

# OWNERS MANUAL

WITH INSTALLATION  
INSTRUCTIONS

**banks**<sup>®</sup>  
**POWERPACK**

**S Y S T E M**

INCLUDING STINGER<sup>®</sup>, STINGER<sup>®</sup>-PLUS,  
TWIN RAM<sup>™</sup> MANIFOLD AND QUICK-TURBO<sup>®</sup>  
WITH OTTOMIND<sup>™</sup> ENGINE CALIBRATION PLATE  
1994–EARLY '98 DODGE 5.9 CUMMINS 2WD/4WD PICKUPS  
(CPL's 1550, 1815, 1863, 1968, 2022, 2023 & 2308)

THIS MANUAL IS FOR USE WITH SYSTEM 24053, 42710, 42711, 49205,  
49206, 49275, 49276, 49280, 49281, 49282 & 49283

**banks**<sup>®</sup>

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# PREPARATION AND PRECAUTIONS

## Notification

**The Banks Ram-Air Filter comes pre-oiled and no oiling is necessary for initial installation. Service the filter as specified in the Filter Maintenance Section of this manual.**

**1.** For ease of installation of your Banks Stinger, Stinger-Plus, PowerPack, Twin-Ram manifold or Quick-Turbo® system, familiarize yourself with the procedure by reading the entire manual before starting work. This instruction manual contains 24 pages of text, illustrations and parts listing. If any pages are missing, please call GALE BANKS ENGINEERING for a replacement.

**2.** Throughout this manual, the left-side of the vehicle refers to the driver's side, and the right-side to the passenger's side.

**3.** This Banks system is designed to fit 1994-early '98 Dodge/Cummins Turbo Diesel pickup trucks with horsepower ratings of 160, 175, 180 or 215 hp. For further identification check the CPL number on the engine information tag located on the timing cover. This manual applies to CPL's 1550, 1815, 1863, 1968, 2022, 2023 and 2308.

**4.** Disconnect the ground cable from the battery before beginning work. If there are two batteries, disconnect both.

**5.** Route and tie wires and hoses a minimum of 6 inches away from exhaust heat, moving parts and sharp edges. Clearance of 8 inches 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. If foreign debris is transferred to any Banks component, clean it thoroughly before installing.

# INSTALLATION PROCEDURE

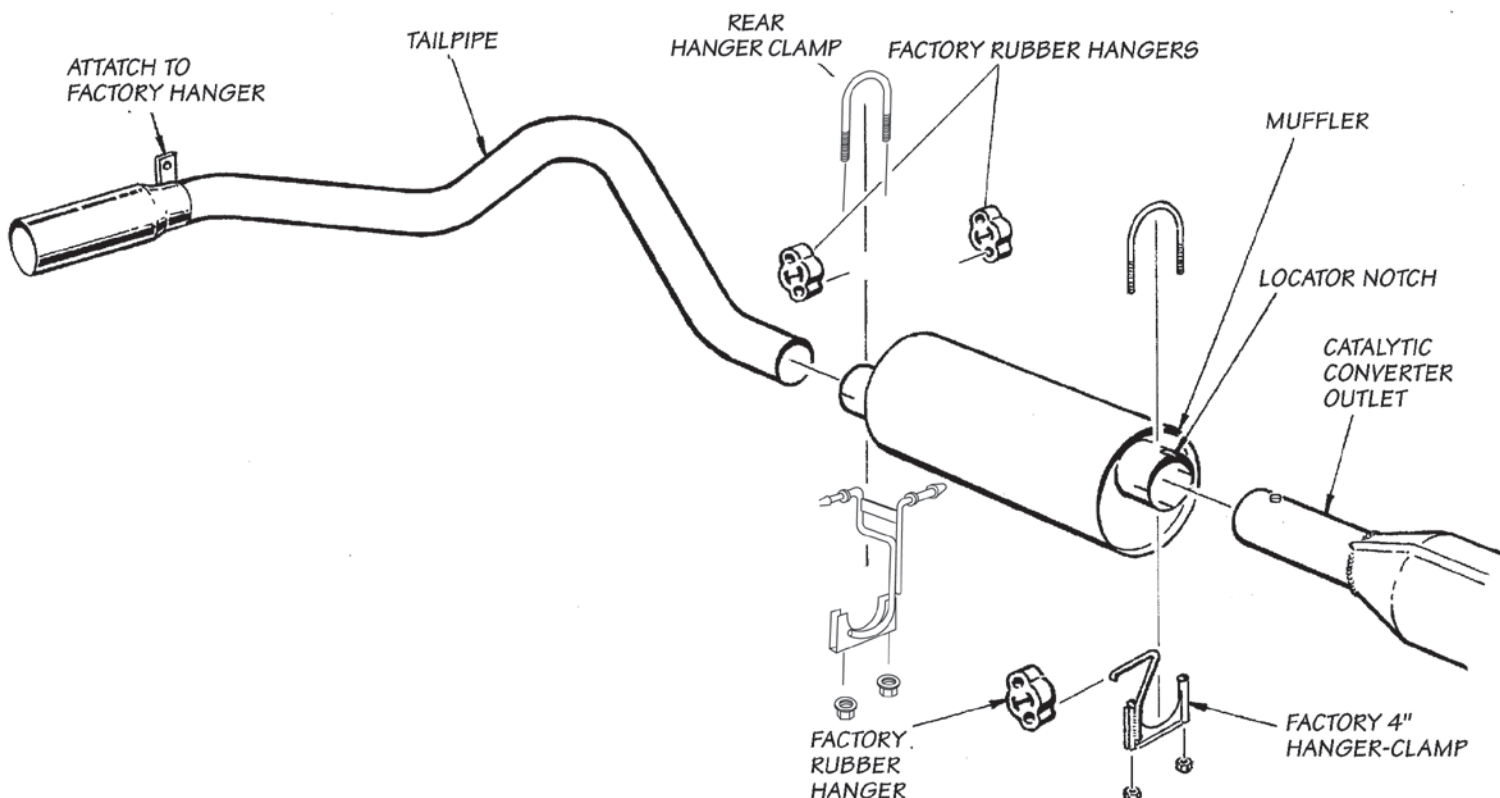
For Quick-Turbo installation only, proceed to step 5.  
For Twin-Ram manifold installation only, proceed to step 43.

**1.** Unbolt front and rear muffler U-clamps and rear tailpipe hanger, then remove muffler and tailpipe from vehicle. Heat slip joints at muffler inlet and outlet to a red-orange color to allow separation of the components. Lubricate rubber hangers with WD40 or a similar product to allow hanger rods to be pried out with a large groove-joint pliers. Save tailpipe hanger hardware and front muffler hanger clamp assembly.

Note: If vehicle is to be raised on a hoist, use care not to bend clamps and brackets around rear axle housing where lifting points of hoist contact housing. Clamps may be loosened and repositioned to clear hoist prior to lifting.

**2.** Install Banks Dynaflow™ muffler on catalytic converter outlet tube. Note that alignment notch on muffler inlet indexes with a tab on the top of the catalytic converter outlet tube. Install the dual pin supplied rear hanger clamp onto the muffler outlet. Install rear muffler hanger rods in factory rubber hangers. Install front muffler hanger clamp around muffler inlet and into rubber hanger, then tighten clamp while pushing muffler forward against locator tab on catalytic converter. See Figure 1.

**FIGURE 1**



**3.** Install tailpipe in muffler outlet and attach tab on tailpipe to factory rear hanger using original hardware. On 1998 models, install the tailpipe hanger pins into the factory rubber hangers. Install new 3½-inch U-clamp at muffler outlet and tighten once tailpipe has been adjusted for final position.

Reposition and tighten any components that were loosened on the rear axle to clear hoist lifting points.

**4.** Remove air filter cover and replace filter element with Banks Ram-Air™ reusable air filter element. See cleaning instructions at end of this booklet.

## TURBOCHARGER REMOVAL

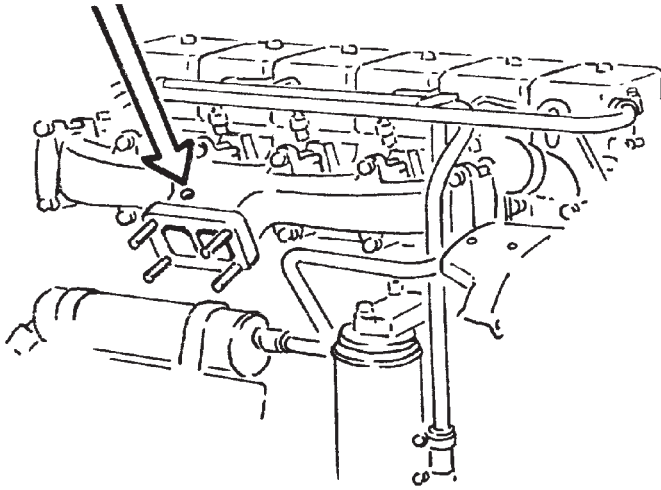
**5.** Position vehicle on a hoist. If no hoist is available, position vehicle on a flat level surface.

**6.** Disconnect the air inlet tube from the air cleaner and the inlet to the turbocharger. Disconnect the exhaust pipe from the rear of the turbocharger.

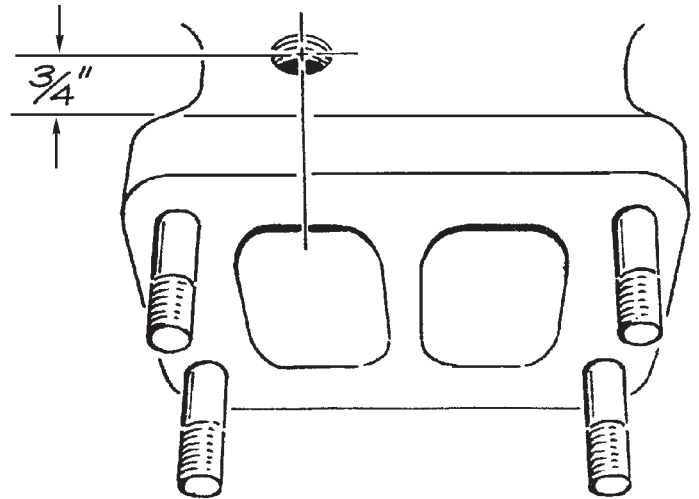
**7.** Remove the two oil drain tube bolts from the turbocharger.

Figure 2

DRILL AND TAP 1/4 NPT PORT IN REAR PASSAGE OF EXHAUST MANIFOLD OUTLET



LOCATE PORT 3/4 INCH BEHIND FLANGE, CENTERED OVER REAR EXHAUST MANIFOLD PASSAGE



8. Disconnect the oil supply hose at the turbocharger.

9. Note the orientation of the compressor housing in the vehicle. When the new assembly is installed the orientation of the compressor outlet should remain the same. Remove the boost pressure hose from the nipple of the wastegate actuator. Remove the turbocharger mounting nuts and the turbocharger from the exhaust manifold.

**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.

10. Clean and inspect the exhaust flange mounting surfaces on the exhaust manifold. Remove any remaining gasket material from the turbocharger oil drain flange surface. Make sure the surface is clean and dry.

For Quick-Turbo installation only, proceed to step 21.

### Pyrometer (Exhaust Temp.) Gauge

11. The exhaust gas pyrometer monitors the temperature of the exhaust entering the turbocharger turbine housing. Installation requires that the exhaust manifold be drilled adjacent to the temperature probe near the outlet of the manifold adjacent to the turbine housing. For this

reason it is essential that the turbocharger be removed from the engine in order to clean out any metal chips from drilling that could cause turbine blade damage.

The Cummins 6BT engine uses a divided exhaust manifold and turbocharger. The pyrometer probe must be installed to sample exhaust temperature in one of the two exhaust passages. Typically the exhaust temperature will not differ appreciably between the two passages. We recommend installing the probe in the rear manifold passage to simplify routing the probe wiring.

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

13. Drill through the exhaust manifold into the rear passage at the location shown in Figure 2. Use a  $\frac{7}{16}$  inch drill, keeping the drill perpendicular to the manifold surface.

14. Tap the drilled hole with a  $\frac{1}{4}$  NPT pipe tap. Check the thread depth as you tap by periodically removing the tap and screwing the probe fitting (supplied in pyrometer kit) into the tapped hole. The probe should thread in 3 to  $3\frac{1}{2}$  turns hand tight. Do not install the probe in place at this time.

15. Remove as many loose chips as possible from the exhaust manifold. A shop vacuum, small brush, or fingers will help. Now remove the rag using a welding rod or coat hanger bent into a hook.

**CAUTION!** Make sure rags are removed from exhaust manifold prior to reinstalling turbine housing!

16. Install the probe in the manifold. Anti-seize on the threads is recommended.

For Stinger only, follow steps 17-20 then proceed to step 25. For Stinger-Plus and PowerPack installations, proceed to step 21.

17. Remove the E-clip from the wastegate arm, allowing the actuator rod to be released. Save the E-clip for reuse. Unbolt the three actuator bracket bolts from the turbine housing. Note the location of all five spacers and retain the spacers and bolts for reassembly. Remove the two nuts holding the actuator to the bracket and remove the actuator. Loosen the jam nut on the actuator rod and remove the rod end link and the jam nut from the factory actuator. See Figure 4.

