

HYPERMAX ENGINEERING, INC.

***** 6.9L/7.3L FORD DIESEL VAN PULSE INSTRUCTIONS *****

I N S T A L L A T I O N I N S T R U C T I O N S

Time will be saved if these instructions are read PRIOR to installation of the turbocharger package.

A. ITEMS TO BE REMOVED:

1. Negative battery cables.
2. Passenger seat and engine cover.
3. Exhaust piping and muffler (do not remove manifolds).
4. Air filter and outside air duct.
5. Crankcase blow by valve and valley cover grommet.
6. Auto trans filter tube and dipstick (take precautions to avoid foreign material entering transmission during installation.)
7. Transmission modulator tube (C-6 Transmission).
8. Transmission downshift rod (C-6 Transmission).
9. Rear lifting eye.

NOTE: To reduce the possibility of cylinder head gasket leakage, it is advisable to re-torque the cylinder head bolts to (6.9L 85 ft.-lbs., 7.3L 110 ft.-lbs.) after 3,000 miles has been accumulated on the vehicle. Valve cover removal is simplified by removing the passenger's side engine mount and raising the engine slightly. Reinstall the rocker arms and posts in their original location with the timing mark on the front pulley at the eleven o'clock position as viewed from the front of the engine. Torque the post bolts to 20 ft.-lbs.

Provide a 1-5/16" diameter hole in the center of the rear circular impression (**1983-89 Models**) or the middle circular impression (**1990-94 Models**) on the left hand valve cover. This will allow for installation of the grommet and baffle for the crankcase breather. Note: If your valve cover has a circular impression in the center of the valve cover regardless of model/year, utilize it. A smooth edge is required on this hole, use silicone sealer if hole quality is in question. The baffle is most easily installed under the valve cover grommet by starting the grommet halfway into the valve cover then hooking the baffle onto this portion of the grommet. The remaining portion of the grommet can then be worked into the valve cover and baffle simultaneously.

B. PRELIMINARY SET-UP:

1. Remove the oil pressure sending unit and replace it with the combination sending unit turbo lube line fitting. Orientate the fitting such that the sending unit can be reinstalled facing the drivers seat with approximately 1/4" clearance between sending unit and intake manifold.
2. Install the rubber expansion plug into the rear of the intake manifold. Use "Loctite" on threads.
3. Some intake manifold/tappet chamber cover gaskets do not allow adequate turbocharger oil drain back. This is due to a manufacturing variance. To ensure adequate drain back, punch three holes (1/8" to 3/16" diameter) with a sharp pointed punch or awl through the grommet hole to the gasket baffle chamber. It will be necessary to perforate two layers of the steel gasket. The layers are about 1" apart. The first layer is the top of the baffle chamber; the second is the bottom of the chamber. Be careful not to go any deeper than necessary to perforate both layers to avoid damaging the roller tappet retainer located about 1" below the baffled chamber.
4. Install the 3/4" I.D. grommet into the opening in the engine valley cover.

C. REROUTING FUEL RETURN LINES, ELECTRICAL & CONTROL CABLES:

1983 ONLY:

1. Remove the tee fitting fuel return hose between (No.5 & No.7) injectors. Cut a 4" piece off of the long hose that connects both engine banks. Install hose between the (No.5 & No.7) injectors reusing the hose clips.
2. Remove the fuel return hose from the (No.2 & No.4) injectors and replace with the hose and tee fitting removed from (No.5 & No.7) injectors. Remove the return hose that connects the fuel filter and the (No.2) injector at the injector and reconnect hose on the tee fitting between the (No. 2 & No.4) injectors.
3. Remove the caps on (No.1 & No.2) injectors and connect the right and left bank injector returns at the front of the engine with the 28" length of hose provided. This hose can be shortened if desired. Reuse hose clamps.
4. Cap off the open fitting on main return line with a cap removed from (No. 1 or No. 2) injectors in step 2. Reuse hose clips.

5. Remove fuel return line clamp at left rear of engine and move forward to next manifold bolt. Bend fuel return line up 15 to 20 degrees for clearance with new down shift rod. Shorten injector return hose if necessary.

6. Replace engine fuel return hose and line to chassis with steel return line and 5/16" inverted flare tube, nut, and fitting provided. Reuse clamp.

ELECTRICAL & CONTROL CABLES

1983 ONLY:

1. Reroute the throttle and cruise control cables under the 3/8" fuel return line at left rear of engine and under the glow plug wiring harness at (No. 7) cylinder. Fasten the bundle to the threaded boss at the right rear of the intake manifold inlet with (2) zip ties provided.

