

Owner's Manual with Installation Instructions

Banks Bullet™ Diesel Tuner

**2003-2007 (235, 250, 305 and 325 HP) Dodge
5.9L Cummins (24-valve) ISB Pickup Trucks**

THIS MANUAL IS FOR USE WITH KITS 66522 & 66523

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bankspower.com



Products available from Banks Power for the '03-07 Dodge 5.9L



Banks iQ System (P/N 61148-61149)

- 5" touchscreen interface that can control the Banks Diesel Tuner on the fly.
- Interchangeable gauge display, read and clear codes, monitor engine diagnostics, log data, time your vehicles runs and much more.

Banks Monster® Exhaust System

Single (P/N 48640-48643, 48700, 48701, 48708)

Duals (P/N 48702-48707, 48709)

Sport (P/N 48777-48780)

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

Banks Ram-Air Intake System (P/N 42145)

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

Banks Ram-Air Intake Super-Scoop (P/N 42190-42191)

- Adds cooler denser air to the Ram-Air Intake housing, further increasing fuel economy, reducing smoke and lowers EGTs.

Banks Monster-Ram (P/N 42765-42766)

- Increased flow from intercooler
- Raises boost without increasing backpressure at the turbine

Big Hoss Intake Manifold System (P/N 42747)

- Increases flow and provides more uniform air distribution to the engine for more available power at a given boost level.

Banks Techni-Cooler® System (P/N 25980-25981)

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

Banks Exhaust Brake (P/N 55222-55229)

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

Banks SmartLock (P/N 55270)

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

Boost and Pyro Gauges (P/N 64507)

- Keep your engine safe by monitoring vital engine parameters.

Banks Billet Torque Converter (P/N 72515)

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

Banks Diesel Tuner

EconoMind w/switch (P/N 63725, 63793, 63795, 64507)

EconoMind w/iQ (P/N 63807, 63808, 63817, 63818)

Six-Gun w/switch (P/N 61022, 63797)

Six-Gun w/iQ (P/N 63809, 63819)

- 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 Speed-Loader (P/N 62981)

- Furthers the power output of the Banks Six-Gun and provides EGT limiting safety.

Banks BigHead® Actuator (P/N 24331)

- Achieves a higher peak boost over stock and gives you precise boost control that gives you crisp acceleration and more mid-range pulling power.

Banks Stinger Systems (P/N 49692-49699, 49708-49711, 49716-49721)

Contains:

- Ram-Air Intake system
- Monster Exhaust (single or dual)
- EconoMind Tuner w/ Banks iQ
- Big Head Wastegate Actuator

Banks PowerPack Systems (P/N 49700-49707, 49712-49715, 49722-49727)

Contains:

- Ram-Air Intake system
- Monster Exhaust (single or dual)
- EconoMind Tuner w/ Banks iQ
- Big Head Wastegate Actuator
- Monster-Ram
- Techni-Cooler System

Banks Six-Gun Bundle (P/N 49728-49735, 49744-49747, 49752-49757)

Contains:

- Ram-Air Intake system
- Monster Exhaust (single or dual)
- Six-Gun Tuner w/ Banks iQ
- Big Head Wastegate Actuator

Banks Big Hoss Bundle (P/N 49736-49743, 49748-49751, 49758-49763)

Contains:

- Ram-Air Intake system
- Monster Exhaust (single or dual)
- Six-Gun Tuner w/ Banks iQ
- Big Head Wastegate Actuator
- Monster-Ram
- Techni-Cooler System

**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.

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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 Bullet 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 Bullet Diesel Tuner has 3 power levels adjustable via controls on the interface diesel tuner. Level 1 is stock, Level 2 is towing and Level 3 is sport.

To prevent damage to the factory transmission, Banks recommends that both automatic and manual transmission vehicles do not exceed Level 2 while the vehicle is experiencing load (towing, climbing a steep grade, carrying a load, etc.).

