



# Owner's Manual with Installation Instructions

## **Banks Monster<sup>®</sup> Exhaust System**

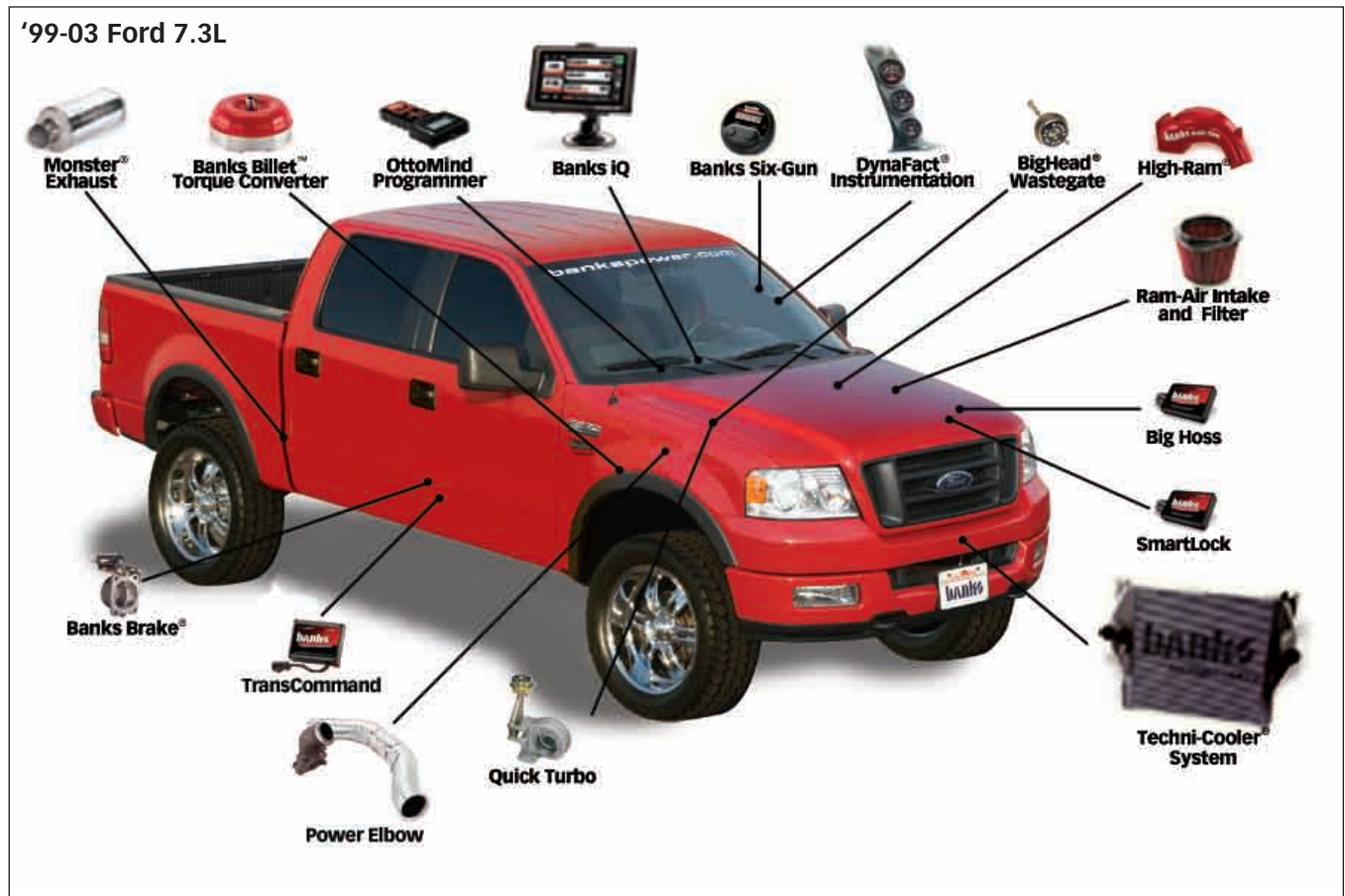
**1999<sup>1/2</sup>-2003 Ford Power Stroke 7.3L  
Turbo-Diesel F250/F350 Trucks  
and Excursions (non-catalytic converter)**

THIS MANUAL IS FOR USE WITH

- MONSTER EXHAUST, SYSTEMS 48646-48653
- MONSTER EXHAUST w/ POWER ELBOW, SYSTEMS 48649-48654
- POWER ELBOW, ASSEMBLIES 48652-48663



# Also Available from Banks Power for '99-03 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) Big Hoss (P/N 66505)**  
- Adds power safely to your vehicle  
- Engine and transmission safeguards  
- Change power levels on-the-fly

**Thermocouple**  
- Add a temperature limiting function to your Diesel Tuner

**Banks QuickTurbo (P/N 24456-24457)**  
- More boost through the powerband  
- Does not over-boost  
- Turbo-diesel efficiency

**Banks Git-Kit Systems (P/N 47401, 47511-47514) Contains:**  
- Monster Exhaust  
- Big Hoss Module

**Banks Stinger Systems****Contains:**

- Ram-Air Intake Filter
- Monster Exhaust
- Big Hoss Module
- Big Head Wastegate Actuator

**Banks PowerPack Systems****Contains:**

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

**Banks Six-Gun Bundle  
(P/N 46594-46613)****Contains:**

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

**Banks Big Hoss Bundle  
(P/N 46623-46643)****Contains:**

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

**Banks Power Combo 1****Contains:**

- Big Hoss Module
- TransCommand
- Big Head Wastegate Actuator

**Banks Power Combo 2****Contains:**

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

**Banks Power Combo 3****Contains:**

- Big Hoss Module
- Monster Exhaust

**Banks Power Combo 4****Contains:**

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

# General Installation Practices

- 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 7-9) 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.

