



Owner's Manual with Installation Instructions

Banks Sidewinder[®] with Intercooler

1999-2006 4.0L I-6 Jeep Wrangler

THIS MANUAL IS FOR USE WITH SYSTEMS: 2005-2006 WRANGLER - SYSTEM 24245,
2003-2004 WRANGLER - SYSTEM 24243, 1999-2002 WRANGLER - SYSTEM 24242

IMPORTANT NOTICE:

*Gale Banks Engineering strongly recommends the use of an OEM radiator and fan assembly with the Banks Sidewinder Turbo System. **Cooling system issues can result from the use of aftermarket radiators and electric fans.***

*The Banks Sidewinder Turbo system results in significantly higher power and torque output. Depending on vehicle usage and driving style, **additional drivetrain upgrades may be required to ensure vehicle reliability.***

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Customer Support: (888) 839-5600
Installation Support: (888) 839-2700

bankspower.com

Additional products available from Banks for the 1999-2006 Jeep Wrangler



Banks iQ® System (P/N 61195)

- 5" touchscreen Man-Machine Interface
- Interchangeable gauge display, read and clear codes, monitor engine diagnostics, log data, time your vehicles runs and much more.

Banks Straight-Shot® Water-Methanol Injection (P/N 45001)

- Maximizes Engine Performance
- Cools Intake Temperatures
- Digital Controller (included)
- Plug-and-Play wiring
- Greater flow than the competition
- Higher Pump Volume than others.

Banks Double-Shot® Water-Methanol Injection (P/N 45003)

- The Double-Shot system offers the same benefits of the Straight-Shot and adds a second stage for increased output and control.

Banks Ram-Air® Filter (P/N 41506X)

- Large Conical lifetime
- High-flow filtration

Banks Ram-Air® Pre-Filter (P/N 42640)

- Extra layer of filtration protection

Banks Blow-Off Valve Spacer (P/N 24285)

- Reduces intake air temperatures
- Quickens turbo response
- Unmistakable sound

Banks TorqueTubes® Exhaust Manifold, 4.0L (P/N 51306)

- Improves power and torque.
- Reduces engine load.
- Improves economy.
- Tough construction.

Banks Monster® Exhaust System (P/N 51314, 51315)

- Increases exhaust flow.
- Decreases backpressure.
- Lowers exhaust gas temperatures.
- Increases power.

Banks Monster® Muffler Delete (P/N 51306)

- Minimizes backpressure for increased turbocharger response, adds aggressive exhaust tone.
- For use with Banks Monster Exhaust Systems 51314 and 51315.

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

Dear Customer,

If you have any questions concerning the installation of your Banks Sidewinder® Turbo System, please call our Technical Service Hotline at (888) 839-2700 between 7:00 am and 4:00 pm (PT). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

General Installation Practices

1. For ease of installation of your Banks Sidewinder® with Intercooler system (BSWI), familiarize yourself with the procedure by reading the entire manual before starting work. This instruction manual contains 32 pages of text, illustrations and parts listing.

2. 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.

3. 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.*

4. During installation, keep your work area and components clean to avoid possible dirt entry into the engine.

5. For proper performance and to prevent engine damage it is essential that your engine systems be capable of supporting the additional requirements of the Banks Sidewinder® Turbo System. To ensure proper per-

formance, please complete every step in the engine health inspection section.

Tools Required

- 1/8" and 3/8" drive ratchets with inch and metric sockets ☐
- 1/2" drive ratchet or breaker bar ☐
- 1/4" and 3/8" drive extensions .. ☐
- Inch and metric combination or open-end wrenches ☐
- 5/8" Spark plug socket ☐
- Standard and Phillips head screwdrivers ☐
- T15, T20 and T40 Torx drivers .. ☐
- Standard, vice grip & needle nose pliers ☐
- Crescent wrench..... ☐
- Pocket or X-Acto knife..... ☐
- Tape measure..... ☐
- Clean shop towels or rags..... ☐
- Inch-pound or foot-pound torque wrench..... ☐
- Pneumatic reciprocating saw or equivalent..... ☐
- Pneumatic die grinder or equivalent..... ☐
- Compressed air source and hoses ☐
- Flashlight or shop light ☐
- Ear and eye protection ☐
- Drill and stepped drill bit ☐
- Permanent marker..... ☐
- 1 1/2" hole saw ☐

Additional tools for 1999-2002 Model Years

- Wire cutters, strippers and crimpers..... ☐
- Heat gun/source for shrink wrap..... ☐

Highly recommended Tools and Supplies:

- Penetrating oil or light lubricant spray..... ☐
- Deburring tool ☐
- Cylinder leakage and compression testers..... ☐
- 15 mm swivel socket..... ☐

- 1 1/16" Oil pressure sensor socket. ☐
- Fuel pressure tester adapter kit ☐
- 60 PSI gauge..... ☐

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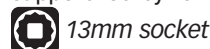
Engine Health Inspection

The Banks Sidewinder® with Intercooler system (BSWI) MUST be installed on an engine that is known to be in good operating condition in order to maintain engine life. Before installing your BSWI, you must perform a cylinder leakage test, compression test, spark plug inspection, and key on fuel pressure test. If you are not familiar and experienced with these tests, we recommend that you have the vehicle inspected by a qualified technician to ensure that your engine is in good health and will support the BSWI.

Whether you complete these tests yourself or have a qualified technician complete them, fill out the following tables for future reference.

Reference Figure 1

1. Remove passenger side radiator support rod by removing two bolts.



2. Disconnect intake air temperature (IAT) sensor connector from stock intake tube. Remove and retain sensor for use on new intake tube.

3. Remove stock intake tube by loosening one clamp at throttle body and one clamp at air box. Cover throttle body inlet with a cap or clean rag.

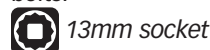


4. Remove front positive crankcase ventilation (PCV) hose from air box lid and top of engine.

5. Remove air box lid and air filter element. Remove air box housing by removing three bolts from inside air box housing.



6. Remove ignition coil pack to access spark plugs by removing four bolts.



NOTICE: Do not disconnect connector at rear of ignition coil pack. Set ignition coil pack where it will not interfere with removing spark plugs.

7. Using compressed air source, blow any debris away from spark plugs to prevent any foreign objects from falling into cylinders once spark plugs are removed. Remove ALL spark plugs.



NOTICE: Mark each spark plug with the cylinder number that it was in. If there is a problem, this may help locate which cylinder has the issue.

8. Perform a spark plug inspection, cylinder leakage test, dynamic compression test, and key on fuel pressure test. Record all values in following tables for future reference.

Engine Component	Good	Bad
Spark Plug 1		
Spark Plug 2		
Spark Plug 3		
Spark Plug 4		
Spark Plug 5		
Spark Plug 6		

Spark plugs should not have any unusual discoloration or pitting. We recommend replacing all spark plugs with new OEM parts. Check the gap on spark plugs, whether they are being reused or brand new. Gap requirements are posted on the inside of the hood or in vehicle owner's manual.

Engine Property	Value	Unit
Cyl. 1 Leakage		%
Cyl. 2 Leakage		%
Cyl. 3 Leakage		%
Cyl. 4 Leakage		%
Cyl. 5 Leakage		%
Cyl. 6 Leakage		%

Ideal cylinder leakage is less than 10%, however you may see higher values depending on the condition of your vehicle. Banks Sidewinder® Turbo System can be installed on a vehicle with up to 50% leakage in a cylinder, at the owner's discretion. If you are unsure whether your vehicle can support the Sidewinder® Turbo System, consult a qualified technician.

If you record cylinder leakage greater than 50% or if the leakage in a cylinder is 2-3 times greater than the other cylinders, there may be an issue with the engine.

Take the vehicle to a qualified technician before installing the Sidewinder® Turbo System.

Engine Property	Value	Unit
Cyl. 1 Compression		psi
Cyl. 2 Compression		psi
Cyl. 3 Compression		psi
Cyl. 4 Compression		psi
Cyl. 5 Compression		psi
Cyl. 6 Compression		psi

Typical cylinder compression is 160-185+ psi, with no more than 10% difference between the highest and lowest values. If you record compression lower than 160 psi or a difference greater than 10%, there may be an issue with the engine. Take the vehicle to a qualified technician before installing the Sidewinder® Turbo System.

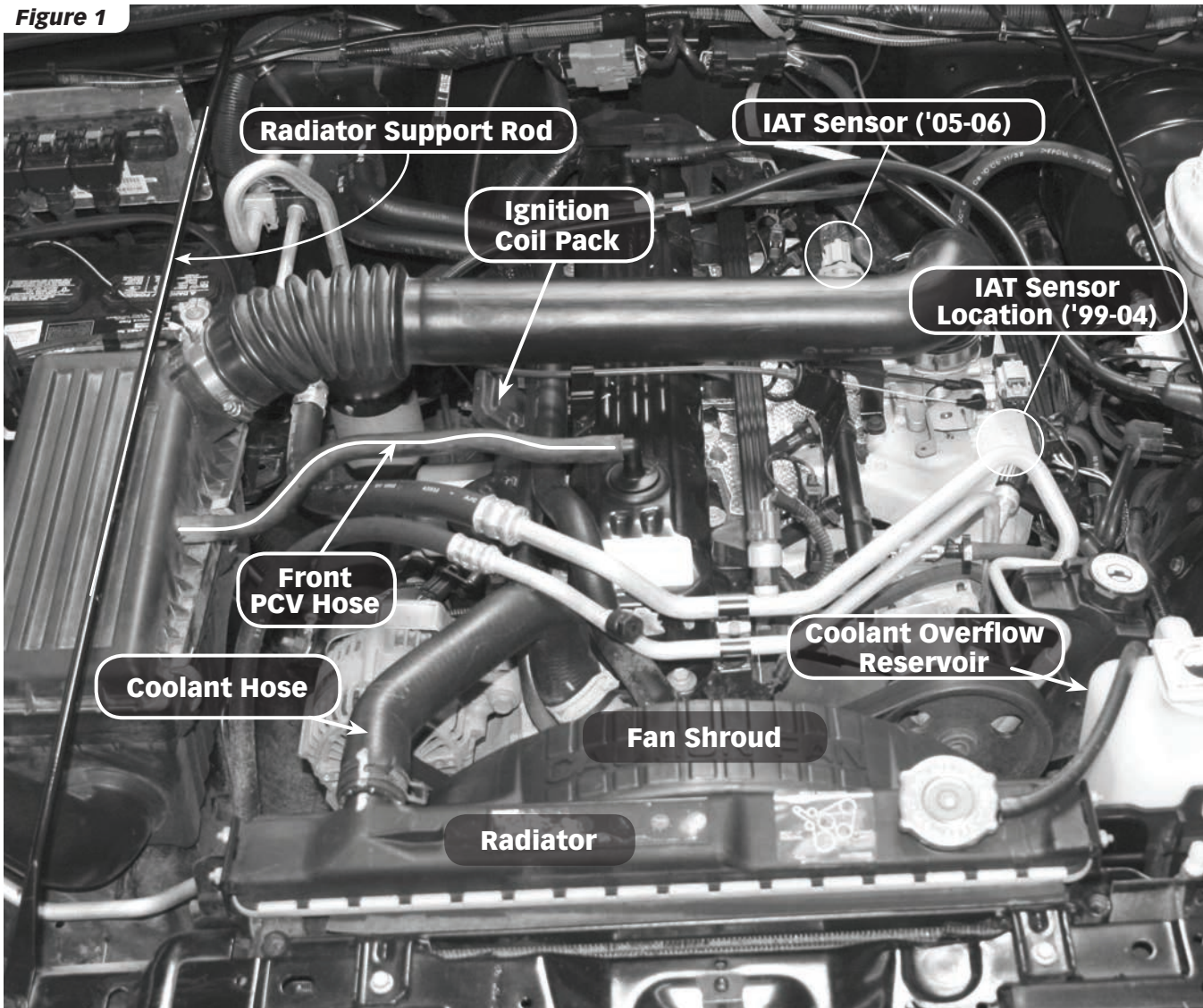
Key on fuel pressure: _____
Verify that the key-on fuel pressure is within factory-specific tolerance. Lower or higher fuel pressure can cause major driveability issues and lead to engine damage with installation of the Sidewinder® Turbo System. If your measured fuel pressure is outside of the factory tolerance, take the vehicle to a qualified technician for repair before installing the Sidewinder® Turbo System.

Technician Signature: _____

Date: _____

9. Reinstall spark plugs and ignition coil pack after checking spark plug gaps. Apply dielectric grease to inside of ignition coil pack boots.

Figure 1



BANKS SIDEWINDER® WITH INTERCOOLER INSTALLATION PROCEDURE

NOTICE: If you are not going to weld oil return bung onto the oil pan yourself, we recommend starting by removing the oil pan so that it can be welded by a qualified welder as you proceed with installation. See *Oil Pan and Exhaust Removal and Turbocharger Oil Return* on pages 10 and 15.

NOTICE: The provided drive belt will only work for stock configuration front engine accessory pulleys. If your vehicle is equipped with an aftermarket power steering pulley or other aftermarket pulley with a diameter smaller than the stock equivalent, you must purchase a shorter drive belt from your

local automotive supply shop. We have found that a 91.0" (2310 mm 6PK2310 or 910K6 or equivalent) fits appropriately with aftermarket power steering pump pulleys.

RADIATOR REMOVAL

CAUTION: Disconnect battery or batteries before beginning this installation.

1. Remove both radiator support rods for better access. **See Figure 1**

 15 mm socket

2. Drain coolant system using the petcock on the bottom passenger side of the radiator.

3. Remove coolant overflow reservoir by lifting to release catches and pulling towards rear of vehicle.

See Figure 1

4. Remove radiator fan and shroud. Remove radiator by removing 4 bolts and disconnecting 2 coolant hoses. Cover open ports and store in clean area to keep it free of debris.

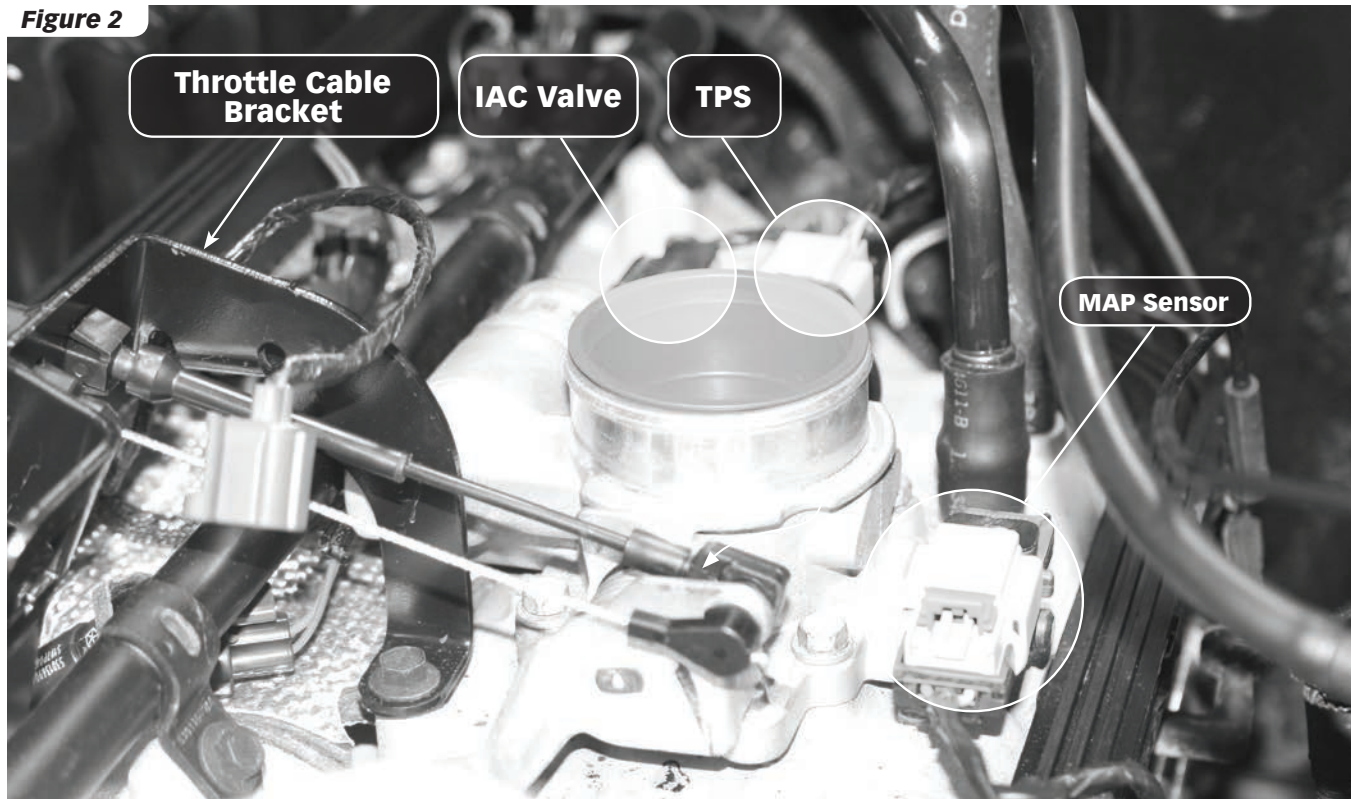
See Figure 1

 11 mm socket (Shroud)
 10 mm socket (Radiator)

FUEL INJECTORS

1. Disconnect manifold air pressure (MAP) sensor connector, throttle position sensor (TPS) connector, and idle air control (IAC) valve connector from throttle body. **See Figure 2**

Figure 2



2. Disconnect throttle, trans control (if equipped), and cruise control cables from throttle lever.


3. Remove throttle body by removing four bolts and lifting straight up. Cover intake manifold inlet with a cap or clean rag.

