

banks

with Installation Instructions

Owner's Manual

Banks Six-Gun® Diesel Tuner

1999-03 Ford Power Stroke 7.3L Turbo-Diesel

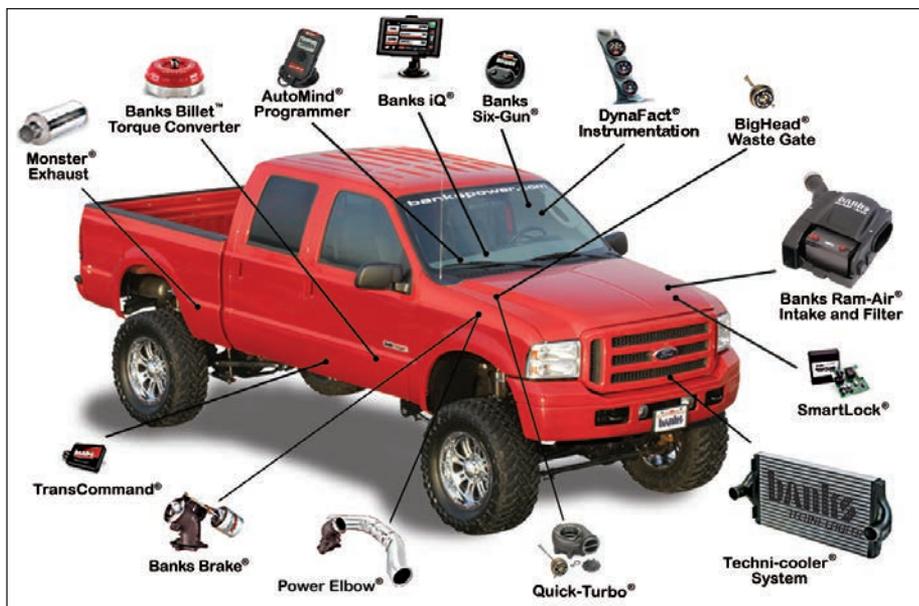
THIS MANUAL IS FOR USE WITH SYSTEMS 66513, 66514, & 66515

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bankspower.com

Products available from Banks Power for 1999-2003 Ford 7.3L



Banks Power Elbow (P/N 48651-48652, 48661-48663)

- Reduces stock outlet and pipe backpressure

Banks Monster® Exhaust System Sport (P/N 48789) **Single and Dual** (P/N 48653-48660, 47391-47399)

- Increases exhaust flow, cuts backpressure, lowers exhaust gas temperatures (EGTs) and increases power.

Banks Ram-Air Intake System (P/N 96885)

- Increases your airflow over stock.
- Adds power, improves fuel economy, lowers EGTs and reduces smoke.

Banks Techni-Cooler® System (P/N 25971-25973)

- Provides increased air flow to the engine by increasing air density for more increased power, lower EGTs and improved fuel economy.

Banks Brake (P/N 55202-55207)

- Increases the stopping power of your truck and extends the service life of your brakes

Banks SmartLock (P/N 55266)

- Reduces wear on transmission
- Locks Torque Converter and raises trans-line pressure
- Works with Banks Exhaust Brake

Banks TransCommand (P/N 62570)

- Produces smooth, firm, light-throttle shifts and solid, decisive heavy-load shifts.
- Eliminates excessive clutch slippage

Banks Billet Torque Converter (P/N 72521)

- Higher torque capacity over stock
- Lockup clutch is slip-resistant so transmission fluids stay cooler and transmission life is prolonged.

Banks Diesel Tuner

Six-Gun (P/N 66513-66515)

- Adds power safely to your vehicle
- Engine and transmission safeguards
- Change power levels on-the-fly

Thermocouple

- Add a temperature limiting function to your Diesel Tuner

Banks QuickTurbo

(P/N 24456-24457)

- More boost through the powerband
- Does not over-boost
- Turbo-diesel efficiency

AutoMind Programmer

(P/N 66100)

- Contains Banks tunes that boost your vehicles HP, Torque and MPG.
- Displays a host of critical engine functions
- Provides "service technician" diagnostic capabilities
- Has upgradeable functionality, so it will never be out of date

Banks Git-Kit Systems

(P/N 47401, 47511-47514)

Contains:

- Monster Exhaust
- AutoMind Programmer

Banks Stinger Systems

Contains:

- Ram-Air IntakeFilter
- Monster Exhaust
- AutoMind Programmer
- Big Head Wastegate Actuator

Banks PowerPack Systems

Contains:

- Ram-Air Intake Filter
- Monster Exhaust
- Quick-Turbo
- TransCommand
- Techni-Cooler System
- Big Head Wastegate Actuator

Banks Six-Gun Bundle

(P/N 46594-46613)

Contains:

- Ram-Air Intake Filter
- Monster Exhaust
- Six-Gun Tuner
- TransCommand
- Big Head Wastegate Actuator

Banks Big Boss Bundle

(P/N 46623-46643)

Contains:

- Ram-Air Intake Filter
- Monster Exhaust
- Six-Gun Tuner
- TransCommand
- Big Head Wastegate Actuator
- Techni-Cooler System
- AutoMind Programmer
- Power Elbow

Banks Power Combo 1

Contains:

- AutoMind Programmer
- TransCommand
- Big Head Wastegate Actuator

Banks Power Combo 2

Contains:

- Six-Gun Tuner
- TransCommand
- Big Head Wastegate Actuator

Banks Power Combo 3

Contains:

- AutoMind Programmer
- Monster Exhaust

Banks Power Combo 4

Contains:

- AutoMind Programmer
- TransCommand
- Big Head Wastegate Actuator
- Six-Gun Tuner

**For More Information please call (888) 635-4565
or Visit us online @ www.bankspower.com**

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

Gale Banks Engineering Inc., and its distributors, employees, 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 extended 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) whether or not occasioned by the **SELLER's** negligence.