2. Relocate the fuel filter forward using the 2" x 4" x 1/2" adapter plate and 3/8" NC x 1" bolts and lock washers. It is not necessary to remove the fuel lines. Note: When cold air package is added this step is not necessary and plate is not included.

3. Install new transmission downshift rod. Adjust the downshift rod length by setting a .030" gap at the adjusting screw on the injection pump lever with the injection pump at full fuel position and the transmission lever at its full travel.

4. Readjusting the fuel injection pump is advisable at this time. Refer to supplement sheets 6.9/7.3L Fuel Injection Pump Adjustment.

1984-1994:

1. Remove the return hose connecting the right and left injection nozzle banks at the rear of the engine and retain the hose clips (discard hose). **Note:** 1990 models use 3/16" or 1/4" inside diameter return hose. Install the same size replacement hose (both sizes are provided for this model year).

2. Slide the clamps on both ends of the 28" length of hose provided.

3. Route the hose around the front of and underneath the intake manifold to reconnect the right and left bank nozzle return fittings.

4. Tie-wrap the hose to one of the injection lines on the passenger side of the engine for maximum clearance between the turbocharger and hose.

5. Replace engine fuel return hose and line to chassis with steel return line and 5/16" inverted flare tube, nut, and fitting provided. Reuse hose clips.

6. 1992 and later models are equipped with a steel line which is not replaced. Clamp line to rear of cylinder head for maximum clearance.

7. Clamp fuel return hose to rear of left cylinder head to clear pipe.

8. Readjusting the fuel injection pump is advisable at this time. Refer to supplement sheets 6.9/7.3L Fuel Injection Pump Adjustment.

ELECTRICAL & CONTROL CABLES

1. Remove throttle and cruise control cables from injection pump and re-route under 3/8" fuel return line at left rear of engine. Fasten both cables to the threaded boss at the right rear of the intake manifold inlet with (2) zip ties provided.

1984-1986: Reroute the glow plug wiring harness at (No.7) cylinder with the throttle and cruise control cables, causing the glow plug harness to be on top of the cables. Fasten the bundle to the threaded boss at the right rear of the intake manifold inlet with (2) zip ties provided.

2. Relocate the fuel filter forward using the 2" x 4" x 1/2" adapter plate and 3/8" NC x 1" bolts and lock washers. It is not necessary to remove the fuel lines. Note: When cold air package is utilized this step is not necessary and plate is not included.

Downshift Rod - C-6 Transmission Only:

Install new transmission downshift rod. Adjust the downshift rod length by setting a .030" gap at the adjusting screw on the injection pump lever with the injection pump at full fuel position and the transmission lever at its full travel.

Note: Readjusting the fuel injection pump on all models is advisable at this time. Refer to supplement sheets 6.9/7.3L Fuel Injection Pump Adjustment.

E40D Transmission Only:

Locate wire bundle on the left side of the engine. This wire bundle connects to the transmission. Route the bundle under the injection lines. Locate best position for maximum clearance with pipes and mount plate. Drill a hole for a zip tie on a fin on the transmission housing and secure wire bundle.

D. RELOCATING GLOW PLUG WIRING HARNESS & RELAY - 1987-1994:

1. Unplug glow plug harness on passenger side, unbolt relay and ground wire from intake manifold. Disconnect glow plugs and remaining connections. Remove entire glow harness from vehicle with relay intact.

2. Lay harness out on table and reverse position of relay from rear to front of engine keeping right and left sides of harness the same.

3. Passenger Side: Locate three (3) Injection Pump wires, water temperature sender wire, and the oil pressure sending unit wire. Reposition these wires from the front to the rear of the harness.

Driver Side: Reposition the two (2) temperature sending unit wires, and three (3) fuel filter wires from rear to front of harness.

4. Unbolt fuel filter mount from intake manifold, lift and move forward. It is not necessary to remove the fuel lines.

5. Set glow plug relay mounting plate in position on intake manifold pad with bumper on valve cover. See attached illustration.

6. Remount the fuel filter forward using the 2 x 4 x 1/2 adaptor plate and 3/8 nc x 1" bolts and lock washers. This plate is not used or included in the standard package when the optional cold air package is utilized. Adaptor plate goes over glow plug relay mounting plate.

7. Lay harness loosely into position on engine.

8. Position harness under (No. 3 & No. 1 cylinder) injection lines. Start from wiring harness connector located on passenger side fender well.

9. Position harness below the transmission down shift rod (C-6 transmission only) and under (No. 2 cylinder) injection line to glow plug relay. Wire connections on relay should be facing rearward.