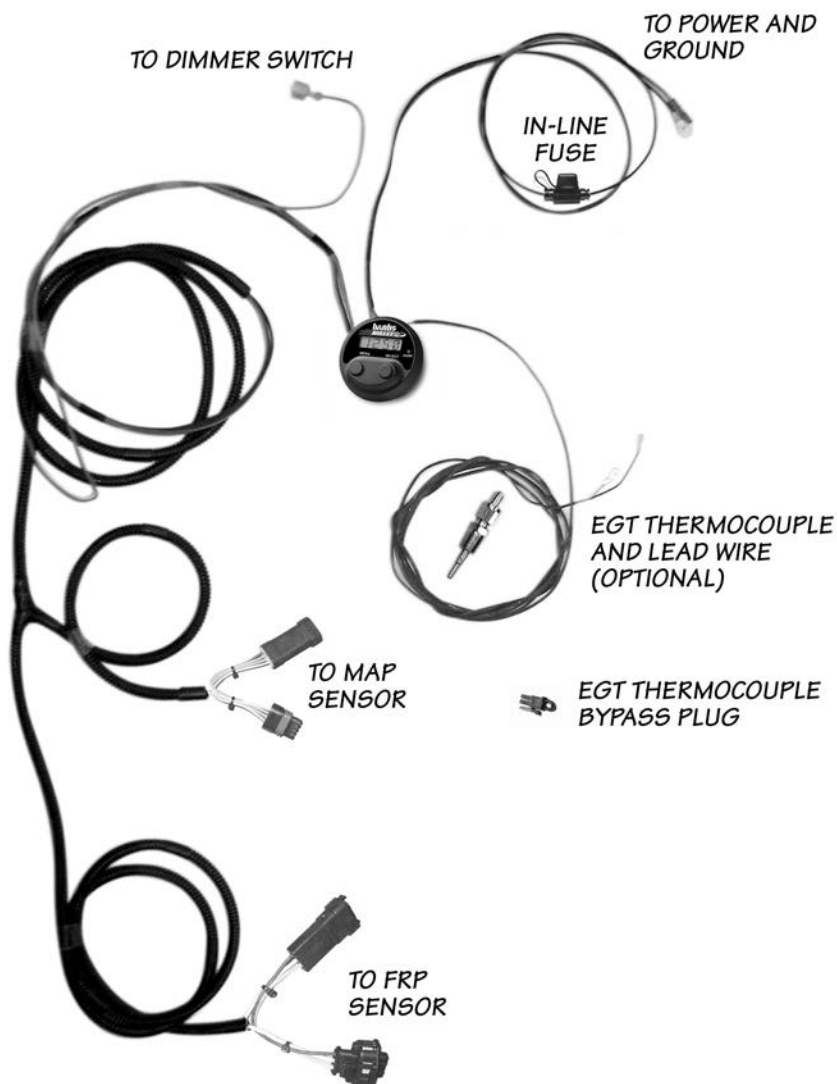
To use the Bullet Diesel Tuner in Level 2 while towing or climbing, airflow improvements must be made to lower the exhaust gas temperature (EGT) entering the turbocharger's exhaust turbine. The EGT should not exceed 1300° F (1050° F if measured at the turbine outlet) for more than a few seconds. Elevated 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.

Banks Bullet and Wiring Harness

Figure 1



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	325-hp Rated Engines: Std. Cab Long Bed	48700
	325-hp Rated Engines: Quad Cab Short Bed	48700
	325-hp Rated Engines: Quad Cab Long Bed	48701
	235-, 250- and 305-hp Rated Engines Std. Cab Long Bed w/ Cat	48640
	235-, 250- and 305-hp Rated Engines Quad Cab Short Bed w/ Cat	48640
	235-, 250- and 305-hp Rated Engines Std. Cab Long Bed w/o Cat	48641
	235-, 250- and 305-hp Rated Engines Quad Cab Short Bed w/o Cat	48641
	235-, 250- and 305-hp Rated Engines Quad Cab Long Bed w/ Cat	48642
	235-, 250- and 305-hp Rated Engines Quad Cab Long Bed w/o Cat	48643
Techni-Cooler® ('03-05)	235-, 250-, 305- and 325-hp Rated Engines	25980
Ram-Air® Intake System	235-, 250-, 305- and 325-hp Rated Engines	42145
Ram-Air® Filter	235-, 250-, 305- and 325-hp Rated Engines	41028
	Service Kit	90094
Thermocouple	235-, 250-, 305- and 325-hp Rated Engines	63042
Thermocouple Lead	235-, 250-, 305- and 325-hp Rated Engines	63060
Banks BigHead® Actuator	235-, 250- and 305-hp Rated Engines, '03-04	24331
Turbine Inlet Gasket	2003-07	93033

Section 1

EXHAUST GAS THERMOCOUPLE INSTALLATION INSTRUCTIONS

NOTE: If not installing or connecting an EGT thermocouple to the Banks Bullet 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 19.

If your kit does not have EGT sensing and limiting functions, please skip to **Section 2**.

1. The thermocouple monitors the temperature of the exhaust gases entering the turbocharger at the turbine housing. Installation requires that the exhaust manifold be drilled near the outlet of the manifold adjacent to the turbine housing. For this reason it is essential that the turbocharger be removed from the engine in order to clean out any metal chips from drilling that could cause turbine blade damage.

