



STOP!

BEFORE BEGINNING INSTALLATION, READ THESE IMPORTANT NOTES...

- For all vehicles except 1995 Tahoe, you **MUST** purchase a separate Edelbrock Fuel Pump Kit for this installation; single fuel tank vehicles use Edelbrock #3581, dual-tank vehicles use #3580.
- External EGR is required for this installation. You must purchase External EGR Adapter kit #2899 for use with tubular exhaust headers, or use the left side exhaust manifold from a Vortec truck. GM #10220275 (EGR supply tube) also required (see step #29 for more details).
- CHECK the *Kit Contents and Suggested Tools* lists on page 2 to be sure that you have all items necessary to finish installation.
- Make sure this kit is for your vehicle.
- This kit is designed work with Vortec cylinder heads and Vortec camshaft or Edelbrock E-tec heads and Vortec camshaft developed for this application. Stock compression must be maintained plus or minus two tenths of a ratio.
- You **MUST** change your computer chip for this kit to function on your vehicle and be emissions legal. Complete the *Chip Information Card* and return to Edelbrock. We will send the computer chip within the continental U.S., free of charge via UPS second day air. Orders outside of the continental U.S. will be shipped via the best method at the same costs as continental UPS second day air. If requested, customers may pay for expedited shipping by providing a current Visa or Master Card.
- Your vehicle's wiring harness and electronics must be in good shape or you may not get maximum performance and/or may experience problems. The TBI will work with less adequate connections, but the Performer Multi-Point EFI System is much more sensitive than a stock TBI.
- Read ALL instructions before beginning installation.
- Note that fuel tank or bed of pick-up **MUST** be removed.

PERFORMER MULTI-POINT EFI #3505 & #3506 KIT CONTENTS

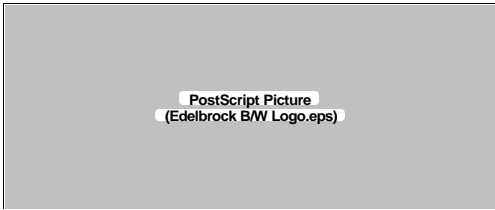
<u>Qty.</u> <u>Description</u>	<u>Qty.</u> <u>Description</u>
<input type="checkbox"/> 1 Manifold assembly (see detail below)	<input type="checkbox"/> 1 3/8" i.d. x 1" tall bushing
<input type="checkbox"/> 1 Installation instructions	<input type="checkbox"/> 1 3/8"-16 x 1.5" long hex head bolt
<input type="checkbox"/> 1 Fuel injector wiring harness	<input type="checkbox"/> 1 3/8"-16 x 1 1/4" Long small hex headbolt
<input type="checkbox"/> 1 Fuel filter adapter fitting (filter to #6 AN male) with O-ring	<input type="checkbox"/> 1 3/8" Starwasher
<input type="checkbox"/> 1 Return line adapter fitting	<input type="checkbox"/> 1 1/2" NPT to 3/4" hose barb
<input type="checkbox"/> 2 #6 AN straight pushlock fittings	<input type="checkbox"/> 1 36" length 3/4" i.d. heater hose
<input type="checkbox"/> 1 3/8" i.d. pushlock heat resistant fuel line, 10 foot length	<input type="checkbox"/> 1 3" length 5/16" i.d. high pressure fuel line (pump to sending unit)
<input type="checkbox"/> 1 #6 AN 45 degree elbow pushlock fitting	<input type="checkbox"/> 1 2 foot length 5/32" i.d. vacuum line (regulator & EGR)
<input type="checkbox"/> 1 #6 AN 90 degree elbow pushlock fitting	<input type="checkbox"/> 1 5-1/8" i.d. air cleaner base gasket
<input type="checkbox"/> 1 Fuel line clamp (floor mounted)	<input type="checkbox"/> 1 12" length 1/4" i.d. vacuum line (MAP)
<input type="checkbox"/> 4 11" tie wrap	<input type="checkbox"/> 2 3/4" hose clamp
<input type="checkbox"/> 1 Throttle cable bracket	<input type="checkbox"/> 1 3/8" hose clamp (fuel injection clamp)
<input type="checkbox"/> 1 Throttle body block-off plate	<input type="checkbox"/> 1 5/16" hose clamp (fuel injection clamp)
<input type="checkbox"/> 1 Throttle body gasket	<input type="checkbox"/> 1 1/4" x 1/4" out x 5/32" bottom out vacuum "T" fitting
<input type="checkbox"/> 1 EGR gasket	<input type="checkbox"/> 1 10-16 x 3/4" TEX screw (self tapping)
<input type="checkbox"/> 1 3/8" NPT pipe plug	<input type="checkbox"/> 1 Air Cleaner Lid decal
<input type="checkbox"/> 1 3/8" I.D. Flatwasher	

MANIFOLD ASSEMBLY CONTENTS

<u>Qty.</u> <u>Description</u>	<u>Qty.</u> <u>Description</u>
<input type="checkbox"/> 1 Intake manifold	<input type="checkbox"/> 1 Fuel inlet fitting (3/8" male pipe to #6 AN male, steel)
<input type="checkbox"/> 1 Driver's side (left side) fuel rail	<input type="checkbox"/> 1 Fuel regulator nut and Viton O-ring
<input type="checkbox"/> 1 Passenger's side (right side) fuel rail	<input type="checkbox"/> 1 Viton O-ring; fuel regular nut (1/2" o.d. 5/16" i.d.)
<input type="checkbox"/> 4 1/4"-20 x 1.25" Hex head cap screw rail hold down bolts	<input type="checkbox"/> 4 1/4" i.d. AN thin flat washers
<input type="checkbox"/> 1 Fuel pressure regulator	<input type="checkbox"/> 1 1/4"-20 x 1/2" hex head cap screw
<input type="checkbox"/> 8 Magnetti Marelli® pico injectors	<input type="checkbox"/> 1 1/4" i.d. split lock washer
<input type="checkbox"/> 1 Fuel crossover line (including adapter and schrader valve)	<input type="checkbox"/> 1 Schrader valve cap
	<input type="checkbox"/> 4 1/4" internal star lock washers