The **BUYER** is responsible to fully understand the capability and limitations of his/her vehicle according to manufacturer specifications and agrees to hold the **SELLER** harmless from any damage resulting from the failure to adhere to such specifications.

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 the use or sale of any such equipment.

The **BUYER** is responsible to obey all applicable federal, state, and local laws, statutes, and ordinances when operating his/her vehicle, and the **BUYER** agrees to hold **SELLER** harmless from any violation thereof.

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 automotive manufacturer.

Limitation of Warranty

Gale Banks Engineering Inc. (hereafter "**SELLER**"), gives Limited Warranty as to description, quality, merchantability, fitness for any particular 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 except those expressly written herein. This Warranty shall not be extended or varied except by written instrument signed by **SELLER** and **BUYER**.

Please see enclosed warranty information card, or go to www.bankspower.com/warranty, for warranty information regarding your product. 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 Gale Banks Engineering Inc.

Under no circumstance 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 expense.

Under no circumstances will the **SELLER** be liable for any damage or expenses incurred 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 thirty (30) days from date-of-purchase for a full refund, less shipping and/or restocking fee.

The installation of this product indicates that the **BUYER** has read and understands this agreement and accepts its terms and conditions.

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Dear Customer,

If you have any questions concerning the installation of your Banks Six-Gun Diesel Tuner, please call our Technical Service Hotline at (888) 839-2700 between 7:00am and 5:00pm (PST). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

The Banks Six-Gun Diesel Tuner has 6 power levels adjustable via controls on the interface module. Level 1 is stock, and each additional higher level adds approximately 20% of the available power increase.

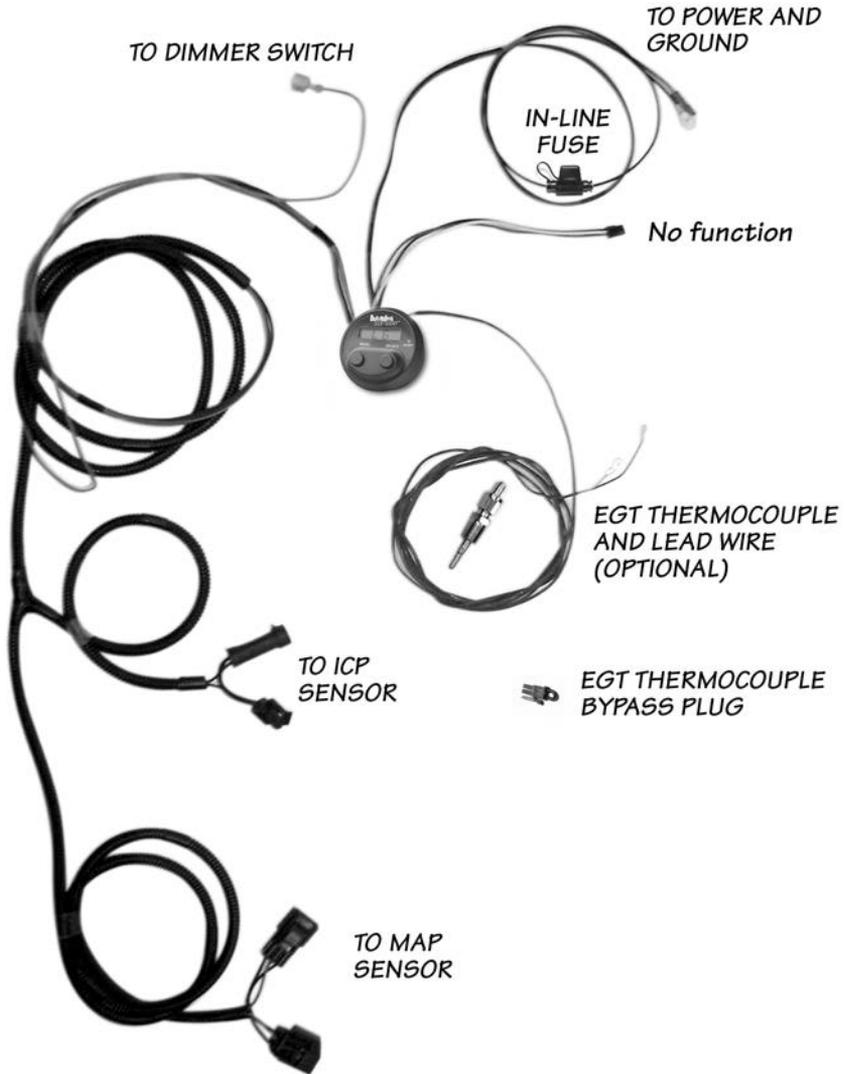
To prevent damage to the factory transmission, Banks recommends that both automatic and manual transmission vehicles do not exceed Level 4 while the vehicle is experiencing load (towing, climbing a steep grade, carrying a load, etc.).

To use the higher levels of the Six-Gun Diesel Tuner while towing or climbing, airflow improvements must be made to lower the exhaust gas temperature (EGT) entering the turbocharger's exhaust turbine. The EGT should not exceed 1300° F (1050° F if measured at the turbine outlet) for more than a few seconds. Elevated EGT can damage the turbocharger and engine.

Attention!