#### **Tools Required:**

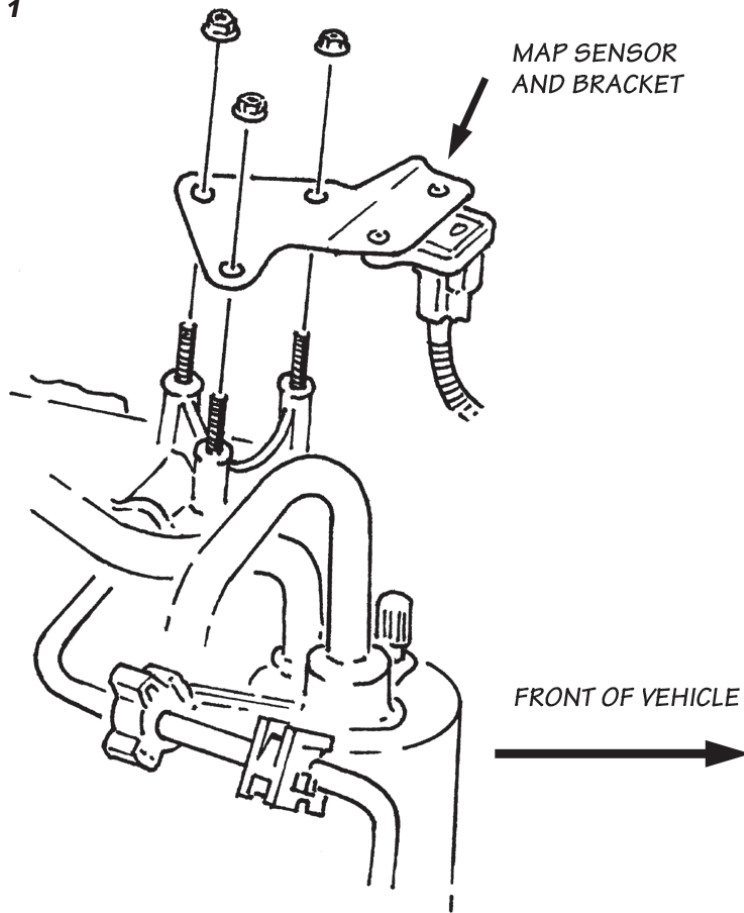
- 1/2" and 3/8" drive ratchets with inch and metric sockets and 1/2" and 3/8" drive extension
- Inch and metric combination or open-end wrenches
- Standard screwdriver
- Clean shop towels or rags
- Pry-bar
- Reciprocating saw

#### **Highly recommended tools and supplies:**

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

# Installation Instructions

Figure 1



**1.** 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 (spray lubricant will ease hanger removal). Remove the muffler and tailpipe from the vehicle. Cutting the tailpipe may ease the process of removal.

**2.** Remove the remaining portion of the exhaust system from the vehicle. Retain the V-band clamp for reuse.

**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 new vehicles with exhaust leaks in this area. Correct this condition now or soon after installation of the Monster exhaust components to eliminate dangerous exhaust leaks and poor turbocharger performance.**

***If a Banks Power Elbow is being installed, follow steps 3-10 below. Otherwise, skip to step 11.***

**3.** On the passenger side of the vehicle, temporarily remove the manifold absolute pressure (MAP) sensor (**Figure 1**) from its mounting location by removing the three nuts from the mounting studs. Save the nuts for reinstallation later. Set the MAP sensor out of the way by resting it in the intake valley of the engine.

**4.** Remove both driver- and passenger-side boost tubes and the intake plenum from the vehicle to allow access to the rear of the turbocharger.

**5.** Disengage the exhaust backpressure control 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.

**6.** Locate the engine lifting hook at the rear of the engine on the passenger side, bolted to the cylinder head. Remove the lifting hook. This will allow clearance for the installation of the Power Elbow. It is not necessary to re-install the hook.

**7.** Remove the exhaust backpressure control valve assembly from the factory turbine housing by removing the seven (12-point, 8mm head) bolts. Retain these bolts for reuse.

**8.** Install the Banks Power Elbow casting onto the outlet of the turbocharger using the original bolts. Use the supplied anti-seize compound on the bolts and tighten them evenly. The torque specification for these bolts is 62 In-Lb (not Ft-LB!)

*Note: It may be necessary to re-locate the transmission dipstick tube*

*to allow clearance for the V-band clamp at outlet of Power Elbow. The tube can be re-located with a prybar or similar tool. There should be 3/4"-1" clearance between the tube and the Power Elbow casting.*