NOTE: The Cummins ISB engine uses a divided exhaust manifold. The thermocouple may be installed to sample exhaust temperature in either exhaust passage. We recommend the rear passage (toward the firewall).

2. Loosen the clamps that attach the air inlet tube to the air filter housing and to the turbocharger, and remove the air inlet tube from the vehicle. Remove the air filter housing from the vehicle. This will allow easier access to the turbocharger.

3. Loosen the upper hose clamp on the turbocharger oil drain-tube hose that is located between the two sections of the oil drain tube.

4. Disconnect the oil supply hose at the turbocharger. Disconnect the compressor outlet hose that goes to the intercooler.

5. Disconnect the turbine outlet pipe by loosening the V-band. Save V-band for re-installation.

6. Remove the turbocharger mounting nuts/bolts and the turbocharger from the exhaust manifold. Clean and inspect the exhaust flange mounting surfaces on the exhaust manifold. Make sure the surface is clean and dry.

CAUTION: Anytime the turbocharger is removed from the engine, take care that no foreign objects enter any of the turbocharger connections on the engine or the turbocharger. Foreign objects entering air, exhaust, or oil connections may cause major damage to the engine and/or turbocharger and is not covered under any warranty. Cover the open end of the intercooler pipe with a clean rag, as this pipe is very susceptible to foreign object entry.

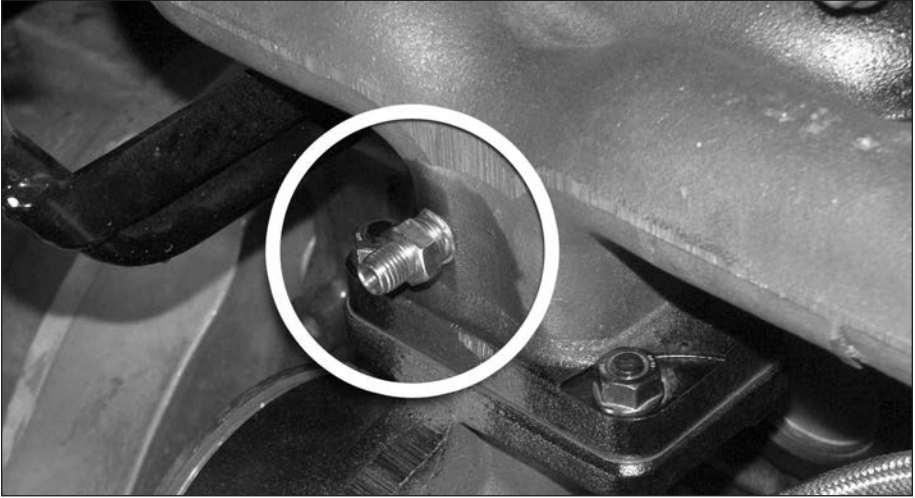
7. Stuff clean shop towels into the compressor outlet and inlet hoses to prevent contamination from entering the pipes. Cover the turbo oil drainpipe to avoid contamination.

8. Stuff a small clean shop towel or rag 4 to 5 inches into the rear exhaust manifold passage through the turbocharger mounting flange. This is to prevent chips from entering the manifold while drilling and tapping.

9. Use a 7/16" drill, keeping the drill perpendicular to the manifold surface and drill through the exhaust manifold into the rear passage as shown in **Figure 2**.

10. Tap the drilled hole with a 1/4" NPT pipe tap. Check the thread depth as you tap by periodically removing the tap and screwing the pipe coupling into the tapped hole. The coupling

Figure 2



should thread in 3 to 3½ turns hand tight. Do not install the probe in place at this time.

11. Remove all loose chips from the exhaust manifold. A shop vacuum or small brush will help. Now remove the rag using a welding rod or coat hanger bent into a hook.

CAUTION: Remove all the rags that are inside the compressor hoses and the exhaust manifold before re-installing the turbocharger.

12. Install the new turbine inlet gasket provided and apply a dab of anti-seize compound to the four turbo mounting studs. Install the turbocharger on the exhaust manifold. As the turbocharger is reinstalled, slip the oil drain tube into the drain hose. Tighten the turbocharger mounting nuts to 24 ft-lbs. Tighten the oil drain hose clamp.

13. Reconnect and tighten the turbo oil supply hose.

14. Reconnect the turbine outlet pipe to the turbocharger and secure it with the V-band.

15. Re-connect the compressor outlet hose that goes to the intercooler.

16. Re-install the air filter housing that was previously removed.

17. Install the thermocouple in the manifold using anti-seize on the threads.

18. If the vehicle has a Banks DynaFact thermocouple currently installed, remove the existing lead wire by cutting away the heat shrink covering the connection between the lead wire and thermocouple, removing the fasteners, and removing the existing lead wire from the vehicle.

