



Owner's Manual with Installation Instructions

Banks PowerPack[®] System

**Including Stinger[®]-Plus,
Stinger[®] and Git-Kit[®]**

with AutoMind[®] Programmer

**1999-2003 Ford Power Stroke 7.3L
Turbo-Diesel F450/F550 Trucks**

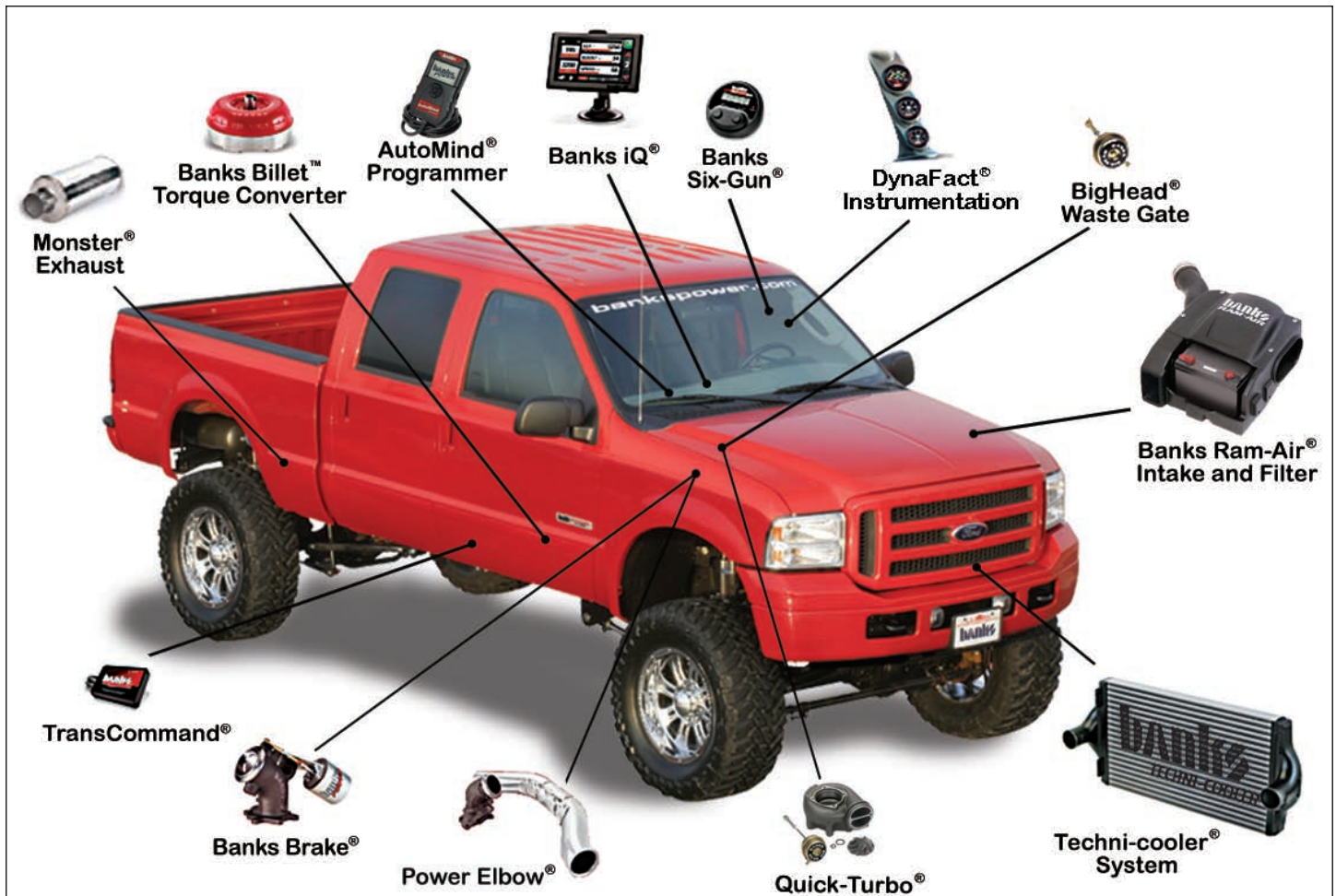
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Product Information & Sales: (888) 635-4565

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 Six-Gun 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
- AutoMind Programmer
- Big Head Wastegate Actuator

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**

General Installation Practices

Dear Customer,

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

Thank you.

1. For ease of installation of your Banks system, familiarize yourself with the procedure by reading the entire manual before starting work.

2. The exploded view (pages 10-11) provides 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's side, and the right side to the passenger's side.

4. Disconnect the 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; put the transmission in park; set the hand brake; and place blocks behind the rear wheels.

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 turbocharger and/or engine damage upon start-up.

NOTE: This Manual contains installation instructions for Monster Exhaust, Techni-Cooler, Quick-Turbo and AutoMind Programmer. Depending on the system you have purchased, some of these components may not be included. Review the entire manual and select the installation sections that apply to your product.

Tools Required:

- 1/2" and 3/8" drive ratchets with inch and metric sockets and 1/2" and 3/8" drive extension
- Inch and metric combination or open-end wrenches
- Standard screwdriver
- Clean shop towels or rags
- Pry-bar
- Reciprocating saw

Highly recommended tools and supplies:

- Inch-pound and foot-pound torque wrenches
- Penetrating oil or light lubricant spray

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Section 1

LEGAL & WARRANTY INFORMATION

Banks AutoMind Programmer Disclaimer of Liability and Limited Warranty

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

Please read these terms and conditions (the "Agreement") carefully prior to installing and/or using any BANKS Product (the "Product"). By installing and/or using the Product you agree to be bound by the following terms and conditions.

DISCLAIMER OF LIABILITY

The PURCHASER is responsible to fully understand the capability and limitations of his/her/its vehicle according to manufacturer specifications and agrees to hold Gale Banks Engineering, its owners, officers, directors, employees, and distributors (hereinafter "BANKS") harmless from any and all damage resulting from the failure to adhere to such specifications. BANKS expressly disclaims any liability for personal injury or damages. PURCHASER acknowledges and agrees that the disclaimer of any liability for personal injury is a material term of this agreement and agrees to indemnify BANKS and to hold BANKS harmless from any and all claims related to the purchase and use of the Product. Under no circumstance will BANKS be liable for any damages or expenses by reason of the use or sale of any such Product. PURCHASER is responsible to obey all applicable federal, state, and local laws, statutes, and ordinances when operating his/her/its vehicle, and agrees to hold BANKS harmless from any violation thereof. BANKS assumes no liability regarding the improper installation or misapplication of its Product. PURCHASER is solely responsible for any and all warranty issues from the automotive manufacturer.

LIMITATION OF WARRANTY

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

A defect is defined as a condition that would render the Product inoperable. This warranty does not cover deterioration of plating, paint, or any other coating. Due to the subjective nature of sound BANKS does not warrant for sound. BANKS liability is limited to

the repair or replacement, at BANKS' option, of any warrantable Product returned prepaid with a complete service history and proof of purchase to the factory. A valid proof of purchase is defined as a legible dated bill of sale from an authorized dealer. Repaired or replaced Product will be returned to the customer freight collect. If a replacement Product is not reasonably available BANKS will have the option to either replace the Product with a substantially similar Product or refund a pro-rated amount of the original purchase price for that specific Product. Any repaired or replacement BANKS Product will conform to the warranty for the unexpired duration of the warranty period for the original, nonconforming Product. Accepted warranty units which have been replaced become the sole property of BANKS. All BANKS Products are subject to the provisions stated herein regardless of mileage.

Product returned for warranty determination must be accompanied by a Return Material Authorization (RMA) number obtained in advance from a BANKS customer service representative. BANKS is not responsible for return freight on any delivery refused for not having an RMA number. BANKS will be the final authority on all warranty decisions.

This warranty shall not apply to any unit which has been improperly stored or installed; subjected to misapplication, improper operating conditions, used in race applications, used for off-road purposes, involved in accidents, subjected to neglect; or which has been improperly repaired or altered or otherwise mistreated or improperly maintained by the owner or his agent. This warranty is **VOID** for any new products purchased through auction websites.

Labor costs incurred by the removal and replacement of a BANKS Product, while performing warranty work, will be the responsibility of the vehicle owner. In no case does the obligation of BANKS exceed the original purchase price of the Product as indicated on the original bill of sale. This Warranty is non-transferable and coverage applies for the

BANKS Product installed on the original vehicle for the original purchaser of those Products.

THE PRECEDING LIMITED WARRANTIES ARE THE EXCLUSIVE WARRANTIES GIVEN BY BANKS FOR THE PRODUCT AND SUPERSEDE ANY PRIOR, CONTRARY OR ADDITIONAL REPRESENTATIONS, WHETHER WRITTEN OR ORAL. BANKS DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE

BANKS ALSO DISCLAIMS ANY LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO, LOSS OF USE, REVENUE OR PROFIT, COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, REPAIR LABOR, TOWING EXPENSE, RENTAL VEHICLES, HOTEL COSTS OR ANY OTHER INCONVENIENCE COSTS. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR GUARANTEES, EITHER EXPRESSED OR IMPLIED, AND SHALL NOT EXTEND TO ANY CONSUMER OR TO ANY PERSON OTHER THAN THE ORIGINAL PURCHASER RESIDING WITHIN THE BOUNDARIES OF THE CONTINENTAL U.S. OR CANADA. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

This Agreement will be governed by and construed under the laws of the State of California, without regard to conflict of laws principals. This warranty replaces all previous warranties.

*Ltd. warranty does not cover service conditions (i.e. soot buildup in shaft bushings due to out-of-tune engine, or excess heat-damage due to overly-rich fueling conditions)

-END, SECTION 1-

Section 2

END USER LICENSE AGREEMENT (EULA)

IMPORTANT-READ CAREFULLY: This End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) later referred to as "LICENSEE" and Gale Banks Engineering (hereinafter referred to as "Company" for the software product related to Banks iQ and Banks Automind Programmer later referred to as "SOFTWARE". By installing, copying, or otherwise using the SOFTWARE, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, do not purchase, install or use the SOFTWARE.

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- LICENSEE may not simultaneously use the SOFTWARE on more than one device unless they have purchased multiply devices for multiple vehicles.

- LICENSEE may use this SOFTWARE in compliance with all applicable laws and not for any unlawful purpose.

- LICENSEE may make a copy of the licensed SOFTWARE for backup purposes.

2. DESCRIPTION OF OTHER RIGHTS AND LIMITATIONS.

- LICENSEE may not reverse engineer, recompile, disassemble, modify, translate the SOFTWARE and/or make any attempt to discover the source code of the SOFTWARE.

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3. DISCLAIMER OF WARRANTY.

THIS SOFTWARE AND THE ACCOMPANYING FILES AND/OR UPDATES ARE DISTRIBUTED and SOLD "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OR MERCHANTABILITY OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED. LICENSEE USES THE SOFTWARE AT HIS/HER/ITS OWN RISK.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES. To the maximum extent permitted by applicable law, in no event shall Company or its employees, contractors, agents, distributors or suppliers be liable for any special, incidental, indirect, or consequential damages whatsoever (including, without limitation, damages for loss of business

profits, business interruption, loss of business information, loss of data, loss of business opportunity, loss or damages to property, injuries to any person or any pecuniary loss,) arising out of the use of or inability to use the SOFTWARE, even if Company has been advised on the possibility of such damages. In any case, Company's entire liability under any provision of this EULA shall be limited EXCLUSIVELY TO PRODUCT REPLACEMENT.