4. Remove throttle cable/cruise control cable bracket by removing two bolts. **See Figure 2**

 10mm socket

⚠ CAUTION: Fuel system may be under pressure!

5. Using compressed air source, blow any debris away from fuel injectors to prevent any foreign objects from falling into intake manifold once fuel injectors are removed. Disconnect fuel injector connectors. Remove injector rail by removing two nuts and two studs.

 10mm deep socket

6. Drain injector rail by placing a cup under rear of fuel injector rail and removing the #6 injector (rear most). Tilt fuel injector rail towards cup at rear.

7. Remove remaining injectors and retain securing clips. Injectors should have O-rings at both ends. Locate and remove any o-rings that separated from injectors during removal.

8. Install provided injectors (P/N 43643) into fuel injector rail using original securing clips. A drop of oil can be used on o-rings to ease installation.

NOTICE: Be careful not to pinch or cut o-rings when reinstalling fuel injectors as this will cause a major fuel leak.

10. Reinstall fuel injector rail and reconnect fuel injector connectors. Torque to 10 lb-ft.

11. Reinstall throttle cable/cruise control cable bracket using provided spacers (P/N 42730) and bolts (P/N 91759). Torque to 8 lb-ft.

NOTICE: Bracket varies de-*pending on model year, one spacer and one bolt may not be used.*

12. After installation of upgraded fuel injectors, a leak check must be performed under pressure. To check for fuel system leaks, turn ignition key on but do not start engine. This will run the in-tank fuel pump for a brief time, which will build fuel pressure in fuel rail. After keying ignition on, examine area around the fuel injectors and fuel rail for any leaks. Turn ignition off and back on again without starting engine, and re-examine for leaks. Repeat this process 4-5 times to insure there are no fuel system leaks - it may be helpful to have an assistant during this process.

THROTTLE BODY SPACER

NOTICE: At this point in the installation disconnect both leads to the battery. Leave disconnected until installation is complete.

1. Remove stock MAP sensor from throttle body by removing two bolts.

 T15 Torx

2. Mount high pressure MAP

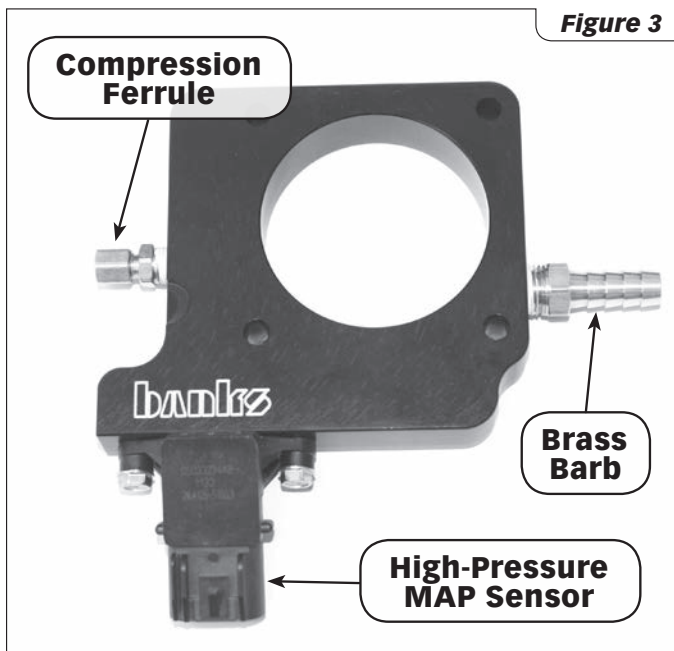


Figure 3

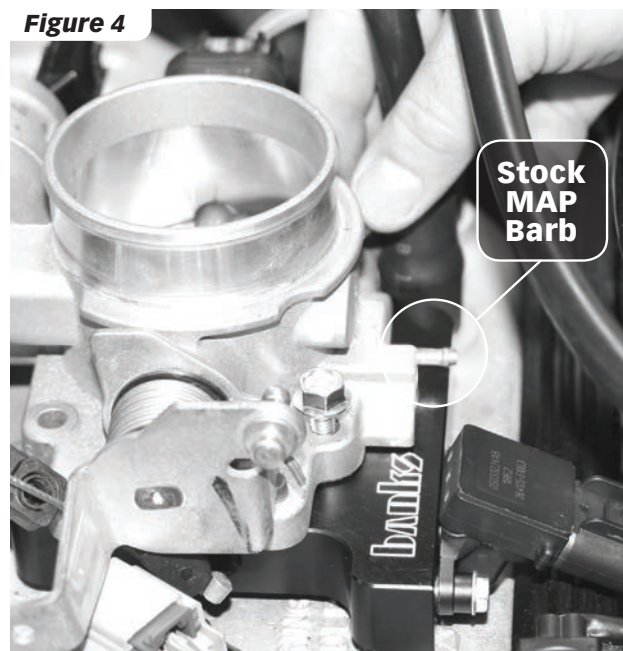


Figure 4

sensor (P/N 43625) in throttle body spacer (P/N 43628) using provided washers (P/N 91826) and bolts (P/N 91860). **See Figure 3**

3. Mount brass barb fitting (P/N 92131) and brass compression ferrule (from boost gauge kit) in throttle body spacer (**Figure 3**) using provided thread sealant (P/N 90040).

7/16" and 9/16" wrenches

4. Carefully scrape intake manifold and throttle body to remove any debris that will prohibit sealing. Wipe clean with rag. Ensure that no debris enters intake.

5. Install throttle body and spacer with the provided gaskets (P/N 93078) on both sides of spacer and secure with bolts (P/N 91761). Torque to 8 lb-ft.

10mm socket

6. Connect blow-off valve (BOV) reference hose (P/N 94122) to stock MAP sensor barb on throttle body using silver spring band clamp (P/N 92775). **See Figure 4**

7. Reconnect throttle, trans control (if equipped), and cruise control cables to throttle lever.

8. Reconnect MAP sensor, TPS, and IAC valve connectors.

NOTICE: Tape on wire harness may need to be cut for MAP sensor connector to reach new position. Take care while cutting as to not damage any wires.

For 1999-2002 Model Years ONLY: MAP Sensor Connector Replacement

The 1999-2002 model Wranglers are equipped with a factory MAP sensor connector that is not compatible with the high-pressure (2 atmosphere) sensor that is required for proper operation with the Sidewinder® Turbo kit - your system includes a connector pigtail kit (PN 43626) to replace your stock sensor connector.

To install the new MAP sensor connector:

1. Locate the stock MAP sensor connector, peel back the electrical tape at least 2.5" from the connector and cleanly cut all three wires leading to it approximately 1.5" back from the connector. **See Figure 5.** Strip approximately 5/16" of insulation from the end of each wire using an appropriately sized wire stripping tool, then crimp one side of the supplied barrel-butt crimp sleeves to each wire end.

Figure 5

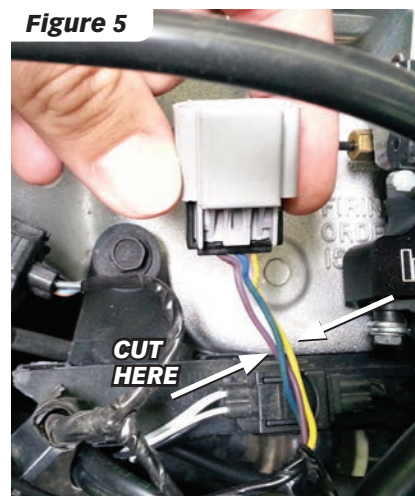
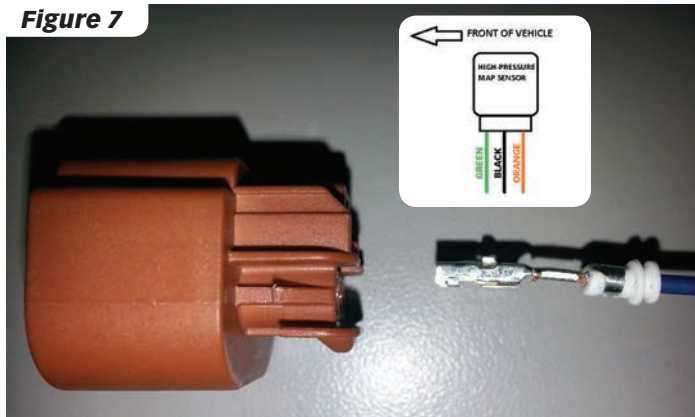


Figure 6



2. Locate the three pre-terminated wires in the MAP sensor pigtail kit, cut the unterminated end of the lead down to leave approximately 3" total lead length, including the crimped-on terminal. Strip approximately 5/16" of insulation from the un-terminated

Figure 7

end of each wire, then slip a piece of the supplied heatshrink tubing over each one.

3. Insert the stripped end of a pre-terminated lead into the open end of a barrel-butt crimp sleeve attached to the factory MAP sensor harness, and crimp it snugly. Double-check the crimp by tugging lightly on the opposing ends of the wire, ensuring that the crimp is solid. Repeat for the remaining two leads.

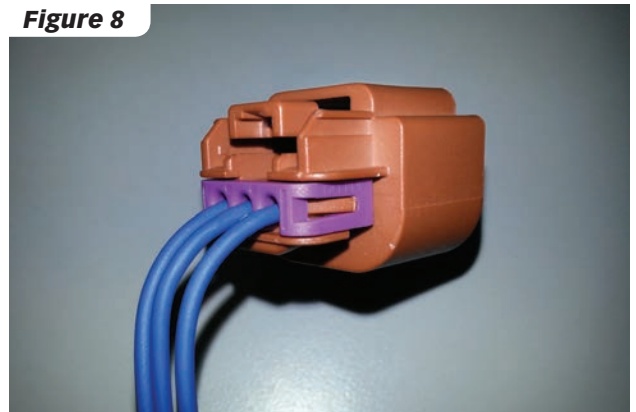
4. Center each piece of heatshrink over the crimp barb on each lead, then apply heat using a heat gun to fully shrink and seal all of the tubing.

5. Locate the connector body supplied in the 43626 kit and, using a small screwdriver, remove the purple

sensor-side terminal lock inside the connector - this allows insertion of the terminals from the other side of the connector. **See Figure 6**

6. Place the new connector body from the pigtail kit onto the High-Pressure MAP sensor, ensuring that it seats and locks properly - this guarantees the connector orientation to the sensor, and assists in reconnecting the newly terminated factory leads to the proper pins on the replacement sensor - the pin orientation IS NOT the same as the original sensor.

7. Insert the newly terminated leads into the connector body, using the wire color code, terminal orientation and pin location as shown in **Figure 7** - Green wire

Figure 8

to forward pin (front of vehicle)
 - Black wire to middle pin
 - Orange wire to rear pin (rear of vehicle). Each lead should lock into place, verify with a light tug outwards.

8. Remove the connector from the MAP sensor by depressing the thumb catch, then re-install the purple sensor-side terminal lock inside the connector, ensuring that it seats fully back onto the connector. Locate the purple seal retainer clip from the 43626 kit, and install onto the back of the connector body. **See Figure 8.** Assembly of the new MAP sensor connector is now complete - re-connect it to the new high-pressure MAP sensor.

Figure 9

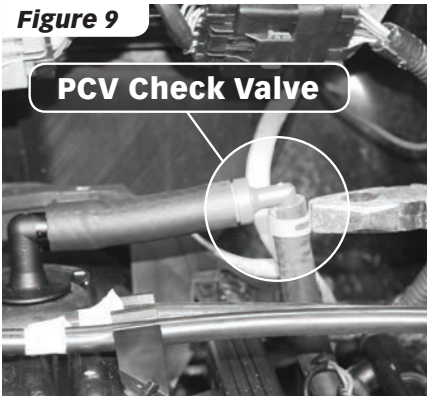


Figure 10

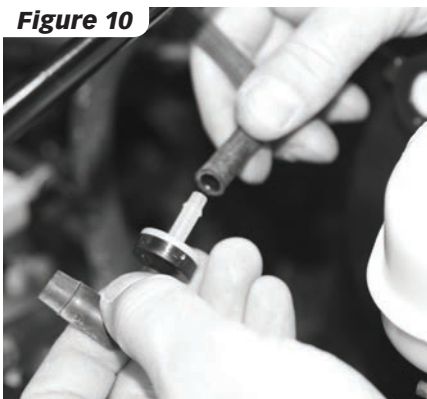


Figure 11

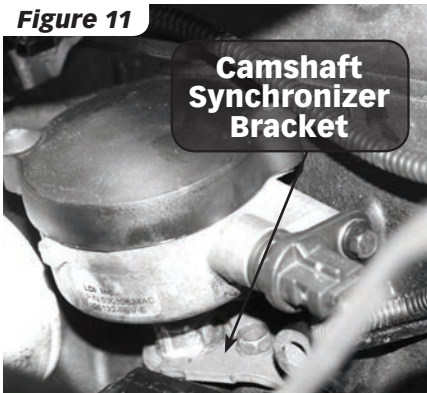


Figure 12

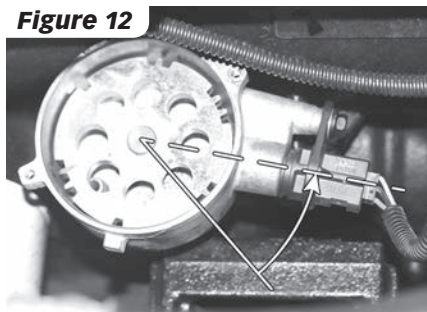
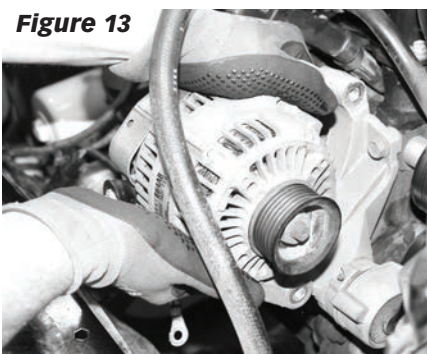


Figure 13



PCV HOSE/VACUUM CONTROL

1. Remove PCV hose from intake manifold (next to throttle body) and top of engine (towards the rear).


2. To prevent unintentional over-pressurization of crankcase under boost, install provided PCV check valve (P/N 47105) into provide 3" length of 1/2" inner diameter PCV hose (P/N 94138). Install assembly onto existing PCV elbow on top of engine (towards the rear). Rotate PCV check valve to face down. **See Figure 9**

3. Install provided 16" length of 3/8" inner diameter PCV hose (P/N 94136) from brass barb on throttle body spacer to PCV check valve using spring clamps (P/N 92777) on each end. Mark length and trim, if necessary.

4. Install PCV cap (P/N 92032) onto existing PCV barb located on intake manifold using spring clamp (P/N 92879). Trim cap if desired.

For 1999-2002 Model Years ONLY:

Remove PCV barb from intake manifold and replace with supplied 1/4" NPT plug (PN 92257) after applying sealant tape to threads.

 1/4" Allen

5. To prevent unintentional over-pressurization of vacuum control system under boost, install vacuum check valve before tee in cruise control actuator line. Remove line from barb on side of intake manifold (underneath throttle body).

Cut line before tee and push in vacuum check valve. Replace line on barb. **See Figure 10**

NOTICE: Install with black end of vacuum check valve towards engine.

CAMSHAFT SYNCHRONIZER (2005-2006 MODEL YEARS)

1999-2005 Models Years skip to Alternator Removal


NOTICE: Rotating the camshaft synchronizer/oil pump drive assembly (Figure 8) is ONLY necessary if the factory position will interfere with the turbine outlet pipe. We recommend taking your vehicle to your local dealership to have this service performed.

1. Using compressed air source, blow any debris away from camshaft synchronizer to prevent any foreign objects from falling into the housing once cap is removed.

2. Remove camshaft synchronizer cap and use a permanent marker to mark the position of timing wheel relative to housing.

 T20 Torx

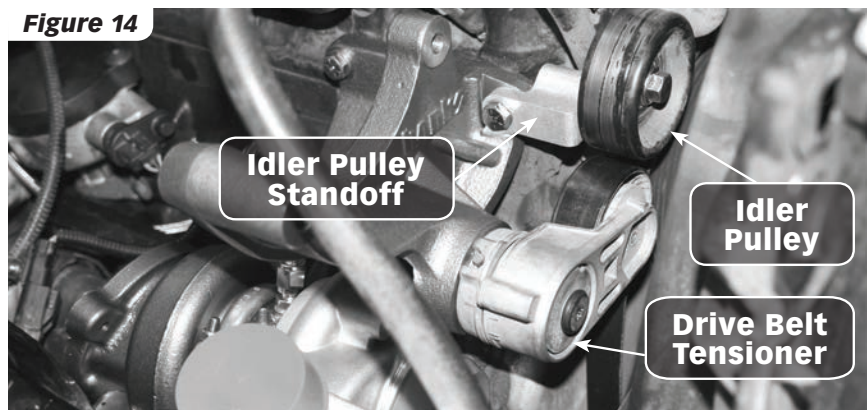
3. Remove camshaft synchronizer bracket by removing one bolt. **See Figure 11**

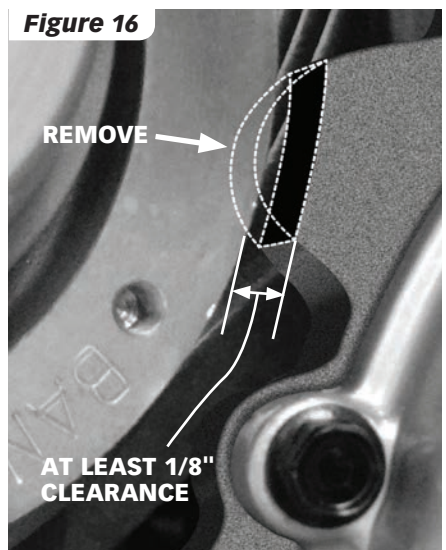
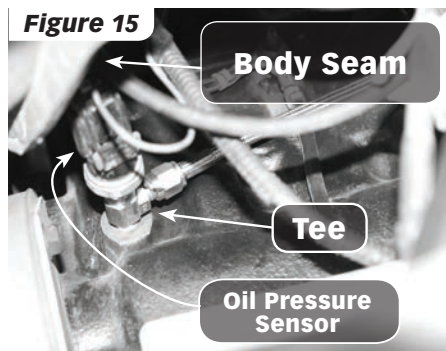
 1/2" wrench

4. Remove camshaft synchronizer by lifting straight up. Rest on clean rag near motor mount.

NOTICE: Inspect Camshaft Synchronizer/Oil Pump Drive

Figure 14





Assembly (OPDA) drive for excessive wear. If worn, Camshaft Synchronizer/OPDA should be replaced to prevent drivability issues.