18. Thread the jam nut and rod end link onto the Banks actuator. Install the actuator onto the bracket using the original nuts. Loosely fasten the actuator assembly to the turbine housing using the original spacers and bolts in their original configuration. Do not slip the rod end link onto the wastegate arm yet.

19. Turn the rod end link on the threads of the actuator rod until the hole lines up with the pin on the wastegate arm. Turn the rod end clockwise an additional 6 full turns, such that it will add preload to the wastegate.

20. Loosen the bracket bolts and slide the rod end link over the wastegate arm. Retighten the bracket bolts. Replace the E-clip and tighten the jam nut against the rod end link.

For Stinger installation proceed to step 25.

#### TURBOCHARGER DISASSEMBLY AND REASSEMBLY:

21. Clamp the turbine inlet flange of the turbocharger in a bench vise. Loosen the four bolts, attaching the turbine housing to the center bearing section of the turbocharger. (See Figure 3)

22. Remove the bolts, lockplates, and clamp plates. Carefully remove the center bearing and compressor assembly from the cast iron turbine housing. If the turbocharger has been in service for some time, rust and carbon may prevent the center bearing and compressor assembly from easily separating from the turbine housing. If light hammer blows, penetrating oil or heat will not free the compressor assembly from the turbine housing, the clamp bolt adjacent to the turbo oil inlet connection may be backed out so as to push against the bearing casting and separate the two components. Remove any loose rust or carbon from the bearing housing that might prevent proper engagement into the new turbine housing.

23. Install the center bearing and compressor assembly into the new turbine housing supplied. Apply a dab of anti-seize compound to the bolts, then install bolts, clamp plates, and lock plates finger tight to allow for final positioning.

24. Remove the exhaust outlet adapter from the rear of the turbine housing and save for reuse. Clamp the exhaust inlet flange of the new turbine housing in a bench vise. Install the turbo exhaust outlet adapter casting to the turbine housing with five 8mm x 20mm metric hex bolts. Apply a dab of anti-seize compound to the bolts, then torque the bolts to 11.3N-m (100 in-lbs.). Make sure the turbine inlet flange does not rotate in the vise while torquing. (See Figure 4)

#### TURBOCHARGER INSTALLATION

25. Install a new turbo exhaust inlet gasket provided and apply a dab of anti-seize compound to the four turbo mounting studs. For Stinger installations, reuse the stock gasket. Install the turbocharger on the exhaust manifold. Tighten the turbocharger mounting nuts to 32N-m (24 ft.lbs.) torque.

Figure 3

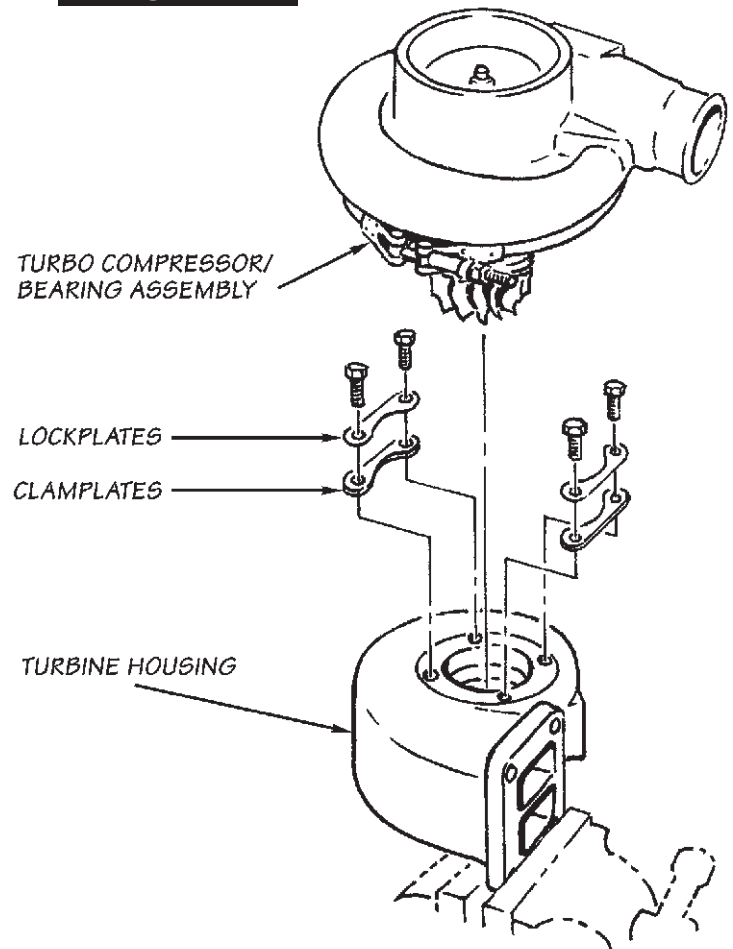
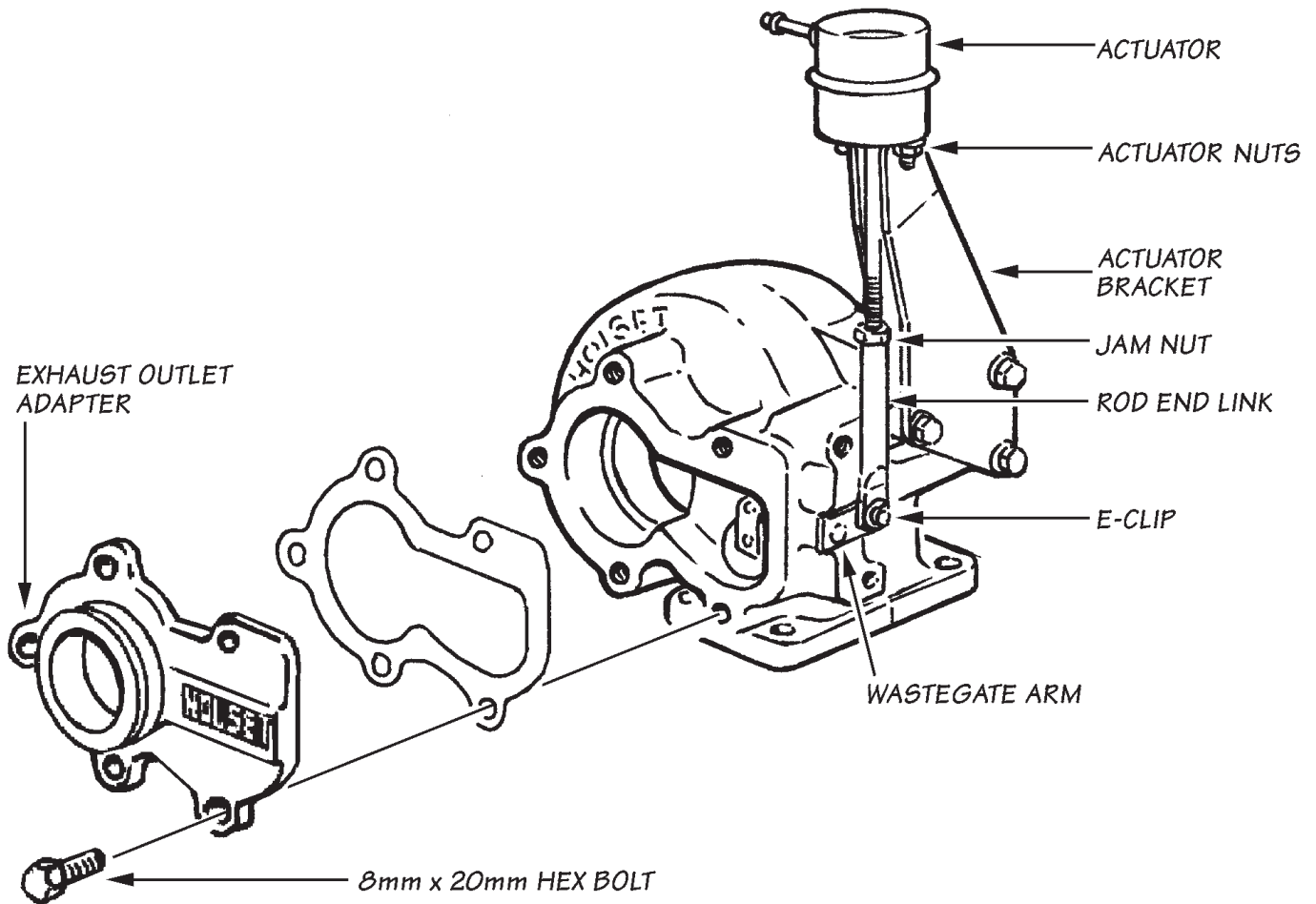


Figure 4



**26.** Align the compressor outlet with the intercooler hose adapter and tighten the clamp. Tighten the turbine housing clamp plate bolts to 11.3N-m (100 in-lb.) torque.

**27.** Spin the turbocharger shaft to make sure it turns freely. If not, loosen the turbine clamp plate bolts and check for misalignment between the turbine housing and turbocharger center section. Retighten bolts and check again.

**28.** Use the new gasket provided to connect the turbocharger oil drain tube to the turbocharger. Make sure the turbocharger oil drain flange is clean and free of any old gasket material. Tighten the drain flange bolts to 24N-m (18 ft.lbs.) torque. NOTE: If the bolts encounter excessive resistance prior to seating against the flange, check for paint build up in the threads of the turbo bearing housing. The threads may need to be chased with an 8mm x 1.25 metric tap.

**29.** Reconnect and tighten the turbo oil supply hose.

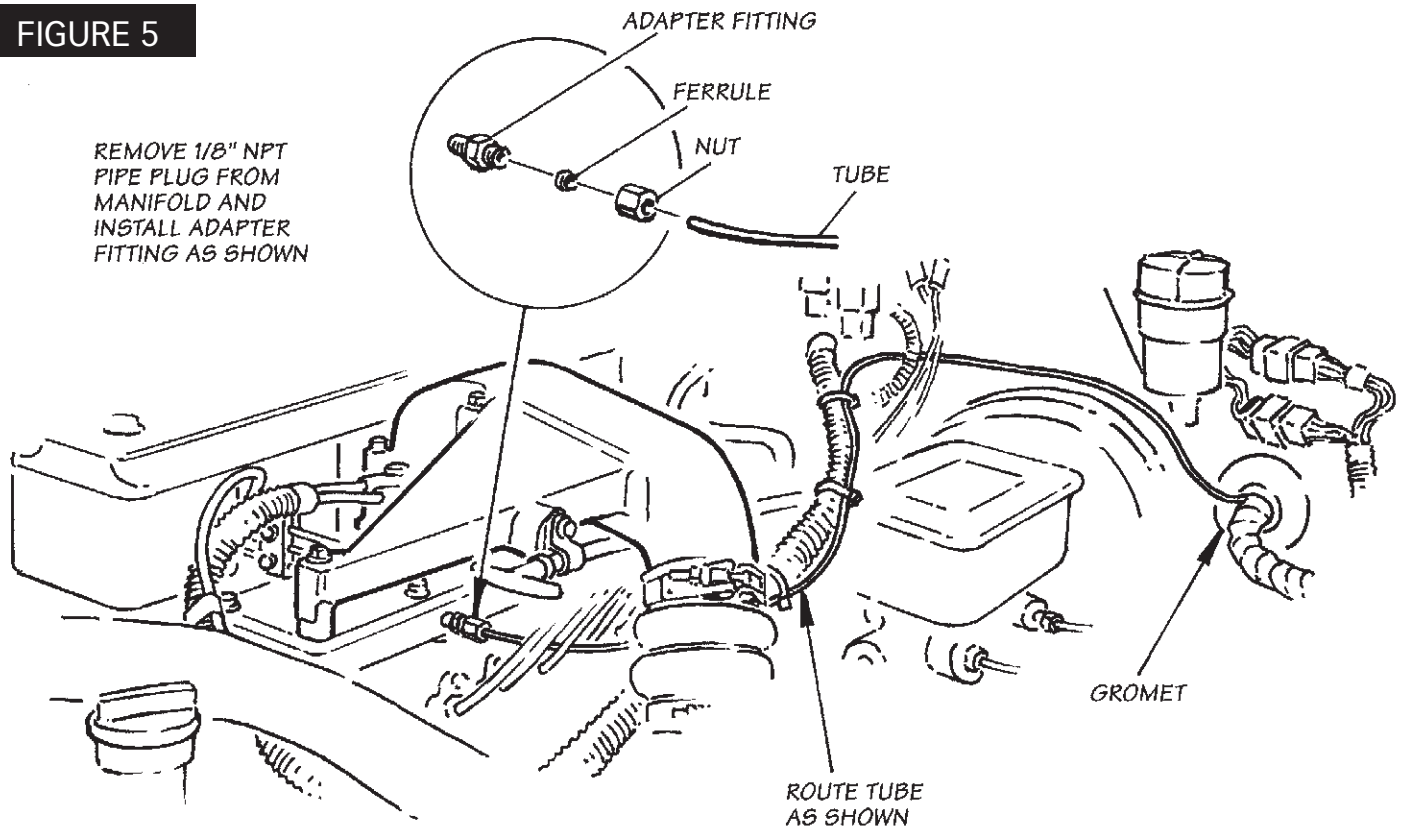
### **30. BOOST GAUGE INSTALLATION**

**30.** Choose a suitable location under the lower edge of the dash panel for mounting the instrument panel provided where it can be conveniently viewed by the driver. This will typically be above and slightly to the right of the accelerator pedal.