4. GOVERNING LAW

This agreement shall be governed by laws of the State of California, U.S.A. applicable therein. You hereby irrevocably and submit to a court of proper jurisdiction in Los Angeles County, California, U.S.A., and any competent Courts of Appeal therefrom. If any provision shall be considered unlawful, void or otherwise unenforceable, then that provision shall be deemed severable from this license and not affect the validity and enforceability of any other provisions.

Company reserves all rights not expressly granted here.

ACKNOWLEDGEMENT

By installing, copying, or otherwise using the SOFTWARE, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, do not purchase, install or use the SOFTWARE.

-END, SECTION 2-

Section 3

MONSTER® EXHAUST INSTALLATION (PART 1 OF 2)

NOTE: This Manual contains installation instructions for Monster Exhaust, Techni-Cooler, Quick-Turbo and AutoMind Programmer. Depending on the system you have purchased, some of these components may not be included. Review the entire manual and select the installation sections that apply to your product.

For Git-Kit installation, proceed to **Step 2**.

1. Replace the factory air filter element with the Banks Ram-Air™ filter.

MONSTER EXHAUST INSTALLATION

2. Raise the vehicle on a hoist or safety stands to provide access to the exhaust system. Loosen the clamp at the front of the muffler and pry the muffler and tailpipe hanger pins from the rubber hangers. Remove the muffler and tailpipe from the vehicle. Cutting the tailpipe may ease the process of removal.

WARNING: At the outlet of each exhaust manifold, locate the short section of tubing that feeds exhaust up to the turbocharger. Check these tubes to ensure that they are not loose, as we have found several vehicles with problems in this area. Correct this condition now or soon after installation of the PowerPack

components to eliminate dangerous exhaust leaks and poor turbocharger performance.

For Git-Kit installation, proceed to **Section 6**.

3. For 1999 vehicles with catalytic converter: Mark a point 4 inches from the forward edge of the weld at the inlet of the catalytic converter on the downward facing side of the pipe (see **Figure 1A**).

For 1999.5-2003 vehicles without catalytic converter: Mark a point 15½ inches back from the forward side of the 2-bolt flange of the intermediate pipe. Make the mark on the downward facing side of the pipe (see **Figure 1B**).

4. Loosen the two bolts at the front of the catalytic converter or intermediate pipe and pry the hanger pin on the pipe inlet from the rubber hanger. Remove the pipe assembly from the vehicle. Disconnecting the extension pipe from the outlet of the converter may ease the process of removal.

IMPORTANT: If the vehicle is equipped with a catalytic converter, it should be inspected. Diesel catalyts may become plugged with soot and can cause a restriction to exhaust flow, impeding performance. Shine a powerful flashlight into the inlet end of the converter. Observe the light through the other end of the converter. The full circle of

the flashlight should be visible without any blockage in the gridwork of the catalyst. If excessive soot is observed, the catalyst may need to be cleaned. **TAKE PRECAUTIONS to avoid blowing soot toward the work area or where it could be inhaled. ALWAYS use breathing protection.** Also inspect the catalyst for damage (i.e. chips, bent corners, etc.) to the gridwork. If your catalytic converter is damaged, it may be covered under your vehicle's emissions warranty.

5. Using a reciprocating saw, make a cut in the turbine outlet pipe about an inch downstream of the factory heat shield being careful not to damage the heat shield, as it will be reused. Remove the V-clamp that secures the factory turbine outlet pipe to the turbocharger outlet. Remove both portions of the pipe from under the vehicle.

6. At the mark previously made, cut through the pipe square with the remaining face of the pipe.

7. Cut through the metal straps that hold the heat shield onto the factory turbine outlet pipe. Secure the heat shield to the Banks Monster® T.O.P. turbine outlet pipe using the clamps provided (see **Figure 2**).

—END, SECTION 3—

Figure 1A- 1999 with Catalytic Converter

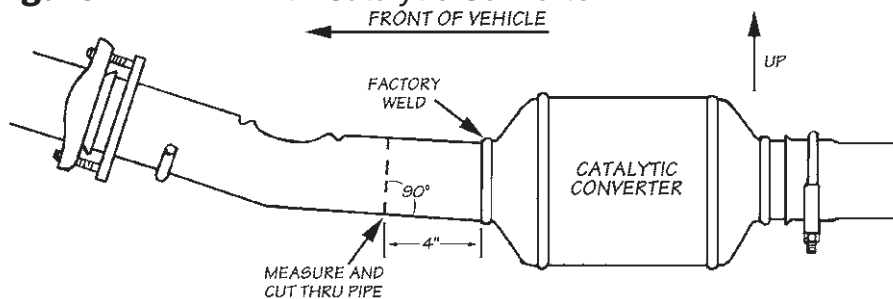


Figure 1B- 1999.5-2003 without Catalytic Converter

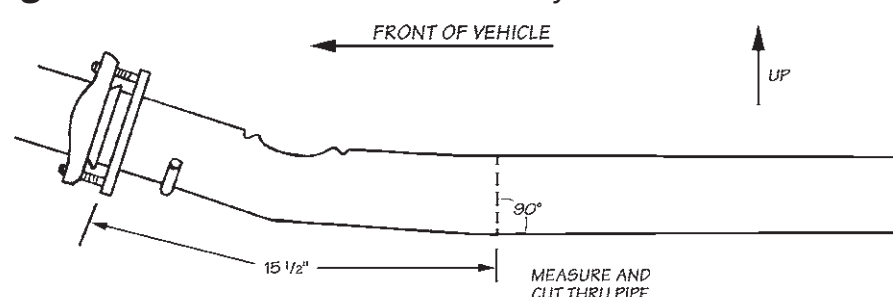
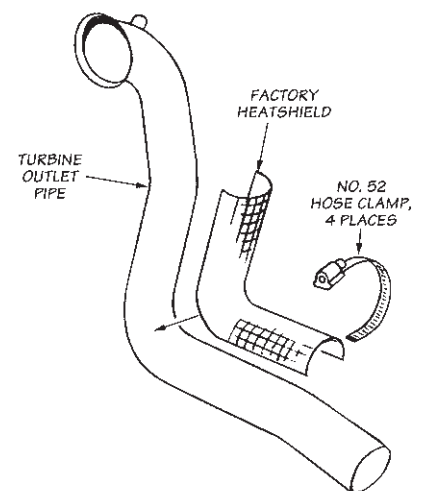


Figure 2- Securing Heat Shield



Section 4

TURBOCHARGER REMOVAL

For Stinger installation proceed to **Section 5, Step 4.**

TURBOCHARGER REMOVAL

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 rag, as this pipe is very susceptible to foreign object entry.

1. Remove the decorative plastic cover directly over the engine.
2. Loosen the clamp holding the air intake hose at the turbocharger compressor inlet. Pull the hose free of the turbo compressor. Disconnect the boost line attached to the nipple on the wastegate actuator. Disconnect wiring and plastic tubing attached to components on the turbo compressor discharge plenum casting.
3. Loosen the four clamps on the hoses connecting the compressor discharge plenum casting to the intake manifolds. Loosen the clamp attaching the plenum to the turbocharger compressor outlet and the intercooler duct. Remove the compressor discharge plenum from the engine. Cover the two intake manifold

hose nipples with clean rags to prevent foreign objects from entering the engine.

4. Disengage the exhaust backpressure control actuator rod by sliding the cover on the end of the rod back toward the turbocharger and pulling the rod downward. This rod is below the turbine housing; it is not the wastegate actuator rod that runs across the top of the turbocharger (see **Figure 3**).
5. At the rear of the turbine housing, loosen and remove the V-band clamp attaching the turbine housing to the exhaust inlet casting. Remove the two bolts attaching the turbocharger bearing housing to the pedestal base mounted on the engine. Remove the turbocharger from the engine by lifting while lightly tapping the turbine housing with a hammer.
6. Remove the two O-rings from the junction of the turbocharger bearing housing and pedestal mount. Place a clean rag over the oil passages in the pedestal mount and the exhaust inlet casting to prevent foreign object entry.
7. At the back side of the turbocharger, locate the small e-clip that retains the actuator rod end on the wastegate arm. Using a small screwdriver, carefully pry the clip off of the wastegate arm and retain for reuse.

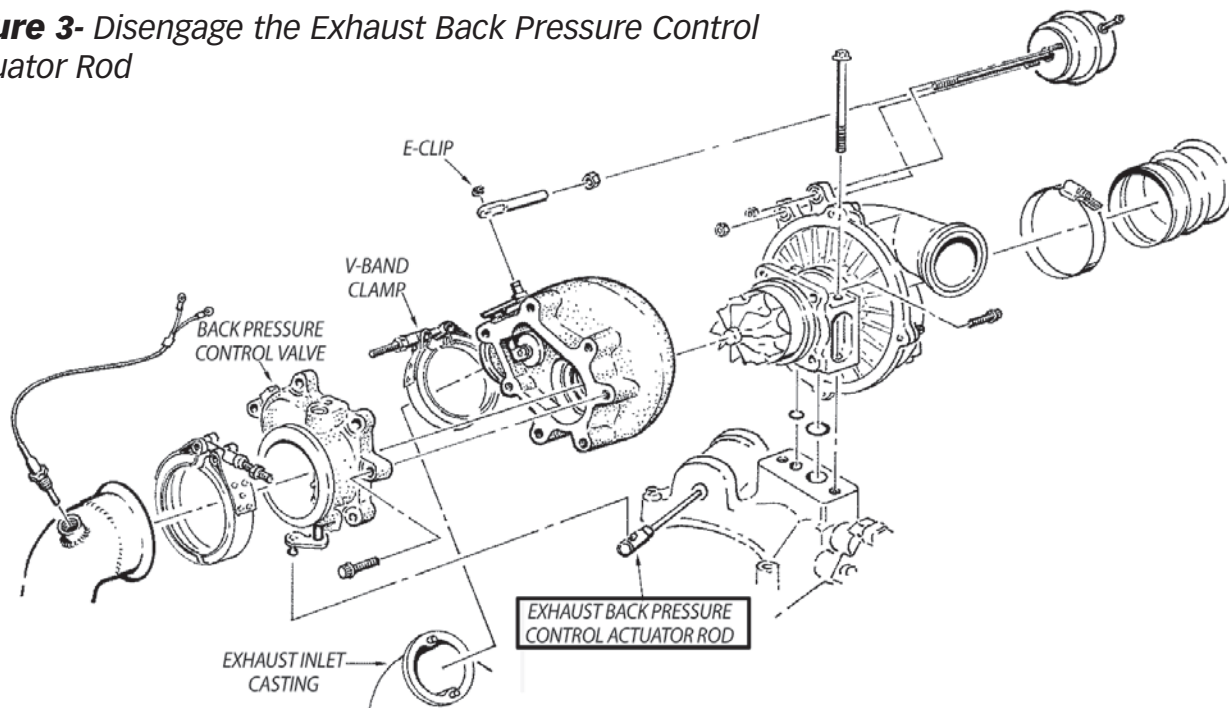
CAUTION: This clip is very small and is easy to lose. It may help to use a magnet to retain the clip as you remove it.

Loosen the two wastegate actuator nuts on the turbocharger compressor housing and remove the actuator.

