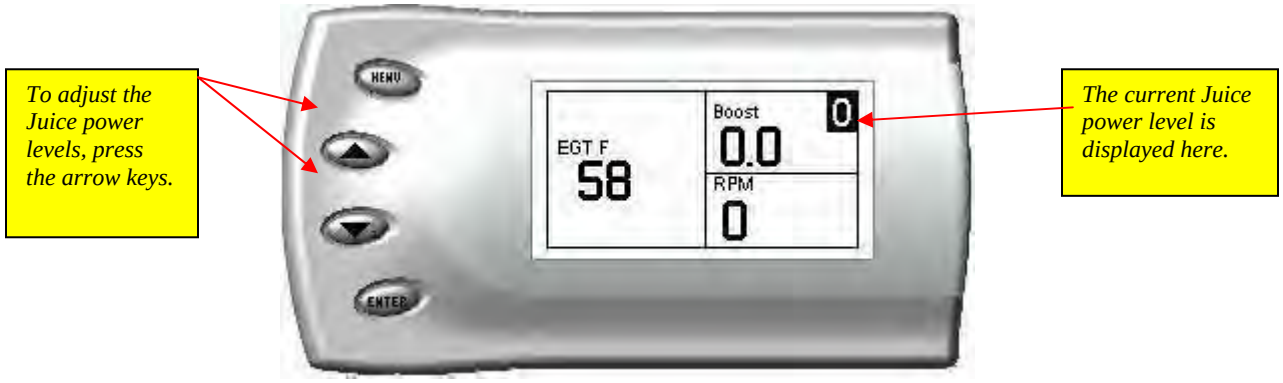
If the *Attitude* monitor is installed correctly, a screen similar to the following will appear when the ignition key is in the run position:

Press the <ENT> key to accept the terms and conditions in your Owner's Manual. A screen similar to the following appears indicating that your Juice and Attitude were installed correctly.



Adjusting Juice Power Levels

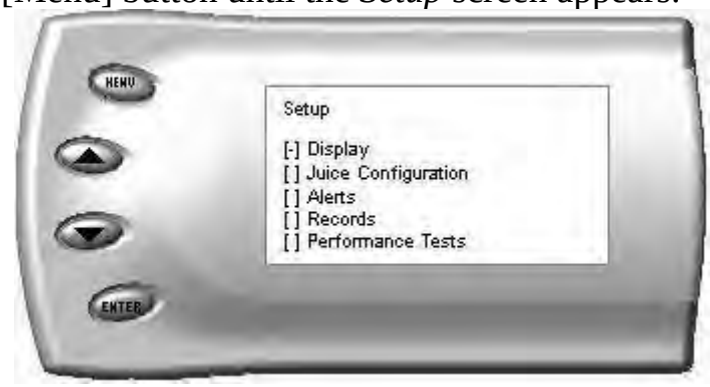
The Juice power level is displayed in the upper right-hand corner of the screen when vehicle parameters are being viewed. To adjust the power levels, press the arrow keys to the desired level. Levels can be changed at any time while viewing vehicle parameters.



Changing the Display View

The Attitude allows you to view multiple engine parameters on the same screen. To select a desired view, perform the following steps:

1. Press the [Menu] button until the *Setup* screen appears:

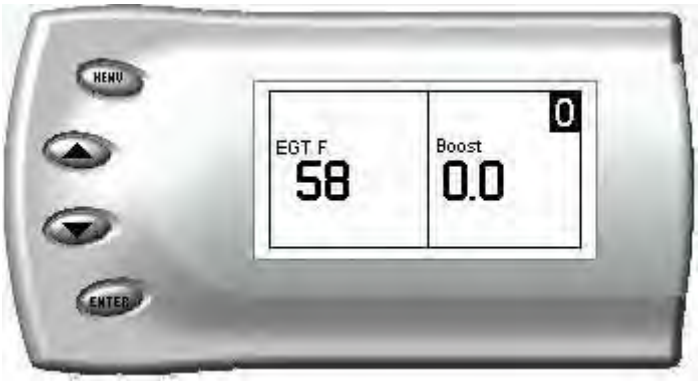


2. Select the Display option and press the [Enter] button. The following screen appears:

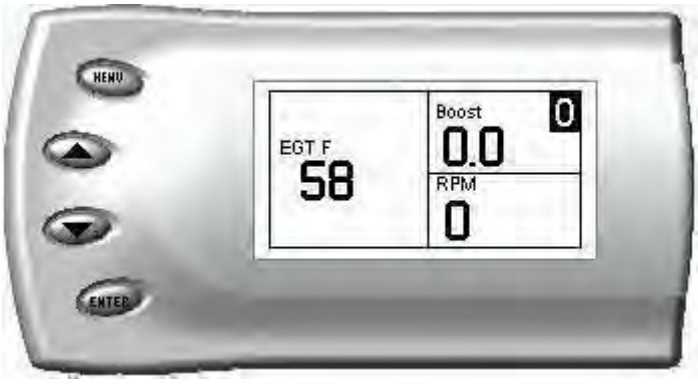
3. Select the desired viewing option by using the up and down arrows and pressing the [Enter] key. Below are examples of the display options:

Two Function Bar Graph Display Sample

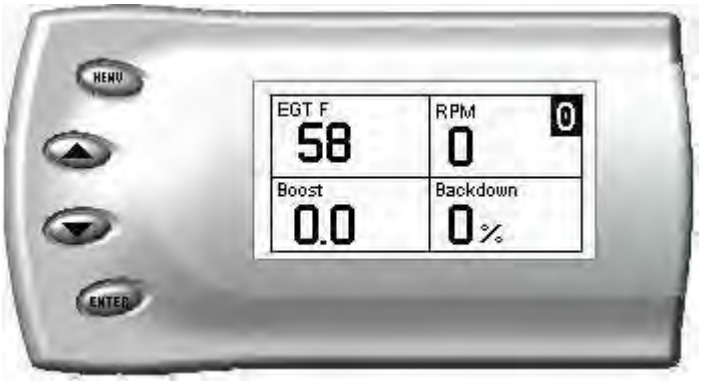
Two Function Digital Display Sample



Three Function Digital Display Sample



Four Function Digital Display Sample



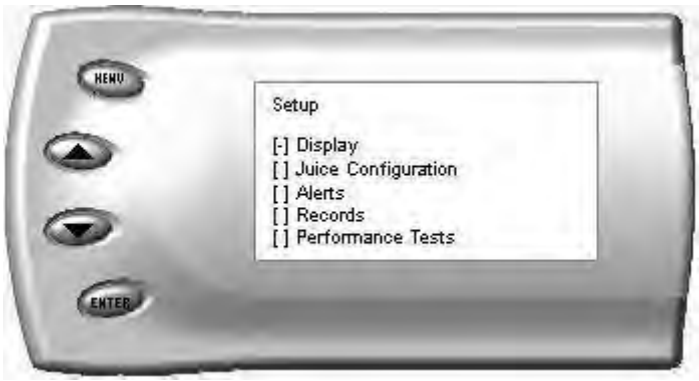
Changing Variables on the Screen

The following is a list of parameters that can be displayed on the *Attitude*:

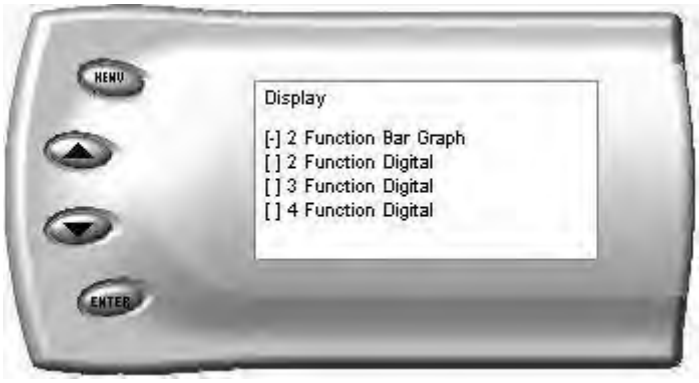
- Backdown %
- ECM Volts
- EGT (exhaust gas temperature)
- Engine Coolant Temp F
- Engine Oil Pressure (98.5 - 2001)
- Fuel Pressure
- Fuel Temp F
- Intake Air Temp F
- Load % (Only on later models)
- Module Temp F
- RPM
- Speed MPH
- Throttle %
- Transmission Temp F
- Turbo Boost PSI

