



Granatelli Motor Sports, Inc. • 1000 Yarnell Place • Oxnard, CA 93033-2454
 805-486-6644 (Phone) • 805-486-6684 (Fax) • Hours: M-F 8AM-5PM (PST)

www.GranatelliMotorSports.com/techsupport.htm
TechSupport@GranatelliMotorSports.com

Big G Diesel Module Installation Instructions
 FORD 6.0 POWER STROKE TURBO DIESEL

Installation Instructions (Read Carefully Before Starting Project)

NOTE: Mileage Miser Modules Only – Just plug them in, no cutting, knobs or adjustments required.

<u>Bill of Materials:</u>	<u>Tools you need:</u>	<u>Available accessories:</u>
<ul style="list-style-type: none"> • Big G Power Module • Big G wiring harness • 4 position switch or digital display • 1 bypass plug • 1 Velcro patch • 4 plastic ties • 1 alcohol wipe 	<ul style="list-style-type: none"> • Drill for mounting switch • Side cutters for trimming plastic ties • Razor blade or knife if cutting through firewall grommet (optional) • 5/64 allen wrench for installing switch knob • Ratchet ¼" drive • 10mm socket • 13mm socket 	<p>Pyrometer & boost gauge</p>

REMEMBER THIS IS A PERFORMANCE PRODUCT USE AT YOUR OWN RISK.
This product is not intended to be used to break the law.

It is necessary to remove the unit before taking your vehicle to the dealer for service, as it may interfere with the diagnostic equipment. Do not use this product until you have carefully read the following agreement. This product may affect the ability of your dealer to diagnose any problem on your vehicle so it must be removed before taking it to your dealer. This agreement 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 the terms and conditions.

DISCLAIMER OF LIABILITY

Granatelli Motor Sports, Inc. Its distributors, jobbers, and dealers (hereafter Seller) shall be in no way responsible for the product's proper use and service. THE BUYER HERBY WAIVES ALL LIABILITY CLAIMS.

The Buyer acknowledges that he is not relying on the Sellers 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 Buyers hereby waivers all remedies or liabilities expressed or implied, arising by law or otherwise, (including without any obligation of the Seller with respect 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

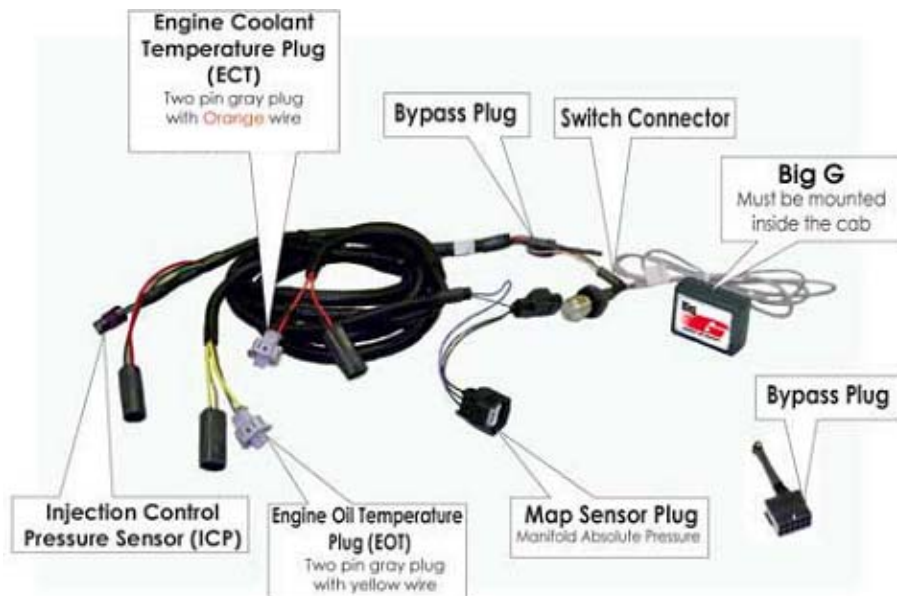
the Seller and to hold the seller harmless from any claim related to the item of the equipment purchased. Under not circumstances will the Seller be liable for any damages or expenses by reason of use or sale of any such equipment.

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.

The Buyer is solely responsible for all warranty issues from the manufacturer.

IMPORTANT: Read the disclaimer completely before installing your Granatelli Big G product.