8. Clamp the turbocharger assembly in a vise. Do not use the compressor inlet or outlet to clamp the turbocharger. The compressor housing is aluminum and could be damaged. Observe and mark the relationship of the turbine housing to the center section of the turbo assembly.
9. Remove the exhaust backpressure control valve from the factory turbine housing, and install it onto the new turbine housing with original hardware. Duplicate the orientation of the original assembly. Use anti-seize on the bolts.
10. Remove the four bolts securing the turbine housing to the turbocharger center section. If the turbocharger is more than a few months old, it may be necessary to spray some Liquid Wrench (or similar rust penetrating lubricant) into the joint between the turbine housing and the center section. Work the housing loose from the center section by tapping with a hammer and brass drift or a soft face hammer. Work from side to side and use plenty of lubricant until the housing is loose from the center section. Pull the housing straight off of the center section to avoid damaging the turbine blades.

—END, SECTION 4—

Figure 3- Disengage the Exhaust Back Pressure Control Actuator Rod



Section 5

QUICK-TURBO® AND COMPRESSOR WHEEL INSTALLATION

- 1.** For 1999.5-2003 model year: Remove the five bolts around the outside of the compressor cover and carefully remove the cover by pulling it straight off the turbocharger assembly, avoiding contact with the compressor wheel. Use caution to avoid damaging the sealing o-ring around the outside diameter of the compressor back plate.
- 2.** Secure the turbine wheel in a vise by clamping the hub of the turbine wheel. Remove the compressor wheel using a 5/8" socket. Install the new compressor wheel provided in the kit. Slide the wheel onto the shaft and lightly turn the wheel to engage the threads. If the wheel does not easily engage the threads, back the wheel off and try again. It may be helpful to listen for a small click while rotating the wheel counterclockwise, and then rotate the wheel clockwise again. Once the wheel has engaged the threads properly,

spin it on by hand until snug. Using a torque wrench, tighten the assembly to 100 in/lbs. Reinstall the compressor cover, making sure that the o-ring is properly seated against the backplate of the turbo. Reinstall the five bolts and tighten.

- 3.** Place Banks Quick-Turbo® turbine housing onto the center section, again paying careful attention to the turbine blades. Apply some anti-seize to the four bolts and reinstall them. Check the orientation of the assembly, then tighten the bolts.
- 4.** Install the Banks Big Head actuator onto the turbocharger. Tighten the lock nuts on the mounting studs and adjust the rod end until the hole aligns with the wastegate arm pin. Turn the rod end link clockwise an additional six full turns, such that it will add preload to the wastegate. Apply a regulated supply

of air pressure to the nipple on the actuator until the rod extends enough to slip over the wastegate arm pin. Install the e-clip onto the wastegate arm pin to retain the actuator rod. Tighten the jam nut down on the end link.

For Stinger installation proceed to Section 6.

- 5.** Reinstall the turbocharger onto the pedestal assembly on the engine. Make sure the sealing area on the pedestal assembly and the bottom of the turbocharger are clean, and the new O-rings provided are in place, then bolt the turbocharger to the pedestal. Reinstall the V-band clamp attaching the turbine housing to the exhaust inlet casting.
- 6.** Reinstall the air inlet hose to the turbocharger compressor air inlet.

—END, SECTION 5—

Section 6

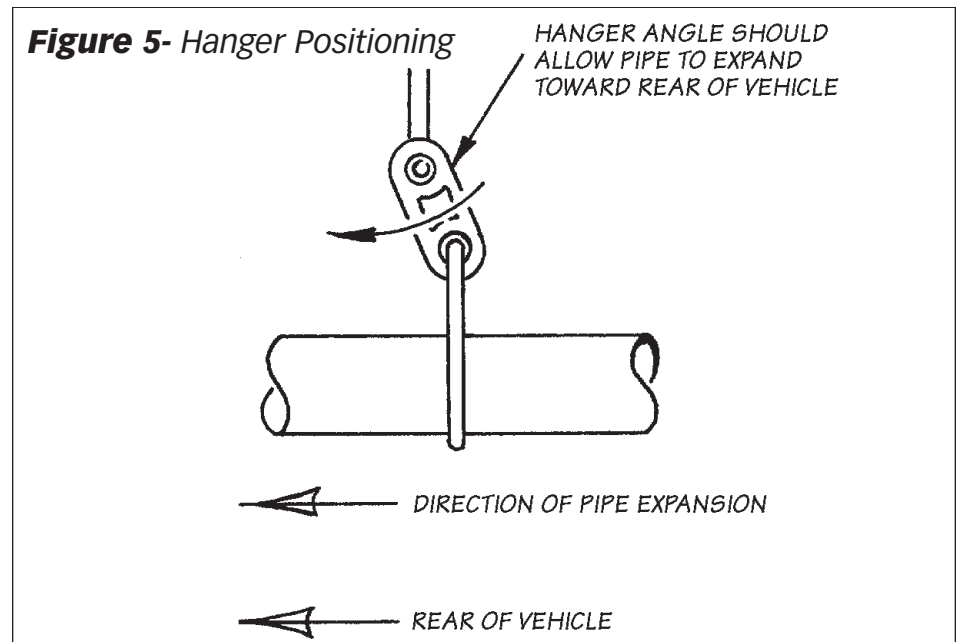
MONSTER® EXHAUST INSTALLATION (PART 2 OF 2)

- 1.** Loosely clamp the upper portion of the turbine outlet pipe to the exhaust backpressure control valve on the turbocharger. Slide two 3½-inch exhaust clamps over the lower portion of the turbine outlet pipe and install the pipe, aligning the hanger pin in the rubber hanger. Reinstall the catalytic converter or intermediate pipe by slipping the inlet into the lower portion of the turbine outlet pipe (see **Figure 4**).

NOTE: On some Powerstrokes a ground strap is bolted on back of the cylinder head. This bolt may interfere with the Banks turbine outlet pipe. If so, remove the bolt and relocate it in the cylinder head.

- 2.** Slide a 3½-inch exhaust clamp over the inlet of the muffler. Reinstall the extension pipe, if removed, and install the Banks Dynaflow® muffler onto the end of the intermediate pipe, aligning the slot with the raised tab. Insert the hanger pins into the rubber hangers at the front and back of the muffler.
- 3.** Slide a 3½-inch exhaust clamp over the outlet of the muffler. Install the Banks Monster® tailpipe over the rear axle and into the outlet of the Banks Dynaflow muffler. Insert the hanger pin into the rear rubber hanger.

Figure 5- Hanger Positioning



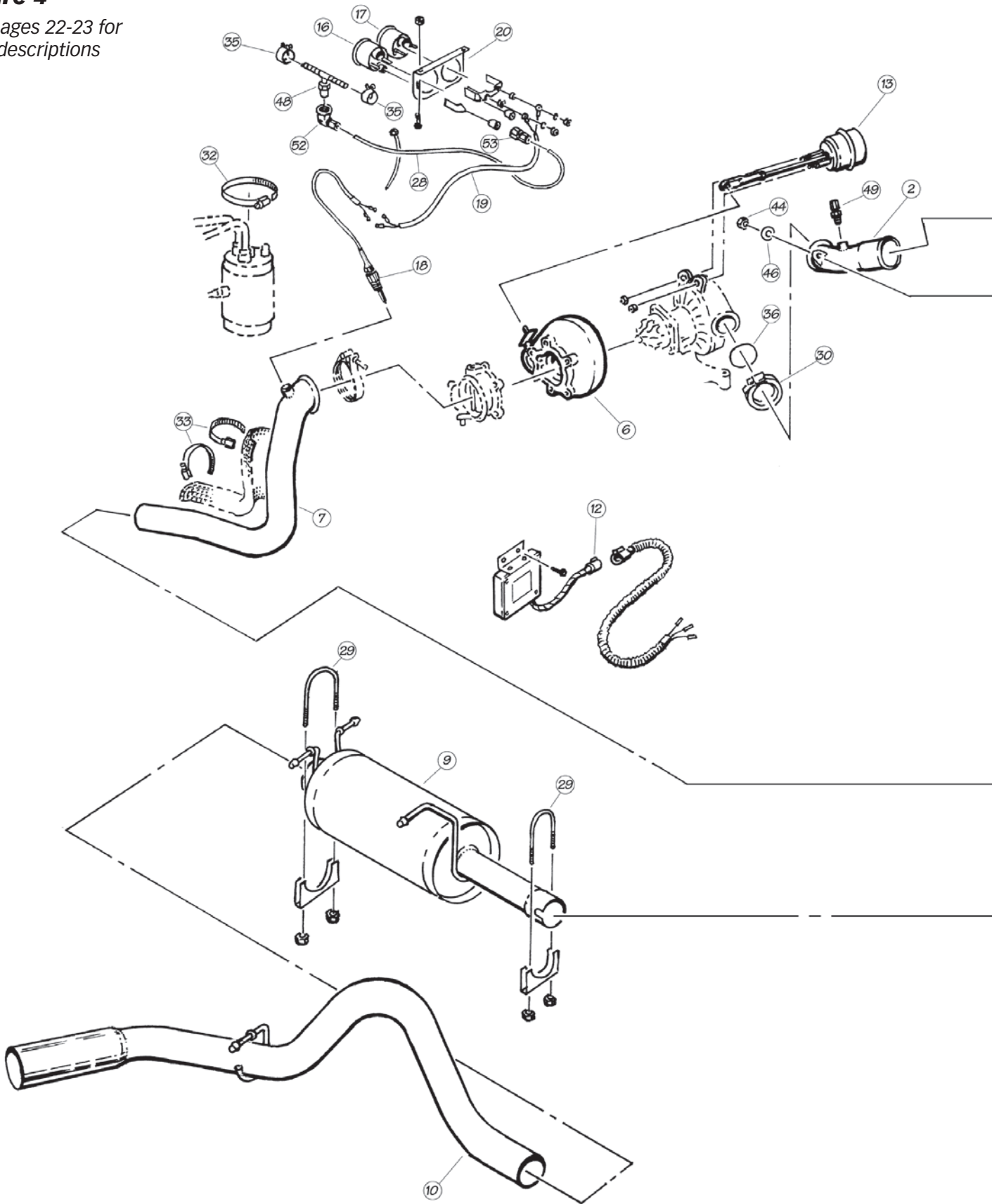
- 4.** Position all the exhaust components such that all the hanger pins are parallel with the ground and all exhaust tubing is located properly. Lightly tighten the clamps to maintain position. The tailpipe tip should be positioned 2 to 2½ inch below the bottom edge of the fender. All hangers should be level and hanging slightly forward (see **Figure 5**).