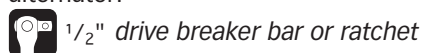
5. Use a standard screwdriver and flashlight to rotate camshaft synchronizer drive in engine block. Rotate drive so that sensor and connector will face towards front of vehicle. **See Figure 12**

6. Replace camshaft synchronizer and check the alignment of your mark. If misaligned, remove camshaft synchronizer and rotate drive. Repeat until alignment is correct.

7. Reinstall bracket and snug bolt. Check alignment and tighten if properly aligned. Torque to 18 lb-ft. Replace camshaft synchronizer cap.

ALTERNATOR REMOVAL

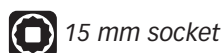
1. Remove drive belt by relieving drive belt tensioner and lifting belt off alternator.



1/2" drive breaker bar or ratchet

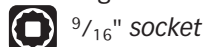
2. Remove power cable and connector from alternator. Remove plastic clip that secures wiring to alternator bracket.

3. Remove alternator from bracket by removing two bolts. **See Figure 13**



15 mm socket

4. Remove alternator bracket by removing four bolts.



9/16" socket

5. Remove drive belt tensioner from alternator bracket. Remove idler pulley from engine.



T40 Torx and 9/16" socket

6. Install drive belt tensioner on new alternator/turbo bracket (P/N 52157). Use original hardware. Torque to 21 lb/ft. **See Figure 14**

TURBOCHARGER OIL SUPPLY

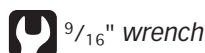
1. Disconnect oil pressure sensor on passenger side of engine block (towards rear of vehicle). Remove oil pressure sensor.



1 1/16" oil pressure sensor socket or crescent wrench

2. Use vice grip pliers to bend body seam near oil pressure sensor location to provide clearance for new oil pressure sensor assembly. Approximately 1/4" of clearance is needed.

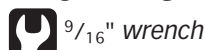
3. Install tee fitting (P/N 92106) into oil pressure sensor location using thread sealant. Position tee fitting as shown. **See Figure 15**



9/16" wrench

4. Install oil pressure sensor into tee fitting with provided thread sealant. Reconnect oil pressure sensor connector. **See Figure 15**

5. Connect straight end of braided steel oil supply line (P/N 94075) to tee fitting. **See Figure 15**



9/16" wrench

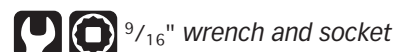
NOTICE: The 90-degree end will connect to turbocharger. Route accordingly, avoiding moving vehicle components.

To avoid heat of turbocharger, route close to engine block.

TURBOCHARGER ASSEMBLY

1. Inspect turbocharger to ensure no foreign objects entered compressor or turbine during shipping. Cover all turbocharger openings with caps or clean rags.

2. Using provided blue thread locker (P/N 90001), install turbocharger assembly (P/N 24250) and idler pulley standoff (P/N 65298) with four short bolts (P/N 91458), one long bolt (P/N 91468), and five washers (P/N 91401). **See Figure 14.** Torque all bolts to 45 lb-ft.



9/16" wrench and socket

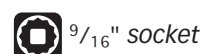
NOTICE: Long bolt is used in top right corner of alternator/turbo bracket, and passes through both bracket and standoff.

For 1999-2003 Model Years ONLY:

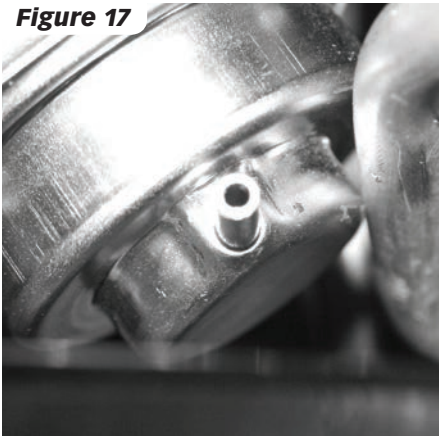
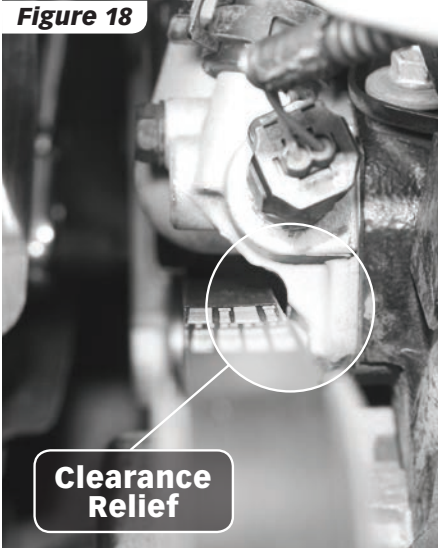
Test-fit the turbocharger/bracket assembly to the engine block and look for any interference with the compressor cover and the block boss behind the front engine cover. If there is interference as shown in (Fig 16), mark location and remove turbocharger / bracket assembly. Using pneumatic die grinder or reciprocating saw, relieve the block boss until there is approximately 1/8" clearance to the turbocharger compressor when installed. Note: There are no oil galleries in this location, but take care not to cut down into the front cover-to-block seal interface.

3. If A/C lines contact BOV actuator or alternator case/mounts, gently pull A/C line to provide approximately 3/8" clearance. **See Figure 17**


4. Using provided blue thread locker, install idler pulley onto standoff with one bolt (P/N 91457) and washer (P/N 91402). Torque to 30 lb-ft.



9/16" socket

Figure 17**Figure 18**

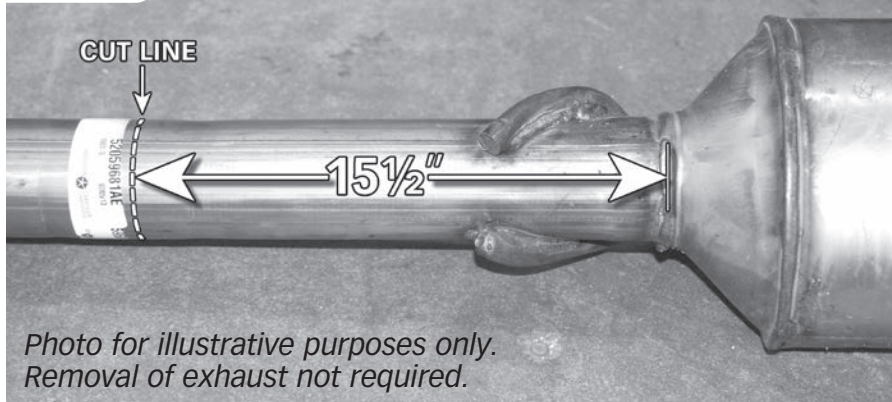
5. Connect braided steel oil supply line to turbo oil supply fitting on top of turbocharger.

 **9/16" wrench**

6. Install alternator onto new bracket using original hardware. Torque to 41 lb-ft. Connect power cable (9 lb-ft) and connector. If needed, gently adjust A/C lines for clearance.

7. Install new drive belt (P/N 65330) following routing noted at front of engine compartment or in vehicle owner's manual. (Replacement drive belt 6PK2325 or 915K6 or equivalent.)

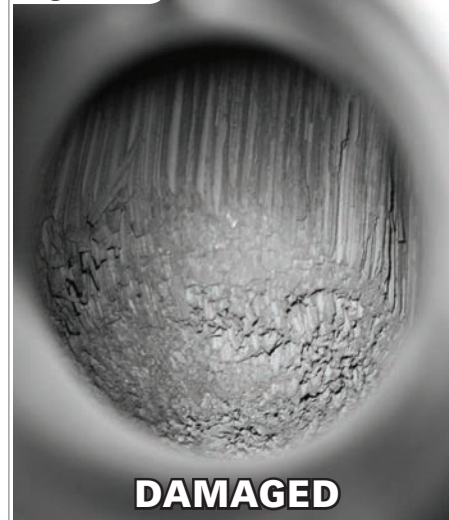
8. Check for belt clearance near thermostat housing. If clearance is needed, mark location and remove belt. Using pneumatic die grinder, relieve thermostat housing to provide approximately 1/4" clearance. Replace drive belt and check clearance once more. **See Figure 18**

Figure 19

*Photo for illustrative purposes only.
Removal of exhaust not required.*

Figure 20

GOOD


Figure 21

DAMAGED

OIL PAN & EXHAUST REMOVAL

1. Soak exhaust manifold outlet to "Y" pipe bolts and clips with penetrating oil.

2. Place an oil pan under oil drain and remove plug to drain oil.

 **5/8" socket**


3. Measure 15 1/2" forward of rear catalytic converter and mark exhaust with permanent marker. Place a hose clamp around exhaust at mark and use permanent marker to create a line that will ensure a square cut. Remove clamp. **See Figure 19**

4. Cut exhaust on mark with pneumatic reciprocating saw. Take care while cutting and beware of surrounding components.

⚠ CAUTION: Use eye and ear protection while cutting.

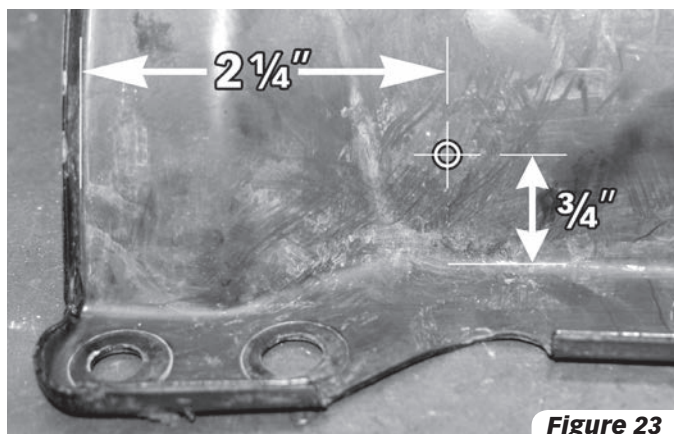
5. Remove "Y" pipe with front

catalytic converters by disconnecting both oxygen sensors and removing four bolts at exhaust manifold outlet.

 **15mm swivel socket & extension**

NOTICE: Use a flashlight to inspect all of the catalytic converters (two front and one rear) and replace if damaged. A typical good catalytic converter is shown in Figure 20. A damaged catalytic converter will have cracks or holes in the ceramic core. Severely damaged catalytic converters will be missing parts of the ceramic core, which may cause the core to become misaligned inside the housing, as in Figure 21. Using damaged catalytic converters may cause catastrophic damage to engine and/or turbo system.

6. With "Y" pipe removed, measure 3 1/4" from where welds join together. Place a hose clamp around exhaust at mark and use permanent marker

Figure 22**Figure 23**

to create a line that will ensure a square cut. Remove clamp. **See Figure 22**

7. Cut exhaust on mark with pneumatic reciprocating saw. Take care while cutting and beware of surrounding components.

⚠ CAUTION: Use eye and ear protection while cutting.

8. Remove oil pan by removing all bolts. Note stud location for reinstallation.

 $7/16$ " deep socket and extension

9. Inspect oil pan gasket. Replace if damaged or clean if reusable.

TURBOCHARGER OIL RETURN

1. Thoroughly clean oil pan in preparation for welding. Scrape flange to remove any silicone or gasket material.

2. Mark location for oil return bung. Measure $2\frac{1}{4}$ " from front edge and $\frac{3}{4}$ " from top edge. Use a center punch to mark oil pan once location is determined. **See Figure 23**

3. Use a stepped drill bit to drill a $\frac{5}{8}$ " hole in oil pan at marked location.

4. Deburr edge of hole and prepare oil pan for welding by using a wire brush to remove paint around hole.

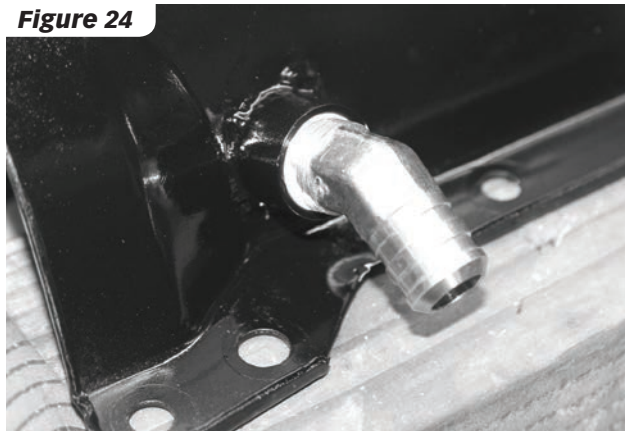
5. Center oil return bung on drilled hole and weld around outer edge.

NOTICE: If you are not an experienced welder, take the oil pan to your local welding shop to have it welded by a qualified welder.

6. Clean weld with a wire brush and inspect for imperfections that may cause it to leak. Prime and paint raw metal to prevent rust and corrosion. Plug bung to protect threads during painting.

7. Using thread sealant, install 45° brass fitting (P/N 92177) into oil return bung on oil pan. Position as shown in **Figure 24**.

8. Clean gasket surfaces of oil pan and engine block. Apply silicone sealant to rear main bearing cap corners and engine block to front

Figure 24**Figure 25**

cover joints. **See Figure 25**

9. Hold gasket and oil pan in position, install all $\frac{1}{4}$ " bolts and torque to 7 lb-ft. Install four $\frac{5}{16}$ " bolts and torque to 11 lb-ft.

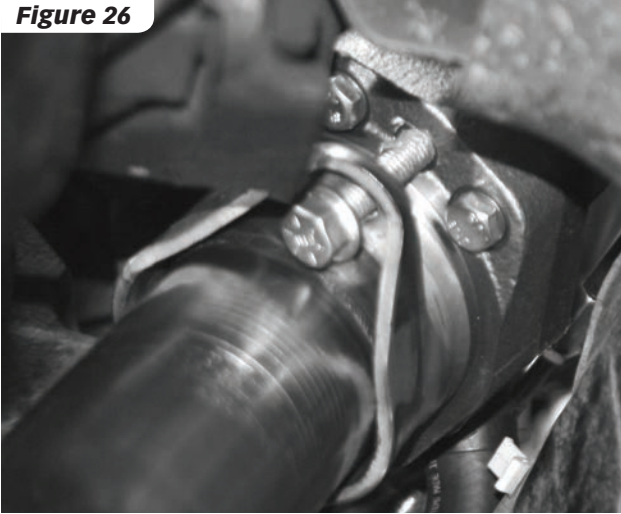
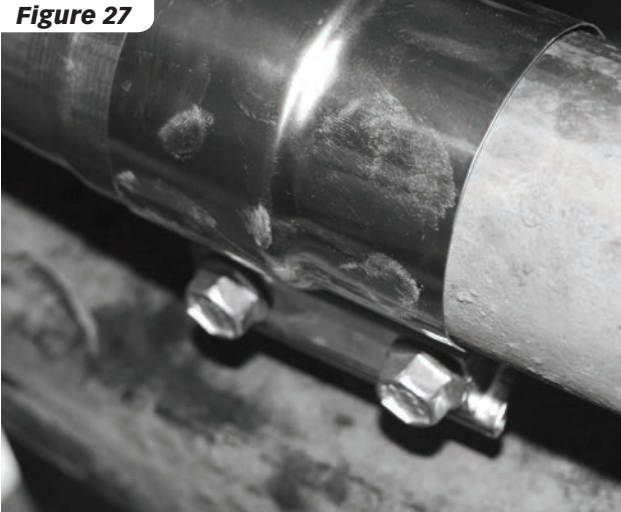
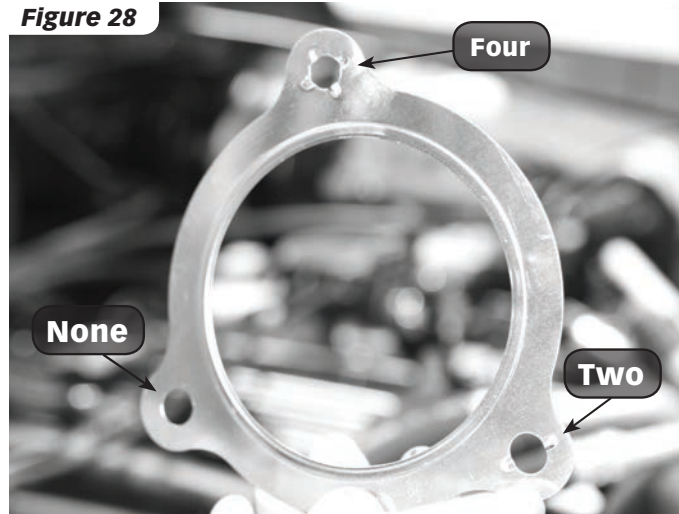
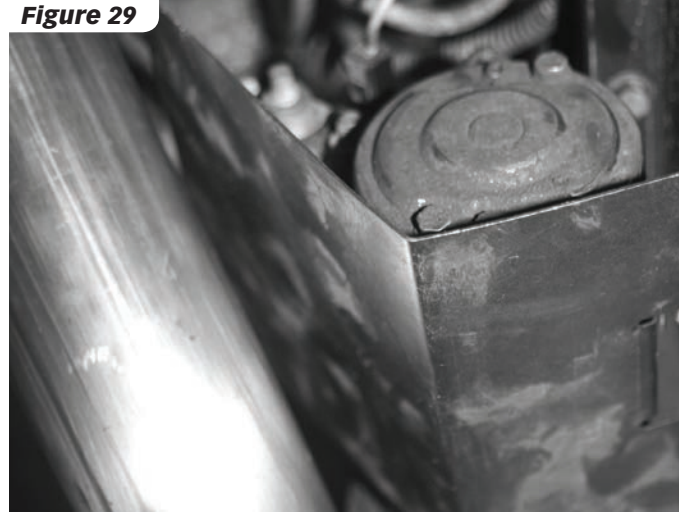
10. Install oil pan drain plug. Torque to 25 lb-ft.