NOTE: Molded instrument consoles for top-of-dash mounting and additional gauges are available through Gale Banks Engineering.

**31.** Using the panel as a template, drill two  $\frac{3}{16}$ " diameter holes in the dash and mount the panel with two no. 10 x  $\frac{1}{2}$ " machine screws, nuts and star washers provided.

**32.** Locate and remove the  $\frac{1}{8}$ " NPT pipe plug on the driver's side of the intake manifold as shown in Figure 5. Install the  $\frac{1}{8}$ " NPT male x  $\frac{1}{8}$ " compression tube adapter at this location. Use Teflon tape or sealant on the pipe thread end of the adapter fitting.

**FIGURE 5**

**33.** Install one end of the  $\frac{1}{8}$ " diameter plastic tube provided in the nut and ferrule adapter fitting and tighten the nut. Check that the plastic tube cannot be pulled out of the ferrule, but do not over-tighten the nut. Route the plastic tube between injector tubes on the injector pump, toward the firewall following the path of the main electrical wiring loom, then up and over the brake vacuum booster diaphragm. See Figure 5. Feed the plastic tube toward the instrument panel through the large electrical wire loom grommet at the upper left area of the firewall. Tie the tubing with 4 to 5 plastic cables provided to keep it clear of sharp edges and moving parts. Do not kink the tube.

**34.** Install the boost gauge in the gauge panel using the clamps and thumb nuts provided. Install the  $\frac{1}{8}$ " NPT female x  $\frac{1}{8}$ " compression tube adapter fitting onto the connection at the back of the gauge. Use Teflon tape or sealant on the male threads of the gauge nipple. Use sealant sparingly, and do not allow any sealant to cover the small pin-sized hole in the end of the gauge nipple.

**35.** Route the plastic tube to the gauge, then cut the tube to length. 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 overtighten.

**For Quick-Turbo installation only, proceed to step 41.**

**36.** Uncoil the leadwire cable provided with the pyrometer gauge kit. As a precaution to improper gauge function, re-crimp the ring terminals on the wires at the probe, after sliding an insulating sleeve onto each of the wires at this end of the cable. Check that the two red wires are connected together, and likewise the yellow wires, and that screws are tight. Then slide the insulating sleeves over each connection and check that connections cannot short together. Wrap electrical tape over the sleeves for additional insulation.

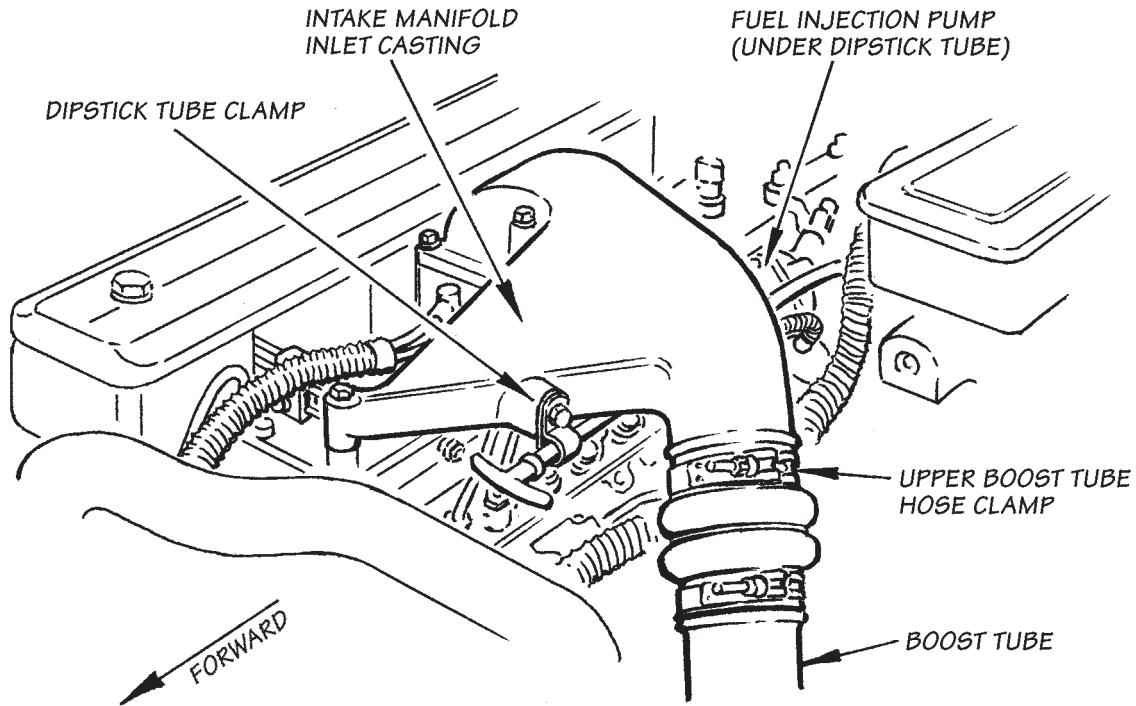
**37.** Route the pyrometer cable up the firewall and across to the grommet where the boost gauge tubing was fed through the firewall. Make sure the cable is clear of hot exhaust components, moving parts, and sharp edges that could damage it. Tie the cable to fixed components at intervals with 4 to 5 of the plastic cable ties provided.

**38.** Feed the leadwire through the firewall grommet and run the free end toward the mounted gauge panel. Do not cut lead wire, as the pyrometer is calibrated for this length of wire as a minimum. Coil and tie up excess wire under the dash.

**39.** Remove the short piece of bare wire from across the stud terminals on the back of the pyrometer gauge. Remove the U-clamp from the studs, then install the gauge through the panel using the U-clamp and two 10-32 hex nuts provided with the gauge. Do not remove the nuts on the studs closest to the gauge body.

**FIGURE 6**

**NON-EGR  
MODEL  
SHOWN**



**40.** Slip the ring terminals on the end of the leadwire cable over the studs on the pyrometer. Connect the yellow wire to the + terminal and the red wire to the other terminal. If the leadwires are accidentally reversed, the gauge will read backwards. Install one flat washer, one lock washer, and one 10-32 hex nut on each stud and tighten.

#### **GAUGE LIGHTING**

**41.** Snap the light sockets into the back of each gauge if not already installed. Connect one wire from each light to a good ground location under the dash, such as metal dash support brackets where other wires may already be grounded. Connect the remaining light wires together, then to an 18-ga. or larger wire connected to the headlight circuit, or to the factory instrument light circuit. Wiring and terminals for gauge lighting are not supplied with the system.

**42.** Install the air inlet tube (from the air cleaner housing) and the turbo exhaust pipe onto the turbocharger. Reattach the wastegate actuator boost line using a crimp lock clamp provided.

For Quick-Turbo installation only, proceed to CHECKING ENGINE PERFORMANCE.

**43.** On exhaust gas recirculation (EGR) models, unbolt the EGR crossover tube from the exhaust manifold and the EGR valve. Remove and set aside for later use. Disconnect the vacuum

supply to the EGR valve, and unbolt the valve from the air inlet casting. Set aside for later use. On all models loosen the upper hose clamp on the boost tube hose joint at the air inlet casting. Unbolt the dipstick tube clamp from the inlet casting, then unbolt and remove the inlet casting from the engine. Retain the inlet casting gasket if it is in good condition (a replacement is provided if required). Cover the intake manifold opening and the open end of the boost tube with clean rags to prevent foreign object entry. (See Figure 6)

For Stinger and Stinger-Plus installation, proceed to OTTOMIND INSTALLATION.

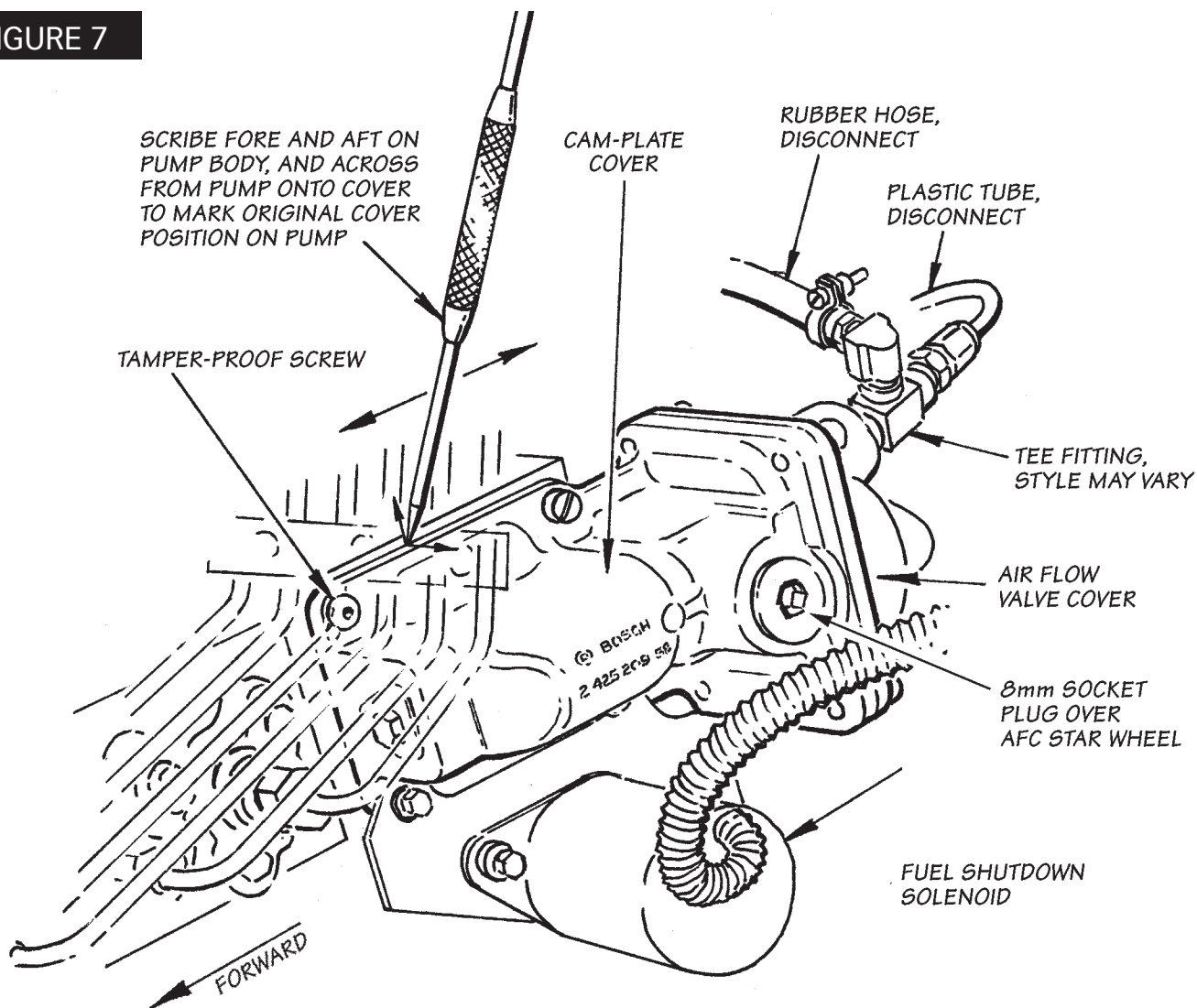
#### **INTAKE MANIFOLD COVER REMOVAL**

**44.** Disconnect two large lead wires attached to the stud terminals on top of the manifold cover next to the air inlet flange. Loosen the tube nuts at both ends of all six fuel injection lines. Remove the two bolts from the intake manifold cover that retain the fuel injection line clamp brackets. Remove the injection lines as an assembly. It is very important that no dirt or debris be introduced to the fuel system while the injector lines are removed. Place the plastic caps provided over each injector nozzle and each fitting on the injection pump. Set the injector lines aside in a clean place.

**45.** Unplug the air temperature sensor located in the intake manifold cover. On EGR models, unplug the wiring to the EGR vacuum regulator solenoid. Remove the remaining manifold cover bolts and remove the manifold cover. Make note of the various bolt lengths and their locations. Cover the cavity in the cylinder



**FIGURE 7**



head with clean rags to keep foreign material out while working.

**46.** It is necessary to remove the two heater elements from the intake manifold cover casting for reinstallation with the TwinRam manifold. First carefully grind the staked threads from the bottom of the studs protruding into the underside of the cover so that the nuts can be removed. In some cases the nuts can simply be unscrewed over the staked threads. These studs and nuts will be reused. Remove all the nuts and washers that retain the heater elements and remove the elements from the manifold cover. Remove the studs, spacers and mica insulating washers and sleeves from the casting and set all the pieces aside for later use. Remove the air temperature sensor from the cover and set aside for later use.

For Twin-Ram manifold installation only, proceed to step 57.

### OTTOMIND INSTALLATION

To realize power gains made available by the increased airflow through the Banks components, the fuel delivery of the injection pump must also be increased. This installation procedure will provide the additional fuel flow required.