Before proceeding with these instructions, please carefully read the DISCLAIMER OF LIABILITY and LIMITATION OF WARRANTY statement located on page 4 of this manual.

Six-Gun and Supplied Wiring Harness



General Installation Practices

1. Before starting work, familiarize yourself with the installation procedure by reading all of the instructions.
2. The exploded views provide only general guidance. Refer to each step and section diagram in this manual for proper instruction.
3. Throughout this manual, the left side of the vehicle refers to the driver side, and the right side to the passenger side.
4. Disconnect the negative (ground) cable from the battery (or batteries, if there are two) before beginning work.
5. Route and tie wires and hoses a minimum of 6" away from exhaust heat, moving parts and sharp edges. Clearance of 8" or more is recommended where possible.
6. When raising the vehicle, support it on properly weight-rated safety stands, ramps or a commercial hoist. Follow the manufacturer's safety precautions. Take care to balance the vehicle to prevent it from slipping or falling. When using ramps, be sure the front wheels are centered squarely on the topsides. When raising the front of the vehicle, put the transmission in park (automatic) or reverse (manual), set the parking brake, and block the rear wheels. When raising the back of the vehicle, be sure the vehicle is on level ground and the front wheels are blocked securely.

CAUTION: Do not use floor jacks to support the vehicle while working under it. Do not raise the vehicle onto concrete blocks, masonry or any other item not intended specifically for this use.

7. During installation, keep the work area clean. Do not allow anything to be dropped into intake, exhaust, or lubrication system components while performing the installation, as foreign objects will cause immediate engine damage upon start-up.
8. Save this Owner's Manual as a reference for system maintenance and service.
9. Banks also recommends the following airflow improvements (see Table 1) to maintain safe engine operating conditions and provide increased power gains.

Tools Required:

- Standard and Metric sockets and wrenches
- Standard and Phillips screwdrivers
- Foot-pound torque wrench
- Drill motor
- 3/16" Drill bit
- 7/16" Drill bit
- 1/4" NPT tap and tap handle

Highly recommended tools and supplies:

- Penetrating oil or light lubricant spray
- Heatgun

Table 1: Recommended Airflow Improvements		
Banks Monster® Exhaust System	1999 Pickup Cat conv*	48640
	1999-03 Pickup No cat conv*	48656
	2001-03 Pickup Cat conv*	48657
	2000-03 Excursion	48653
Power Elbow™ Assembly	1999-99½ (early) Pickup	48661
	1999½ (Late)-03 Pickup	48662
	2000-03 Excursion	48663
Exhaust Extension Pipe Kits	1999-03 Pickup Crew Cab, Short Bed	53516
	1999-03 Pickup Ext Cab, Long Bed	53517
	1999-03 Pickup Crew Cab, Long Bed	53518
Banks BigHead® Wastegate Actuator	1999-99½ (Early)	24400
	1999½ (Late)-03 Stock turbine housing	24401
	1999½ (Late)-03 Banks turbine housing	24402
Techni-Cooler™ Intercooler	1999	25972
	1999½ (Early)	25971
	1999½ (Late)-03	25973
High-Boost Turbo Compressor Wheel	1999½-03	24440
Banks Ram-Air® filter element	1999	41510
	1999½-03	41511
	Service Kit	90094
Digital Gauge Accessories	2-Gauge Partial Pillar Mount 1999-03 only	63223
	2-Gauge Full Pillar Mount	63325
	3-Gauge Full Pillar Mount	63326
	2-Gauge Dash-Top Mount 1999-03 only	63127
	3-Gauge Dash-Top Mount 1999-03 only	63128
Thermocouple**	—	63042
Lead Wire***	—	63060

* Pickups other than standard-cab long-bed or extended-cab short-bed require one of the Exhaust Extension Kits listed above.

** Included in kit 66513

*** Included in kits 66513 and 66515

Section 1:

EXHAUST GAS THERMOCOUPLE INSTALLATION INSTRUCTIONS

NOTE: If not installing or connecting an EGT thermocouple to the Banks Six-Gun Diesel Tuner then install the supplied EGT thermocouple bypass plug. The bypass plug is installed on the two pin connector attached to the backside of the Tuner.

If your vehicle already has a Banks DynaFact EGT probe installed, please skip to step 8.

If your kit does not have EGT sensing and limiting functions, please skip to step 10.

Installation

1. The thermocouple monitors the temperature of the exhaust gases entering the turbocharger, and allows the Six-Gun to limit maximum exhaust gas temperatures to a level that you select. If your vehicle is not already equipped with a mounting location for an EGT probe (Ex: Banks exhaust system with the Banks Turbine Outlet Pipe), installation requires that the exhaust manifold be drilled near the manifold outlet. **All metal shavings must be cleaned from the manifold to avoid turbine wheel damage** – Gale Banks Engineering recommends removal of the exhaust manifold for safety and ease of installation.

NOTE: The displayed exhaust gas temperature reading is greatly affected by placement of the EGT probe.

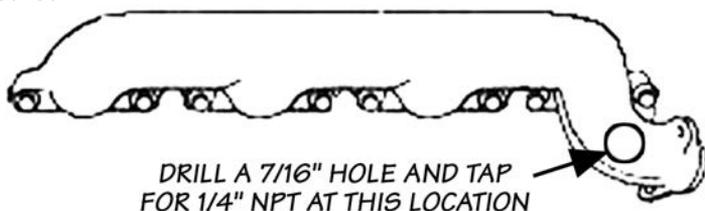
Placement of the EGT thermocouple probe in the exhaust manifold directly ahead of the turbocharger's exhaust turbine inlet will always provide the truest EGT measurement as it most directly reflects your engine's internal operating conditions. Placing the EGT probe in the turbocharger's turbine outlet pipe can provide an EGT reading up to 250 °F lower than the true turbine inlet temperature. Keep this in mind when monitoring your EGT and setting EGT limits.