SUGGESTED TOOLS AND MATERIALS FOR INSTALLATION

<input type="checkbox"/> 3/8" ratchet socket set with extensions	<input type="checkbox"/> Intake gasket set for Vortec engines (GM #12529094)
<input type="checkbox"/> Combination set of open-end wrenches (SAE and metric)	<input type="checkbox"/> Thermostat housing gasket (GM #10105135, Fel-Pro #2201, or equivalent)
<input type="checkbox"/> Jackstands, screwdrivers, pliers, crescent wrench, hacksaw, hammer, brass punch and assorted hand tools	<input type="checkbox"/> Gasket sealant (Gasgacinch, etc.)
<input type="checkbox"/> Torx screwdrivers	<input type="checkbox"/> RTV Silicone sealant; O ₂ sensor-safe
<input type="checkbox"/> Tin snips	<input type="checkbox"/> Wire stripper & crimper
<input type="checkbox"/> White grease	<input type="checkbox"/> Heat gun or lighter
<input type="checkbox"/> Teflon thread sealant or equivalent	



IMPORTANT INSTRUCTIONS

**for ordering your FREE Edelbrock computer chip...
*You must use an Edelbrock chip with the Performer
 Multi-Point EFI conversion***

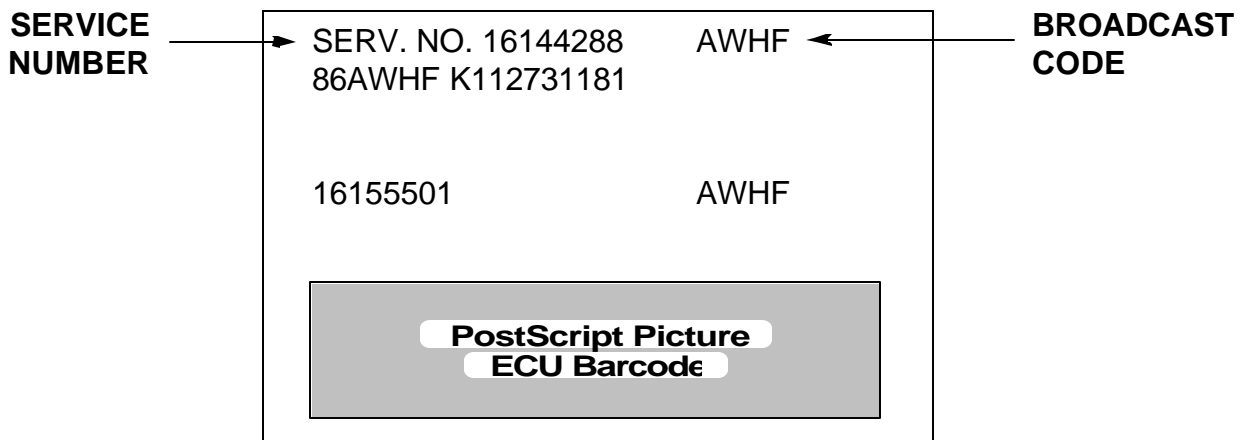
You must change the computer chip in your stock computer (ECU) for proper functioning and maximum performance with the Edelbrock Performer Multi-Point EFI for 5.7L Chevy/GMC engines.

To receive your computer chip, please complete the attached postage-paid card and send to Edelbrock. After receiving your card, **Edelbrock will send the computer chip within the continental U.S., free of charge via UPS second day air.** Orders outside of the continental U.S. will be shipped via the best method at the same costs as continental UPS second day air. If requested, customers may pay for expedited shipping by providing a current Visa or Master Card.

When filling out your information card, please print clearly.

The information below will help you to locate your ECM Service Number and Broadcast Code:

Typical ECM Label



- The ECM is accessible in pick-ups by removing the glove box liner. This requires removing four (4) small hex head screws and pulling out the liner. The ECM sits vertically in a plastic cradle on the far right side of the dash with the connectors facing to the rear.
- The Broadcast Code is stamped on a white paper label, located on the top of the ECM. Typical codes for the 5.7L run from AKSM to BDXX, increasing alphabetically with later release dates.

There is a plastic decal on the bottom of the glove compartment with a list of the RPO codes for that vehicle. This is a listing of the "RPO" codes and what they stand for:

<u>CODE</u>	<u>VEHICLE EMISSIONS</u>	<u>CODE</u>	<u>ENGINE</u>	<u>CODE</u>	<u>TRANSMISSION</u>	<u>CODE</u>	<u>REAR AXLE</u>
NA1	Under 8600 GVW	L03	5.0L TBI V8	MD8	4L60 Auto	GU2	2.73:1
NA4	Over 8600 GVW	L05	5.7L TBI V8	M30	4L68E Auto	GU3/GW9	2.93:1
NA5	Federal	L19	7.4L TBI V8	MT1	4L80E Auto	GU4	3.08:1
NB2	California			MG5	Manual w/ Deep Low	GU6	3.42:1
NB8	New York/California			MY2	Manual 5-Speed	GT4	3.73:1
NM8	Special Fuel Compatible			M20	Manual 4-Speed	GT5	4.10:1
						HC4	4.56:1

INSTALLATION INSTRUCTIONS

for Performer Multi-Point EFI System

for 5.7L (L31-Vortec) Replacement Engine GM #12530282

Catalog #3505 for 1993-1995 Model Years

Catalog #3506 for 1987-1992 Model Years

- **APPLICATION INFORMATION:** Calibrated for the GM Vortec factory replacement engine, these multi-point fuel injection systems deliver outstanding performance in 1987-95 trucks originally equipped with Throttle Body Injection. Now you can buy a GM #12530282 long block from GM, install it in a truck with an Edelbrock EFI system, and enjoy modern performance without buying a new truck. These complete systems utilize the stock computer and throttle body unit for a simple and effective conversion to multi-point fuel injection. Fuel is injected directly into each port in the head for ideal fuel distribution and efficiency.
- **TECHNICAL SUMMARY:** In 1987, Chevrolet introduced their Throttle Body Injection (TBI) systems. Produced from 1987 to 1995 on all pick-up trucks and Suburbans, this TBI system was essentially an intermediate step between a carburetor and true port (multi-point) fuel injection. In these TBI systems, two injectors are positioned above the throttle blades of a two-barrel throttle body and fuel is injected into the manifold, much like a carburetted system. This arrangement suffers from distribution problems because the fuel spray from the injectors does not stay in suspension with the incoming air, resulting in uneven distribution. Our Performer Multi-Point Systems include an intake manifold designed to deliver an equal charge to each cylinder. Each injector delivers exactly the same amount of fuel to each cylinder for an extremely even air/fuel ratio from cylinder-to-cylinder. This permits us to tune the system for ideal fuel and spark delivery for more horsepower, torque and improved mileage.
Performer Multi-Point Systems include all parts needed to make the conversion. The stock TBI unit is retained as an air valve and the factory computer (re-programmed) is also retained to control the injectors in a batch-fire mode. In the Edelbrock systems, all of the factory sensors are retained and fully functional. The compact size was achieved by using extruded aluminum fuel rails with new Magnetti Marelli® pico injectors. These are half the size of conventional style injectors.
- **SPECIAL NOTICE:** This Edelbrock part has received an Executive Order number (E.O. #) from the California Air Resources Board (C.A.R.B.) making it legal for street use on pollution-controlled motor vehicles in all 50 states. To assist you with emissions inspection, we have included a silver fan shroud decal to verify that this part is a legal replacement part on the vehicle for which it is cataloged. The adhesive-backed decal should be affixed to your fan shroud next to the existing emission and engine specification decal. Do not cover your original equipment specification decal with the Edelbrock fan shroud decal. E.O.# decal is shipped with the computer chip .