To change the variables on the screen, perform the following steps:

1. When viewing the main screen of variables, press the [Menu] button. The following screen appears:

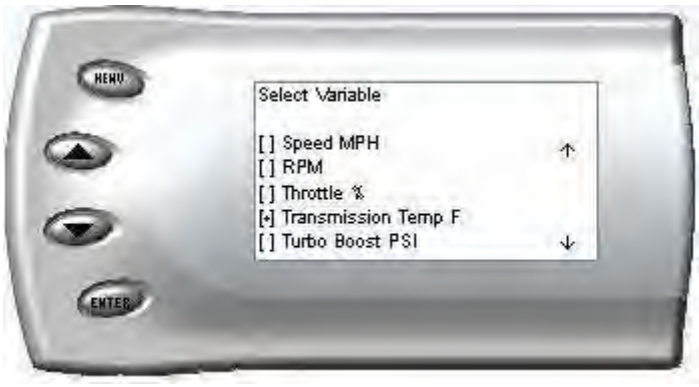


2. Select the Display option and press [Enter]. The following screen appears:



3. Select the desired display style you would like and press [Enter]. Depending on which option you choose, a screen similar to the following appears:

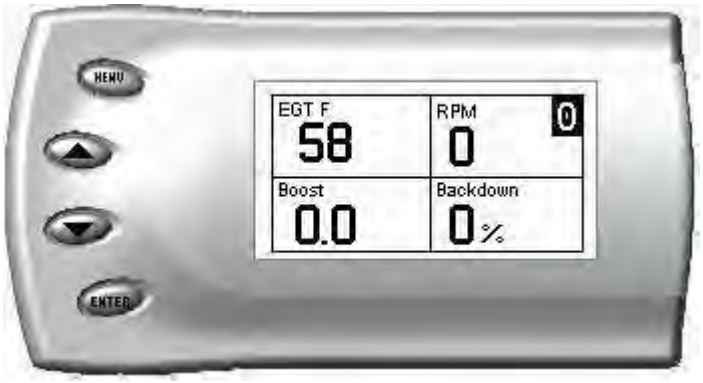
4. This screen lists the current variables you have selected to view and their respective positions on the screen (i.e., TOP LEFT, etc.). Select the variable you would like to change and press [Enter]. A screen listing the possible replacement variables similar to the following appears:



5. Select the variable you would like to view and press [Enter]. The Setup Digital Displays screen appears again listing the variable options you have chosen to view. If you have no more changes, select the *Set As Display* option and press [Enter]. The main screen appears with your desired variable in view.

Adjusting the Backlight

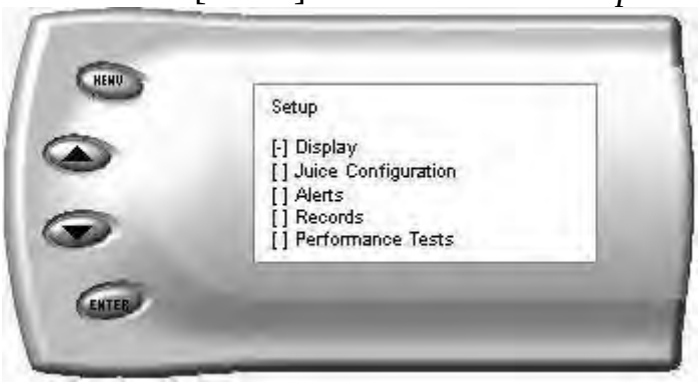
While viewing the main display screen (like the sample below) press the [Enter] button to adjust the backlight. Each time the [Enter] button is pressed, the backlight will change to either bright, dim, or off.