2. Raise the vehicle and disconnect all negative battery cables before beginning work – refer to the **General Installation Practices** section. Remove the driver side exhaust manifold using a 13mm socket for the eight (8) manifold bolts and two (2) turbocharger exhaust inlet pipe bolts, using a moderate amount of penetrating oil on the threads of the turbocharger exhaust inlet pipe bolts to ease removal if necessary. (The manifold and turbocharger exhaust inlet pipe bolts are most easily accessed from underneath the vehicle.)

3. Drill a hole $\frac{7}{16}$ " in the driver side exhaust manifold at the location shown in **Figure 1**.

4. Tap the hole for a $\frac{1}{4}$ " NPT thread. Check the thread depth as you tap by periodically removing the tap and

Figure 1: Location to drill and tap the driver-side exhaust manifold for the pyrometer sensor



screwing the pipe coupling into the tapped hole. The coupling should thread in 3 to 3½" turns hand tight. Do not install the probe in place at this time.

CAUTION: Running the tap too deeply can prevent the pipe fitting from properly sealing.

5. Remove the NPT fitting from the pyrometer and install it on the exhaust manifold. Use anti-seize lubricant on the threads and torque to 14-16 lb-ft.

6. Remove all metal chips from the exhaust manifold and clean the manifold sealing surfaces thoroughly.

NOTE: Failure to remove all metal chips could result in catastrophic damage to the engine and turbocharger.

7. Re-install the exhaust manifold. Apply a small amount of anti-seize lubricant to the eight (8) manifold bolt threads and torque them to 45 lb-ft, tightening the inner bolts first and working outwards as shown in **Figure 2**. Re-install the two (2) bolts retaining the turbocharger

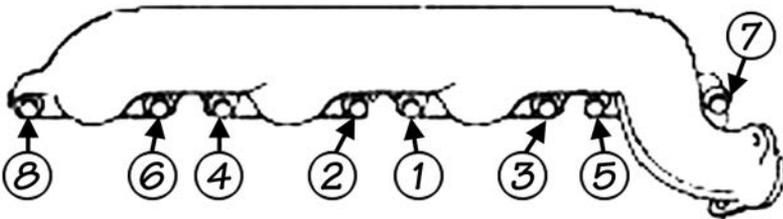
exhaust inlet pipe to the intake manifold and torque them to 36 lb-ft. Install the pyrometer probe in the fitting and torque to 14-16 lb-ft.

8. If the vehicle has a Banks DynaFact thermocouple currently installed, remove the existing lead wire by cutting away the heatshrink covering the connection between the lead wire and thermocouple, removing the fasteners, and removing the existing lead wire from the vehicle. For all installations, slide the short length of supplied heat shrink tubing over the supplied two-lead wiring harness. Connect the lead wire to the pyrometer probe.

9. Slide the heat shrink over the exposed connection junction, and supply moderate heat to seal the connection and finish the thermocouple installation - a heat gun works well for this. Refer to Step 16 for instructions on routing the thermocouple lead wire to the Six-Gun Module.

-END, SECTION 1-

Figure 2: Exhaust manifold bolt torque sequence



Section 2:

INSTALLATION OF WIRING HARNESS, CONNECTIONS AND SIX-GUN MODULE

10. Disconnect the battery ground cables from all of the batteries. Secure the cables so that they do not accidentally come in contact with the battery posts during the installation.

11. Locate the Manifold Air Pressure (MAP) sensor on the passenger side of the firewall, as shown in **Figure 3**. Unplug the stock harness connector from the MAP sensor by sliding the red safety slide down, depressing the locking catch, and pulling down on the connector.

12. Plug the Six-Gun MAP connector into the MAP sensor, then plug the factory MAP connector into the Six-Gun MAP wiring harness. Double-check that both connectors have locked securely.

NOTE: If there is any type of MAP/Boost sensor voltage limiting device installed on the vehicle (a zener diode or similar item), remove it at this time, as it can create input errors on the Six-Gun module.

13. Route the Six-Gun wiring harness along the factory wiring harness from

the MAP sensor to the firewall. Route the remaining length of the Six-Gun wiring harness as shown in **Figure 4**, following the factory wiring harness along the firewall and through the metal retaining loop at the driver side. With the exception of the short harness for the Injection Control Pressure (ICP) sensor, tuck the Six-Gun wiring harness up into the factory plastic wiring tray and secure it with the supplied zip ties.

14. Locate the ICP sensor behind the alternator (or AC compressor on older models) at the front driver side corner of the engine, as shown in **Figure 5**. Route the Six-Gun harness for the ICP sensor as shown previously in **Figure 4**, running it over the compressor inlet tube, under the compressor outlet tube, then down to the ICP sensor.