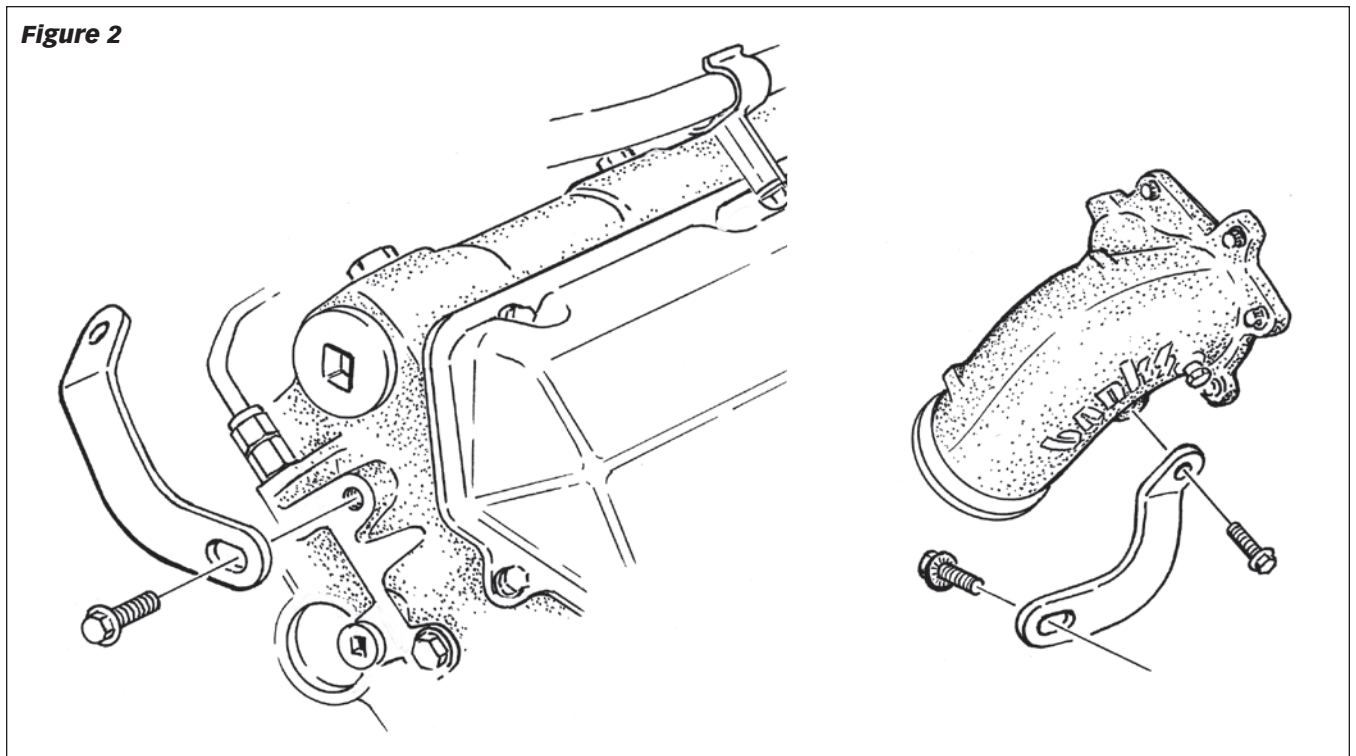
**9.** Install the support bracket between Power Elbow casting and passenger-side cylinder head using supplied 3/8-16 x 3/4" bolt, M10 x 1.5 x 20mm long bolt. See **Figure 2**. The M10 x 1.5 x 20mm bolt is used on the cylinder-head side of the bracket. The 3/8-16 x 3/4" bolt is used on the Power Elbow side of the bracket.

**10.** Clamp the upper portion of the supplied turbine outlet pipe onto the outlet of the Power Elbow assembly using the original turbine outlet V-band clamp.

*Note: If a pyrometer is used, the probe may be installed in the threaded port, located in the side of the Power Elbow casting. Remove the plug and install the probe using the anti-seize provided.*

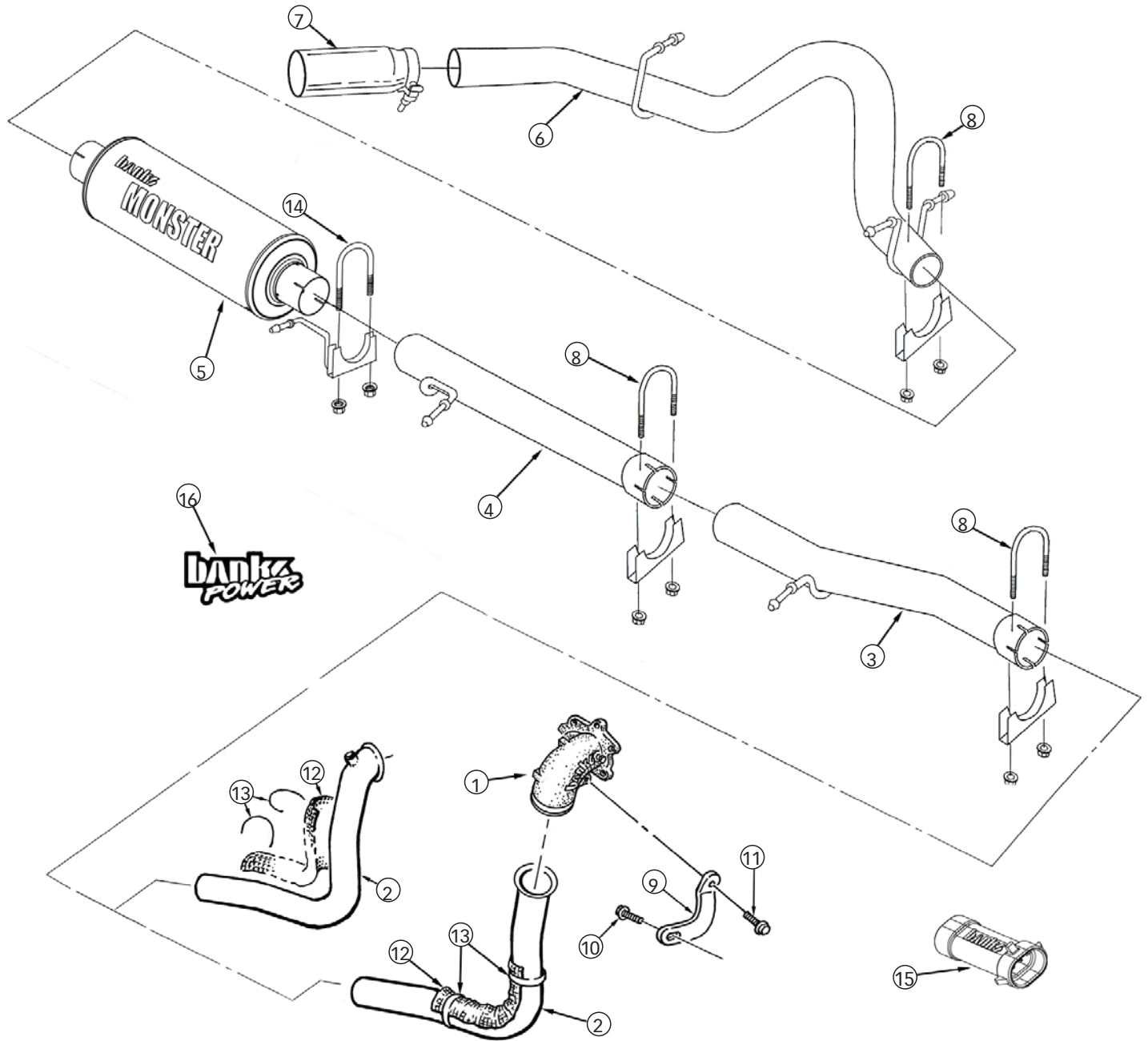
*If Power Elbow is being installed, skip to **step 13**.*