19. Attach the thermocouple to the supplied thermocouple lead wire extension with the supplied nuts and bolts. Cover this joint with the supplied heat shrink tubing and heat until the tubing conforms to the joint. Make sure the entire joint is insulated.

20. Refer to Section 2 for instructions on routing the thermocouple lead wire to the Banks Bullet Diesel tuner.

-END, SECTION 1-

Section 2

INSTALLATION OF WIRING HARNESS CONNECTIONS AND BANKS BULLET DIESEL TUNER

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

2. In the engine compartment find the Fuel Rail Pressure (FRP) sensor on the fuel rail. It is located on the drivers side of the engine. Unplug the factory connector and plug it into the corresponding male FRP sensor connector on the Banks Bullet harness. Plug the Banks Bullet's female FRP sensor connector into the sensor. See **Figure 3**.

3. Locate the Manifold Absolute Pressure (MAP) sensor on top of the intake manifold. Unplug the factory connector and plug it into the corresponding male MAP sensor connector on the Banks Bullet harness. Plug the Banks Bullet's female MAP sensor connector into the sensor. See **Figure 3**.

4. Locate the rubber grommet on the drivers side firewall. Using a utility knife, make a 1.5-inch-long slit in the grommet next to the wire harness. Be careful not to cut or damage the harness. See **Figure 4** for the proper location of the required cut. Insert a screwdriver from the engine compartment into the cut hole and gently thrust it through the grommet.

5. Inside the vehicle, remove the lower dash panel beneath the steering column by removing the two (2) screws at the bottom of the panel. Retain the screws for re-installation.

NOTE: There are also two (2) clips located at the top corners of the panel, which hold the panel in place. These clips can be released by gently pulling on the corners of the panel. Use caution to avoid damaging the panel during removal.

6. Remove the electrical connector bracket on the left hand side of the

Figure 3

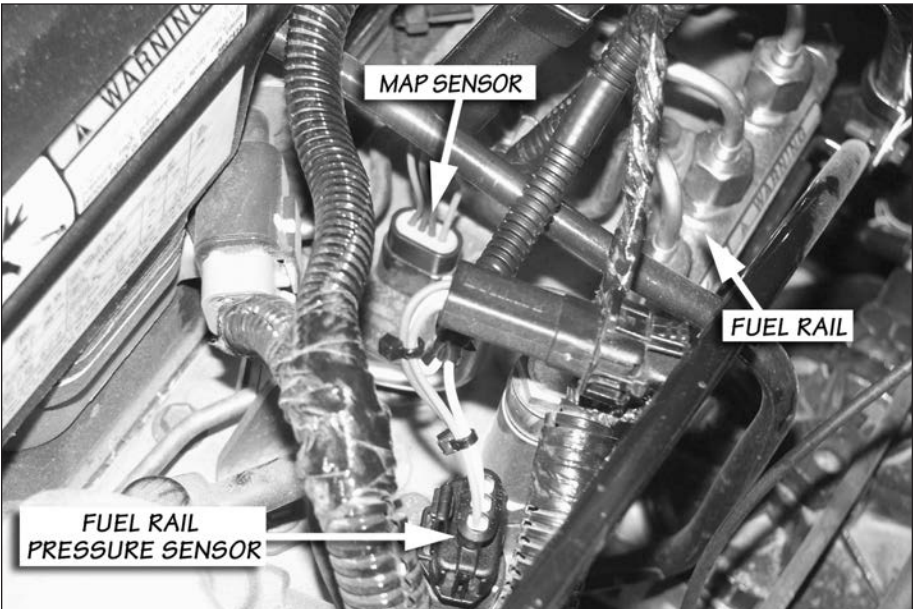
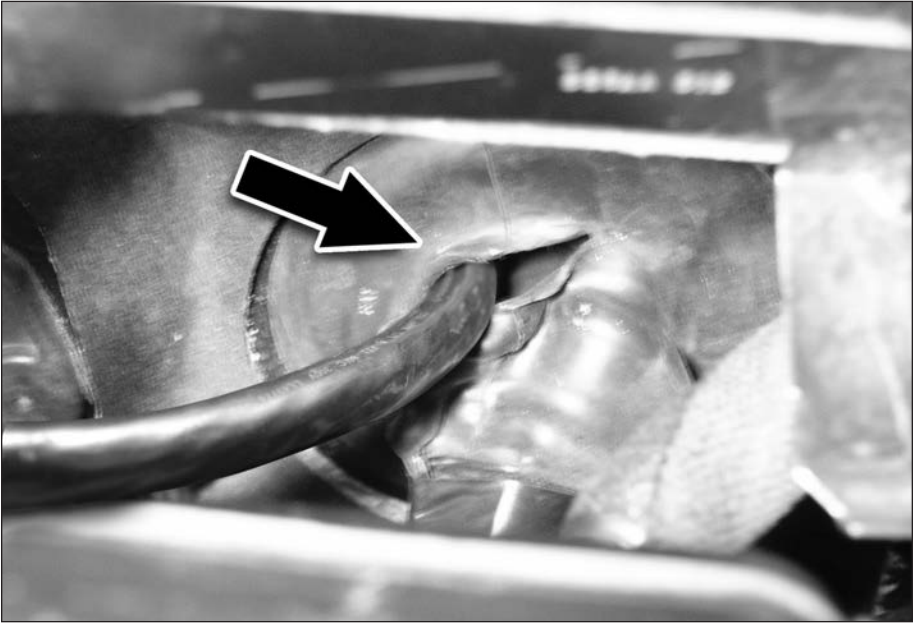