10. Loop glow wires over and below the relay mounting plate and connect to the glow plug.

11. Connect passenger side glow plugs and remaining oil, fuel, temperature and injection pump terminals.

12. Bolt relay and ground wire to mounting plate with bolts and locknuts supplied.

E. AUTOMATIC TRANSMISSION HOUSING REWORK:

C-6 Transmission:

Locate the lug protruding from transmission housing at the 3 o'clock position where the transmission bolts to the engine.

Saw approximately 1-1/4" off the boss on a vertical plane. This boss is a machining locator and serves no other purpose. Removal provides clearance for the turbine outlet pipe to be installed later.

E40D Transmission:

Locate the lug on the left side of the transmission housing at the 9 O'clock position.

Saw off the lug as close to the transmission as possible. This lug is a machining locator and serves no other purpose. Removal provides clearance for the left manifold pipe to be installed later.

F. MOUNT PLATE AND TURBINE INLET PIPING:

1. Install the turbo mounting plate to the rear of the right cylinder head, using (3) counter sunk 3/8" Allen screws provided.

2. Install the left and the right manifold pipes into the turbocharger mount. Leave nuts loose enough to adjust for best pipe alignment. Install (2) 1/4" NC x 1/2" stainless steel bolts through the mounting tabs and into the mounting plate. Adjust for best pipe alignment and tighten manifold nuts. Then tighten the tab bolts.

3. Zip tie shift cable to frame to clear left manifold pipe.

G. TURBOCHARGER HOUSING ORIENTATION:

1. Grease the end of the turbocharger oil drain tube and insert it into the grommet previously installed in the engine valley cover.

2. Loosen the retaining bolts on the turbocharger's exhaust and compressor housings.

3. Install turbocharger, and exhaust gasket onto the mount plate (compressor housing facing left side of the engine) with (4) 3/8" NC lock nuts. Tighten (4) nuts. This is a TRIAL FIT step.

4. Rotate center housing of turbocharger to align with drain tube.

5. Lightly secure drain tube flange to turbocharger with (2) 3/8" NC x 1" bolts and lock washers.
6. Rotate center housing and lower end of drain tube to permit uniform tube to grommet contact; i.e. - be certain drain tube is not loading one side of grommet heavier than the opposite side.
7. Tighten (2) center section to exhaust housing bolts.
8. Install intake manifold cover with its "O" ring (apply grease to "O" ring). Retain lightly with 3/8 NC x 4" bolt with "O" ring washer and backup washer.
9. Rotate compressor housing to obtain best alignment with connector stub on intake manifold cover - a 3/8 - 1/2" gap will be present.
10. Tighten (2) center section to compressor housing bolts.
11. Remove intake manifold cover.
12. Remove drain tube bolts and remove turbocharger from mounting plate with drain tube in place.
13. Crankcase oil vapors are ingested into the inlet of the turbocharger and may collect in the compressor housing. This oil may leak from the hold-down bolt holes. After aligning the compressor housing, put a reference mark on it and the backplate. Apply silicone sealer or equivalent product to the compressor housing bolt threads. Align reference marks.
14. Tighten compressor and exhaust housing bolts and bend over lock tabs.

H. **FINAL TURBOCHARGER INSTALLATION:**

1. Wash inside of oil feed tube (1/4" diameter). Lubricate seal grommets. Install the oil feed line on the combination fitting installed in section B-1, leaving the turbo side unconnected.
2. Reinstall turbocharger using "Never Seeze" compound on the exhaust gasket and studs. Center exhaust housing on studs and tighten.
3. Bolt drain tube with its gasket to turbocharger with (2) 3/8 NC x 1" bolts and lock washers.
4. Recheck for optimum drain tube to grommet condition.
5. Tighten turbocharger mounting and drain tube bolts for final time.

6. Remove plastic plug from oil inlet passage at top of turbocharger and fill passage with clean oil.

7. Install turbocharger oil lube fitting using pipe sealer on threads. Fitting should face rearward. **DO NOT overtighten.**

8. Connect the feed line to the fitting in the turbo charger.

9. Tighten flex fitting nuts until they just bottom on their fittings.

I. **INTAKE MANIFOLD COVER INSTALLATION:**

1. Slide compressor discharge hose and clamps onto the manifold cover.

2. Lightly grease the intake cover "O" ring and install it on the intake manifold.

3. Install intake manifold cover and hose onto the compressor discharge and onto intake manifold simultaneously.

4. Rotate cover for optimum hose alignment. Be certain cover is bottomed against intake manifold.

5. Install 3/8 NC x 4" bolt with "Loctite" with its "O" ring and back up washer. Tighten only enough to compress "O" ring - Do NOT overtighten! Tighten compressor discharge clamps.