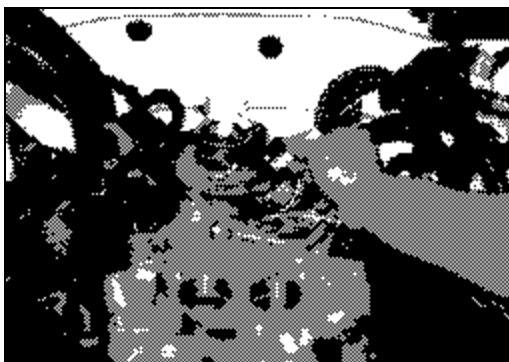
If you have any questions or problems, call our
EFI Technical Hotline at: (800) 739-3737, Ext. 2819
8:00 am - 5:00 pm, Monday-Friday, Pacific Standard Time

INSTALLATION INSTRUCTIONS

1. Disconnect negative battery cable.
2. Drain coolant.
3. Remove air cleaner assembly.
4. **Label all lines, wires, and connections with masking tape before disassembly to aid in re-assembly.** Disconnect all throttle cables and accessories, disconnect all vacuum lines to throttle body. Disconnect both fuel lines at rear of throttle body. Be careful of line pressure. Remove 3 throttle body mounting bolts and remove throttle body.



5. Remove top radiator hose, remove thermostat housing and thermostat. **NOTE:** Ground wires may be located on thermostat mounting bolt. It is important to note the location of all ground wires so they can be put back exactly as they were. **NOTE:** Canister purge solenoid (if used) mounts to thermostat mounting bolts.
6. Disconnect vacuum fitting for power brake booster from intake manifold.
7. Remove plug wires from top of distributor cap. Make note of location of each wire. Remove distributor cap. Before removal of distributor note location of distributor body and also note location of the ignition rotor by marking distributor body with a felt tip marker. Loosen distributor clamp and remove distributor.



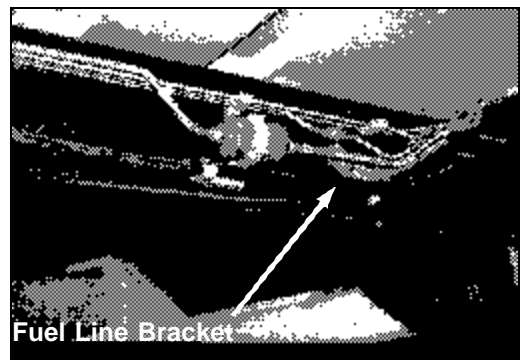
8. Remove ignition coil brackets and the intake mounting bolts. Note the location of mounting bolts that are studs to reinstall in same location (same goes for all brackets).



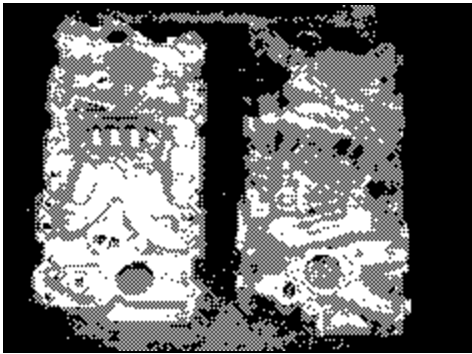
9. Using a flat blade screwdriver, pry on front end seal of intake manifold breaking the silicone seal. Lift manifold off engine. Be careful not to dump coolant into valley of engine. Use paper towels to absorb any coolant spilled.



10. Remove original fuel lines. Remove bracket from left top transmission bellhousing bolt, either from on top, or from underneath the vehicle. Next, go under vehicle to where the fuel lines connect at the fuel filter and at the return junction fitting. Remove lines from these connections. Now remove fuel line and bracket, which is mounted to the frame right in front of the fuel filter. You will not need the bracket or fuel lines any more.



11. Scrape remaining gasket material off cylinder heads.
Note: Place rags or paper towels into intake ports and in valley before scraping gaskets. After surface is clean, remove rags or paper towels. Install GM intake gaskets #12529094. These plastic O-ringed gaskets will snap into place on iron Vortec cylinder heads. Do not use any type of gasket sealer on intake gaskets. The rubber O-rings will seal without chemical sealers.
12. Place old and new manifolds next to each other.
NOTE: Performer Multi-Point EFI manifolds come with fuel injectors and fuel rails installed. On most vehicles, you can install the manifold with these parts in place. Some vehicles have an EGR valve bracket on the right side (passenger side), which will require the removal of the right side fuel rails and fuel injectors prior to manifold installation. In some cases, other OEM bracketry may also interfere with manifold installation, requiring removal of fuel rails and injectors.



Remove distributor hold down and bolt, EGR valve with its studs and nuts, coolant temperature sensor, and vacuum fitting for power brake booster. Re-install these parts on new manifold. (EGR valve is now located up near thermostat housing.) Use new gasket supplied in kit. On the rear area of the intake, there is a vacuum hole. If not used on your application, install the 3/8" pipe plug supplied in kit. Use pipe sealant on all fittings. Prep gasket and valley area.

NOTE: Be sure that gaskets are already installed on heads (see Step #11).

Do not use end seal gaskets. Instead, apply a 1/4" bead of O₂ sensor safe silicone on end seals of engine block valley area. Now carefully set intake manifold down as straight as possible. Make sure not to slide manifold once it is in place. Now install manifold bolts in the same manner as they were removed. Torque intake manifold bolts down to proper specs. (12-15 ft/lbs.) in three steps using blue Loctite® on bolts. Install manifold brackets in the same manner as they were removed. **(See page 14 for Torque Sequence).**

Note: You will be installing Edelbrock's throttle cable bracket supplied in kit, using the two left rear manifold bolts. Swap all cables over to new bracket at this time. To use the vacuum diaphragm cruise control (found on 1987 pickups and 1987-1991 Blazers, Suburbans, Heavy Duty), contact Edelbrock.