Figure 4



support below the steering column in front of the firewall by removing the two (2) bolts. This will allow access to the inner grommet. See **Figure 5**.

7. Route the Banks Bullet 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. Reattach bracket after passing the Banks Bullet wiring harness through the grommet.

8. 2003-2005 trucks Inside the truck cab, gently remove the headlamp control panel. See **Figure 6**.

2006-2007 trucks To remove the head lamp control panel remove the two Philip head screws located to the lower right of the headlamp control panel. See **Figure 7**. *Note: the lower dash panel previously removed in step 5 must not be installed to access screws.*

Now, gently unclip the upper left corner of the headlamp control panel.

NOTE: the headlamp control panel will not be removed from the dash. Pull back on headlamp control panel enough to access headlamp control connector.

9. With the headlight control panel accessible, place one of the supplied snap-on wire taps onto the ORANGE wire with a BROWN tracer (ORG/BRN) 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. See **Figure 8**.

10. Locate the Banks Bullet wiring harness where it passes through the firewall. Route the ORANGE 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

Figure 5

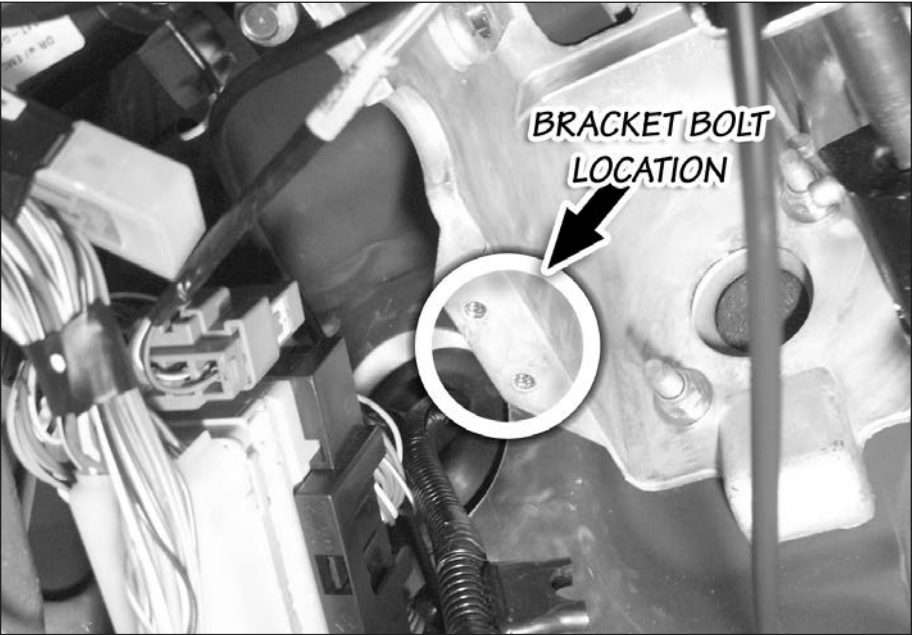


Figure 6 2003-2005 Trucks



Figure 7 2006-2007 Trucks



Figure 8

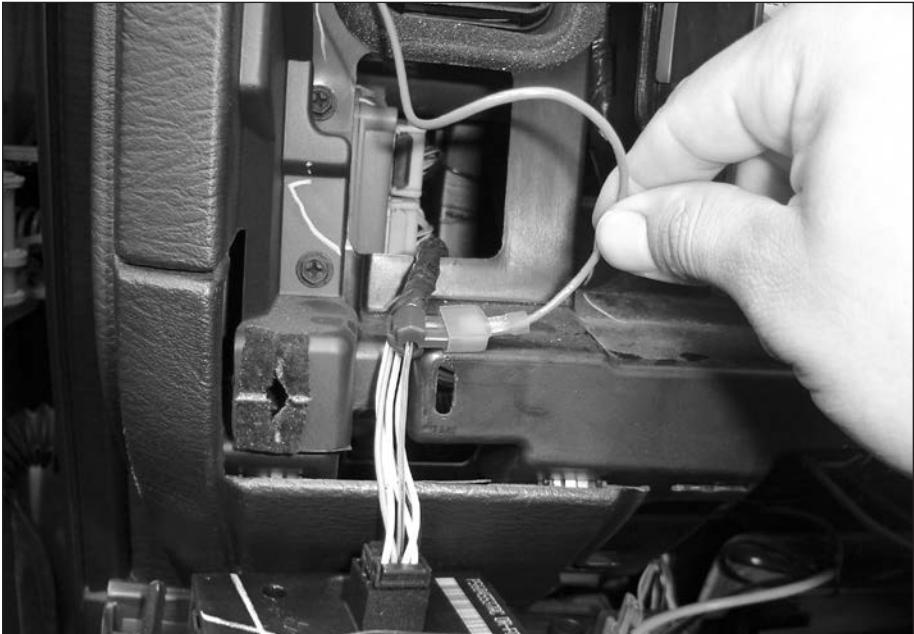