**Figure 2**



**Figure 3A: Excursions**

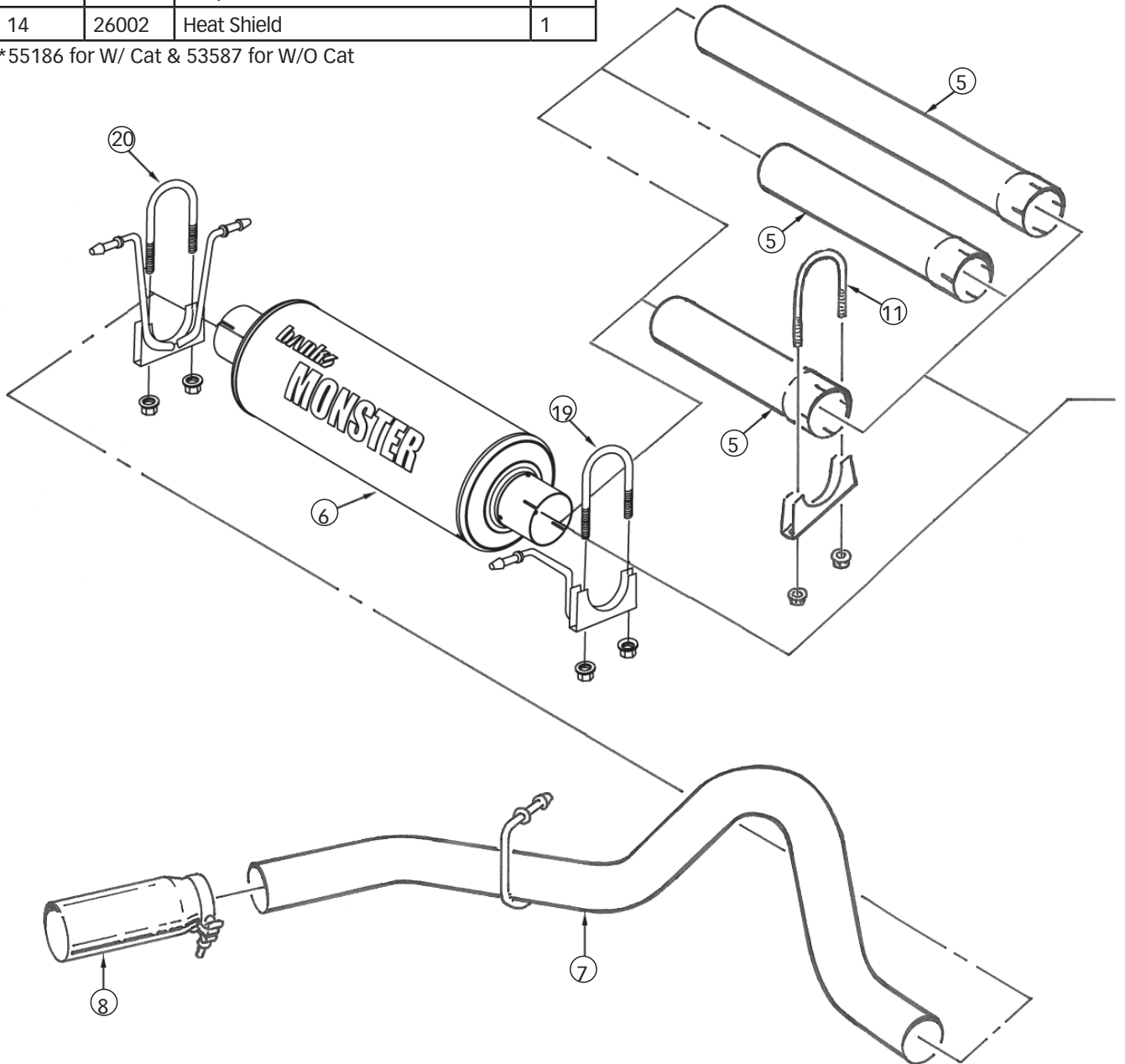
Item #	Part #	Description	QTY	Item #	Part #	Description	QTY
1	53495	Power Elbow (48654 only)	1	9	55036	Support Bracket (48654 only)	1
2	55189	Turbine outlet pipe	1	10	91922	Bolt, M10-1.5 x 20mm (48654 only)	1
3	53521	Intermediate pipe, front	1	11	91455	Bolt, 3/8-16 x 3/4" (48654 only)	1
4	53522	Intermediate pipe, rear	1	12	26000	Heat Shield	1
5	53800	Monster muffler	1	13	26013	Wire Ties	4
6	53523	Monster tailpipe, 4"	1	14	53553	Hanger Clamp, front	1
7	52383	Tailpipe tip, 5"	1	15	62545	Warm-Up Valve Module	1
8	52470	Exhaust Clamp, 4"	3	16	96009	Urocal, "Banks Power"	2