J. **AIR FILTER INSTALLATION:** (Omit this step when cold air package is added. Refer to cold air package instructions.)

1. Replace the right hand front engine lifting eye with the "T" shaped air filter support. Bolt glow plug harness clamp to rear bolt.

2. Install the 3" dia. 90 degree rubber elbow onto the air filter pipe.

3. Install the air filter hose assembly onto the turbocharger air inlet and its protruding stud into the air filter support.

4. Obtain best alignment of air filter such that no contact occurs between it and the fuel filter mount, intake manifold cover, top of engine compartment or injection lines.

5. Install and tighten hose clamps securing 90 degrees rubber elbow to turbocharger and air filter assembly.

6. Install and tighten 1/4" NC lock nut on the stud securing the air filter assembly to the air filter support bracket.

7. Install crankcase breather grommet into valve cover and baffle, screw in 90 degree nylon fitting. Mount crankcase breather valve onto air cleaner mount using nuts and lock washers supplied. Install hose, clamp to crankcase breather valve with hose clamp provided. Models using the center circular impression on valve cover shorten the long leg of the hose approximately 4".

K. **AUTOMATIC TRANSMISSION OIL FILLER TUBE:**

Install the transmission dipstick tube with "O" ring and secure it to the top of intake manifold and bracket on valve cover.

C-6 Transmission Only - Install the new transmission modulator tube (1/4" dia.) provided - utilize stock spring clips.

L. **EXHAUST CONNECTIONS:**

1. Apply "Never Seeze" to discharge pipe seal ring. Install the turbocharger discharge pipe into the turbocharger and secure it with (1) 5/16" NC x 3/4" bolt and lock washer on the side of the mount plate and (1) 5/16" NC x 1/2" and lock washer to the back of the plate and tighten both.

2. Hang the 3 1/2" tailpipe from the stock location. The stock hanger must be widened to accept the large diameter pipe. A 3 1/2" clamp will be installed to secure the pipe to the hanger.

3. Install the expanded end of the 20" muffler outlet extension pipe onto the tail pipe.

4. Install the 48" muffler extension pipe onto the turbine discharge pipe.

5. Install the muffler with the inlet side forward over the 48" pipe and complete the connection.

6. Hang with (2) hangers provided. Install and tighten all remaining clamps.

M. **MISCELLANEOUS:**

1. Examine the entire installation. Check for interference and contact between wires, tubes and cables with the hot side of the turbocharger.

2. Reconnect batteries - start engine with cover removed. Check for leaks.

N. OPERATING NOTES:

1. As with any turbocharged diesel engine, use a brand name Series Three lubricating oil.
2. Injection pump timing should be at the nominal factory specification! If it has been advanced or combustion noise is unusually loud, have the timing checked.
3. The turbocharger supplied with this package has been matched to the vehicle's exhaust system and will not over-boost the engine. **DO NOT** alter the exhaust system to exceed 12 PSIG intake manifold pressure.
4. If the fuel injection pump is readjusted, do not increase the fuel delivery more than 25% of the difference between the maximum delivery and the stock delivery without having a pyrometer installed on the vehicle. Limit turbine inlet temperature to 1300 degrees F. A pyrometer tap is provided in the exhaust connector pipe. A boost pressure tap is provided in the intake manifold cover.
5. Remember to re-torque the cylinder head bolts to 85 ft.-lbs. approximately 3000 miles after installing NEW cylinder head gaskets.
6. The 1983 and early 1984 6.9L cylinder head gaskets may develop a slight external coolant leak under prolonged high output operation. This is not due to a combustion leak but rather the result of thermal and mechanical deformation of the cylinder heads at the lower corners.

The problem, should it occur, CANNOT be solved by replacing the gaskets. A simple fix is the addition of a product such as "PRESTONE" Heavy Duty Cooling System Sealer to the radiator. As this product will not block the cooling system, its use is advisable as a precautionary measure should a leak develop.

Installing 1987 cylinder head gaskets will permanently alleviate this problem.

Hypermax has accumulated a considerable amount of data during the 6.9L/7.3L turbocharger development program. If your specific application should warrant a system variation, call us with your problems or requests - we have already been there!

LIMITED WARRANTY

All Hypermax Engineering, Inc. non-competition products or merchandise is warranted to be free from defects in material and workmanship, under normal use and service for a period of one year (365 days) from date of delivery to the initial end user.

Hypermax Engineering, Inc.'s liability under this warranty is limited to repair or replacement at its option, subject to the provisions set forth herein, of any parts which upon examination by Hypermax Engineering, Inc. are found to be defective. The user shall prepay cost of transportation of defective parts to Hypermax Engineering, Inc. for inspection.