Figure 9



Figure 10 2003-2005 Trucks

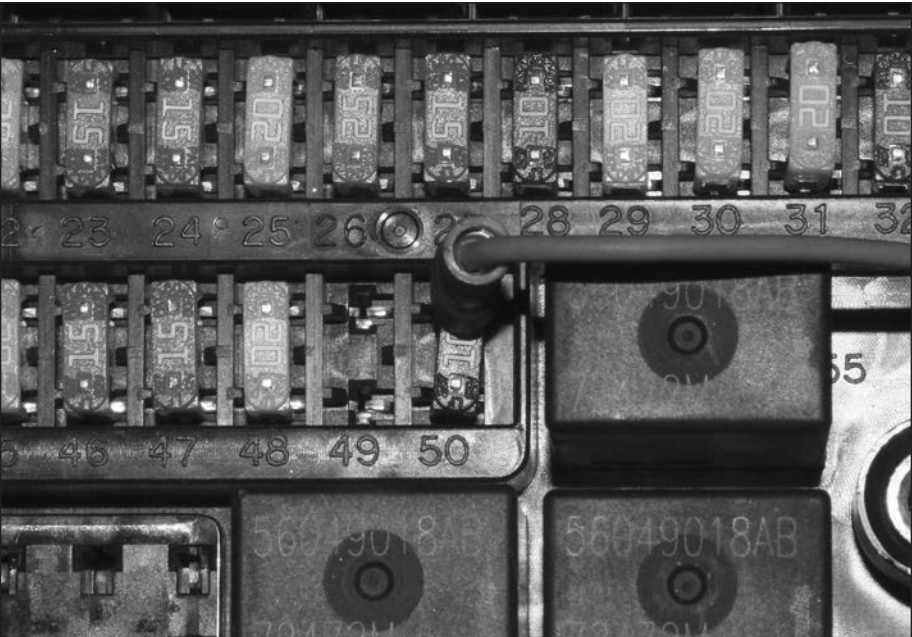


Figure 11 2003-2005 Trucks



Figure 12 2006-2007 Trucks



Figure 13



installed in the previous step, then reinstall the headlight control panel into the dash. (The control panel should push easily in and snap back into place – if it does not, look for kinked or pinched wiring behind it.) Reinstall the two Philip head screws if previously removed in step 8.

11. 2003-2005 trucks Use fuse #50. See **Figure 10**

2006-2007 trucks Use fuse #28. See **Figure 12**

Remove the fuse box cover, located in left front side of the engine compartment. Locate the mini-fuse applicable to your model year and remove it (see above). Install the mini-auto blade tap onto the removed mini fuse as shown in **Figure 9**.

Re-install the mini fuse with the attached blade tap into its previously removed location.

NOTE: **2003-2005 trucks** Install the mini-auto blade tap on the terminal leg closest to the firewall. This is the “hot” side of the circuit.

2006-2007 trucks Install the mini-auto blade tap on the terminal leg closest to the engine. This is the “hot” side of the circuit.

Caution: It is very important that you select the proper fuse. The Banks Bullet Diesel Tuner will not function properly if installed incorrectly.

12. 2003-2005 trucks It is recommended to cut a small notch in the fuse box cover as shown in **Figure 11**, to avoid a crimped or stressed wire.