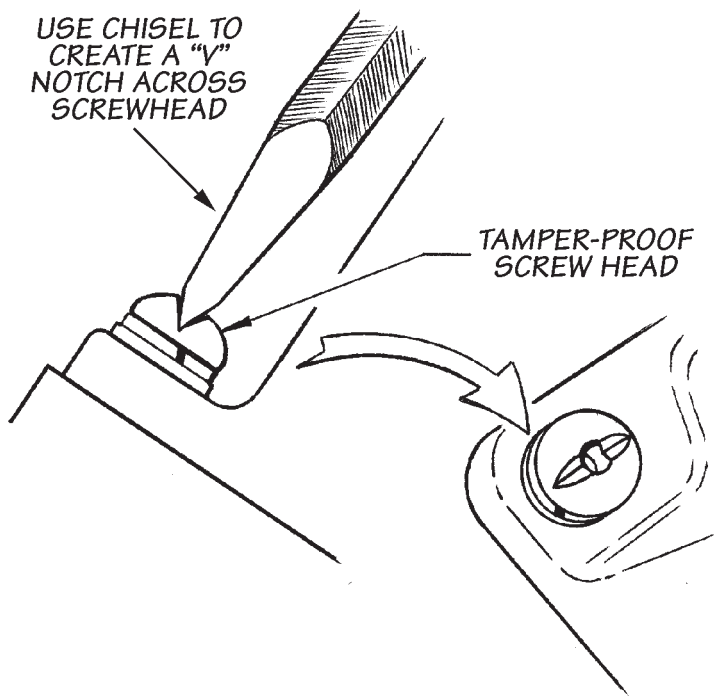
**47.** The injection pump is located on the upper left side of the engine, and can be identified by the row of six injector pressure tube connections on top of the pump body. Locate the cam plate cover on the injection pump. See Figure 7. The cover is just to the rear of the area where the six injector pressure tubes connect to the pump body, and is retained by four screws. Clean any dirt, grease, or foreign material from the cam plate cover, especially in the area where the cam plate cover flange contacts the main pump body, to prevent contaminants from entering into the pump upon disassembly.

Use a sharp scribe to scribe a line in the injector pump body along the outside edge of the cam plate cover where the cover attaches to the pump (along the upper edge of the cover, on the side facing

the engine). Then scribe another line at a right angle across the first, from the pump body onto the cover. These scribe lines are to enable you to reinstall the cam plate cover in exactly the same position. You may make any additional scribe lines if you feel it may be helpful.

**48.** Loosen and disconnect a rubber hose and a plastic tube from a "tee" fitting located in the air flow valve cover. This is a smaller cover attached to the rear of the cam plate cover, with four screws facing the rear of the engine.

**FIGURE 8**

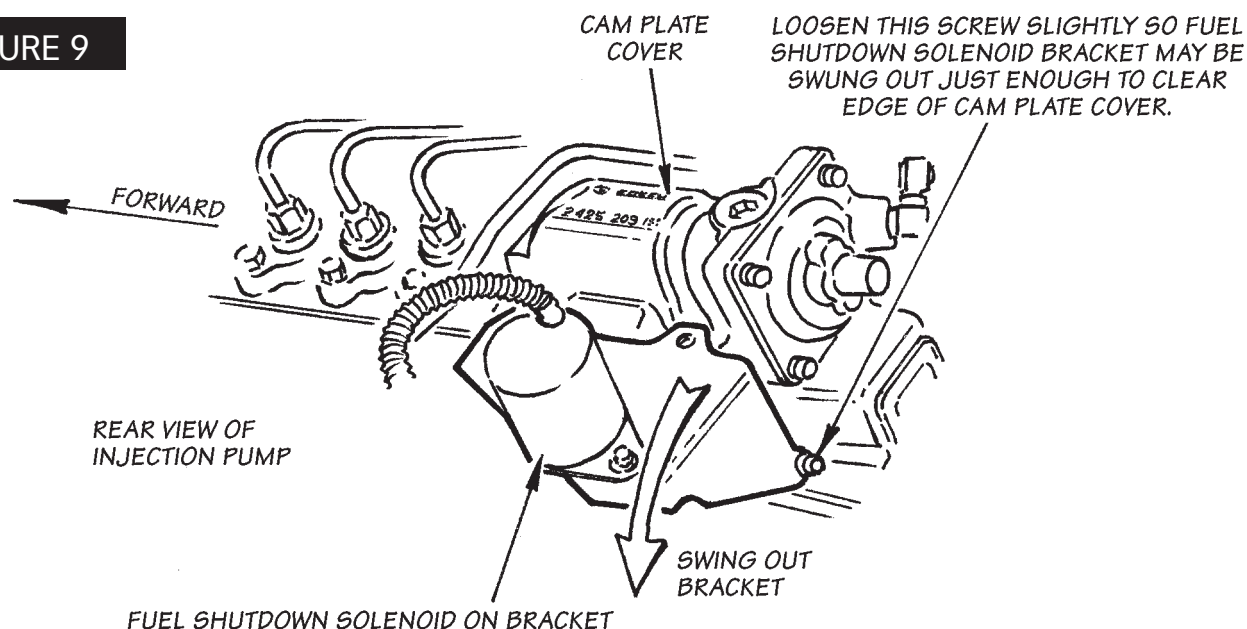


**49.** The upper forward screw attaching the cam plate cover to the fuel pump body has a factory break-off tamper proof head. This screw head must be modified to provide some means of removal. A sharp chisel with an approximately  $\frac{3}{8}$ " wide blade may be used to chisel a screwdriver "slot" across the screw head. Pass the chisel between the injector tubes and strike straight down to create a "V" notch, then use a  $\frac{5}{16}$ - $\frac{3}{8}$ " blade screwdriver with moderate downforce to turn the screw. See Figure 8. Note: On PowerPack or Twin Ram manifold installations, this screw will be more easily accessible since the injector lines have already been removed.

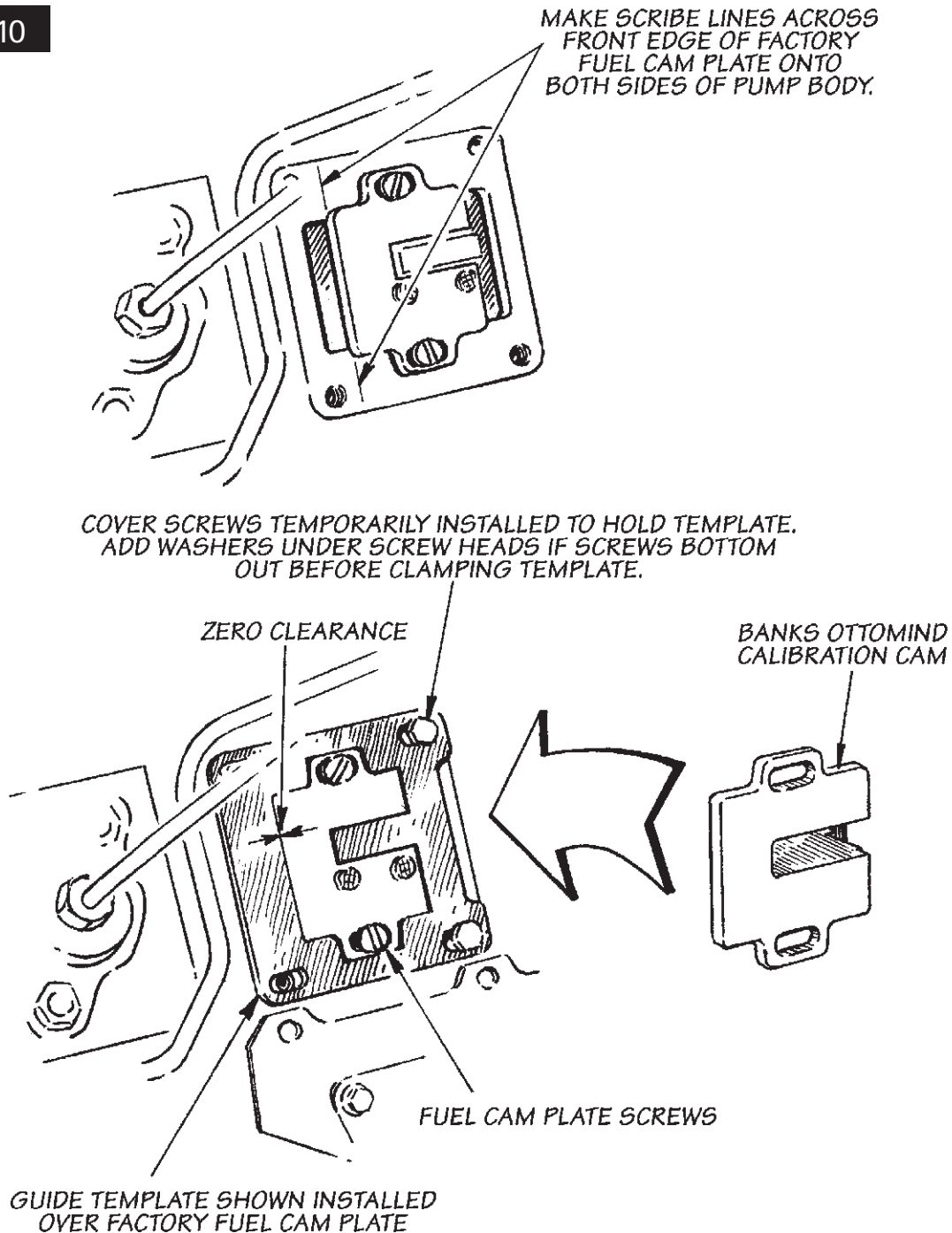
An alternate method is to drive the chisel into the screw head using blows upon a hand held impact driver tool that is set in the "removal" position, such as a Snap-On No. PIT 160 or equivalent. Install a hex or 8-point socket on the driver that will fit over the shank on the chisel. Another method is to drive a No. T15 (or in some cases a No. T20) male TORX bit into the screw head using either a hammer or hand impact driver. A center punch may be required to provide a depression in the top of the screw. When using a hand impact driver, use light hammer taps to seat the TORX bit, and progressively harder blows to loosen the screw.

Once this screw has been removed, save the washers and discard the screw. Next, remove the clip from the fuel shutdown solenoid plunger rod under the bracket. Remove the two bolts attaching the shutdown solenoid to the bracket, then remove the solenoid. Remove the remaining three cam plate cover screws and washers. Loosen slightly one bolt at the rear of the injection pump that will allow the fuel shutdown solenoid bracket to be swung outboard just enough to clear the edge of the cam plate cover so the cover can be removed from the pump. Now remove the cam plate cover and set it aside. (See Fig. 9)

**FIGURE 9**



**FIGURE 10**



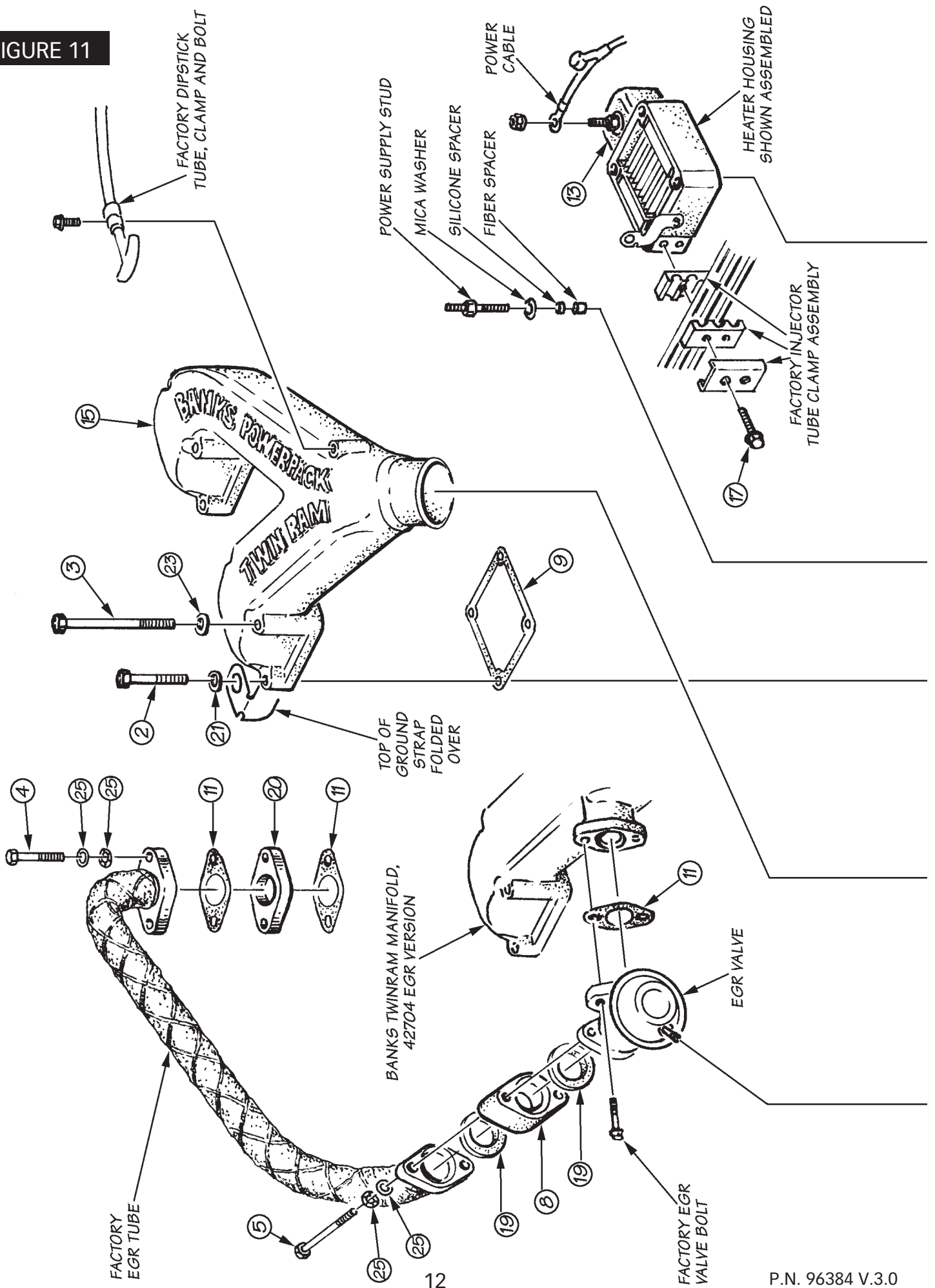
**50.** Note the position of the cam plate attached to the pump body by two screws. Mark a scribe line in the pump body at the forward edge of the cam plate where it contacts the pump body. See Figure 10. This mark can be used as a reference should the original cam plate need to be reinstalled.

