YOUR ONE STOP SHOP FOR ALL YOUR SUPERCHARGING NEEDS™

BLOWERWORKS

CORVETTE C5 SUPERCHARGING SYSTEMS

BlowerWorks™ Professional Supercharging Systems

C5 SUPERCHARGING SYSTEM 1997-2004 LS1/LS6 CORVETTE

INSTALLATION GUIDE

INSTRUCTIONS FOR INSTALLING
A SUPERCHARGING SYSTEM ON A
C5 CORVETTE

January 2005 Revision No. 3

BLOWERWORKS
WYCKOFF, NJ

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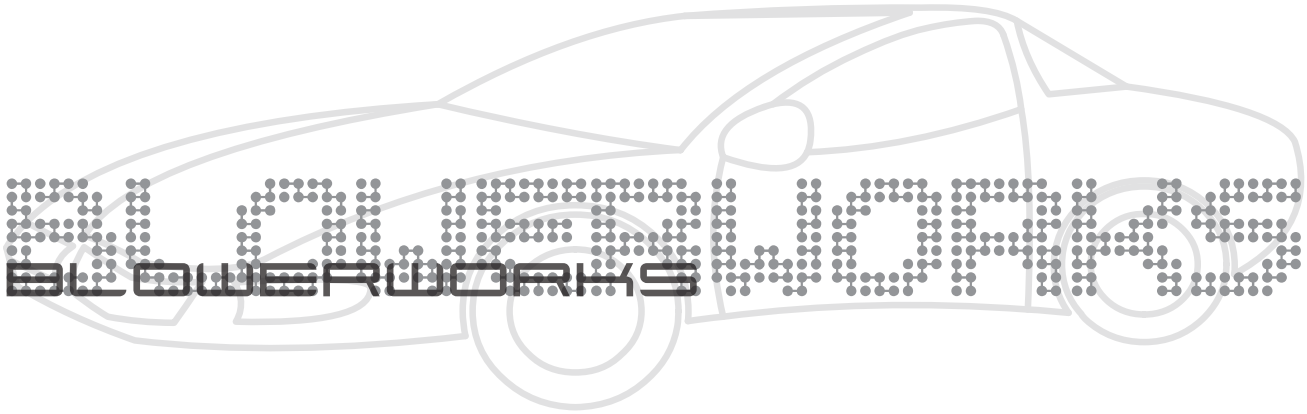
PLEASE VISIT US ONLINE AT WWW.BLOWERWORKS.NET

Thank You For Choosing



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Other BLOWERWORKS™ Products...

- **PROFESSIONAL SUPERCHARGING KITS FOR C4, C5, & C6 CORVETTES**
- **WORLD'S LARGEST ASSORTMENT OF WATER/ALCOHOL INJECTION SYSTEMS**
- **SUPPLEMENTAL FUEL INJECTION SYSTEMS**
- **PULSE WIDTH MODULATED CLOSED LOOP FUEL PUMP CONTROLLERS**

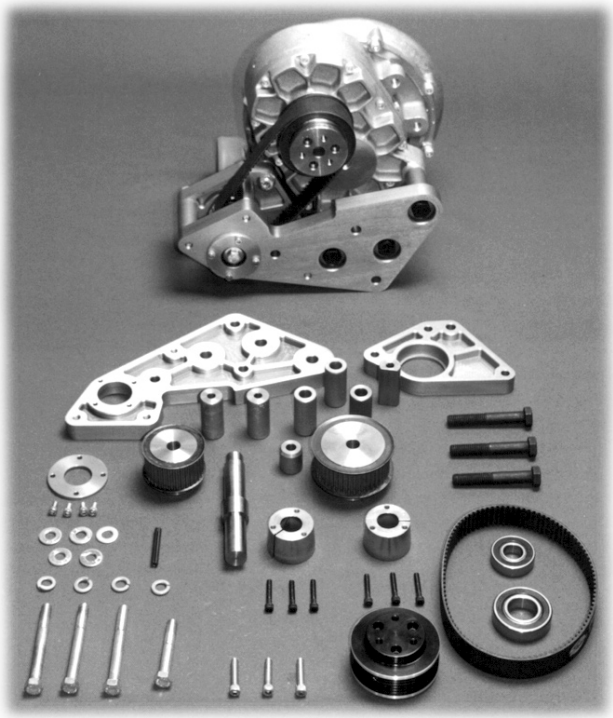
COMPUTER REPROGRAMMING

- Your computer must be removed and sent out to be reprogrammed. Below is a sample of the computer certificate you will receive with your supercharging system. If you did not receive this certificate please contact us.

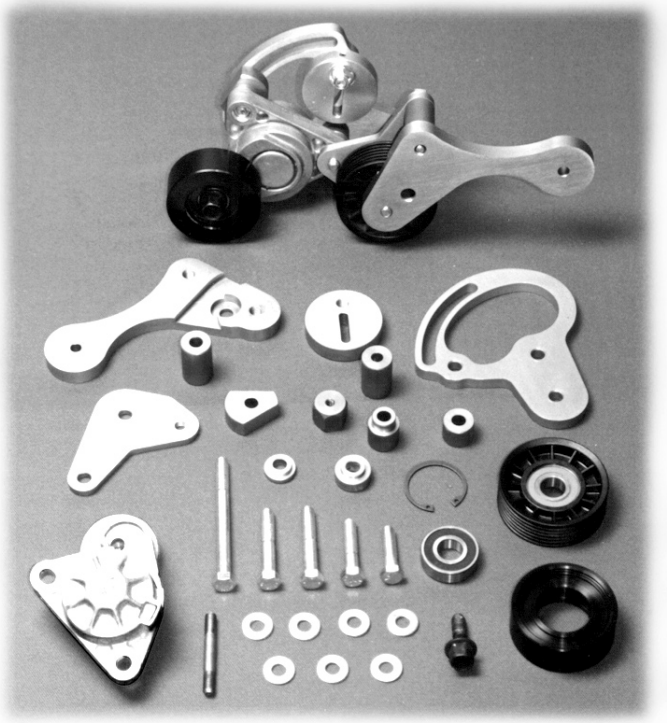
- Package your computer carefully and mail to the address indicated on the certificate.

— NOTES —

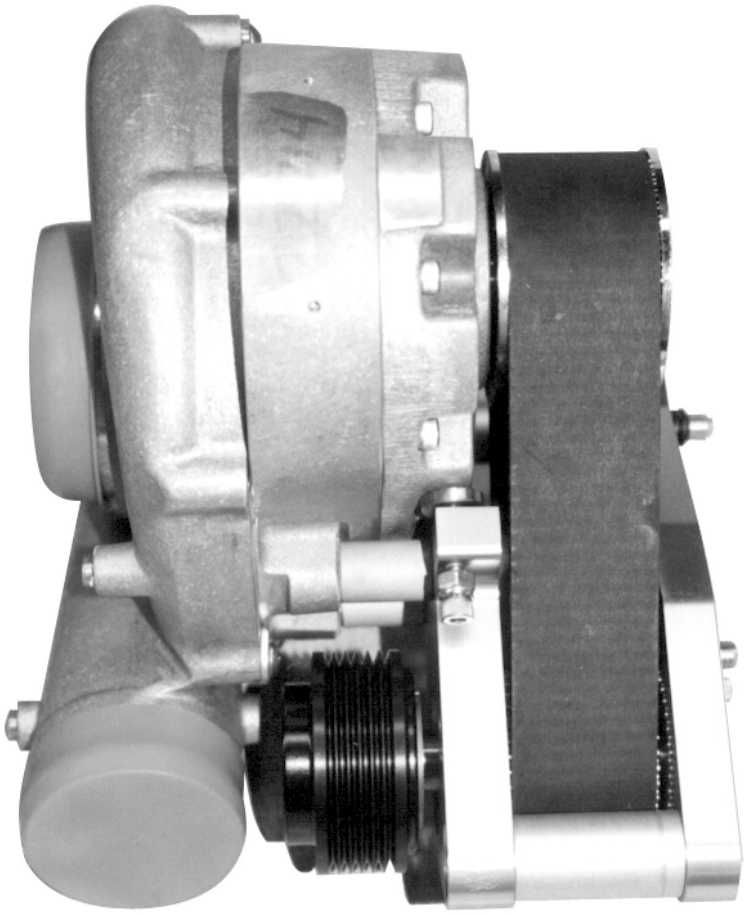
LS1 CORVETTE SUPERCHARGING SYSTEM COMPONENTS
(Engine Oil & Filter Are Not Included For Non-Factory Installations)



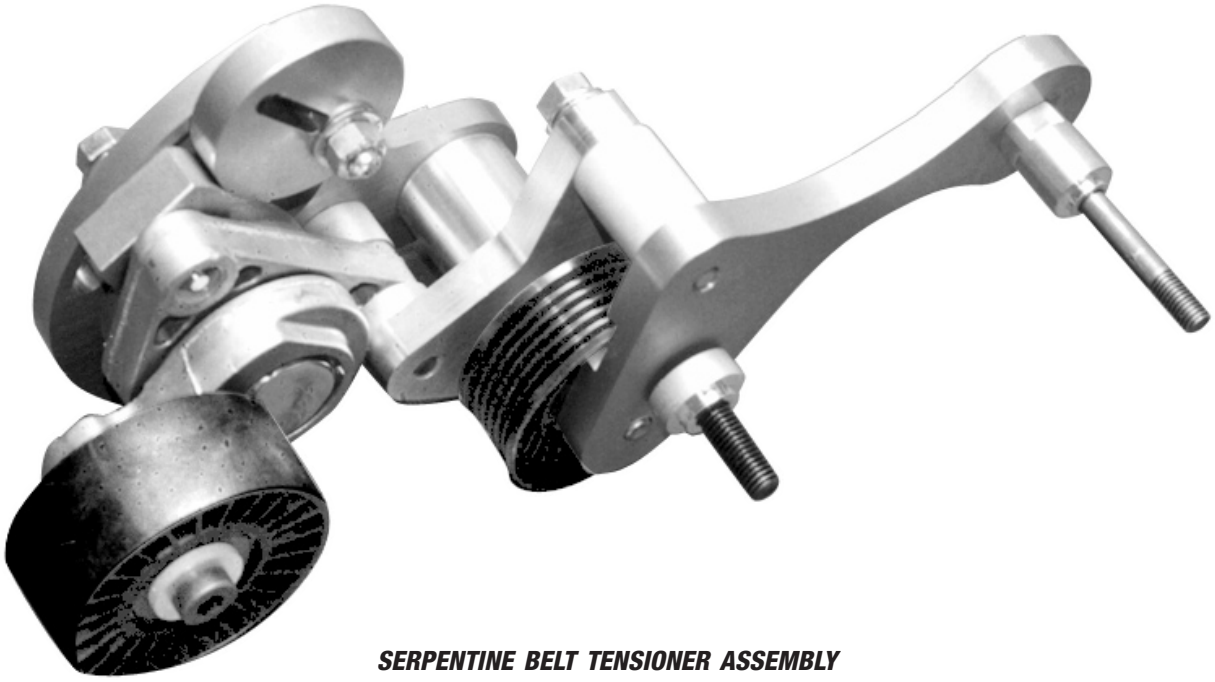
SUPERCHARGER BRACKETRY COMPONENTS



AUTOMATIC BELT TENSIONER COMPONENTS



BLOWER ASSEMBLY

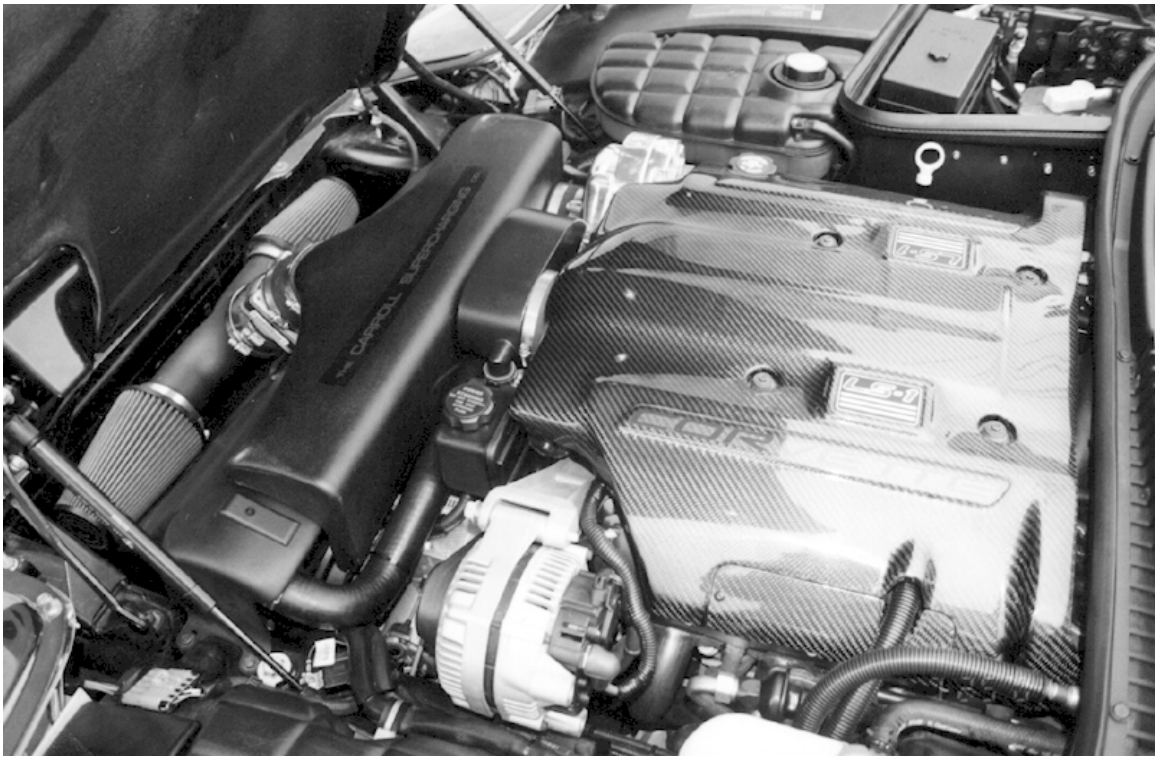


SERPENTINE BELT TENSIONER ASSEMBLY

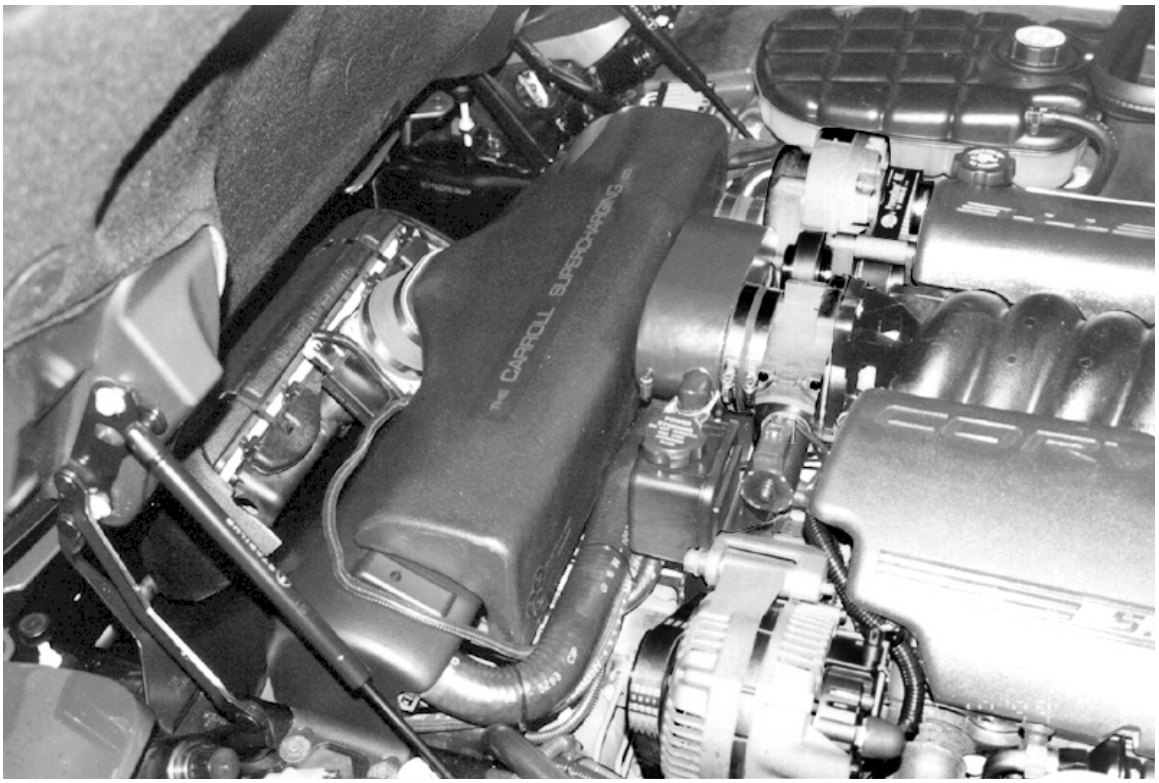
AIR INLET MANIFOLD

MODIFIED GM CRANK PULLEY ASSEMBLY

TAPERED COLLET

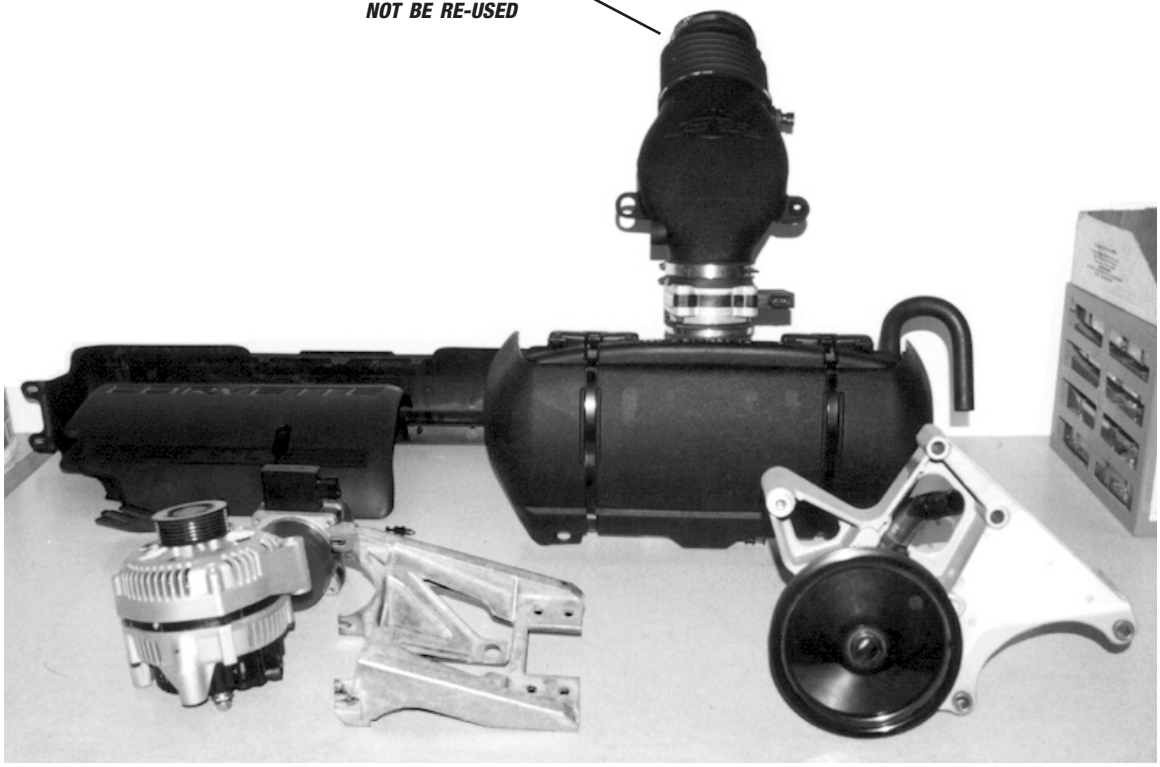


2000 C5-LS1 CORVETTE • STAGE IV WITH HEADS & CAM
500 REAR WHEEL HORSEPOWER



1999 C5–LS1 CORVETTE • STAGE I SUPERCHARGING SYSTEM • NOTE STOCK GM AIR FILTER

TABLE of CONTENTS



— FIGURE 1.1 —
COMPONENTS THAT MUST BE REMOVED FROM VEHICLE PRIOR TO INSTALLATION.
MOST WILL BE RE-INSTALLED.

— FIGURE 1.2 —

Section 1 • PREPARATION & DISASSEMBLY

1.1 Review photos. Note parts to be removed. Note the only parts left over are 3 bolts, belt tensioner, and rubber bumper.

1.2 Remove engine compartment light from hood. Set to side for modification.

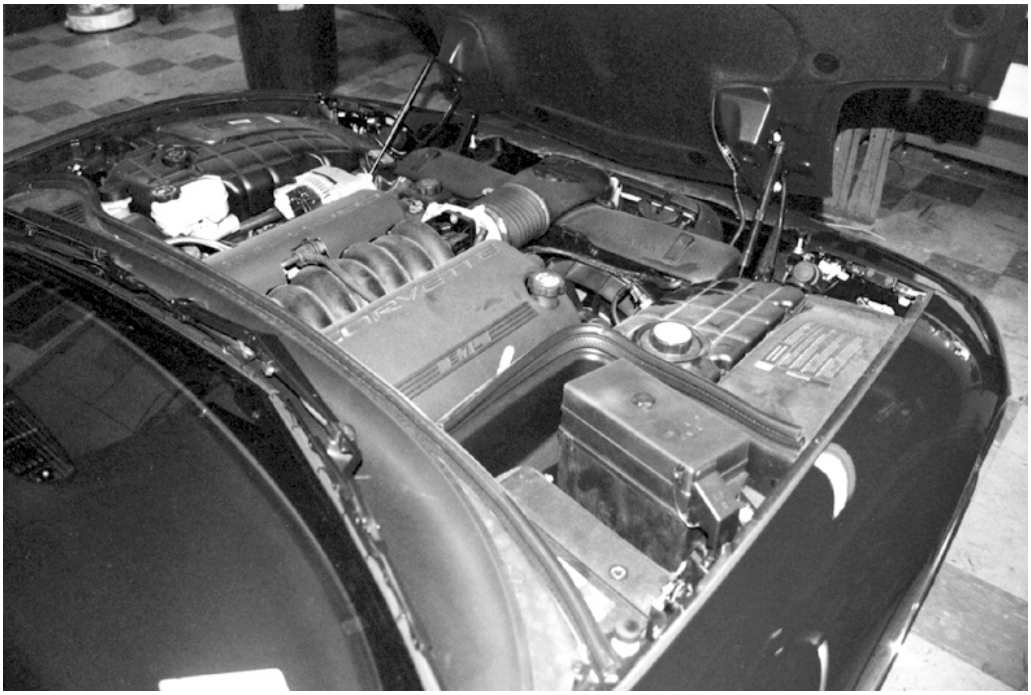
1.3 Disconnect Vehicle Battery – If '99 or newer vehicle remove battery.

— FIGURE 1.3 —

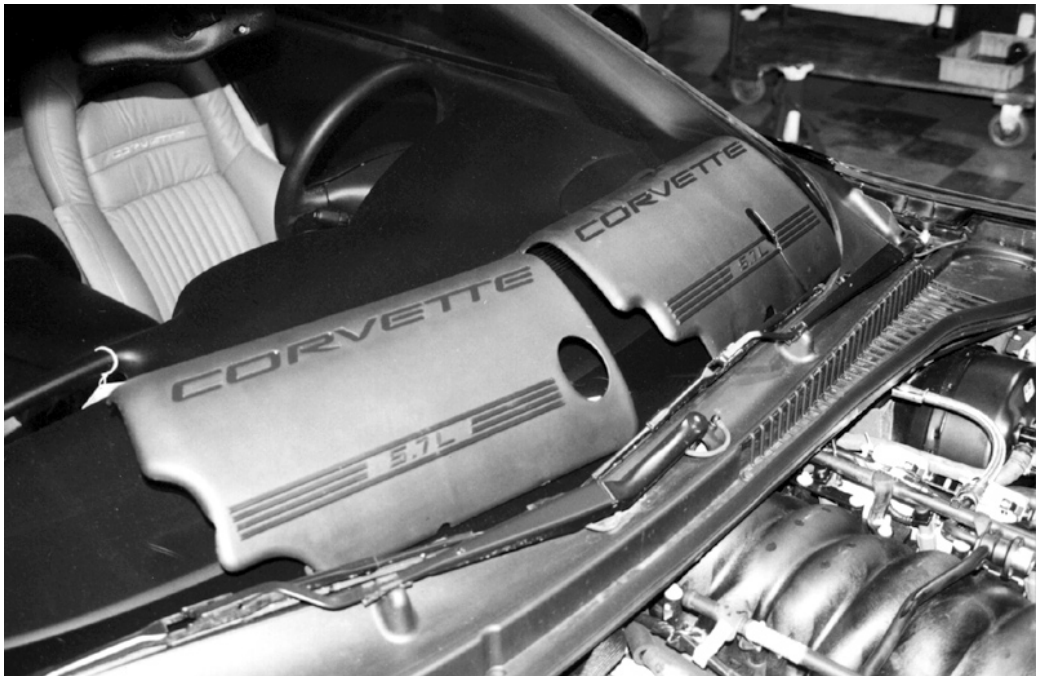
1.4 Remove Engine Hood.