Hypermax Engineering, Inc. shall not have any responsibility under this warranty unless the defect results in a claim arising within the operational periods listed above, the part was properly installed, normally maintained and not subject to misuse, negligence or accident, and the turbocharger, parts, system components and/or accessories were not repaired or altered in such a way that, in the judgement of Hypermax Engineering, Inc. its performance or reliability was adversely affected.

Remedies are expressly limited to the repair or replacement of defective Hypermax Engineering, Inc. products or merchandise as specified herein. Neither Hypermax Engineering, Inc. nor its distributors or dealers have any liability for any other claims including claims for special, indirect, or consequential damages (including but not limited to turbocharger removal installation, equipment down time, prospective profits or other economic loss) because of any defect. Any claim arising from defects in material or workmanship must be presented in writing to Hypermax Engineering, Inc. within thirty (30) days after the date on which the claim arises, and any action on the claim must be commenced within six (6) months after original Hypermax Engineering, Inc. shipping date.

THIS REPRESENTS THE COMPLETE WARRANTY OFFERED BY HYPERMAX ENGINEERING, INC. AND IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO PERSON IS AUTHORIZED TO BIND HYPERMAX ENGINEERING, INC. TO ANY WARRANTY OR TERMS NOT SET FORTH HEREIN.

Note: This turbocharger package may not meet state or local pollution control regulations. It is the buyer's responsibility to investigate any applicable laws prohibiting the purchase of or installation of this package on road vehicles.

6.9/7.3L FUEL INJECTION PUMP ADJUSTMENT

The fuel injection pump must be adjusted to realize any performance improvement with the 6.9/7.3L turbocharger package.

By following this simple procedure, the adjustment can be made WITHOUT removing the injection pump from the engine.

ALL MODEL YEARS:

1. Locate the triangular-shaped cover plate on the passenger-side of the fuel injection pump - below the throttle lever.
2. Remove (2) 1/4" hex head screws retaining the cover to the pump housing. Place rags under the pump to absorb the fuel that will drain from the pump when the cover is removed.
3. Prepare to rotate the engine by hand using a 15/16" socket, 3" extension and ratchet on the crankshaft damper retaining bolt. Rotate the engine clockwise as viewed from the front to avoid loosening the bolt.
4. By directing a flashlight on to a small mirror and aiming the light onto the hole (exposed by removing the cover plate), a 5/32" hex allen screw will be in view when the injection pump shaft is moved into position by rotating the engine. This 5/32" hex allen screw is the leaf spring or fuel screw. Turning the screw in a clockwise direction increases the fuel delivery.
5. Have an assistant rotate the engine by hand until the 5/32" hex socket screw comes into view. (2) revolution of the engine may be required to bring the hex screw into alignment with the hole.
6. Refer to the BHP VS Fuel Flow Curve attached (upper curves) and decide what power level is desired. Note: The California setting is 1-1/2 to 2 flats increase in fuel delivery and two degrees retarded injection pump timing.

The injection pump timing is retarded two degrees by loosening the three mounting stud nuts and rotating the injection pump clockwise two degrees (as viewed from the drive end or front of the engine) this corresponds to 1/16" on the circumference of the mounting flange. If these instructions are not understood by the installer take the vehicle to a qualified diesel injection shop for these adjustments.

Example: If 227 horsepower is desired at 3300 RPM, the 5/32" hex screw must be rotated 180 degrees in a clockwise direction; this corresponds to turning the 5/32" allen wrench (3) flats as indicated by the lower set of fuel curves.

NOTE: It is important to obtain a high quality 5/32" allen wrench to avoid damaging the hex drive portion of the screw since rotating the screw will require considerable effort.

7. After rotating the fuel screw to the desired setting, replace the housing cover plate.

1992-1/2 MODELS (Identifiable with a serpentine belt system):

This model 7.3L engine is equipped with an injection pump incorporating an adjustment feature that reduces fuel delivery at 3300 RPM. This adjustment may in some cases cause unacceptable performance by reducing the fuel delivery at too low of an engine speed. If the boost pressure seems to drop off before 3200 RPM a readjustment may be desired. The screw affecting this adjustment is located at the top left rear of the injection pump housing at about a 45° angle and is covered with a plastic seal cap. Remove the plastic cap and discard. Loosen the jam nut and rotate the allen screw 3 turns out (CCW). Retighten the jam nut. The absence of the seal cap only indicates the screw has been readjusted and it is not reused.

NOTE: After all adjustments are completed, start the engine and check for fuel leaks.