**51.** Place the installation guide template provided over the stock fuel cam plate. This template will provide the position reference for the Banks OttoMind calibration cam. Note: The guide template will only fit one way. If it appears to be misaligned or does not seem to fit, flip the plate over and try again.

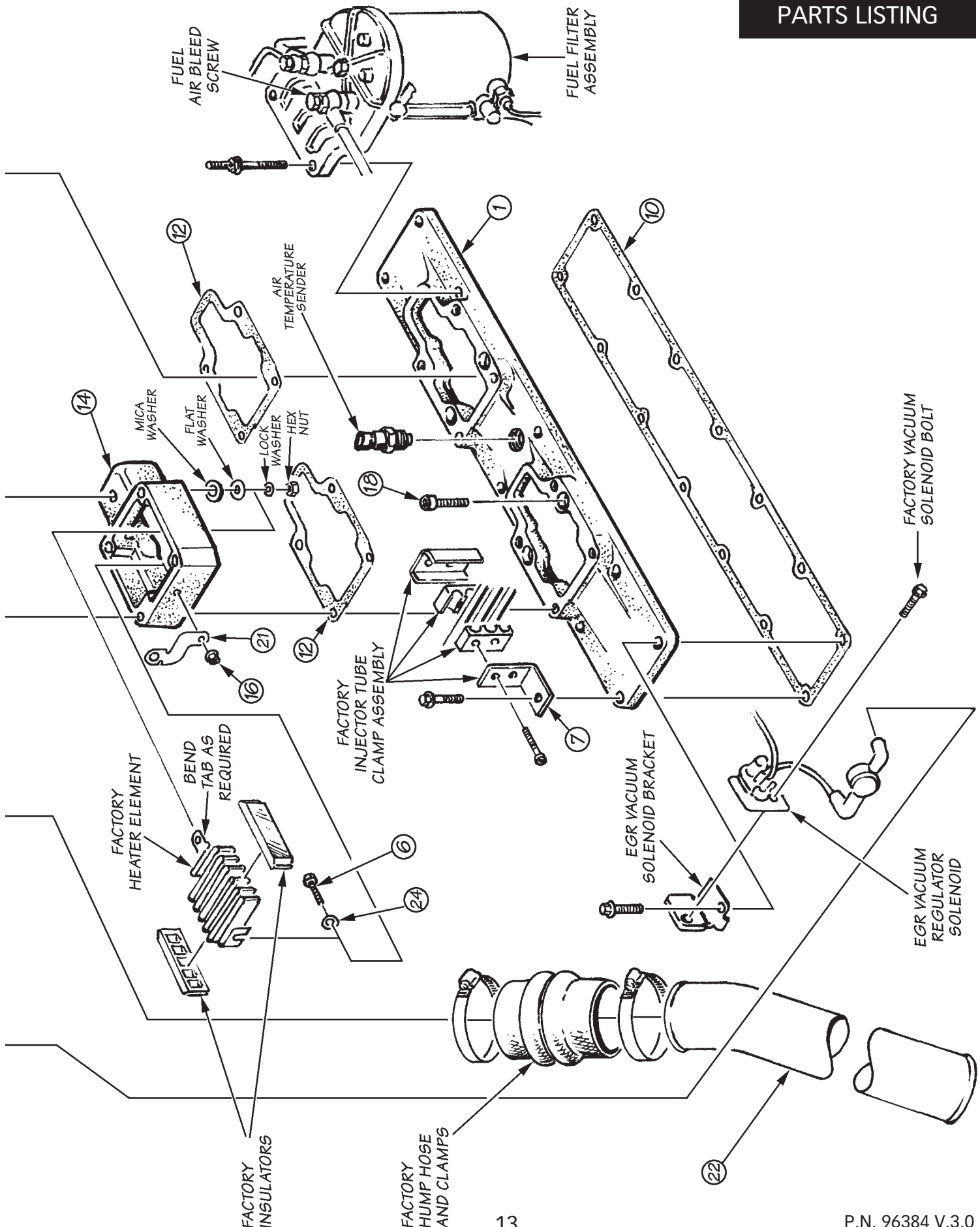
**52.** Using two of the short cam cover screws previously removed, loosely attach the guide template to the fuel pump body. Slide the guide template toward the rear of the engine so that there is zero clearance between the front edge of the fuel cam plate and the guide template. Hand tighten the two screws so that the guide template DOES NOT move during the remainder of the Banks OttoMind installation.

**53.** Loosen and remove the two screws holding the fuel cam plate in place. Keep these for reuse. Remove the stock fuel cam plate. Keep this piece in a safe location in case it is needed for future work on your vehicle.

FIGURE 11



SEE PAGE 24 FOR PARTS LISTING



**54.** Install the Banks OttoMind fuel calibration cam in the same position as the stock fuel cam plate, with zero clearance between the front edge of the calibration cam and the guide template. Replace the two screws to retain the calibration cam and tighten. Remove the installation guide template and keep it with your stock fuel cam plate for future use.

**55.** Once installation is complete, replace the cam-plate cover on the pump, swing the fuel shutdown solenoid bracket into place and thread the two lower cover screws into the pump until finger-tight. Re-install one original screw in the upper rear bolt-hole. This is a temporary-use screw, to be replaced by the new break-off screw, provided, when fuel calibration is complete.

Place the cover in its exact original position, as indicated by the scribe lines on the cover and pump body. Maintaining its position, tighten the cover bolts and rear fuel-shutdown bracket bolt that was previously loosened.

After engine performance has been checked, replace the temporary-use Phillips-head screw with the new break-off screw provided. **CAUTION:** Failure to install the new break-off screw when

fuel calibration and performance have been verified can invalidate your emissions warranty.

**56.** Reconnect the rubber hose and plastic tube to the "tee" fitting on the air flow valve cover, tighten the hose clamp and tube nut.

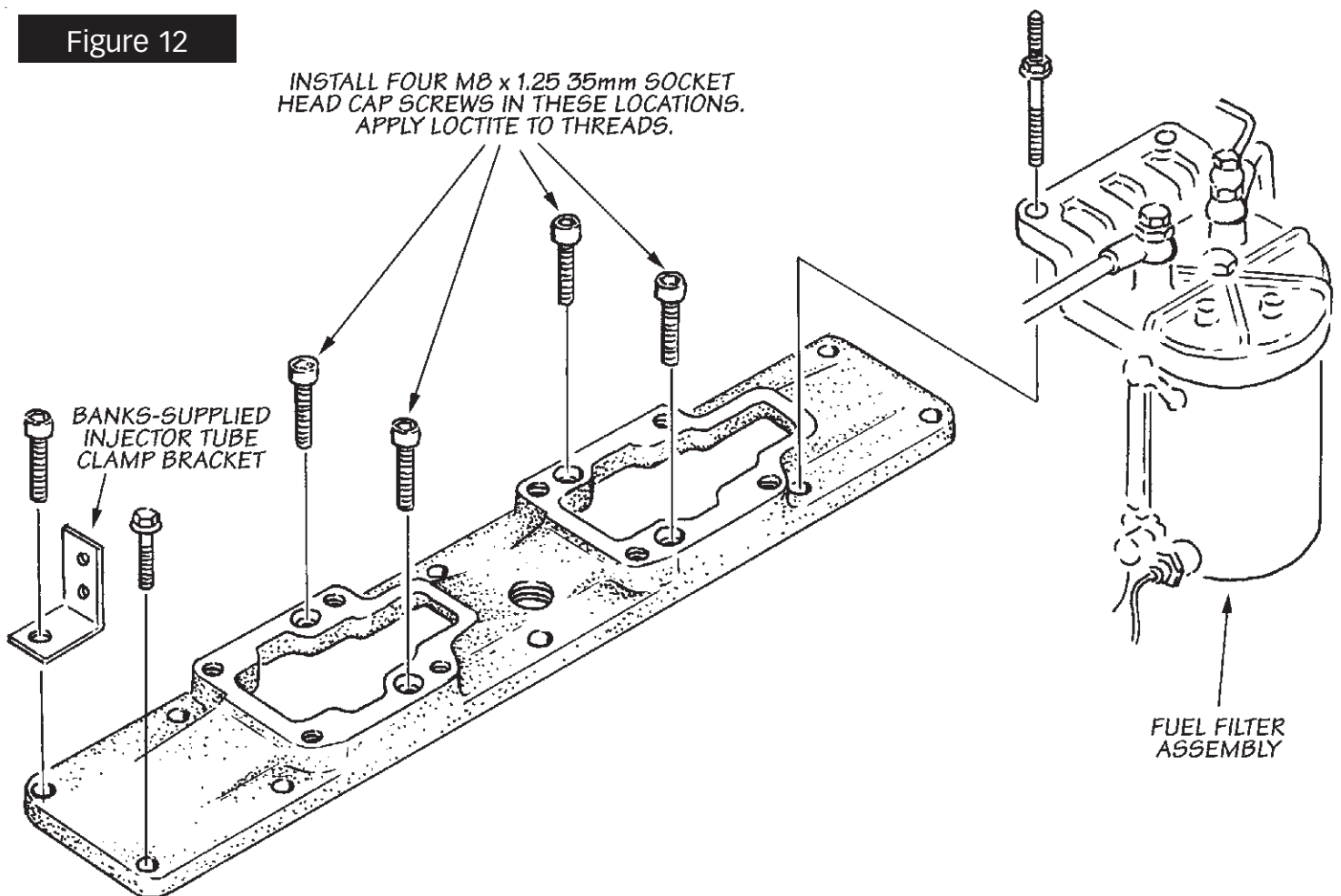
For Stinger and Stinger-Plus installation, proceed to Step 69.

### TWIN RAM MANIFOLD INSTALLATION

**57.** Clean any remaining gasket residue from the cast iron surface of the cylinder head. Take care to keep the gasket material from entering the cylinder head cavity. Remove any rags placed in the head cavity at this time to allow for the installation of the TwinRam manifold components.

**58.** Install the air temperature sensor in the large threaded hole in the Twin Ram base plate. Place the new gasket provided over the bolt pattern in the cylinder head and place the base plate in position. See figure 12. Apply a drop of Loctite to the threads of four metric socket-head capscrews provided and install into the recessed holes in the base plate. Install ten factory fasteners