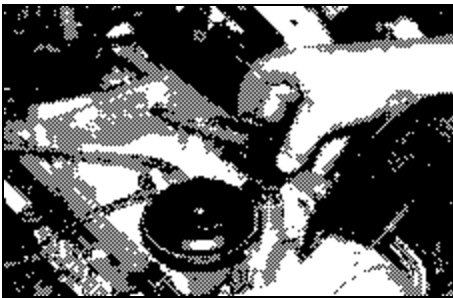
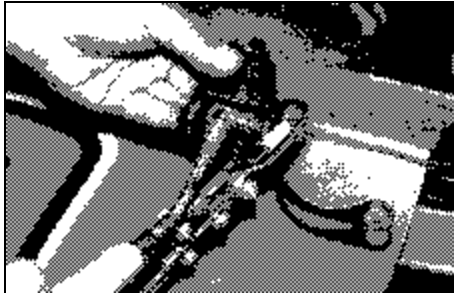
13. With manifold bolts torqued down and all brackets re-installed, re-install distributor using a new distributor base gasket. Install distributor in the same orientation as before, using your previous marks for reference. If distributor gear does not line up with oil pump drive tang, use a long flat-blade screwdriver to rotate pump. Snug distributor clamp down and make all electronic connections. Install distributor cap and wires. Final timing adjustments will be made later. Make sure all ground wires and electrical connections are secure.



14. Install thermostat housing and thermostat using a new gasket. If your original thermostat used an O-ring, discard O-ring and use gasket.

NOTE: Early-body style trucks used an angled water outlet and upper radiator hose that interferes with the Multipoint System. To solve this problem, switch to the upright water outlet and hose found on any newer body style truck (i.e. 1988-1995 light and standard duty pickups). Use GM #10126717 for the outlet and #15659486 for the hose.

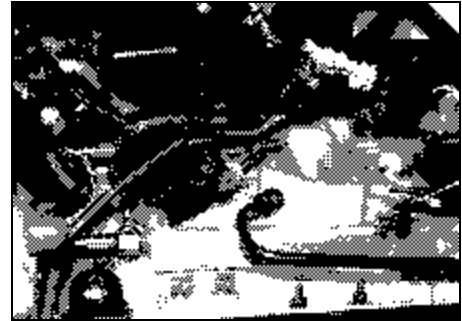
15. The canister purge solenoid (if used) was mounted on the two thermostat mounting bolts. Now it will be mounted with one 3/8" bolt and a star washer on top of an aluminum spacer, just above the thermostat housing. Before mounting this bracket, you must cut with tin snips, leaving one 3/8" hole for mounting (see picture).



16. INJECTORS AND RAILS

NOTE: Fuel injectors and fuel rails are assembled on manifold and ready to run unless you had to remove them for manifold installation. If they were removed, use the following procedure for re-installation. If not, skip to step #17.

Using non-silicone based spray lubricant or white grease, lubricate injector O-rings (top and bottom) before sliding them into fuel rails. Push injectors into rails, making sure that the electrical connectors on injector bodies face up. Now push fuel rails and injectors into manifold. **Use caution not to damage O-rings upon installation.** Place fuel rail with pressure regulator on passenger's side with regulator toward rear of engine. Place other rail on driver's side of manifold. Push down with enough force to seat lubricated O-rings in manifold, making sure not to cut O-rings. Once installed, secure rails with 1/4" bolts and flat washers supplied in kit. When properly installed, the injectors should rotate freely by hand.



17. HEATER HOSE CONNECTION

The original heater hose connection at the rear of intake manifold will be relocated to right front of manifold. Install 1/2" pipe x 3/4" barb fitting into manifold using sealant on threads. Remove old heater hose at firewall connection. Using 36" long piece of 3/4" heater hose and two clamps supplied, install heater hose, cutting to fit. Tighten clamps.



18. VACUUM HOSE

We supply 24" of 5/32" vacuum hose and 12" of 1/4" vacuum hose. On the middle right of the intake manifold, there is a bracket that holds the EGR solenoid (where applicable; not used on all years). The pre-formed vacuum line coming off the rear of the solenoid gets replaced with 13" of 5/32" hose and routed from the solenoid to the EGR valve. A 6" piece of 5/32" hose is installed on the fuel pressure regulator. On the right rear side of the manifold there is a bracket with a MAP sensor on it. The pre-formed vacuum tube is discarded and replaced with a 6" piece 1/4" vacuum hose. It is connected to the 1/4" x 1/4" x 5/32" vacuum tee supplied in kit. On the other 1/4" outlet of the tee, put another 6" piece of 1/4" vacuum hose. It will go to the rear of the throttle body, when installed. Connect the 5/32" part of the tee to the fuel regulator. This is easier to do before the throttle body is mounted. (Some cutting may be necessary on vacuum lines.)

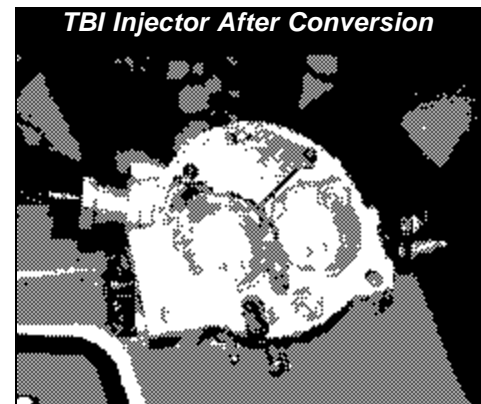
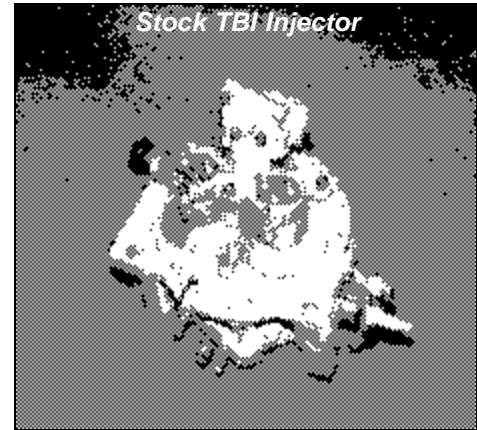


19. THROTTLE BODY CONVERSION

Take the original throttle body assembly and remove the fuel inlet and return fittings at rear of the throttle body assembly. Next remove three torx screws retaining the fuel injector/regulator assembly to the main body. Remove this assembly while leaving the factory gasket in place. Using the factory torx screws, install the injector block off plate supplied in kit. The throttle body is now ready to be installed using the new base gasket supplied in kit. Once installed, make sure all vacuum and electrical connections are secure. Make throttle connections and the power brake vacuum supply line connection, which is on the left corner under the throttle body.