2006-2007 trucks Route the RED power wire as shown in **Figure 12**.

All Years Locate the RED wire with the Power Terminal on the Banks Bullet

tuner wire harness and connect it to the mini-fuse blade tap. Replace the fuse cover and make sure not to pinch the RED power wire.

NOTE: Make sure the inline fuse holder is routed outside the factory fuse box.

13. In the engine compartment, locate the BLACK Ground wire with the ring terminal on the Banks Bullet Diesel Tuner wire harness. Install this ring terminal onto the fender ground stud, over the ring terminals already there, and re-install the nut. See **Figure 13**.

14. Route the six-pin connector from the Banks Bullet harness, the ten-pin connector from the power harness, and the two-pin connector from the EGT thermocouple leadwire (if so equipped) to the back of the Banks Bullet diesel tuner and plug them in, making sure that the locking connector catches engage fully.

15. If using a diesel tuner 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.

16. 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.

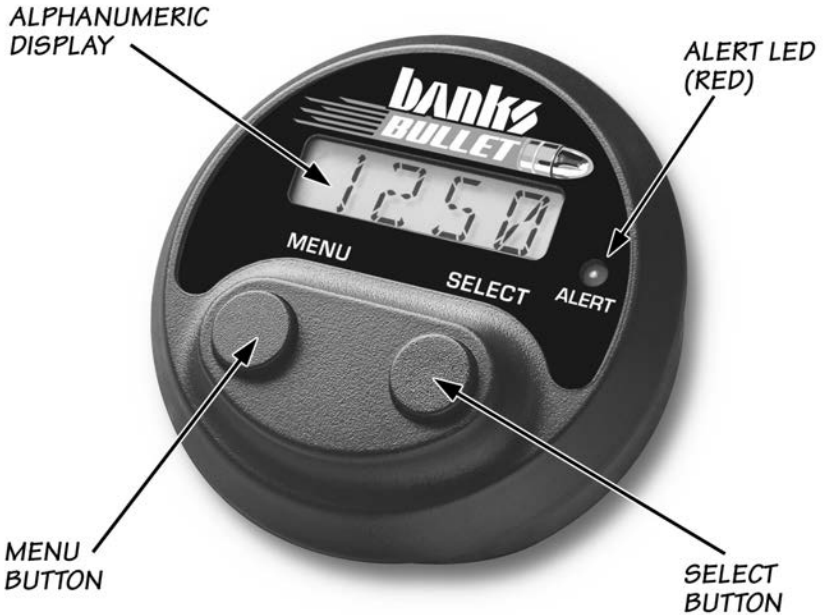
NOTE: As a precautionary check, go over the entire installation to ensure that all clamps are tight, wiring and hoses are properly routed, and connections are correct and tight. Make sure that the Banks Bullet wire harness is not lying in the way of the brake and gas pedals, or any moving parts.

-END, SECTION 2-

Section 3

OPERATION OF THE BANKS BULLET DIESEL TUNER

Figure 14: Banks Bullet diesel tuner controls



If your Banks Bullet Diesel Tuner 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 Bullet diesel tuner 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 Bullet diesel tuner 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 Bullet diesel tuner, none of the EGT-related menus will be displayed.

If the Bullet diesel tuner 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 Bullet diesel tuner'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 diesel tuner.

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 diesel tuner will display a '**SAVED**' message confirming your selection), or press the 'MENU' button to cycle through power levels '**STK**' (stock), '**TOW**' (tow) and '**SPT**' (sport).

Press 'SELECT' when your desired power level is displayed, and the Bullet diesel tuner 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 diesel tuner 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 '**STK**' - '**SPT**'.

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 diesel tuner 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 diesel tuner 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 Bullet diesel tuner 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 diesel tuner will return to the standard display mode without saving any changes.

The Bullet diesel tuner 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 50° 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 Bullet Diesel Tuner is installed in tandem, or 'stacked' with another performance diesel tuner that modifies the amount of fuel injected into the engine, the Bullet diesel tuner may not be able to control EGT within the set limit as it is not able to control the functions of the secondary performance diesel tuner.

ALWAYS CAREFULLY MONITOR YOUR EGT WHEN RUNNING STACKED PERFORMANCE DIESEL TUNERS.

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 Bullet diesel tuner, press the 'SELECT' button – a '**SAVED**' message will be displayed and the diesel tuner 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 a percentage of the stock fuel amount. '**VER**' will display tuner part number and current firmware/calibration version.