15. Unplug the stock harness connector from the ICP sensor by lifting the connector catch and pulling up on the connector. Plug the Six-Gun ICP connector into the ICP sensor, then plug the factory ICP connector into the

Figure 3: MAP sensor location

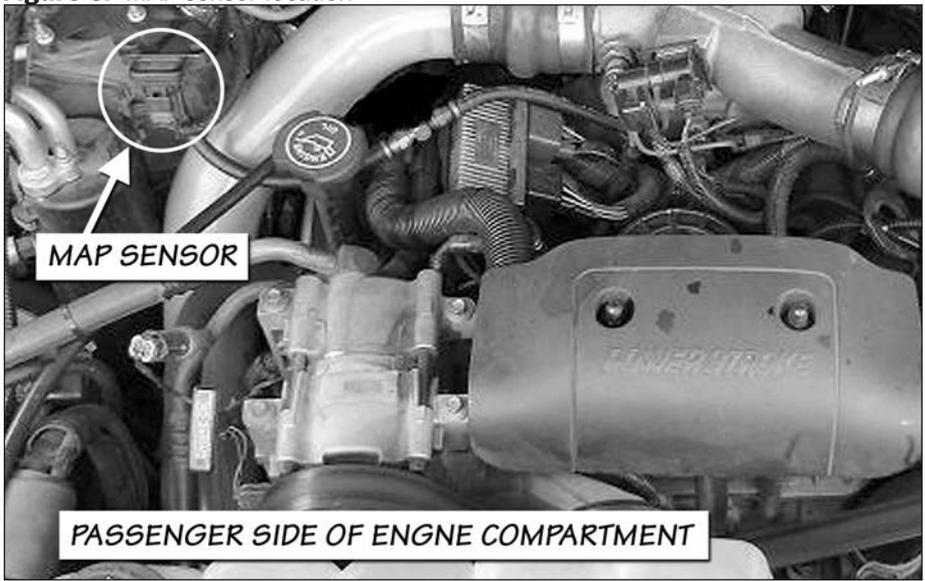


Figure 4: Wire harness routing

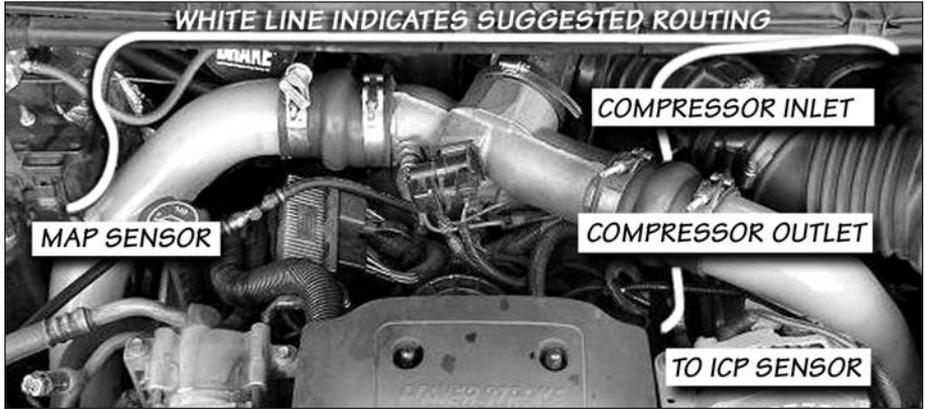
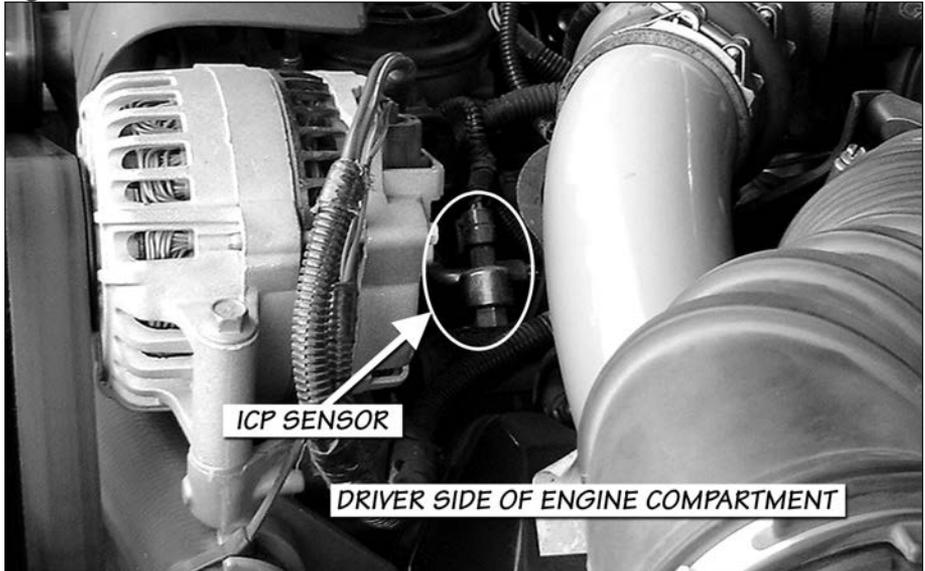


Figure 5: ICP sensor



Six-Gun ICP wiring harness. Double-check that both connectors are properly indexed and latched securely.

16. Route the Six-Gun wire harness (and EGT thermocouple lead wire harness, if so equipped) through the firewall to the passenger compartment, leaving enough slack harness length in the engine bay to allow for engine movement without straining the sensor connectors. When passing through the firewall, either make a hole in a factory grommet or drill a hole and use a new grommet. If drilling, check the backside of the target location to make sure there are no components that may be damaged by drilling.

17. Inside the truck cab, use a flat-blade screwdriver to remove the headlight control switch panel as show in **Figure 6**, taking care not to damage the dashboard surface. (The switch panel is held in place by several spring clips and may come out with some difficulty – using the screwdriver blade to reach past the panel and depress the clips individually while pulling outwards on the panel will ease removal.)