CONSIDERATIONS

The fuel curves indicated that rotating the fuel screw (4) flats (wide open - 240 degrees) will raise the fuel delivery and subsequent power from a non-turbocharged setting (N.A. 160 - 170 HP) to maximum turbocharged power of 250 HP. This is only valid for injection pumps set for operation at sea level. Injection pumps set for high altitude (5000 ft. above sea level) will require rotating the fuel screw (6) flats (wide open - 360 degrees). FOR COMMERCIAL APPLICATIONS: Be conservative on the fuel setting i.e., (1-1/2) flats will probably satisfy the operator.

You can identify an altitude set engine by observing the sticker on the valve cover. An altitude engine sticker is punched at 150 HP; a sea level engine is punched at 170 HP.

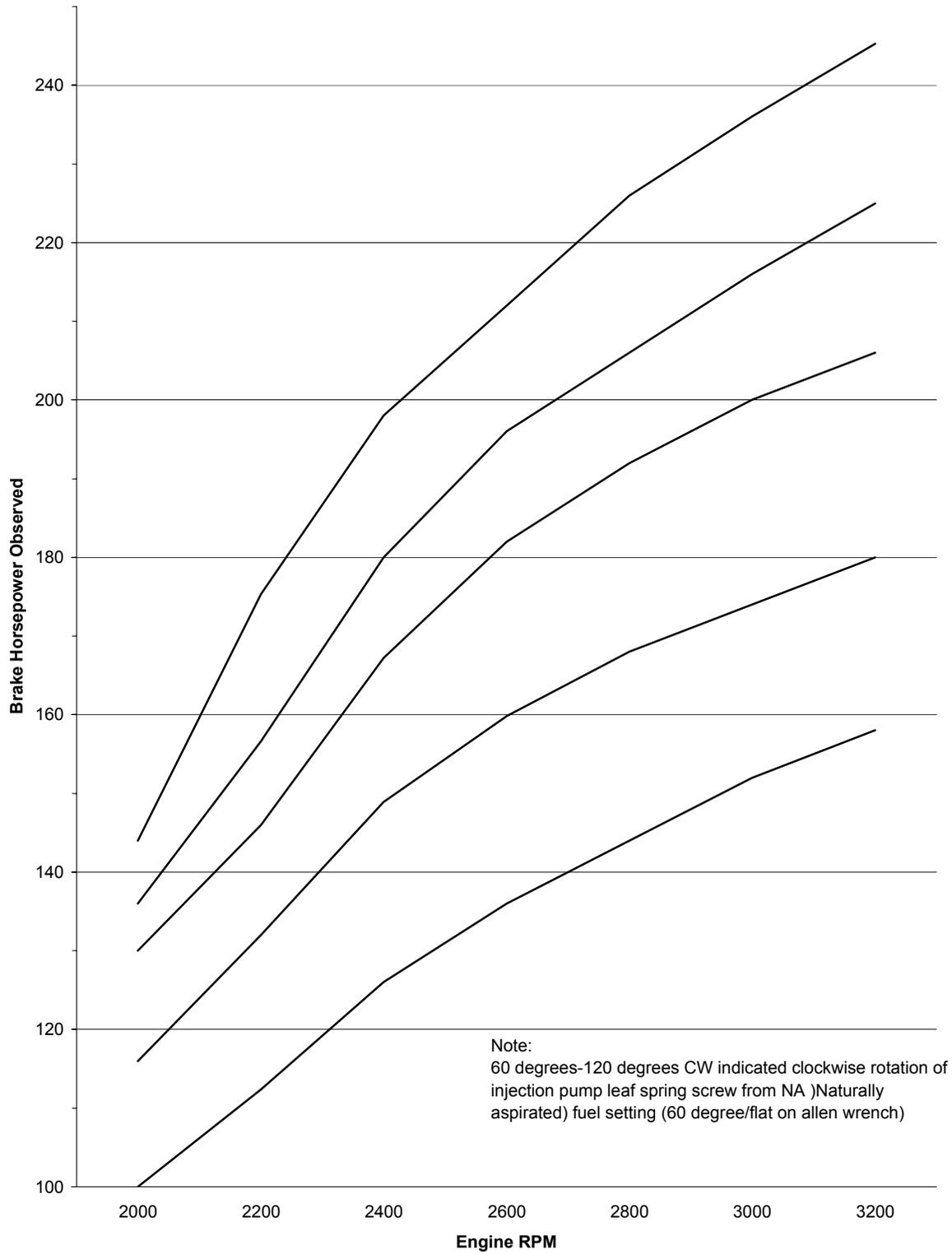
If the vehicle is to be operated at 5000 ft. and above for prolonged periods, it would be prudent not to set the fuel injection pump wide open since even the turbocharged air delivery at that altitude would not be sufficient to produce 250 HP and fuel will be wasted at wide open throttle.