NOTE: Vehicles equipped with Throttle Valve (TV) cable must perform the following procedure for kick-down cable adjustment. FAILURE TO PERFORM THIS ADJUSTMENT PRIOR TO ENGINE START-UP MAY LEAD TO TRANSMISSION FAILURE!

Depress the metal lock tab on adjuster and move the "slider" back away from the Throttle Body as far as it will go, then release the tab. Re-connect the kickdown cable to the throttle arm, then move the throttle arm to Wide Open Throttle, which will pull the slider forward to the correct position.

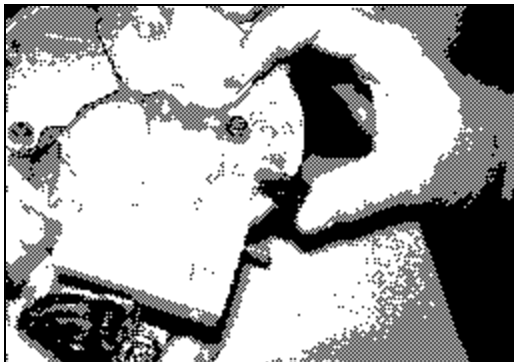


20. WIRE HARNESS

Install injector wire harness supplied in kit on engine, looping it around the backside of the throttle body, so that no lines are crossing the front area. Push connectors onto injectors until they snap on easily. With everything snapped in place, you will see four pink crimp connectors sticking out of loom. These will be used to connect to the factory harness. Now take the factory harness where it is connected to the stock TBI injectors. Just down from the injectors, there is a rubber grommet with the wires running through it. Cut the four wires right above rubber grommet.



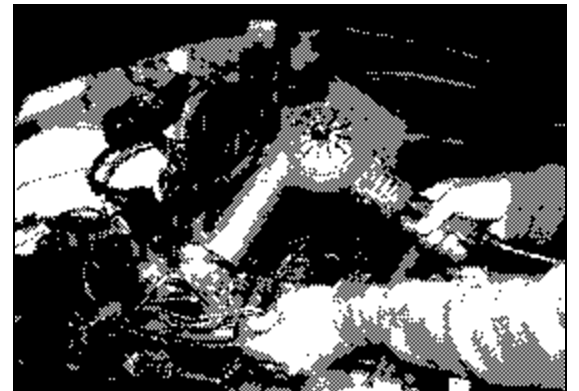
Pull rubber grommet off of wires. Force silicone (oxygen sensor-safe) through these four holes, filling them with silicone. Install the grommet on air valve in groove to prevent dirt from entering the system.



Separate four wires cut previously out of the factory loom. These will be used to mate with the corresponding butt connectors; green to green, blue to blue, and the two pink wires go to either connector. Use stripping tool to strip end of the wires back 1/4".



After sticking stripped end of butt connector and crimp connector onto wire, use crimping tool to crimp the connection. Tug on wire slightly after crimping to make sure you have a good connection. After doing all four connectors take heat gun or cigarette lighter (be careful not to burn wires) to heat the ends of the connectors. They will shrink down around the wires and ensure a tight connection. After cooling, slide all wires into black sleeve coming off loom.



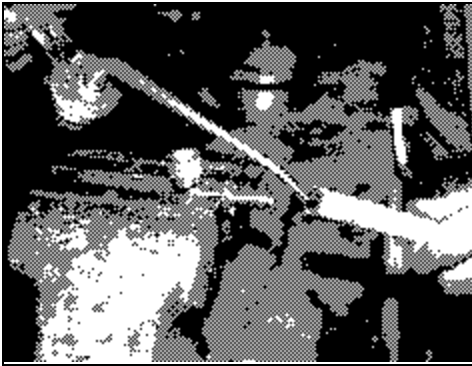
21. FUEL LINE CONNECTIONS

From the kit contents, locate the length of 3/8" high pressure fuel hose, one 45° #6 Pushlock fitting, one 90° Pushlock fitting, and two straight #6 Pushlock fittings.

Pushlock Fitting-To-Hose Installation

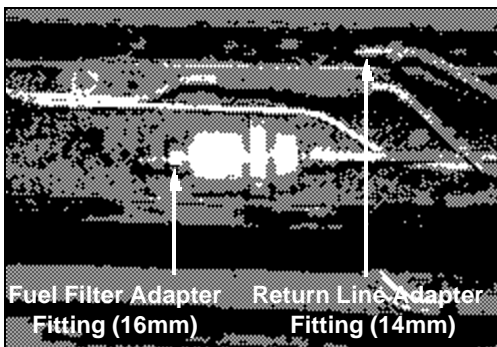
Use this procedure for installing each one of the Pushlock Fittings onto hose ends

Clamp Pushlock fitting in vise, being careful not to crush fitting. Lubricate inside of hose end and Pushlock fitting barb with a small amount of lubricant (oil, spray lube, or white grease). Push the hose over the barb until it stops against the fitting collar. No clamping is necessary.



Before making the fuel lines, you must install the fuel filter adapter fitting and the returnline adapter fitting. The fuel filter adapter fitting is a male #6-to-16mm threaded male with an O-ring on the end of the fitting. Install into fuel filter and tighten securely. The return adapter fitting is the female 14mm-to-#6 fitting. This will attach to the return fuel line.

NOTE: Be careful not to damage the O-rings on the fittings or the existing fuel lines. Install both fittings as shown in photo.



22. FUEL RETURN LINE INSTALLATION

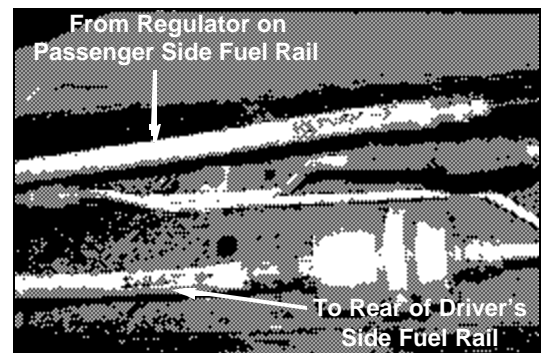
Install the 90° #6 pushlock fitting into the 10 foot length of hose using the pushlock fitting installation procedures described previously. Tape off the open end of fuel line to prevent debris from entering. Route the open end (taped) of hose down the bellhousing towards the fuel filter and return line area.