18. With the headlight control panel removed, place one of the supplied snap-on wire taps onto the light blue wire with a red tracer (LT BLU/RED) exiting the back of the instrument dimmer switch. Be sure that the wire tap snaps closed securely – firmly squeezing it shut with a pair of pliers will help ensure a proper electrical connection.

19. Locate the Six-Gun wiring harness where it passes through the firewall. Route the orange (ORG) wire with the shielded male connection tab up behind the dash and to the back of the headlight control panel. Plug the male connector tab into the wire tap installed in the previous step, then reinstall the headlight control panel into the dash. (The control panel should push easily in and snap

Figure 6: Headlight control panel removal



Figure 7: Fuse tap



back into place – if it does not, look for kinked or pinched wiring behind it.)

20. Remove the lower dash trim panel using a flat-blade screwdriver to undo the four (4) quarter-turn fasteners. Remove the fuse box cover. Using the factory fuse removal tool (located on the inside of the fuse box cover), remove the following fuse:

1999-01 Vehicles: Fuse #19

2002-03 Vehicles: Fuse #22

Affix the supplied fuse tap to the fuse as shown in **Figure 7**. To ensure that the Six-Gun module receives power from a 'fused' (protected) source, reinstall the fuse into the fuse block with the fuse tap oriented as follows:

1999-01 Vehicles: Left lead

2002-03 Vehicles: Upper lead

21. Connect the red (RED) wire of the power harness to the fuse tap installed

Figure 8: Recommended ground wire attachment point



in the previous step. Route the red (RED) wire out through the bottom of the fuse box and reinstall the fuse box cover. (It may be necessary to bend the fuse tap/connector and route the wire around several fuse box components to allow clearance for the fuse box cover to snap back into place.)

NOTE: Make sure the Six-Gun harness's inline fuse holder is routed outside the factory fuse box.

22. Using a $\frac{3}{16}$ " socket or wrench, remove the lower left fuse block mounting bolt shown in **Figure 8**. Attach the ring terminal of the black (BLK) wire from the power harness to this point, reusing the stock bolt.

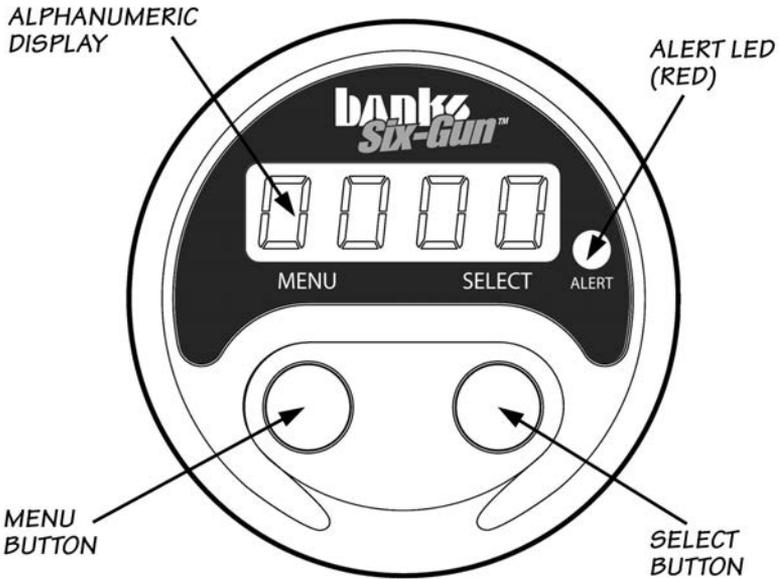
NOTE: If you will be mounting the Six-Gun module using anything other than the supplied bracket, please refer to the mounting instructions that accompanied your chosen gauge mount, and skip to step 25. Molded A-Pillar and dashboard

mounts, as well as additional digital gauges are available through Gale Banks Engineering.

23. If you will be using the supplied mounting bracket, choose a mounting location that is easily viewed and accessed from the driver's seat. Hold the bracket in place and mark through the middle of each mounting slot, then remove the bracket. Check behind the target hole locations to make sure that there are no components nearby that could be damaged by drilling, then drill both mounting holes using a $\frac{3}{16}$ " drill bit.

24. Install the bracket using the supplied mounting hardware and tighten finger-tight. After double-checking bracket position and alignment, tighten down the mounting hardware using a Phillips screwdriver and $\frac{3}{8}$ " wrench or socket.

Figure 9: Six-Gun module controls



25. Place the Six-Gun module into the mounting bracket and index it for optimum viewing from the driver's seat. Place the supplied mounting hardware over the module from the back, then install and tighten the mounting nuts.

26. Route the six-pin connector from the Six-Gun harness, the ten-pin connector from the power harness, and the two-pin connector from the pyrometer (if so equipped) to the back of the Six-Gun module and plug them in, making sure that the locking connector catches engage fully.

27. If using a module mounting method other than the supplied bracket, complete the mount installation per the supplied directions. Double-check all wire harness routing for proper

clearance around moving and sharp objects as well as heat sources, then use the supplied nylon tie straps to secure the wire harnesses safely away from any control linkages and the operator's feet underneath the dashboard.

28. Re-attach any previously removed interior trim panels, re-connect the negative battery cables and lower the vehicle. Start the vehicle, checking for normal engine operation and listening carefully for exhaust leaks and rattles. Re-torque any exhaust manifold fasteners as needed.

29. Please refer to the following sections for instructions on how to operate and troubleshoot your Six-Gun module.

-END, SECTION 2-

Section 3:

OPERATION OF THE SIX-GUN MODULE

If your Banks Six-Gun Diesel Tuner module has been properly installed as outlined in the previous section, it will power up and briefly scroll **'BANKS POWER'** across the screen, then display the current power level setting after you switch your ignition key on.