— FIGURE 1.4 —

1.5 Remove Plastic Injector Covers from both sides of Engine.



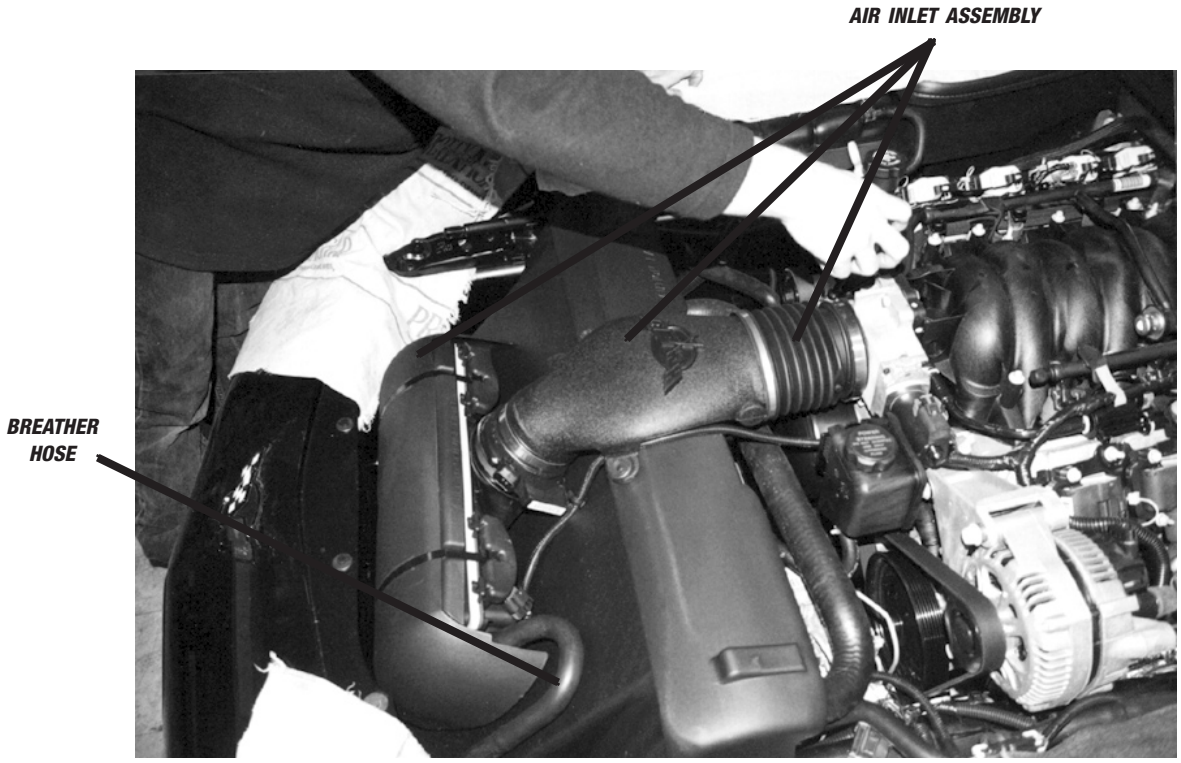
— FIGURE 1.5 —



— FIGURE 1.6 —

1.6 Disconnect Breather Hose from Air Cleaner Assembly.

1.7 Remove entire Air Inlet Assembly.



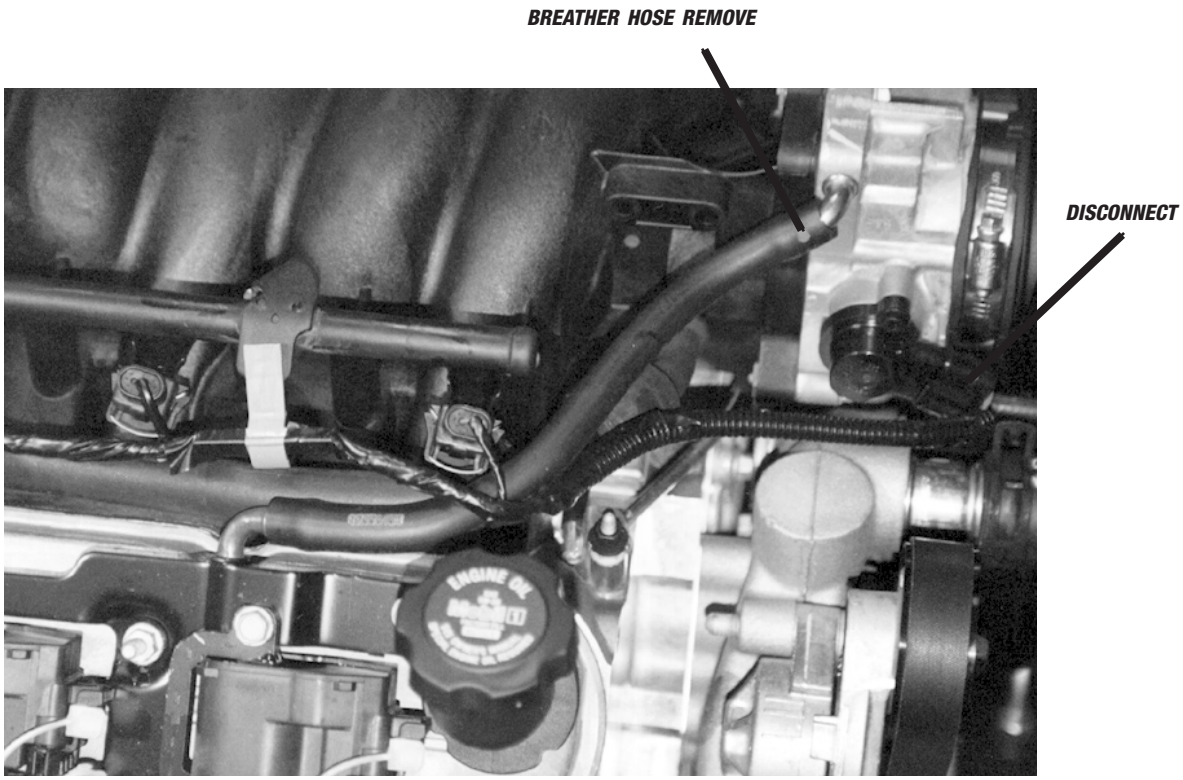
— FIGURE 1.7 —

RESERVED

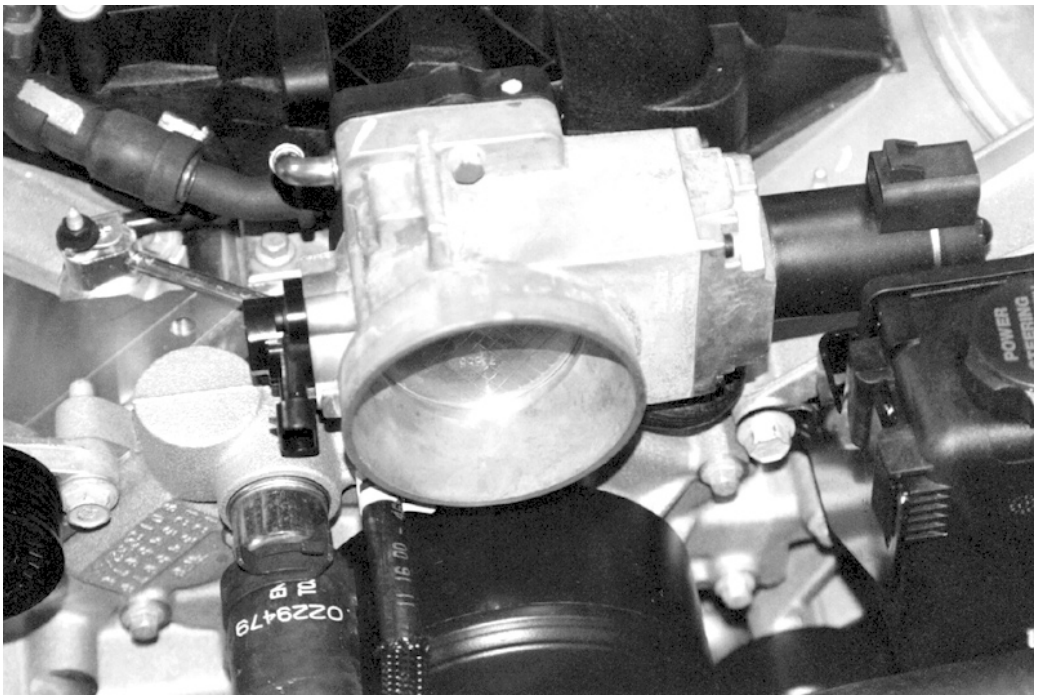
— FIGURE 1.8 —

1.8 Remove Breather Hose that runs from Passenger Side Valve Cover to Throttle Body.

1.9 Disconnect Throttle Body Position Sensor Connector.

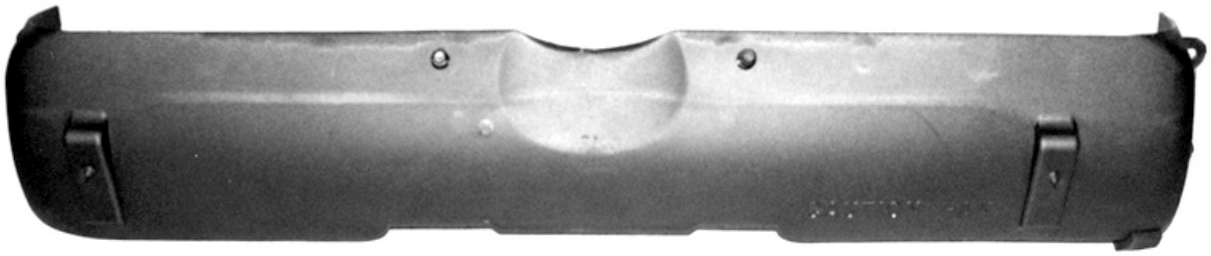


— FIGURE 1.9 —



— FIGURE 1.10 —

1.10 Remove Top Radiator – A/C Condenser Cover.

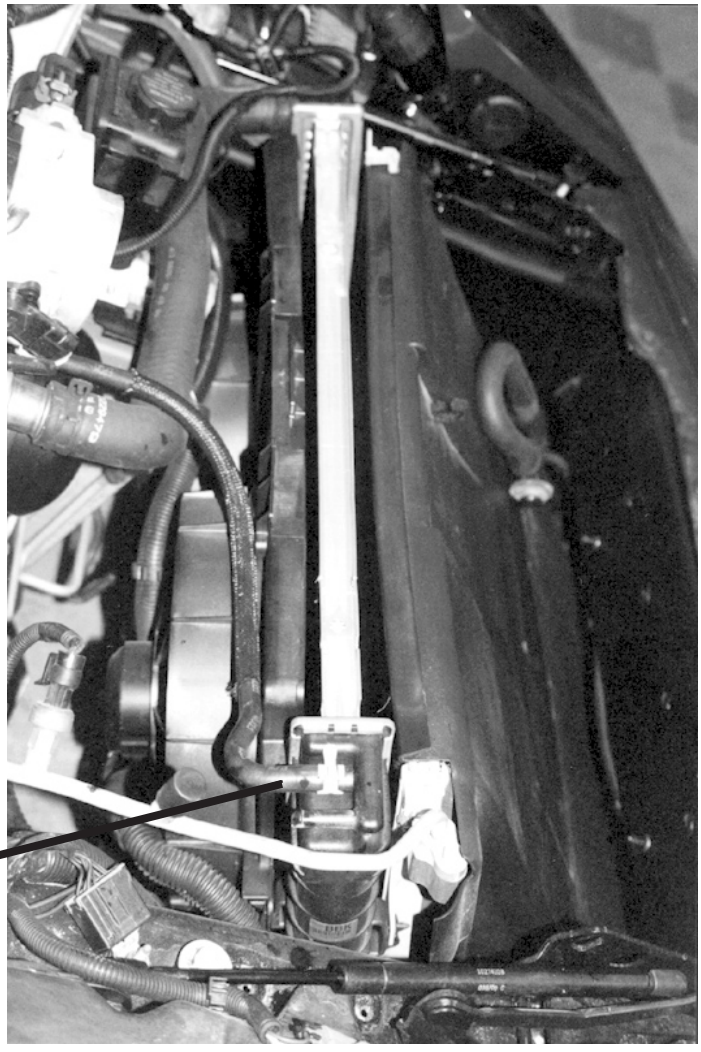


— FIGURE 1.11 —
RADIATOR / A/C CONDENSER COVER

1.11 Drain Engine Coolant.

1.12 Remove Coolant Hose that runs from top of Radiator to Throttle Body.

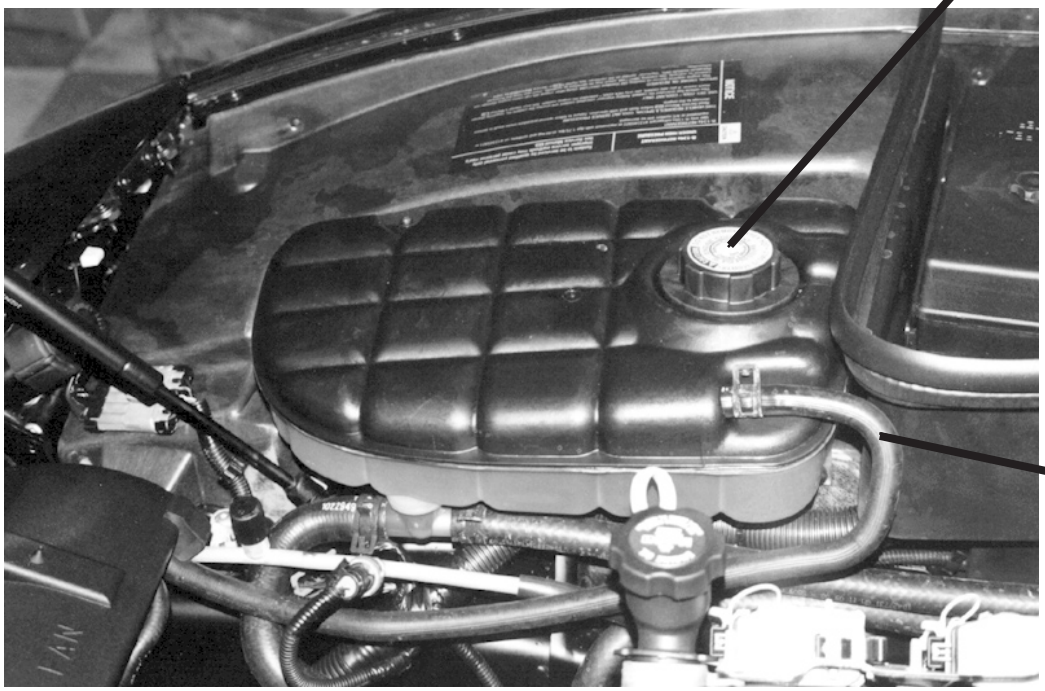
1.13 Remove Coolant Hose that runs from Coolant Reservoir to Radiator. ***See Figure 1.13.***



— FIGURE 1.12 —

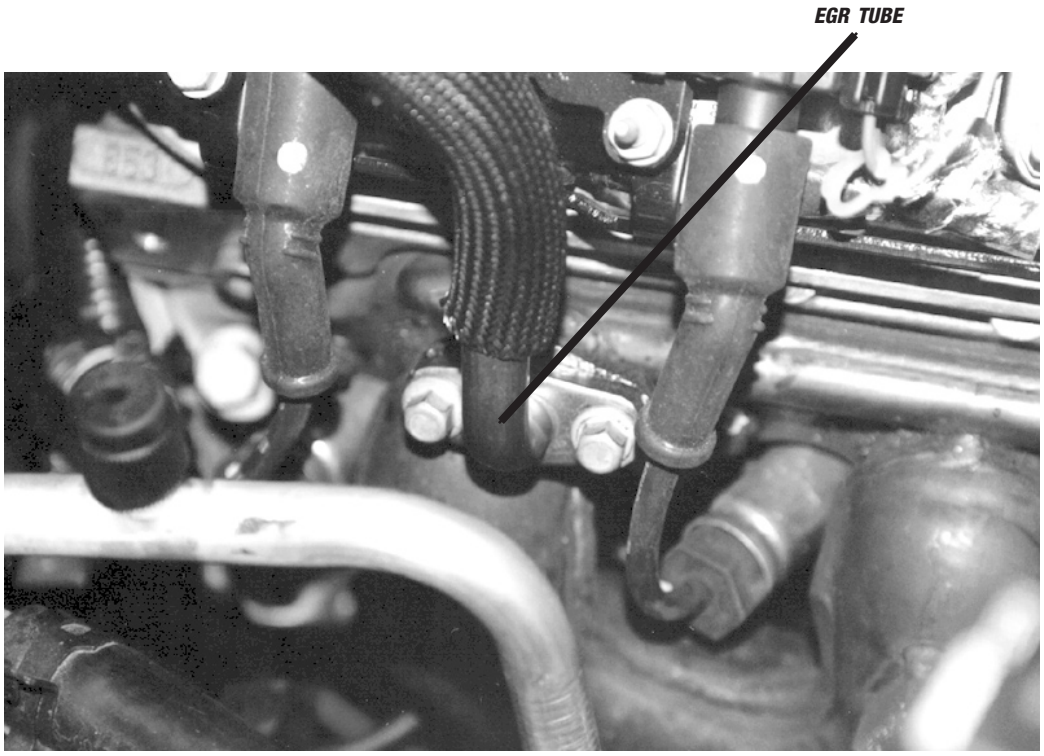
1.14 Remove Engine Coolant Reservoir after draining antifreeze: 3 bolts.

1.15 Remove A/C Refrigerant and save for re-use.

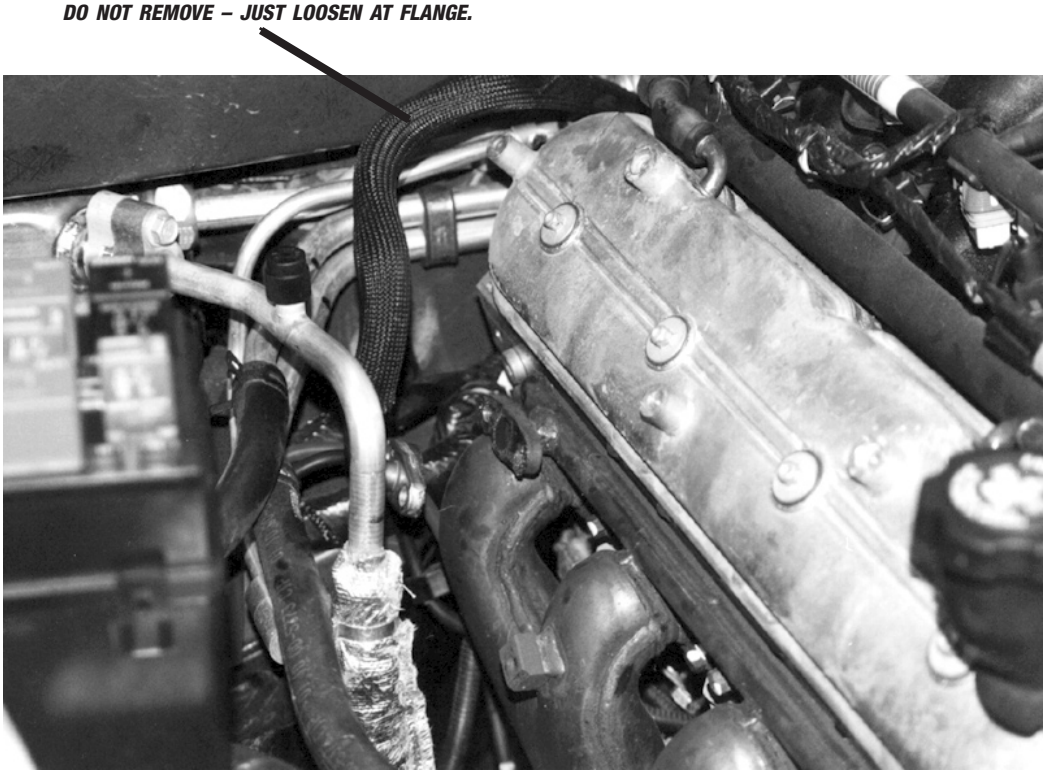


— FIGURE 1.13 —

1.16 Disconnect EGR Crossover Tube from Passenger Side Exhaust Manifold. ***See Figures 1.14 and 1.15.***

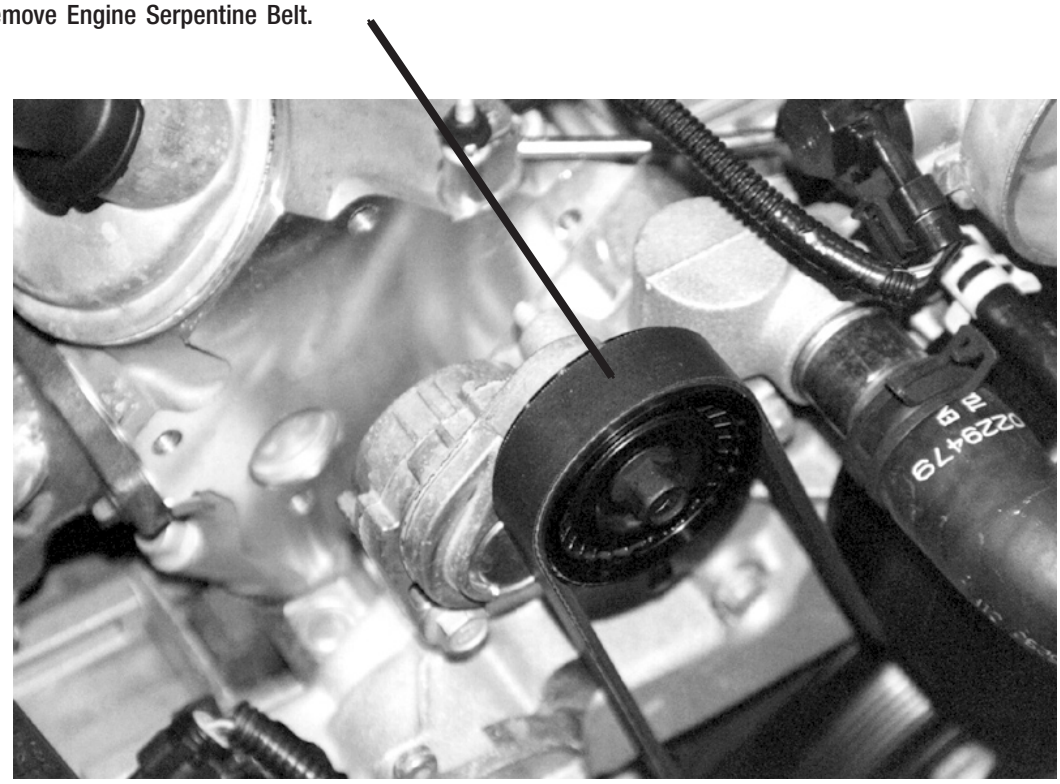


— FIGURE 1.14 —



— FIGURE 1.15 —

1.17 Remove Engine Serpentine Belt.

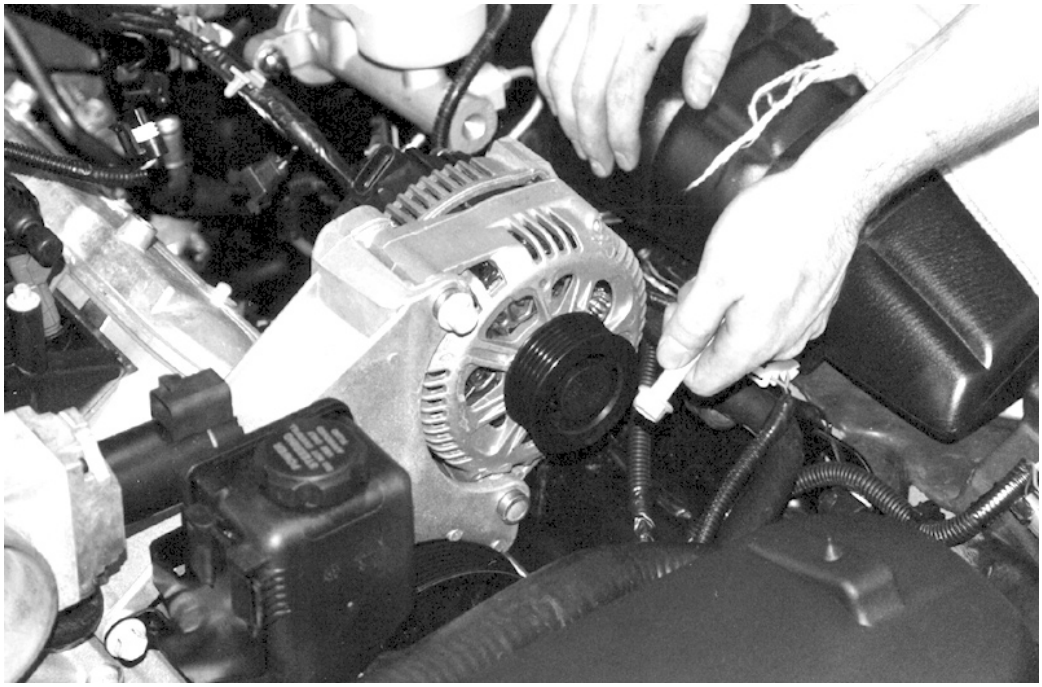


— FIGURE 1.16 —

1.18 Remove Engine Serpentine Belt Tensioner. This piece will not be used. You may send it to Carroll Supercharging for $25.00 credit or save for future.

— FIGURE 1.17 —

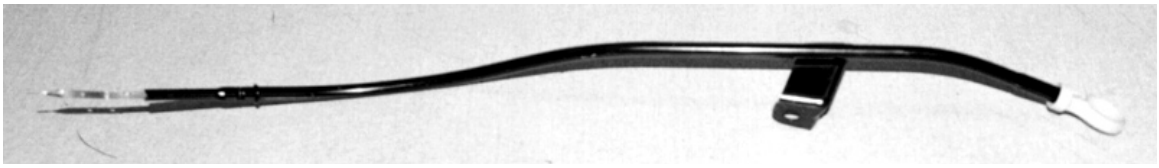
1.19 Remove Alternator.



— FIGURE 1.18 —

— FIGURE 1.19 —

1.20 Remove Engine Oil Dipstick Tube Holder.



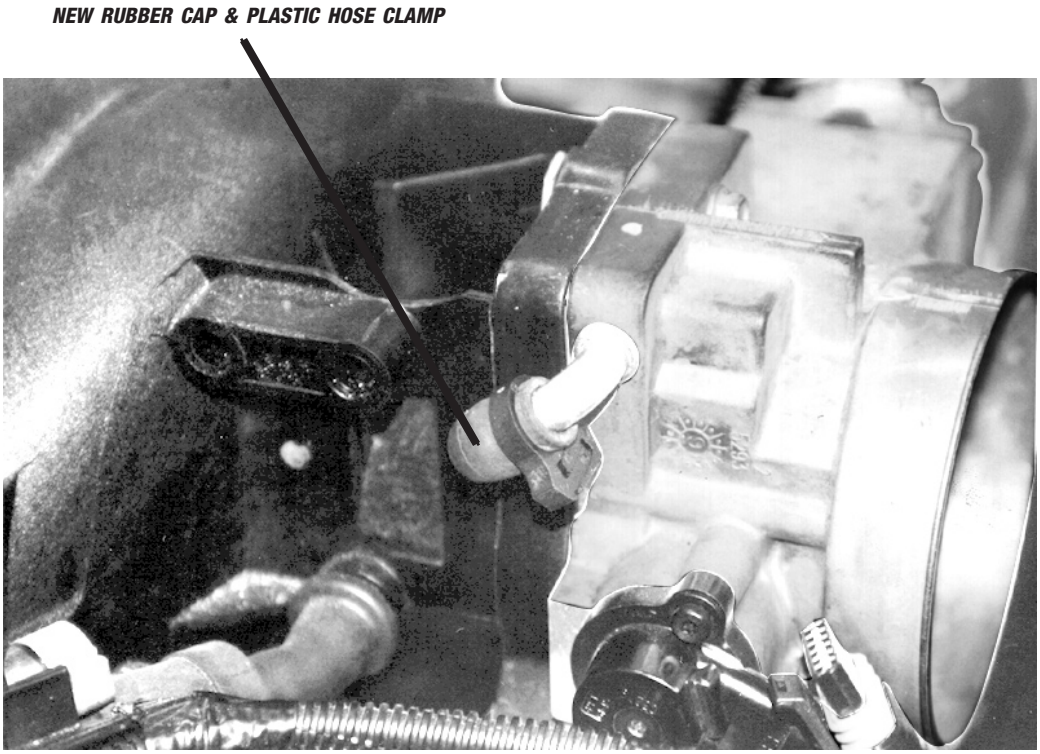
— FIGURE 1.20 —

1.21 Remove all 4 Spark Plugs from Passenger Side Vehicle.

NOTE: Stage II and up requires replacing all 8 spark plugs with Champion #7401.

RESERVED

1.22 Close Throttle Body Breather Connection with Rubber Cap and Plastic Clamp.



— FIGURE 1.21 —

RESERVED

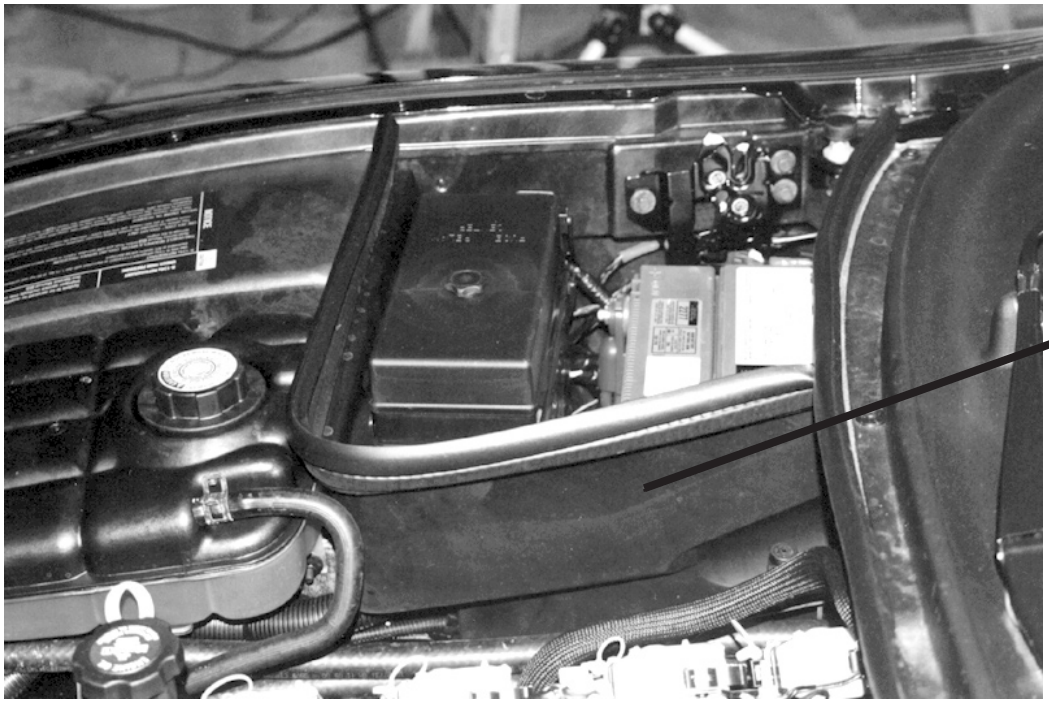
1.23 Remove Plastic Line with fittings that runs from the Throttle Body to the Vapor Recovery Solenoid.

— FIGURE 1.22 —

— FIGURE 1.23 —
GASOLINE VAPOR RECOVERY LINE

1999 & Newer Vehicles Only:

1.24 If '99 or Newer Vehicle with SUPERPUMPER-II™ remove Dust Shield that surrounds vehicle battery. If you haven't removed the battery yet, please do so now.