Figure 12

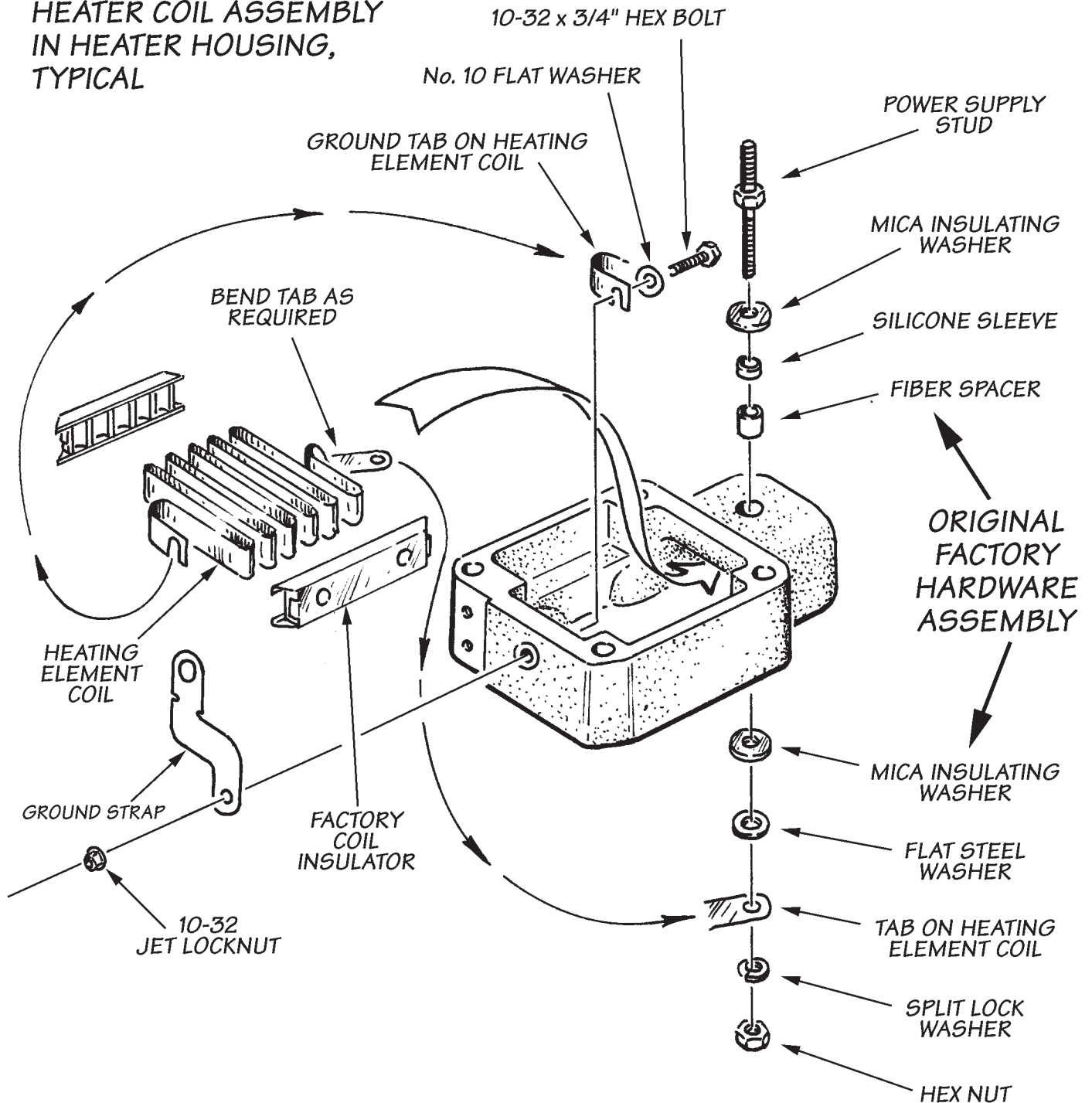


finger tight in the remaining positions. Note the location of two slightly longer factory fasteners for mounting the fuel filter bracket. Also note the location of the new injection line bracket provided. On non-EGR models, use one of the metric cap screws provided (see Figure 12). On EGR models, reinstall vacuum regulator solenoid bracket.

**59.** Remove the two line clamp assemblies from the injector feed lines that are bolted to brackets. Remove the plastic caps from the fuel pump and the injector nozzles. Reinstall the injector line assembly on the engine using the new bracket provided as shown in figure 11. Do not tighten lines at this time. Torque all fourteen of the base plate bolts to 18 lb-ft. working from the center, outward.

Figure 13

**HEATER COIL ASSEMBLY  
IN HEATER HOUSING,  
TYPICAL**

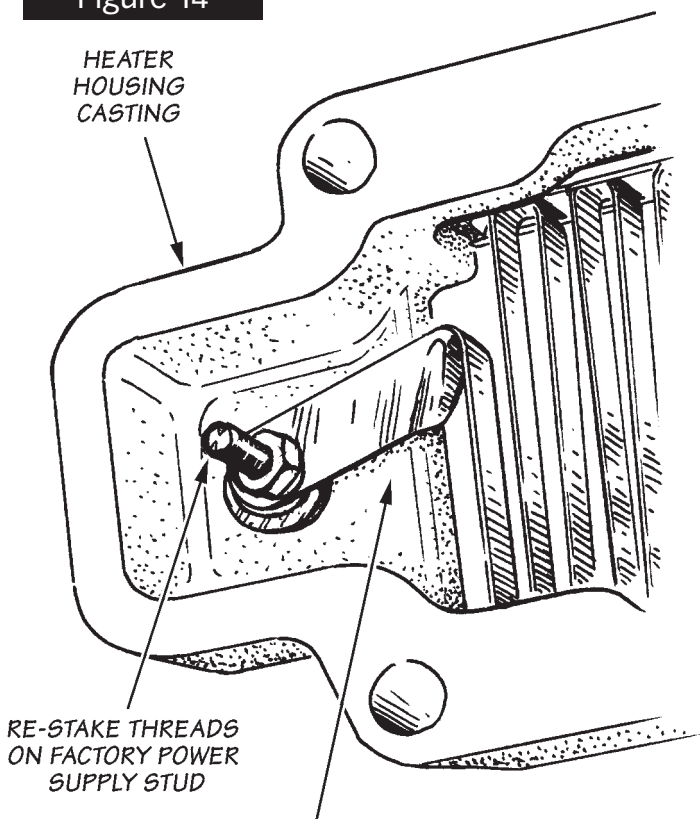


**60.** Install the silicone and fiber insulating sleeves removed with the factory heater power supply studs into the thru-holes in the Banks heater housing castings. See figure 13. Install the heating elements and ceramic insulator assemblies into the top of the heater housings. Install the power supply studs, mica insulating washers, flat and lock washers, and nuts into the heater housings and through the heating element coils. The heating element coils will have to be bent slightly to line up the holes in the coils with those in the housings. Check that there is a mica washer on both top and bottom side of each stud against the housing where the stud passes through. Re-stake the stud threads with a chisel to prevent loss of the nuts after assembly.

**61.** Install a 10-32 x 3/4 inch hex bolt, No. 10 washer, ground strap and jet-locknut through the side of each heater housing. See figure 11. Bend the heating element coil slightly to install the bolt through the slot in the ground end of the coil. Tighten the bolt and nut to ground the coil and ground strap against the heater housing. Check that no part of the heating element coil other than the ground end comes in contact with the inside of the heater housing. Bend the other (power input) end of the coil as required to provide clearance. See figure 14.

Set a heater housing gasket

Figure 14



DO NOT ALLOW TAB OR ANY PART OF COIL TO SHORT AGAINST INSIDE OF HEATER HOUSING AT THIS LOCATION. MAINTAIN AT LEAST 1/8 INCH CLEARANCE BETWEEN TAB AND CASTING. BEND TAB AWAY AS REQUIRED.

and the rear heater housing casting in place upon the manifold baseplate. Note that the gasket goes on one way to match the outline of the baseplate flange. Also note that the rear heater housing has a machined flat area and two threaded holes in the front surface of the housing. See figure 11.

**62.** Set the other heater housing gasket and front heater housing in place on the baseplate. It may be necessary to slightly bend one injector tube to clear the front corner of the forward heater housing. The injector tube must not contact the housing after assembly. Bend the tube as little as possible to obtain about 1/16-inch clearance to the housing. Use a smooth, rounded-edge pry tool to avoid nicking or gouging the tube.

**63.** Slip a 3/8 washer on one of the 3/8 x 5-inch hex bolts, then apply a drop of Loctite to the first few threads and slide the bolt into the rearmost long bolt hole on the Banks TwinRam manifold. Set an air inlet manifold gasket on top of each heater housing, then set the TwinRam manifold in place while guiding the bolt through the heater housing and gaskets. Use extreme care not to tear or damage the gaskets while installing the bolts as boost leaks can occur. Thread the bolt into the baseplate finger-tight, then install washers and apply Loctite to the remaining three 5-inch hex bolts and thread them into the baseplate through the manifold, heater housings and gaskets. Use pliers to bend the upper end of each heater housing ground strap to line up over the adjacent corner bolt hole. Install a 3/8 washer on two 3-inch 3/8 hex bolts and thread the bolts into the baseplate through the ground straps, manifold, heater housings and gaskets. Install a 3/8 washer on the remaining two 3-inch 3/8 hex bolts, apply Loctite and thread the bolts into the baseplate through the manifold, heater housings and gaskets. Torque all bolts in the pattern shown in figure 15. Tighten all eight bolts to 20 lb-ft, then in 5 lb-ft increments to 35 lb-ft, each time using the pattern shown.

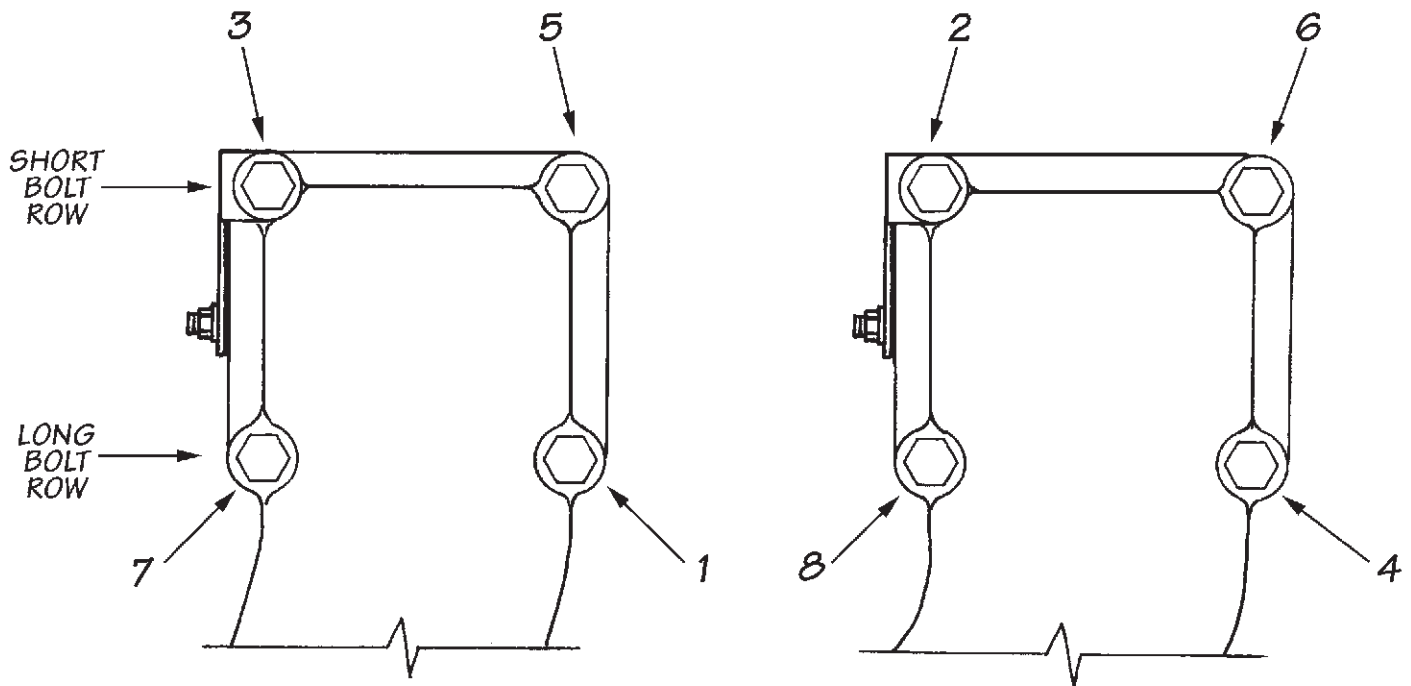
**64.** Once the bolts are torqued, slide one of the factory injector tube spacers between the rear heater housing and the three injector tubes, so that the spacer is positioned over the two threaded holes in the housing. See figure 11. Install the other factory spacer half, and the factory clamp plate to the heater housing using two 10 - 24 x 1-inch bolts. When tightening the bolts, adjust the position of the clamp assembly to center the heater coil ground nut between the tubes. The tubes must not be allowed to vibrate against this nut. Once this position has been established, remove each bolt one at a time, apply Loctite and tighten.

**65.** Tighten all 12 injector tube nuts to 22 lb-ft. using a 19mm or 3/4-inch crow's-foot wrench on a torque wrench. Install factory injector tube clamp hardware onto the new bracket at the front of the baseplate and tighten.



Figure 15

TWIN RAM MANIFOLD BOLT TORQUE SEQUENCE



**66.** Locate the ends of the two intake heater power cables previously disconnected. Un-bundle the wire loom containing these cables until enough cable length is freed up to comfortably reach the two power studs on the intake heater housings. Also un-bundle the wire loom portion containing the intake manifold air temperature sensor pigtail to free up enough of this cable to reach the sensor. Plug the pigtail on the temperature sensor and reconnect one of the intake heater power cables to each of the power studs on the intake heater housings using the factory hardware. Re-bundle any other wiring back into the wire loom jackets and secure with electrical tape as required.

NOTE: Before slipping any boost tubes and the corresponding hoses, into position, ensure that all connection ends are clean and free of any oil residue and contaminants. Clean compressor outlet and all connection points with a non-oil based solvent such as Acetone, Mineral Spirits, Denatured Alcohol or Lacquer Thinner. Read and follow the manufactures operation instruction for non-oil based solvent cleaner.

**67.** Loosen the hose clamp at the bottom of the factory boost tube and remove the boost tube. Install the new boost tube provided with the straight end at the bottom and the bend at the top. Rotate the tube such that the bend is aligned properly with the inlet to the TwinRam manifold and reinstall the factory hump hose. Retighten all the hose clamps. Bolt the dipstick tube and bracket to the top of the TwinRam manifold using the factory bolt.