**Figure 3B: F-series trucks**

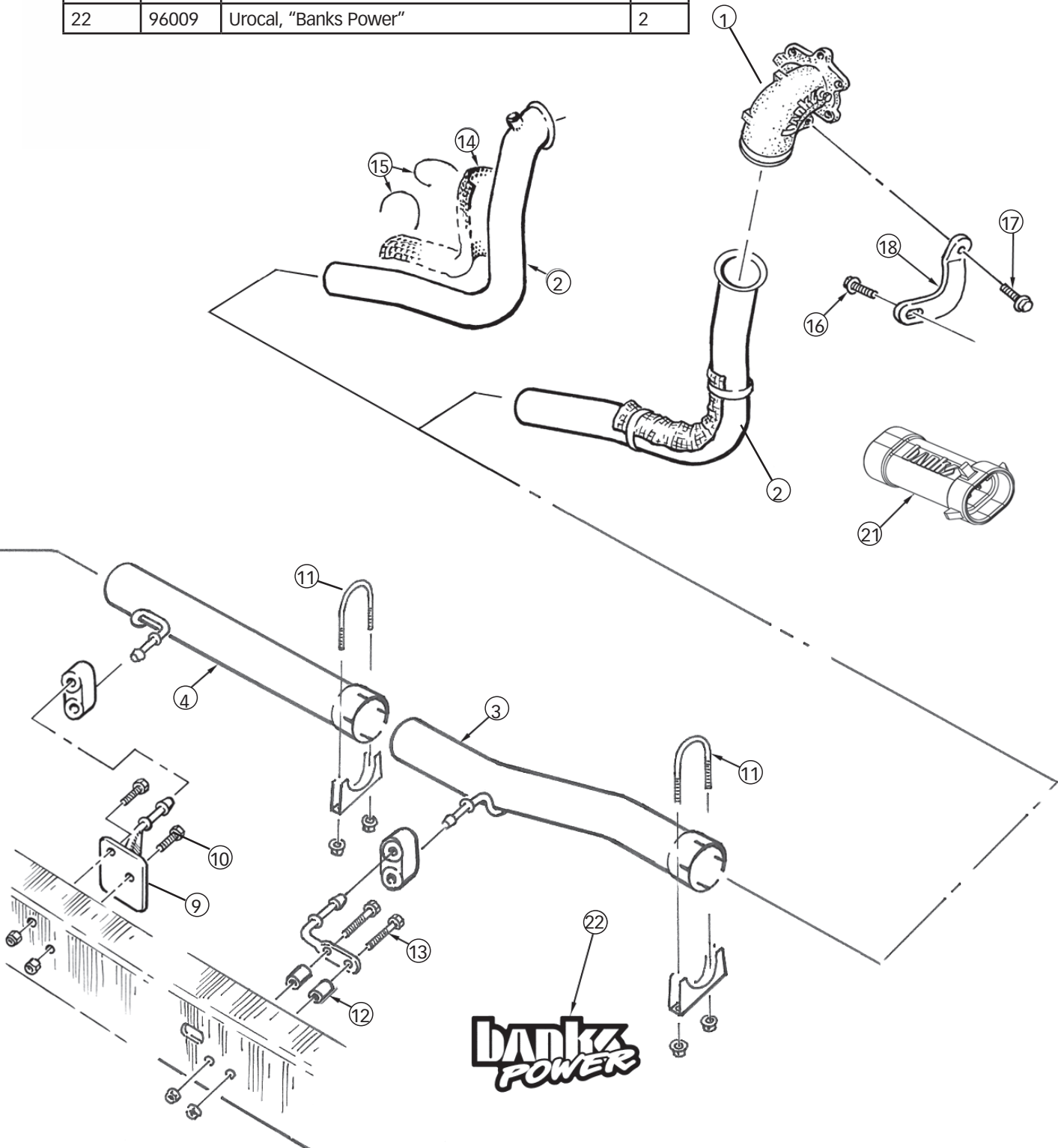
Item #	Part #	Description	QTY
1	53495	Power Elbow (48649-48652 only)	1
2	55186* 53587*	Turbine outlet pipe	1
3	53588	Intermediate pipe, front	1
4	53508	Intermediate pipe, rear	1
5	53513	Extension pipe (optional)	1
6	53800	Monster muffler	1
7	53512	Monster tailpipe, 4"	1
8	52383	Tailpipe tip, 5"	1
9	53519	Hanger, Super-Cab Long Bed (optional)	2
10	91789	Bolt, M8 - 1.25 x 30mm (optional)	2
11	52470	Exhaust Clamp, 4"	1
12	26096	Spacer, 3/8 x 5/8"	2
13	91792	Bolt, 8mm x 1.25 x 45mm Hex	2
14	26002	Heat Shield	1

\*55186 for W/ Cat & 53587 for W/O Cat





Item #	Part #	Description	QTY
15	26013	Wire Ties	3
16	91922	Bolt, M10-1.5x20mm (systems 48649-48652 only)	1
17	91455	Bolt, 3/8-16 x 3/4" (systems 48649-48652 only)	1
18	55036	Support Bracket (systems 48649-48652 only)	1
19	53453	Hanger Clamp, front	1
20	53454	Hanger Clamp, rear	1
21	62545	Warm-Up Valve Module	1
22	96009	Urocal, "Banks Power"	2



**11.** Locate the 7" x 24" blanket heat shield provided. Form the heat shield to the shape of the Banks Monster T.O.P. (turbine outlet pipe) in the vertical section of the pipe. Secure the heat shield to the T.O.P. using the wire ties provided (see **Figure 4**).