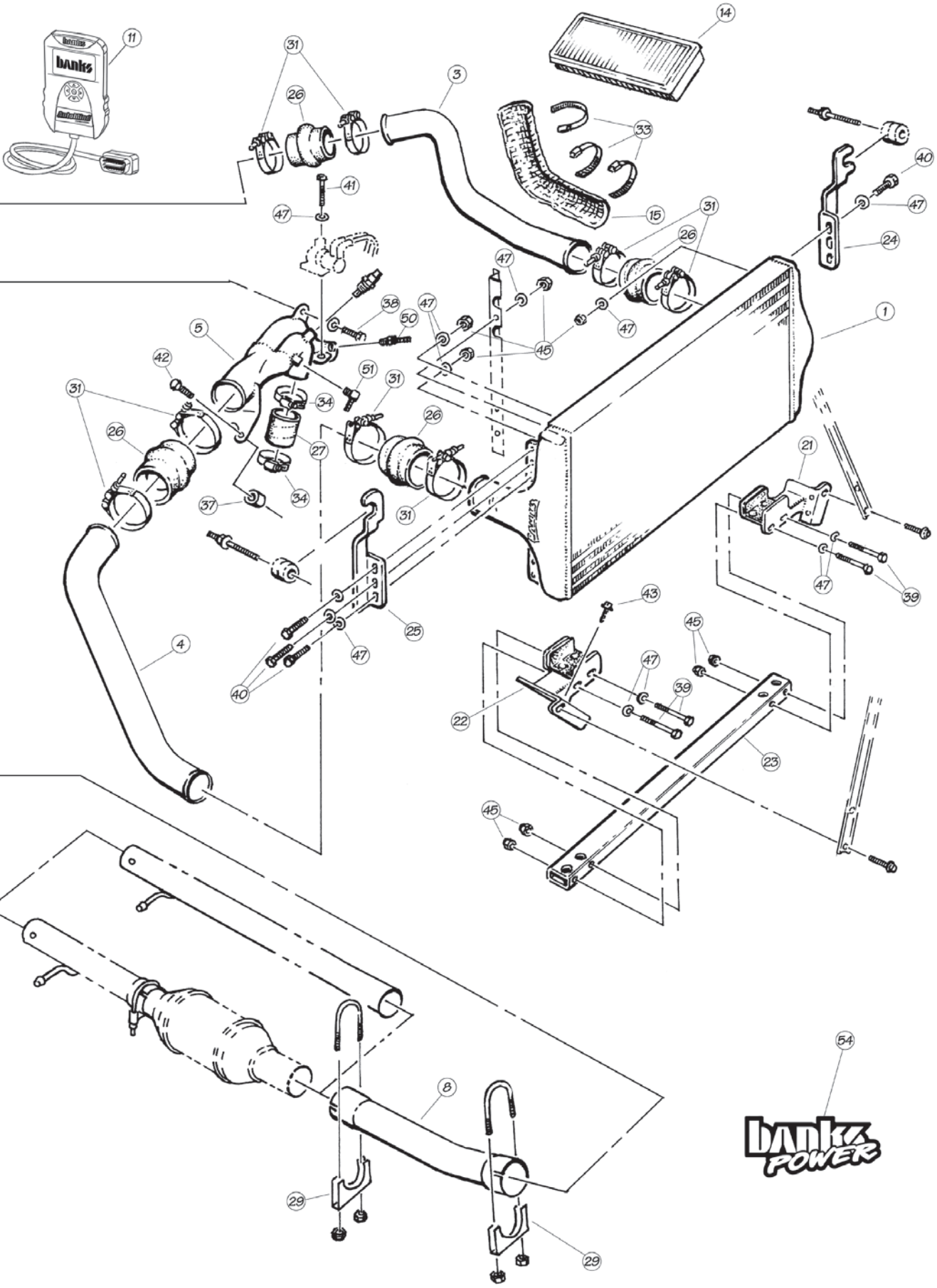
- 5.** With everything positioned properly, begin tightening all exhaust clamps, beginning with the V-band clamp at the turbine discharge, and working down stream.

—END, SECTION 6—

Figure 4

See pages 22-23 for
item descriptions





**banks
POWER**

Section 7

BANKS TECHNI-COOLER® INSTALLATION

For Git-Kit Installation, proceed to Section 9.

For Stinger Installation, proceed to Section 8.

For Stinger-Plus Installation, proceed to Step 23.

For PowerPack Installation, continue with Step 1.

TECHNI-COOLER INSTALLATION

1. Remove the factory intercooler plumbing from the vehicle. Loosen the clamps on the boost tubes and remove the boost tubes. (It is assumed that the compressor discharge plenum casting has been removed from the vehicle at this point.)

2. To remove the factory intercooler, it will be necessary to remove the grille assembly. At the front of the vehicle, remove the pushpins holding the rubber air deflector to the grille support and remove the air deflector. Remove the screws at the top of the grille, disconnect the lower clips with a small screwdriver, and remove the grille.

3. On each side, remove the bulb from the headlight assembly. Remove the two bolts below the turn signal/marker light combination and remove the assembly by pulling it directly forward. Remove the bulbs from the turn signal/marker lights or disconnect the connectors to separate it from the vehicle.

4. Remove the pushpin and the hood cable clip to disconnect the left air deflector from the radiator core support. Separate the left air deflector from the grille support by removing the pushpins from the bracket on the grille support. Repeat this process for the right side air-deflector, removing the pushpins from the core support and grille support.

5. Remove the upper a/c condenser brackets. Remove the grille support bracket attaching bolts and remove the grille support from the vehicle. The a/c condenser needs to be lifted at the same time as the grille support is pulled away from the vehicle. Pull from the bottom at first to pivot the support upwards as you pull forward. The a/c condenser will fit between the air deflector brackets as the support moves forward. Be cautious of the corners of the front fenders as the condenser is lifted up. It may be beneficial to cover the fender corners with masking tape or some other form of protection.

6. Scribe a line around the hood latch with a sharp instrument to mark the location of the latch, then remove the

latch from the upper radiator support. Do not remove the cable from the latch. Move the latch out of the way.

7. Remove the jacking tools from the core support and remove the coolant reservoir bolt from the jacking tool mount bracket. Remove the upper radiator brackets. Remove the upper diagonal brace bolts from the upper radiator core support. Remove the wiring harness from the intercooler mounting studs and remove the studs from the upper radiator support. Remove the six bolts on each end of the upper radiator core support cross bar and remove the upper core support cross bar from the vehicle. It may be necessary to pry the cross bar up out of the slot in the core support.

8. Pull the air conditioning condenser up out of the lower brackets and swing it up over the engine and out of the way. Be careful of the tubes that carry pressurized refrigerant. Do not bend the tubes as they are aluminum, and can be easily damaged. Using a bungee cord or similar equipment, temporarily suspend the condenser from the hood of the vehicle, out of the way.

9. Remove the bolt attaching the power steering cooler to the diagonal brace. Remove the diagonal braces from the lower radiator core support. Tilt the intercooler forward and remove it up and out of the vehicle.

NOTE: Later models do not have diagonal braces, unbolt power steering cooler from brackets as required.

10. Using the four ¼"-28 x 2" bolts, washers and nylock nuts, loosely bolt the new lower intercooler mounting brackets to the lower mounting crossbar. Position this mounting assembly into the vehicle as shown in **Figure 4**. Using the lower diagonal brace mounting holes as locations, position the crossbar assembly level in the vehicle and temporarily bolt the brackets to the core support using the lower diagonal brace bolts. Using the brackets as a template, mark the four holes necessary to complete the attaching of the lower mounting brackets, and drill four ⅛" holes in those positions. Attach the lower mounting brackets to these holes in the core support with the four #10 sheet metal screws provided. Now remove the two factory diagonal brace bolts.

NOTE: On later model vehicles without diagonal braces and associated bolt holes, slide the lower intercooler mounting crossbar, with brackets

loosely attached, up the sides of the core support opening until the brackets come against the bottom edges for the "ears" that overlap the inside edge of the core support opening. If the lower intercooler mounting brackets cannot be slid out far enough on the crossbar to contact the sides of the core support opening at this elevation, slide each bracket outward on the crossbar as far as it will go, then tighten the ¼" thru-bolts, set the crossbar assembly in the core support opening, and level it to the vehicle.

With the crossbar assembly positioned in the core support opening as indicated, scribe the core support through the four holes on the inside edges of the brackets, being certain that the front flanges of the brackets (with the single unused bolt hole) are against the face of the core support. Drill four ⅛" holes at the scribed locations, then attach the brackets to the core support with four #10 sheet metal screws provided.

11. Remove the rubber air deflector strips from the ends of the factory intercooler by snipping the plastic ties that run through the intercooler fins. Attach the deflectors to the inboard side of the 3-hole tabs on the Banks intercooler by installing one ¼"-28 x 1" hex bolt, washer, and nylock nut assembly through the bottom hole on the lower tab on each end of the intercooler and the existing bottom hole on each deflector strip. The remaining three holes on the deflector strips will not line up with the holes in the intercooler. Drill or punch a new set of holes in the deflector strips to line up with the upper holes in the lower tabs on the intercooler, then install a ¼"-28 x 1" hex bolt, washer, and nylock nut assembly in each of these locations. (See **Figure 4**) Drill or punch a third set of holes through each deflector strip to line up with the middle hole in the upper tabs on the intercooler.

12. Loosely bolt the upper brackets to the Banks Techni-Cooler as shown in **Figure 4** using four ¼"-28 x 1" hex bolts, ¼" washers and nylock nuts through the outboard holes in the two upper tabs on the intercooler.

13. Trim the rubber air deflector to clear the upper bracket attaching nuts so the deflector will sit flat against the tab on the intercooler. Attach the deflectors to the intercooler at the middle hole in each upper tab using another pair of ¼"-28 bolt assemblies. Do not tighten these bolts yet.

14. On the passenger side of the engine compartment, locate the air conditioning filter/dryer assembly. It will be necessary to modify the clamping bracket to allow clearance for the new tube assembly. Remove the upper filter dryer bracket by unbolting in three places. Using a hacksaw or other cutting tool cut the forward half of the clamp off in front of the elevated tab across from the opening of the clamp. Next cut the remaining tab off of the open side of the clamp. Reinstall the bracket using a #56 hose clamp provided to secure the filter/dryer unit to the bracket.

15. Slide three #52 hose clamps over the left boost tube. These will be used later to secure the heatshield in place. Set both boost tubes into place in the vehicle. Place two of the 3" silicone hump hoses onto the intercooler inlet and outlet, and fasten with the T-bolt clamps provided. Position two more clamps on the open ends of the silicone hoses, and place the intercooler into the vehicle slipping the boost tubes into the hoses on the intercooler and the intercooler into the rubber saddles on the lower mounting brackets. Do not tighten these clamps yet.

16. Place the air conditioning condenser back into its original position. Reinstall upper crossbar into truck, using the original bolts. Reinstall the diagonal braces to the radiator support and reattach the power steering cooler to the right side diagonal.

NOTE: Rotate the upper power steering fluid tube in the clip to allow the hose portion to clear the bottom of the right lower intercooler bracket.

17. Remove the factory rubber isolators from the factory intercooler and install them into the upper brackets of the Banks intercooler. Install the original studs through the isolators into the upper crossbar and tighten them. Tighten the upper mounting bracket bolts on the intercooler.

For Late 1999½–2001 models proceed to Step 23.

18. Remove the sensors from the factory compressor discharge plenum casting and install them into the Banks TwinRam intake assembly.

Remove the heating element from the factory compressor discharge plenum casting and install it in the Banks Twin Ram intake assembly.

19. Slide the two 2" silicone hoses up the legs of the TwinRam. Slip two #36 hose clamps over each hose and install

the TwinRam to the engine, sliding the hoses down the legs and onto the intake stubs, making sure that the hoses are positioned equally between the TwinRam legs and the manifold stubs. Tighten the clamps. Attach the bracket to the rocker cover using the 8mm x 30mm metric bolts and spacers provided.

20. Attach the wastegate control solenoid to the tab on the TwinRam with the supplied ¼-20 x 1¼" hex bolt and washer. Reconnect the wiring harnesses to the sensors.