If the Six-Gun module detects any errors in installation wiring, sensor readings, or internal hardware functions, it will flash a message with the detected errors immediately after displaying the current power level setting. Please refer to the following section, 'Troubleshooting', for a full explanation of the error codes, their causes, and corrective actions.

NOTE: The Six-Gun module will automatically detect an EGT thermocouple when one is properly connected, and will configure the available menus accordingly. If you do not have a Banks EGT thermocouple installed and properly connected to the Six-Gun module, none of the EGT-related menus will be displayed.

If the Six-Gun module does not detect any errors in the system, it will monitor and display the selected default engine parameter in the following format:

- Boost is displayed in PSI – the letter **'B'** and one or two digits
- EGT is displayed in degrees Fahrenheit – three or four digits with no prefacing letter
- Fuel amount is displayed as a percentage of stock fuel amount entering the engine – the letter **'F'** and three digits
- VER displays the tuner part number and current firmware/calibration version

This is the Six-Gun module's normal display mode. Power level selection, EGT limiting, display options and diagnostics information are all accessed by pressing the 'MENU' button on the face of the module.

Setting Desired Power Level:

To set the desired power level from the normal display mode, press the 'MENU' button until **'PWR'** is displayed, then press the 'SELECT' button.

The current power level setting will be displayed – press the 'SELECT' button to continue operating at this power level and return to normal operating mode (the module will display a **'SAVED'** message confirming your selection), or press the 'MENU' button to cycle through power levels **'L1'** (stock) to **'L6'** (maximum performance).

Press 'SELECT' when your desired power level is displayed, and the Six-Gun module will instantly make the necessary corrections to engine fueling, display a **'SAVED'** message confirming your selection, and return to the normal display mode. If no buttons are pressed within five (5) seconds, the module will return to the standard display mode without saving any changes.

Quick Power Level Changes:

Power levels can also be quickly changed at any time from the normal display mode by pressing the 'SELECT' button. The currently selected power level will be displayed – pressing the 'SELECT' button again within five (5) seconds will increase the power level by one; repeatedly pressing the 'SELECT' button will cycle through power levels **'L1'-'L6'**.

Pressing the 'MENU' button will set the currently displayed power level as the new operating level, and display a '**SAVED**' message before returning to the normal display mode. If no buttons are pressed within five (5) seconds, the module will return to the standard display mode without saving any changes.

Setting Desired Maximum EGT Limit:

To set the desired maximum EGT limit and alarm level from the normal display mode, press the 'MENU' button until '**TLMT**' is displayed, then press the 'SELECT' button.

The current EGT limit will be displayed, in degrees Fahrenheit (the default value is 900 °F). Press the 'SELECT' button to continue operating with this EGT limit and return to normal operating mode (the module will display a '**SAVED**' message confirming your selection), or press the 'MENU' button to cycle through all available EGT limit options from 800 °F to 1500 °F, in 50 degree increments.

Press the 'SELECT' button when your desired maximum EGT limit is displayed, and the Six-Gun module will save your selection, display a '**SAVED**' message, and return to the normal display mode. If no buttons are pressed within five (5) seconds, the module will return to the standard display mode without saving any changes.

NOTE: When setting the maximum desired EGT limit, keep in mind that there can be up to a 250 °F difference in measured EGT based on thermocouple installation location. Gale Banks Engineering recommends that EGT not go over 1300 °F (1050 °F when measured at the turbocharger's exhaust turbine outlet) for more than a few seconds.

The Six-Gun module will now limit the measured EGT at or below this value as much as possible by reducing the amount of extra fuel that it injects into the engine. In addition, if the measured EGT increases past the selected limit, an alarm will trigger and illuminate the warning light as well as flashing the current EGT value on the display.

WARNING: If the Six-Gun Diesel Tuner is installed in tandem, or 'stacked' with another performance module that modifies the amount of fuel injected into the engine, the Six-Gun module may not be able to control EGT within the set limit as it is not able to control the functions of the secondary performance module.

ALWAYS CAREFULLY MONITOR YOUR EGT WHEN RUNNING STACKED PERFORMANCE MODULES.

Setting Default Display Options:

To set the desired default display parameter from the normal display mode, press the 'MENU' button until '**DISP**' is displayed, then press the 'SELECT' button.

The currently selected engine parameter is displayed – to continue operating with this parameter displayed by default on the Six-Gun module, press the 'SELECT' button – a '**SAVED**' message will be displayed and the module will return to the normal display mode. To cycle through the available parameter display options, press the 'MENU' button. '**EGT**' will display the Exhaust Gas Temperature from the thermocouple (if installed); '**BST**' will display boost (manifold) pressure; '**FUEL**' will display the amount of fuel entering the engine as '**VER**' and percentage of the stock fuel amount. '**VER**' will display tuner port number and current firmware/calibration version.

Press the 'SELECT' button to set the currently displayed engine parameter as the default display parameter – the Six-Gun module will save your selection, display a '**SAVED**' message, and return to the normal display mode where the parameter you have just selected will now be displayed on the module. If no buttons are pressed within five (5) seconds, the module will return to the standard display mode without saving any changes.

Setting the Boost Level Set Point:

To set the boost level at which the Six-Gun module will trigger a visual alarm warning you of a high boost condition, press the 'MENU' button while in the normal display mode until '**B SP**' is displayed, then press the 'SELECT' button.