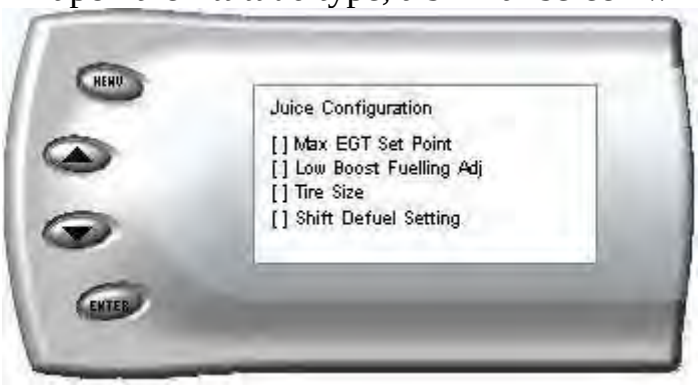
Juice Configuration

The Juice configuration submenu allows the user to tune and customize the *Juice* module to the user's preference. To change the Juice configurations, perform the following steps:

1. Press the [Menu] button until the *Setup* screen appears:



2. Select the *Juice Configuration* option and press [Enter]. Depending upon the *Attitude* type, a similar screen will appear:



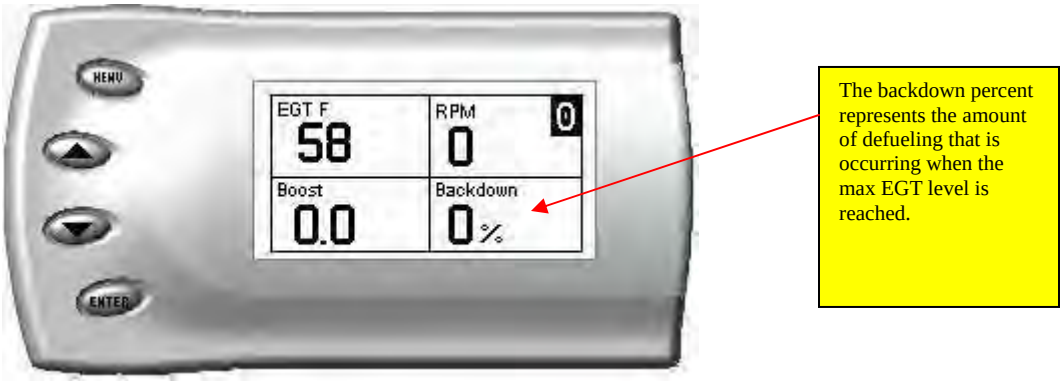
3. Select the desired option and press [Enter]. The following are descriptions of each of the Juice Configuration options available:

   - Max EGT Set Point
   - Max Boost Set Point
   - Low Boost Fueling Adjust
   - Turbo Cool Down Setup
   - Cold Engine Protection
   - Tire Size
   - Truck Model Year

Max EGT Set point

As the exhaust gas temperature approaches the EGT set point, a percentage of defueling occurs. This percentage is represented by the backdown value you can display on the screen. The percentage represents the amount of defueling that is occurring due to the max EGT value being reached. In other words, fueling is decreased at higher percentages. When this value reaches 100% the fueling delivered by the Juice module will be totally disabled. However, stock fueling will allow the truck to reach its stock EGT levels which may exceed the preset *Max EGT Set Point* which you set in the Attitude.

Important Note: Any other high performance modifications in addition to the Juice can allow the fueling to exceed stock EGT levels even after 100% defueling by the Attitude is reached, which may result in detrimental EGT levels.



After selecting the *Max EGT Set Point* option from the Juice Configuration screen (previous steps), the following screen appears:

Change the Max EGT set point by pressing the up and down arrow keys to select the maximum temperature that you want the exhaust gas temperature to reach, then pressing [Enter]. When the exhaust gas temperature reaches this value, the power delivery will be retarded so as not to allow the temperature to exceed this set value.