11. Install oil drain hose (P/N 94203) from turbocharger to 45° brass barb with two worm gear clamps (P/N 92810).

TURBINE INLET AND OUTLET

1. Reinstall modified "Y" pipe with front catalytic converters. Use provided anti-seize (P/N 90045) on original hardware, but do not tighten. Reconnect both oxygen sensors.

2. Slide flange and clamp (P/N 52462) over turbine inlet pipe (P/N 52096). Slide turbine inlet pipe over the "Y" pipe until the double-slip cuff is fully bottomed. If needed, carefully adjust turbine inlet pipe in vice so that it will fully slip over "Y" pipe. Using provided Anti-Seize, mount turbine inlet pipe to turbo with two bolts (P/N

Figure 26**Figure 27****Figure 28****Figure 29**

91459). Torque to 45 lb-ft. **See Figure 26.** Tighten clamp at "Y" pipe.

 $\frac{9}{16}$ " and 15mm sockets

3. Secure "Y" pipe by tightening four bolts at exhaust manifold outlet. Torque to 23 lb-ft.

4. Install starter heat shield (P/N 26062) onto starter with hose clamp (P/N 92841). Do not tighten.

5. Slide lap joint clamp (P/N 52492) over exhaust with larger end closer to turbocharger. Install the turbine outlet pipe by sliding it over the exhaust. **See Figure 27**

Position gasket (P/N 93013) between turbine and turbine outlet pipe.

NOTICE: Turbine outlet gasket has marks near each hole. Position gasket with four mark hole closest to engine block, two mark hole closest to fender, and zero mark hole at bottom. **See Figure 28**

6. Using provided anti-seize, install three bolts (P/N 91817) at the turbine outlet flange. Torque bolts to 28 lb-ft. Tighten lap joint clamp.

 $\frac{9}{16}$ " socket, 13mm wrench and socket

7. Position starter heat shield half way between starter and turbine outlet pipe, as shown above. Tighten clamp to secure. **See Figure 29**

8. Install the preformed turbocharger heat shield (P/N 26110) over the turbocharger and secure with bolt (P/N 26110). Secure wire harness away from turbine outlet pipe using large cable tie (P/N 62003). **See Figure 30**

RAM-AIR® INTAKE & SUPER-SCOOP®

NOTICE: Installing the Ram-Air® Intake & Super-Scoop® requires that you cut a hole in your hood. The

Banks Sidewinder® Turbo System can be run without the Super-Scoop®; however the performance of the Banks Sidewinder® Turbo System will suffer and cannot be guaranteed.

1. Cover entire turbo with clean rag. Cover any other open ports or electrical connectors.

2. Use scissors to carefully cut provided template on reference lines labeled bottom of hood and edge of hood latch.

NOTICE: Edge of Hood Latch Reference Line refers **ONLY** to OEM hood latches!

3. Position template on hood by aligning bottom of hood reference line with bottom edge of hood. Then, align edge of hood latch reference line with left side of hood latch. Ensure the upper and lower hood crease reference lines are aligned

Figure 30



with crease in side of hood and adjust if necessary. Use masking tape to hold template in place.

See Figure 32

4. Use a center punch to mark four mounting hole centers and five intake hole centers for drilling locations. Carefully remove template from hood without damaging it. **See Figure 32**

5. Using a stepped drill bit, drill a $\frac{3}{8}$ " hole in four mounting hole locations (outside center marks). Drill a $\frac{5}{16}$ " starter hole in five intake hole locations (inside center marks) to guide $1\frac{1}{2}$ " hole saw. Take care while drilling and cutting and beware of surrounding components.

⚠ CAUTION: Use eye and ear protection while drilling and cutting.

6. Use a $1\frac{1}{2}$ " hole saw to cut five intake holes where the $\frac{5}{16}$ " starter holes were made. **See Figure 33**

7. Use scissors to fully cut intake hole from template (arch shape). Position intake hole by aligning outer edge with outer edges of all five $1\frac{1}{2}$ " holes. Ensure bottom edge of intake hole is parallel to bottom edge of hood. Secure with masking tape and trace along outer edge to create intake hole shape on hood.

See Figure 33

8. Use a pneumatic reciprocating saw or similar cutting implement to cut along inside edge of trace, connecting all five outer edges of $1\frac{1}{2}$ " holes. Deburr all edges and carefully remove rags, trapping all debris. Use touch-up paint to cover raw metal edge. **See Figure 33**

9. Center Super-Scoop® (P/N 41565) in intake hole with bottom

Figure 31

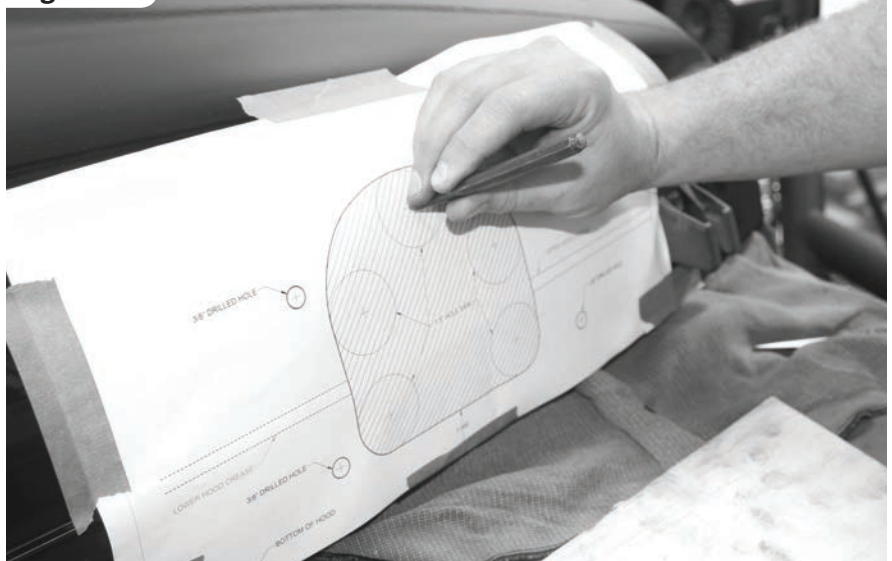
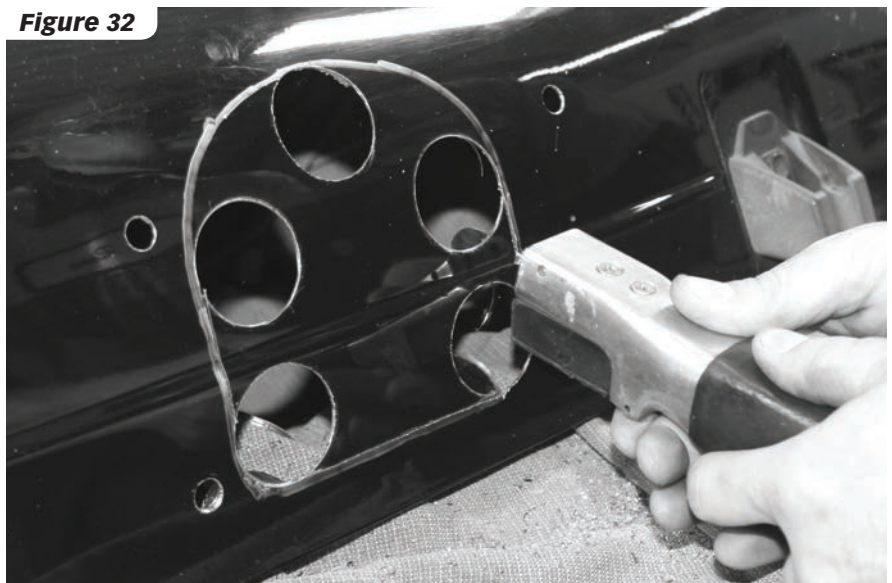


Figure 32



edge parallel to bottom edge of hood. Mark mounting locations on Super-Scoop® through inside of hood.

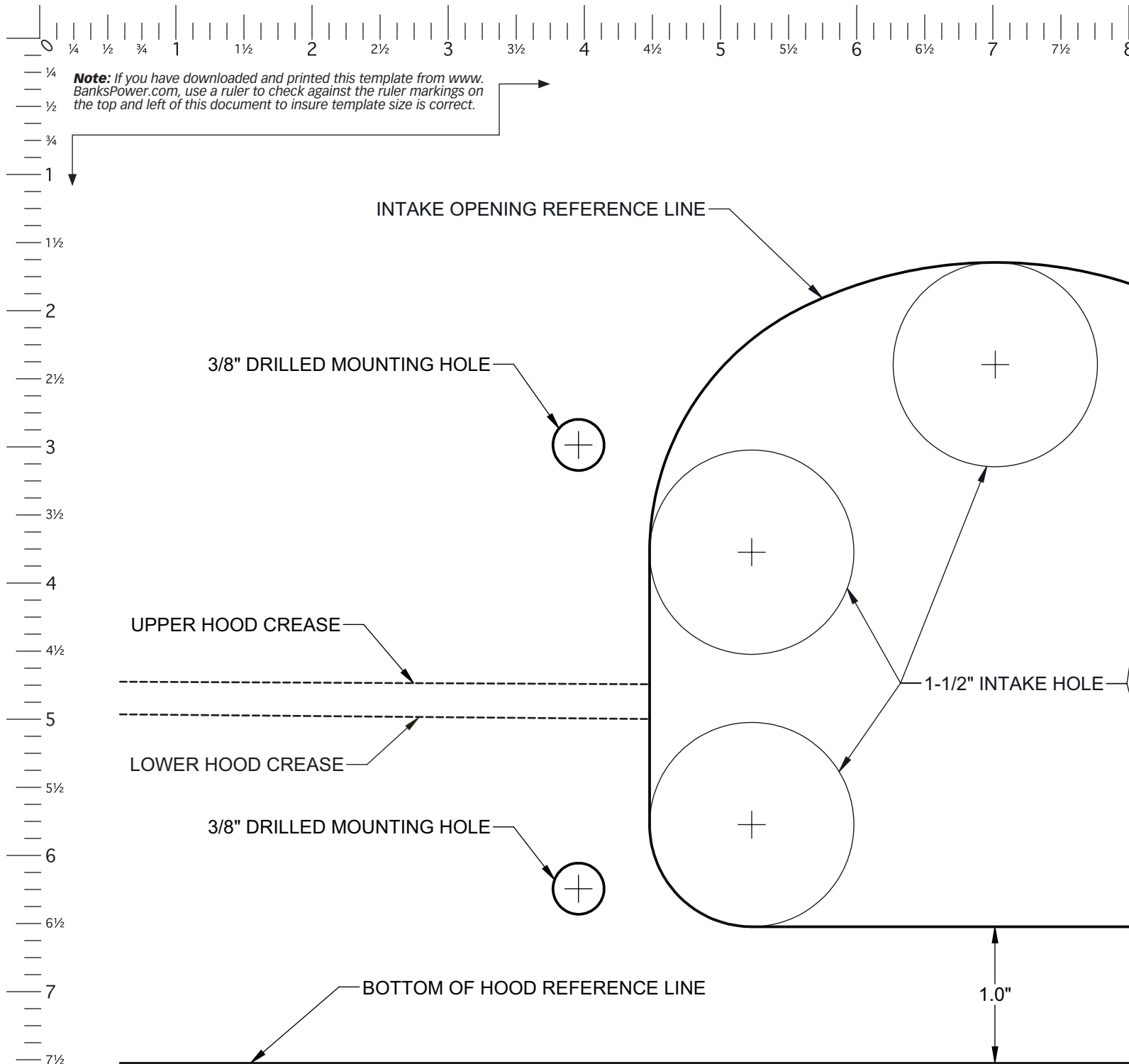
See Figure 34

10. Use stepped drill bit to drill four $\frac{3}{8}$ " holes in Super-Scoop® at marked mounting locations. Deburr all edges.

⚠ CAUTION: ONLY drill through inside wall of Super-Scoop®

11. Use four push type retainers (P/N 92023) to mount Super-Scoop® on hood. Install edge seal (P/N 93141) onto inside edge of Super-Scoop®. **See Figure 34**

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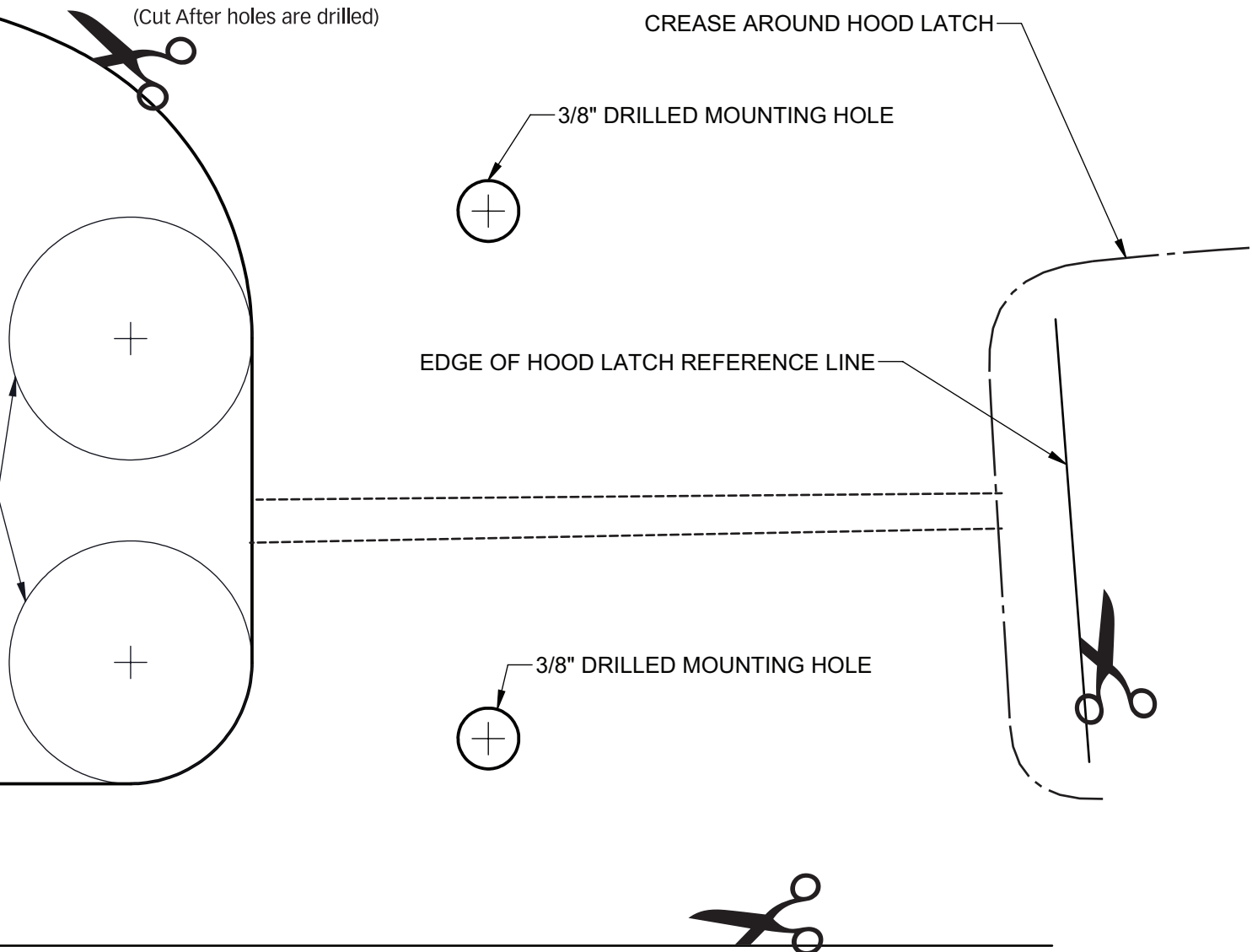
Note: If you have downloaded and printed this template from www.BanksPower.com, use a ruler to check against the ruler markings on the top and left of this document to insure template size is correct.