— FIGURE 1.24 —
1999 & NEWER VEHICLES ONLY

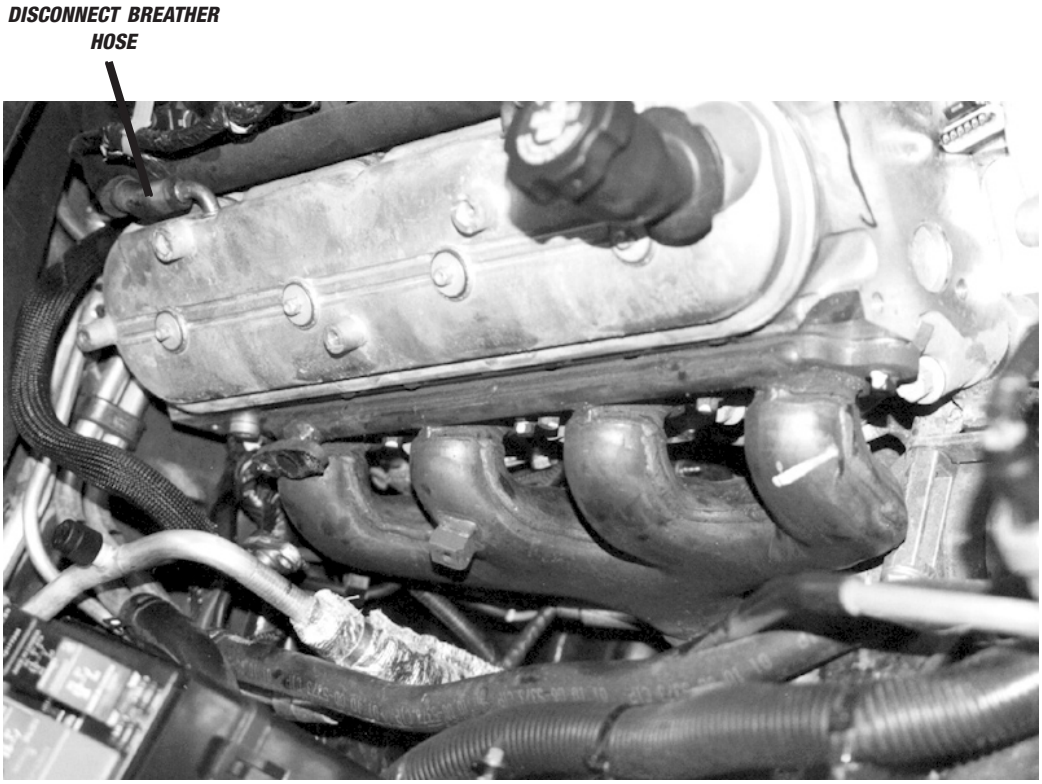
RESERVED

1.25 Disconnect Passenger Side Coil Pack and remove. ***See Figure 1.25.***

— FIGURE 1.25 —

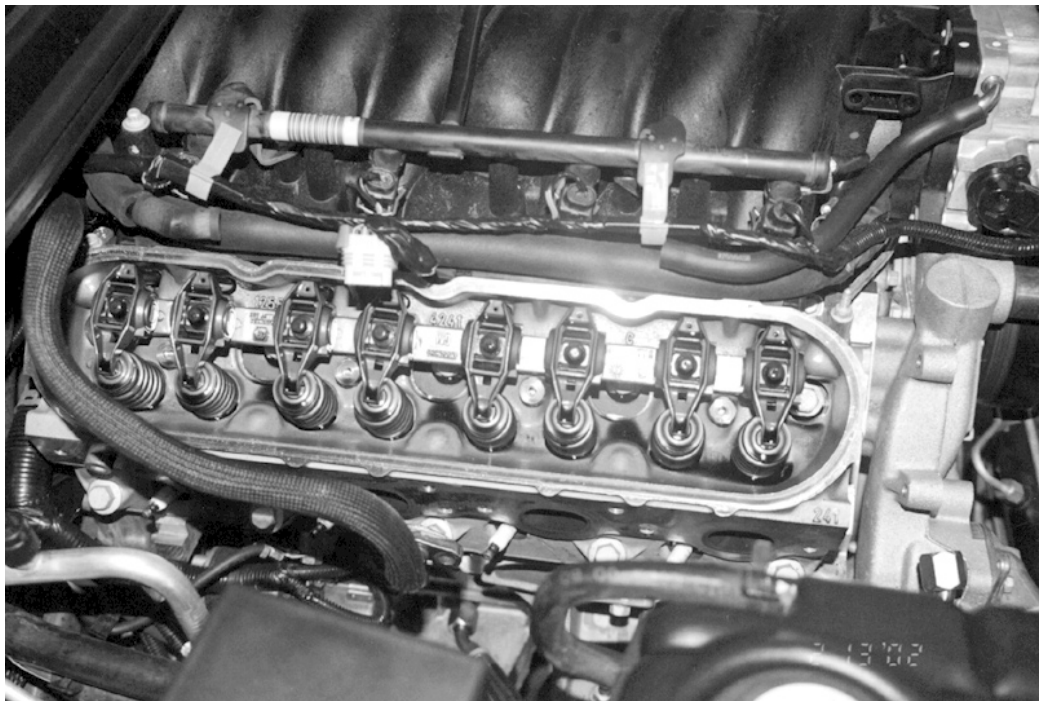
RESERVED

1.26 Disconnect Rear Breather Hose Passenger Side Valve Cover.



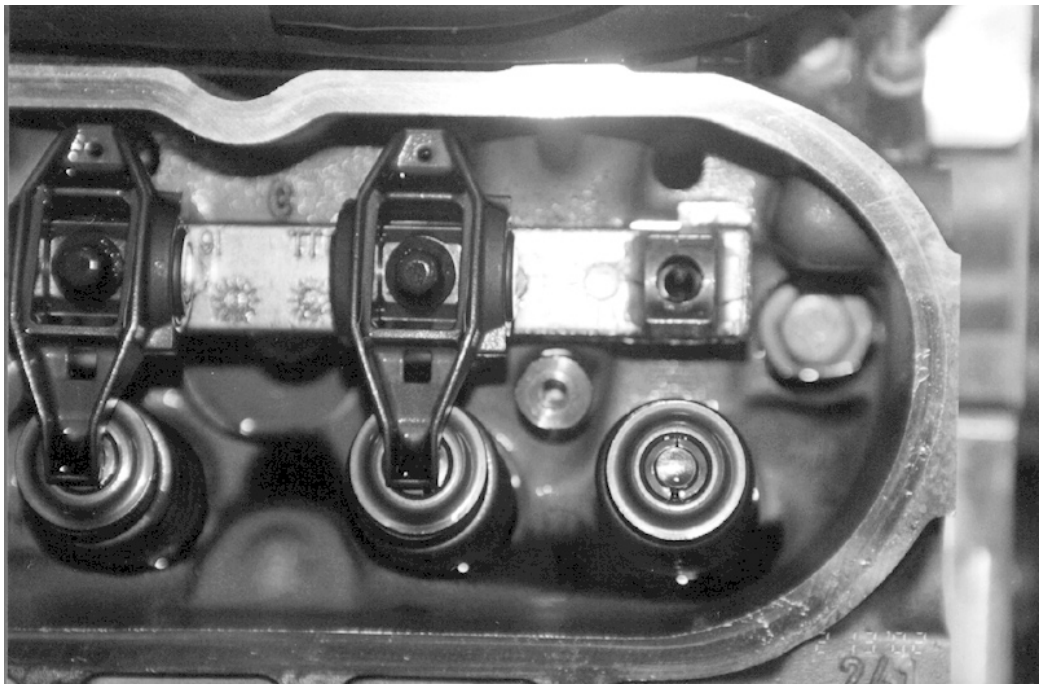
— FIGURE 1.26A —

1.27 Remove Passenger Side Valve Cover.



— FIGURE 1.26B —

1.28 Remove Rocker Arm Closest to Front of Engine. The purpose of doing this will be seen later when you install the Supercharger Bracket.



— FIGURE 1.26C —

1.29 Remove Push Rod and set aside.

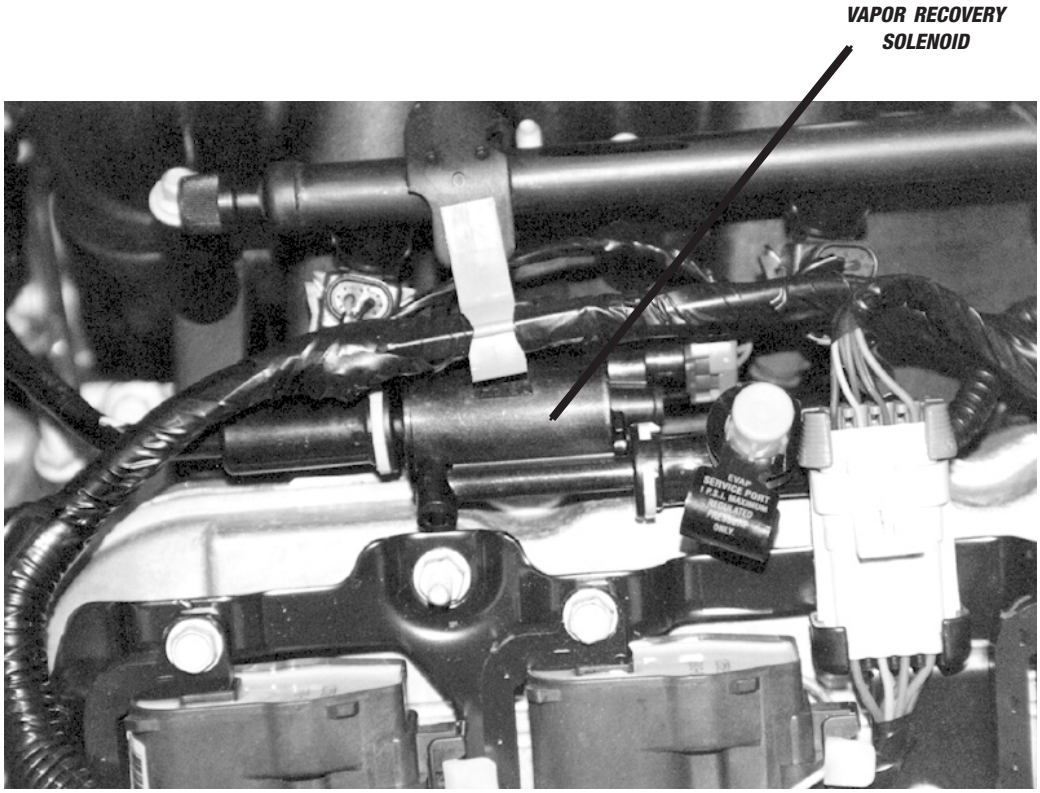
— FIGURE 1.26D —

NOTE:

IF CHANGING ENGINE VALVE SPRINGS PERFORM STEPS A–E, OTHERWISE SKIP TO STEP 1.30.

A. Disconnect Driver's Side Coil Pack and remove.

B. Remove Vapor Recovery Solenoid.



— FIGURE 1.27 —

— FIGURE 1.28 —

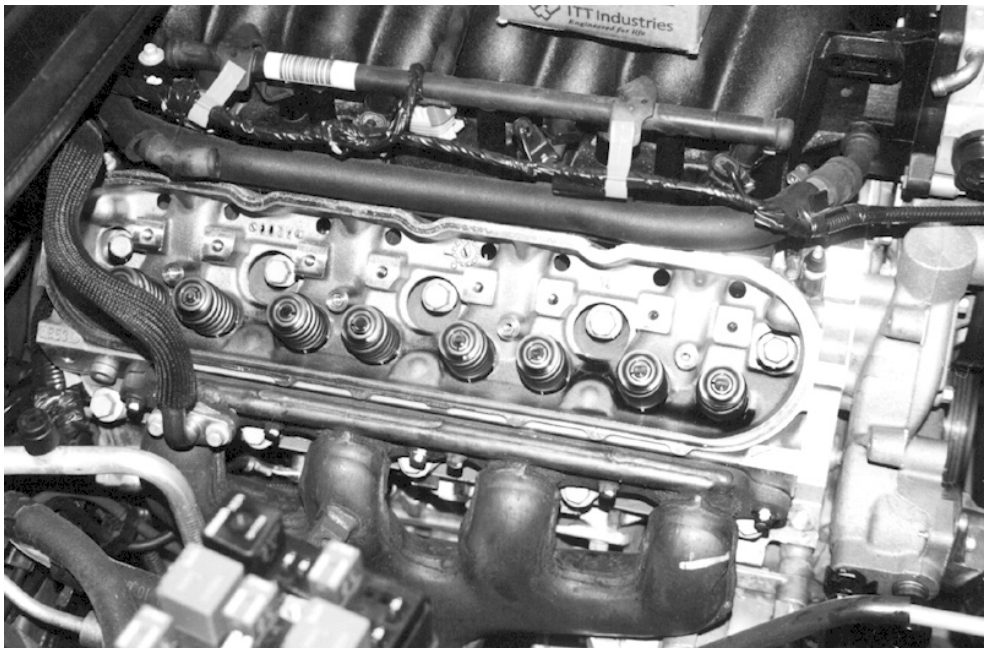
NOTE:

IF CHANGING ENGINE VALVE SPRINGS PERFORM STEPS A–E, OTHERWISE SKIP TO STEP 1.30.

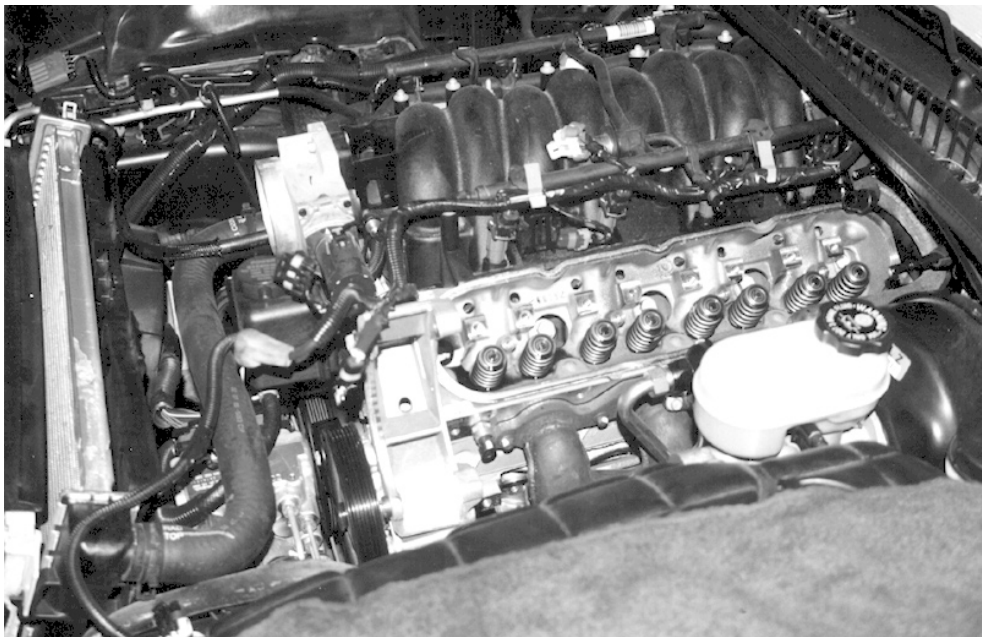
C. Remove Driver's Side Spark Plugs.

D. Remove Driver's Side Valve Head Covers.

E. Remove/Change Valve Springs. Remember to pressurize each cylinder with air prior to removing spring!



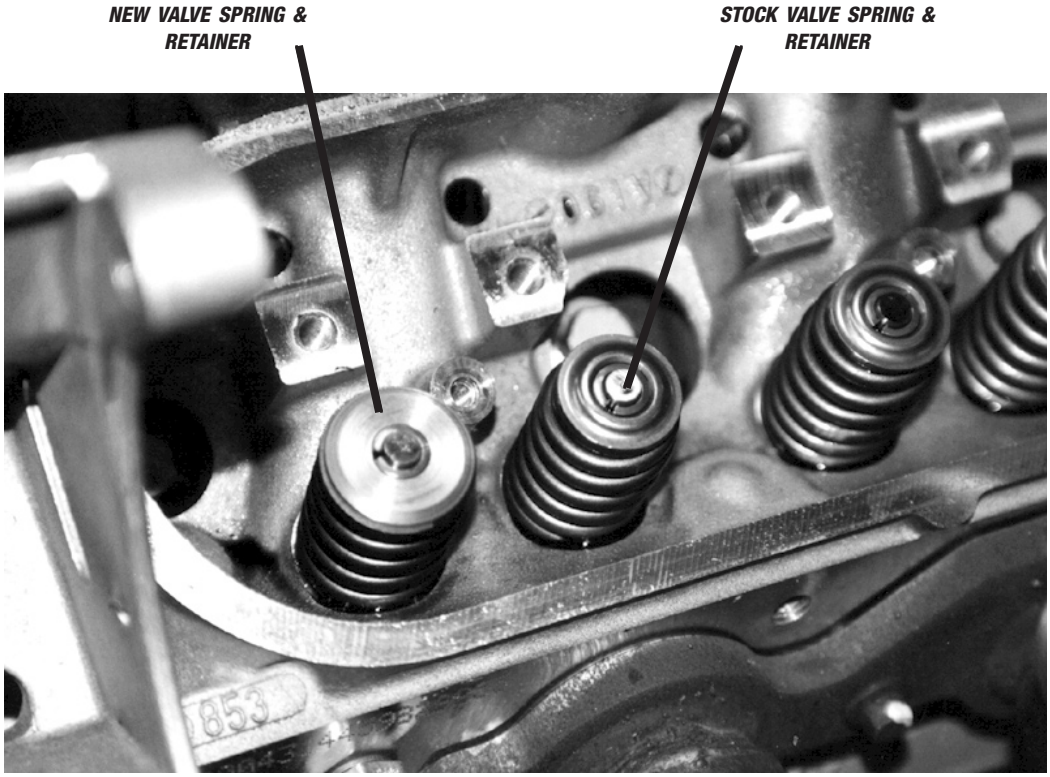
— FIGURE 1.30 —



— FIGURE 1.31 —

NOTE:

IF CHANGING ENGINE VALVE SPRINGS PERFORM STEPS A–E, OTHERWISE SKIP TO STEP 1.30.



— FIGURE 1.32 —

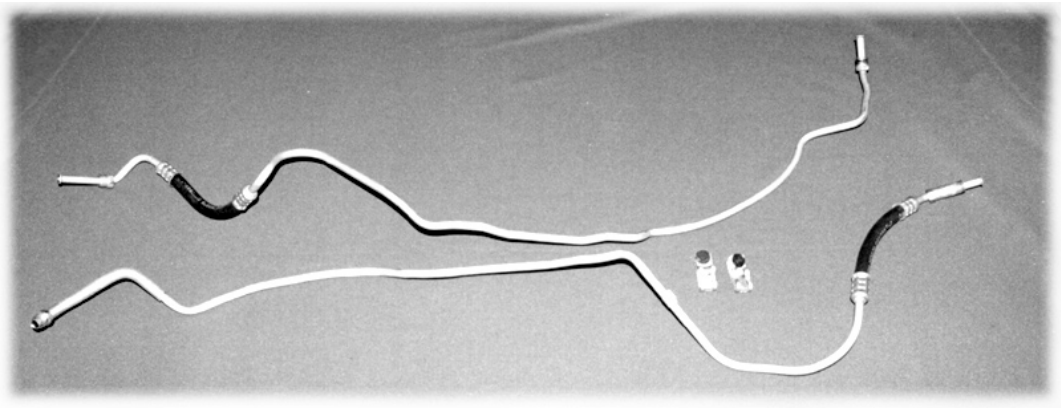
1.30 Raise Vehicle and support on 4 Jackstands.

— FIGURE 1.33 —

1.31 Remove both Front Wheels.

— FIGURE 1.34 —

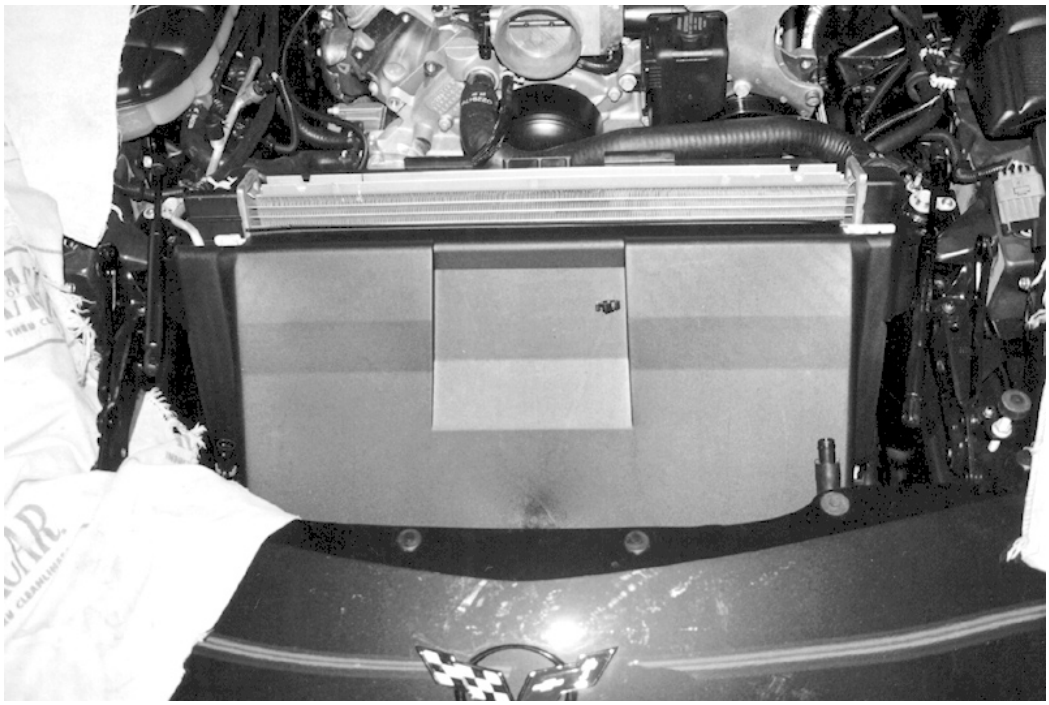
1.32 If vehicle is equipped with automatic transmission remove transmission coolant lines between radiator and transmission junction block.



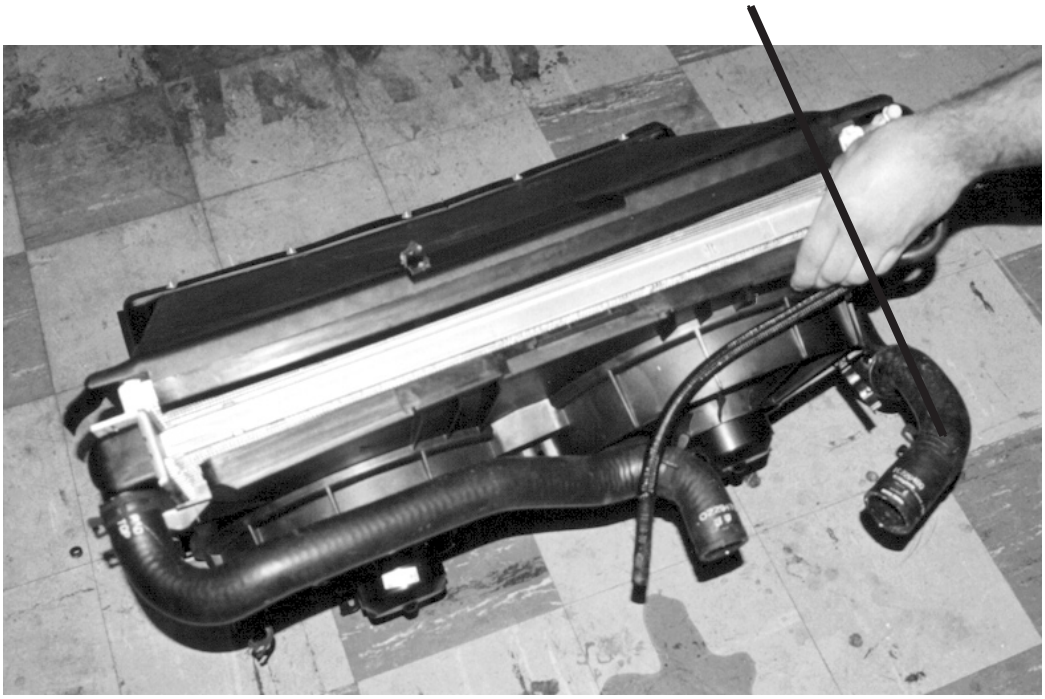
— FIGURE 1.35 —
AUTOMATIC TRANSMISSION LINES

RESERVED

1.33 Remove the Engine Radiator/Fans, the A/C Condenser, and the Shroud as an assembly.



— FIGURE 1.36 —

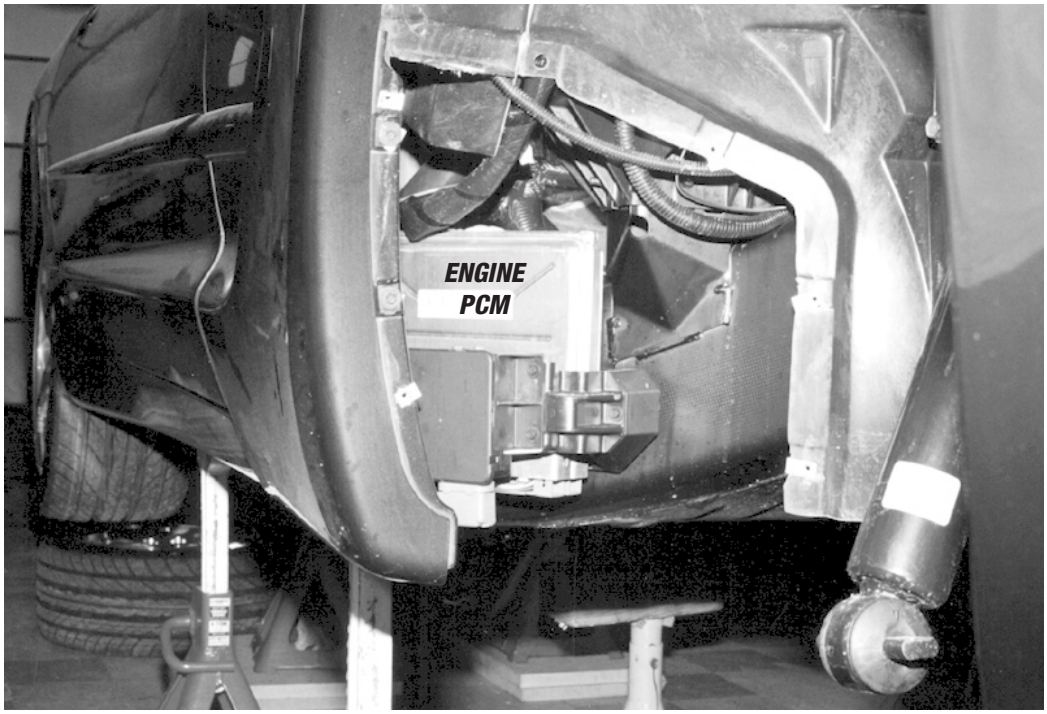


— FIGURE 1.37 —

— FIGURE 1.38 —
VIEW RADIATOR – A/C CONDENSER SHROUD ASSEMBLY AFTER REMOVAL FROM ENGINE COMPARTMENT.

1.34 Remove passenger side Inner Wheelwell Access Cover. Remove PCM (engine computer). Use enclosed certificate and ship as per instructions.

— FIGURE 1.39 —

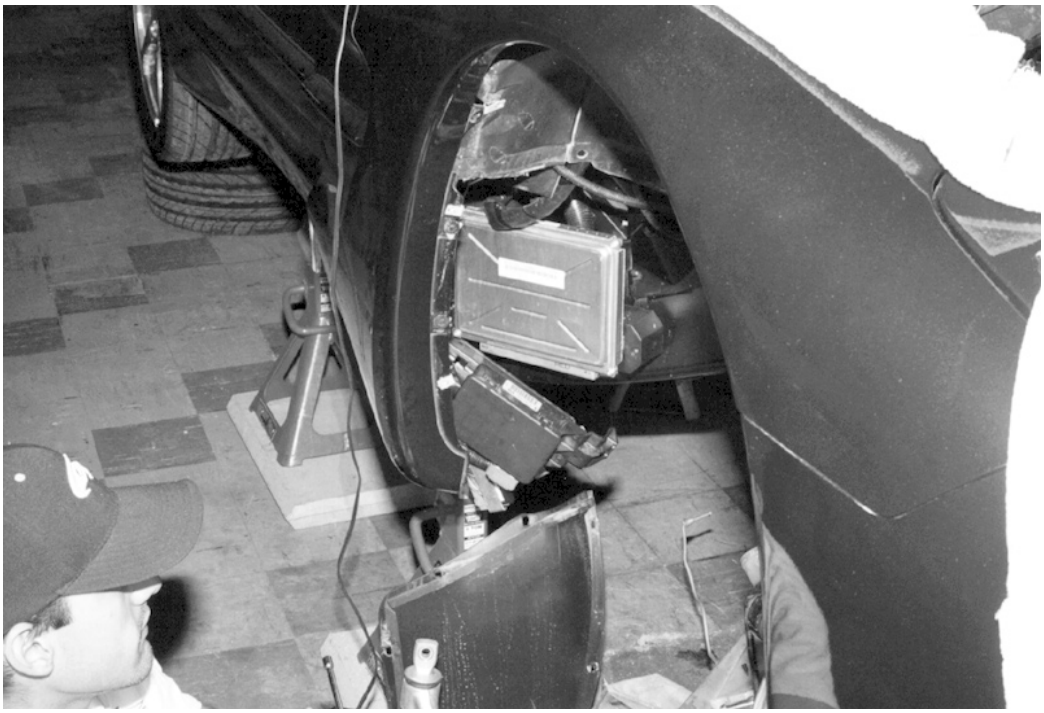


— FIGURE 1.40 —

— FIGURE 1.41 —

1.35 Remove one screw that holds fender in place. This will allow you to pull out fender and get to back screws on bracket that holds PCM.

— FIGURE 1.42 —



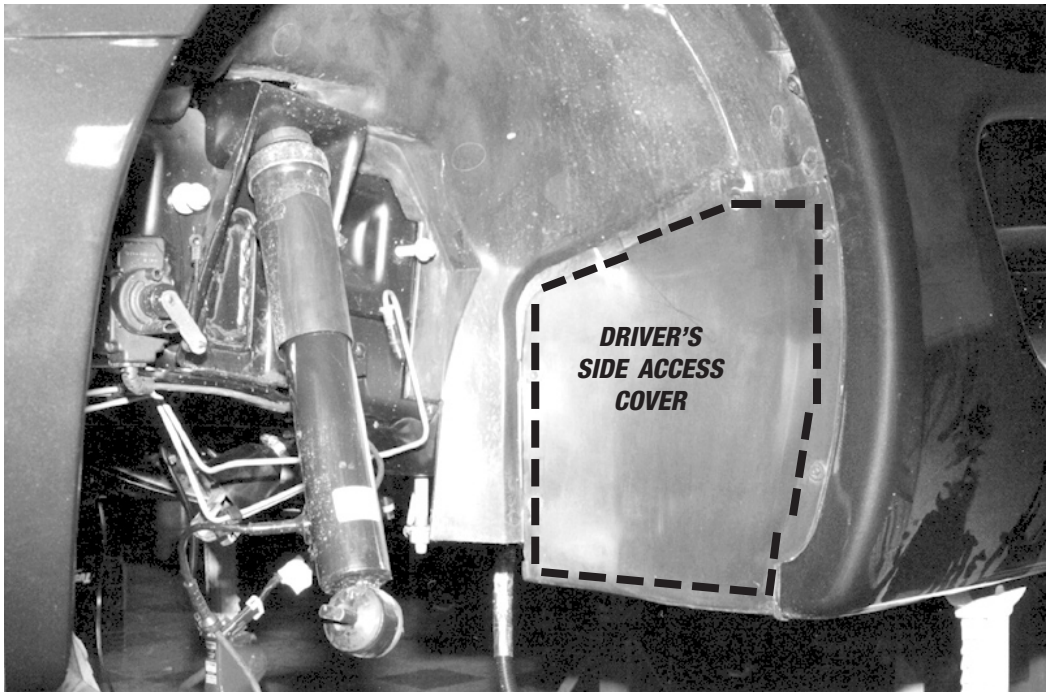
— FIGURE 1.43 —

1.36 Remove 4 screws. Unplug GM 2 harnesses from PCM. Remove 4 screws (7mm) from bracket.

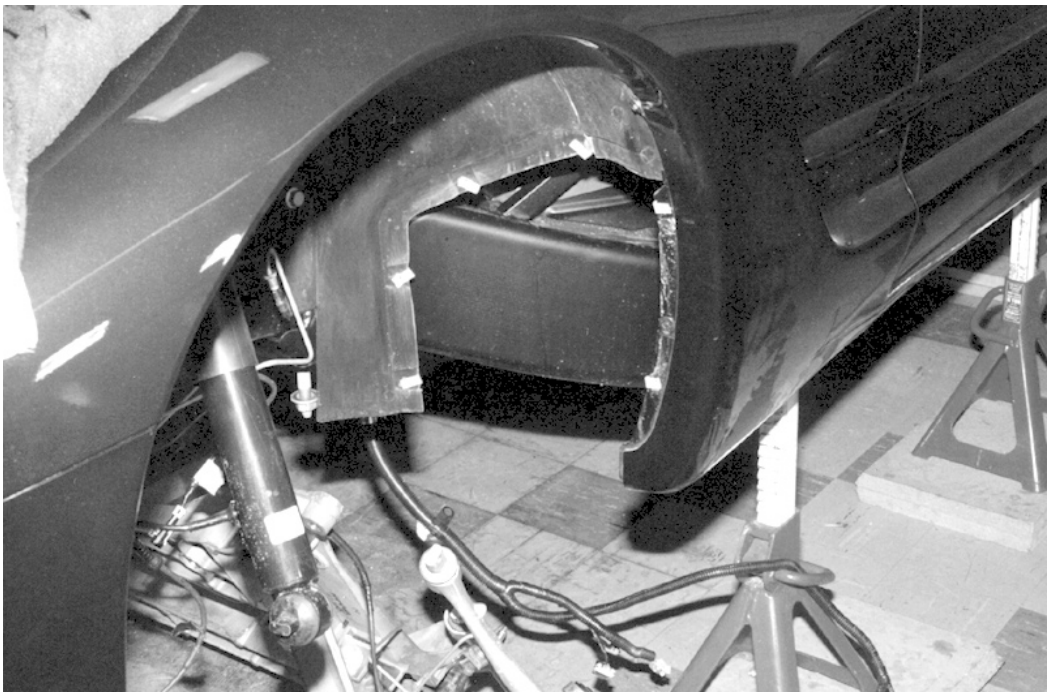
1.37 Slide out and remove computer.