21. Attach the right side boost tube to the TwinRam using a 3" silicone hump hose, and two T-bolt clamps.

22. Place the new O-ring into the recess in the compressor housing and attach the compressor discharge elbow to the compressor housing with the new v-band clamp provided. A small amount of bearing grease may be used to hold the o-ring in position while installing the elbow. Bolt the compressor discharge elbow to the TwinRam through the tab provided for this purpose using the 5/16" bolt, washers, and nylock nut provided. Install a 1/8-inch NPT x 1/8-inch compression fitting (supplied in the boost gauge kit) in the bung on the compressor discharge elbow. Sparingly apply pipe sealant tape or paste on the male pipe threads, and tighten the hex on the fitting body (NOT the compression nut).

23. Place the O-ring into the recess in the turbo compressor outlet and reinstall the factory compressor discharge plenum casting on the turbocharger. A small amount of bearing grease may be used to hold the O-ring in position while installing the casting. Slide the hump hoses on the boost tubes onto the compressor plenum discharge casting. Reconnect any wiring or sensor tubes to components on the compressor discharge casting. Reconnect boost line to wastegate actuator.

24. To reconnect the exhaust backpressure control valve, hold the cover on the end of the rod back and have someone start the engine. When the rod extends after a few seconds, push it up onto the valve linkage and allow the cover to snap back into position.

25. Make sure that the ignition is off, then disconnect all three connectors from the PCM for easier accessibility to the wires.

26. While engine is running, check for oil leaks around the base of the turbocharger center section or the pedestal mount. Repair any leaks before continuing.

NOTE: The most likely cause of an oil leak in this installation is a pinched O-ring at the base of the turbocharger.

For Stinger-Plus installation proceed to Section 8.

27. Reposition the left and right air deflectors back into their original positions, and use the pushpins to attach them to the radiator support. Reattach the wiring harness removed from the intercooler mounting studs. Reinstall the original radiator mount brackets onto the radiator upper support. Tighten the bolts. Reattach the radiator overflow tank to the upper radiator bracket. Reinstall the jacking tools to the core support. Reinstall the grille support to the vehicle using the original hardware. Reinstall the air conditioning condenser upper brackets. Reattach the right and left air deflectors to the grille support with the original hardware. Reinstall the hood latch in its original position.

28. Reinstall the light bulbs into the turn signal/marker light combinations, and reinstall the combinations into the vehicle. Press them firmly, straight back into the attaching clips and bolt them into place. Reinstall the headlight bulbs into the headlight assemblies. Be careful not to touch the headlight bulbs themselves with your fingers, as oil from your skin can cause damage to the bulbs. If necessary, clean the bulbs thoroughly with rubbing alcohol before reinstalling them.

29. Turn on the headlights and turn signals briefly to check for proper operation.

30. Reattach the upper radiator air deflector to the grille support and upper radiator support with the plastic pushpins previously removed. Reinstall the grille by pushing it into the lower clips. Reinstall the original screws.

31. Recheck all clamps to ensure that they are tight before driving the vehicle.

–END, SECTION 7–

Section 8

DYNAFACT® INSTRUMENTATION INSTALLATION

1. If gauges are being installed into an existing gauge panel, this step may be skipped. If gauges and a gauge panel or console are being installed, choose a location where the driver can easily view the gauges. This will typically be to the right of the accelerator pedal, under the lower edge of the dash panel. Mount the gauge panel with the machine screws, washers, and nuts provided.

2. Install the DynaFact pyrometer probe (supplied in the pyrometer kit) in the 1/4" NPT bung located at the top of the turbine outlet pipe. Use anti-seize compound on the threads. Connect the lead-wire to the sensor with the supplied screws. The wires are different lengths to prevent cross connecting. Make sure that the screws are tight. Slip the heat shrink tubing provided over the wire ends.

3. Supply moderate heat to the heat shrink tubing to seal the connections. A heat-gun or lighter works well.

4. When passing through the firewall either make a hole in a factory grommet

or drill a hole and use a new grommet. If a hole needs to be drilled, drill a 5/16" hole and deburr it on both sides, so that the wiring or tubing does not get cut as it passes through the hole. For added protection, wrap the wiring with several layers of electrical tape in the area where it passes through the hole. When drilling, check the backside to make sure that there are no components blocking the backside of the hole that would be damaged by drilling.

5. Route the pyrometer lead-wire up and across the top of the firewall then down and through the hole in the firewall. Inside the vehicle, route the wire to the gauge location. If routing the lead-wire under the carpet, avoid placing it where the driver's feet will rest on the wire. Tie the wire to existing wire looms and hoses with the cable ties provided.

6. Position the gauge through the console or gauge panel. Slip the plastic U-clip, provided with the pyrometer, over the studs on the rear of the gauge and tighten the nuts, provided.

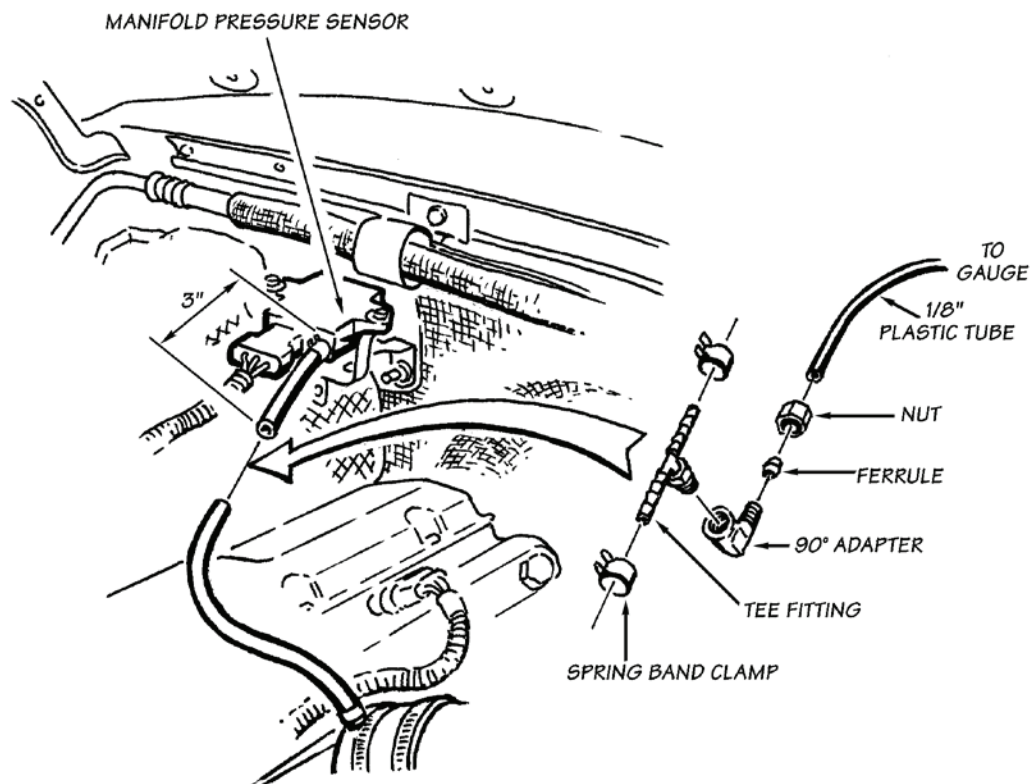
IMPORTANT: Remove the bare shorting wire from between the gauge terminals before connecting the lead-wire to the pyrometer. Attach the spade connectors to the back of the gauge. Connect the yellow wire to the (+) terminal and the red wire to the (-) terminal. If the lead-wires are accidentally reversed, the gauge will read backwards.

7. Pull any excess wire through the firewall, coil it and secure it up under the dash, out of the way. Do not shorten the lead-wire.

NOTE: If it is necessary to replace one of the terminal ends, use a crimp tool only. Do not solder to the wires.

8. Locate the rubber hose connecting the intake manifold on the passenger side to the pressure sensor mounted on the firewall. Cut through this hose at a point 3" below the sensor. Install the 1/8" hose by 1/8" NPT tee fitting and the spring band clamps, provided, between the cut ends of the hose as shown in **Figure 6**.

Figure 6- Adapter Positioning



9. Install one 1/8" NPT female by 1/8" compression 90° fitting onto the threaded end of the tee. Sparingly apply pipe sealant tape or paste on the male pipe threads, and adjust the 90° fitting to point back toward the firewall, as shown in **Figure 7**. Do not allow any sealant to cover the small hole in the fitting. Do not over-tighten the plastic fitting.

10. Install one end of the 1/8"-diameter plastic tube provided into the compression fitting on the plastic tee or the fitting on the compressor discharge elbow (PowerPacks only) and tighten the nut. Be sure the plastic tube cannot be pulled out of the ferrule, but do not over-tighten the nut.

11. Route the free end of the tube up and along the top of the firewall toward the brake master cylinder assembly. Use caution to avoid kinks in the line. Tie the tube to existing wires and hoses with the cable ties provided. Follow the routing of the pyrometer lead-wire through the firewall.

12. Route the plastic tube to the gauge panel and cut the tube to the proper length. Install the gauge through the panel or console using the U-clamp and two hex nuts provided with the gauge.

13. Install the 90° elbow fitting onto the connection at the back of the gauge. Use Teflon thread sealer on the male threads of the gauge nipple. Do not allow any sealant to cover the pin-sized hole in the end of the gauge nipple.

14. Insert the tube into the nut and ferrule on the adapter fitting at the gauge, then tighten the nut against the tube and ferrule. Do not over-tighten.