1. Cover entire turbo with clean rag. Cover any other open ports or electrical connectors.
 2. Use scissors to carefully cut provided template on reference lines labeled bottom of hood and edge of hood latch.
- NOTICE:** Edge of hood latch reference line refers **ONLY** to OEM hood latches!
3. Position template on hood by aligning bottom of hood reference line with bottom edge of hood. Then,

- align edge of hood latch reference line with left side of hood latch. Ensure the upper and lower hood crease reference lines are aligned with crease in side of hood and adjust if necessary. Use masking tape to hold template in place. **See Figure 27**
4. Use a center punch to mark four mounting hole centers and five intake hole centers for drilling locations. Carefully remove template from hood without damaging it. **See Figure 27**
 5. Using a stepped drill bit, drill a $\frac{3}{8}$ " hole in four mounting hole locations

- (outside center marks). Drill a $\frac{5}{16}$ " starter hole in five intake hole locations (inside center marks) to guide $1\frac{1}{2}$ " hole saw. Take care while drilling and cutting and beware of surrounding components.
- CAUTION:** Use eye and ear protection while drilling and cutting.
6. Use a $1\frac{1}{2}$ " hole saw to cut five intake holes where the starter holes were made. **See Figure 28**
 7. Use scissors to fully cut intake hole

'99-06 Jeep Wrangler TJ Super-Scoop® Hood Cut Template



from template (arch shape). Position intake hole by aligning outer edge with outer edges of all five $1\frac{1}{2}$ " holes. Ensure bottom edge of intake hole is parallel to bottom edge of hood. Secure with masking tape and trace along outer edge to create intake hole shape on hood.

See Figure 28

8. Use a pneumatic reciprocating saw or similar cutting implement to cut along inside edge of trace, connecting all five outer edges of $1\frac{1}{2}$ " holes. Deburr all edges and carefully remove

rags, trapping all debris. Use touch-up paint to cover raw metal edge. **See Figure 28**

9. Center Super-Scoop® (P/N 41565) in intake hole with bottom edge parallel to bottom edge of hood. Mark mounting locations on Super-Scoop® through inside of hood.

See Figure 29

10. Use stepped drill bit to drill four $\frac{3}{8}$ " holes in Super-Scoop® at marked mounting locations. Deburr all edges.

⚠ CAUTION: *ONLY drill through inside wall of Super-Scoop®.*

11. Use four push type retainers (P/N 92023) to mount Super-Scoop® on hood. Install edge seal (P/N 93141) onto inside edge of Super-Scoop®.

See Figure 30

banks

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Figure 33



Figure 34

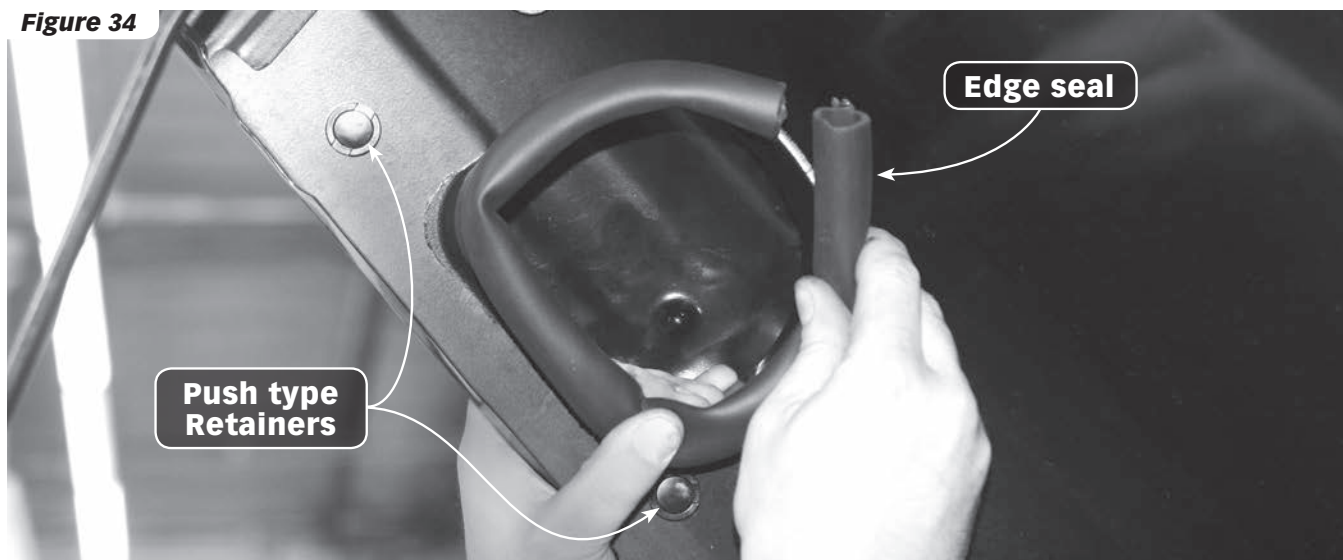


Figure 35

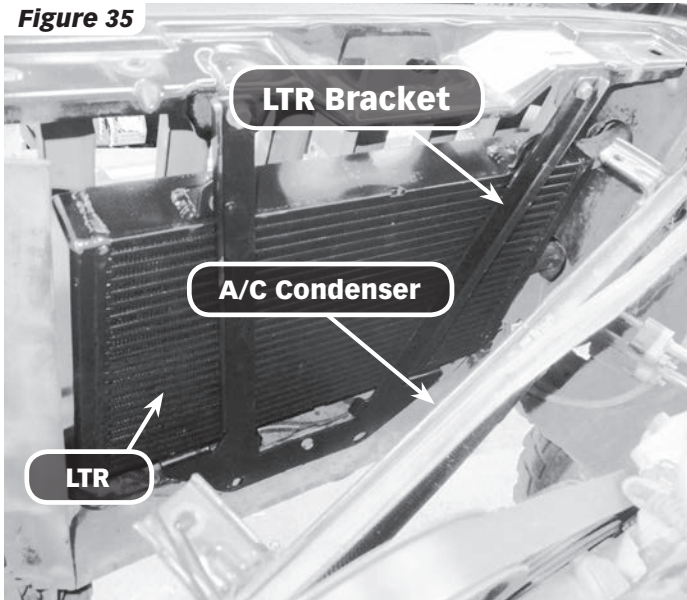


Figure 37

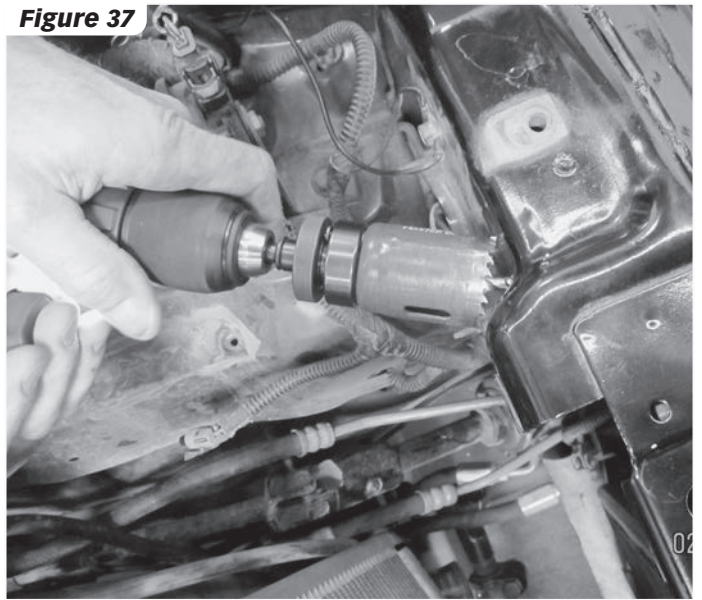
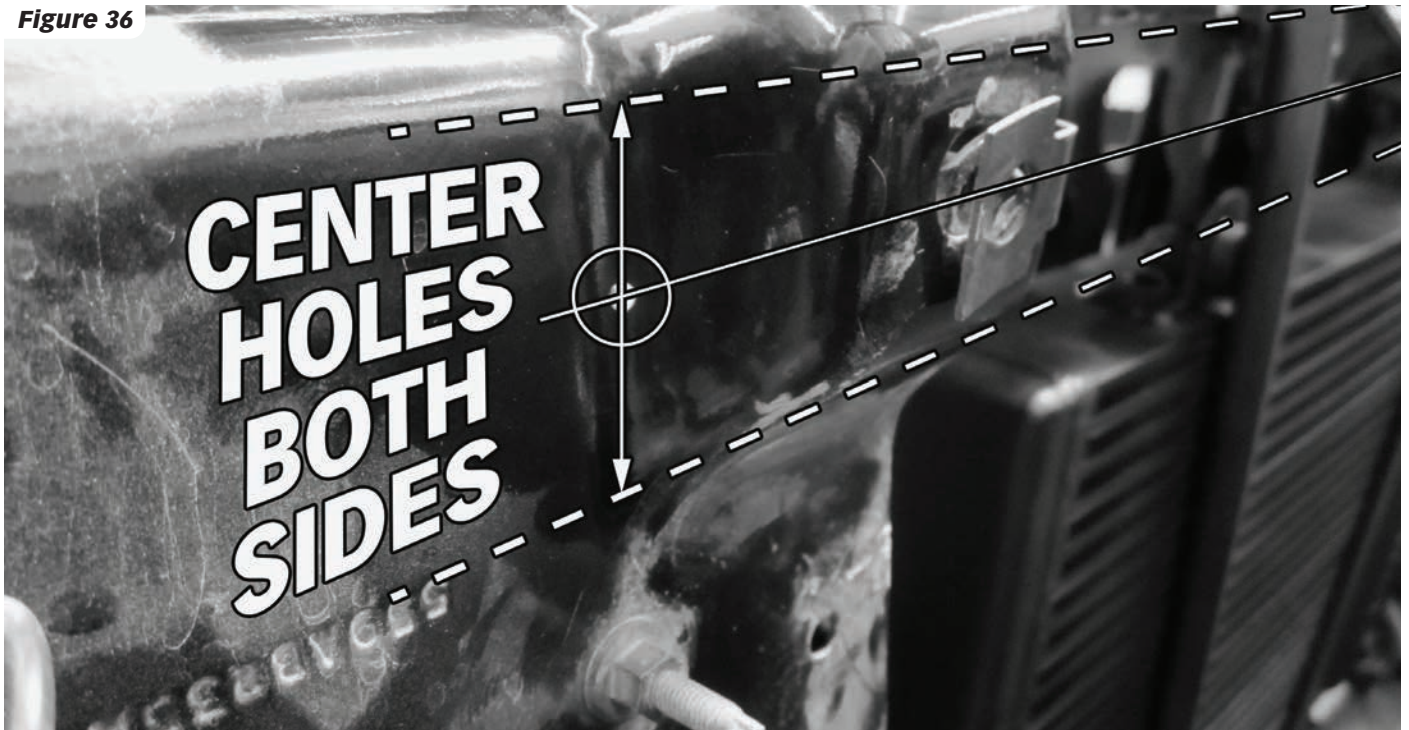


Figure 36




INTERCOOLER SYSTEM INSTALLATION PROCEDURE

LOW TEMPERATURE RADIATOR INSTALL


 11 mm socket (Shroud)
 10 mm socket (Radiator)

1. Remove 4 air conditioning condenser bolts and use tie wraps to hold condenser clear of radiator support to allow installation of Banks low temperature radiator (LTR) (P/N 25411). **See Figure 35**

 10 mm socket

NOTICE: It is NOT necessary to disconnect air conditioning lines, move as far as lines will allow.

2. Remove front radiator brace by removing 2 upper bolts and 1 lower bolt.

 10 mm socket

3. Remove windshield washer fluid reservoir mounting bolts for better access to drill holes for intercooler hoses.

 10 mm socket

NOTICE: It is NOT necessary to disconnect windshield washer fluid hoses, move as far as hoses will allow.

4. Carefully drill one 1.5" hole in the corner on each side of the front clip approximately 13.75" from center for intercooler hose pass-throughs. **See Figures 36 & 37**

CAUTION: Use extreme caution when drilling holes, take care to avoid wiring and headlight bezel.

5. Completely deburr holes to avoid damaging the intercooler hoses and place grommets (P/N 93655) into holes to cover exposed sheet metal. **See Figure 38**

6. Replace windshield washer fluid reservoir.

7. Cover LTR outlet hose (P/N 94268-05) with corrugated loom (P/N W-CCL-100), as shown. **See Figure 39**

8. Place LTR outlet hose with corrugated loom into bottom of radiator support and pass through

Figure 38

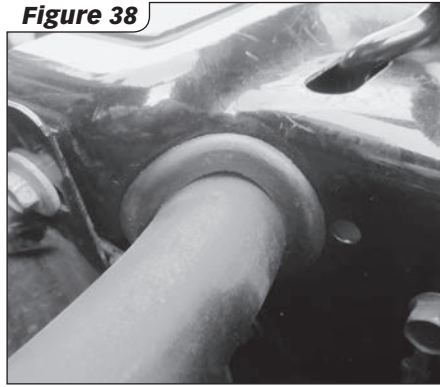


Figure 40

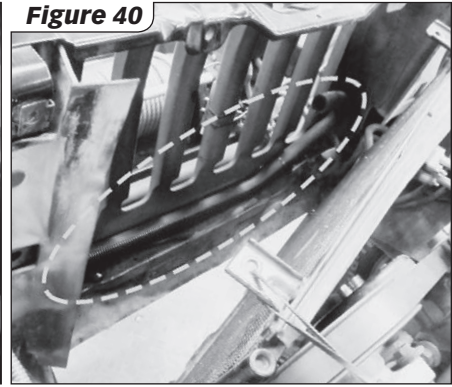


Figure 39

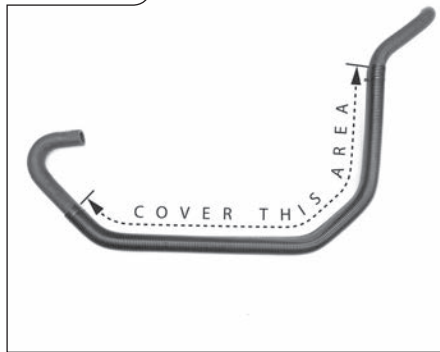


Figure 41

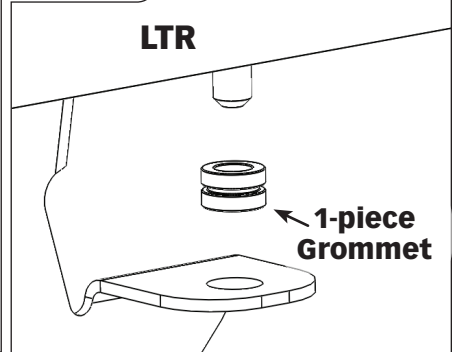
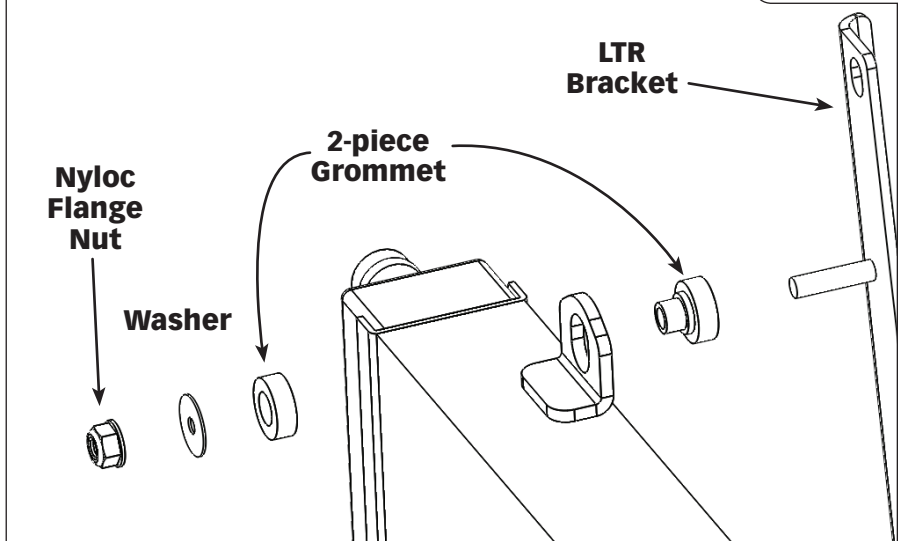



Figure 42



driver side grommet, as shown. Trim air deflectors as necessary. **See Figure 40**

9. Mount LTR to the LTR mounting bracket (P/N 25412) using grommets (P/N 25413) in the lower mounting holes and bushing isolators (P/N 25414) on the upper studs. Use fender washers (P/N 91180) and Nyloc nuts (P/N 91161) to secure LTR to mounting bracket. **See Figures 41 & 42**

 7/16" socket

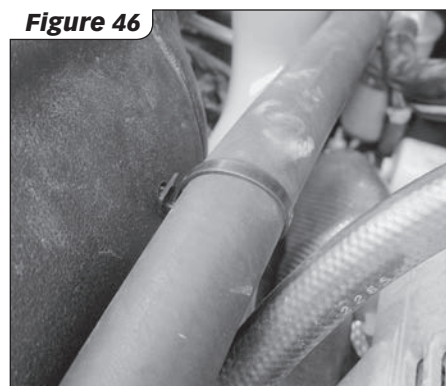
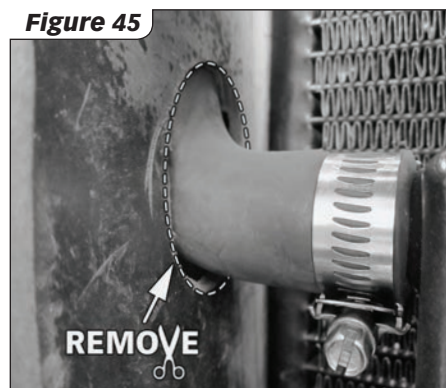
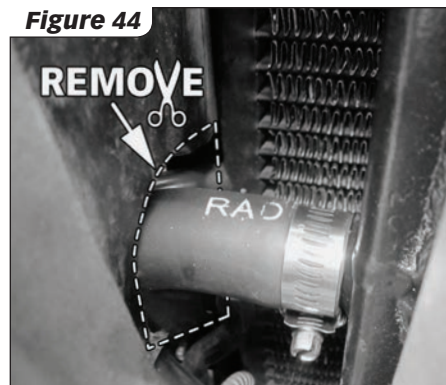
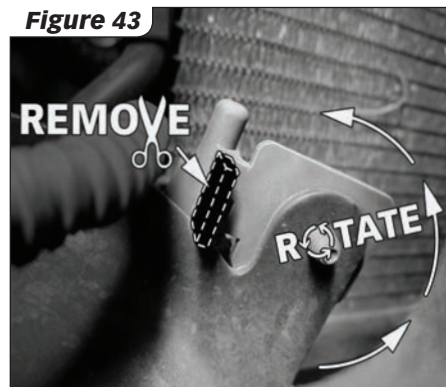
10. Mount LTR and LTR bracket where the front radiator brace was located. **See Figure 35**