— FIGURE 1.44 —

1.38 Remove driver's side inner wheelwell access cover.

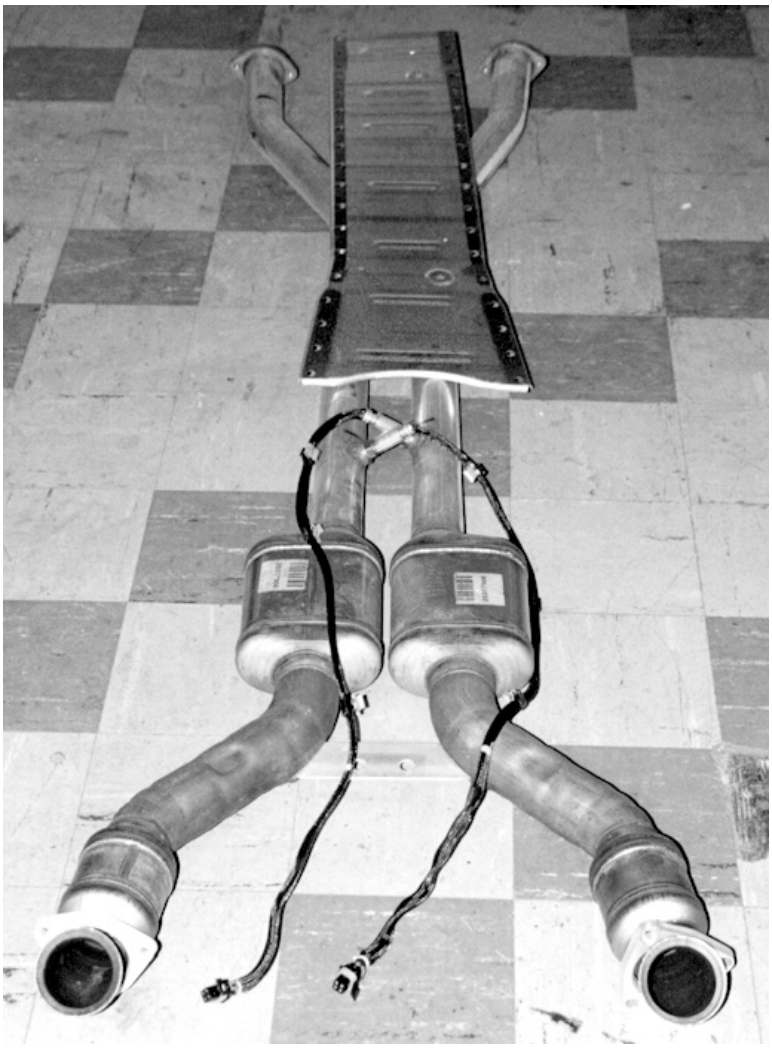


— FIGURE 1.45 —



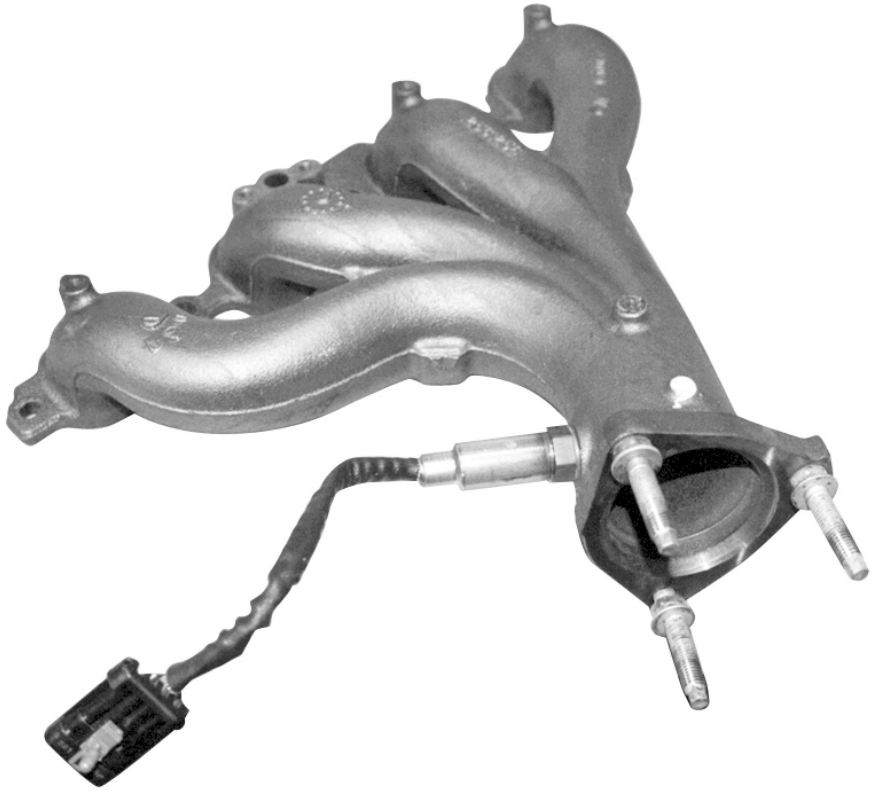
— FIGURE 1.46 —
VIEW DRIVER'S SIDE WHEELWELL AFTER REMOVING ACCESS COVER.

1.39 Remove Exhaust System from vehicle.



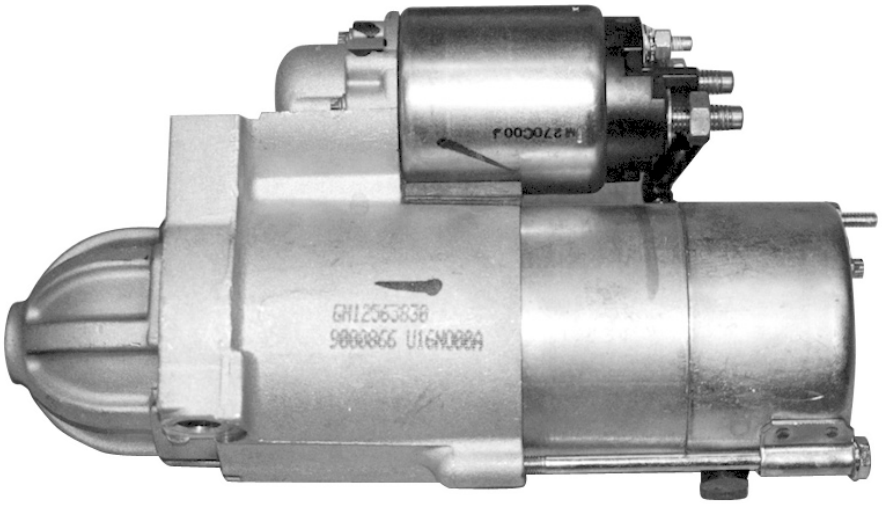
— FIGURE 1.47 —

1.40 Remove Passenger Side Exhaust Manifold with O_2 Sensor. Remove O_2 Sensor from Manifold. Set aside.



— FIGURE 1.48 —

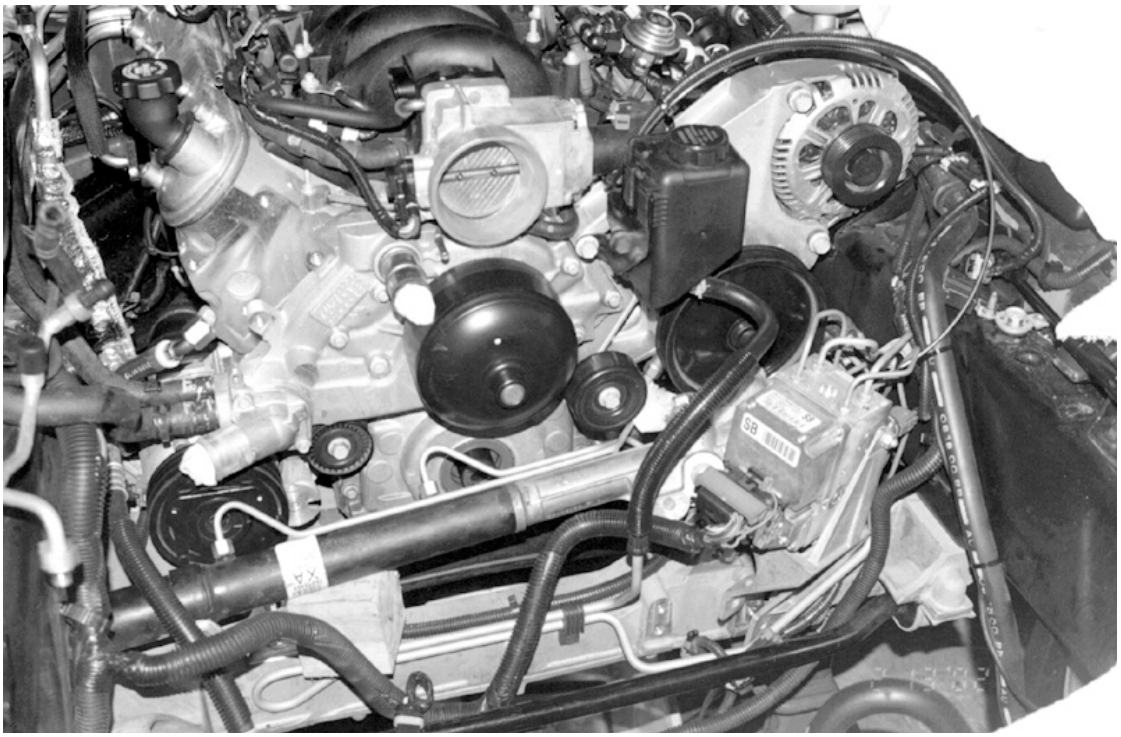
1.41 Remove Starter.



— FIGURE 1.49 —

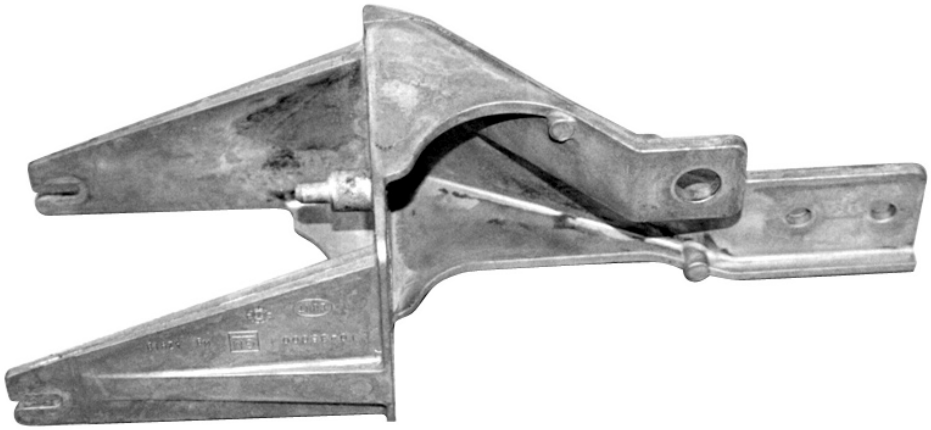
— NOTE —

IN THE NEXT COUPLE OF STEPS YOU WILL BE DIRECTED TO REMOVE THE STEERING RACK. THIS IS DONE IN ORDER TO GAIN ACCESS TO THE CRANKSHAFT PULLEY – HARMONIC BALANCER. YOU CAN SAVE SOME TIME BY SIMPLY LOOSENING THE RACK AND PUSHING IT FORWARD WITHOUT DISCONNECTING THE POWER STEERING HYDRAULIC LINES. THE FOLLOWING PHOTO SHOWS HOW THE ENGINE COMPARTMENT MIGHT LOOK SHOULD YOU CHOOSE THIS SHORT-CUT.



— FIGURE 1.50 —

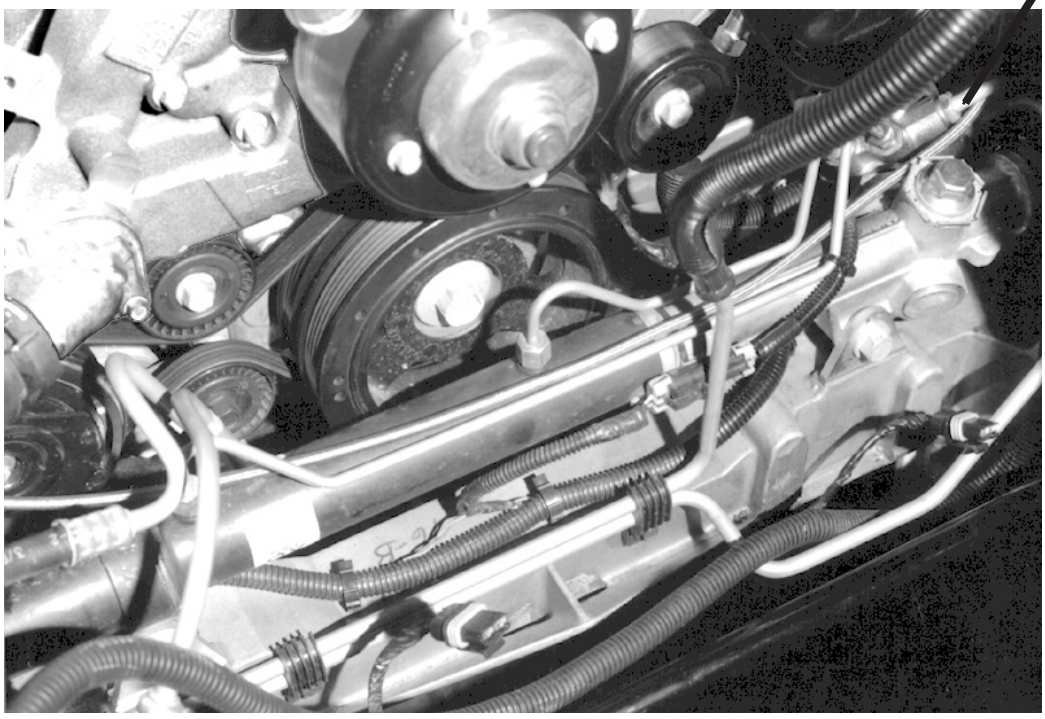
1.42 Take Off Bracket for ASR. Do not remove ASR unit itself.



— FIGURE 1.51 —
ASR BRACKET

1.43 Suction Power Steering Reservoir dry.

1.44 Disconnect the two larger oil lines (3/8") from the Power Steering rack motor.



— FIGURE 1.52 —

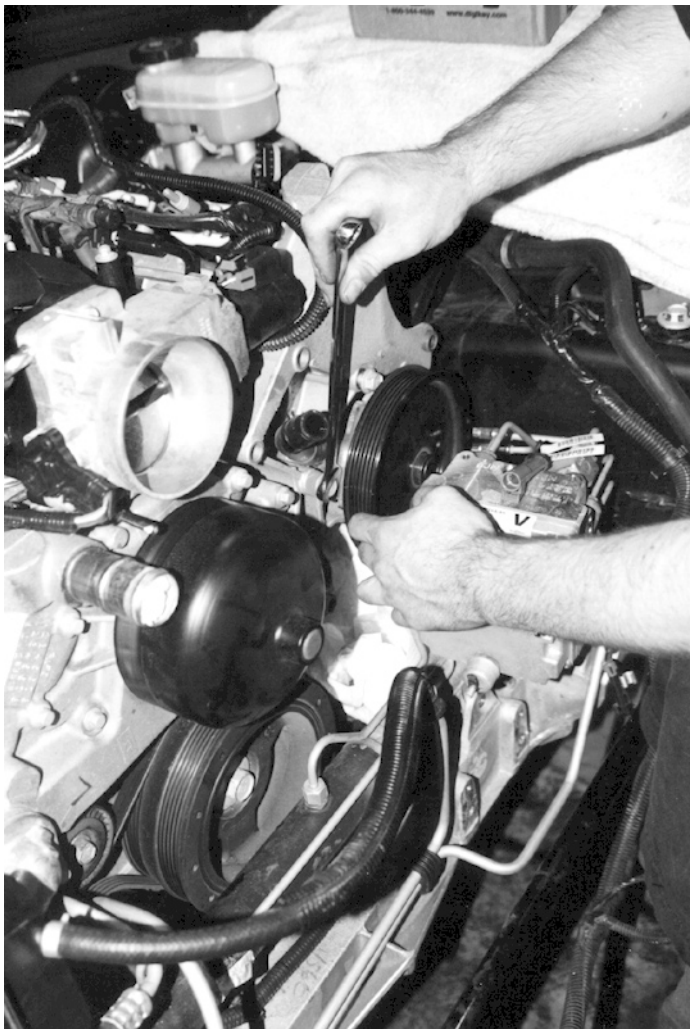
1.45 Remove the short Power Steering Line from the rack motor to the Power Steering Pump.

— FIGURE 1.53 —

1.46 Remove the power steering reservoir with hoses as shown. Have rubber caps ready to plug reservoir and tube end. If equipped with Power Steering Cooler remove it with reservoir.

— FIGURE 1.54 —

1.47 Remove Power Steering Pump and Alternator Bracket as one piece.

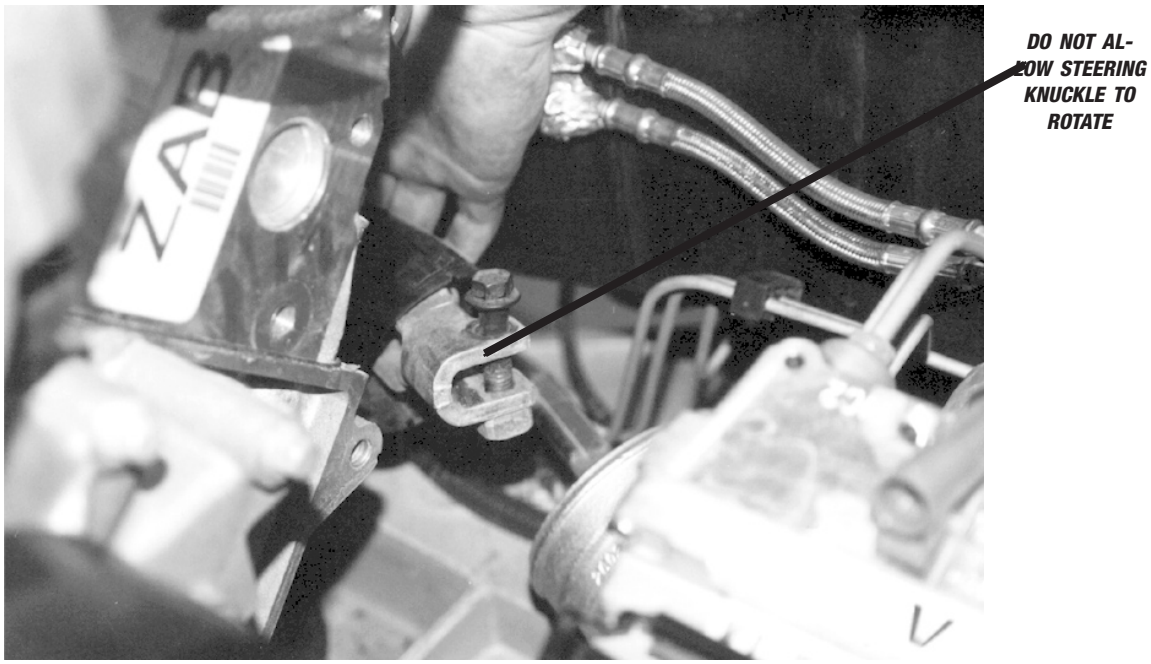


— *FIGURE 1.55* —

— *FIGURE 1.56* —

1.48 Disconnect Steering Knuckle.

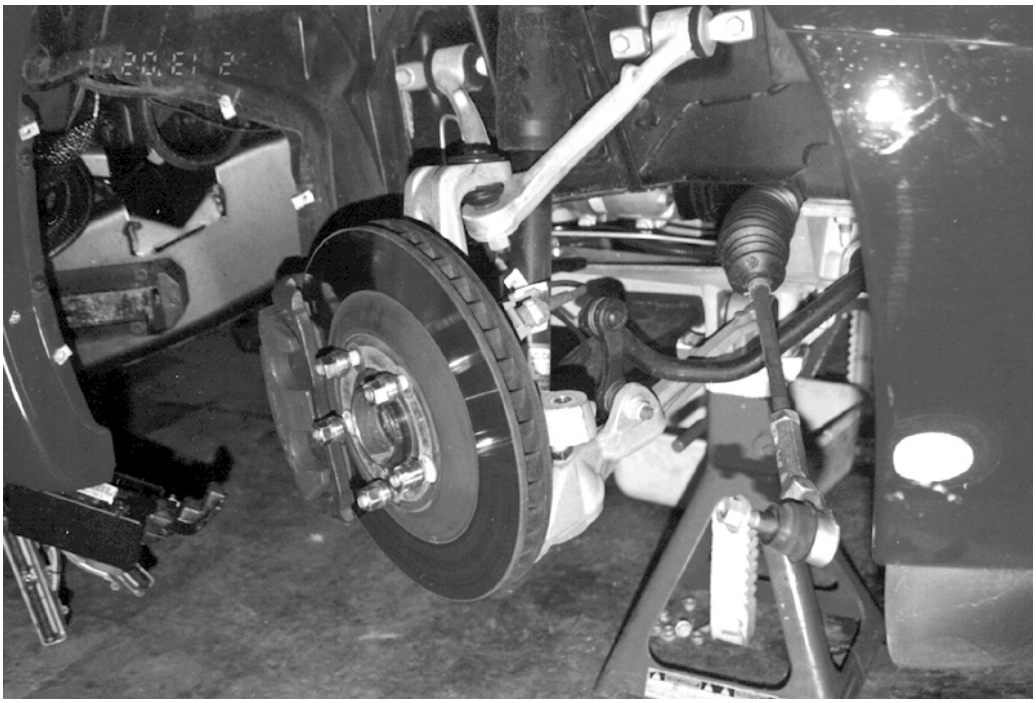
CAUTION — DO NOT ALLOW STEERING ARM TO ROTATE! YOU WILL BREAK THE TRIGGER WIRES IN THE SRS IN THE STEERING. SUGGEST YOU CLAMP OR TIE ARM TO KEEP FROM ROTATING!



— FIGURE 1.57 —

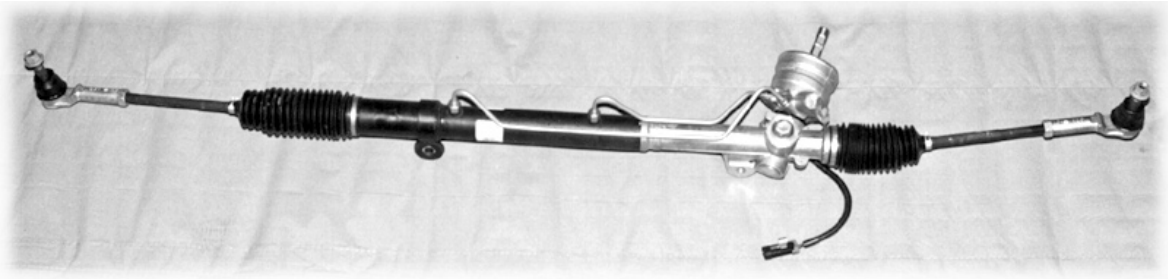
1.49 Disconnect Steering Rod Ends from each wheel. Pickle Fork not necessary and may even damage rod ends.

— FIGURE 1.58 —



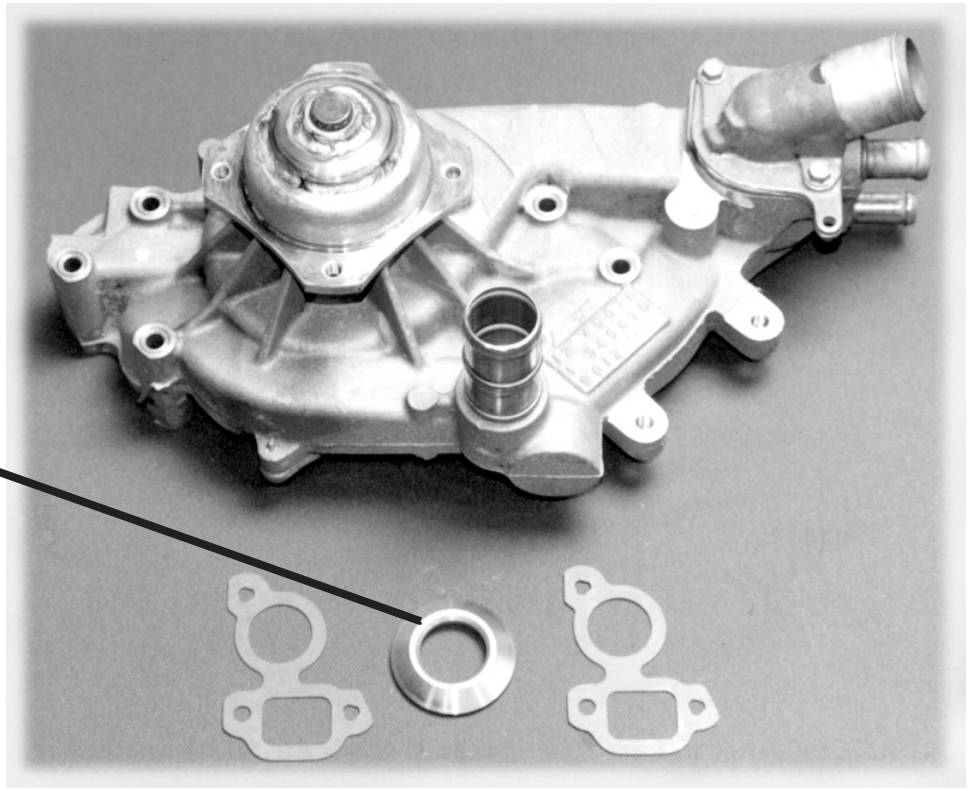
— FIGURE 1.59 —

1.50 Remove Steering Rack.

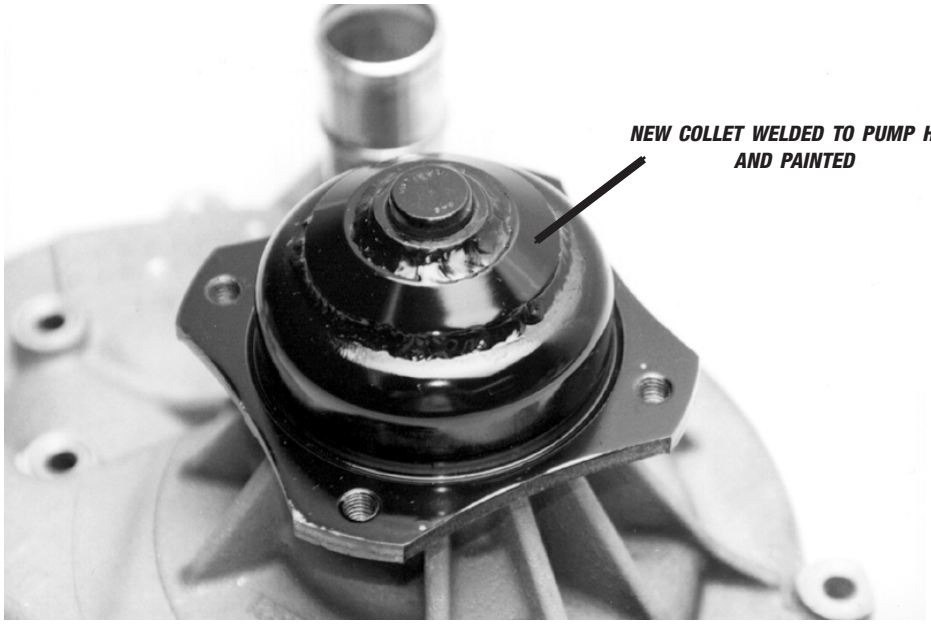


— FIGURE 1.60 —

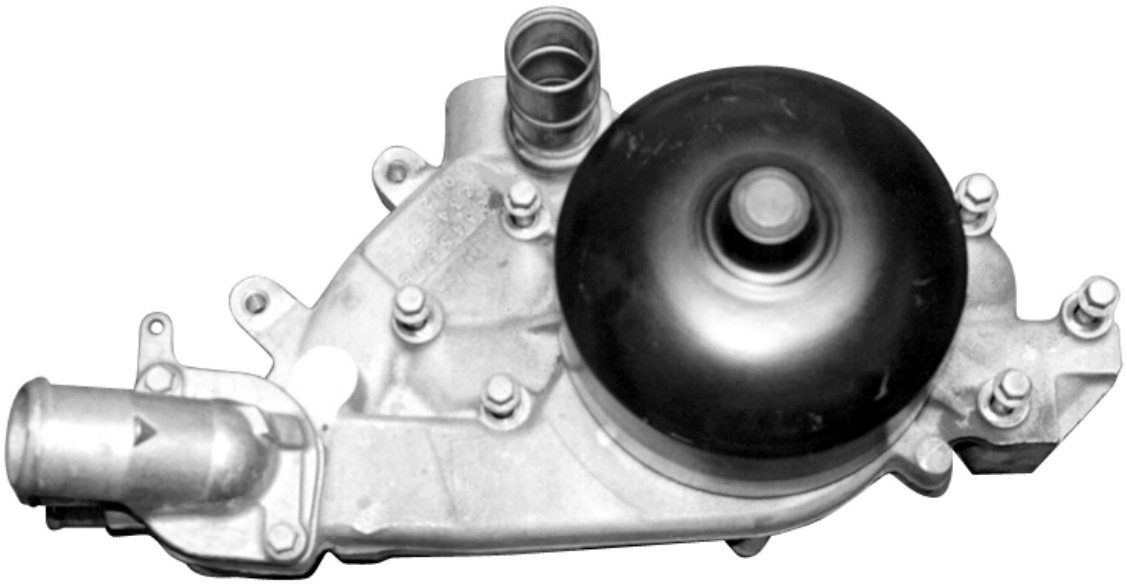
1.51 If '97/'98 vehicle with old style water pump remove and modify as shown. Be sure to place wet rags behind and around water pump seal before welding steel ring to water pump pulley. Alternately, you can replace old style pump with new one. New style water pump does not require modification. If you do be sure to use the newer water pump gasket P/N 12559271 x 2.