**68.** On EGR models, install the EGR crossover tube using the steel spacer and two gaskets

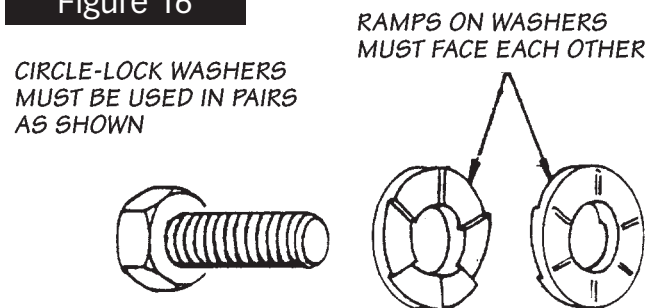
provided onto the exhaust manifold with two 8mm x 45mm hex bolts and four circle lock washers provided. Note that the circle-lock washers must be used in pairs and be installed with their ramped sides facing each other. Leave bolts finger tight at this time. See figure 11 and 16.

Install the EGR valve, aluminum EGR extension casting and two conical seal rings to the free end of the crossover tube using two 8mm x 90mm bolts and four circle lock washers provided. Leave bolts finger tight. Bolt the EGR valve to the flange on the side of the TwinRam manifold with a new gasket provided and the two factory mounting bolts. After checking all EGR components for best alignment, tighten all EGR system bolts.

Remount EGR vacuum regulator solenoid to bracket at front of baseplate using the factory bolt, then reconnect solenoid wiring and EGR vacuum hose.

For PowerPack and Twin-Ram manifold installation, proceed to Step 70.

Figure 16



**69.** Remove the rags covering the intake manifold opening and boost tube, then reinstall the intake manifold inlet adapter casting on the intake manifold. Inspect the gasket and if necessary use the new gasket provided if the original was damaged. Reinstall the dipstick tube clamp and bolt. Check that the boost tube hose is properly engaged on the manifold adapter and the clamp is positioned properly on the hose, then tighten the clamp nut.

For Stinger and Stinger-Plus installation, proceed to CHECKING ENGINE PERFORMANCE.

### FUEL LINE BLEEDING PROCEDURE

**70.** If injector lines have been disconnected, the engine may not start due to air in the lines or it may run erratically until air is purged. If the engine will not start after 30 seconds of cranking, allow a 2 minute starter cooling period, followed by another 30 seconds of cranking. If the engine will not start after several of these cycles, bleed the fuel system as follows:

A. Loosen the bleed bolt in the top of the forward banjo fitting above the fuel filter.

B. Operate the rubber push button primer on the fuel transfer pump until fuel exiting the bleed bolt is free of air. Tighten the bleed bolt to 6 lb-ft. of torque.

C. Crank the engine for 30 seconds followed by a 2 minute cooling period. Repeat this procedure several times as required to start engine.

D. Once engine starts, bring engine speed slightly above idle for 1-2 minutes to bleed additional air, then allow to idle.

If the engine still will not start or runs erratically after this procedure, bleed the high pressure lines while observing these safety precautions:

**71.** A. Place vehicle in park or neutral with parking brake set. Vehicle may start during purging procedure.

B. Do not bleed lines on a hot engine. Do not allow fuel to spray on a hot exhaust manifold.

C. High pressure fuel spray can puncture your skin. Wear goggles and protective clothing. Avoid contact with fuel spray while bleeding lines.

**72.** Bleed air from one high pressure injector line at a time as follows:

A. Slightly loosen the line nut at the injector end of the line.

B. Crank the engine until all air appears to be bled from the line. Do not crank for more than 30 seconds. Wait 2 minutes between cranking intervals.

C. Tighten each injector line nut to 22 lb-ft. of torque before moving to the next injector line.

NOTE: Engine may start and run while cranking to bleed air. Continue the air bleeding procedure on the remaining injector lines with the engine running, bleeding them one at a time until the engine runs smoothly.

# CHECKING ENGINE PERFORMANCE

Go over the entire installation as a precautionary check to ensure that all clamps are tight, wiring and hoses are properly routed, and connections are tight. Start the engine and allow it to warm up. Drive the vehicle under light load (normal around town driving) for 20 to 30 minutes, and listen for any exhaust leaks or rattles, or intake boost leaks. Shut off the engine and re-tighten all intercooler and turbocharger boost clamps. These connections may have loosened with time, and if leaking, will cause a drop in boost pressure with a loss in performance. Check that clamps are properly positioned on hoses, and periodically check tightness of hose clamps at regular maintenance intervals, such as when the oil is changed.

Observe the operation of the boost and pyrometer gauges while driving under varying conditions. Turbocharger boost pressure will increase as a function of load and engine RPM, thus the engine will produce little boost while cruising at light throttle, with maximum boost while climbing hills heavily loaded during acceleration. Note the boost level seen during hard acceleration with a given load. If performance seems to have deteriorated sometime in the future, the maximum boost figures may be compared to see if boost has dropped off. Lower boost may be caused by turbo ducting leaks, a malfunctioning wastegate or fuel injection pump, or a dirty air filter. Typical maximum boost pressure settings for the Dodge/Cummins diesel will vary considerably with stick or automatic transmission options, year model of vehicle and altitude.

Use your pyrometer (exhaust gas temperature) gauge to monitor exhaust gas temperature (EGT) in the engine. At idle, exhaust gas temperature will be very low, perhaps only 300 degrees F. As the engine is accelerated for higher speeds with greater loads, the EGT will rise. The highest EGT will be seen under maximum load at full throttle, such as climbing a steep grade with a heavily laden vehicle. Use caution if your pyrometer reading approaches 1300 F, with 1350 F being the ABSOLUTE MAXIMUM! Exceeding these figures for more than a brief moment may cause engine damage.

If the vehicle reaches maximum EGT under these conditions, downshift the vehicle to reduce load, or back off the throttle.

If the vehicle shows excessive smoke while accelerating (see page 15).

# TROUBLE SHOOTING CHART

SYMPTOM	CAUSE	REMEDY
HIGH EGT	• EXCESSIVE FUEL DELIVERY	• CHANGE INJECTOR PUMP SETTING
	• FAULTY INJECTOR(S)	• REPAIR INJECTOR(S)
	• RESTRICTED EXHAUST SYSTEM	• CHECK FOR OBSTRUCTIONS
EXCESSIVE FUEL SMOKE (BLACK) POOR PERFORMANCE	• FAULTY INJECTOR(S)	• REPAIR INJECTOR(S)
	• DIRTY AIR CLEANER	• CLEAN OR REPLACE
	• RESTRICTED AIR INTAKE	• CHECK FOR BLOCKED OR COLLAPSED
EXCESSIVE OIL SMOKE (BLUE)	• POOR QUALITY or DIRTY DIESEL FUEL	AIR INTAKE HOSES
	• BLOCKED OR RESTRICTED TURBO OIL DRAIN	• REPLACE FILTERS, CLEAN LINES, INJECTORS AND TANK AS REQUIRED
LACK OF BOOST, EXCESSIVE OIL SMOKE, & POOR PERFORMANCE	• ELIMINATE RESTRICTIONS IN THE DRAIN LINE	• REBUILD TURBO, CHECK OIL LEVEL,
	• DAMAGED TURBO BEARINGS, CAUSED BY DIRTY OIL OR LACK OF LUBRICATION	CHANGE OIL AND FILTER AT REGULAR
LOW BOOST, POOR PERFORMANCE, SOMETIMES WITH HIGH EGT	• WORN OR DAMAGED ENGINE COMPONENTS	SERVICE INTERVALS
	• RESTRICTED EXHAUST SYSTEM	• CHECK COMPRESSION, REPLACE RINGS OR VALVES
LACK OF BOOST OR LOW BOOST, POOR PERFORMANCE	• INTAKE SYSTEM LEAKS	• ELIMINATE RESTRICTIONS, CHECK FOR OBSTRUCTIONS
	• EXHAUST SYSTEM LEAKS AHEAD OF TURBOCHARGER EXHAUST INLET	• LOCATE AND SEAL LEAKS; CHECK INTAKE CLAMPS & MANIFOLD GASKETS
	• BROKEN TURBOCHARGER BLADES CAUSED BY FOREIGN OBJECTS ENTERING THE INTAKE OR EXHAUST SYSTEM	• LISTEN FOR LEAKS, REPAIR AS NECESSARY
PYROMETER NOT WORKING	• CHECK FOR REVERSED WIRES	• REBUILD TURBOCHARGER;
	• POOR WIRE CONNECTIONS	ELIMINATE MEANS OF FOREIGN OBJECT ENTRY
		• REVERSE WIRES
BOOST GAUGE NOT WORKING	• WIRING CONNECTIONS SHORTED TOGETHER	• CLEAN AND SECURE CONNECTIONS. IF GAUGE READING CHANGES WHILE WIGGLING CONNECTIONS, CONNECTIONS ARE FAULTY.
	• LOOSE, BROKEN, PINCHED, CUT, OR MELTED PLASTIC PRESSURE LINE	• INSULATE CONNECTIONS
GRADUAL LOSS OF PERFORMANCE, AND POSSIBLY BOOST ("FLATTENS OUT" AT HIGH RPM)	• NEEDLE IN GAUGE STICKS	• REPAIR OR REPLACE AS REQUIRED, RE-ROUTE LINE AWAY FROM HAZARDS
	• CLOGGED, OR PARTIALLY CLOGGED, FUEL FILTER	• REPLACE GAUGE
		• REPLACE FUEL FILTER(S)

# CLEANING AND OILING BANKS RAM-AIR™ FILTER

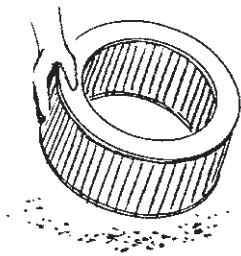
## Notification

The Banks Ram-Air Filter comes pre-oiled and no oiling is necessary for initial installation.

Use Banks Ram-Air Filter cleaning system (part #90094), available from Gale Banks Engineering to service the Air Filter. Follow the instructions included with the cleaning system to clean and re-oil your Banks Ram-Air Filter.

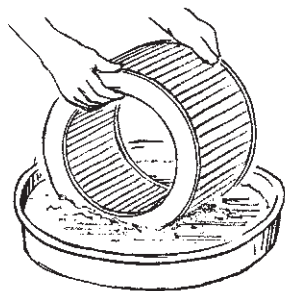
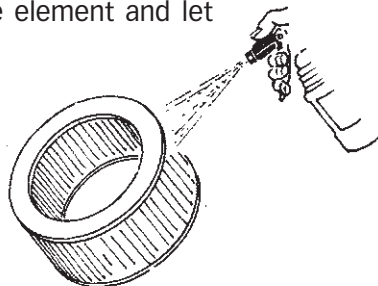
### 1. PRE-CLEANING

Tap the element to dislodge any large embedded dirt, then gently brush with a soft bristle brush. NOTE: If complete cleaning is not practical at this time, re-oil the element and re-install in your vehicle.



### 2. SPRAY-ON CLEANING

Spray air filter cleaner liberally onto the entire element and let soak for 10 minutes.



### PAN CLEANING

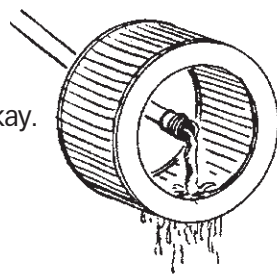
Large air filter elements can be rolled or soaked in a shallow pan of air filter cleaner. Remove immediately and let soak for approximately 10 minutes.

### 3. CLEANING HINTS

Use only Banks Ram-Air filter cleaner. NO gasoline cleaning, NO steam cleaning, NO caustic cleaning solutions, NO strong detergents, NO high pressure car wash, NO parts cleaning solvents. Any of these NOs can cause harm to the cotton filter media plus SHRINK and HARDEN the rubber end caps.

### 4. RINSE OFF

Rinse off the element with low pressure water. Tap water is okay. Always flush from the clean side to dirty side. This removes the dirt and does not drive it into the filter.



### 5. DRYING HINTS

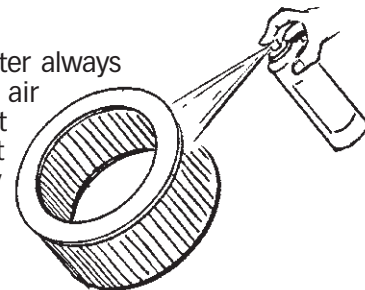
Always dry naturally. After rinsing, shake off all excess water and let the element dry naturally. DO NOT USE COMPRESSED AIR – DO NOT USE OPEN FLAME – DO

NOT USE HEAT DRYERS!

EXCESS HEAT WILL SHRINK THE COTTON FILTER MEDIA. COMPRESSED AIR WILL BLOW HOLES IN THE ELEMENT.

### 6. AEROSOL OILING

After cleaning air filter always re-oil before using. Spray air filter oil down into each pleat with one pass per pleat. Wait 10 minutes and re-oil any white spots still showing.



### 7. OILING HINTS

Never use a Banks Ram-Air filter without oil (the filter will not stop the dirt without the oil). Use only Banks air filter oil. Banks air filter oil is a compound of mineral and animal oil blended with special polymers to form a very efficient tack barrier. Red dye is added to show just where you have applied the oil. Eventually the red color will fade but the oil will remain and filter the air. NEVER USE Automatic Transmission Fluid. NEVER USE Motor Oil. NEVER USE Diesel Fuel. NEVER USE WD40, LPS, or other light weight oils.

### 8. REINSTALL

Reinstall your Banks Ram-Air filter element with proper care. Make sure the element seats properly in the filter case. Install the cover making sure it's in the right position. Tighten all the nuts, bolts, screws or clips to factory specifications.