11. If necessary, modify ambient temperature sensor by trimming catch and rotating the top away from the LTR, as shown. **See Figure 43**

12. Connect the LTR outlet hose to the lower barb of the LTR and secure using hose clamp (P/N 92810). Trim air deflectors as necessary. **See Figure 44**

17. Pass LTR inlet hose (P/N 94267) through passenger side grommet and connect to upper barb of the LTR. Secure using hose clamp (P/N 92810). Trim air deflectors as necessary. **See Figure 45**

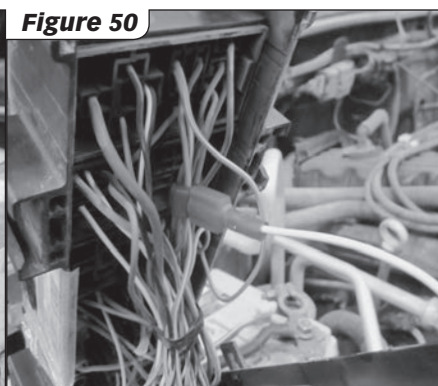
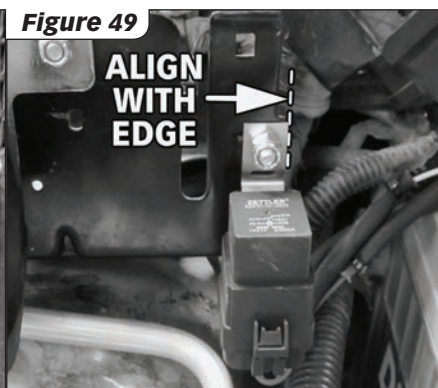
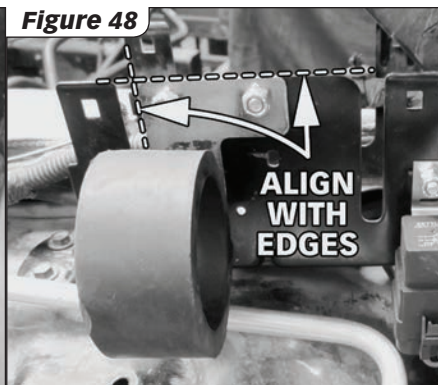
18. Drill a 1/4" hole into airbox to hold LTR inlet hose away from engine



components. Secure LTR inlet hose using push mount cable tie (P/N 62006). **See Figure 46**

19. Reinstall air conditioning condenser using provided replacement well nuts (P/N 91164).

20. Reinstall radiator using original hardware and reconnect hoses.



Reinstall coolant overflow reservoir. Fill radiator with appropriate automotive coolant to factory specs.

PUMP AND WIRING INSTALL

1. Release 4 tabs on the fuse box to free entire fuse box for access to wires on the bottom side. Leave all wires connected, if possible. **See Figure 47**

2. Drill intercooler pump mounting bracket (P/N 25418) holes (.25") and wire harness relay mounting holes (.25") on fuse box sheet metal as shown in **Figure 48 & 49**

3. Locate the fuel pump relay and tap the hot side of signal lead (orange/red wire) using supplied wire T-tap (P/N 62032). **See Figure 50**

4. Connect male faston connector (yellow lead) of the intercooler pump wire harness (P/N 62802) to the wire T-tap. Route with other wires towards the battery.

5. Mount the relay using 1/4"-20 bolt (P/N 91171) and Nyloc flange nut (P/N 91161). **See Figure 49**


6. Mount the intercooler pump brackets (P/N 25418) using 1/4"-20 bolts (P/N 91171) and Nyloc flange nuts (P/N 91161). **See Figure 51**

7. Replace fuse box onto sheet metal mount and check that all 4 tabs engage.

8. Mount intercooler pump (P/N 25419) in pump bracket with pump head towards rear of vehicle and outlet barb horizontal towards engine as shown. Connect the pump power connector to the pump and connect the pump outlet hose. Secure using hose clamp (P/N 92810). **See Figure 51**

TECHNI-COOLER INSTALL

1. Remove underhood light from bracket by lifting edge. Remove mounting bracket. **See Figure 52**

 10 mm socket

2. Drill a 3/16" hole approximately 2-3/8" to the left of the original hole to relocate the light. Replace bracket and light as shown in **Figure 52**.

3. Remove lower two bulkhead connectors from the firewall (upper connector for automatic transmission

does not need to be relocated) and install bulkhead connector relocation bracket (P/N 25408) using 2 bolts (P/N 91115) and Nyloc flange nut (P/N 91161).

See Figure 53

4. If adding Techni-Cooler kit to a previously installed Sidewinder turbo kit, remove the existing boost tube and disconnect the wastegate reference line.


5. Remove appropriate valve cover bolts to allow for Techni-Cooler installation (P/N 25404), as shown.

See Figure 54

6. Replace valve cover bolts with provided studs (P/N 91193) and flange nuts (P/N 91160). Install studs with Threadlocker (P/N 90001) leaving 3/4" threads above the valve cover, as shown.

See Figure 55 & 56

7. Install Techni-Cooler brackets (P/N 25405-05, 25405-07) onto studs using washers (P/N 91102) below the bracket and Nyloc flange nuts (P/N 91161) to secure it, as shown. **See Figure 57**


 7/16" socket

8. Check throttle cable and cruise control cable clearance to the Techni-Cooler brackets, adjust by sliding the cables to create at least 1/2" of clearance. **See Figure 58**

9. Check heater hose clearance to the Techni-Cooler brackets, cover with corrugated loom to protect hose from the sheet metal edge. **See Figure 59**

10. Install straight barbed fittings (P/N 92188) into Techni-Cooler using 2 layers of thread sealing tape (P/N 91099). Tighten 2-3 turns past finger-tight.


See Figure 60

 7/8" socket

NOTICE: Do NOT over-tighten fittings.

11. Install sight glass (P/N 25417), if not already installed, into Techni-Cooler using 2 layers of thread sealing tape. Tighten 2-3 turns past finger-tight.

See Figure 61

 15/16" socket

NOTICE: Do NOT over-tighten sight glass.

12. Install Techni-Cooler onto brackets using 5/16"-18 bolts (P/N 91271) and

Figure 51

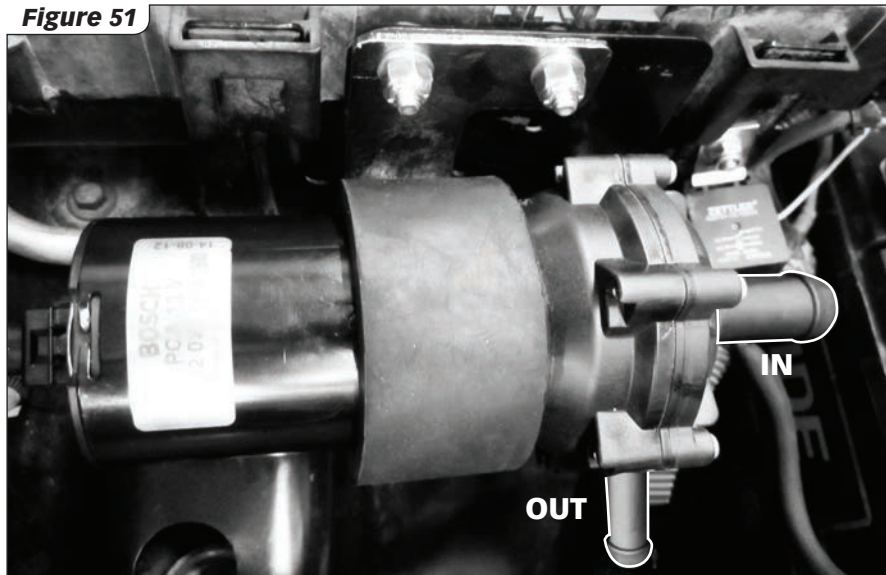


Figure 52

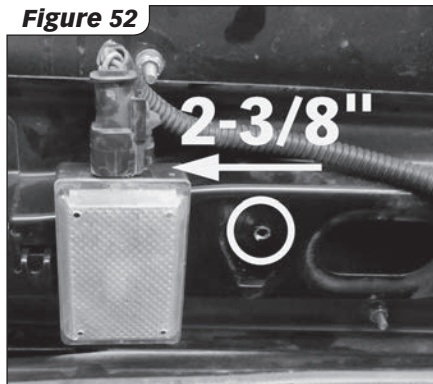


Figure 55

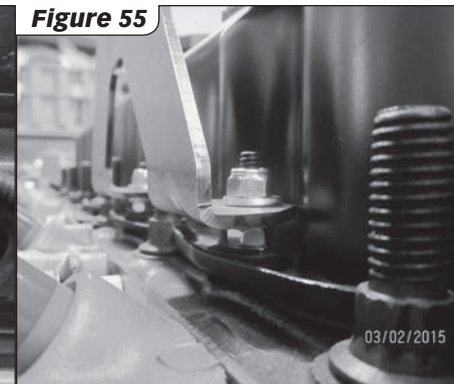


Figure 53

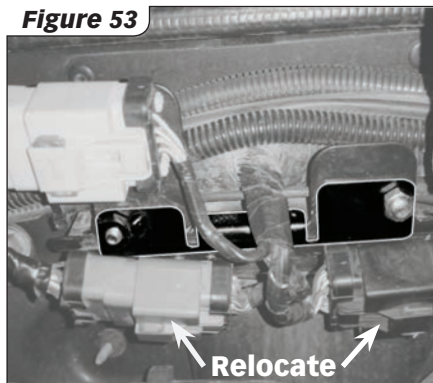


Figure 56

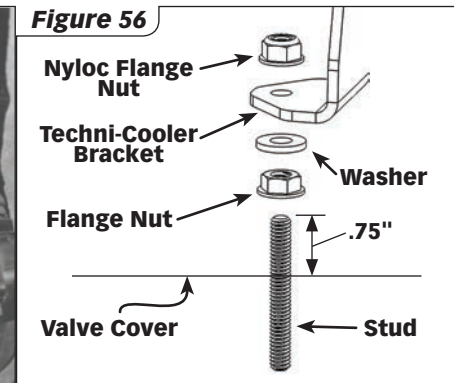


Figure 54

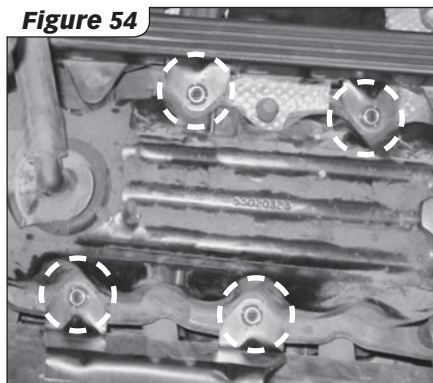
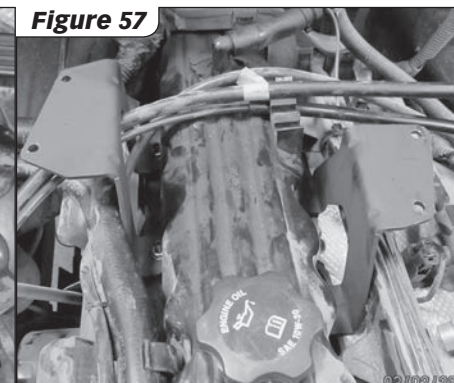



Figure 57



washers (P/N 91202) using threadlocker. **See Figure 62**

 1/2" socket

PLUMBING INSTALL

1. Install Techni-Cooler to pump inlet hose (P/N 94269) and secure with clamps (P/N 92810). Secure hose to boost tube using double-loop tie wrap

Figure 58

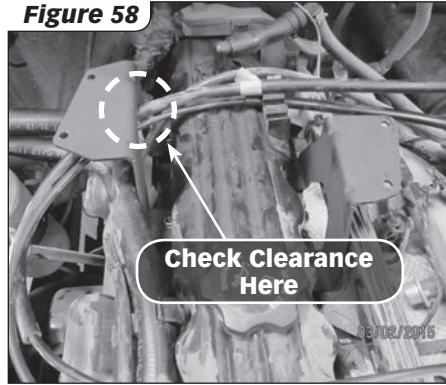


Figure 59

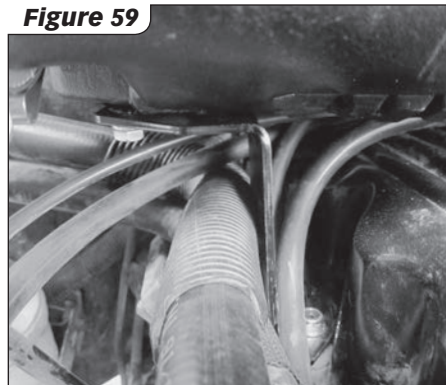


Figure 60

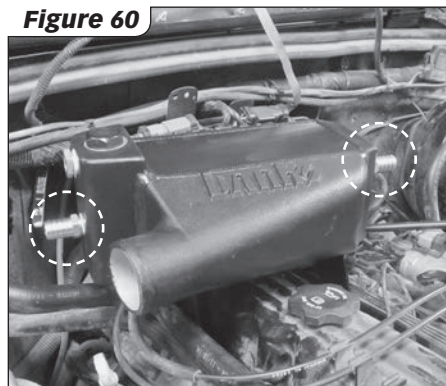
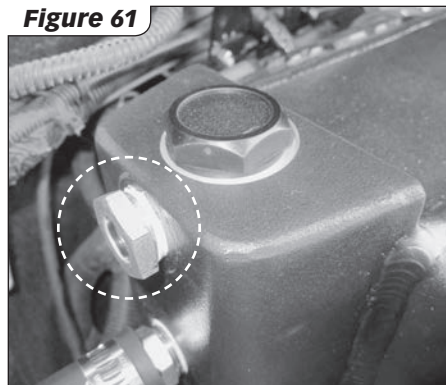



Figure 61



(P/N 62008). **See Figure 63**

 8 mm nut driver

2. Install hose barb adapter (P/N 92191) and barb to Techni-Cooler inlet hose (P/N 94268-07) and secure with clamps (P/N 92810). Secure hose to radiator support rod using tie wrap (P/N 62001). **See Figure 64**

Figure 62

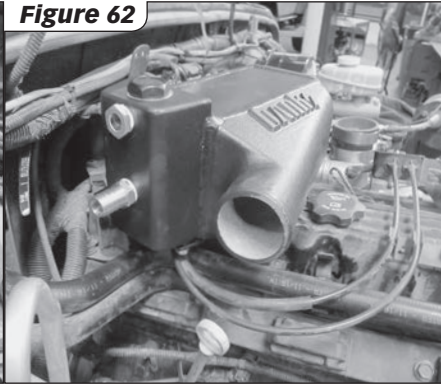


Figure 63

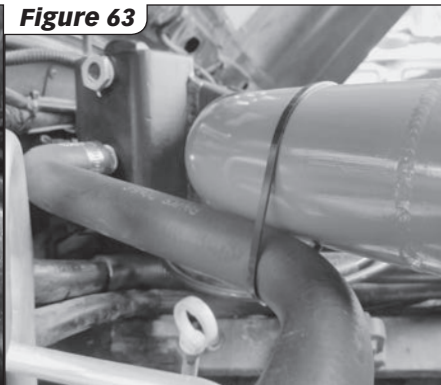


Figure 64

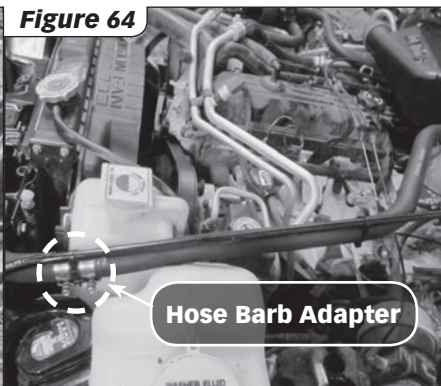
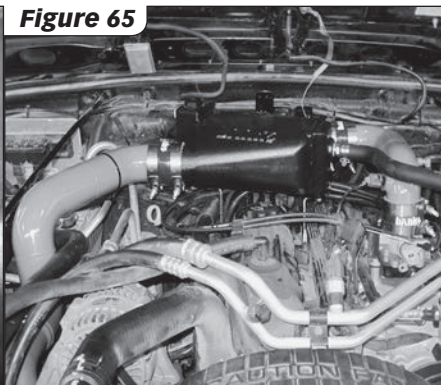


Figure 65



 8 mm nut driver

3. Install Techni-Cooler inlet boost tube using silicone hose (P/N 94262) and clamps (P/N 92855). Use throttle body silicone hose and clamp from turbo kit. **See Figure 65**

4. Install Techni-Cooler outlet boost tube using silicone hose (P/N 94262) and clamps (P/N 92855). Use compressor-side silicone hose and clamp from turbo kit. **See Figure 66**

5. Install intake air temperature (IAT) sensor and barbed elbow (from turbo kit) into the outlet boost tube. Plug water-methanol injection port if not used. Connect intake air temperature sensor connector. **See Figure 66**

6. Install wastegate reference hose (P/N 94123) from wastegate barb to boost tube barbed elbow using clamps (from turbo kit). **See Figures 67 & 68**

7. Connect power (red) lead of wire harness to fuse box power post and ground (black) lead to the battery ground terminal. Reconnect the battery. **See Figure 69**

8. Fill Techni-Cooler reservoir using funnel with automotive coolant such as Prestone® 50/50 prediluted antifreeze (or equivalent) fill to top, leaving room for cap.