— FIGURE 1.61 —

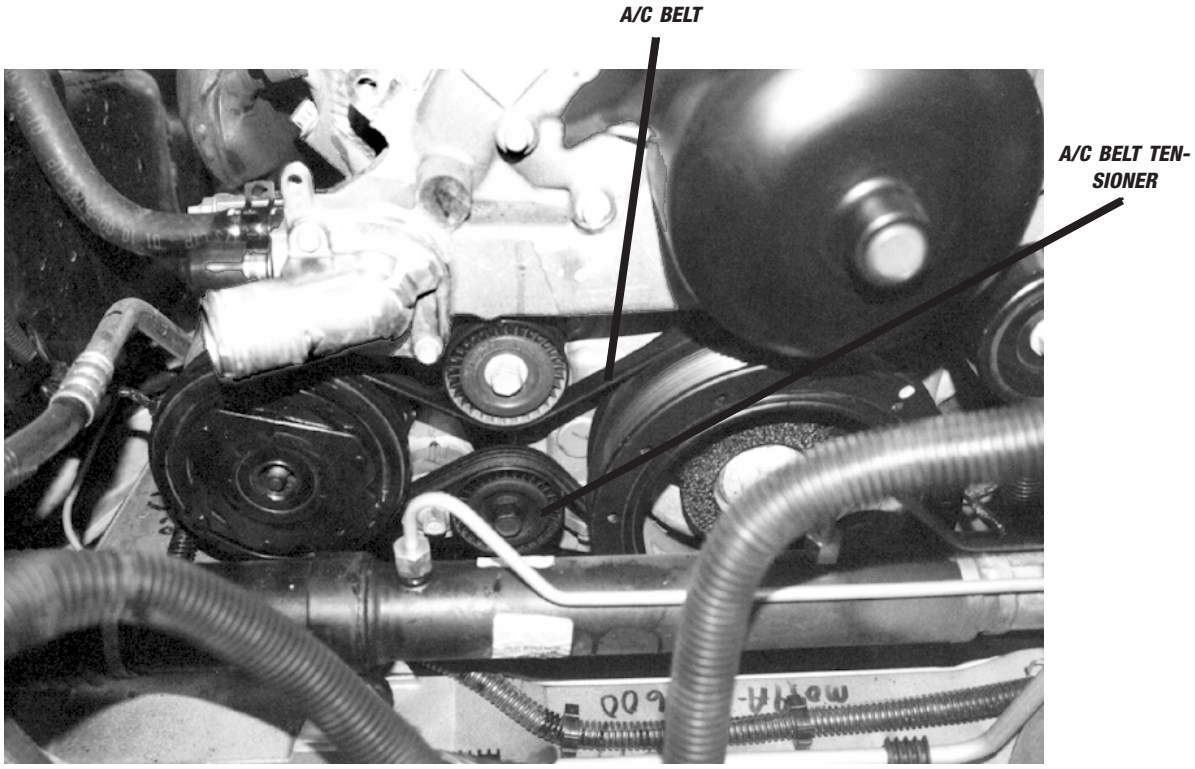


— FIGURE 1.62 —



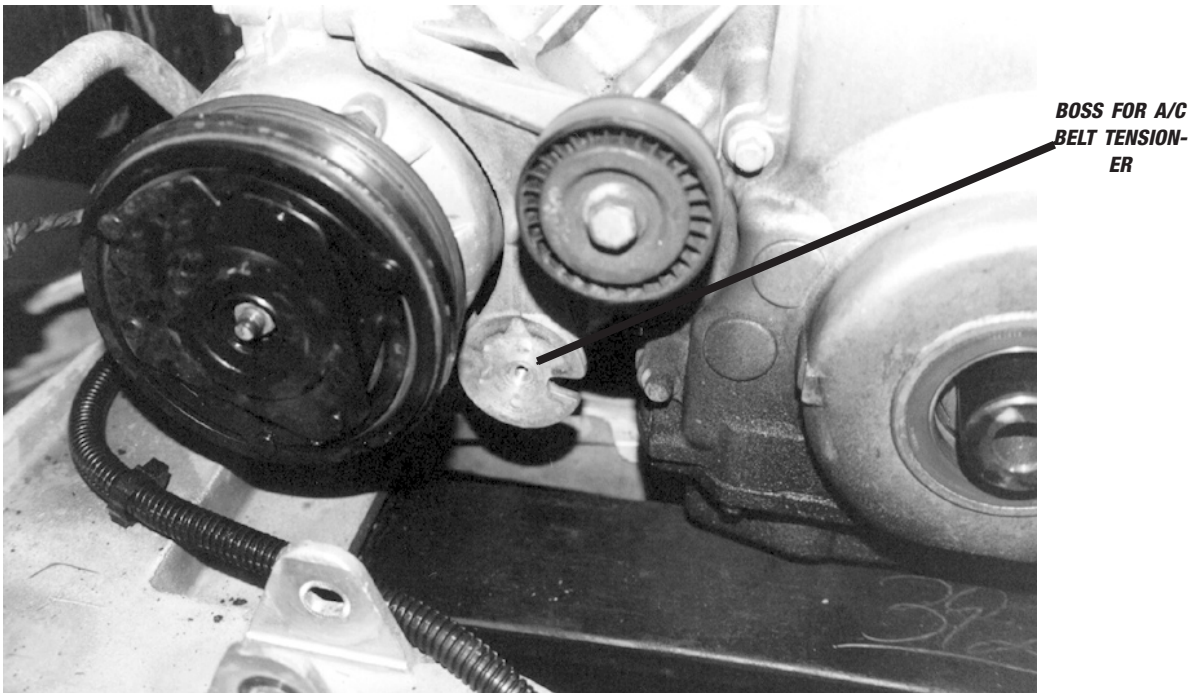
— FIGURE 1.63 —
NEW STYLE WATER PUMP

1.53 Remove A/C Belt.



— FIGURE 1.64 —

1.54 Remove A/C Belt Tensioner.



— FIGURE 1.65 —

— FIGURE 1.66 —
GM A/C BELT TENSIONER & BOLT USED TO FASTEN TO ENGINE.

— NOTES —

Section 2 • CRANKSHAFT BALANCER REMOVAL & INSTALLATION

2.1 Remove Stock Crank Pulley Balancer. Save bolt. *(See GM Instructions below).*

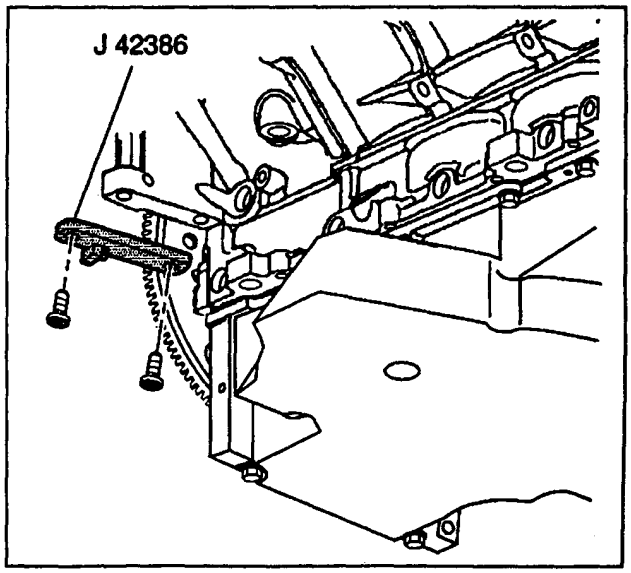
— NOTE —
SNAP-ON BLUE POINT PULLER P/N YA9740A WORKS AS WELL OR BETTER THAN THE GM TOOL.

Crankshaft Balancer Removal

Tools Required

- *J 41816* Crankshaft Balancer Remover
- *J 41816-2* Crankshaft End Protector
- *J 42386* Flywheel Holding Tool

Important: Note the position of the crankshaft balancer before removal. The balancer does not use a key or keyway for positioning. Mark or scribe the end of the crankshaft and the balancer before component removal. The crankshaft balancer must be reinstalled to the original position. If replacing the crankshaft balancer, note the location of any existing balance weights (if applicable). Install new balance weights into the new crankshaft balancer (if applicable). Crankshaft balancer weights must be installed into the new balancer in the same location as the old balancer. A properly installed balance weight will be either flush or below flush with the face of the balancer.



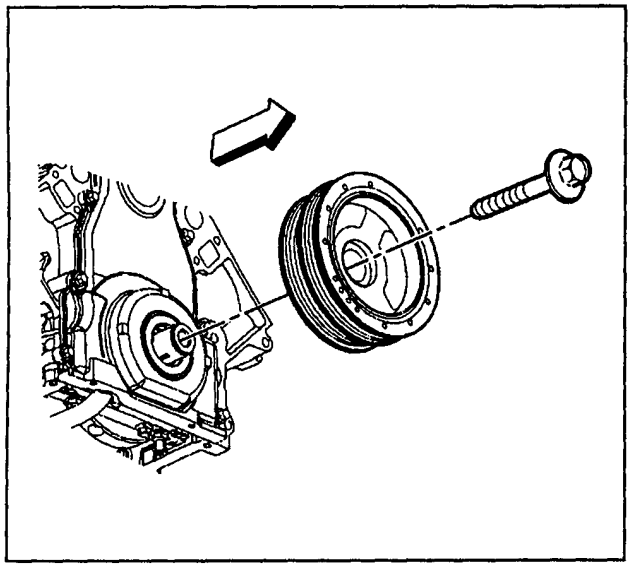
156162

Do not reuse the crankshaft balancer bolt. Install a NEW crankshaft balancer bolt during final assembly.

Important: Make sure that the teeth of the flywheel holding tool mesh with the teeth of the engine flywheel.

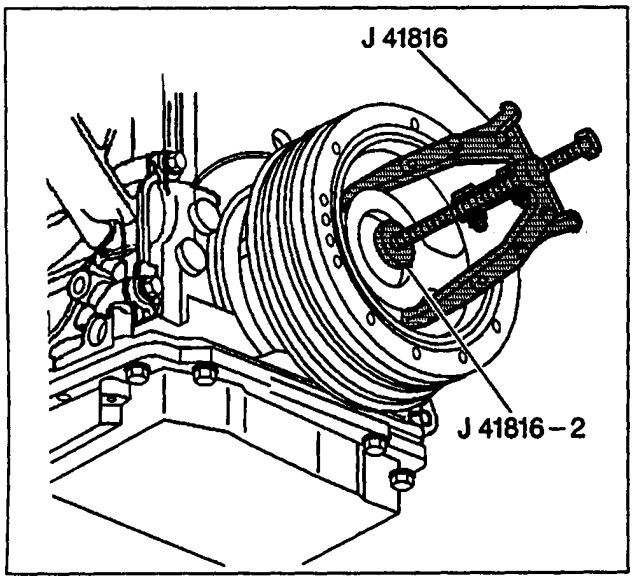
Notice: Refer to *Fastener Notice* in Cautions and Notices.

1. Install the *J 42386* and bolts.
   Tighten
   Tighten the J 42386 bolts to 50 N·m (37 lb ft).
2. Remove the crankshaft balancer bolt.
   Do not discard the crankshaft balancer bolt. The balancer bolt will be used during the balancer installation procedure.
3. Mark or scribe the crankshaft balancer and the end of the crankshaft.
   Note the balancer installed position on the crankshaft for assembly.


64275

Crankshaft Balancer Removal • Continued

4. Use the *J 41816* and the *J 41816-2* in order to remove the crankshaft balancer.
5. Remove the *J 42386* and bolts.



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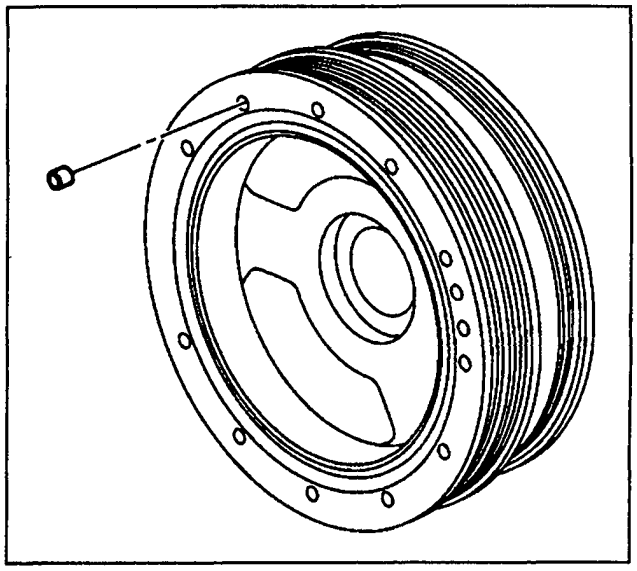
6. Note the position of crankshaft balancer weights (if applicable).



63153

Crankshaft Balancer Installation

Crankshaft Balancer Installation

Tools Required

- *J 41665* Crankshaft Balancer and Sprocket Installer
- *J 36660* Torque Angle Meter
- *J 42386* Flywheel Holding Tool

Important: Note the position of the crankshaft balancer before removal. The balancer does not use a key or keyway for positioning. Mark or scribe the end of the crankshaft and the balancer before removal. The crankshaft balancer must be reinstalled to the original position. If replacing the crankshaft balancer, note the location of any existing balance weights (if applicable). Install new balance weights into the new crankshaft balancer (if applicable). Crankshaft balancer weights must be installed into the new balancer in the same location as the old balancer. A properly installed balance weight will be either flush or below flush with the face of the balancer.

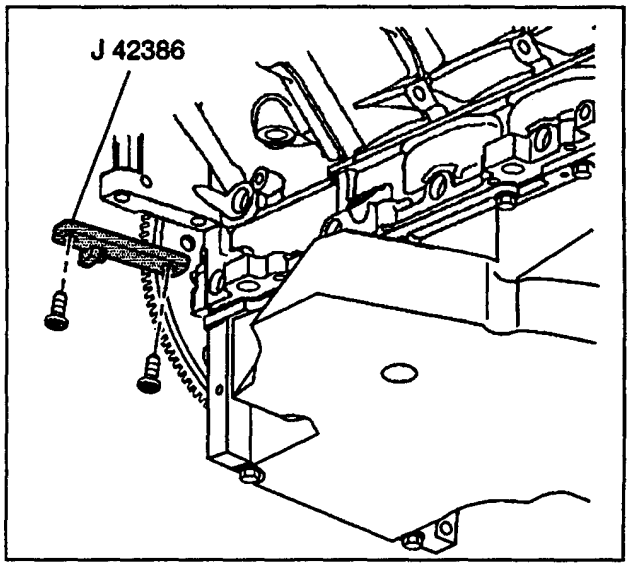
The crankshaft balancer installation and bolt tightening involves a four stage tightening process. The first pass ensures that the balancer is installed completely onto the crankshaft. The second, third and fourth passes tighten the bolt to the proper torque.

The used crankshaft balancer bolt will be used only during the first pass of the balancer installation procedure. Install a NEW crankshaft balancer bolt and tighten as described in the second, third and fourth passes of the balancer bolt tightening procedure.

Important: Make sure the teeth of the tool engage the engine flywheel teeth.

Notice: Refer to *Fastener Notice* in Cautions and Notices.

1. Install the *J 42386* and bolts.
   Tighten
   Tighten the J 42386 bolts to 50 N·m (37 lb ft).

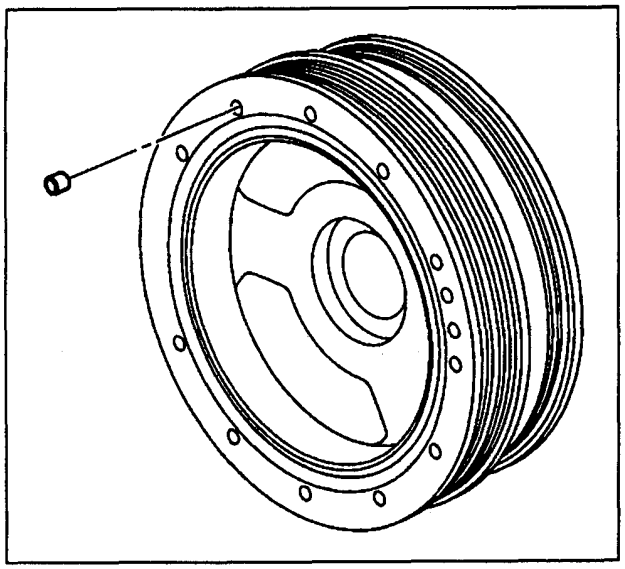


156162

Crankshaft Balancer Installation • Continued

2. Using the old balancer as a reference, mark or scribe the NEW balancer in the same location (if required).

   Install balance weights into the NEW balancer (if required).

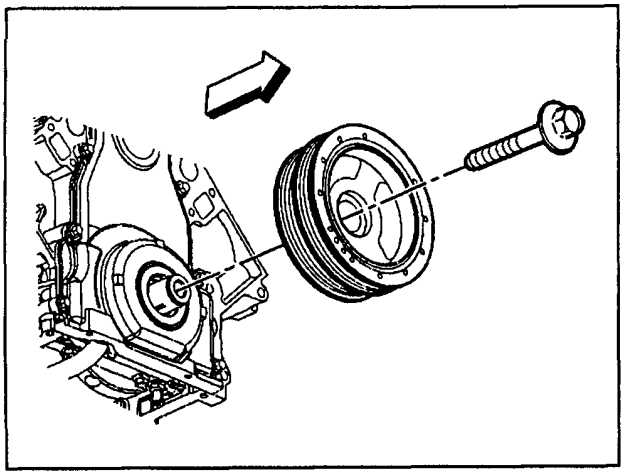


63153

Important: Align the scribe mark on the balancer with the scribe mark on the crankshaft.

The balancer should be positioned onto the end of the crankshaft as straight as possible prior to tool installation.

3. Install the balancer onto the end of the crankshaft.

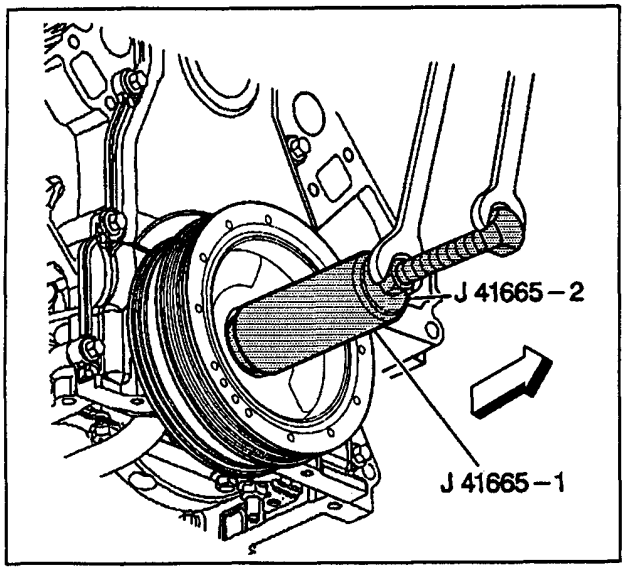


64275

4. Use the *J 41665* in order to install the balancer.
   - 4.1. Assemble the threaded rod, nut, washer and installer.

     Insert the smaller end of the installer into the front of the balancer.
   - 4.2. Use a wrench and hold the hex end of the threaded rod.
   - 4.3. Use a second wrench and rotate the installation tool nut clockwise until the balancer is started onto crankshaft.
   - 4.4. Remove the tool and reverse the installation tool.

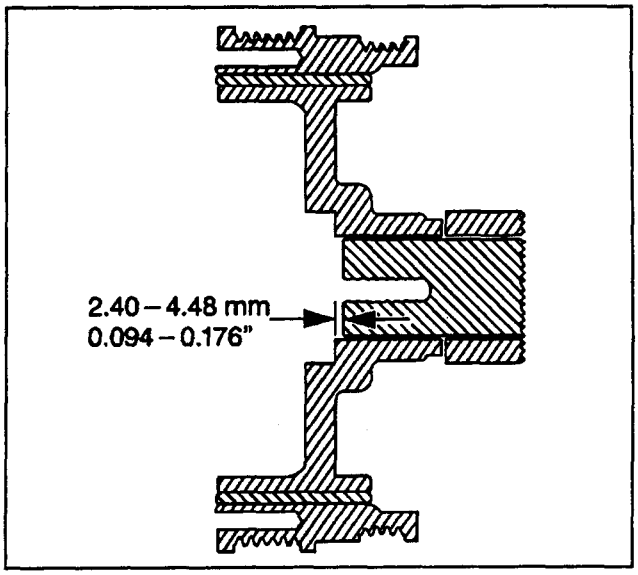
     Position the larger end of the installer against the front of the balancer.
   - 4.5. Use a wrench and hold the hex end of the threaded rod.
   - 4.6. Use a second wrench and rotate the installation tool nut clockwise until the balancer is installed onto the crankshaft.
   - 4.7. Remove the balancer installation tool.



63187

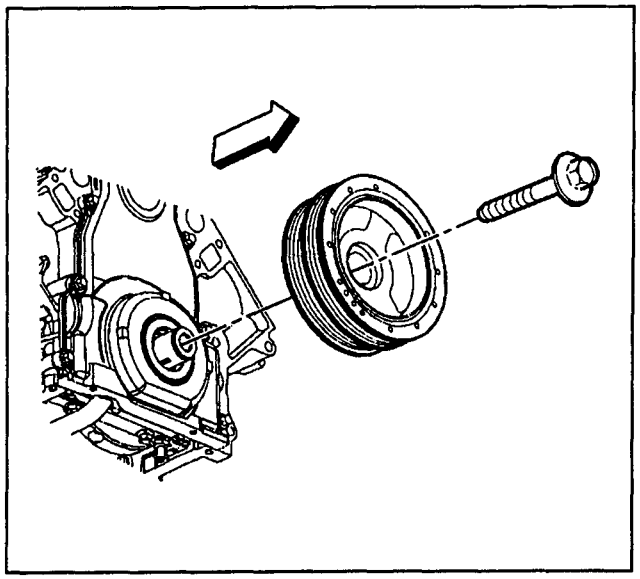
Crankshaft Balancer Installation • Continued

5. Install the used crankshaft balancer bolt.
   Tighten
   Tighten the crankshaft balancer bolt to 330 N·m (240 lb ft).
6. Remove the used crankshaft balancer bolt.
   Important: The nose of the crankshaft should be recessed 2.40-4.48 mm (0.094-0.176 in) in the balancer bore.
7. Measure for a correctly installed balancer.
   If the balancer is not installed to the proper dimensions, install the *J 41665* and repeat the installation procedure.

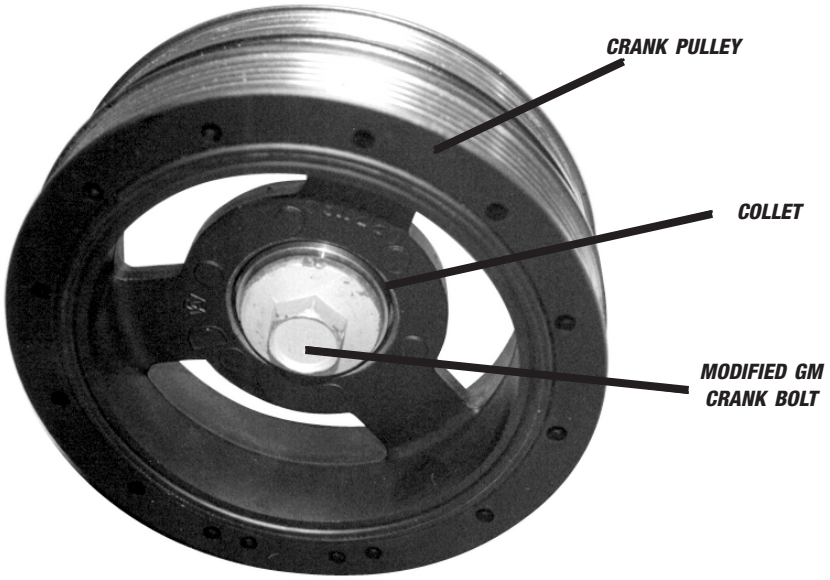


63245

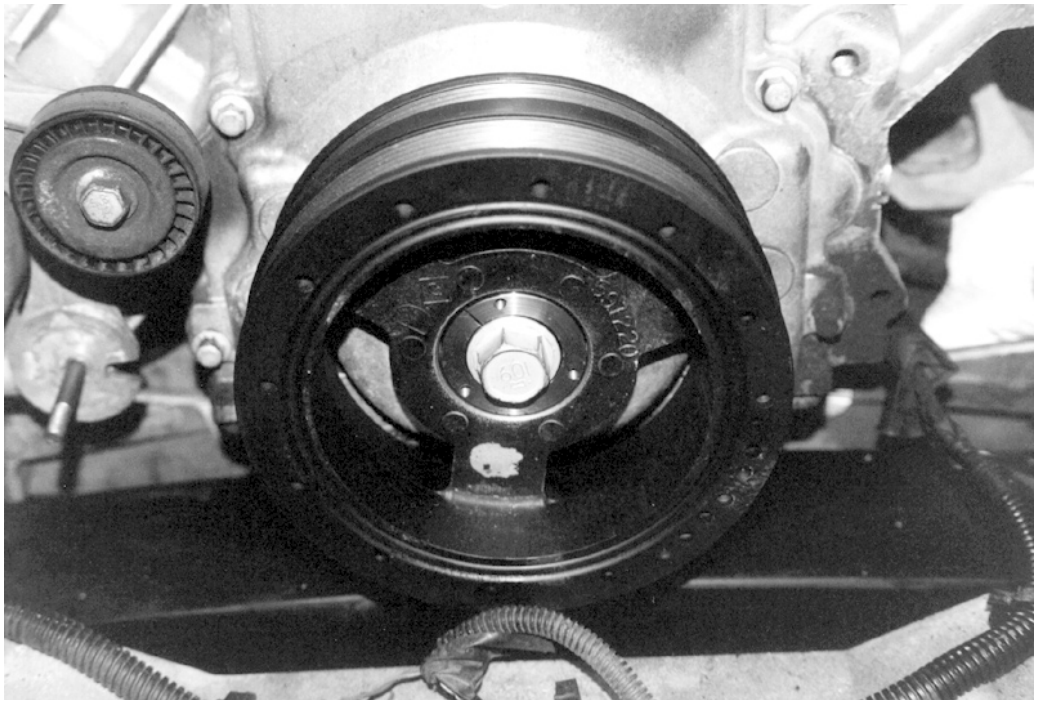
8. Install the NEW crankshaft balancer bolt.
   Tighten
   8.1. Tighten the crankshaft balancer bolt a first pass to 50 N·m (37 lb ft).
   8.2. Tighten the crankshaft balancer bolt a second pass to 120 degrees using the *J 36660*.
9. Remove the *J 42386*.