**12.** Reusing the saved V-band clamp previously put aside, loosely clamp the upper portion of the turbine outlet pipe to the factory warm-up valve outlet. Do not tighten at this time.

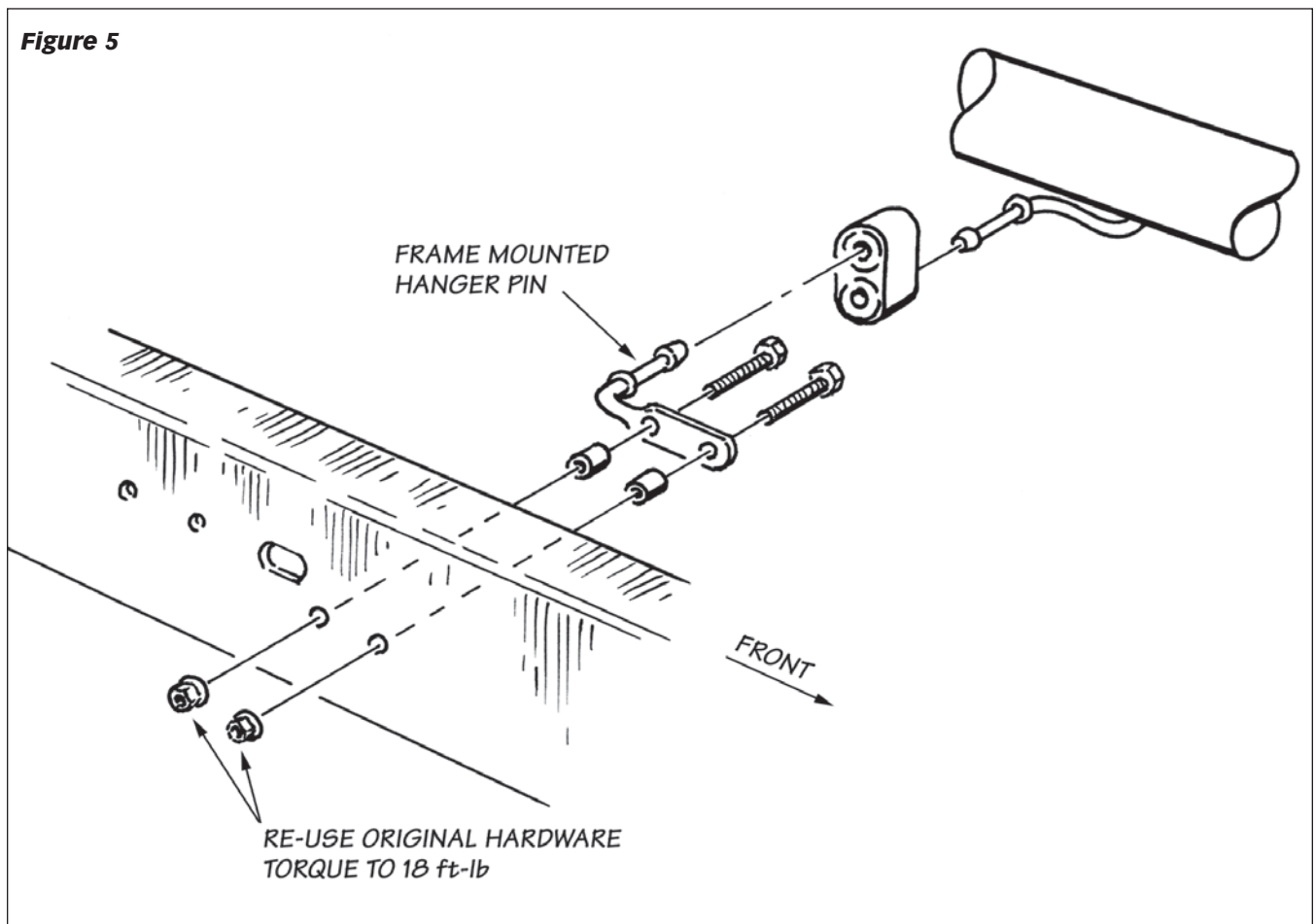
*NOTE: On some Power Strokes a ground strap is bolted on the back of the cylinder head. This bolt may interfere with the Banks turbine outlet pipe. If so, remove the bolt and relocate it in the cylinder head.*

**13.** On 2002-03 F-series models only, it is necessary to relocate the factory-installed frame hanger pin that is located behind the transmission crossmember.

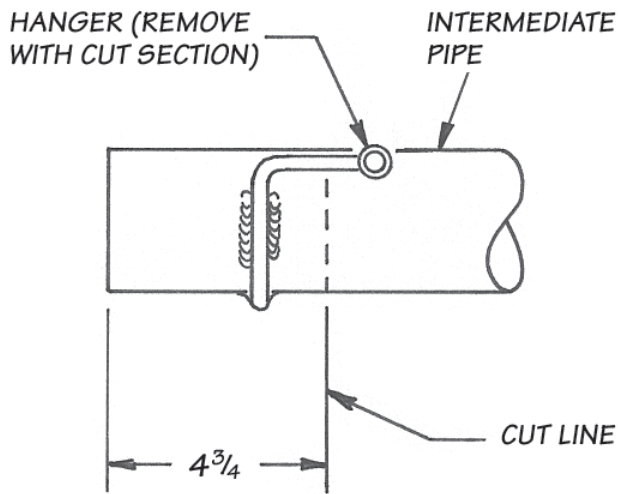
**Figure 4**



**Figure 5**



**Figure 6**



**14.** Place a 4" exhaust clamp on the turbine outlet pipe. Install the front intermediate pipe onto the turbine outlet pipe. Place a 4" exhaust clamp on the front intermediate pipe (see **Figure 3A** or **3B**, depending on application).