Max Boost Set point

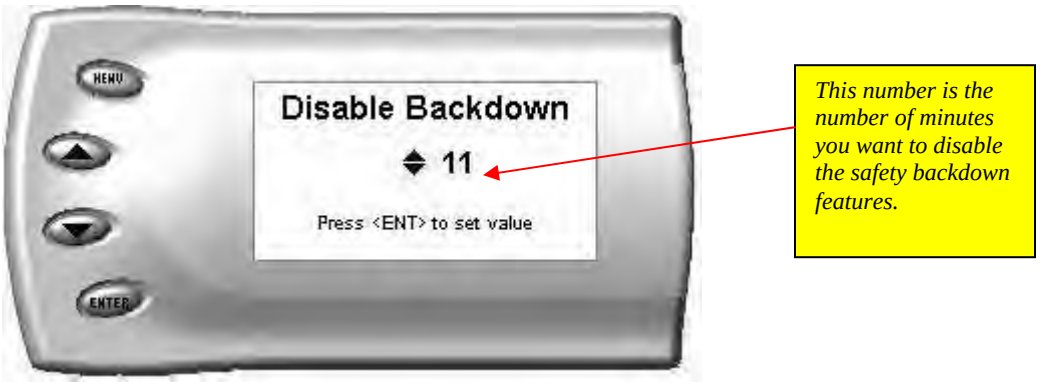
Max boost backdown functions much like EGT backdown. While in the Max Boost Setpoint screen, the user selects a maximum boost value using the up and down arrows. The *Juice* module will decrease fuel in an attempt to prevent the turbo boost from exceeding the max boost set point. The amount of fuel that has been reduced by the *Juice* module is represented by the backdown variable on the display screen as a percentage.

In a competition setting (drag race, dyno run, etc) you may want to disable the max EGT, max boost and cold engine protection safety features for a limited amount of time. Temporarily disabling these safety features would allow the *Juice* module to run at its maximum potential.

Warning: Disabling these features could lead to dangerous EGT levels.

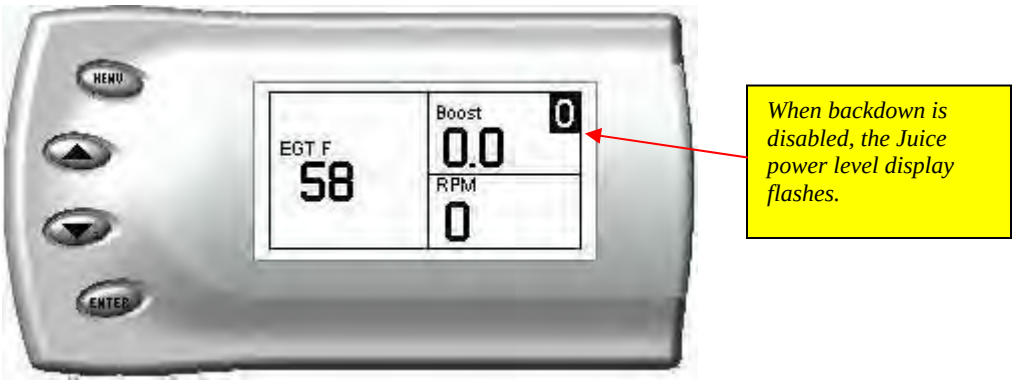
To remove these safety features, perform the following steps:

1. While viewing the main display screen, press [Enter] twice quickly and the following screen will appear:



2. The number on this screen represents the number of minutes the max EGT, max boost and cold engine protection features will be disabled. Press the up or down arrow keys to select the number of minutes you would like this feature disabled.

3. After selecting the number of minutes you would like the EGT backdown option disabled, press [Enter]. The screen will return to your previous view mode, and the Juice power level indicator will flash until the designated time for disabling has been reached. When the Juice power level indicator quits flashing, the max EGT, max boost and cold engine protection safety features will be re-enabled.



Low Boost Fueling Adjustment

Low boost fueling allows the user to "tune" the power levels relative to turbo boost pressure. If boost pressure is low, adding extra fuel causes excessive black smoke out the tail pipe. As the turbo spools up and builds more boost pressure, more air is forced into the combustion chamber and the fuel/air charge burns cleaner, resulting in less smoke. If low boost fueling where set to 1, the *Juice* module would not add the full, potential amount of fuel until boost pressure reached 20 psi. This results in less smoke, and reduces the responsiveness of the throttle. If low boost fueling where set to 5, the *Juice* module disregards boost pressure and adds the calculated amount of fuel at 0psi. This would smoke more and the throttle would be more responsive. The chart below shows how boost is used in each low boost level.

Low boost 1: 0psi to 20psi
Low boost 2: 0psi to 15psi
Low boost 3: 0psi to 10psi
Low boost 4: 0psi to 5psi
Low boost 5: disregards boost psi

After selecting the *Low Boost Fueling Adj* option from the *Juice* Configuration screen (previous steps), the following screen appears:

Select the **power level** for which you want to adjust the low boost fueling and press Enter. When you press Enter, the following screen appears allowing you to select the Low Boost Fueling level that will be unique to the power level and every time you select that power level the fueling adjustment will be set to what you chose on this screen.