It should be stressed that operating the engine above 1300 degrees F exhaust temperature (turbine inlet temperature) or in excess of 13 PSIG intake manifold pressure is harmful and should be avoided.

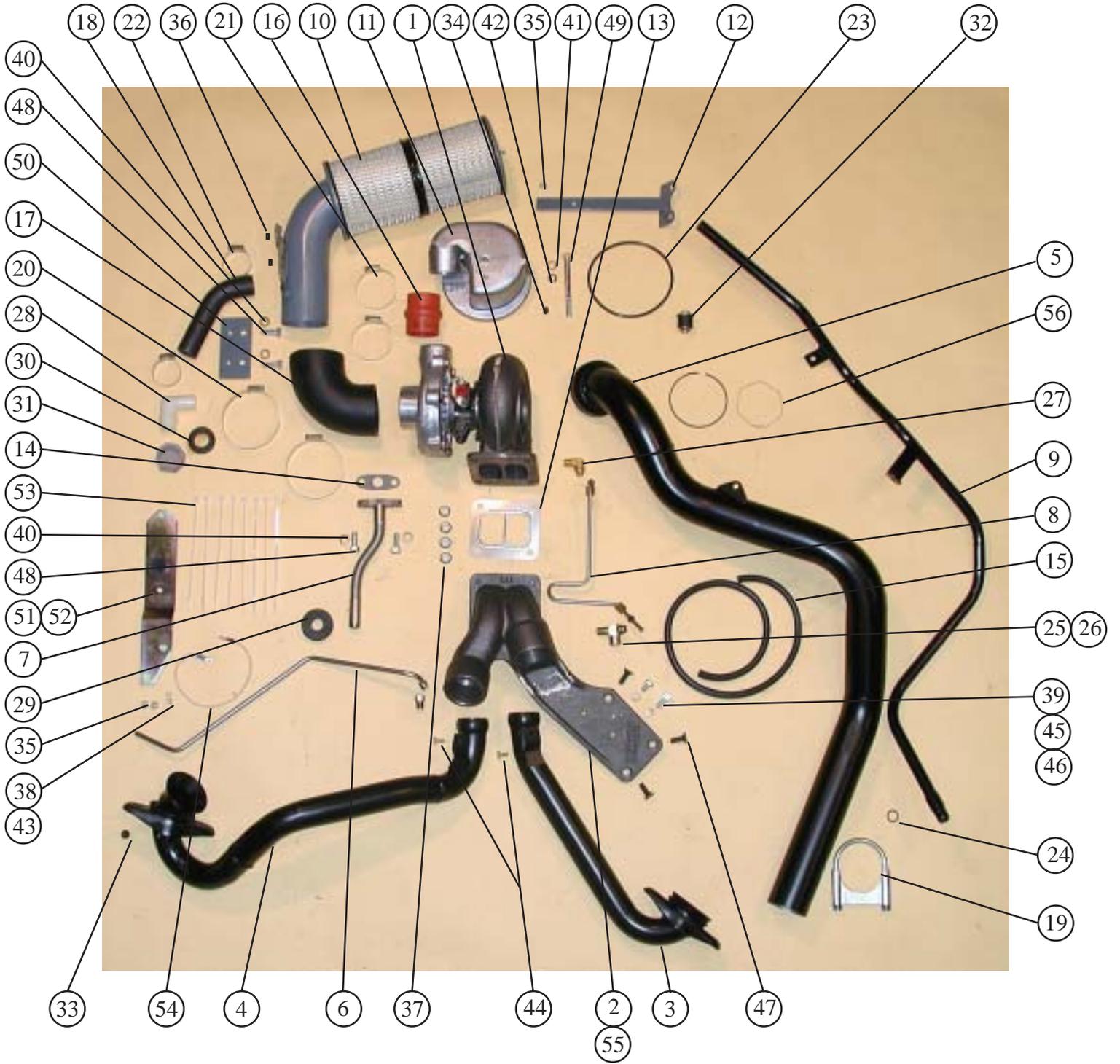
Should either of these limits be exceeded on a grade or prolonged wide open throttle operation, simply back-off on the accelerator pedal or shift to a lower gear.

A certain percentage of injection pumps will not respond to the setting procedure described above. This is due to their being at the high or low end of the maximum fuel delivery specifications as a result of manufacturing tolerances. The low delivery injection pumps yield slightly lower power causing no problems, but the high delivery pumps cause the exhaust temperature to rise rapidly and require frequent accelerator pedal adjustment to keep the exhaust temperature below 1300 degrees F. The setting on high delivery injection pumps should be reduced between (1) and (2) flats counterclockwise.