Below is a photo of the Granatelli Dodge Big G and some simple things to remember.



In all positions, the Granatelli Big G module should deliver power smoothly without ill effects. The truck should behave just like it did when it was stock, with the exception of the increase in power. As you run in higher levels some black smoke from the tailpipe is normal, but it should not be excessive and should clear up as turbo boost is achieved. As fuel is added to the vehicle exhaust gas temperatures will increase and you should use a pyrometer to monitor exhaust gas temperature. In the higher setting you will notice the pitch of the engine to be slightly different. This is due to the timing increase and it is normal as long as it is not excessive. The higher settings will have a lighter throttle feel to them and may not be as desirable if driving in inclement weather or around town when on a small amount of extra power is needed. If use in the higher level is needed you may consider a cold air intake or a 4" exhaust system as well.

LED Definitions:

The Big G module has built in diagnostics and a self-test that it runs every time you start your truck. Below will help you define what the module is telling you. There are 4 blinks upon start up. You only need to be concerned with the first 3 blinks. The 4th blink will be used for technical support only.

Blink Sequences (First 3 Blinks):

- Orange, Green, Green: 03-04 Standard Module
- Orange, Red, Orange: 03-04 Race Module
- Orange, Red, Green: 2005 Standard Module
- Orange, Orange, Orange: 2005 Race Module

NOTE: It is important to make sure you have the correct module that you ordered.

LED Color Definitions:

The Big G also displays which power level you have selected. Below are the settings and corresponding colors:

No LED: Off Setting

Green LED: Power Level 1

Orange LED: Power Level 2

Red LED: Power Level 3

The Big G module alters fuel injector quantity, fuel pressure, fuel injection timing and boost. When using the Big G module it is highly recommended that you use a pyrometer to monitor exhaust gas temperature.

Big G Power Ratings:**Standard Module:**

Position 1: Switch completely rotated counter clockwise = off

Position 2: Switch rotated 1 position clockwise from position 1 = 30HP increase

Position 3: Switch rotated 2 positions clockwise from position 1 = 60HP increase

Position 4: Switch rotated 3 positions clockwise from position 1 = 120HP increase

Race Module:

Position 1: Switch completely rotated counter clockwise = off

Position 2: Switch rotated 1 position from clockwise from position 1 = off

Position 3: Switch rotated 2 positions clockwise from position 1 = 30HP increase

Position 4: Switch rotated 3 positions clockwise from position 1 = 120HP increase (7.4L)

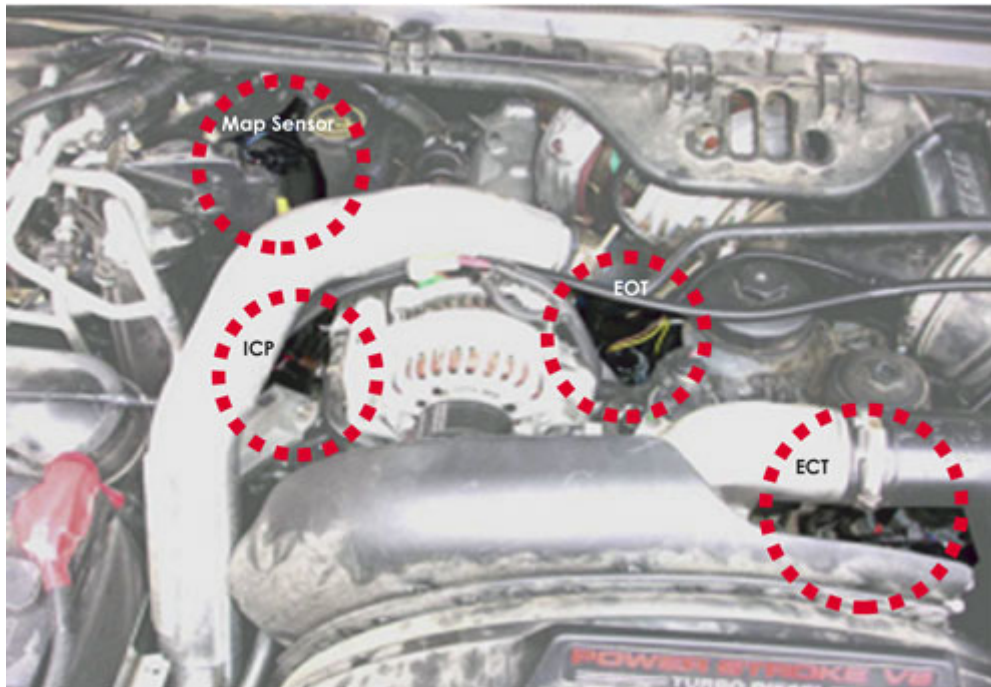
Position 4: Switch rotated 3 positions clockwise from position 1 = 160HP increase (6.0L)