9. Cycle the ignition to ON without starting the vehicle to run the pump and circulate coolant through the system. Check the system for coolant leaks.

10. Check the coolant level and add coolant if needed.

11. Repeat steps 9 and 10 until the coolant level stays in the center of the sight glass.

12. Place cap onto Tecni-Cooler.

NOTICE: Do NOT over-tighten cap.

Figure 66

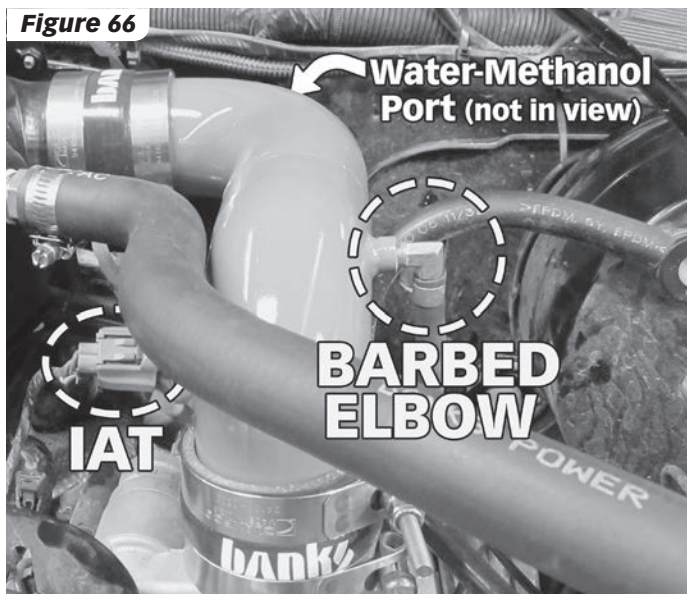


Figure 68

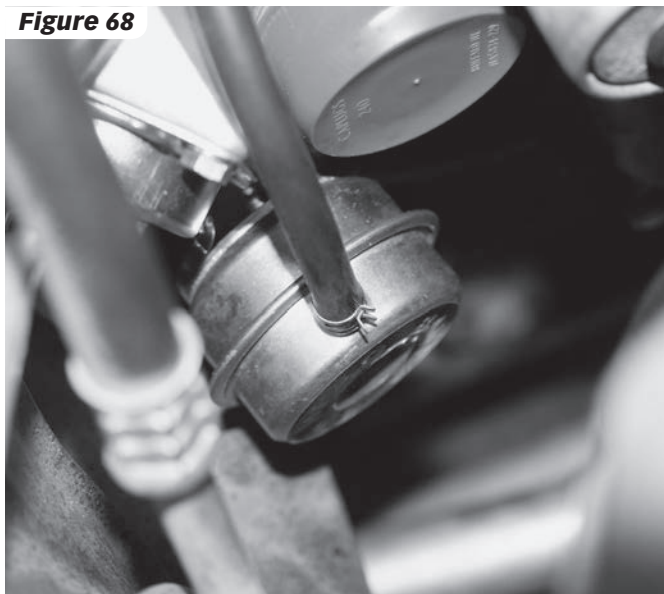


Figure 67

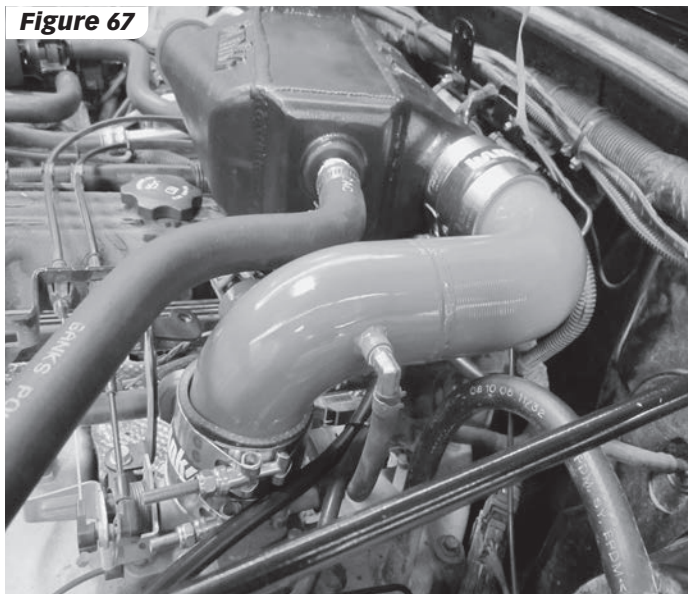
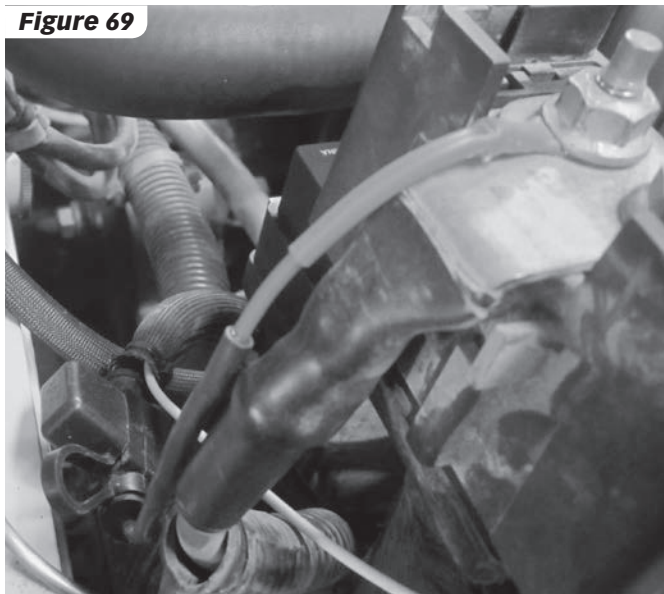


Figure 69



BANKS RAM-AIR® INSTALLATION PROCEDURE

Figure 70

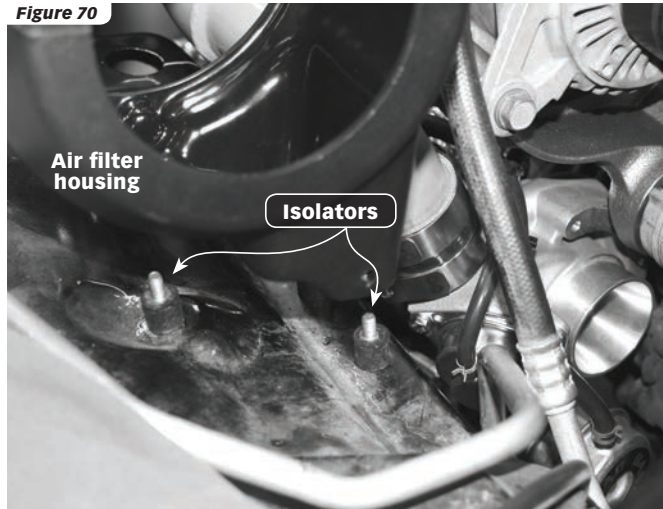


Figure 72

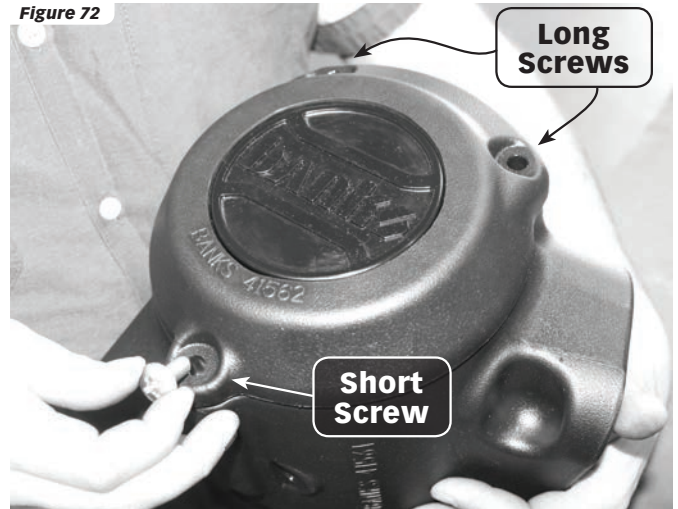


Figure 71

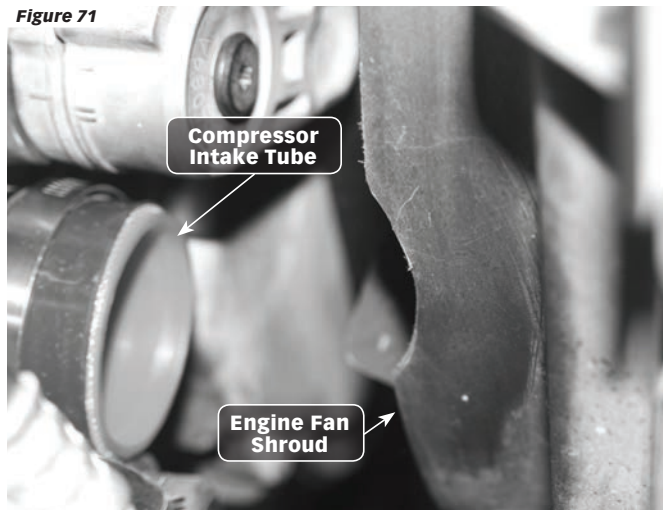
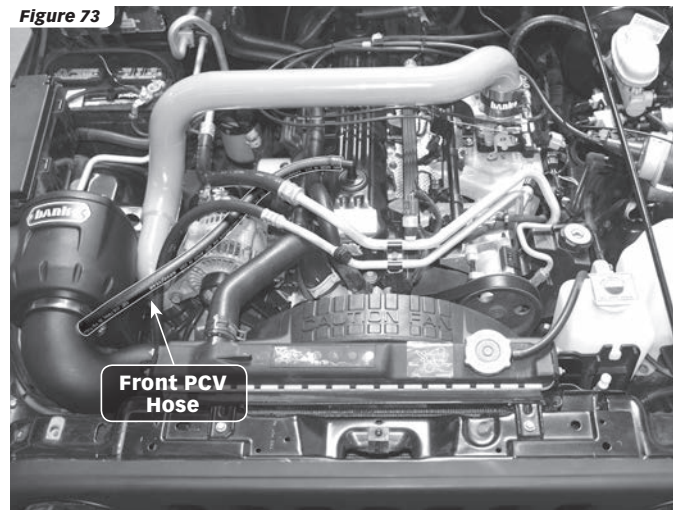


Figure 73



AIR FILTER AND HOUSING

1. Install air filter housing isolators (P/N 92980) onto fender with washers (P/N 91102) and Keps nuts (P/N 91112). Do not tighten.

See Figure 70

2. Install air filter housing (P/N 41561) onto isolators with washers and Keps nuts. Torque all fasteners to 8 lb-ft.



$\frac{7}{16}$ " wrench and socket

3. Install compressor intake tube (P/N 41564) onto compressor using one hose coupler (P/N 94265) and two worm gear clamps (P/N 92841). Do not tighten.

NOTICE: Place coupler and clamps on compressor (position clamps where worm

gear is accessible), then install compressor intake tube.

4. Install air filter element into air filter housing with open end towards compressor intake tube. Use hose clamp (P/N 92872) to secure air filter element to compressor intake tube. Do not tighten.

NOTICE: Check for clearance between compressor intake tube and engine fan shroud. If necessary, mark where clearance is needed and remove compressor intake tube. Trim fan shroud to provide approximately $\frac{3}{8}$ " clearance. See Figure 71

5. Install air filter housing cover (P/N 41562) with one short machine screw (P/N 91226) in bottom hole and two long machine screws (P/N 91242) in top two holes. Tighten compressor

intake tube clamps at compressor inlet, then the clamp at air filter.

See Figure 72

#3 Phillips,

6. Install provided 20" length $\frac{1}{2}$ " inner diameter front PCV (P/N 94138) from compressor intake tube to PCV elbow on top of engine (towards the front). **See Figure 73**

7. Reinstall passenger side radiator support rod.

BOOST GAUGE

1. Using compression ferrule installed in throttle body, install boost gauge kit. Refer to provided boost gauge kit installation instructions for full procedure.

Figure 74



Figure 76



Figure 78



Figure 75



Figure 77

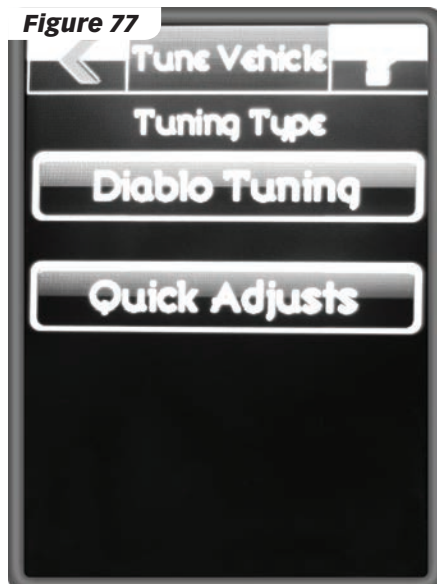
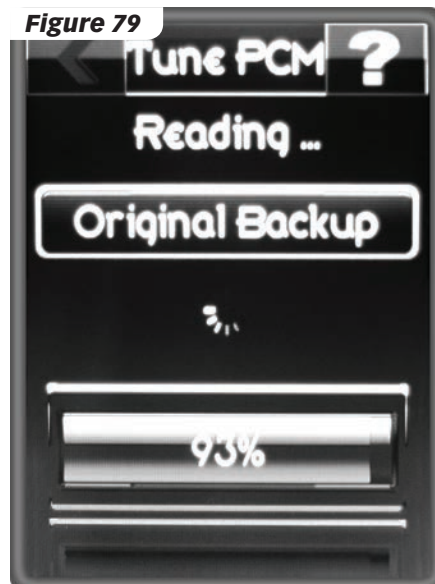


Figure 79



FLASH TUNE: '05-06 ONLY

FOR '99-04: Refer to supplemental SCT Tuning Guide that is included with your kit for all tuning instructions.

NOTICE: Banks Sidewinder® Tune must be successfully loaded before running vehicle.

1. Run the inTune auto update software by connecting inTune to your computer with provided USB cable.
2. Software should run automatically. If it does not, click Run InTune.exe in popup window. If

there is no popup window, click the Windows icon in bottom left corner. Then, click on Computer (Windows 7, Vista) or My Computer (Windows XP) in right hand column. In new window, double click on drive labeled CD Drive Diablosport. Finally, double click InTune to run software.

3. If an update is available, you will be prompted to not unplug the device, click OK. The update will begin, do not unplug device until it has restarted.

4. Connect inTune to vehicle's diagnostic port using OBDII cable.

NOTICE: Diagnostic port is located below steering column, on left hand side.

After loading screen, the Main

Menu will appear with the following selection options: Tune Vehicle, Scan Tool, and Settings. **See Figure 74**

5. To flash tune vehicle, select Tune Vehicle from Main Menu. Then, select Write Vehicle. **See Figure 75**

6. Wait for prompt, then turn key to on position without starting the vehicle. **See Figure 76**

Select Diablo Tuning and then Banks Sidewinder® Turbo. Select green check mark to confirm tune or select red "X" to go back. **See Figures 77 & 78**

NOTICE: Device will automatically backup factory tune. **See Figure 79**

7. A prompt will ask if you want

Figure 80

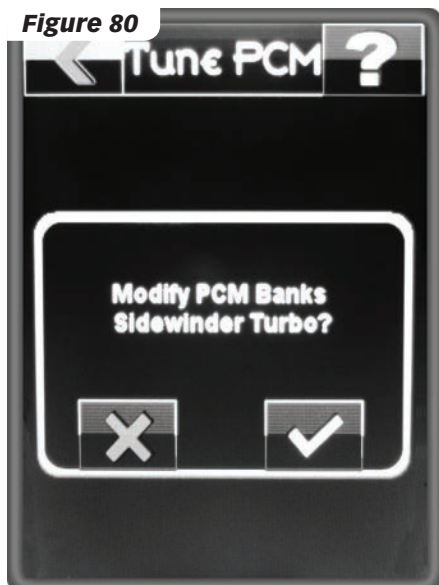


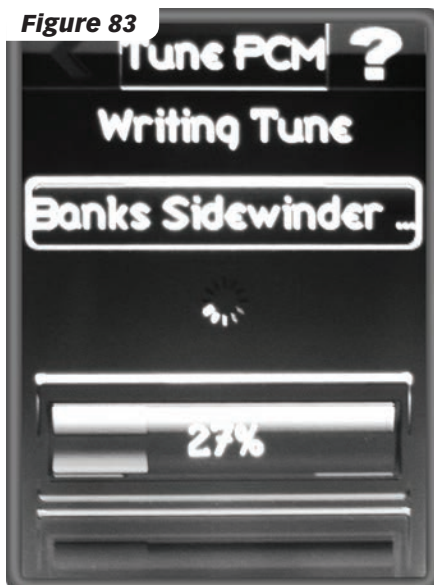
Figure 81



Figure 82



Figure 83



to modify tune (tire sizes, gear ratios, etc.). To modify tune, select the green check mark or to install default tune select red "X". **See Figure 80**

8. Select the green check mark to install Banks Sidewinder Turbo tune.

9. Cycle key position when prompted and select green check mark to continue. **See Figures 81 & 82**

10. Device will begin installing tune. Once tune is installed, cycle key position when prompted and select green check mark to continue.