64275

2.2 Apply Red Loctite #27140 (High Strength) to inside of new modified Crank Pulley/Balancer Assembly. Using the ***old*** Crank Pulley Bolt and the supplied steel washer install the new Crank/Pulley Balancer to specified GM torque. Remove old Crank Pulley Bolt. Apply same Loctite to new Crank Pulley Bolt. Insert new Steel Collet into Crank/ Pulley Balancer. Install new bolt and torque to 400 ft/lbs. If you do not have a torque wrench that measures this high use a large 3/4" breaker bar with a 4 or 5 foot pipe handle extension and pull really ***HARD!***



— FIGURE 2.1 —



— FIGURE 2.2 —

— FIGURE 2.3 —
MODIFIED GM CRANK PULLEY ASSEMBLY

— FIGURE 2.4 —
TAPERED COLLET

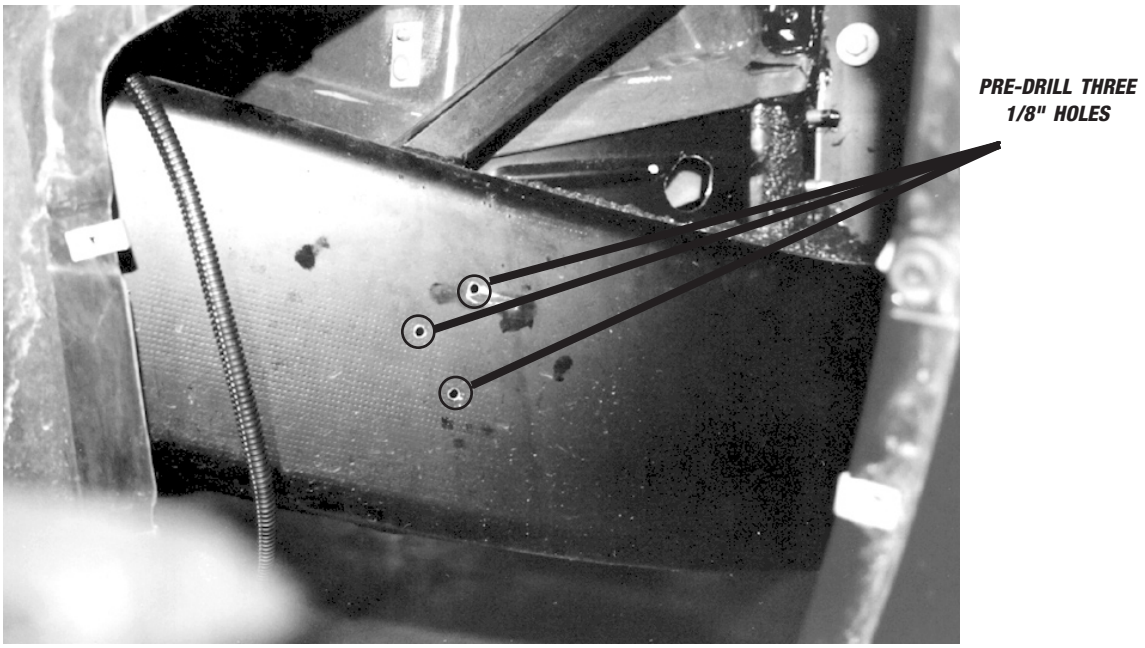
— FIGURE 2.5 —
SUPPLIED STEEL WASHER "TOOL" USED TO INSTALL GM HARMONIC BALANCER/CRANK PULLEY

— NOTES —

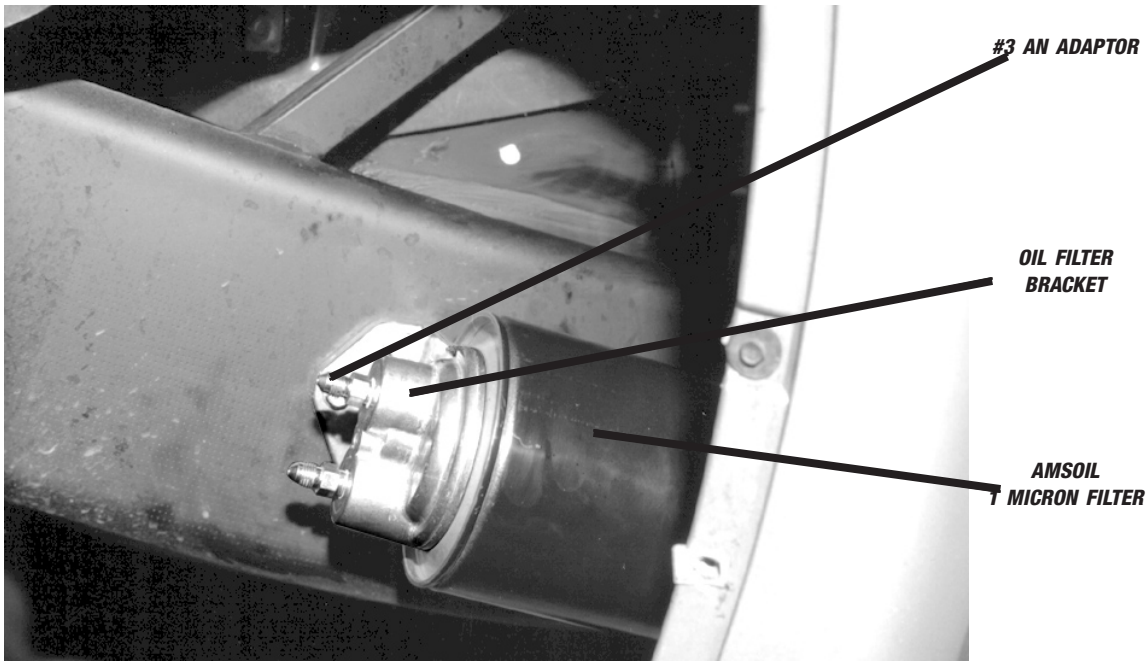
Section 3 • SUPERCHARGER OIL SUPPLY & DRAINBACK

3.1 Mount new Oil Filter Bracket. Pre-drill frame member for TEK screws.

3.2 Fill Amsoil 1 Micron Oil Filter with engine oil and install.

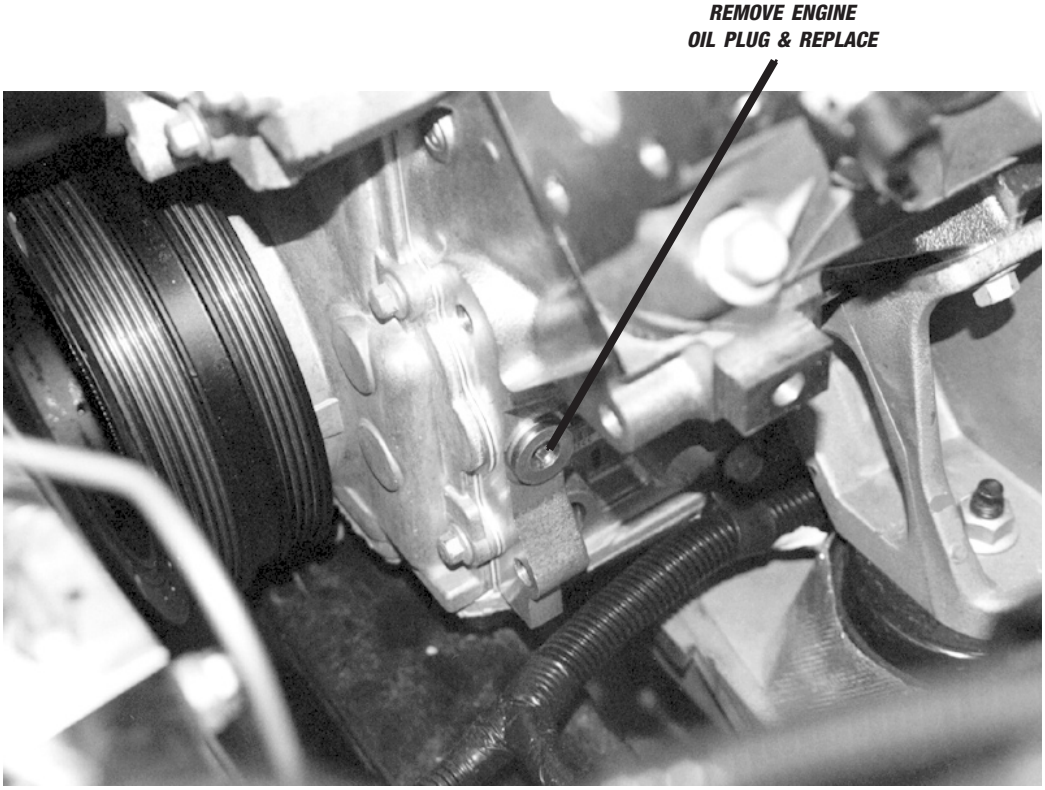


— FIGURE 3.1 —
DRIVER'S SIDE CAVITY BEHIND ACCESS COVER



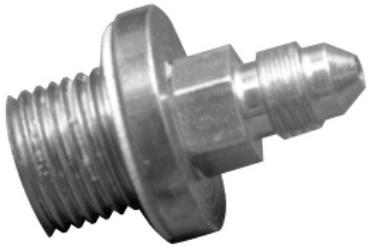
— FIGURE 3.2 —

3.3 Remove Engine Oil Supply Plug – Driver's Side Front bottom of Engine.

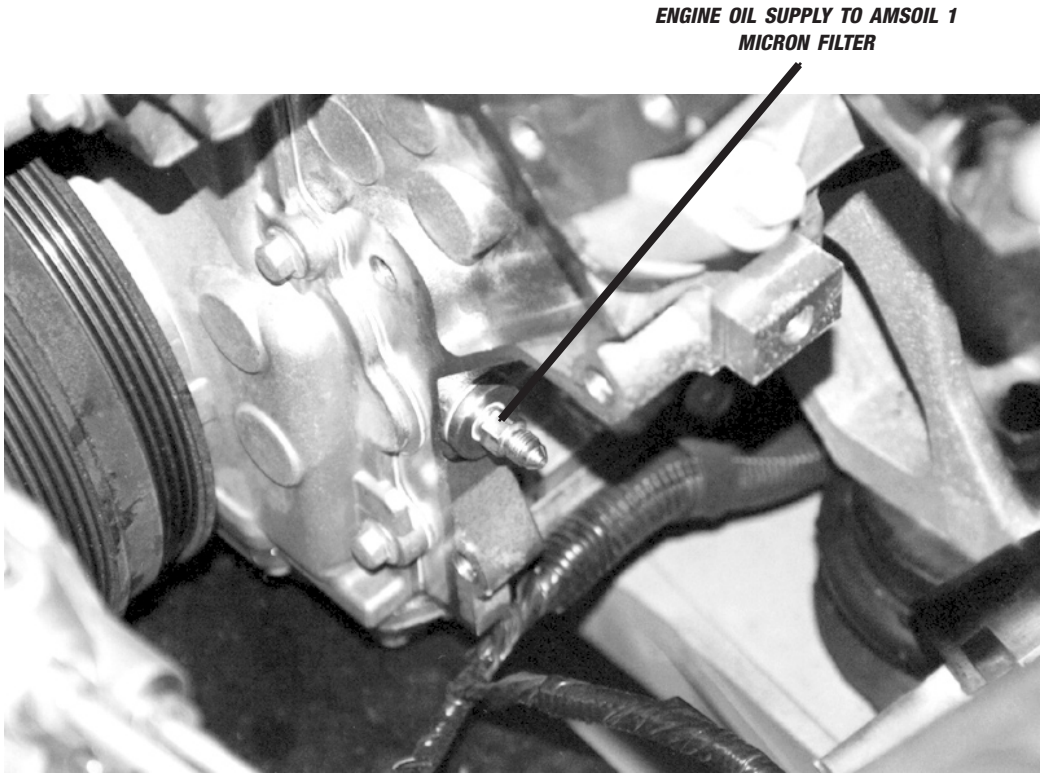


— FIGURE 3.3 —

3.4 Install new Oil Supply Plug with #3 AN Flair Adaptor.



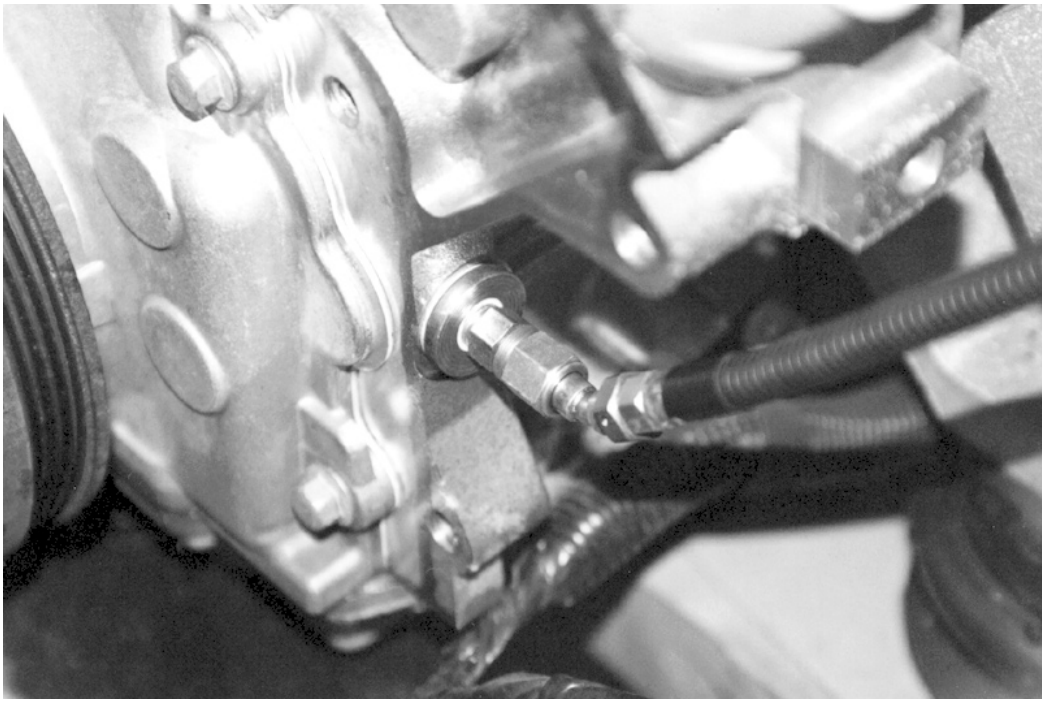
— FIGURE 3.4 —
MODIFIED GM OIL PLUG WITH #3 AN ADAPTOR



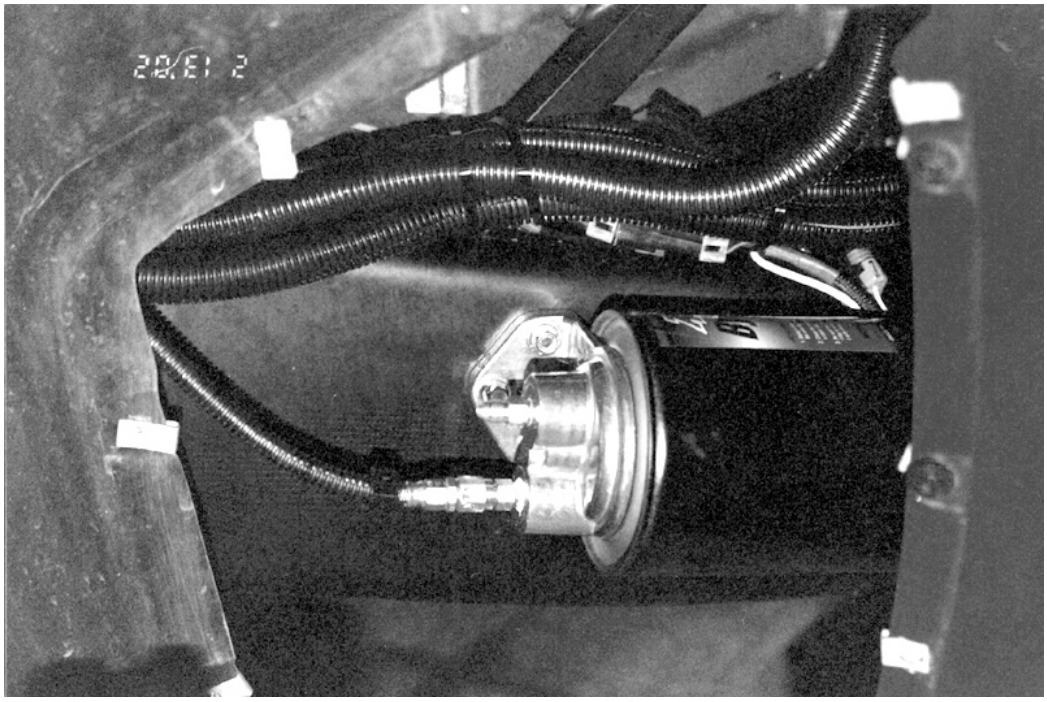
— FIGURE 3.5 —

3.5 Install Engine to Supercharger Oil Filter Line from #3 Oil Supply Adaptor to the Amsoil Filter shown below.

NOTE: BE SURE TO ATTACH OIL SUPPLY LINE TO "FILTER IN" AS SHOWN.

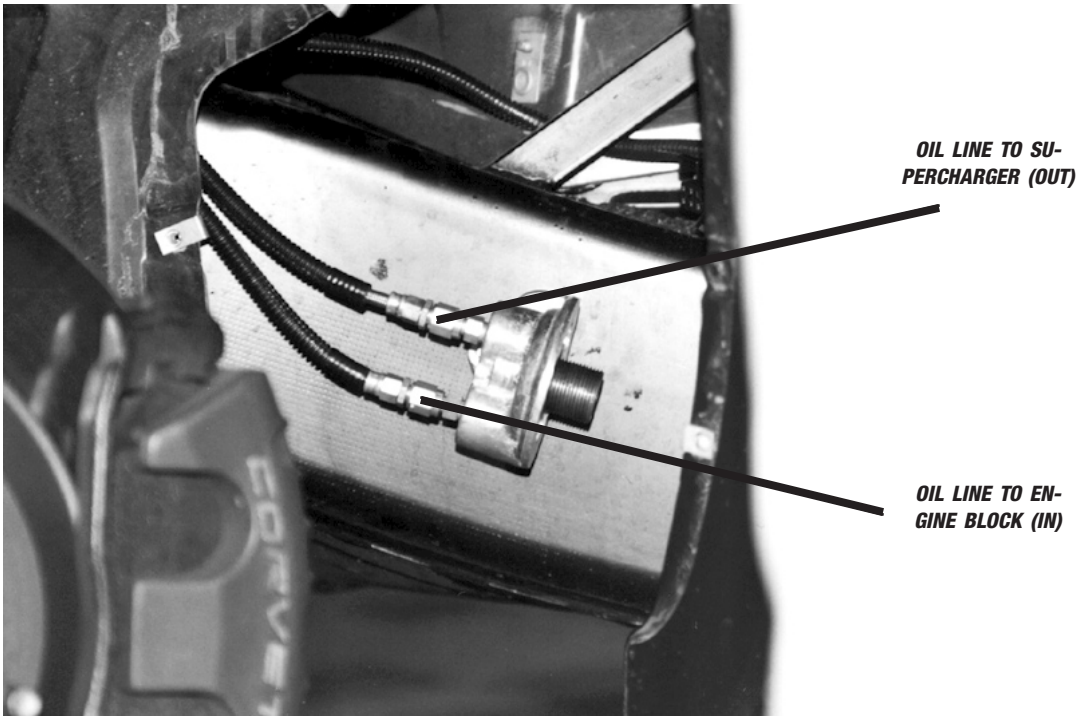


— FIGURE 3.6 —



— FIGURE 3.7 —

3.6 Connect supercharger oil supply line to “OUT FITTING” on Amsoil filter bracket. Line will be routed along steering rack after reinstalling.



— FIGURE 3.8 —

OIL PAN DRILLING & TAPPING

— NOTE —

SUPERCHARGING SYSTEMS SHIPPED FROM MARCH 1st, 2002 & FORWARD UTILIZE 3/8" PIPE THREAD BEADED HOSE FITTINGS ON THE BLOWER & THE OIL PAN. PHOTOS & INSTRUCTIONS REMAIN THE SAME EXCEPT FOR TAPPING THE OIL PAN FOR 3/8" NPT VERSUS 1/4" NPT. THE REASON FOR THE CHANGE IS EASE OF INSTALLATION & REMOVAL. PULLING THE OIL DRAIN LINE OFF OF A BEADED HOSE FITTING IN THE OIL PAN IS SAFER THAN USING A WRENCH ON THE AN FITTING. IT IS TOO EASY TO STRIP THE OIL PAN WITH THE AN FITTING & A WRENCH.

NOTE: USE GREAT CAUTION INSTALLING FITTING. OIL PAN WALL IS THIN!

3.7 Drill & Tap Oil Pan for 1/4" NPT fitting. Use grease to hold filings to drill and tap. Position is critical. DO NOT DEVIATE FROM PHOTO!

NOTE: 2000 AND NEWER VEHICLES HAVE DIFFERENT OIL PAN. HOWEVER DRAIN BACK FITTING GOES IN SAME LOCATION.

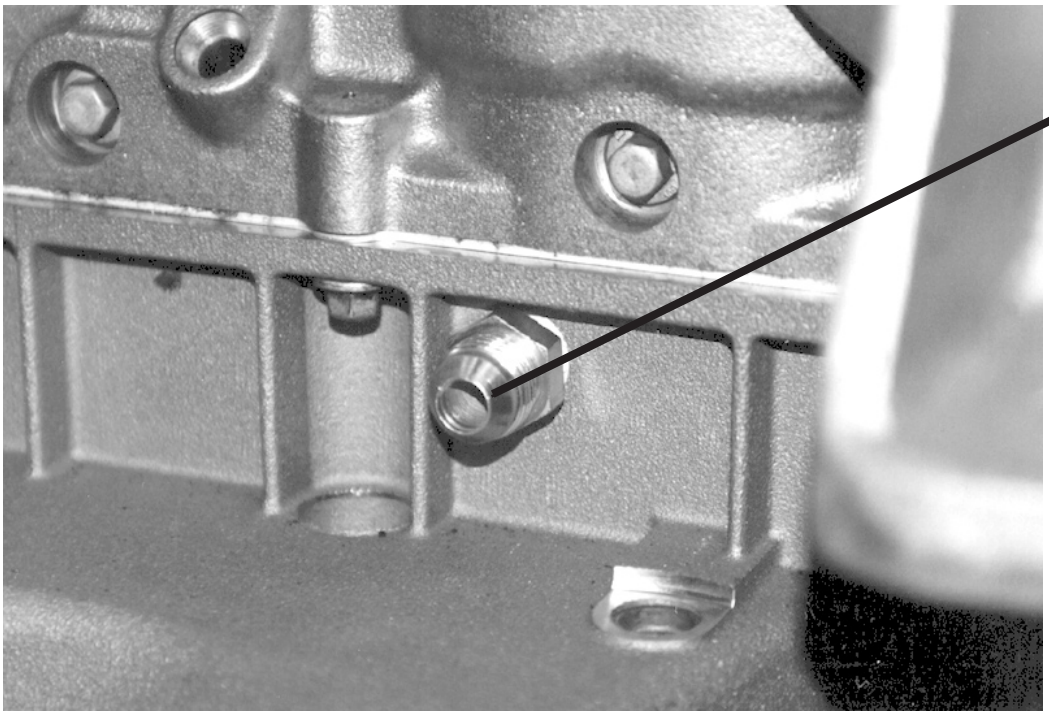
3.8 Thread #8 x 1/4" NPT Supercharger Oil Drain Back Fitting into engine oil pan. Use Teflon dope on threads.

3.9 Remove GM Engine Oil Pan Drain Plug and Drain Engine Oil.

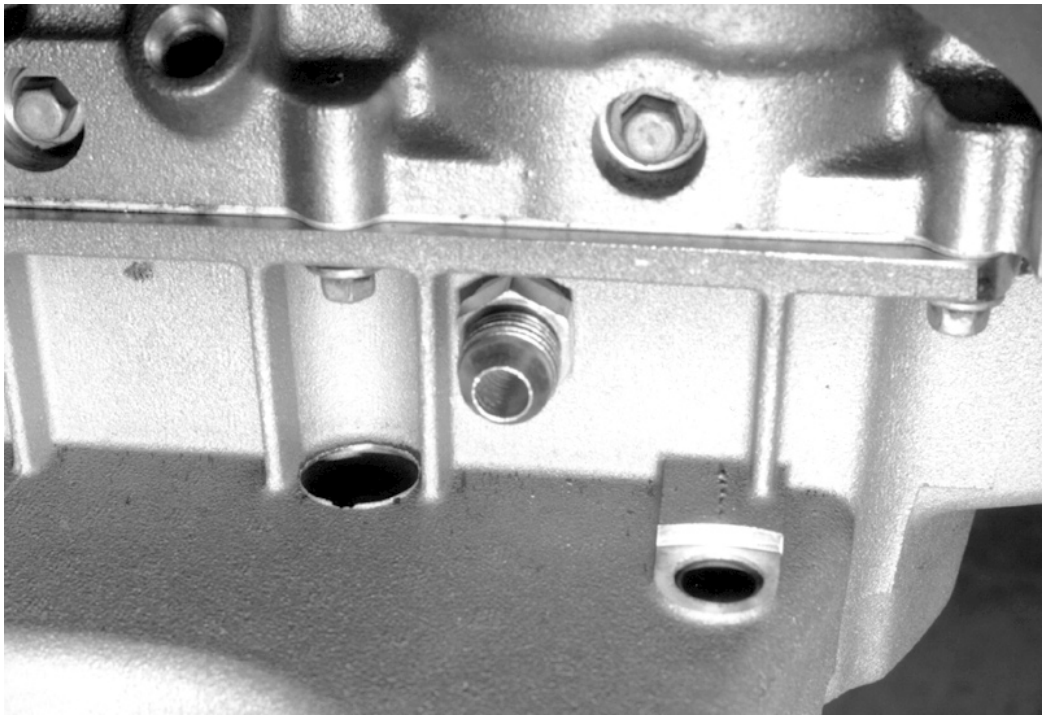
3.10 Re-Install GM Engine Oil Drain Plug.

— FIGURE 3.9 —

OIL PAN DRILLING & TAPPING (continued)

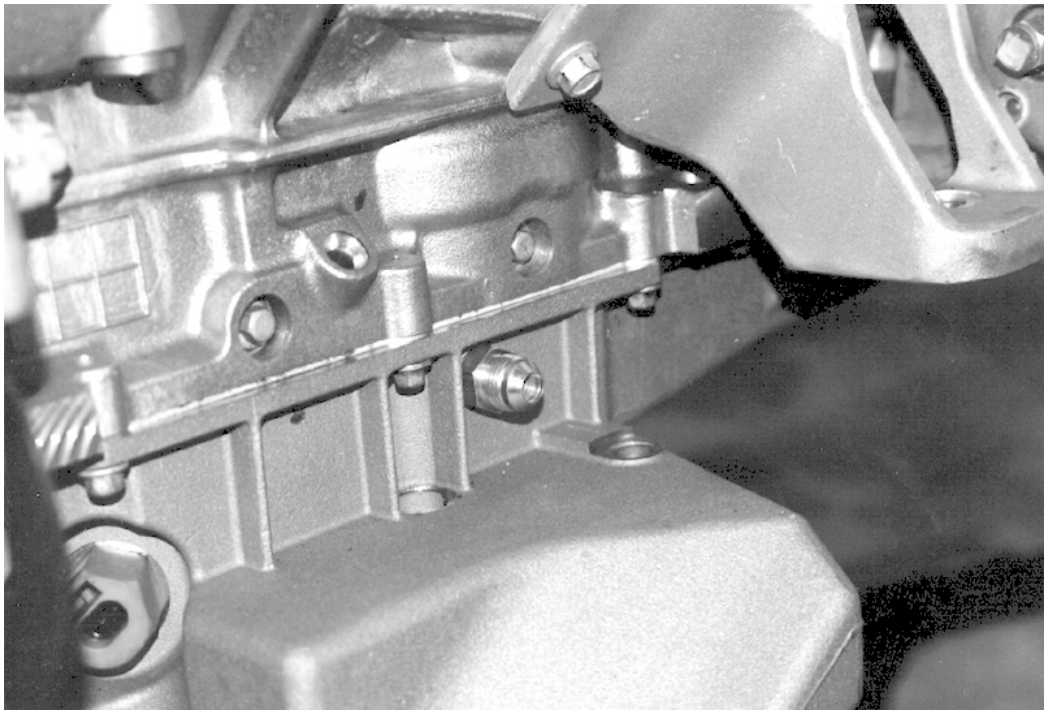


— FIGURE 3.10A —

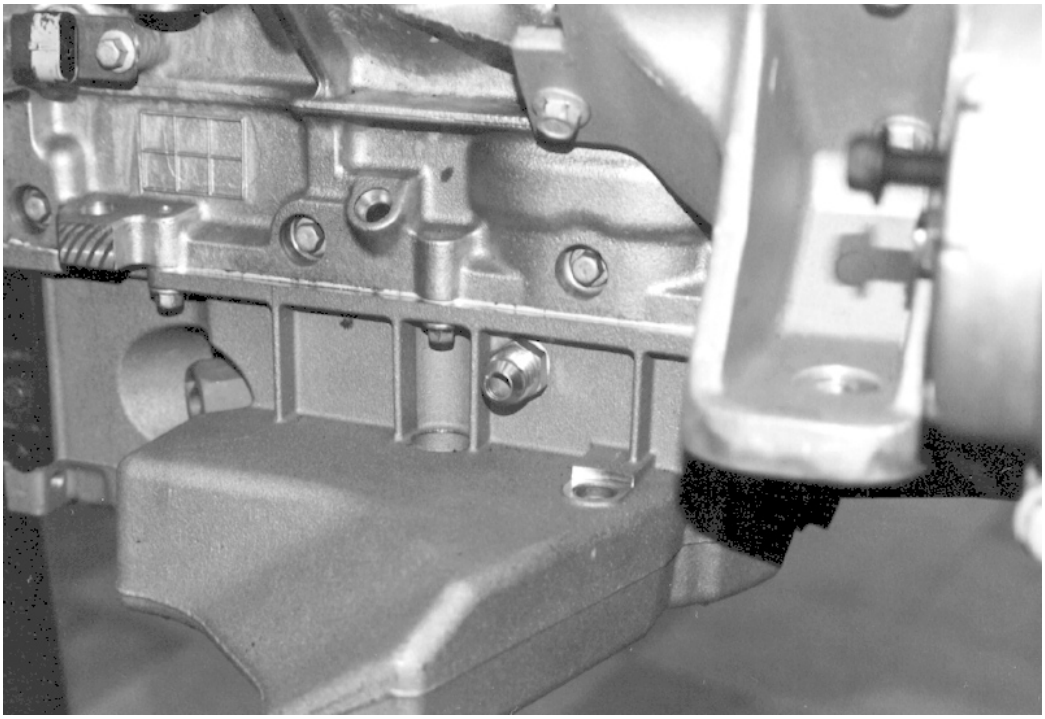


— FIGURE 3.10B —

OIL PAN DRILLING & TAPPING (continued)