Adjusting the fuel at low boost allows you to adjust the response and smoke output before the turbocharger builds boost pressure in the intake. Select level 1 for the lowest level of response and smoke at low boost, and select level 5 for the highest level. You will see a significant change in vehicle response and smoke depending upon which level you select. To leave this screen, press the [Menu] button multiple times.

Turbo Cool Down Setup

This feature allows the engine to continue running (after key-off) until one of two conditions are met. 1) if the EGT falls below the target EGT set point or 2) the time set expires. Press the brake pedal (late model trucks) or lightly press the throttle (early model trucks) to override this feature and shut off the engine.

WARNING: To avoid carbon monoxide poisoning, avoid using this feature in a garage or enclosed area.

Use EGT

Use Time **- (In minutes)**

Cold Engine Protection

Cold Engine Protection prevents the Juice module from adding additional fuel and ignition timing until after the engine reaches normal operating temperature. The *Juice* module starts to deliver additional power at 130 degrees F and max power is reached at 150 degrees F.

Tire Size

If your truck has larger than stock tires, the *Attitude* can display the corrected MPH. To do this, you must enter the stock tire circumference and the tire circumference of the new tires. An accurate method of measuring tire circumference would be to mark a point on the outside edge of the tire. Start with the mark located next to the pavement (and mark the pavement where the rubber meets the road), roll the tire three revolutions stopping with the mark on the pavement. Measure between the first mark on the pavement and where the tire mark ends after the third revolution. Divide the distance by three and enter this value on the CURRENT tire size screen.

Enter the STOCK tire size for your vehicle on the following screen:

Enter the current tire size (the size of tires you currently have on your vehicle).

If the stock tires are a different size than the current tire size, a screen will appear asking you if you have had the speedometer recalibrated to compensate for the different tire size. Answer the question appropriately.

Truck Model Year

The last Juice configuration menu is truck model year. Simply select the model year of your truck and press Enter. The 98.5 – 2000 trucks have a different MAP sensor and MAP sensor calibration then the 2001 – 2002 models. The *Attitude* uses model year to adapt the MAP calibration for the particular year. Failure to select the correct model year can result in a loss in performance and incorrect boost readings. Model year is also used to change the display screens. For example, oil pressure is only available on the 98.5 – 2001 models, so if you selected a 2002 model year, oil pressure would not show up as a variable on the *Attitude.*

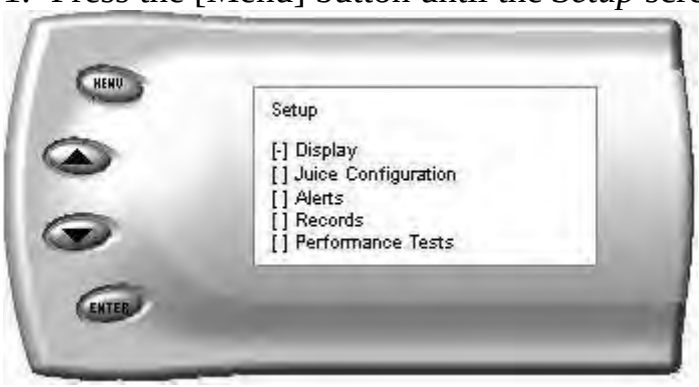
Alerts

The Attitude can sound an alert when certain engine parameter levels are met such as EGT, boost, and engine temperature. When these parameter thresholds are met or exceeded, the Attitude screen will display the value and you will hear a repeating audible alarm. The volume of this audible alarm can not be changed. The following alerts are available:

- EGT Alert
- Boost Alert
- Engine Temp Alert
- Speed Alert
- Engine Oil Alert (98.5 – 2001)
- Fuel PSI Alert
- RPM Alert
- Trans Temp Alert

To set alerts, perform the following steps:

1. Press the [Menu] button until the *Setup* screen appears:



2. Select the *Alerts* option and press [Enter]. The following screen appears:

3. Turn alerts *On* by scrolling to the *Alerts are On/Off* option and press [Enter] to turn alerts On or Off.

To change the EGT Alert value [default is 1350] scroll to the *EGT Alert* option and press [Enter]. The following screen appears:

4. Press the up and down arrow keys until you see the desired EGT level at which you want to be alerted and press [Enter] to set that value.
5. To change the Boost Alert value [default is 25] scroll to the *Boost Alert* option and press [Enter]. The following screen appears:

6. Press the up and down arrow keys until you see the desired Boost level at which you want to be alerted and press [Enter] to set that value.