15. Connect the 4-pin connector of each gauge into the back of its corresponding gauge.

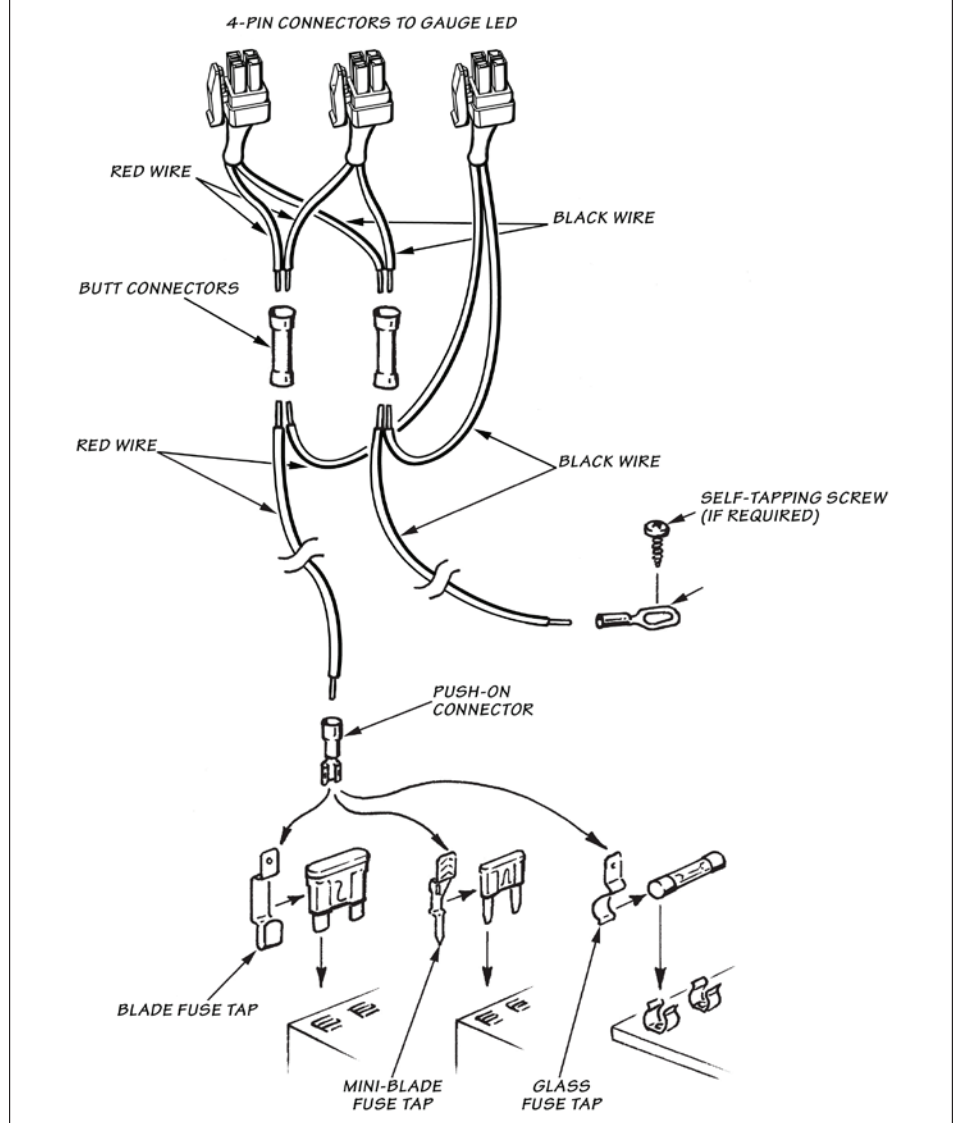
a. Crimp the remaining Black and RED wires from each 4-pin connector gauge harness to the butt connectors as shown in **Figure 7**.

b. Strip one end of the RED wire and crimp it to the butt connector containing the RED wires from step 'a'.

c. Strip one end of the BLACK wire and crimp it to the butt connector containing the BLACK wires from step 'a'.

d. Route the RED wire to the fuse box. Locate the appropriate fuse for instrument lighting in the owner's manual. Cut the RED wire as required and strip the end. Crimp the push

Figure 7- Gauge Connections



on connector to the RED wire and connect to the fuse as shown in **Figure 7**. Alternatively, locate power wire to dimmer switch and install T-tap. Cut the RED wire as required and strip the end. Crimp the push on T-tap connector to the RED wire and connect to T-tap on dimmer power wire.

e. Locate a metal surface that will serve as an acceptable chassis ground. Cut the BLACK wire to a sufficient length that will allow it to reach the chassis ground and strip the end. Crimp the ring terminal to the BLACK wire as shown in **Figure 7**.

f. Drill a 1/8" hole, if required, to attach the ring terminal to the chassis ground.

CAUTION: If drilling, check the backside to make sure there are no components that may be damaged by drilling.

g. Use the supplied self-tapping screw to secure the ring terminal to the chassis ground.

NOTE: On vehicles with an automatic transmission, complete the TransCommand installation before proceeding.

—END, SECTION 8—

Section 9

PREPARING VEHICLE & CONNECTING BANKS AUTOMIND® PROGRAMMER

Follow the vehicle preparation steps to ensure a complete program installation. These steps must be performed prior to installing the Banks AutoMind calibration.

WARNING

• **Failure to follow proper instructions can result in a damaged or disabled ECM (Engine Control Module).**

• **Do not perform any operations on Banks AutoMind Programmer while vehicle is running. The vehicle must be parked and engine OFF.**

Precautions for Calibration Process

The vehicles Batteries must be fully charged and in good condition before using the Banks AutoMind Programmer.

NOTE: Always turn off all auxiliary vehicle systems or functions that might come active while the key in the vehicle is in the "ON" position. Locate the fuse box and remove the fuses for the fuel pump cooling fans and all auxiliary systems or functions. Auxiliary systems/functions draw power from the battery and can cause the download/upload process to take longer or freeze the process if the battery charge is to low.

Figure 8



Familiarize yourself with Banks AutoMind Programmer keypad controls. The keypad will allow the user to navigate between screens and to select functions. (See **Figure 8**).

1. Do not activate any electrical accessories while installing the Banks AutoMind calibration. Ensure that there are no electronic devices wired or plugged into the vehicle that can cause a substantial voltage drop, which might be activated during the installation process. Please contact a Banks dealer if uncertain about devices that are on your vehicle.

2. Certain cellular phones or radio equipment might also cause interference, please remove or turn such devices off.

3. Unless instructed in the installation steps, never turn the ignition key OFF while the Banks AutoMind programmer is plugged into the OBDII connection port.

WARNING: Unplugging the Banks AutoMind Programmer while uploading or downloading a calibration can damage the vehicles ECM.

4. Ensure that the factory "stock" calibration is in the vehicle's ECM before installing the Banks AutoMind calibration. If you are uncertain if your

vehicle is in stock condition tune then have the vehicle's ECM reflashed by your vehicle's make dealer.

NOTE: Dealer re-flashes are the same as stock factory calibration.

WARNING: The Banks AutoMind calibration should not be installed over a non-factory/aftermarket performance tune, and except in rare Cases should not be used in conjunction with other tuning devices such as chips or plug in modules of any kind. COMBINING DEVICES IS DONE AT THE USER'S OWN RISK

Connecting to OBD II

5. Locate the OBD II connection port in your vehicle. The OBD II connection port is located under the dash panel and can be located on either side of the steering wheel.

6. Connect your Banks AutoMind Programmer to the vehicle OBD II connection port.

*NOTE: When the OBD II connector is plugged in, the Banks AutoMind programmer will automatically power on and illuminate its start up screen. If the Banks AutoMind programmer does not come on then check the fuse to the cigarette lighter or OBD II in the fuse panel. The screen will display Banks (See **Figure 9**), then display the AutoMind Warning and Disclaimer.*

Figure 9



—END, SECTION 9—

Section 10

INSTALLING BANKS AUTOMIND® CALIBRATION PROGRAM

WARNING: Do not unplug the Banks AutoMind Programmer while uploading or downloading a program. Doing so can damage the vehicles ECM.

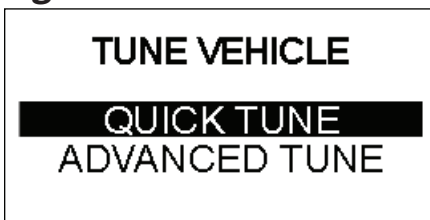
–IMPORTANT- When the AutoMind programmer is plugged into the vehicle OBDII port connection, follow the on screen instruction and turn the ignition key 'ON/OFF' when prompted by the programmer, but do not start the engine. Apply the parking brake to turn off lights and conserve the battery. (Not necessary on some models that do not activate parking lights when the ignition is turned ON).

1. Using the keypad, scroll up or down to highlight 'TUNE VEHICLE' and press the 'OK' button on the keypad. See **Figure 10**.

Figure 10



Figure 11



2. Select 'QUICK TUNE' to choose from calibrations that retain the factory values for Speed Limiter, Rev Limiter, Tire Size, Shift Characteristics, Gear Ratio and Fan Activation Temperature. Select 'ADVANCED TUNE' to adjust any of these parameters. Press 'OK' once you have made your selection. See **Figure 11**.

3. Select desired calibration to install and press the 'OK' button to continue. See **Table 1** for a list of tune levels and description.

CAUTION: The Banks AutoMind Programmer does not increase the load capacity of your vehicle. Gross combined Weight Rating Specifications should always be adhered to.

4. Follow the on screen instructions and turn the ignition key 'ON/OFF' when prompted by the programmer, but do not start the engine.

Table 1

| Calibration levels | |
|----------------------------|--|
| Level | Description |
| Diesel Applications | |
| Economy | Calibration optimized to achieve best fuel economy. |
| Work/Tow | Safely towing up to OEM limits. |
| Sport | Better power and performance. Light towing is acceptable. |
| Super Sport | Highest available power and performance. Towing not recommend. |
| Stock w/ options | Stock calibration with the option to adjust limited parameters. Varies by vehicle. |
| Stock | Vehicle Factory stock calibration. |

5. The Vehicle stock file will be saved to the Banks AutoMind Programmer. Press 'OK' to continue.

If you selected 'QUICK TUNE' calibration skip to step 8.

6. In the following screen you may modify Limited available parameters within the calibration

The following parameters may be modified:

- Speed Limiter
- Rev Limiter
- Tire Size
- Shift Pressure

NOTE: Parameter availability may vary by vehicle year model.

WARNING: Only Adjust/Remove speed and/or rev limiter higher than stock if your vehicle is equipped with appropriately speed-rated tires.

Highlight to select an available parameter to modify and press the 'OK' button. In the parameter menu, scroll Up or Down to select the appropriate/desired value and press 'OK' to save your changes.

NOTE: If you have previously flashed your vehicle with the Banks AutoMind programmer and made changes to adjustable parameters, the Programmer will retain your most recent parameter selections. To modify your selections when reflashing your vehicle adjust the parameters as desired in the adjust options screen.

7. Once you have finished modifying the available adjustable parameter, scroll down, select continue, and press the 'OK' button to save changes and begin installing the calibration.

8. The AutoMind will incorporate your new adjustments and create a new calibration file. It will then ask if you would like to continue. Select 'YES' to install the calibration or 'NO' to return to the 'TUNE VEHICLE' menu, then press 'OK'.

9. Follow the on screen instructions and turn the ignition key 'ON' when prompted by the programmer, but do not start the engine.

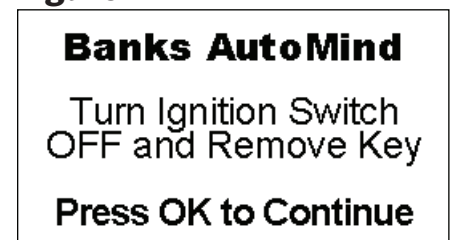
NOTE: The initial installation process may take several minutes to complete.

WARNING: Do not unplug the Banks AutoMind Programmer while uploading or downloading a program. Doing so can damage the vehicles ECM.

10. The Banks AutoMind programmer will begin to download the selected calibration to the ECM. The Banks AutoMind programmer message center will display the percentage of completion.

11. When the process is complete the screen will display "Turn Ignition Switch OFF and Remove Key, Press OK to continue". See **Figure 12**.

Figure 12



12. The Calibration Process is now complete. You may unplug the AutoMind programmer and drive your vehicle.

-END, SECTION 10-

Section 11

RESTORING FACTORY TUNE

The stock calibration can be reinstalled at any time by following the instructions below. This feature will remove the Banks AutoMind calibration and will return the vehicle to its stock condition. The Banks AutoMind calibration will be saved in the Banks AutoMind programmer.

1. Plug the OBD II connector from your Banks AutoMind programmer into the OBDII connection port of your vehicle.
2. Choose 'TUNE VEHICLE' in the main menu screen and press the 'OK' button.
3. Select 'QUICK TUNE' and press 'OK' to continue.
4. Scroll up or down to highlight the 'Stock' calibration and press the 'OK' button. See **Figure 13**.

Figure 13



5. Press the 'OK' button to continue restoring stock calibration or 'Left' button to abort and go to the previous menu.
6. Follow the on screen instructions and turn the ignition key 'ON' when prompted by the programmer, but do not start the engine.