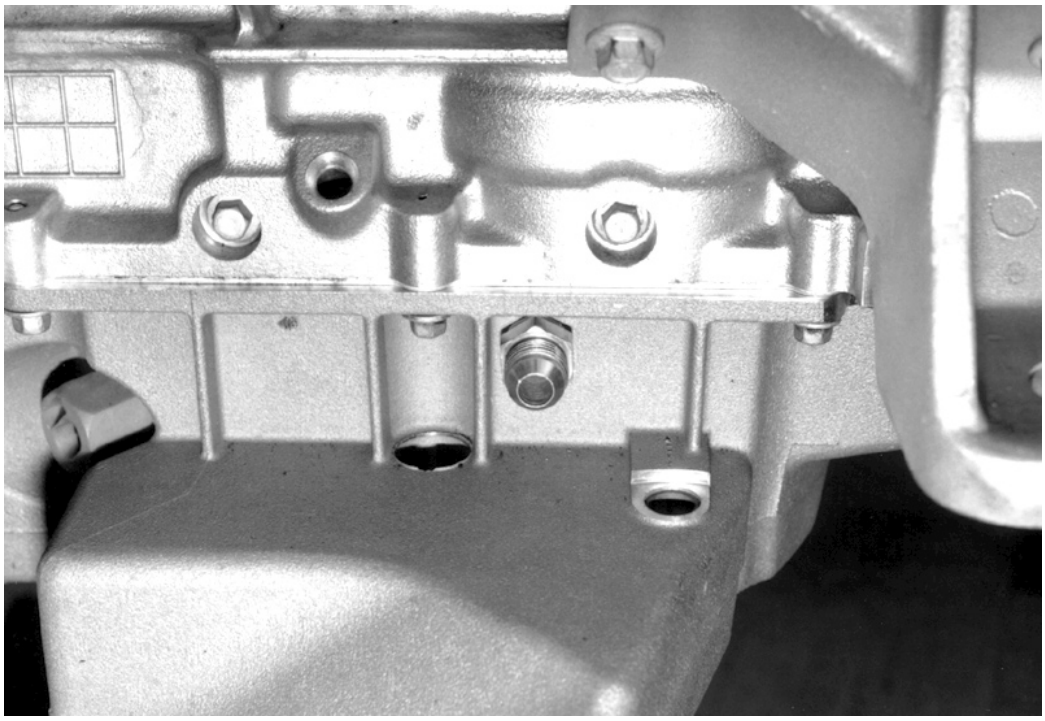


— FIGURE 3.10C —

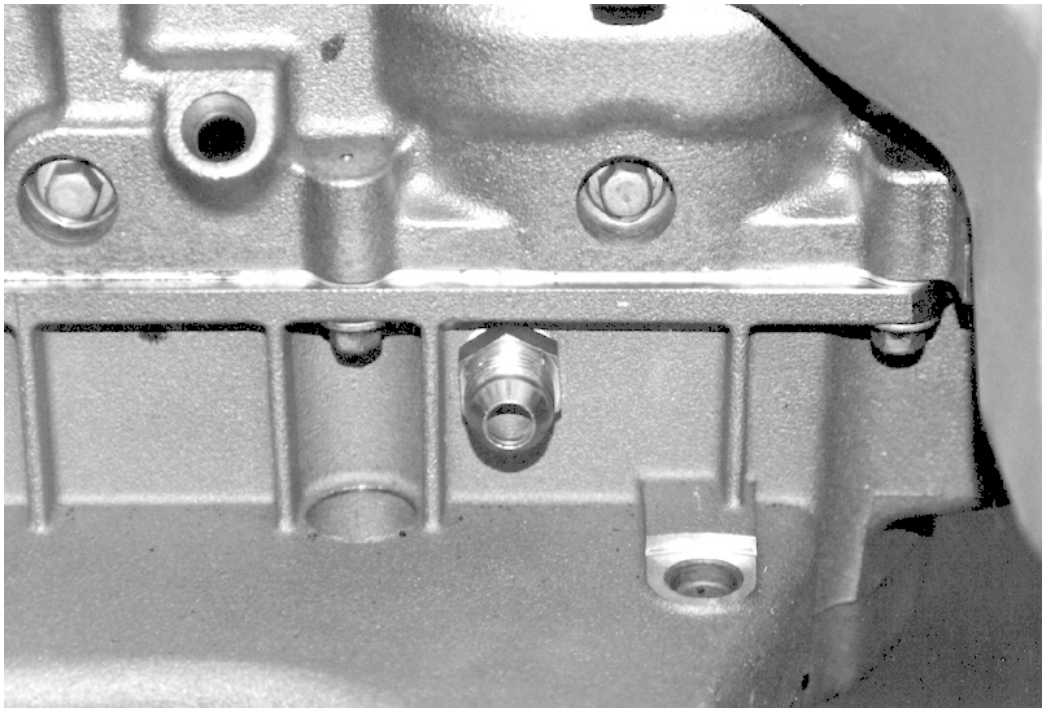


— FIGURE 3.10D —

OIL PAN DRILLING & TAPPING (continued)

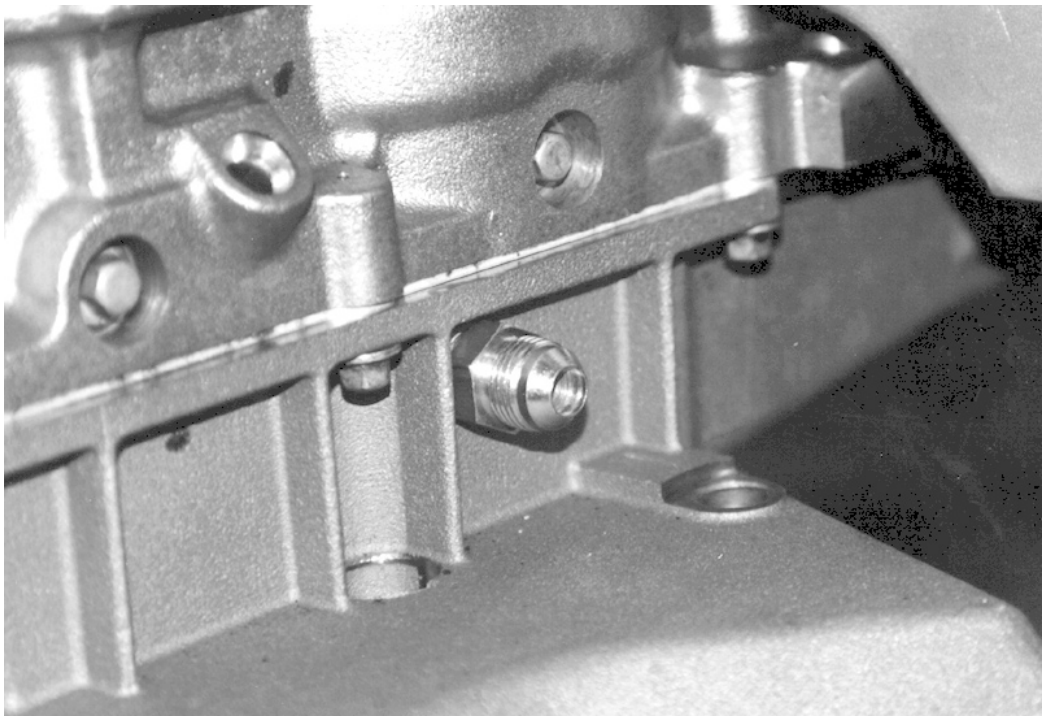


— FIGURE 3.10E —

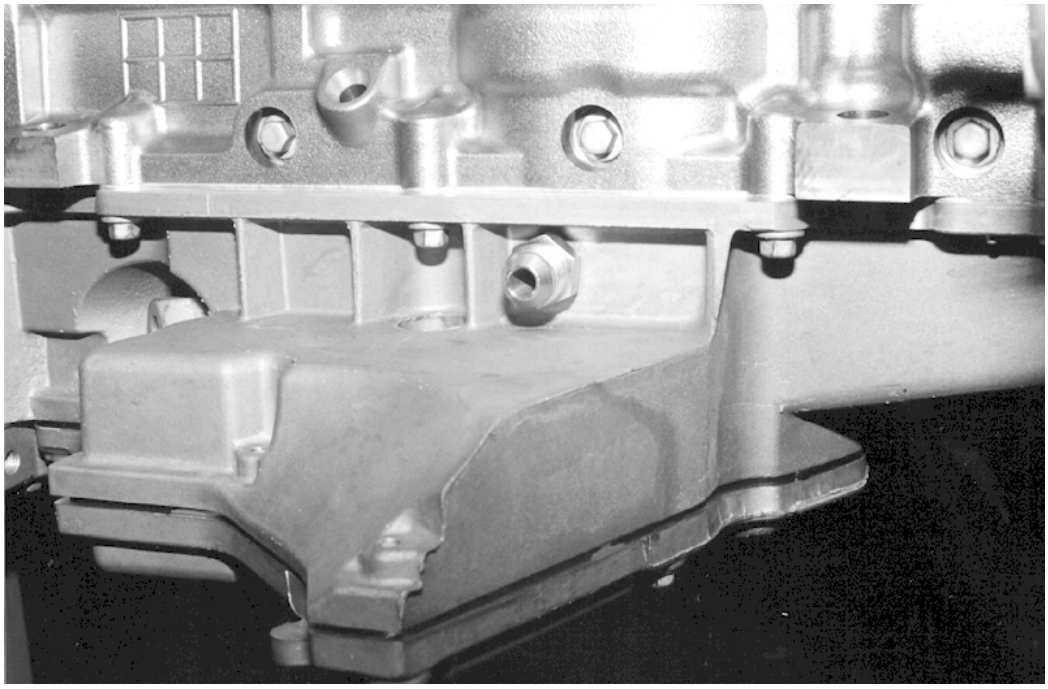


— FIGURE 3.10F —

OIL PAN DRILLING & TAPPING (continued)

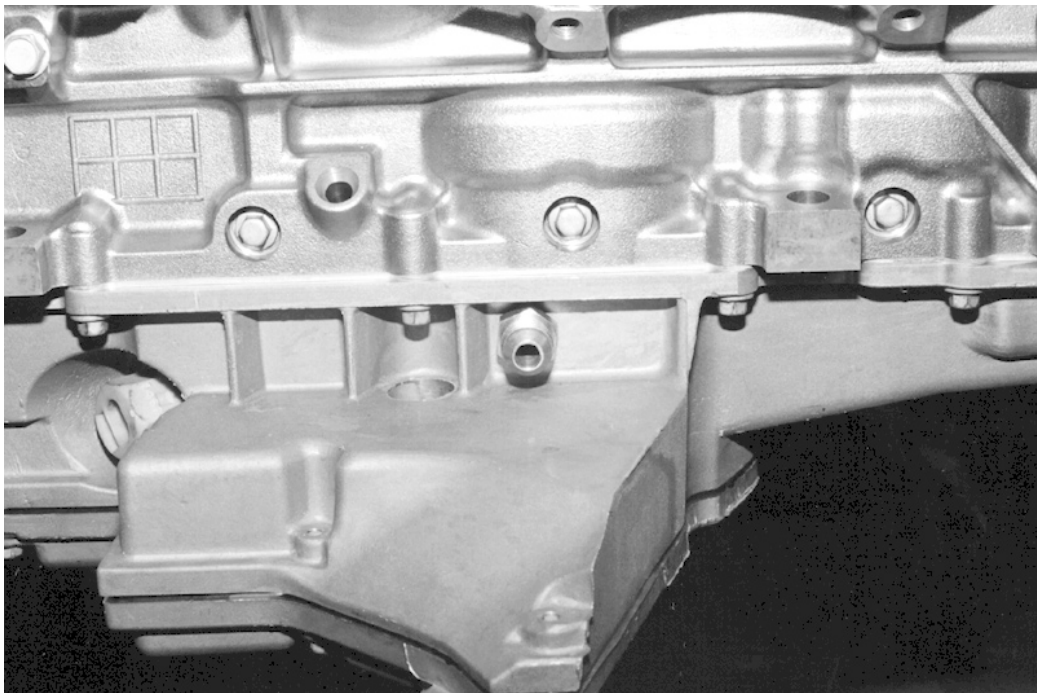


— FIGURE 3.10G —

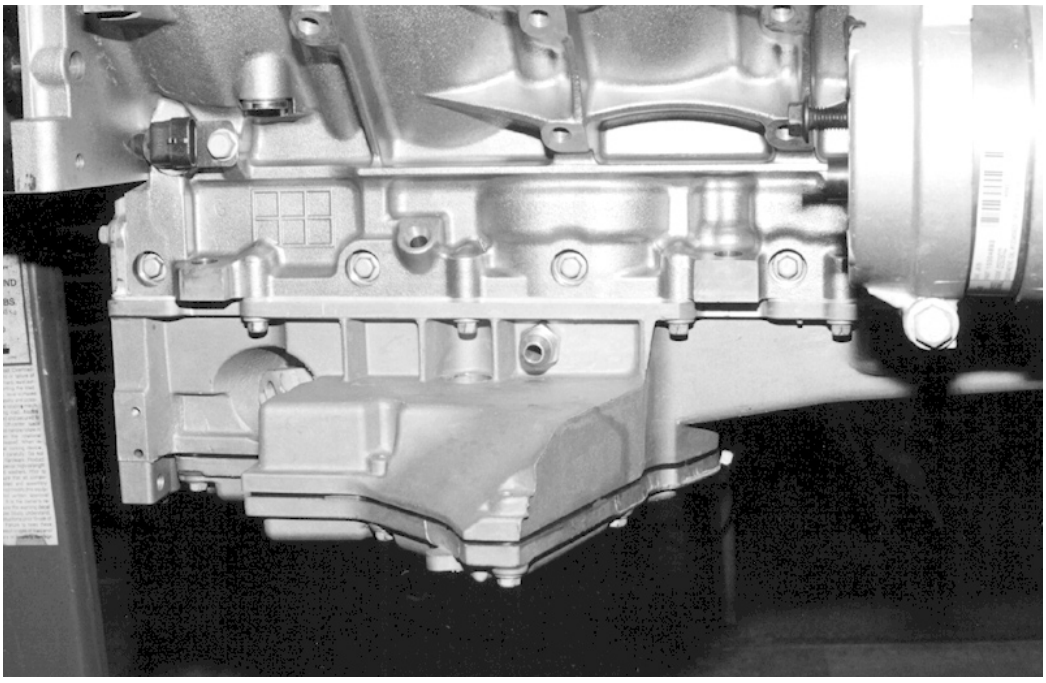


— FIGURE 3.10H —
2000 & NEWER CORVETTE OIL PAN SHOWN

OIL PAN DRILLING & TAPPING (continued)



— FIGURE 3.10I —
2000 & NEWER CORVETTE OIL PAN SHOWN



— FIGURE 3.10J —
2000 & NEWER CORVETTE OIL PAN SHOWN

OIL PAN DRILLING & TAPPING IS NOW COMPLETE.

3.11 Re-Install Passenger Side Exhaust Manifold (Do not install O_2 Sensor. It makes it difficult to install supercharger oil drainback line.)

3.12 Re-connect EGR Crossover Tube using new supplied gasket.

3.13 Change Engine Oil Filter.

— FIGURE 3.11 —

Section 4 • FMU

(For 1997/98 Corvettes Only)

See Separate Installation Guide for Instructions on Installing the FMU

Section 5 • SUPERPUMPER-II™

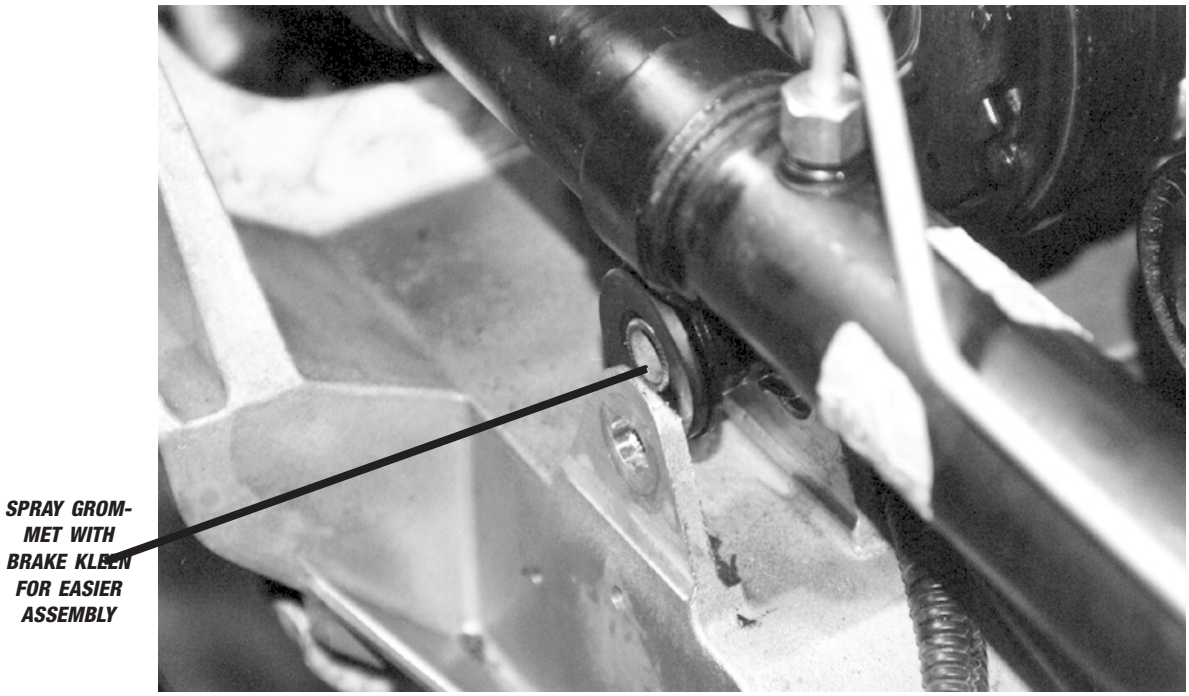
(For 1999–02 Corvettes Only)

See Separate Installation Guide for Instructions on Installing SUPERPUMPER-II™

— NOTES —

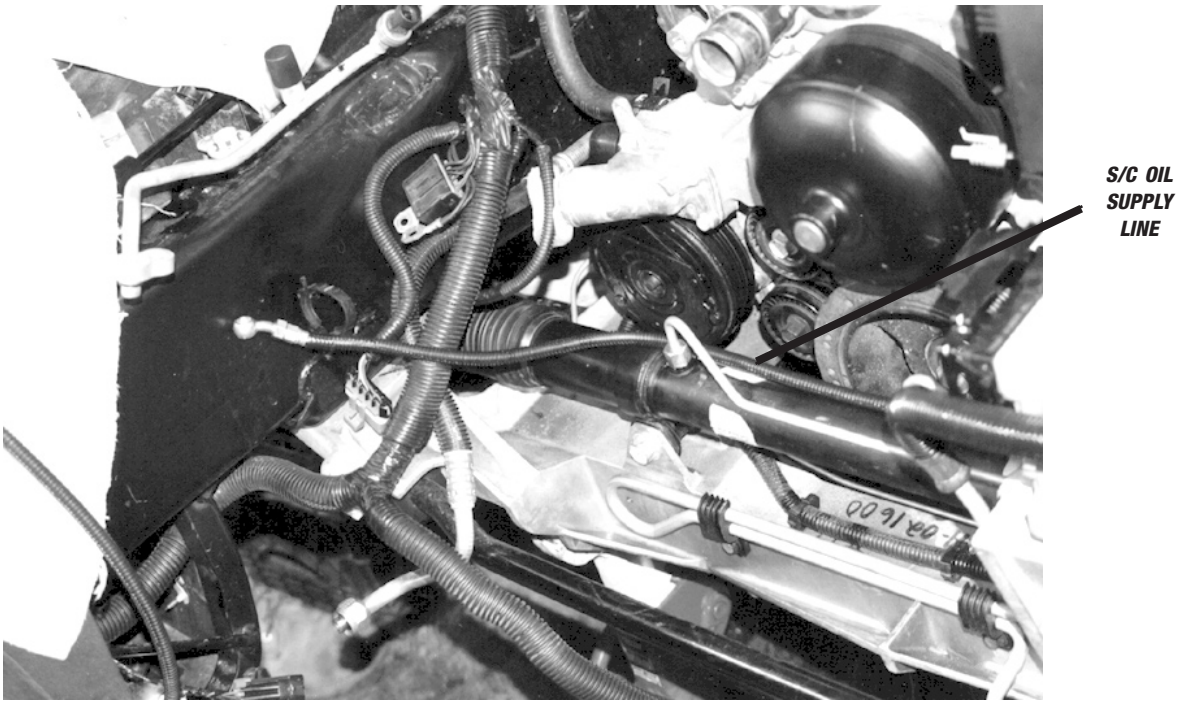
Section 6 • Miscellaneous Assembly

6.1 Re-Install Steering Rack. (HINT: Spraying Rubber Grommets with Brake Kleen allows Rack to slip in more easily).



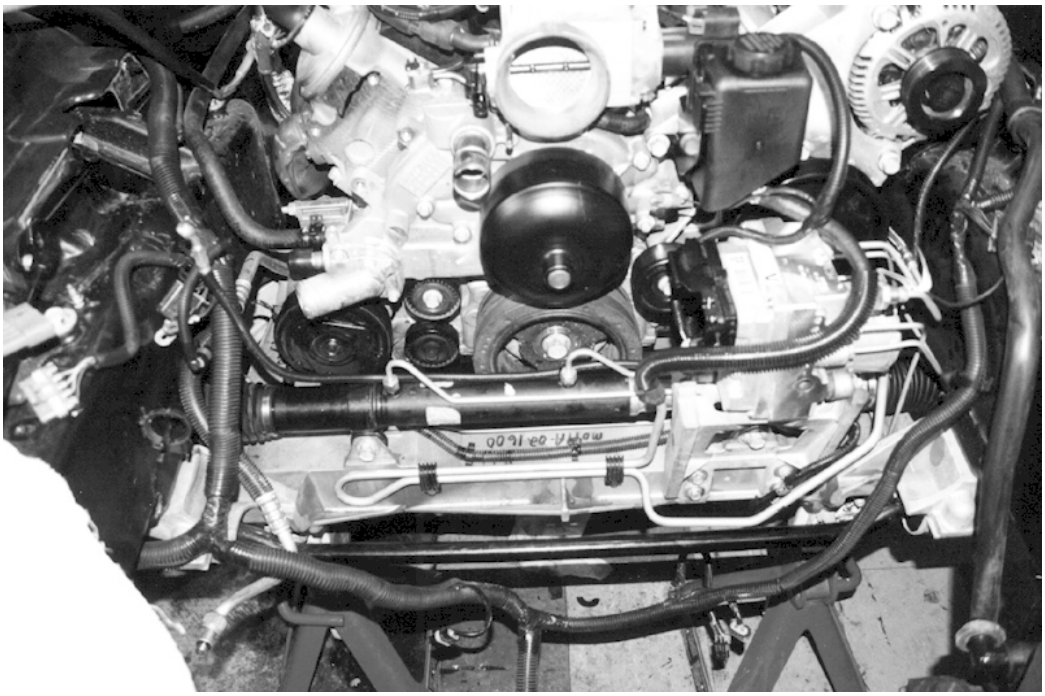
— FIGURE 6.1 —

6.2 Route supercharger oil supply line along steering rack as shown.



— FIGURE 6.2 —

6.3 Re-Install Power Steering Lines.

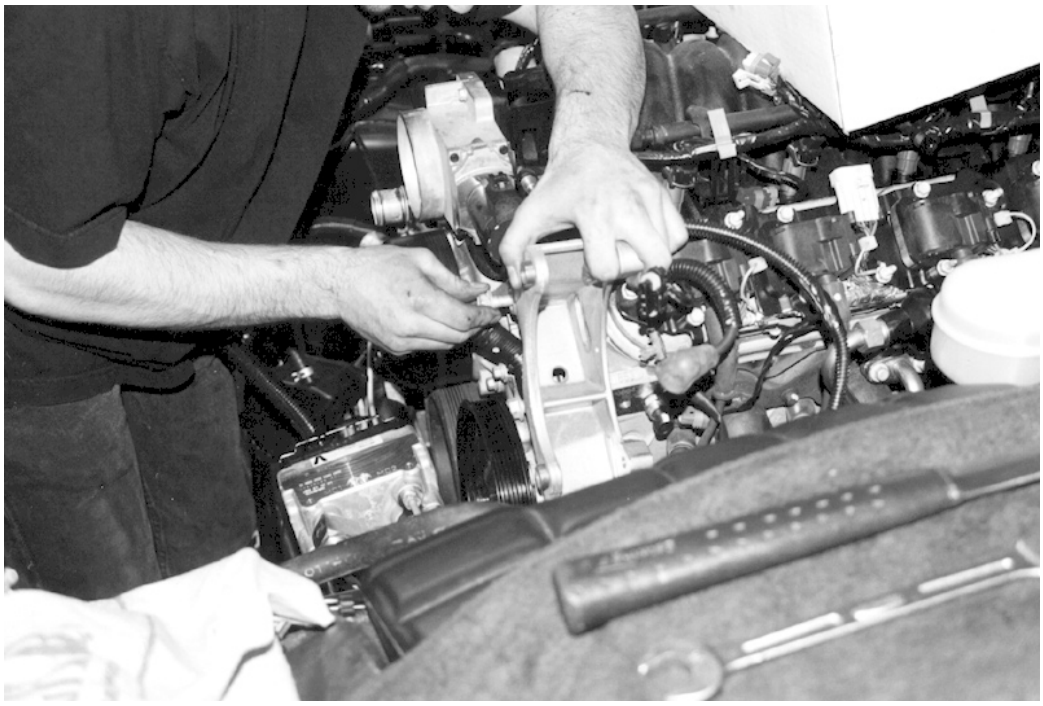


— FIGURE 6.3 —

6.4 Ty-wrap supercharger oil supply to rack as shown.

— FIGURE 6.4 —
NOTE: SUPERCHARGER & BELT TENSIONER ARE SHOWN FOR REFERENCE ONLY. THEY HAVE YET TO BE INSTALLED.

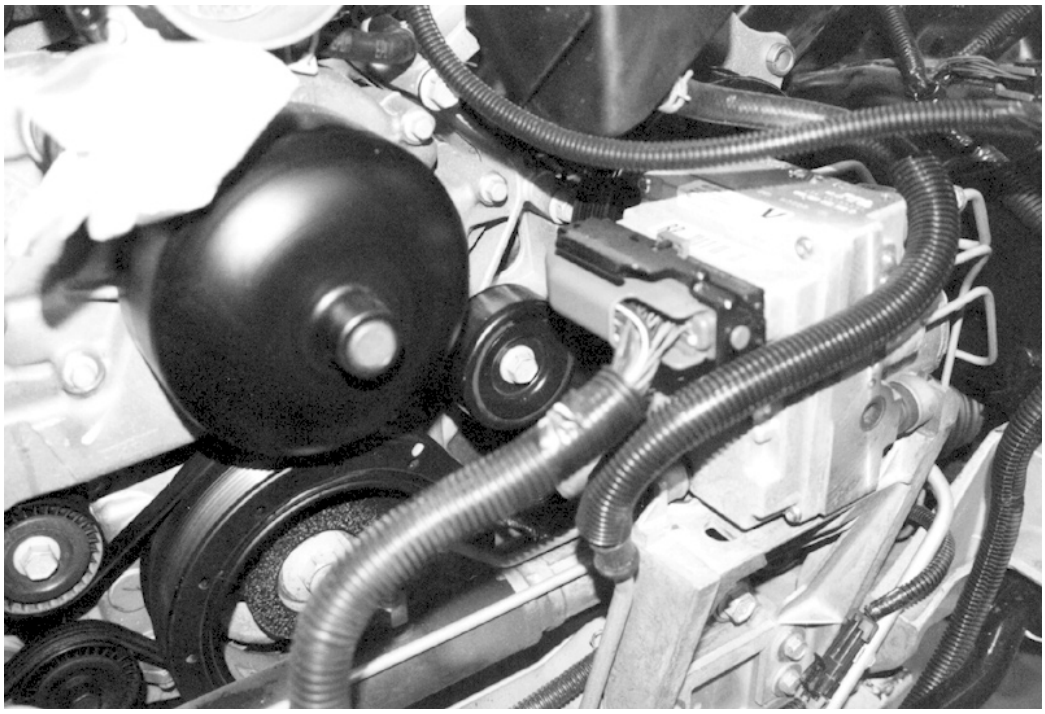
INSTALL POWER STEERING PUMP & ALTERNATOR



— FIGURE 6.5 —

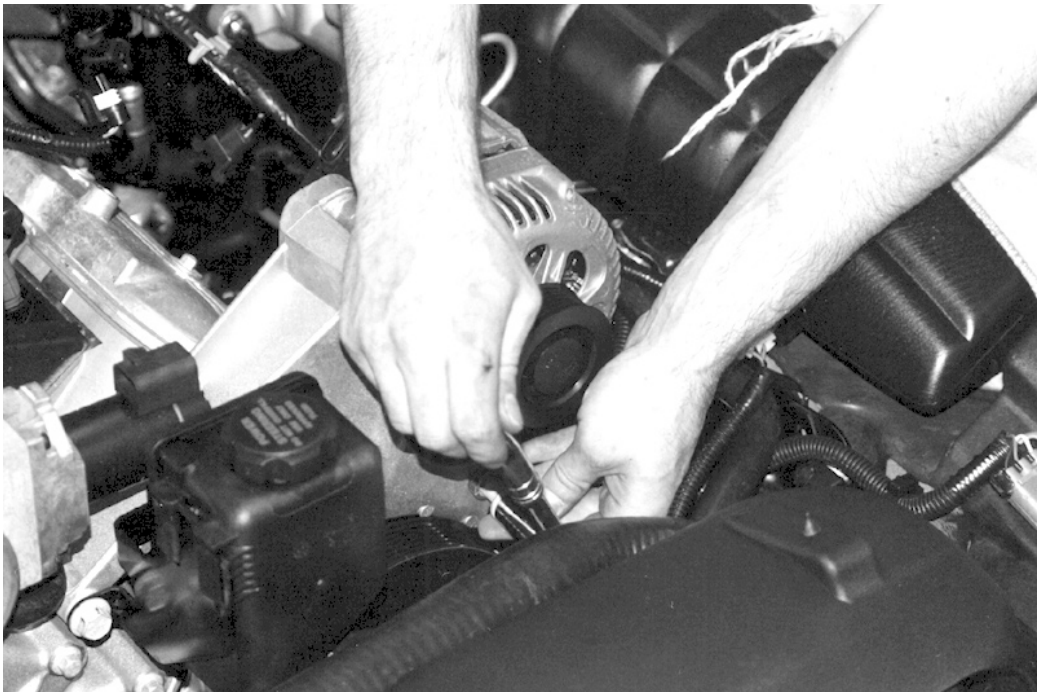
6.5 Re-Install Power Steering Pump and Alternator Bracket. Re-install all Power Steering Lines and Reservoir.