NOTE: The race modules were not intended to be used in the high settings for every day usage. Using the 160HP setting may cause poor shifting, poor fuel mileage, excessive black smoke and other minor undesirable characteristics. The 160HP setting was intended for racing use or dyno use only. The race module was designed to shift properly at full throttle; at light throttle shifting may be less than desirable.

The Big G monitors oil temperature as an added safety feature for your engine. The Big G module will allow power to be added when the oil temperature reaches 160 degrees F. The Big G module will automatically lower the module to the off position if engine oil temperature exceeds 240 degrees F. If the engine coolant temperature exceeds 230 degrees F. it will completely disable itself and bypass to stock.

Because some 6.0L engines are known to lose coolant out of the overflow cap under severe duty, we have added even further protection. If the oil temperature and water temperature are separated by more than 40 degrees F. the Big G module will automatically turn to the stock position. If your vehicle loses enough coolant the engine coolant temperature sensor will not read accurately and if the water level is low enough the sensor will read low. By monitoring oil temperature as well the Big G will not be fooled by a false reading.

1. Make sure the ignition is in the off position and the keys are removed from the ignition.
2. Pop the hood and locate the Injection Control Pressure (ICP), manifold absolute pressure sensor (MAP), engine oil temperature (EOT), and engine coolant temperature (ECT). The ICP is round, has 3 wires and is located on the passenger side valve cover (04-05). The ICP sensor for 03 and early 04 trucks is located behind the turbo on the driver's side of the engine. The ICP inspection plate must be removed for installation. The MAP sensor has 3 wires and is located near the firewall, over the top of the passenger side valve cover. The EOT sensor is next to the oil filter housing on the passenger side of the vehicle. The ECT sensor is located on the front of the engine on the driver's side just below the cooling fan sensor.