WARNING: Unplugging the Banks AutoMind Programmer while uploading or downloading a calibration can damage the vehicles ECM.

7. The data transfer may take a few minutes to complete. Once the upload is complete you will be instructed to "Turn Ignition Switch OFF and Remove Key, Press OK to continue." See **Figure 12**.
8. The original factory stock calibration restoration is complete. You may unplug the Banks AutoMind Programmer and drive your vehicle.

-END, SECTION 11-

Section 12

DIAGNOSTICS

The diagnostic feature on the Banks AutoMind programmer allows you to read and clear Diagnostic Trouble Codes (DTCs) and aids in Troubleshooting.

1. Plug the OBD II connector from your Banks AutoMind programmer into the OBDII connection port of your vehicle.
2. After the welcome screen, scroll up or down in the main menu screen and highlight to select 'ADDITIONAL FEATURES' and press the 'OK' button. See **Figure 14**.

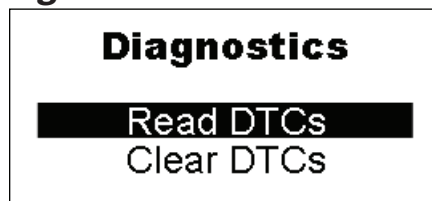
Figure 14



3. Scroll through the 'ADDITIONAL FEATURES' screen using the up and down button keys to view the options.
4. Highlight 'Diagnostics' and press the 'OK' button.

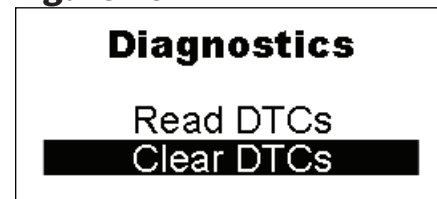
5. Highlight to select 'Read DTCs' and press the 'OK' button. See **Figure 15**.

Figure 15



6. Follow the on screen instructions and turn the ignition key 'ON' when prompted by the programmer, but do not start the engine. Then press the 'OK' button.
7. Scroll up or down to view any displayed DTC along with a description. Press the 'Left' button to EXIT.
8. To remove Diagnostic Trouble Codes (DTC) press the 'OK' button to return to the 'Diagnostics' menu and scroll down to 'Clear DTCs'. Press the 'OK' button. See **Figure 16**.

Figure 16



9. Follow the on screen instructions and turn the ignition key 'ON' when prompted by the programmer, but do not start the engine. Then press the 'OK' button.

10. Screen will announce that the DTCs have been cleared. Follow the on screen instructions and turn the ignition key OFF, when prompted by the programmer. Then press the 'OK' button to EXIT and go to the previous menu.

-END, SECTION 12-

Section 13

DATA LOGGING

The Data Acquisition feature allows you to view various sensors that are monitored through your vehicle's ECM, and record data during acceleration runs.

1. Plug in your Banks AutoMind Programmer and turn the key to the ON position. Do not start the vehicle.
2. After the welcome screen, scroll up or down in the main menu screen and highlight to select 'ADDITIONAL FEATURES' and press the 'OK' button.
3. In the 'ADDITIONAL FEATURES' submenu highlight to select 'DATA Logging' and press 'OK'.
4. In the Data Logging Menu you will have the option to 'Log by Speed', 'Log by Distance', or 'Advanced'. Highlight to select the desired Data Logging Feature and press 'OK'.

Log by Speed - Log the vehicles 0 to 40 through 0 to 70 MPH run times,

review Last Run History and the Best Times History. Log by Speed will begin once a selection is made and the vehicle is in motion.

Log by Distance - Log the distance runs for your vehicle from 60ft through 1/4mile. Review the Last Run History and the Best Speed & Time History. Log by Distance will begin once a selection is made and the vehicle is in motion.

Advanced - This option will allow you to view various sensor values that are available through the vehicle's ECM.

5. After selecting the Advanced feature, use the UP and DOWN button keys to view all your options. Select the items you would like to monitor by highlighting them and pressing the 'OK' button. An arrow will appear next to the options you have selected.

NOTE: To unselect, highlight the item you have already selected and press the 'OK' button.

6. Once you are done selecting, press the 'Left button' key to continue.

7. To start the sensor valve display, highlight to select 'START DISPLAY' and press 'OK' button to continue.

8. Turn the vehicle ON, then press the 'OK' button to continue.

9. The monitor will setup your configurations. The options status you have selected will be displayed on the screen.

NOTE: Screen will only display 4 items.

10. To Exit data logging press the 'OK' button at anytime during the data logging.

-END, SECTION 13-

Section 14

INFO & SETTINGS

The 'INFO & SETTINGS' menu will allow you to check the Programmer info, Vehicle info, vehicle options, and change the Display Settings.

1. Plug the OBD II connector from your Banks AutoMind programmer into the OBD II connection port of your vehicle.
2. After the welcome screen, scroll down the main menu and select 'INFO & SETTINGS' by highlighting to select and press the 'OK' button. See **Figure 17**.

Figure 17



Figure 18



Tuner Info

In the Info & Setting menu scroll Up or Down to highlight and select 'Tuner Info' and press 'OK'. See **Figure 18**.

In the Device Info screen, the AutoMind Programmer current version and serial number information will be displayed. Use this information to verify that your AutoMind Programmer is up to date. Press 'OK' after reviewing the Device Info to return to the Info & Settings menu.

Vehicle Info

Scroll Up or Down to highlight and select 'Vehicle Info' and press 'ok'.

In the Vehicle Info screen, the programmer will display the Vehicles current calibration, VIN, and Vehicle Files. Use this information to verify the current calibration in your vehicle. After reviewing the information press 'OK' to return to the Info & Settings menu.

Vehicle Options

Scroll Up or Down to highlight and select 'Vehicle Options' and press 'OK'.

The Vehicle Options screen will display a list of available parameters (varies by model) that may be adjusted and their current programmed status in your vehicle. For example, you may verify the

current 'Speed Limiter' programmed in your vehicle.

Scroll Up or Down to highlight and select an option, and press 'OK'. The selected vehicle option will display the current status on the screen.

Display Setting

The Display Settings on your Banks AutoMind Programmer allows you to control the contrast level, Set Back Light level, Scroll Speed and set Vehicle tag name.

1. Scroll up or down in the 'Info & Settings' menu to select and highlight 'Display Settings' and press 'OK'.

2. Select an option you wish to adjust (Contrast, Back Light or Scroll Speed). Press 'OK' when you have highlighted your selection.

3. Toggle Up or Down to adjust the selected option as desired. Once the adjustment has been made, press 'OK' to save the changes and to return to the 'Display Settings' menu.

4. Repeat step 1-3 to adjust other options display settings.

-END, SECTION 14-

Section 15

TROUBLESHOOTING BANKS AUTOMIND® PROGRAMMER

Most issues can be resolved by ensuring that the AutoMind programmer is up-to-date. visit www.bankspower.com/downloads to download the AutoMind programmer update utility on your computer, then use the update utility to ensure that the AutoMind programmer has the latest files available.

| | Event | Course of Action |
|---|---|--|
| 1 | Banks AutoMind Programmer will not power up when I plug it into the OBDII port | Make sure that the cigarette lighter or OBD II fuse in your vehicle is functional. You may also want to try plugging the Banks AutoMind Programmer into any other vehicle with an OBDII port to see if it powers up. If it does not, please return to point of purchase for a warranty exchange. |
| 2 | Banks AutoMind Programmer lights up, but nothing happens. | Please contact Gale Banks Engineering Technical service department for further assistance. |
| 3 | Banks AutoMind Programmer is flashing "Script error: Interpreter stopped." Verify that you have done the following: | -Check to see that all fuses in the fuse panel are good. -Make sure you have disabled any aftermarket electronics in the vehicle such as alarm systems, stereos, CD players etc. -Removed anything that is plugged into the cigarette lighter. |
| 4 | Banks AutoMind Programmer says "Vehicle Not Supported" | Please contact Gale Banks Engineering customer service department for further assistance. |
| 5 | Error 22- Time Out | Press 'OK' and restart. |
| 6 | Error 25- Comm Failure | Key was not turned ON in enough time. Leave key in the ON position and press the 'OK' button to restart. |
| 7 | Error 48- DLCS- Time Out | Data link communications system (DLCS) timed out. press 'OK' and restart. |
| 8 | Program Failed, Press OK | Press 'OK' and try again. |

–END, SECTION 15–

Section 16

CHECKING ENGINE PERFORMANCE

1. Start the engine and allow it to warm up. Drive the vehicle, listening for any exhaust leaks or rattles. Adjust and tighten clamps or reposition the piping if required. When positioning of pipins is finalized, it is a good practice to place tack welds at any slip joints in the exhaust system to prevent slippage.

NOTE: The exhaust may smoke slightly after initial startup. This is normal and will go away shortly as the grease used in the bending process burns off the inside of the piping.

2. Observe operation of the boost and pyrometer gauges while driving under varying conditions. Turbocharger boost pressure fluctuates as a function of load and rpm. The engine produces lower boost while cruising at light throttle. Maximum boost occurs while

climbing hills and heavily loaded during acceleration. Note the boost level during hard acceleration with a given load. If future performance declines, the maximum boost pressure figures may be compared to see if boost has decreased. Lower boost can be caused by turbo ducting leaks, a malfunctioning fuel injection system, or a dirty air filter. Maximum boost pressure settings for the Power Stroke turbo diesel vary considerably, due to manual or automatic transmission options, vehicle year and model, and altitude. Boost readings may vary between 18 and 21 psi.

NOTE: Vehicle performance may be erratic and improper if the module connections are not properly cleaned.

3. Use your pyrometer gauge to monitor exhaust gas temperature (EGT) in the

engine. At idle, EGT will be very low, perhaps only 300°F. As the engine accelerates and is under load, the EGT rises. The safe maximum for the EGT is 1050°F. The highest EGT occurs under maximum load at full throttle, such as climbing a steep grade with a heavily laden vehicle. If the vehicle reaches maximum EGT during these conditions, downshift to reduce load, or back off the throttle.

CAUTION: Exceeding 1100°F can cause engine damage.

We recommend that engine oil temp not exceed 250°F. Optimum oil temperature is around 230°F.

NOTE: An optional oil temperature gauge is available from Gale Banks Engineering.