### 9. DO NOT DISCARD

Affix the "Do Not Discard" sticker to the filter case (included with every Banks Ram-Air replacement element). Make sure you put the sticker in a highly visible place to alert your mechanic not to discard.

### 10. PERFORMANCE HINTS

Service every 50-100,000 miles on street driven applications. Service more often in offroad or heavy dust conditions or when air filter reaches 18" of restrictions. Let the dirt "build-up" work for you; it will not hurt the performance and actually helps filter the air.

CAUTION! Extreme fine dust – agriculture or offroad use – will pull the oil from the element. Frequent reoiling of the element's clean side might be required. Completely service when practicable. For extra protection use sealing grease on rubber ends of the element. Service only with Banks Ram-Air filter cleaner and Banks air filter oil.

# IMPORTANT EMISSIONS INFORMATION

## DIESEL SMOKE OPACITY TESTING ON 1994–EARLY '98 DODGE/CUMMINS PICKUPS

Several states are now imposing roadside inspections that test diesel vehicles for smoke opacity (density) and issue citations for excessively smokey vehicles. The predominate standard is a 40% maximum opacity limit, with vehicles exceeding this level either being fined or issued “fix-it” tickets. A 40% opacity level means that 40% of the light visible through the smoke as seen against a white background is blocked by the smoke. Thus a clear exhaust stream represents 0% opacity, while jet-black smoke represents 100% opacity.

The opacity test is conducted with one person depressing the accelerator pedal to the floor as quickly as possible with the engine out of gear while another person observes the opacity of the smoke. The engine is held at full throttle for approximately two seconds, then released. This is done 5-6 times, with the first 2-3 times being considered invalid, as built up carbon being blown out with the exhaust may show darker smoke. The initial burst of smoke from the next several accelerations is simultaneously compared with a tinted plastic sample while viewed against a white background under daylight conditions. This is referred to as a “snap idle” or “snap throttle” test and is often conducted at roadside inspection sites or truck weigh stations using a calibrated opacity meter placed over the smoke stream. Although comparison testing with the plastic sample will not give an actual opacity reading, and it can be interpreted differently because of light conditions and other variables, it will give you an approximate indication of whether the vehicle’s smoke opacity is below the 40% level.

Included with this Banks Stinger system is a 4-inch square of acrylic plastic tinted to approximate a 40% opacity. By using this plastic in the following procedure, the vehicle’s smoke opacity can be compared to the 40% test level.

**1.** \*Start the vehicle and allow the engine to warm up. You may want to drive the vehicle for 5-10 minutes to speed up the process. Park the vehicle outside so the tailpipe is not in shadow and the exhaust smoke can be viewed against a white background that is not in shadow. If a white background is not available, place a piece of white cardboard, at least one-foot square, on the exhaust smoke can be viewed in front of it.

**2.** \*With the vehicle running, set the transmission in Park or Neutral, and apply the parking brake. Have another person depress the accelerator pedal to the floor as quickly as possible and hold it there for 2-3 seconds, then release it. Repeat this procedure two more times.

**3.** \*Hold up the tinted plastic at arms length so it is directly above the path of the exhaust smoke, so both the smoke and the plastic can be viewed simultaneously against the white background while accelerating the vehicle. Have your helper repeat 2-3 more acceleration bursts while you observe the smoke and plastic sample.

Compare the tint of the initial puff of smoke during acceleration with the sample, after the initial puff the smoke will most likely be lighter. The darkest part of the acceleration burst is the level measured in the test. It may take several acceleration bursts for you to make a determination of the vehicle’s opacity level.

**4.** \*If the smoke appears lighter than the sample, the opacity is less than 40%. If the smoke appears darker, the cam plate in the fuel injection pump may have been mispositioned during installation. Please refer to page 9, OTTOMIND INSTALLATION, to verify that the Banks Ottomind calibration cam is in the correct position. This test assumes that the injection pump and fuel injection system are adjusted properly and in good working order, as other factors may affect the opacity level.

NOTE: In no case should this test be considered as meeting any legal requirement where an actual opacity percentage number is required. It is a “ball-park” approximation to give the tuner a relative idea of where the vehicle’s opacity level stands.

# PARTS LIST

## 1994-Early '98 Dodge/Cummins 5.9 Pickups

		24053	49205	49206	49275	49276
		QUICK-TURBO	STINGER	STINGER	STINGER-PLUS	STINGER-PLUS
QTY.	DESCRIPTION	PART#	'94-97 PART#	Early '98 PART#	'94-97 PART#	Early '98 PART#
1	ACTUATOR . . . . .	•	24323	24323	•	•
1	ASSEMBLY, Dynaflow Muffler w/Hanger . . . . .	•	52409	52409	52409	52409
1	ASSEMBLY, OttoMind . . . . .	•	62402	62402	62407	62407
1	ASSEMBLY, Turbine Housing, 14cm. . . . .	24312	•	•	24312	24312
1	BOLT, 6mm x 1.00 x 20mm . . . . .	•	91740	91740	91740	91740
1	CARD, Product Registration . . . . .	96392	96392	96392	96392	96392
1	CLAMP, Exhaust, 3 1/2" . . . . .	•	52468	52468	52468	52468
1	DECAL, Banks Ram-Air Filter . . . . .	•	96002	96002	96002	96002
1	ELEMENT, Banks Ram-Air Filter . . . . .	•	41027	41027	41027	41027
1	GASKET, Air Inlet Manifold . . . . .	•	93023	93023	93023	93023
1	GASKET, Oil Drain . . . . .	93042	93042	93042	93042	93042
1	GASKET, Turbo Back Plate . . . . .	93029	•	•	93029	93029
1	GASKET, Turbo Inlet . . . . .	93027	•	•	93027	93027
1	GAUGE, Boost . . . . .	63025	63025	63025	63025	63025
1	GAUGE, Opacity . . . . .	91090	91090	91090	91090	91090
1	KIT, Installation, Boost Gauge. . . . .	63032	63032	63032	63032	63032
1	KIT, Pyrometer . . . . .	•	64001	64001	64001	64001
1	KIT, Service, Ram-Air Filter. . . . .	•	90094	90094	90094	90094
1	LUBRICANT, Anti-Seize, 1oz. . . . .	90045	•	•	90045	90045
1	MOUNTING PANEL, Gauge . . . . .	63001-01	63002-01	63002-01	63002-01	63002-01
2	NUT, Machine Screw, 10-32. . . . .	91833	91833	91833	91833	91833
1	OWNERS MANUAL . . . . .	96384	96384	96384	96384	96384
1	PIPE, Tail, w/Stainless Steel Tip . . . . .	•	52299	52301	52299	52301
2	PLAQUE, Banks Turbocharged . . . . .	96003	•	•	96003	96003
2	SCREW, Machine, 10-32 . . . . .	91834	91834	91834	91834	91834
2	STICKER, Banks Power, Large. . . . .	•	96005	96005	•	•
2	STICKER, Banks Power, Small. . . . .	•	96004	96004	•	•
10	TIE, Cable, 8" Black. . . . .	62010	62010	62010	62010	62010
1	WARRANTY STATEMENT. . . . .	96364	96366	96366	96366	96366
2	WASHER, #10 Locking. . . . .	91832	91832	91832	91832	91832

# PARTS LIST

## 1994-Early '98 Dodge/Cummins 5.9 Pickups

FIG.11	QTY.	DESCRIPTION	42710	42711	49280	49281	49282	49283
			TWIN-RAM	TWIN-RAM	POWERPACK	POWERPACK	POWERPACK	POWERPACK
			Non-EGR	w/EGR	'94-97	Early '98	'94-97	Early '98
			PART#	PART#	Non-EGR	Non-EGR	EGR	EGR
					PART#	PART#	PART#	PART#
	1	ASSEMBLY, Dynaflow Muffler w/Hanger . . . . .	•	•	52409	52409	52409	52409
	1	ASSEMBLY, OttoMind. . . . .	•	•	62406	62406	62406	62406
	1	ASSEMBLY, Turbine Housing, 14cm . . . . .	•	•	24312	24312	24312	24312
1	1	BASE PLATE, Manifold . . . . .	42701	42701	42701	42701	42701	42701
2	4	BOLT, Hex Head, 3/8"-16 x 3" . . . . .	91435	91435	91435	91435	91435	91435
3	4	BOLT, Hex Head, 3/8"-16 x 5" . . . . .	91440	91440	91440	91440	91440	91440
	1	BOLT, Hex Head, 6mm x 1.00 x 20mm . . . . .	•	•	91740	91740	91740	91740
4	2	BOLT, Hex Head, 8mm - 1.25 x 45mm . . . . .	•	91792	•	•	91792	91792
5	2	BOLT, Hex Head, 8mm - 1.25 x 90mm . . . . .	•	91798	•	•	91798	91798
6	2	BOLT, Hex Head, 10-32 x 3/4" . . . . .	91860	91860	91860	91860	91860	91860
7	1	BRACKET, Fuel Line . . . . .	43300	43300	43300	43300	43300	43300
	1	CARD, Product Registration. . . . .	96392	96392	96392	96392	96392	96392
	12	CAP, Plastic . . . . .	62041	62041	62041	62041	62041	62041
8	1	CASTING, Extension. . . . .	•	42728	•	•	42728	42728
	1	CLAMP, Exhaust, 3 1/2" . . . . .	•	•	52468	52468	52468	52468
	1	DECAL, Banks Ram-Air Filter . . . . .	•	•	96002	96002	96002	96002
	1	ELEMENT, Banks Ram-Air Filter. . . . .	•	•	41027	41027	41027	41027
9	2	GASKET, Air Inlet Manifold. . . . .	93023	93023	93023	93023	93023	93023
10	1	GASKET, Base Plate . . . . .	93028	93028	93028	93028	93028	93028
11	3	GASKET, EGR Flange . . . . .	•	93091	•	•	93091	93091
12	2	GASKET, Heater Housing . . . . .	93026	93026	93026	93026	93026	93026
	1	GASKET, Oil Drain. . . . .	•	•	93042	93042	93042	93042
	1	GASKET, Turbo Inlet. . . . .	•	•	93027	93027	93027	93027
	1	GASKET, Turbo Back Plate . . . . .	•	•	93029	93029	93029	93029
	1	GAUGE, Boost. . . . .	•	•	63027	63027	63027	63027
	1	GAUGE, Opacity . . . . .	•	•	91090	91090	91090	91090
13	1	HOUSING, Heater, Rear . . . . .	42702	42702	42702	42702	42702	42702
14	1	HOUSING, Heater, Front. . . . .	42705	42705	42705	42705	42705	42705
	1	KIT, Installation, Boost Gauge . . . . .	•	•	63032	63032	63032	63032
	1	KIT, Pyrometer . . . . .	•	•	64001	64001	64001	64001
	1	KIT, Service, Ram-Air Filter . . . . .	•	•	90094	90094	90094	90094
	1	LOCTITE®, Adhesive, .02 oz. . . . .	90001	90001	90001	90001	90001	90001
	1	LUBRICANT, Anti-Seize, 1oz. . . . .	•	•	90045	90045	90045	90045
15	1	MANIFOLD, TwinRam. . . . .	42703	42704	42703	42703	42704	42704
	1	MOUNTING PANEL, Gauge. . . . .	•	•	63002	63002	63002	63002
16	2	NUT, Lock, 10-32 . . . . .	91827	91827	91827	91827	91827	91827
	2	NUT, Machine Screw, 10-32 . . . . .	•	•	91833	91833	91833	91833
	1	OWNERS MANUAL . . . . .	96384	96384	96384	96384	96384	96384
	1	PIPE, Tail, w/Stainless Steel Tip. . . . .	•	•	52299	52301	52299	52301
	2	PLAQUE, Banks Turbocharged. . . . .	•	•	96003	96003	96003	96003
17	2	SCREW, Hex Washer, 10-24 x 1" . . . . .	91829	91829	91829	91829	91829	91829
	2	SCREW, Machine, 10-32 . . . . .	•	•	91834	91834	91834	91834
18	4	SCREW, Socket Head, M8 - 1.25 x 35mm . . . . .	•	91784	•	•	91784	91784
18	5	SCREW, Socket Head, M8 - 1.25 x 35mm . . . . .	91784	•	91784	91784	•	•
19	2	SEAL, Conical . . . . .	•	93090	•	•	93090	93090
20	1	SPACER. . . . .	•	42729	•	•	42729	42729
	2	STICKER, Banks Power, Large . . . . .	96005	96005	96005	96005	96005	96005
	2	STICKER, Banks Power, Small . . . . .	96004	96004	96004	96004	96004	96004
21	1	STRAP, Ground. . . . .	62099	62099	62099	62099	62099	62099
	10	TIE, Cable, 8" Black . . . . .	•	•	62010	62010	62010	62010
22	1	TUBE, Boost . . . . .	41108	41108	41108	41108	41108	41108
	1	WARRANTY STATEMENT . . . . .	96362	96362	96366	96366	96366	96366
23	8	WASHER, 3/8" . . . . .	91401	91401	91401	91401	91401	91401
	2	WASHER, #10 Locking . . . . .	•	•	91832	91832	91832	91832
24	2	WASHER, #10, SAE. . . . .	91835	91835	91835	91835	91835	91835
25	8	WASHER, Ramp-lock . . . . .	•	91205	•	•	91205	91205