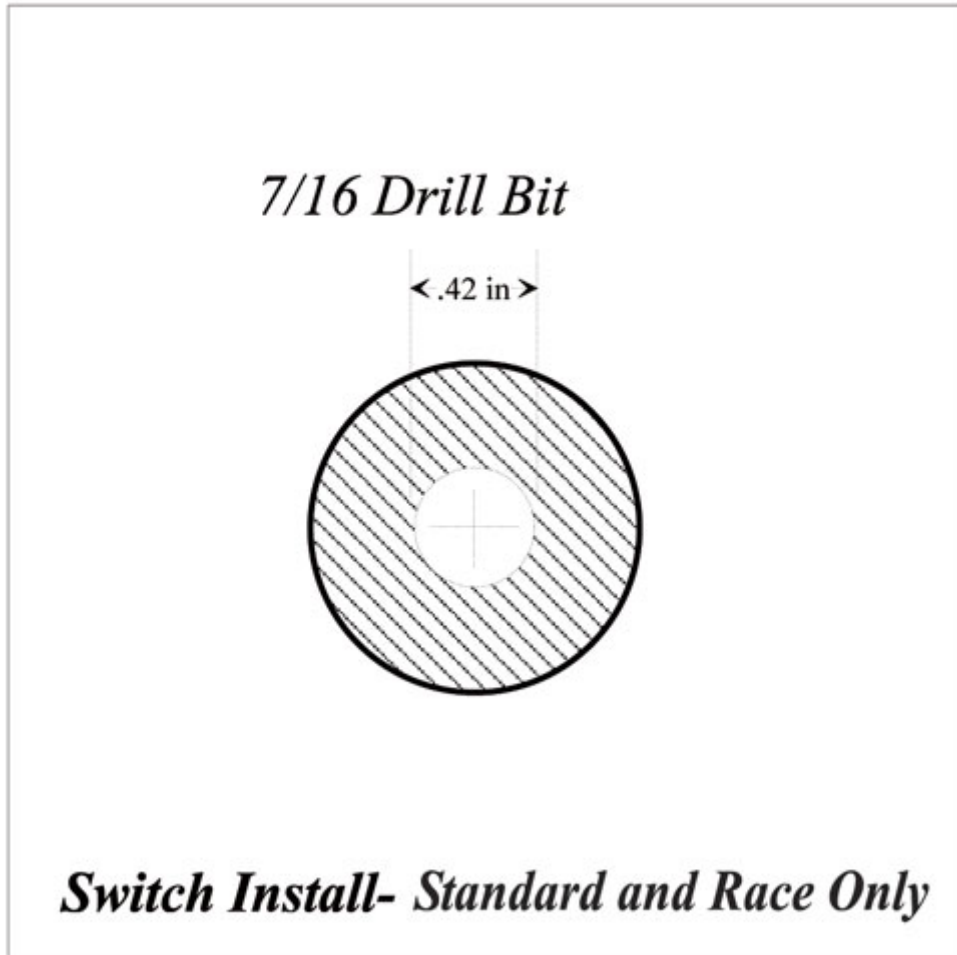
3. (2003 Early 2004). To reach the ICP sensor you must lie underneath the driver's side of the trunk. You will want to look at the backside of the engine towards the turbocharger. You will see a silver inspection plate. There are 3 bolts that you must remove using a ratchet. You must remove (2) 10mm bolts and (1) 13mm bolt. Once the plate is removed you will be able to see and reach the ICP sensor.
4. (2004-2005): Disconnect the ICP sensor plug by gently lifting the locking tab on the connector and removing the connector. The correct plug for the ICP circuit has green and red wires visible to you. Plug the Big G connector into the ICP sensor. Now plug the factory connector into the Big G plug. This essentially makes a loop between the factory connector and the sensor. This particular plug is designed to be extremely tight fitting. The connector for the Big G harness was designed to fit under the collar of the factory connector. The thin sidewall required to fit this connector requires the connector to be extremely tight so that when it is subject to high temps the connection remains solid. You will want to insert the factory connector into the Big G plug at a slight angle with the bottom going in first. Once the bottom is inside the collar push the connector completely into the Big G harness. Then plug the Big G connector back into the factory plug. This essentially makes a loop between the factory connector and the sensor. Make sure the plugs are completely locked together and you notice a light snap when they are fully connected. **NOTE: Failure to connect these plugs properly can cause your check engine light to illuminate and the truck to run poorly.**
5. Disconnect the map sensor by gently sliding the red lock on the connector down, then push the locking tab on the connector and remove the connector from the sensor. The locking tab is located where the red lock was located. The correct plug for the map sensor circuit has a blue wire that is visible to you. Plug the Big G connector into the map sensor. Now plug the factory connector into the Big G plug. This essentially makes a loop between the factory connector and the sensor. Make sure the plugs are completely locked together and you can confirm that the locking tab on both connectors have been properly locked down. **NOTE: Failure to connect this properly will cause a check engine light and the truck will run poorly.**
6. Disconnect the EOT sensor (NOTE: using a pair of needle nose pliers may make removing the factory plug easier). The heat this plug is subject to makes it slightly hard to disconnect for the first time. Gently squeeze the locking tab on top of the factory plug and pull up on the plug gently to remove it. The correct plug for the EOT circuit has a yellow wire that is visible to you. Plug the

Big G connector into the EOT sensor. Now plug the factory connector into the Big G plug. This essentially makes a loop between the factory connector and the sensors. Make sure the plugs are completely locked together and you can confirm that the locking tab on both connectors have been properly locked down. **NOTE: Failure to connect this properly can cause your check engine light to illuminate and the truck to run poorly.**