–END, SECTION 16–

Section 17

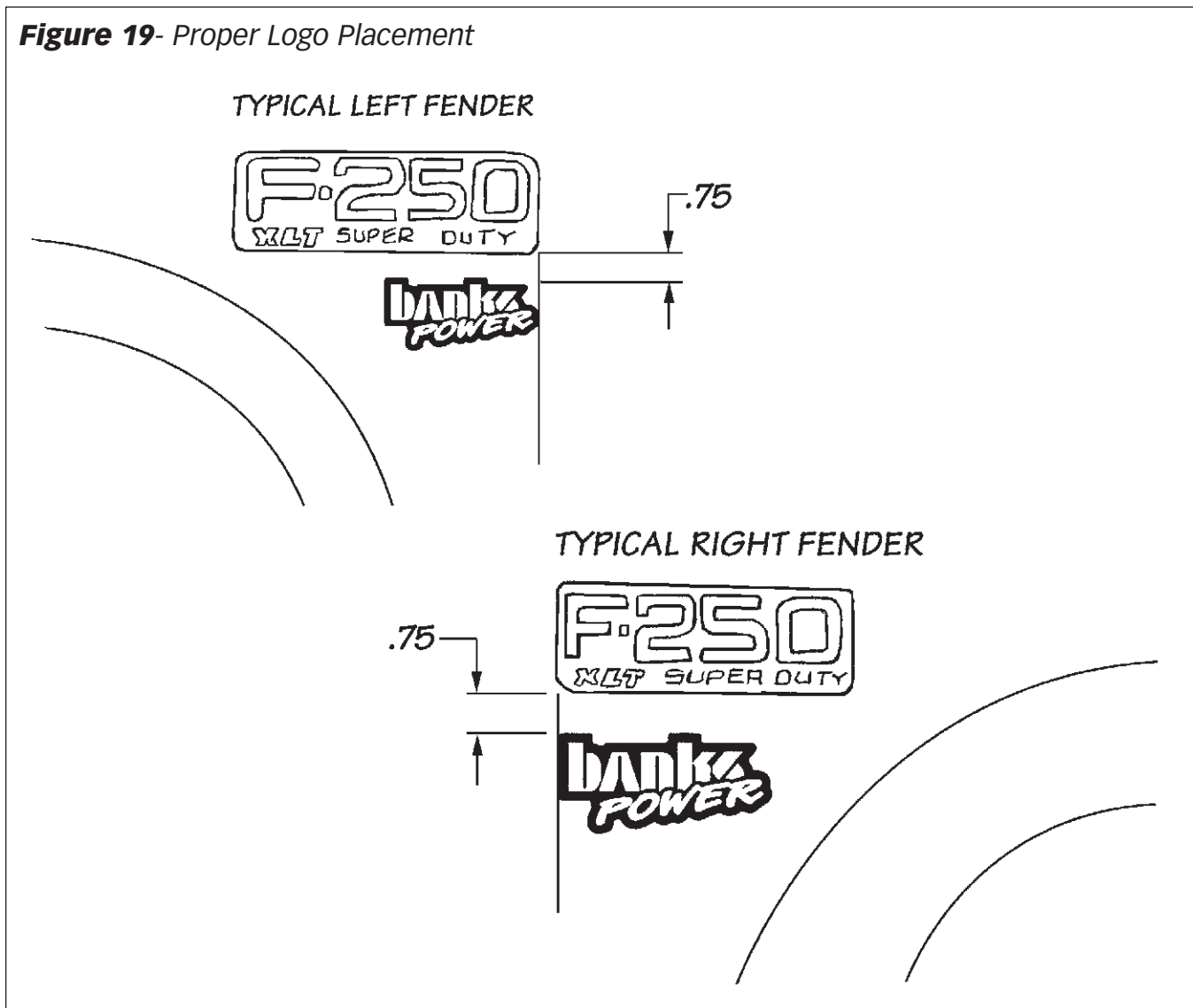
SERVICE TIPS

1. If the need should arise for you to have your vehicle serviced, the Banks AutoMind Flash Program should be removed from the vehicle.
2. It is not uncommon for a service provider to update the program in the vehicle ECU. If this occurs, the AutoMind Flash tune will be lost.

3. Your system includes two Banks Power logos that have been designed to compliment the Ford badging on your truck. We have provided measurements, which will allow you to place these logos in a position that gives a clean factory look. See **Figure 19**.

–END, SECTION 17–

Figure 19- Proper Logo Placement



PARTS LIST, 1999-2003 Ford Power Stroke 7.3L Turbo Diesel

| Item # | Part # | Description | Git-Kit | Stinger | Stinger Plus | Power Pack |
|--------|----------|---|---------|---------|--------------|------------|
| 1 | 25505 | TECHNI-COOLER INTERCOOLER | -- | -- | -- | 1 |
| 2 | 41301 | ELBOW, Compressor Outlet (99 model only) | -- | -- | -- | 1 |
| 3 | 41305 | TUBE, Intercooler Inlet | -- | -- | -- | 1 |
| 4 | 41309 | TUBE, Intercooler Outlet | -- | -- | -- | 1 |
| 5 | 41314 | TWINRAM, Intake Assembly, (1999 model only) | -- | -- | -- | 1 |
| | 24440 | WHEEL, Compressor, (1999½-2003 models only) | -- | -- | 1 | 1 |
| 6 | 24455-01 | HOUSING, Turbine | -- | -- | 1 | 1 |
| 7 | 52152 | PIPE, Turbine Outlet, Upper | -- | 1 | 1 | 1 |
| 8 | * | PIPE, Turbine Outlet, Lower | -- | 1 | 1 | 1 |
| 9 | 52432 | ASSEMBLY, Dynaflo Muffler | 1 | 1 | 1 | 1 |
| 10 | 53448 | PIPE, Monster Tailpipe (53448 99-03 f450/550) | 1 | 1 | 1 | 1 |
| | 53449 | PIPE, Tailpipe Extension | 1 | 1 | 1 | 1 |
| 11 | 66100 | AUTOMIND | 1 | 1 | 1 | 1 |
| 12 | 62557 | TRANSCOMMAND (automatic only) 4r100 | -- | 1 | 1 | 1 |
| 13 | 24338 | ACTUATOR, Banks Big Head | -- | 1 | 1 | 1 |
| 14 | 41510 | FILTER, Banks Ram-Air | -- | 1 | 1 | 1 |
| 15 | 26002 | HEATSHIELD, Blanket | -- | -- | -- | 1 |
| | 90094 | KIT, Service, Banks Ram-Air Filter | -- | 1 | 1 | 1 |
| 16 | 63436 | GAUGE, Dynafact Boost | -- | 1 | 1 | 1 |
| 17 | 63432 | GAUGE, Dynafact Pyrometer | -- | 1 | 1 | 1 |
| 18 | 64001 | THERMOCOUPLE, Pyrometer | -- | 1 | 1 | 1 |
| 19 | -- | LEADWIRE, Pyrometer | -- | 1 | 1 | 1 |
| 20 | 63002 | PANEL, Mounting, Two-gauge | -- | 1 | 1 | 1 |
| 21 | 25517 | BRACKET, Lower Left | -- | -- | -- | 1 |
| 22 | 25518 | BRACKET, Lower Right | -- | -- | -- | 1 |
| 23 | 25524 | BAR, Intercooler Mounting | -- | -- | -- | 1 |
| 24 | 25521 | BRACKET, Upper Left | -- | -- | -- | 1 |
| 25 | 25522 | BRACKET, Upper Right | -- | -- | -- | 1 |
| 26 | 94510 | (4) HOSE, Hump | -- | -- | -- | 4 |
| 27 | 94251 | (2) HOSE, Silicon 2" x 2" | -- | -- | -- | 2 |
| 28 | 94445 | HOSE, ⅛" Bulk X 11½' | -- | 1 | 1 | 1 |
| 29 | 52468 | CLAMP, Exhaust, 3 ½" | 2 | 4 | 4 | 4 |
| 30 | 92881 | CLAMP, V-band | -- | 1 | 1 | 1 |
| 31 | 92871 | (8) CLAMP, T-bolt Hose | -- | -- | -- | 8 |
| 32 | 92857 | CLAMP, Hose, #56 | -- | -- | -- | 1 |
| 33 | 92853 | CLAMP, Hose, #52 | -- | 4 | 4 | 7 |
| 34 | 92837 | (4) CLAMP, Hose, #36 | -- | -- | -- | 4 |
| 35 | 92877 | (2) CLAMP, Spring Band | -- | 2 | 2 | 2 |
| 36 | 93605 | O-RING, Compressor Outlet | -- | -- | 1 | 1 |
| 37 | 41360 | (2) SPACER, ⅝" | -- | -- | -- | 2 |
| 38 | 91253 | BOLT, ⅝"-24 x 1" Hex | -- | -- | -- | 1 |
| 39 | 91144 | (4) BOLT, ¼"-28 x 2" Hex | -- | -- | -- | 4 |
| 40 | 91140 | (10) BOLT, ¼"-28 x 1" Hex | -- | -- | -- | 10 |

* For early 99 models use part number 52162 for all others use part number 52154

| Item # | Part # | Description | Git-Kit | Stinger | Stinger Plus | Power Pack |
|--------|--------|------------------------------------|---------|---------|--------------|------------|
| 41 | 91119 | BOLT, 1/4"-20 x 1 1/4" Hex | -- | -- | -- | 1 |
| 42 | 91789 | (2) BOLT, 8mm 1.25 x 30mm Hex | -- | -- | -- | 2 |
| 43 | 91840 | (4) SCREW, sheet metal, #10 x 3/4" | -- | -- | -- | 4 |
| | 91834 | SCREW, 10 - 32 x 1/2" | -- | 1 | 1 | 1 |
| | 91828 | SCREW, #8 x 1/4" | -- | 1 | 1 | 1 |
| 44 | 91211 | NUT, 5/16" 24, nylock | -- | -- | -- | 1 |
| 45 | 91111 | (14) NUT, 1/4"- 28 nylock | -- | -- | -- | 14 |
| | 91833 | NUT, 10 - 32 | -- | 1 | 1 | 1 |
| 46 | 91202 | (2) WASHER, 5/16" SAE | -- | -- | -- | 2 |
| 47 | 91102 | (18) WASHER, 1/4" SAE | -- | -- | -- | 18 |
| | 91832 | (2) WASHER, #10 Tooth Lock | -- | 2 | 2 | 2 |
| 48 | 92010 | FITTING, Tee | -- | 1 | 1 | 1 |
| 49 | 92011 | FITTING, 1/4" Hose x 1/8" NPT | -- | 1 | 1 | 1 |
| 50 | 92120 | FITTING, 1/8" NPT x 3/16" Hose | -- | 1 | 1 | 1 |
| 51 | 92122 | FITTING, 1/8" NPT x 1/4" Hose, 90° | -- | 1 | 1 | 1 |
| 52 | 92303 | (2) FITTING, Female, 90 | -- | 2 | 2 | 2 |
| 53 | 92301 | FITTING, Male, Straight | -- | 1 | 1 | 1 |
| | 62020 | TERMINAL, Fast On | -- | 1 | 1 | 1 |
| | 62024 | TERMINAL, Ring | -- | 1 | 1 | 1 |
| | 62030 | (2) CONNECTOR, Butt | -- | 2 | 2 | 2 |
| | 62038 | TAP, Fuse, Blade | -- | 1 | 1 | 1 |
| | 62039 | TAP, Fuse, Mini Blade | -- | 1 | 1 | 1 |
| | 62037 | TAP, Fuse, Standard | -- | 1 | 1 | 1 |
| | 62080 | WIRE, 18 Gauge, Red, 6 feet | -- | 1 | 1 | 1 |
| | 62082 | WIRE, 18 Gauge, Black, 6 feet | -- | 1 | 1 | 1 |
| | 62001 | (6) TIES, Cable | -- | 6 | 6 | 6 |
| | 96328 | OWNERS MANUAL | 1 | 1 | 1 | 1 |
| | 96399 | CARD, Product Registration | 1 | 1 | 1 | 1 |
| | 96503 | WARRANTY STATEMENT | 1 | 1 | 1 | 1 |
| 54 | 96009 | (2) UROCAL, "Banks Power" | 2 | 2 | 2 | 2 |
| | | DECAL, Do Not Discard | -- | 1 | 1 | 1 |

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