7. To change the Engine Temperature Alert value [default is 210] scroll to the *EngTemp Alert* option and press [Enter]. The following screen appears:

8. Press the up and down arrow keys until you see the desired Engine Temp level at which you want to be alerted and press [Enter] to set that value.
9. To change the Speed Alert value [default is 70] scroll to the *Speed Alert* option and press [Enter]. The following screen appears:

10. Press the up and down arrow keys until you see the desired Speed at which you want to be alerted and press [Enter] to set that value.

The remaining alerts can be set in a similar manner. Keep in mind that the Fuel Pressure and Oil Pressure alerts are minimum value alerts. This means that the alert will go off if the pressure value drops below the alert set point.

Note: If you desire to temporarily stop the Attitude alert while the alert is signaling you, press any key (menu, arrow or enter) and the alert will temporarily stop. When all of the alarm parameters drop below the set thresholds, then exceed them again, the alert will start up again.

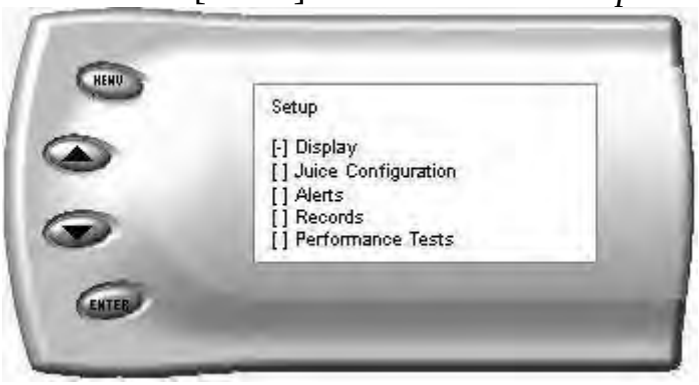
Records

The *Attitude* can keep a record of maximum/minimum engine parameter values that your vehicle produces. These records are stored in the Records section of the Attitude.

- Max Engine Temp F
- 0-60 times
- ¼ mile times
- Max RPM
- Max Speed
- Minimum Fuel Pressure
- Max Module Temp
- Max Transmission Temp

To view or clear these values, perform the following steps:

1. Press the [Menu] button until the *Setup* screen appears:



2. Select the *Records* option and press [Enter]. The following screen appears:

3. All of the records are stored on this screen. To clear an individual record, select that record and press [Enter]. To clear all the values, select *Clear All* and press [Enter].

Performance Tests

The *Attitude* allows you to test the performance of your vehicle by timing the 0-60 and the ¼ mile times. To run these tests, perform the following steps:

1. Press the [Menu] button until the *Setup* screen appears:

2. Select the *Performance Tests* option and press [Enter]. The following screen appears:

3. Select the desired performance test and press [Enter]. The following screen appears:

4. When your vehicle is at a complete stop, the following screen automatically appears:

Hot Unlock Code

Edge Products allows you to upgrade your Juice/Attitude to include a level 6 power level. Power level 6 is very similar to the level five on the Hot or Drag Comp. Although there is not a significant increase in peak HP when compared to level 5, the level 6 fueling curve is more aggressive in the bottom and mid range and adds more fuel in the high RPM range. To get the unlock code you must contact Edge Products Technical Support (801-888-360-EDGE) and give them the *Juice* serial number. The *Juice* serial number can be found in the Module Information screen on the Setup menu of the *Attitude*. They in turn will give you a 4 digit code to unlock level 6. There is a cost associated with accessing level 6 and a release liability waiver must be signed. To enter the unlock code, select the Enter Hot Unlock Code option in the Setup menu and press enter. A screen similar to the one below will appear. Enter the 4 digit code and press Enter. The *Attitude* should inform you that Hot mode is available.