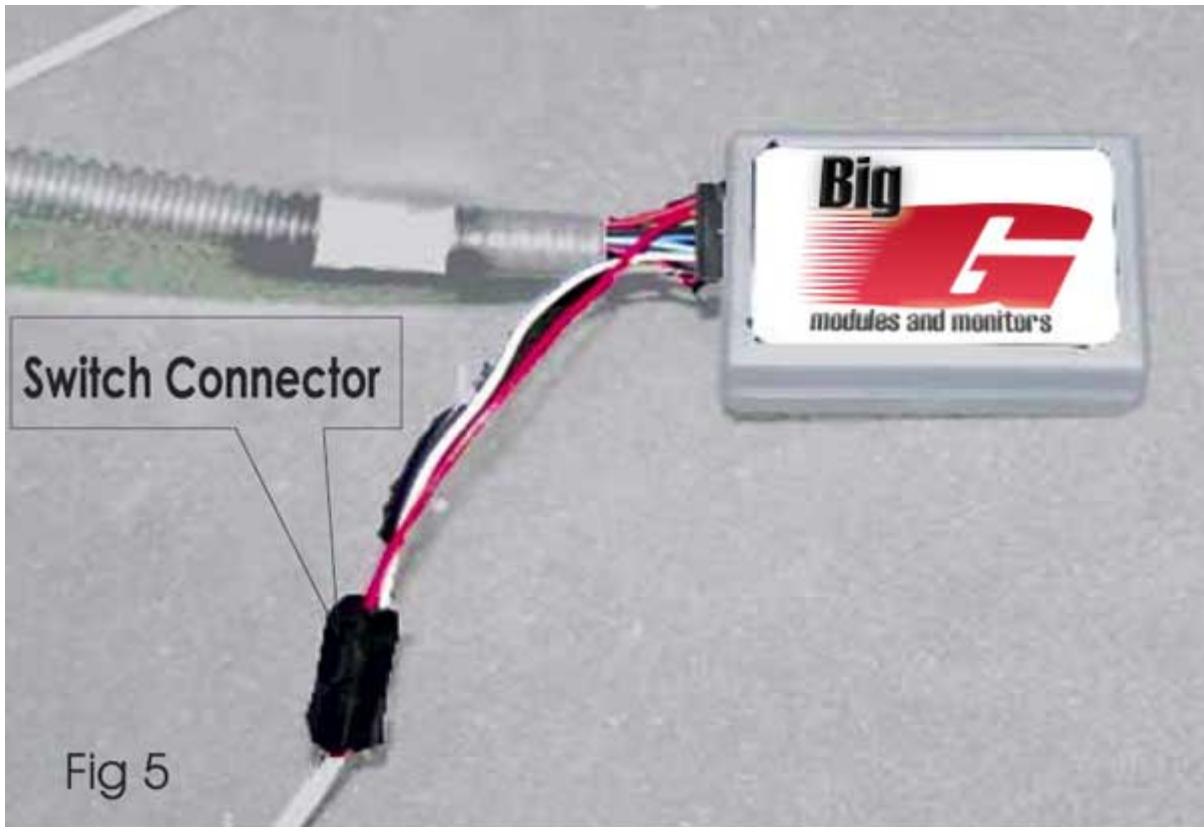
7. Disconnect the ECT sensor (NOTE: using a pair of needle nose pliers may make removing the factory plug easier). The heat this plug is subject to makes it slightly hard to disconnect for the first time. Gently squeeze the locking tab on top of the factory plug and pull up on the plug gently to remove it. The correct plug for the ECT circuit has an orange wire that is visible to you. Plug the Big G connector into the ECT sensor. Now plug the factory connector into the Big G plug. This essentially makes a loop between the factory connector and the sensor. Make sure the plugs are completely locked together and you can confirm that the locking tab on both connectors have been properly locked down. **NOTE: Failure to connect this properly can cause your check engine light to illuminate and the truck to run poorly.**
8. Route the remaining wiring under the turbo inlet tube. It is important to keep the wiring away from any hot or sharp surface that could damage the harness.
9. Locate the factory hole in the firewall on the driver's side of the steering shaft. This hole will have either shiny silver tape covering it or there will be a diamond shaped hard plastic plug in it. If the tape is present a razor blade or even your finger will allow access into the truck cab. If the truck has the plastic plug you will need to reach up under the dash and release the plug so it can come out. There is a thick sound canceling material on the inside of the firewall, but there is already a cut out in it to provide access to this hole. If you have a plastic plug you can either remove it or drill a hole large enough to route the Big G 12 pin plug through the firewall.
10. You now need to run the Big G 12 pin connector with 4-pin switch connector through this grommet.
11. Check all of your under hood connections to make sure everything is properly connected. It is recommended to pull all excess slack inside the cab at this time. Using the supplied ties, secure the wiring harness to keep it from being damaged. **It is recommended that everything is tied tight and kept away from any moving parts or any high temperature areas.**
12. With the wiring harness inside the cab plug the Big G module into the wiring harness. The plug is keyed so there is only one way to plug the wiring harness into the module. Make certain that the plug is completely connected to the module. **NOTE: If the plug is not fully seated it can cause the truck not to start or set a check engine light.**