See Figure 83

11. Select Continue after successful install to return to Main Menu or unplug inTune.

FUEL AND OIL

1. If you were not using 91 octane gasoline, drain all fuel from the vehicle and refill using 91 octane gasoline.

⚠ CAUTION: *Using fuel with an octane rating lower than 91 will cause severe damage to engine and/or turbo system.*

2. Fill vehicle with 10W-30 synthetic motor oil. See vehicle owner's manual for quantity. We also recommend replacing your oil filter.

NOTICE: *It is important to use synthetic oil due to increased oil temperature caused by the turbocharger.*

3. Check engine bay for tools and other items. Start vehicle and let idle for several minutes. Shut down the vehicle.

4. Check for leaks. Check oil level and add oil if needed.

TEST DRIVE

NOTICE: *Banks Sidewinder® Tune must be successfully loaded before running vehicle.*

1. After ensuring that there are no leaks, start the vehicle. Allow vehicle to idle for several minutes to warm-up.

2. Test drive vehicle in a location with minimal traffic. Drive for several minutes at light load, keeping boost at or below 2 PSI and engine RPM under 3000. Shut down vehicle if engine temperature increases above 245 degrees Fahrenheit or if boost pressure increases above 7 psi.

3. Park in a safe location and allow vehicle to idle. Exit vehicle and check for any leaks, including oil, fuel, and exhaust.

4. If no leaks are found, continue to drive vehicle, gradually increasing throttle / load and boost pressure while listening for any pinging / detonation. It is important to allow the ECU time to re-learn the new fuel system configuration - typically, a full tank of fuel used over several drive cycles while gradually increasing boost and RPM will provide adequate time for the system to adapt.

PARTS LIST

Part #	Description	1999-02	2003-04	2005-06
		P/N 24242	P/N 24243	P/N 24245
Part #	Description	Quantity		
24240-2	Turbocharger, 6-PSI W/G & Mounting Bracket Assy, Turbo Syst - 99-06 Jeep 4.0L	✓	✓	✓
24240-3	Lubrication Parts Kit, Turbo Syst - 99-06 Jeep 4.0L	✓	✓	✓
24240-4	Exhaust Components Kit, Turbo Syst - 99-06 Jeep 4.0L	✓	✓	✓
24240-6	Ram-Air Components Kit, Turbo Syst - 99-06 Jeep 4.0L	✓	✓	✓
24240-7	Fuel Injection Parts Kit, Turbo Syst - 99-02 Jeep 4.0L	✓	✗	✗
24241-7	Fuel Injection Parts Kit, Turbo Syst - 03-04 Jeep 4.0L	✗	✓	✗
24244-7	Fuel Injection Parts Kit, Turbo Syst - 05-06 Jeep 4.0L	✗	✗	✓
24242-1	Owners Manual & Install Kit, Intercooler -Turbo System - 1999-06 Jeep 4.0L	✓	✓	✓
24242-5	Intercooler System Kit - 99-04 Jeep 4.0L	✓	✓	✗
24245-5	Intercooler System Kit - 05-06 Jeep 4.0L	✗	✗	✓
66123	AutoMind Programmer, Hand Held, Sidewinder Turbo only - 1999-04 Jeep 4.0L	✓	✓	✗
66124	AutoMind Programmer, Hand Held, Sidewinder Turbo only - Jeep 05-06-4.0L	✗	✗	✓
96585	Brochure, All Jeep Products-4 pg.	✓	✓	✓
97518	Decal Set, Sidewinder - Turbo System, Jeep Wrangler	✓	✓	✓
24240-2	Turbocharger, 6-PSI W/G & Mounting Bracket Assy, Turbo Syst - 99-06 Jeep 4.0L			
24061	Oil Drain, Turbo System - 99-06 Jeep Wrangler, 4.0L	1	1	1
24250	Turbocharger Assembly - 99-06 Jeep 4.0L	1	1	1
24317	Hex Nut, Flex Lock, 1/4-28	2	2	2
24335	Bracket, Wastegate Actuator, Turbo Syst - 99-06 Jeep 4.0L	1	1	1
24373	Linkage, Wastegate Actuator, Turbo System - 99-11 Jeep 4.0/3.8L	1	1	1
24382	Wastegate Actuator, Uncalibrated - Jeep	1	1	1
52157	Bracket, Turbo Mounting, 99-06 Jeep Wrangler 4.0L	1	1	1
62003	Cable Tie, Black, 13" -	2	2	2
65298	Stand-Off, Idler Pulley, Turbo Syst - 99-06 Jeep 4.0L	1	1	1
65330	Belt, Accessory Drive, Turbo Syst - 99-06 Jeep 4.0L, Stock Pulleys, with A/C	1	1	1
91104	Washer, Split Lock, Zinc - 1/4"	2	2	2
91126	Nut, Jam, Thin Hex - 1/4"-28, Zinc	1	1	1
91201	Washer, AN, S/S - 5/16"	6	6	6
91401	Washer, AN, S/S - 3/8"	5	5	5
91402	Washer, Sae Flat, Zinc - 3/8"	1	1	1
91457	Hex Bolt, Flange Head, Non-Serrated, Grade 5, Zinc - 3/8"-16 X 1"	1	1	1
91458	Hex Bolt, Grade 8, Zinc - 3/8"-16 X 1 1/4"	4	4	4
91468	Hex Bolt, Grade 8, Zinc - 3/8"-16 X 1 5/8"	1	1	1
91739	Hex Bolt, Flange Head - 6MM-1.00 X 10MM, 8.8, Zinc	2	2	2
91776	Hex Bolt - 6MM-1.00 X 16MM, 8.8, Zinc	2	2	2
91806	Hex Nut, Locking, 8MM X 1.25, High-temp Steel, Copper Coated	2	2	2
91939	Hex Bolt, 8MM X 1.25 X 30MM, 10.9 Zinc	2	2	2
91943	Hex Bolt, 8MM X 1.25 X 45MM, 10.9 Zinc	2	2	2
92024	Cap, Silicone - 11/64", Turbocharger Assy - Various Applications	1	1	1
93010	Gasket, Turbine Inlet - 99-06 Jeep 4.0L	1	1	1
96059	Decal, Banks Big Head - Wastegate Actuator	1	1	1
24240-3	Lubrication Parts Kit, Turbo Syst - 99-06 Jeep 4.0L			
92106	Fitting, Tee, 1/8 MPT X 1/8" FPT X -4 AN	1	1	1

92177	Fitting, 3/8" NPT X 5/8" Hose 45° Brass	1	1	1
92275	Weld Bung, 3/8" NPT	1	1	1
92810	Hose Clamp, #10	2	2	2
94075	Hose, Turbo Oil Feed - 99-06 Jeep 4.0L	1	1	1
94203	Hose, Oil Drain, Turbo System - 99-11 Jeep 4.0/3.8L (feet)	0.25	0.25	0.25
24240-4	Exhaust Components Kit, Turbo Syst - 99-06 Jeep 4.0L			
52096	Up-Pipe, Turbo System - 99-06 Jeep 4.0L	1	1	1
52098	Turbine Outlet Pipe, Turbo System - 99-06 Jeep 4.0L	1	1	1
52340	Flange, Exhaust - Various Applications	1	1	1
52462	Exhaust Clamp, Band Style - 2 1/2"	1	1	1
52492	Exhaust Clamp, Lap Joint, 2-1/2", 304 SS	1	1	1
91459	Hex Bolt, Flange Head, Grade 8, Zinc - 3/8"-16 X 1 1/2"	2	2	2
91817	Hex Bolt, Flange Head, 10.9 Zinc - 8MM-1.25 X 25MM	3	3	3
24240-6	Ram-Air Components Kit, Turbo Syst - 99-06 Jeep 4.0L			
24240-61	Small Parts Kit, Ram-Air - Turbo Syst - 99-06 Jeep 4.0L	1	1	1
41561	Housing, Air Filter, Turbo System - 99-06 Jeep 4.0L	1	1	1
41562	Cover, Air Filter Hsg, Turbo System - 99-06 Jeep 4.0L	1	1	1
41563	Air Filter Element, Turbo System - 1999-06 Jeep 4.0L	1	1	1
41564	Intake Tube, Turbo System - 96-06 Jeep 4.0L	1	1	1
41565	Super-Scoop, Turbo System - 99-06 Jeep 4.0L	1	1	1
24240-7	Fuel Injection Parts Kit, Turbo Syst - 99-02 Jeep 4.0L			
24241-7	Fuel Injection Parts Kit, Turbo Syst - 03-04 Jeep 4.0L			
24244-7	Fuel Injection Parts Kit, Turbo Syst - 05-06 Jeep 4.0L			
42730	Spacer, 0.85" H X .600 OD X .25 ID - Aluminum	3	3	3
43625	MAP Sensor, 2-Bar, Turbo System - 99-11 Jeep 4.0/3.8L	1	1	1
43626	Harness, Pigtail - MAP Sensor, 2-Bar, Chrysler - 99-02 Jeep 4.0L	1	0	0
43628	Spacer, Throttle Body/Mount, MAP Sensor - Turbo System - 99-06 Jeep 4.0L	1	1	1
43643	Fuel Injector, 35 lb/hr@43.5 PSI, EV6 - Turbo Syst - 99-06 Jeep 4.0L	6	6	6
47102	Valve, Vacuum Check - Turbo System, 1999-06 Jeep	1	1	1
47105	Valve, PCV Check - Turbo System, 1999-06 Jeep	1	1	1
62001	Cable Tie, Black, 6" -	12	12	12
91759	Hex Bolt, Flange Head - 6MM-1.00 X 35MM	3	3	3
91761	Hex Bolt, Flange Head - 6MM-1.00 X 45MM	4	4	4
91826	Washer, Int Tooth Lock, Zinc - #10	2	2	2
91860	Hex Bolt - 10-32 X 3/4"	2	2	2
92032	Cap, Vacuum/Boost, 5/8" ID, Rubber	0	0	1
92131	Fitting, 1/4" NPT Male X 3/8" Push On Barb, Brass	1	1	1
92251	Plug, 1/8" NPT- Hex Countersunk, Zinc	1	1	1
92257	Plug, 1/4" NPT - Hex Countersunk	1	1	1
92775	Clamp, 11/32" Spring Band, Silver	2	2	2
92777	Clamp, 19/32" Spring Band, OD Green	2	2	2
92879	Clamp, 3/4" Spring Band, Black - 97-06 Jeep 4.0L	1	1	1
93078	Gasket, Throttle Body - 99-06 Jeep 4.0L	2	2	2
94122	Hose, Silicone, Black - 3/16" ID X 3/8" OD Bulk (feet)	5	5	5
94136	Hose, PCV, 3/8"Id X 1/2"Od - Bulk (feet)	1.33	1.33	1.33
94138	Hose, 1/2"Id X 3/4"Od, Bulk - Jeep 4.0L, PCV Hose (feet)	0.25	0.25	0.25

24242-1	Owners Manual & Install Kit, Intercooler -Turbo System - 1999-06 Jeep 4.0L			
26111	Heatshield, Turbocharger/Turbine Outlet Pipe, Turbo System - 99-06 Jeep 4.0L	1	1	1
26114	Heatshield, Starter Solenoid - Jeep 4.0L	1	1	1
62001	Cable Tie, Black, 6" -	10	10	10
62003	Cable Tie, Black, 13" -	5	5	5
63001	Mounting Panel, One Gauge - Black, W/Fasteners	1	1	1
64050	Boost Gauge Kit, 0-15 PSI	1	1	1
90001	Threadlocker, Blue .5MI	1	1	1
90040	Thread Sealant w/PTFE - 1oz Tube	1	1	1
90045	Anti Seize, 5 Grams	1	1	1
91102	Washer, Sae Flat, Zinc - 1/4"	1	1	1
91117	Hex Bolt, Grade 5, Zinc - 1/4"-20 X 3/4"	1	1	1
92841	Hose Clamp, #40 W/Liner	1	1	1
93013	Gasket, Turbine Outlet - 99-06 Jeep 4.0L	1	1	1
96002	Decal, Stop Do Not Discard - Ram Air Filter	1	1	1
96009	Urocal, Banks Power, Small - Red, Black & Silver	2	2	2
96239	Decal, Carb Eo D-161-97 - Banks Sidewinder Turbo-99-06 Jeep 4.0L Wrangler	1	1	1
96323	Owners Manual, Sidewinder Turbo Syst - Intercooled -1999-06 Jeep 4.0L	1	1	1
96399	Product Registration Card - All Products	5	5	5
24242-5	Intercooler System Kit - 99-04 Jeep 4.0L			
24245-5	Intercooler System Kit - 05-06 Jeep 4.0L			
25407	Intercooler Kit - 1999-06 Jeep 4.0L Wrangler	1	1	1
25415	Heat Exchanger Kit - 1999-06 Jeep 4.0L Wrangler	1	1	1
25420	Water Pump & Plumbing Kit - CAC, 1999-06 Jeep 4.0L Wrangler	1	1	1
25424	Harness Kit, 1999-06 Jeep 4.0L Wrangler	1	1	1
42451	Boost Tube-1, Intercooled Turbo System - 99-06 Jeep 4.0L	1	1	1
42453	Boost Tube-2, Intercooled Turbo System - 1999-04 Jeep 4.0L	1	1	0
42454	Boost Tube-2, Intercooled Turbo System - 2005-06 Jeep 4.0L	0	0	1
92122	Fitting, 1/8" Npt X 1/4" Hose - Elbow, 90 Degree	1	1	1
92251	Plug, 1/8" NPT- Hex Countersunk, Zinc	1	1	1
92850	Hose Clamp, T-Bolt Style, 2 3/8" - Various Applications	2	2	2
92855	Hose Clamp, T-Bolt Style - 3"	4	4	4
94123	Hose, Silicone, Black - 1/4" ID X 7/16" OD Bulk (feet)	4	4	4
94253	Hose, 2.0" ID x 1.875" Lng, Reinforced silicone, Black w/Brick Red Liner	1	1	1
94272	Hose, 2.5" X 2.5", Black - Various Applications	2	2	2
94276	Hose, Throttle Body Inlet - 1997-06 Jeep 4.0L	1	1	1
25407	Intercooler Kit - 1999-06 Jeep 4.0L Wrangler			
25404	Techni-Cooler Assembly - Jeep Wrangler, 4.0L	1	1	1
25405-05	Mounting Bracket, Left, CAC - Jeep Wrangler 4.0L	1	1	1
25405-07	Mounting Bracket, Right, CAC - Jeep Wrangler 4.0L	1	1	1
25406	Plug, External Hex - M26 x 1.5, O-ring	1	1	1
25408	Bracket, Relocation, Bulkhead Connectors - Jeep Wrangler, 4.0L	1	1	1
91102	Washer, Sae Flat, Zinc - 1/4"	4	4	4
91115	Hex Bolt, Grade 5, Zinc - 1/4"-20 X 1/2"	2	2	2
91160	Nut, Hex Flange, Zinc - 1/4"-20	4	4	4
91161	Nut, Hex Flange, 1/4"-20 Nylock	5	5	5
91193	Stud, Internal Hex Drv - 1/4"-20 x 2"	4	4	4
91202	Washer, Sae Flat, Zinc - 5/16"	4	4	4
91271	Hex Bolt, Flange Head - 5/16"-18 x 3/4", Grade 8, Zinc	4	4	4
92188	Fitting, Straight - 1/2" NPT Male X 3/4" Hose Barb	2	2	2

25415	Heat Exchanger Kit - 1999-06 Jeep 4.0L Wrangler			
25411	Heat Exchanger, Water-Air, w/End Tanks-3/4" Barbs, Mtng tabs	1	1	1
25412	Mounting Bracket, w/Studs - LTR - Jeep 4.0L	1	1	1
25413	Grommet, Lower Isolator, 3/8" (1 pc) - LTR - Jeep 4.0L	2	2	2
25414	Grommet, w/Steel Insert - Upper Isolator, 1/4" (2 pc) - LTR - Jeep 4.0L	2	2	2
91103	Washer, Uss, Zinc - 1/4"	2	2	2
91161	Nut, Hex Flange, 1/4"-20 Nylock	2	2	2
91164	Well Nut, 1/4"-20, 0.5" OD x 0.63 Length	4	4	4
25420	Water Pump & Plumbing Kit - CAC, 1999-06 Jeep 4.0L Wrangler			
25418	Bracket, Mounting, Water Pump, CAC - Jeep 4.0L	1	1	1
25419	Pump, Water - 12VDC, 5.3GPH/4.4 PSI, 0.750"	1	1	1
91161	Nut, Hex Flange, 1/4"-20 Nylock	2	2	2
91171	Hex Bolt, Flange Head - 1/4" -20 x 5/8", Grade 8	2	2	2
92191	Fitting, Union, 3/4" to 3/4" Hose Barb	1	1	1
92810	Hose Clamp, #10	8	8	8
93655	Grommet, Pass-through, 1.25" ID, CAC - Jeep 4.0L	2	2	2
94267	Hose, Pump to LTR, Jeep 4.0L	1	1	1
94268-05	Hose, LTR to Barb - Jeep 4.0L	1	1	1
94268-07	Hose, Barb to CAC, Jeep 4.0L	1	1	1
94269	Hose, CAC to Pump, Jeep 4.0L	1	1	1
W-CCL-100	Corrugated Loom, Nylon, 1.0" Id	5	5	5
25424	Harness Kit, 1999-06 Jeep 4.0L Wrangler			
62032	Connector, T-Tap, Blue - 16-14 Gauge	1	1	1
62802	Wire Harness, CAC Pump Relay - 99-06 Jeep Wrangler 4.0L	1	1	1
91161	Nut, Hex Flange, 1/4"-20 Nylock	1	1	1

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