6.9L/7.3L BHP VS. Fuel Flow



VAN PULSE TURBOCHARGER



VAN PULSE TURBOCHARGER

| ITEM | DESCRIPTION | HYP # | QTY |
|------|--------------------------------------|-----------|-----|
| 1 | TURBOCHARGER | | 1 |
| 2 | MOUNT - TURBOCHARGER | HYP-177 | 1 |
| 3 | PIPE - RIGHT EXHAUST MANIFOLD | HM-21 | 1 |
| 4 | PIPE - LEFT EXHAUST MANIFOLD | HM-20 | 1 |
| 5 | PIPE ASSEMBLY - TURBINE DISCHARGE | HM-19 | 1 |
| 6 | TUBE ASSEMBLY - FUEL RETURN | | 1 |
| 7 | TUBE ASSEMBLY - TURBO OIL DRAIN | | 1 |
| 8 | TUBE ASSEMBLY - TURBO OIL SUPPLY | | 1 |
| 9 | TUBE ASSEMBLY - AUTO TRANS FILLER | HYP-114C | 1 |
| 10 | FILTER ASSEMBLY | | 4 |
| 11 | COVER - INTAKE MANIFOLD | HYP-113 | 1 |
| 12 | SUPPORT - AIR FILTER | | 1 |
| 13 | GASKET - TURBOCHARGER - DIVIDED | | 1 |
| 14 | GASKET - TURBO OIL DRAIN | | 1 |
| 15 | HOSE - FUEL RETURN 1/4" x 28" | | 1 |
| 16 | HOSE - TURBO COMPRESSOR DISCHARGE | IT-2024-A | 1 |
| 17 | HOSE - TURBO COMPRESSOR INLET | HYP-19 | 1 |
| 18 | HOSE - CDR BREATHER CONNECTING | HYP-156 | 1 |
| 19 | CLAMP - MUFFLER 2 1/2" | | 1 |
| 20 | CLAMP - TURBO COMPRESSOR INLET | | 2 |
| 21 | CLAMP - TURBO COMPRESSOR DISCHARGE | | 2 |
| 22 | CLAMP - CDR HOSE | | 2 |
| 23 | O-RING - INTAKE MANIFOLD COVER | -353 | 1 |
| 24 | O-RING - AUTO TRANS DIPSTICK TUBE | -113 | 1 |
| 25 | 90 DEGREE NTP 1/4" FITTING | | 1 |
| 26 | 1/4" x 1/8" CONNECTOR | | 1 |
| 27 | FITTING - 1/4" TUBE TO 1/4" NPT | | 1 |
| 28 | FITTING - 1" X 90 DEGREE | | 1 |
| 29 | GROMMET - TURBO DRAIN TUBE | | 1 |
| 30 | GROMMET - VALVE COVER BREATHER | | 1 |
| 31 | BAFFLE - VALVE COVER BREATHER | HYP-211 | 1 |
| 32 | PLUG - RUBBER EXPANSION 1" | | 1 |
| 33 | PLUG - 1/4" NPT | | 1 |
| 34 | PLUG - 1/8" NPT | | 1 |
| 35 | NUT - 1/4-20 NYLOC | | 3 |
| 36 | NUT - 5/16-18 | | 2 |
| 37 | FLANGE NUT - 3/8 | | 4 |
| 38 | NUT - 10-32 | | 1 |
| 39 | WASHER - 5/16" LOCK | | 2 |
| 40 | WASHER - 3/8" LOCK | | 4 |
| 41 | WASHER - 3/8 AN FLAT | | 1 |
| 42 | WASHER - 3/8 O-RING | | 1 |
| 43 | WASHER - 10-32 LOCK | | 1 |
| 44 | BOLT - 1/4-20 X 1/2" STAINLESS STEEL | | 2 |
| 45 | BOLT - 5/16-18 X 1/2" | | 1 |
| 46 | BOLT - 5/16-18 X 3/4" | | 1 |
| 47 | BOLT - 3/8-16 CSAHCS X 1" | | 3 |
| 48 | BOLT - 3/8-16 X 1" | | 5 |
| 49 | BOLT - 3/8-16 X 4" | | 1 |
| 50 | PLATE - FUEL FILTER ADAPTER | | 1 |
| 51 | PLATE - GLOW PLUG CONTROL MOUNTING | HYP-143 | 1 |
| 52 | RUBBER BUMPER BUTTON | | 1 |
| 53 | TIES - PLASTIC ZIP | | 8 |
| 54 | EXTENSION WIRE ASSEMBLY - OIL PRESS. | | 1 |
| 55 | STUD - 3/8 x 1 1/2 | | 4 |
| 56 | SEAL & EXPANDER RING | | 1 |