13. Find a good spot to mount your switch. There are many locations that provide easy access to your switch. Once you have a spot located run the switch cable to the module. Be careful that the cable is run in a manner that prevents any damage to the switch wire. **CAUTION: Make certain that you look at the supplied template provide to allow for the size of the base switch.**



14. Connect the small switch connector to the wiring harness.



15. While the module is lying on the floorboard turn the ignition to the on position while watching the module. Inside the module there is an LED. This LED will flash a 4 blink self test. There is a chart located on page 5 so that you can reference the blink sequence to make sure that you received the proper module. This also ensures that the module is working properly. Once the 4-blink sequence is finished the LED will display the current switch position. Off = No LED, L1 = Green LED, L2 = Orange LED, L3 = Red LED. Make sure to run the switch through all positions to make sure the module is working properly.
16. Choose a location to mount the module. The module can be mounted under the dash panel or in any position that allows you to see the LED. The module must remain in the cab, as the case is not weatherproof. Secure the module using either Velcro or a plastic tie. Make sure the module is secure in its location.
17. Re-check all connections to ensure proper ventilation.
18. Start the vehicle and rotate the switch through all locations. In certain instances a slight change in tone may be heard when switched, but the idle should remain smooth and quiet just like the vehicle did when it was stock.
19. Enjoy your increased power and mileage.

How It Works:

Upon startup the Big G starts monitoring your engine vitals. If the engine oil temperature (EOT) is lower than 160 degrees F. then the Big G will default to “warm up” mode. The module will let you know this by flashing the LED. The color of the LED will represent whatever color the switch position is. If you are installing the module for the first time and your truck is in warm up mode, then you will still be able to verify your switch is working properly by changing levels. As you change levels the LED will change to the corresponding color, but it will remain flashing. Once you reach operating temperature the LED will stop flashing and you will have the added power of the level.

The Big G module also has the ability to return to stock mode should it see EOT or ECT that is too high. In these situations it will also blink the LED. If the EOT is too high the module will blink a red LED. If the ECT is too high it will blink an orange LED. The way you can determine “warm up” and “shut down” modes is by simply adjusting the switch position. In shut down mode the LED will continue to blink the same color regardless of switch position.

If you are getting a flashing light and you do not believe that the truck should be in warm up or shut down mode then please visit the troubleshooting guide below.

Trouble Shooting Guide:

No LED flashing after installation: Check ICP sensor. Not installed correctly or loose.

Orange LED flashing: Check circuit with orange wire, factory connector is inserted backwards into the Big G plug, also could be plugged into the wrong sensor, and could be plugged into EOT or IAT2. IAT2 is located just behind the driver’s side of the oil filter and should never be used.

Red LED flashing: Check circuit with yellow wire, factory connector is inserted backwards into the Big G plug, also could be plugged into wrong sensor, and could be plugged into ECT or IAT2. IAT2 is located just behind the driver’s side of the oil filter and should never be used.

Switch does not change LED: Check selector ring under mounting hardware on switch, check pins and connectors at 4-pin connector on switch and wiring harness, bad switch.

Module shows green LED all the time: Check selector ring under mounting hardware on switch, check pins and connectors at 4-pin connector on switch and wiring harness, bad switch.

Module resets while driving: Check ICP sensor, make sure the plug is tight and can’t wiggle, add tie wrap to ICP connector and plug to make sure of a tight connection.

Won’t shift correctly: Reset transmission (call for details) repeat learning process exactly as described in the instructions.

Can’t feel power change: At cruising speeds no change should be felt. Use more throttle then adjust switch to feel power. Peak power is only gained at full throttle.

Feels like less power than before: Check air and both fuel filters. Maintain proper maintenance on these items. These items will be more noticeable when dirty after power is added, oil changes at regular intervals is very important, 3,000 miles under heavy duty usage and 5,000 miles under easy usage is recommended.

Truck surges: Check air and both fuel filters. Maintain proper maintenance on these items. These items will be more noticeable when dirty after power is added, oil changes at regular intervals is very important, 3,000 miles under heavy duty usage and 5,000 miles under easy usage is recommended. Also, race modules in the high setting may not be desirable to use for normal driving.