**15.** For *Standard Cab long-bed vehicles*: It will be necessary to cut 4 3/4" off the rear intermediate pipe supplied in the kit. The hanger will be removed with the unused portion of the pipe (see **Figure 6**). Install the rear intermediate pipe.

For *Excursions and Super-cab short-bed models*: Install the rear intermediate pipe as supplied (no cut required).

For *Crew-cab short-bed*: Install the rear intermediate pipe. Place a 4" clamp on the end of the rear intermediate pipe and install the extension pipe kit (P/N 53516).

For *Super-cab long-bed*: Remove the rear frame mounted hanger (see **Figure 3**) and install the supplied frame mounted hanger in its place, using the two 8mm x 30mm hex bolts supplied and re-using the two 8mm nuts previously removed. Install the rear intermediate pipe. Place a 4" clamp on the end of the rear intermediate pipe and install the extension pipe kit (P/N 53517).

For *Crew-cab long-bed*: Install the rear intermediate pipe. Place a 4" clamp on the end of the rear intermediate pipe and install the extension pipe kit (P/N 53518).

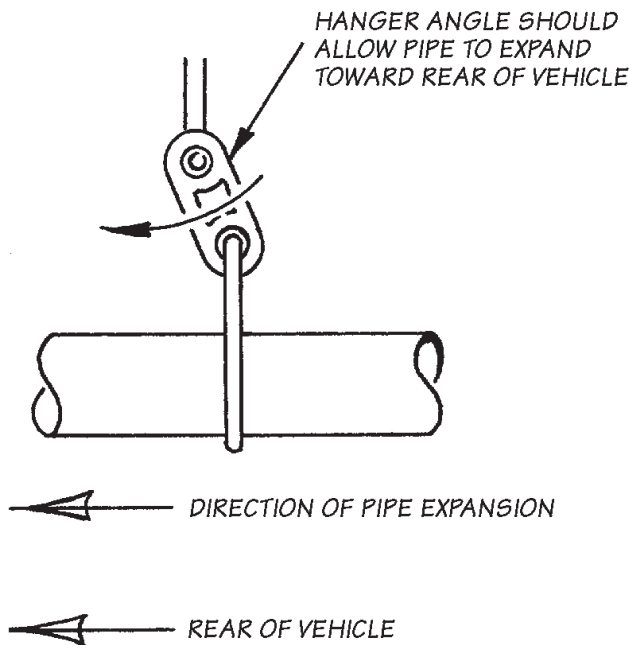
**16.** Place the front hanger clamp on the inlet end of the Banks Monster muffler and install it onto the intermediate pipe or extension pipe. Note the inlet labeling on the Monster muffler. Be sure the Banks Monster embossing on the muffler is level with the frame.

Insert the front hanger pin into the rubber hanger at the front of the muffler.

**17.** For *trucks*: slide the rear hanger clamp over the outlet of the muffler with the hanger pins facing forward. Insert the two (2) hanger pins with the vehicles rubber grommets.

For *trucks and Excursions*: install the Banks Monster tailpipe over the rear axle housing and into the outlet of the Monster muffler. Insert the tailpipe hanger pin(s) into the corresponding rubber hanger(s).

**Figure 7**



**A.** Remove the two (2) nuts that hold the frame-mounted hanger pin to the frame rail, save for reinstallation later. Remove the frame-mounted hanger pin from vehicle.

**B.** Remove the two (2) 8mm studs from the frame-mount hanger pin. *Note: Studs are pressed into hanger pin and will require the use of a hammer or small press to remove.*

**C.** Reinstall the frame-mounted hanger pin using the two (2) 5/8" long steel spacers, two (2) 8mm x 1.25 x 45mm bolts and the two (2) 8mm nuts (removed in **Step A** above). See **Figure 5** for proper assembly sequence. Torque fasteners to 18 ft-lb.