NOTE: This may be left or right side, depending on year and model.

Connect the #6 90° fitting to the fuel pressure regulator fitting on fuel injection assembly (passenger's side fuel rail). Be sure that the hose is routed safely with no sharp bends down the bellhousing to the frame where the connection will be made. Determine the length needed, adding in a little extra to allow mounting fuel line clamp to the floor of vehicle. Mark the line, remove from vehicle and cut to length. **NOTE: Carefully flush out all debris after cutting lines!** Install #6 straight pushlock into hose. Tape end of return line again, then re-install on vehicle. Tighten both fittings securely.

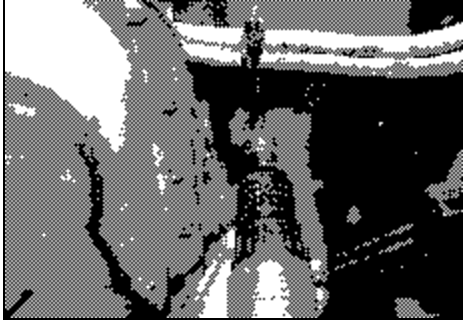
23. FUEL INLET LINE INSTALLATION

Install the 45° #6 pushlock fitting into the remaining length of hose and tape other end to prevent debris from entering. Route open end (taped) of hose down bellhousing and thread 45° fitting onto rear of fuel rail. From under vehicle, determine length needed to reach the fuel filter adapter fitting. Be sure to add a little extra to allow mounting a fuel line clamp to the floor of vehicle. Remove line from vehicle and cut to length. Install #6 straight pushlock into hose.

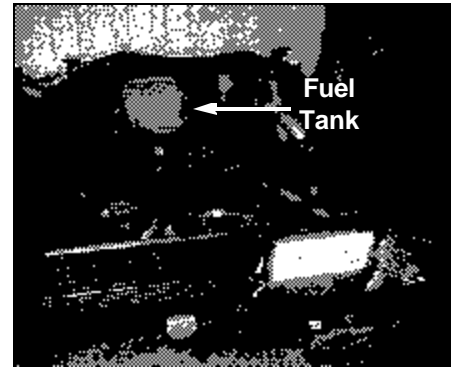


Tape end of return line again, then re-install on vehicle. Tighten both fittings securely. With the lines routed so they are not kinked, use the fuel line clamp kit supplied to mount to the floor.

IMPORTANT NOTE: Using two zip ties, fasten the fuel lines to wire harness running down transmission (and possibly one up top) to ensure that they are not touching firewall or any other sharp areas.



With all bed bolts and wires disconnected, four people can lift off the bed. This takes about 20-30 minutes, which is much faster than draining and removing tank. With bed removed, you will see top of fuel tank. Take a brush or compressed air and clean the top of fuel sending unit area so no debris enters in fuel when removing this assembly.



24. FUEL PUMP INSTALLATION

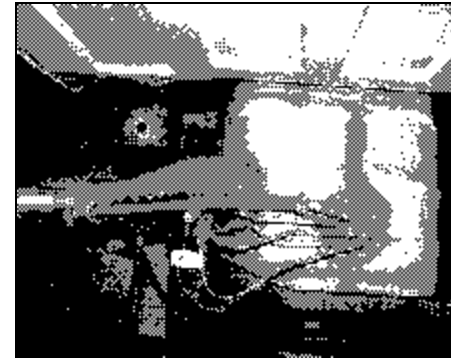
Note: 1995 Tahoe and Yukon only skip to Step #26. For the TBI multipoint conversion, it is necessary to install a high-pressure fuel pump (#3581 for single tank vehicles, sold separately).

IMPORTANT NOTE: On trucks with dual tank set-ups, it will be necessary to install Edelbrock Dual Fuel Tank Conversion Kit #3580, available from your Edelbrock dealer, or call Edelbrock directly for sales or dealer assistance: **800-416-8628 x 2819**. Dual tank vehicles do not require removal of the tanks or pick-up bed, as the new fuel pump kit #3580 mounts on the vehicle frame. See installation instructions supplied in kit.

To install pump #3581 on single tank vehicles, you must gain access to the top of your fuel tank. If you have a Suburban, you will need to drain the fuel tank and drop from the rear of the vehicle. If you have a truck, we recommend removing the bed to reach the fuel tank. On truck beds, you will usually find eight mounting bolts, two ground wires, a couple of weather pack electrical connectors (near license plate area), and you will need to disconnect your fuel fill neck from the bed.



Disconnect two fuel lines, two hoses, and an electrical connection with a ground wire. There is a center fuel pump sending unit assembly lock ring holding assembly into tank.



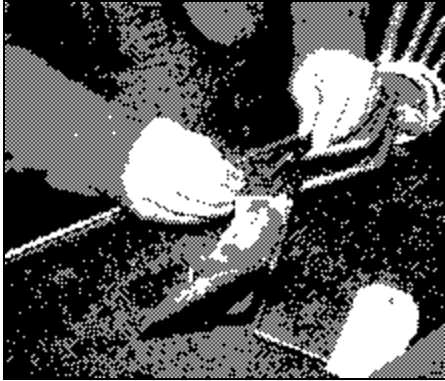
Using a hammer and brass punch, gently strike open edge of lock ring in a counter clockwise direction. Keep hitting until lock ring rotates enough to release. Again blow or brush top area clean and carefully remove the entire assembly. **Be careful on removal! Take your time!**



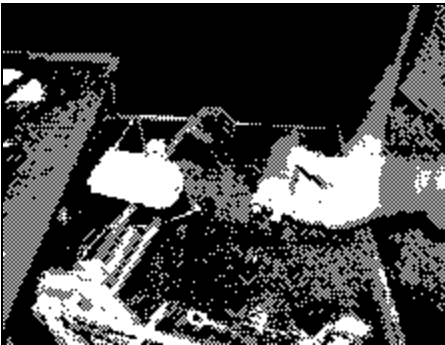
25. FUEL PUMP ASSEMBLY

With fuel pump assembly on bench, loosen and slide up the lower plastic clamp on top of fuel pump. Now disconnect electrical connection. On the bottom of the fuel pump, there is a fuel strainer sock; remove the bottom strainer sock after marking it so you can re-assemble in the original orientation.

Note: There is a kit supplied with the 3501 and 3502 that provides you with new fuel line and clamps. Install the 3" length of fuel hose onto the 3/8" steel tubing where the old fuel pump junction hose was previously. Use the 3/8" hose clamp to secure hose to steel tubing.