THE LEARNING CURVE:

The Ford torque shift is a very strong and advanced transmission. Your transmission has adaptive learning ability. When you installed your Big G module you reset your transmission and you will need to re-train it.

It is recommended to start at the stock power level after installation of the Big G module. It is very important to follow the steps that are outlined in this manual. For your shifting to be the best it can be with this massive amount of added power, it will take some time and some patience on your part. We know that you want to twist that dial and feel the power, but it is very important to follow the learning procedure.

This process will be used in all power levels, starting with the stock mode. Do not proceed to the next power level until shifting is satisfactory. If your shifting is less than desirable do not move to the next level, this will make things worse. The more shifts your truck makes the better the shifting will be. If you drive mainly on the highway it will take considerably longer to learn. Overall mileage does not affect the adaptive learning process of your transmission.

It is highly recommended to find a location where speeds higher than the speed limits are allowed. Do not speed or break any state laws to follow the learning process.

Starting at 25% throttle, allow your truck to shift through all 5 gears while maintaining a steady throttle position. Once you reach 5th gear lightly apply the break while holding your throttle steady for approximately 10 seconds. If the truck has any flares or less than desirable shifts repeat the same process. If it shifted to your liking then proceed to the next step.

Using approximately 50% throttle follow the same guideline as before. Once shifting is desirable, continue to the next step.

Using approximately 75% throttle repeat step 1. Once shifting is acceptable then continue to the last step.

This is the best part! Use 100% throttle and run through all 5 gears. You do not have to reach top speed to complete this level. Once the transmission has shifted into the last gear apply the brake gently and hold for 10 seconds. This typically happens around 80mph, but it can vary from truck to truck. Once the truck shifts perfectly, go to the next power level and then repeat steps 1-4. Do not exceed posted speed limits on public highways during steps 4. Find an area where higher than normal speeds are legal.

Exception to the Rule:

When using less than 50% throttle for the first time on power level 4 your transmission may have a funny shift or may be slow to shift into the next gear. It is rare but this can cause the Tow Haul light to blink. We have simply confused the transmission and can be reset with a key start. If you experience this, once the truck has been restarted, make a 100% throttle run through the gears. The truck may not shift perfect but it should not have problems. If this works continue using 100% throttle until the shifting is desirable. After the shifting is acceptable, then work backwards using 75% throttle, 50% throttle and so on. If you continue to have trouble, please call our technical support line at 805-486-6644.

Explanation:

The reason for the exception has to do with line pressure. There are many different flashes available from the factory and they can have an affect on the shifting. The Big G module makes enough torque on the low end of the power band, and at light throttle that the clutches are not receiving the needed line pressure for a proper shift. Once we make the transmission understand that there is considerably more power at a light throttle it will apply considerably more pressure to the clutches which results in firm, fast shifts. We have been an industry leader in getting power to the ground. Your Big G module has special tuning to make this learning process as fast and as easy as possible. We also offer the best shifting modules. If you can't get through the process it may be necessary to try a different flash or a slightly reduced horsepower program.

BYPASS PLUG:

The Big G module comes with a bypass plug. The bypass plug will come installed on your wiring harness. You will have to remove this to install your Big G power module. This plug allows you to remove your Big G module and continue to operate your truck in stock form without having to un-install the wiring harness. This is especially handy if you choose to upgrade to a higher level or if you let someone else drive your truck. This swap can be done in seconds. Simply unplug the Big G module and plug in the bypass plug in the wiring harness' place



Big G Dodge Specifications:

Operating Voltage: +5V

Power Consumption: .065 Amps

Operating Temperature: -22F to +185F

Storing Temperature: -40F to +230F

Operating Altitude: Sea Level to 10,000 Ft.