Troubleshooting Guide

Generally the installation and operation of the Juice / Attitude module transpires without problems however; occasionally trouble arises. There are several things that need to be checked prior to calling technical support:

- ✓ Ensure that all connections are made correctly by reviewing all installation steps.

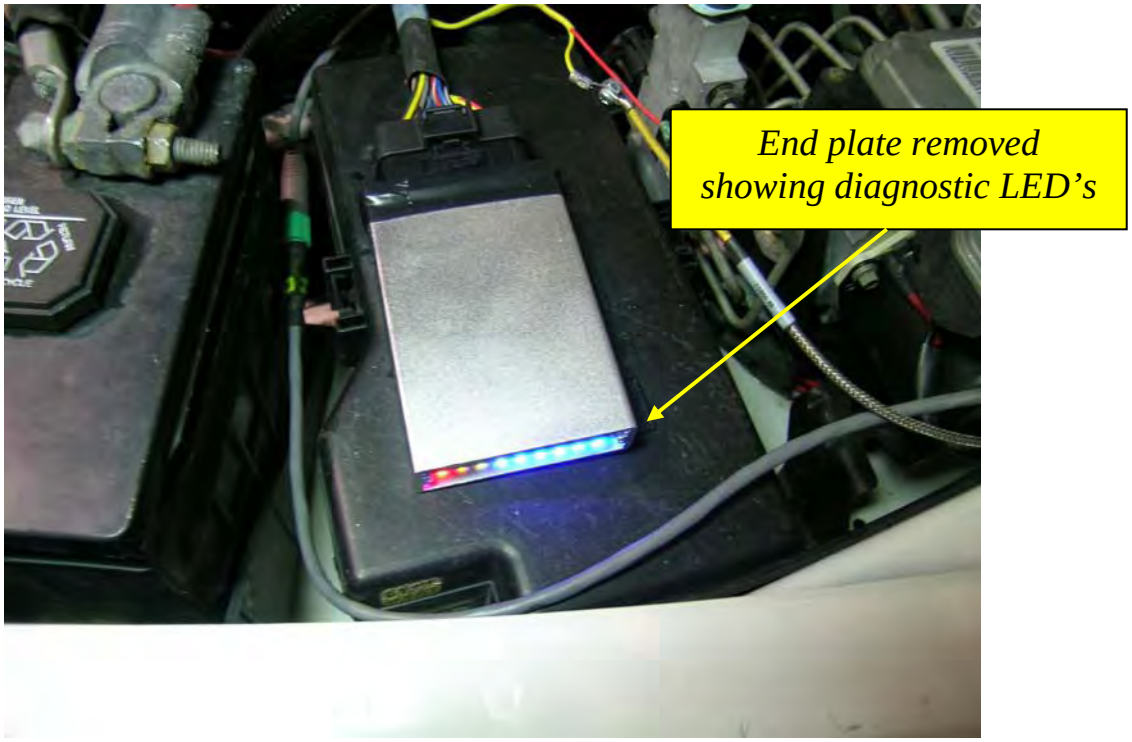
- ✓ If the turbo cool down timer does not work, make sure it is enabled in the Attitude menu

- ✓ If the turbo cool down timer still does not work, check to ensure that the YELLOW wire is connected to FUSE number NINE (9) inside the cab fuse box.

- ✓ If the menu for the cool down timer is set and the YELLOW wire is connected to fuse nine and the turbo cool down timer still does not work, contact technical support.

- ✓ Ensure that the Attitude is not limiting the power by backing down for high EGT, high MAP (boost) or other safety items by checking for items that can “backdown” power to the truck such as EGT backdown setting too low or “boost” setting too low.

- ✓ Ensure that the pump wire is connected properly by observing the diagnostic LED’s on the circuit board inside the case of the Juice module – The end cap of the Juice module can be removed in order to view the diagnostic LED’s as shown below. If the LED’s are “scrolling” during normal operation (engine running), the pump wire has been pierced correctly and the Juice module is detecting pump operation properly (see graphic on next page).



Technical Support

888-360-3343

To expedite your support call, please have part number (i.e., 30100,30101), version number, and Date of Manufacture ready prior to calling support.