Note: You may want to replace the fuel sock at this time with a new factory replacement. Use a small flat blade screwdriver to gently pry around strainer and it will pop off. Carefully slide the factory fuel pump out of the assembly. Install the new fuel pump supplied in the kit into this assembly.



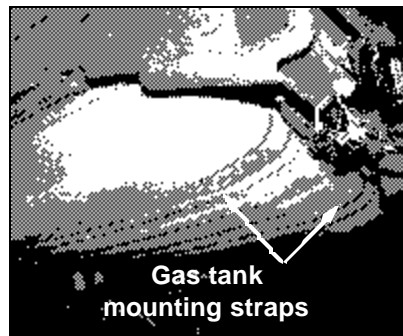
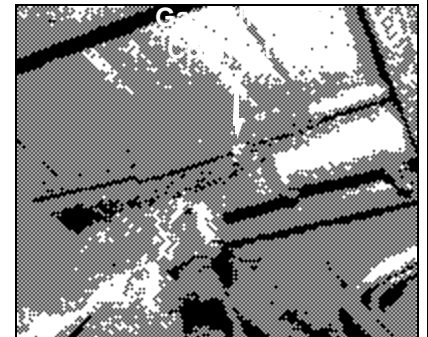
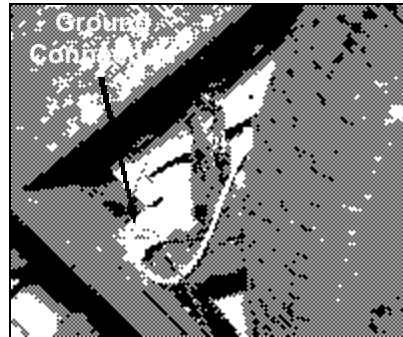
Note: The fuel line will be a very tight fit over the 3/8" tubing. It may be necessary to lube the tubing with some spray lubricant to ease hose installation. Slip the 5/16" clamp over the rubber hose, then insert fuel pump barb into hose and secure with 5/16" clamp. Be sure there is adequate clearance between the metal clamp and the electrical connections on the pump. Some shortening of the rubber hose may be necessary for proper alignment of the pump with the pump hanger.



NOTE: DO NOT RE-USE THE ORIGINAL INTANK FUEL HOSE OR CLAMPS.

ALTERNATE PROCEDURE: LOWERING FUEL TANK

Suburbans (or trucks that you cannot remove the bed), require removal of the fuel tank(s). The fuel tank must be lowered from beneath the vehicle. First drain the fuel, then disconnect the ground wire and the weather pack electrical connector. Then disconnect gas fill hose and vent hose. Let the tank drop enough to gain access to the fuel lines, then disconnect fuel lines and remove tank from vehicle. Most tanks have two mounting straps which must be removed.



Use the new rubber base gasket for fuel pump. If the big O-ring in fuel tank is OK (not torn), you may reuse it. If necessary, replace with original equipment O-ring from a GM dealer. Make sure to grease large O-ring with white grease or equivalent. Making sure clamp is tight and electrical connector is connected, install strainer sock into same position (it will just push on with your thumb).



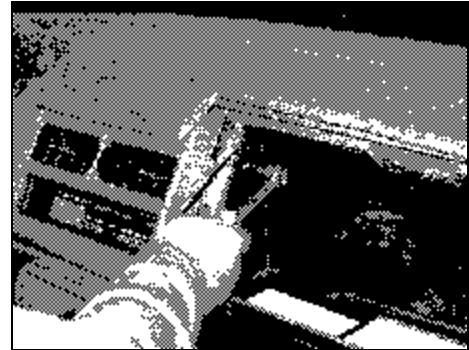
Install complete assembly back in the fuel tank. Make sure you do not bend anything while reinstalling. Lock assembly back in place by rotating lock ring clockwise until it hits its stops. Now tighten fuel connections and hose clamps. Make electronic connection and ground connection. Re-install fuel tank (Suburbans, etc.). **Do not re-install bed on pick-up trucks at this time. Before installing bed, see Fuel Pressure Test Section on page 15.**



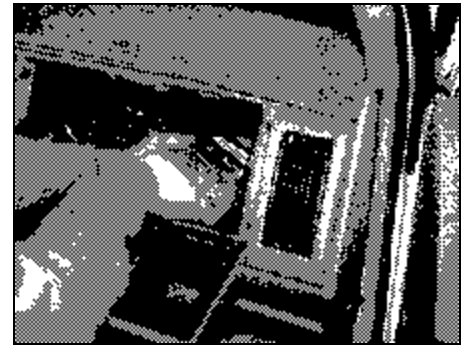
26. NEW COMPUTER CHIP INSTALLATION

IMPORTANT NOTE: COMPUTER CHIP MUST BE ORDERED BEFORE BEGINNING INSTALLATION.

Open glove box and remove four screws mounting the inner tray. Remove glove box tray.



The ECM is located on the right side; slide the ECM to the left to unsnap from its mounting position. Rotate around to disconnect both connections on the ECM, then remove from vehicle.

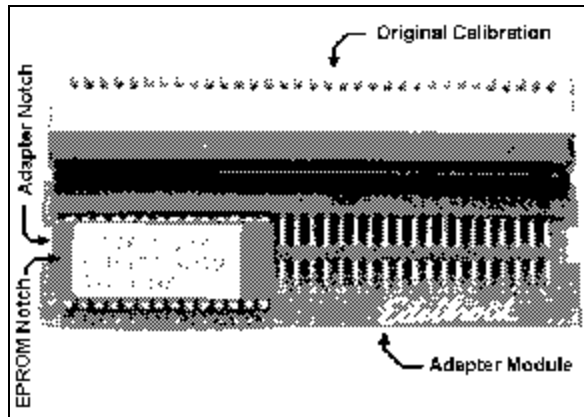


On the ECM, you will find the service number and the broadcast code. Both are needed in order to make a new calibration chip for your particular vehicle. This should be done well before installation to allow enough time for the new chip to arrive. Use the chip order card enclosed with these instructions.



After removing two screws and cover from ECM, remove old chip by pressing down on the two outside retaining clips.

This installation uses a piggyback chip adapter. Push your new computer chip into the adapter, then install these two parts into ECM. There is an alignment lug so that they only fit one way. Be careful not to bend any pins. Put plate back on and re-install ECM in the vehicle. **NOTE:** Early models do not require the adapter; the chip simply replaces the stock chip.