Press the 'SELECT' button to set the currently displayed engine parameter as the default display parameter – the Bullet diesel tuner 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 diesel tuner. If no buttons are pressed within five (5) seconds, the diesel tuner 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 Bullet diesel tuner 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 diesel tuner 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 Bullet diesel tuner 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 diesel tuner 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

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

If the Bullet 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/FRP harness in place of the diesel tuner. Failure to utilize the bypass plug when the Bullet diesel tuner has been unplugged from the harness will generate a Check Engine light when attempting to start the vehicle.

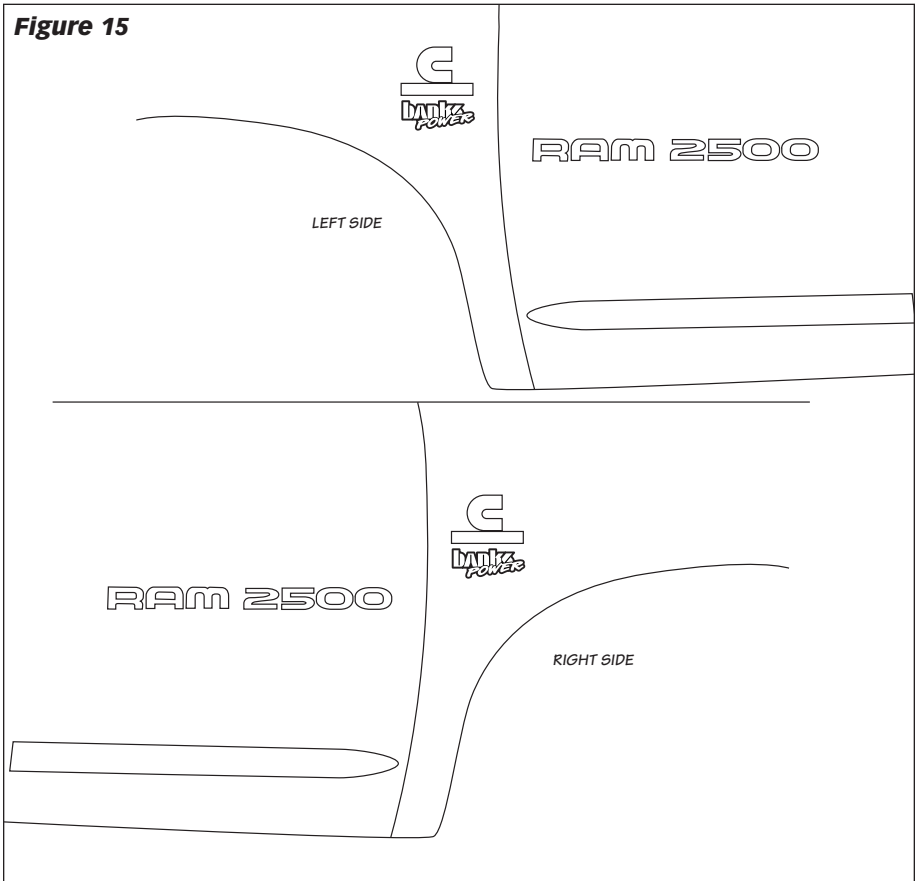
-END, SECTION 4-

Table 2		
Error Code	Code Description	Course of Action
BST ERR1	The Bullet diesel tuner has detected a fault in the Manifold Absolute Pressure (MAP) input circuit.	The listed error code(s) will occur when the Bullet diesel tuner 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.
FRP ERR2	The Bullet diesel tuner has detected a fault in the Fuel Rail Pressure (FRP) input circuit.	
EGT ERR3	The Bullet diesel tuner has detected a fault in the Exhaust Gas Temperature (EGT) input circuit.	Turn the vehicle and ignition completely off, check the Bullet 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 Bullet diesel tuner to ensure that they are properly engaged. After checking all connections, restart the vehicle – if the Bullet diesel tuner continues to display the same error message, please contact Banks Technical Service
BSTO ERR4	The Bullet diesel tuner has detected a fault in the Manifold Absolute Pressure (MAP) output circuit.	The listed output error(s) will be displayed when the Bullet diesel tuner detects a problem with the associated output signal. Turn the vehicle and ignition completely off, check the Bullet 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 Bullet diesel tuner to ensure that it is properly engaged. After checking all connections, restart the vehicle – if the Bullet diesel tuner continues to display the same error message, please contact Banks Technical Service.
FRPO ERR5	The Bullet diesel tuner has detected a fault in the Fuel Rail Pressure (FRP) output circuit.	
INT ERR6	The Bullet diesel tuner has detected an internal (diesel tuner) error.	Turn the vehicle completely off then restart it – if the error is still present contact Banks Technical Service.

Section 5

PLACEMENT OF THE BANKS POWER DECALS

Figure 15



-END, SECTION 5-

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