Weight: 0.8 Ounces

LIMITED WARRANTY:

Granatelli Motor Sports warrants that all products shall be free from defects in materials and/or workmanship for ninety days from the date of purchase (except in-tank and in-line fuel pumps purchased at dealer or wd prices as these items have no warranty and roller rocker arms which have a 12-month limited warranty). The following requirements and exclusions apply: (1) You must be the original purchaser and must complete the warranty registration form (located at www.GranatelliMotorSports.com/warranty.asp) and return the defective product within 10 days after the expiration of the product warranty. Failure to do so voids all warranty, either express or implied set forth herein. (2) You must reside in the United States or Canada and use the product as described in the warranty registration. (3) The product must not have been altered, disassembled, modified, or converted for any other use than intended by Granatelli Motor Sports. (4) The product, or any part thereof, is not used in accordance with the operating parameters specified by Granatelli Motor Sports (5) The product or any part thereof is damaged or rendered unserviceable due to negligence, vandalism, theft, fire, debris, flood, Act of God, or other peril, malfunction of equipment, or by any cause within the Customer's control. (6) The serial number (if applicable) must not have been altered or removed. The extent of Granatelli Motor Sports' liability under this warranty shall be limited to the prompt correction or replacement, at Granatelli Motor Sports' option and at no cost to the customer other than return shipment, of any defective part of the product determined to be necessary by Granatelli Motor Sports. This only applies if written Granatelli Motor Sports received notice of the claimed defect prior to expiration of the warranty period. All warranties of merchantability and fitness for a particular purpose are expressly excluded. The duration of any and all implied warranties is limited to the duration of this express warranty. All incidental and consequential damages including but not limited to loss profits even if it has been advised of the possibility of such damages are hereby excluded. Regardless of the form of the claim, Granatelli Motor Sports liability for any damages to the customer for such product is limited to the guidelines herein. This stated, expressed warranty is in lieu of all liabilities or obligations of Granatelli Motor Sports for damages arising out of or in connection with delivery, use or performance of the product. This warranty cannot be amended or changed by any Granatelli Motor Sports representative, employee, or agent and any promises inconsistent with this warranty are void and unenforceable against Granatelli Motor Sports. Some states do not allow limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state. Your sole remedy for the above warranties is the repair or replacement of the defective product only, at Granatelli Motor Sports' sole discretion.

RETURN POLICY:

Before you return a product for a warranty claim, contact our service department M-F 8AM-5PM (PST) at 805-486-6644 or techsupport@GranatelliMotorSports.com for an RGA number. No returns are accepted without a pre-approved RGA (return goods authorization). No returns on special orders, electrical items or after 90 days from date of original shipment. All returns must be safety packaged in original packaging (if available) and clearly marked with your RGA number on the top and two sides of the box. Please insure your shipment for full replacement value as lost, stolen or items damaged in shipment are not covered by our limited warranty. We recommend using FedEx (www.FedEx.com) or UPS (www.UPS.com) for shipping. Lost, stolen or damaged items claims must be made by the customer and resolved by the freight company and not Granatelli Motor Sports. All returns may be subject to a restocking fee of up to 25%. The balance will be returned in the form of a company check or may be applied as credit towards another purchase.

PERFORMANCE CONSUMER'S BILL OF RIGHTS:

Legally, a vehicle manufacturer cannot void the warranty on a vehicle due to an aftermarket part unless they can prove that the aftermarket part caused or contributed to the failure in the vehicle (per the Magnuson Moss Warranty Act, www.GranatelliMotorSports.com/magnusonmoss.htm (15 U.S.C. 2302(C))). For best results, consider working with performance-oriented dealerships with a proven history of working with customers. If your vehicle manufacturer fails to honor emission/warranty claims, contact EPA at (202) 260-2080 or www.epa.gov. If federal warranty protection is denied, contact the FTC at (202) 326-3128 or www.ftc.gov. For additional information, check out www.GranatelliMotorSports.com/TechSupport.htm.

Disclaimer:

Actual products may vary from photographs shown. For latest information, please call 805-486-6644 first. You can also check out our web site at www.GranatelliMotorSports.com. However, it may have not been updated at the time you actually view it. Therefore, we cannot guarantee the accuracy of the information on our web site. Granatelli Motor Sports is not responsible for any unintentional omissions or typographical errors and reserves the right to make changes to packages, services, operating procedures, colors, materials, features, specifications, part numbers, pricing and to discontinue any products and/or components at any time without prior notice. Some items shown are sold for off-road use only and/or racing use (not street legal) and not intended for use on public highways, customer assumes costs and liability for installation and use. Performance figures shown can vary considerably due to a variety of factors including but not limited to altitude, humidity, barometric pressure, outside temperature, vehicle age, state of vehicle tune, vehicle manufacturer engine tolerances, vehicle modifications, chassis and engine dyno calibration, chassis and engine dyno brand, etc.