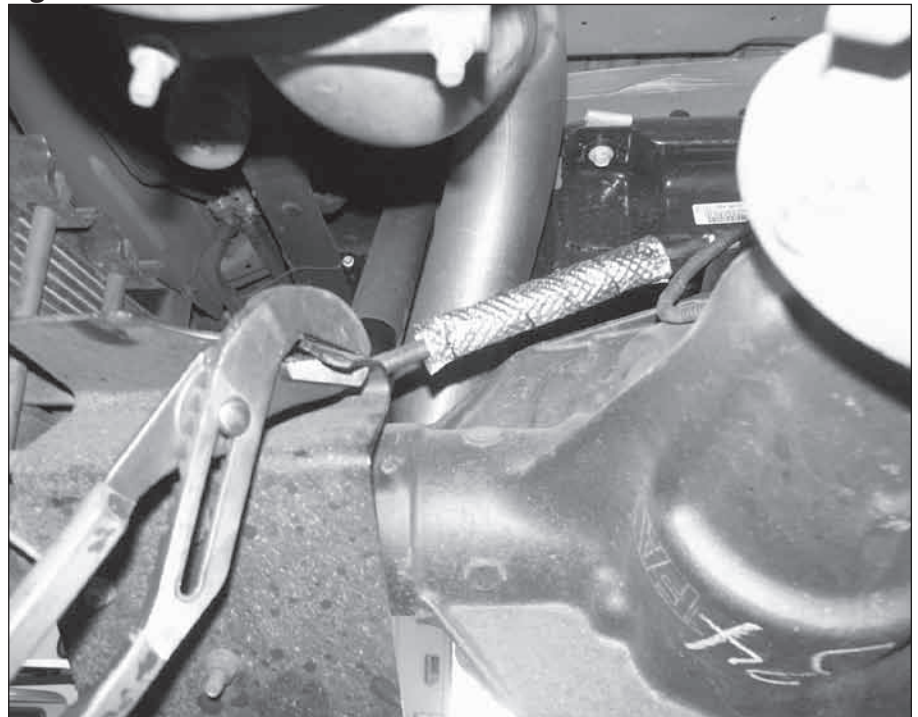
**18.** Slip the 5" Monster tailpipe tip on with the drain hole facing down and Banks logo facing up. Keep the wrapping on for now. For a Fleet-side truck the 5" tip should be hung 1" past the end of the tailpipe. For a dually, the tip should be 3/2" past the end of the tail pipe. Snug up the clamp.

**19** Position all the exhaust components such that all the hanger pins are parallel with the frame pins and all exhaust tubing is located properly. Lightly tighten the clamps to maintain position. The tailpipe tip should be positioned 1-11/2" below the bottom edge of the fender. All hangers should be hanging slightly forward to allow for heat expansion of the exhaust tubing (see **Figure 7**).

**20.** With everything positioned properly, begin to tighten the clamps starting with the ones closest to the turbo and working your way back. Torque V-band clamp to 80 in-lbs. Torque all remaining clamps to 35 ft-lbs.

**21.** For Excursions only: Locate the 6" x 7" blanket heat shield provided and wrap it around the brake cable directly under the tail pipe hoop. Secure with wire tie provided. Using a pair of channel locks or vice grips, gently bend the corner of the shield that is attached to rear end on the passenger's side (see **Figure 8**).

**Figure 8**



**22.** The 2-pin warm-up valve module needs to be installed onto the warm-up valve connector on the vehicle wire harness. On the pedal stool under the turbocharger, disconnect the 2-pin connector. Attach the 2-pin connector to the Banks warm-up valve module and zip-tie the module and wire harness away from any moving parts. See **Figure 9**.

**23.** 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 10**.

**24.** Remove protective wrapping from tailpipe tip. Installation is now complete.

**Figure 9**

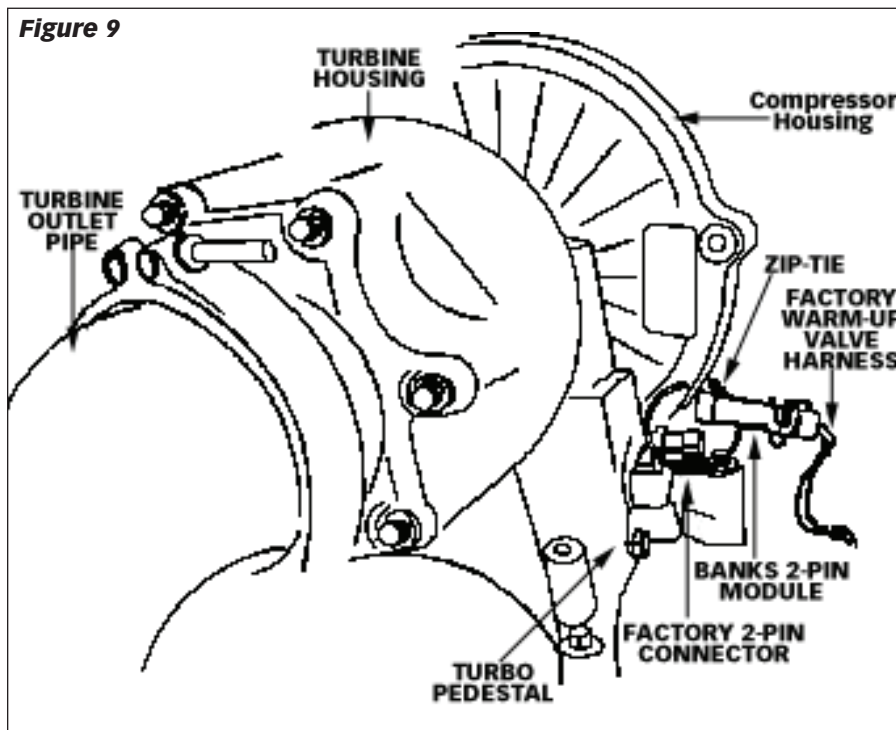
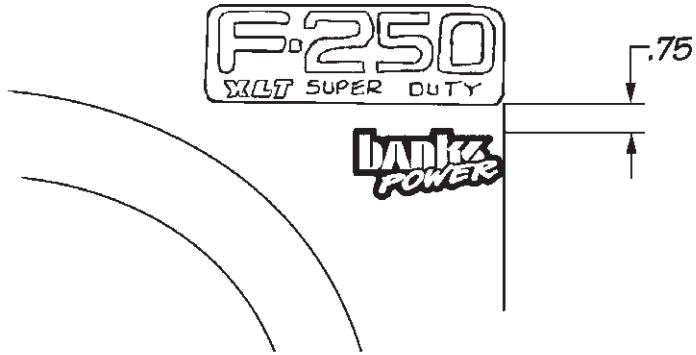


Figure 10

TYPICAL LEFT FENDER



TYPICAL RIGHT FENDER