The current Boost Level Set Point will be displayed, in PSI (the default value is 50 PSI). Press the 'SELECT' button to continue operating with this Boost Level Set Point and return to normal

operating mode (the module will display a '**SAVED**' message confirming your selection), or press the 'MENU' button to cycle through all available Boost Level Set Point options from 20 PSI to 50 PSI, in 1 PSI increments.

Press the 'SELECT' button when your desired Boost Level Set Point is displayed, and the Six-Gun module will save your selection, display a '**SAVED**' message, and return to the normal display mode. If no buttons are pressed within five (5) seconds, the module will return to the standard display mode without saving any changes.

NOTE: In the normal display mode 'T SP' (Transmission Temperature Set Point) is a non-functioning setting for this model vehicle. This menu will still be accessible and editable, but the settings it contains will not have any affect on the Bullet diesel tuner. Please disregard this setting.

-END, SECTION 3-

Section 4: TROUBLESHOOTING

NOTE: The Banks Six-Gun tuner for the Ford 7.3L Power Stroke engine increases the fuel pressure to increase performance. If the fuel system on your Ford 7.3L Power Stroke engine cannot supply the demanded fuel then an engine code will be set. The engine code set may be the P1211- (Injector Control Pressure is different than expected). If this occurs to you while driving then select a lower Six-Gun power level and continue to lower the power level until

you no longer set the engine code. The code clears itself after several ignition cycles.

The Six-Gun Diesel Tuner is equipped with self-diagnosing features that automatically check for proper sensor and module operation. Error codes that your module may display, either upon startup or after accessing the Diagnostics submenu, are listed below.

Error Code	Code Description	Course of Action
BST ERR1	The Six-Gun module has detected a fault in the Manifold Absolute Pressure (MAP) input circuit.	The listed error code(s) will occur when the Six-Gun module fails to receive any signal from the associated sensor, or receives an input signal from the sensor that is out of the normal operating range. Turn the vehicle and ignition completely off, check the Six-Gun harness connections at the sensor in question to ensure that they are fully engaged. Also check the 2- and 6-pin connectors at the back of the Six-Gun module to ensure that they are properly engaged. After checking all connections, restart the vehicle – if the Six-Gun module continues to display the same error message, please contact Banks Technical Service
ICP ERR2	The Six-Gun module has detected a fault in the Injection Control Pressure (ICP) input circuit.	
EGT ERR3	The Six-Gun module has detected a fault in the Exhaust Gas Temperature (EGT) input circuit.	
BSTO ERR4	The Six-Gun module has detected a fault in the Manifold Absolute Pressure (MAP) output circuit.	The listed output error(s) will be displayed when the Six-Gun module detects a problem with the associated output signal. Turn the vehicle and ignition completely off, check the Six-Gun harness connections at the sensor in question to ensure that they are fully engaged. Also check the 6-pin connector at the back of the Six-Gun module to ensure that it is properly engaged. After checking all connections, restart the vehicle – if the Six-Gun module continues to display the same error message, please contact Banks Technical Service.
ICPO ERR5	The Six-Gun module has detected a fault in the Injection Control Pressure (ICP) output circuit.	
INT ERR6	The Six-Gun module has detected an internal (module) error.	Turn the vehicle completely off then restart it – if the error is still present contact Banks Technical Service.

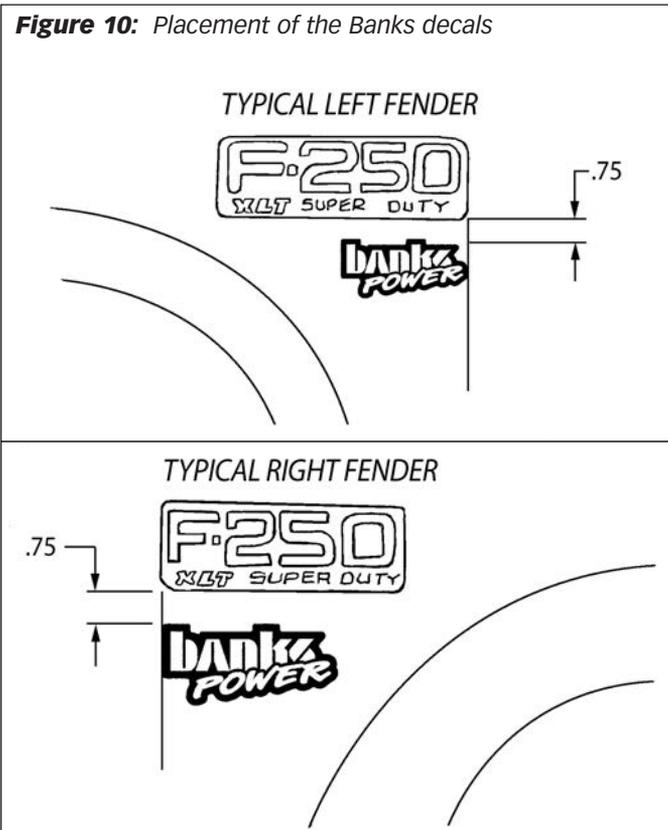
If the Six-Gun Diesel Tuner should ever need to be removed from the vehicle, the system includes a bypass plug that must be connected to the six-pin MAP/ICP harness in place of the module. Failure to utilize the bypass plug when

the Six-Gun module has been unplugged from the harness will generate a Check Engine light when attempting to start the vehicle.

-END, SECTION 4-

Section 5: PLACEMENT OF THE BANKS DECAL

Dimensions are given in **Figure 10**, below, to position the Banks decals to provide a clean factory appearance.



Notes

Notes

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