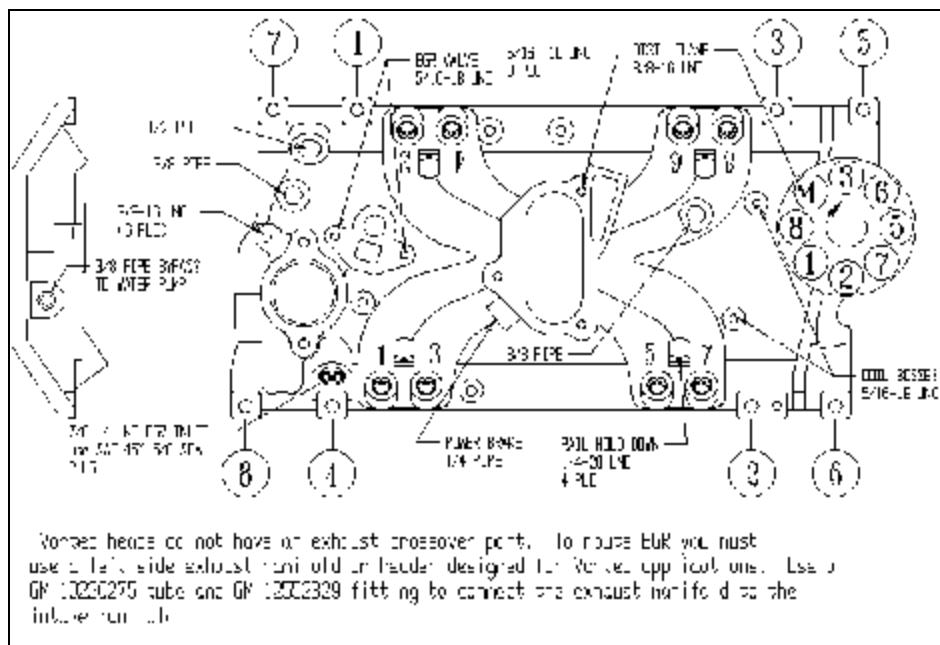
27. INITIAL START UP

Re-connect battery negative cable. Double check connections and fill radiator with a 50/50 mix (or manufacturer's recommendation) of anti-freeze and water. Turn key to the "On" position. You will hear the fuel pump run for a few seconds and stop as it fills the fuel system with fuel. There will be air trapped in system. At this time, inspect all fuel connections for leaks. If there are no leaks and everything looks good, crank it over. It might not start right away. If not, stop and cycle key so fuel pump runs (this will allow air trapped in system to evacuate). Try to start again. Once running, check for fuel leaks again, then water leaks.

28. SET IGNITION TIMING

If there are no leaks, set ignition timing following manufacturer's procedures and specifications. You must disconnect the ignition interrupter wire before you set the timing. This is a single tan wire with a black stripe and a black plastic connector. On late style vehicles, it is usually found under the dash on the passenger's side, between the blower motor and the duct work (next to the courtesy light). On earlier vehicles, it is usually found on the passenger's side firewall, behind a plastic cover which is secured with two screws. If you are not certain of the location of this wire, consult factory service manual. Re-connect wire after timing is set. If you have a truck, re-install bed after checking for leaks around sending unit assembly.

NOTE: You may notice a slight surge in the idle in "Park" or "Neutral". This is normal and will smooth out when the transmission is shifted into any drive gear.



29. EGR ADAPTER KIT #2899

The Vortec engine does not have an exhaust crossover in the cylinder heads, so it requires an external source of exhaust gas to feed the EGR system. It is necessary to purchase a GM #10220275 tube to route exhaust from the exhaust manifold or header to the #3505 inlet manifold.

If exhaust manifolds are used, they must have a provision for the GM #10220275 to screw into. You may use a stock Vortec left side cast iron manifold with a GM #12552329 fitting (from a 1996-1998 5.7L truck engine) or Edelbrock TES headers #6615 for 1996-1998 Vortec trucks, which also fit 1988-1995 trucks and 1992-1995 Suburbans, Tahoes, Yukons and Blazers.

Adapter kit #2899 is intended for those who already have a set of headers (other than Edelbrock #6615) who wish to re-use them with the new Vortec engine. It consists of two tubes and a fitting.

Adapter Installation:

Assemble the #3505/3506 manifold, the GM EGR supply tube with our fitting attached and left side exhaust header. The 1-1/4" tube fits Edelbrock left side TES headers (other than #6615, which already include this tube). The 6" tube is longer and may be used to fit other brands of headers as necessary.

First the tube must be welded to the fitting. Next, mark the header for the best location of the assembly. Remove the header and drill for the adapter, then weld adapter in place.



BASIC TROUBLESHOOTING

1. **Engine Combinations**

- a. If you assemble a combination of parts other than stock or the Edelbrock MPFI package called out in our catalog, your vehicle may not perform properly.
- b. Stroker motors are not supported .
- c. All engine assemblies must maintain stock compression ratios .
- d. A 190- to 195-degree thermostat should be used for optimum mileage, performance and emissions. Thermostats temperatures below 185 degrees should be avoided.

2. **Engine Assemblies**

- a. Edelbrock MPFI Power Package per the catalog.
- b. Standard Duty LO5-350 Cid P/N 12568758. Engines with 9.3:1 Factory compression ratio.
- c. Heavy Duty LO5-350 Cid P/N 12520270. Engines with 8.6:1 Factory compression ratio.

3. **Fuel Pressure**

Fuel pressure must be checked with a fuel pressure gauge only. Do not use a tire pressure gauge.

Test:

- a. Turn key to "On" position, but **do not** start the engine.
- b. Fuel pressure should read 42-45 Psi depending on your altitude . The Higher the altitude the lower the pressure.
- c. The systems fuel pressure should not drop more than 10 Psi in 5 minutes, and should maintain residual pressure even after sitting for 24 hours. If pressure drops more than 10 Psi, check fuel pump hose and clamps in fuel tank. If the original hose and clamp were re-used, replace them with the supplied hose and clamps per the instruction. If fuel pressure still drop off to quickly, contact Edelbrock .
- d. With engine running check fuel pressure, at idle fuel pressure should be between 34-38 Psi depending on idle vacuum.

4. **Engine Runs On Only One Bank**

- a. Check injector wiring for correct connections, green to green, blue to blue or red to red (some cases white to red).
- b. Check that your original MemCal (blue capped chip) is installed on the supplied green piggyback adapter and chip alignment in the green piggyback adapter. **See above Computer Chip section and diagram.**



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