6.6 Re-Install ASR Bracket.



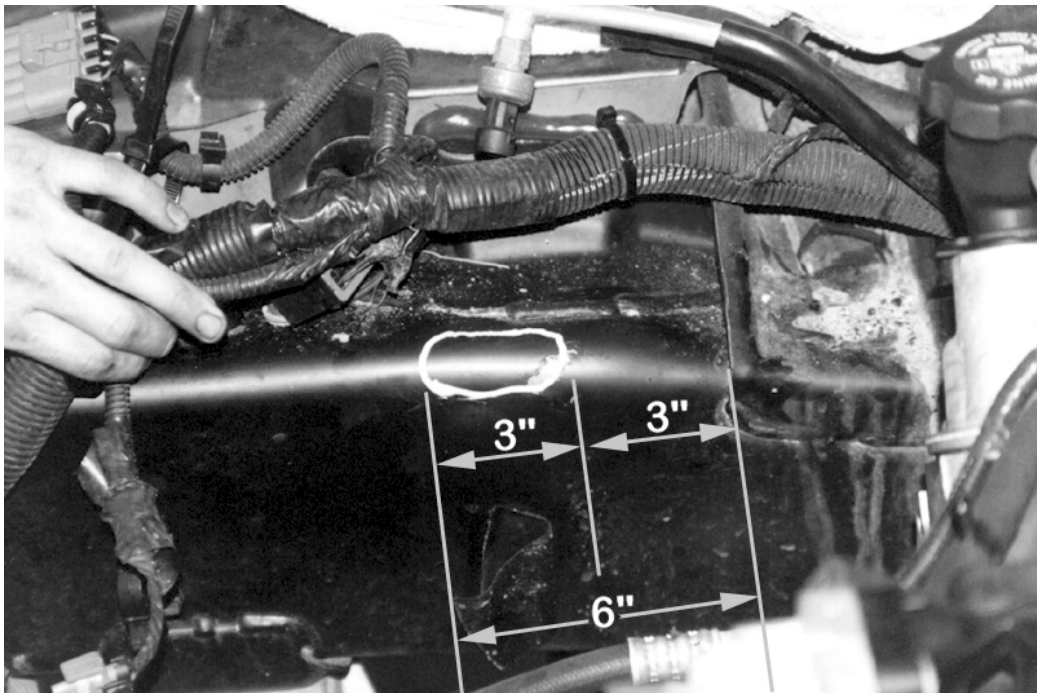
— FIGURE 6.6 —

6.7 Re-Install Alternator.

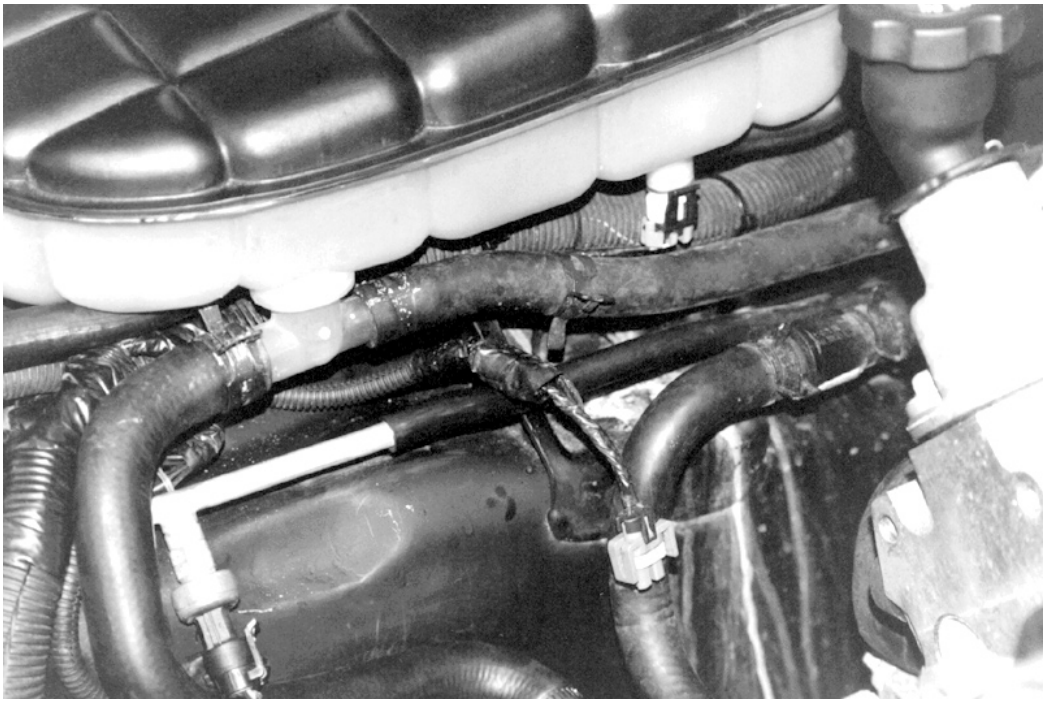


— FIGURE 6.7 —

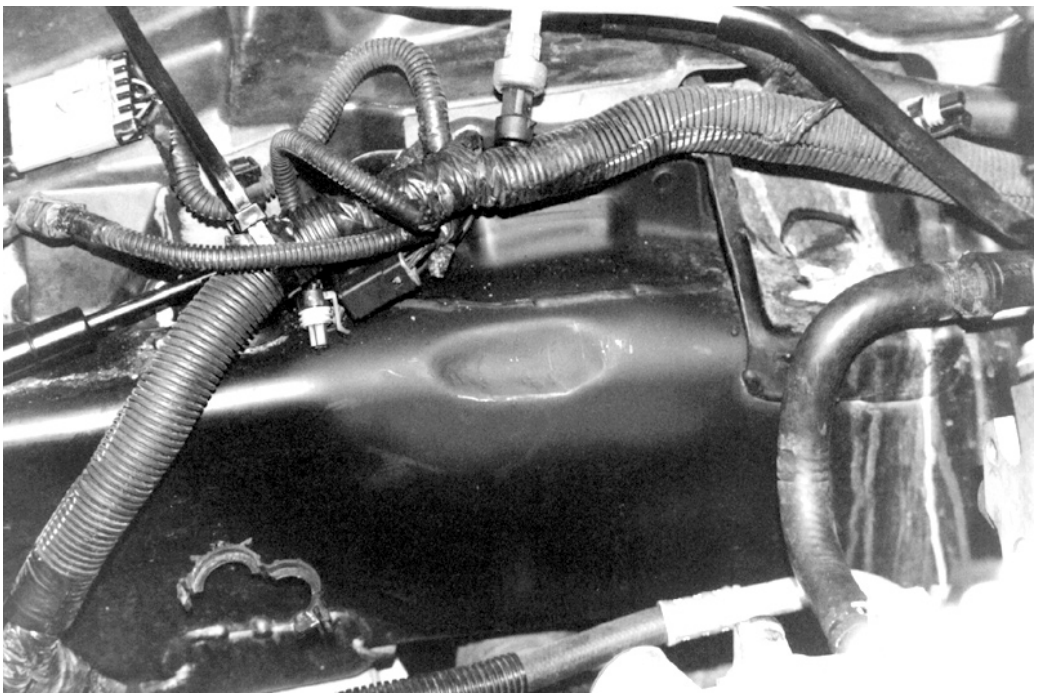
6.8 Dimple Passenger Side Chassis Member. Repaint as necessary. We suggest using #39293 Honda Black manufactured by SEM available at most body shop supply houses. You can order it from Carroll Supercharging for $10.00.



— FIGURE 6.8 —

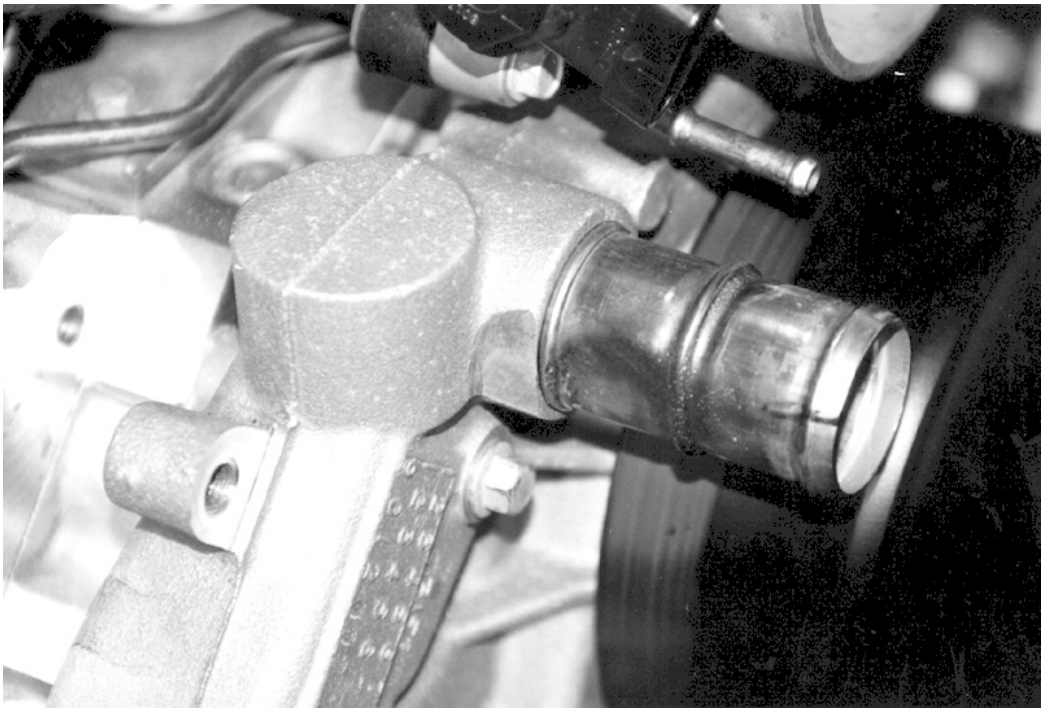


— FIGURE 6.9 —

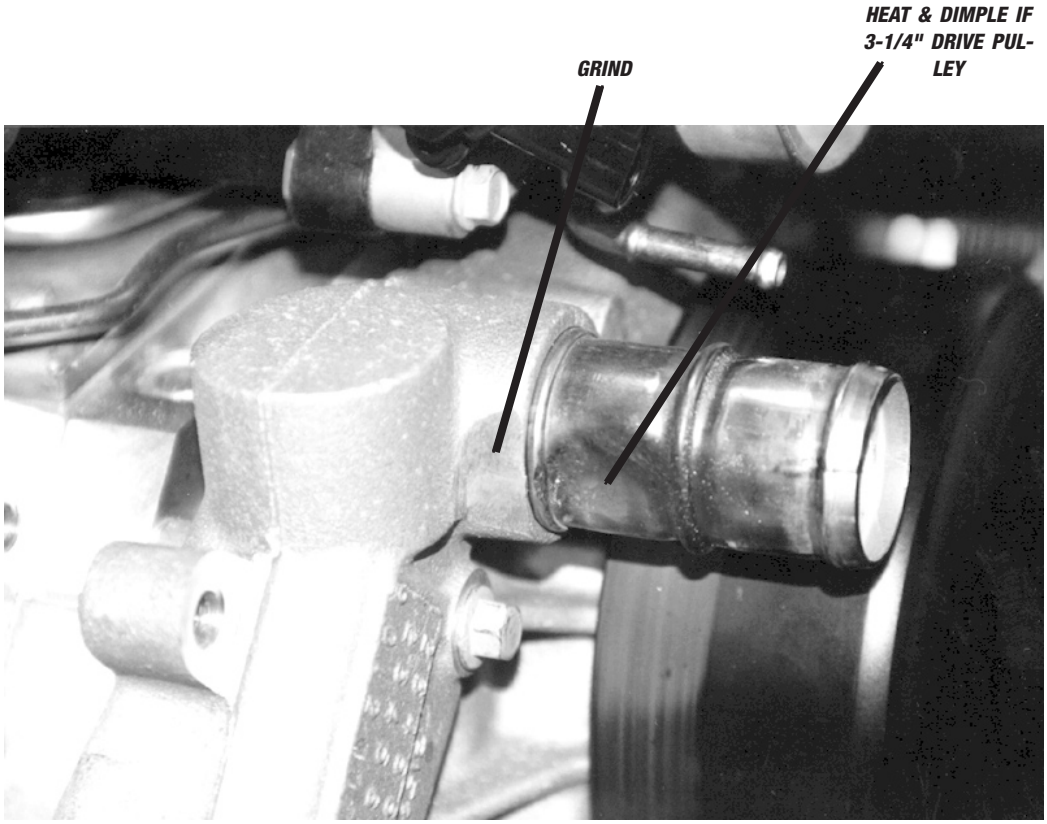


— FIGURE 6.10 —

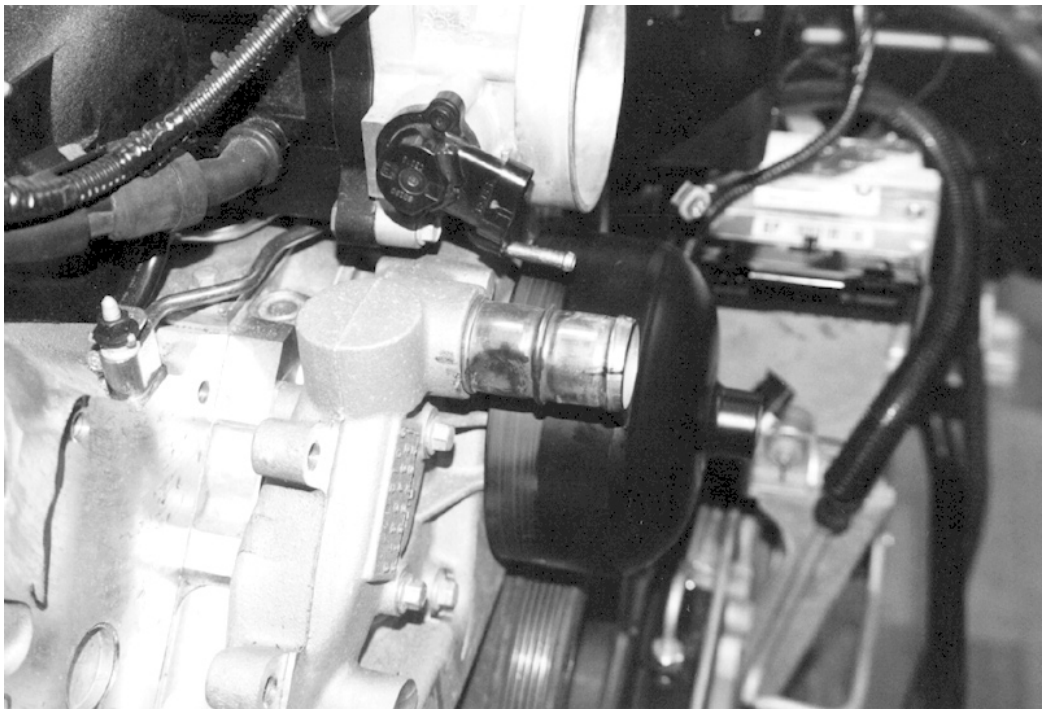
6.9 If Supercharger System Serpentine Belt Pulley is 3-1/4" diameter (Stage I) radiator coolant hose nipple must be dimpled as shown. Use Turbo Torch to heat then dimple with ball peen hammer. Also use die grinder to smooth aluminum edge by nipple.



— FIGURE 6.11 —



— FIGURE 6.12 —



— FIGURE 6.13 —

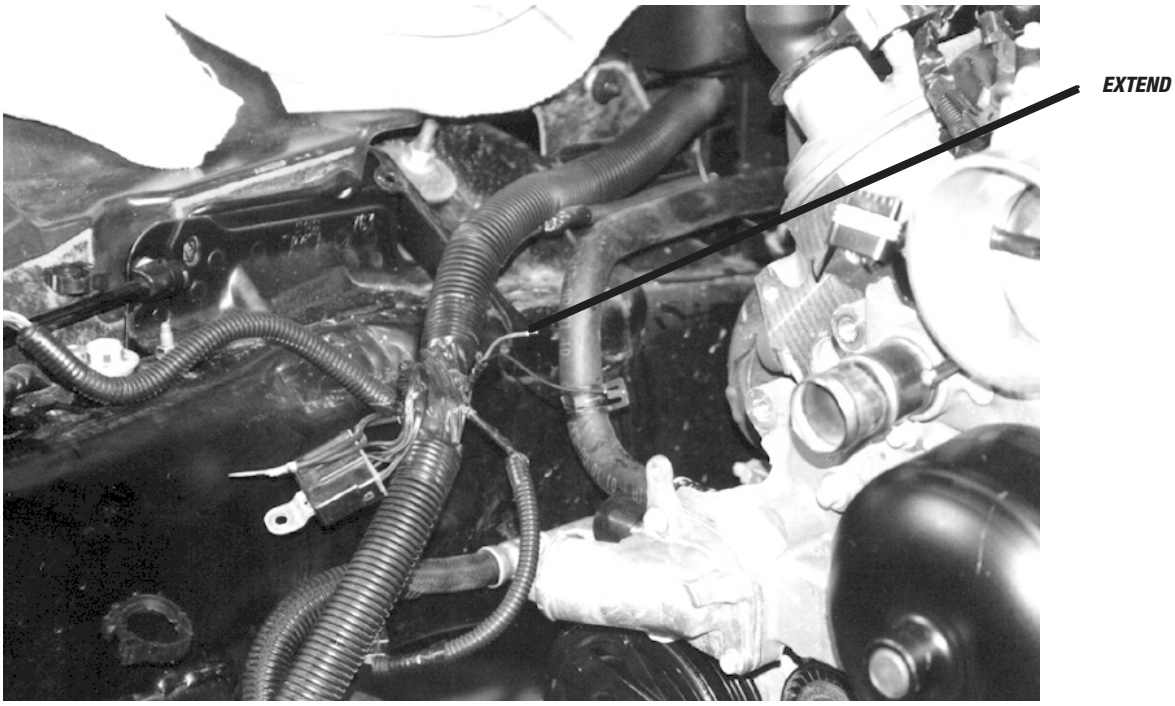
6.10 Reconnect Throttle Body Position Connector.

— FIGURE 6.14 —
NOTE: SUPERCHARGER BRACKET & BELT ARE SHOWN FOR REFERENCE ONLY. THEY HAVE YET TO BE INSTALLED.

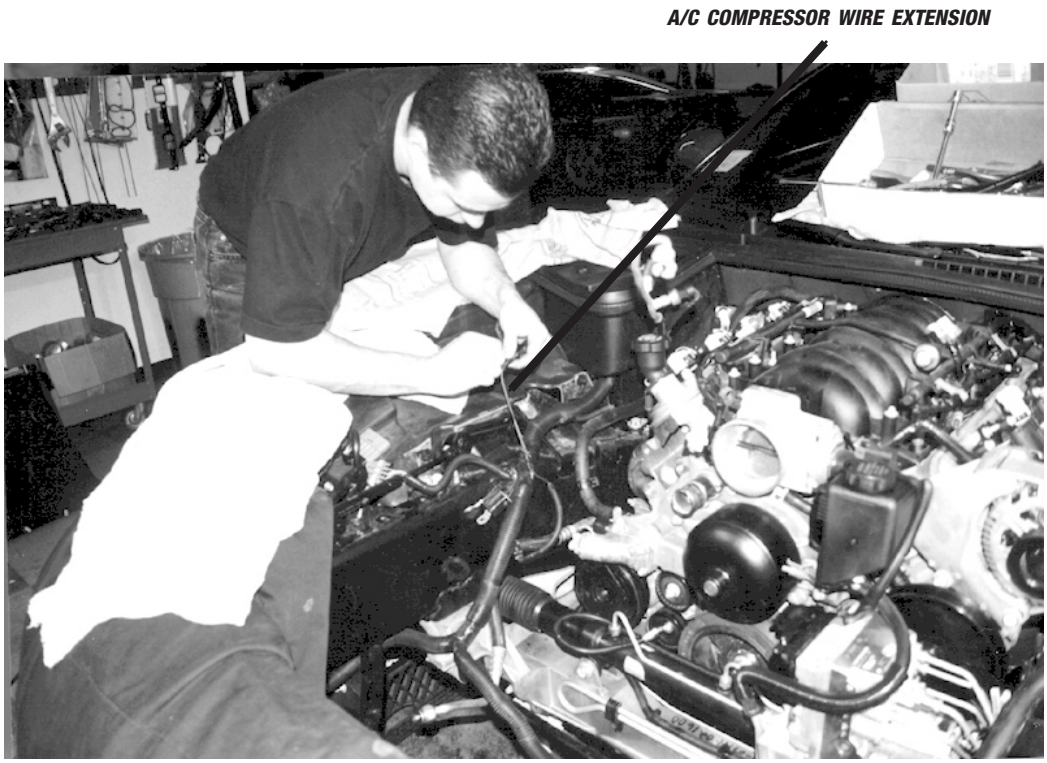
PHOTO SHOWS WHY STAGE I WITH 3-1/4" DRIVE PULLEY REQUIRES DIMPLING WATER PUMP RADIATOR HOSE NIPPLE.

RE-ROUTE A/C REFRIGERANT LINE & GM WIRING HARNESS

6.11 Extend A/C compressor green and black electrical wires using butt splices.



— FIGURE 6.15 —

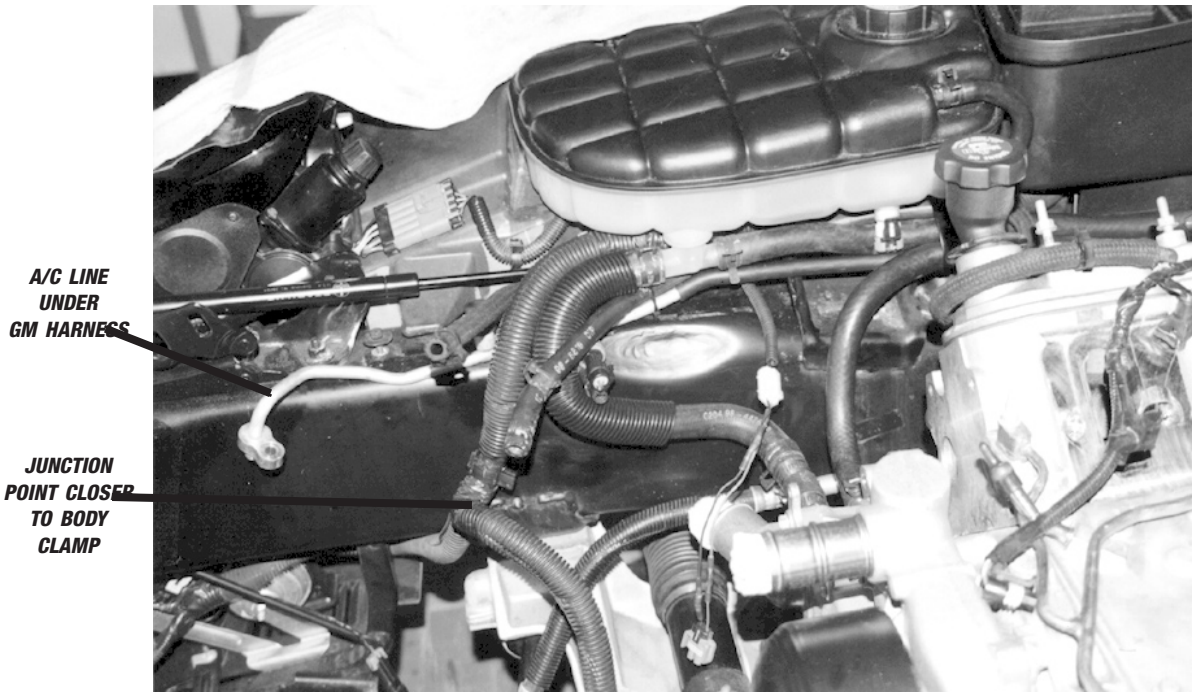


— FIGURE 6.16 —

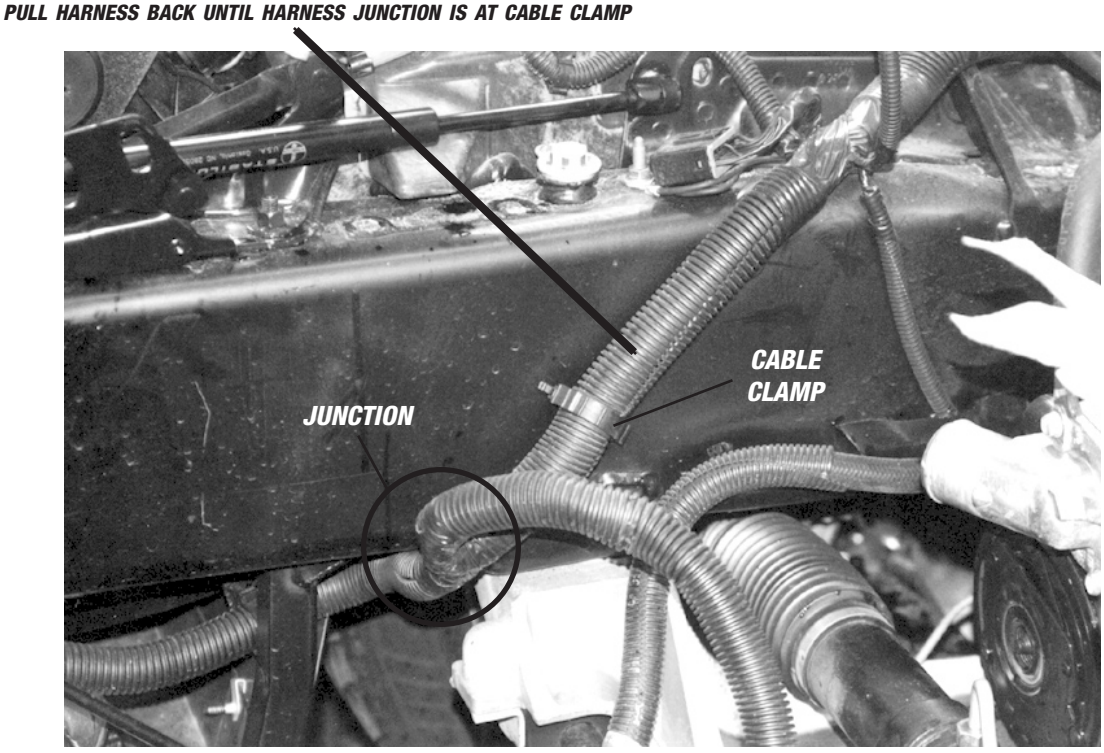
6.12 Straighten A/C line and re-bend as shown.

6.13 Re-route A/C line under GM Harness.

6.14 Extend and straighten GM Wiring Harness by releasing body clip and tugging.

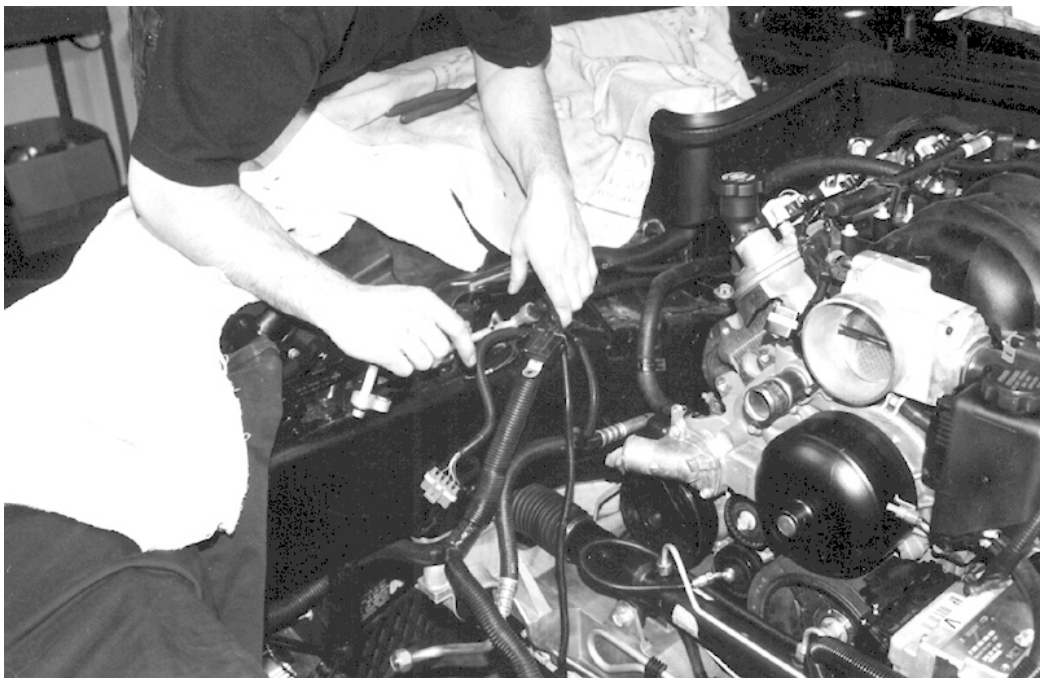


— FIGURE 6.17 —
THIS IS HOW THE A/C LINE & GM HARNESS SHOULD LOOK WHEN COMPLETED

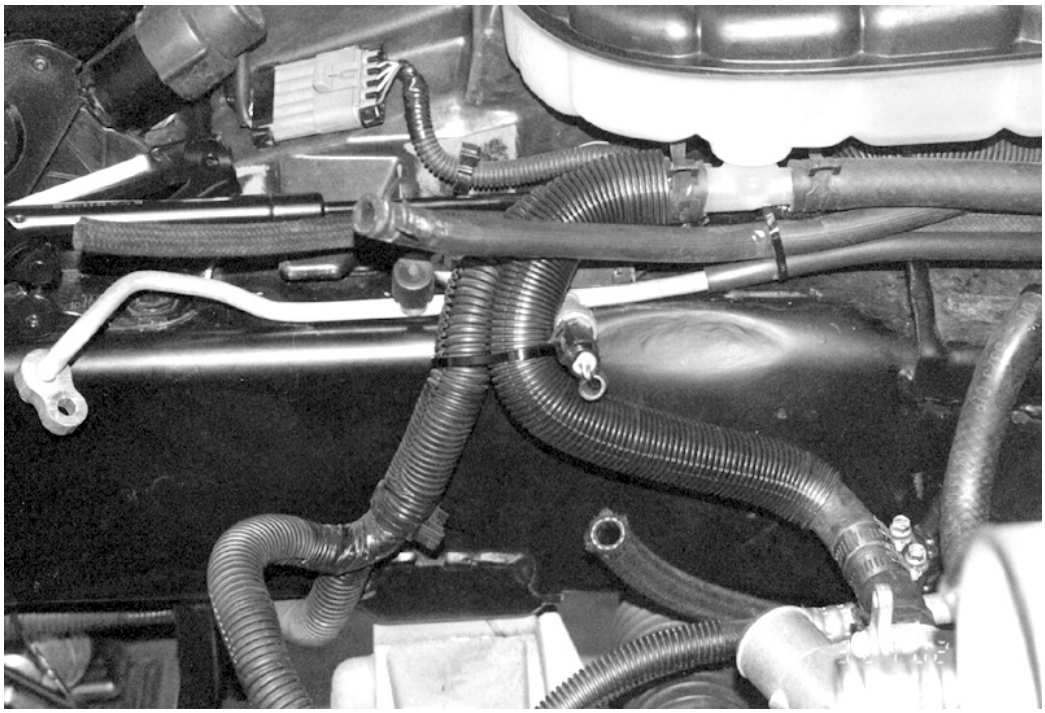


— FIGURE 6.18 —
GM WIRE HARNESS PRIOR TO PULLING BACK

— FIGURE 6.19 —
NOTE: YOU MAY HAVE TO LOOSEN GM HARNESS UNDERNEATH BY HORNS



— FIGURE 6.20 —
CAREFULLY STRAIGHTEN & EXTEND THE REFRIGERANT LINE

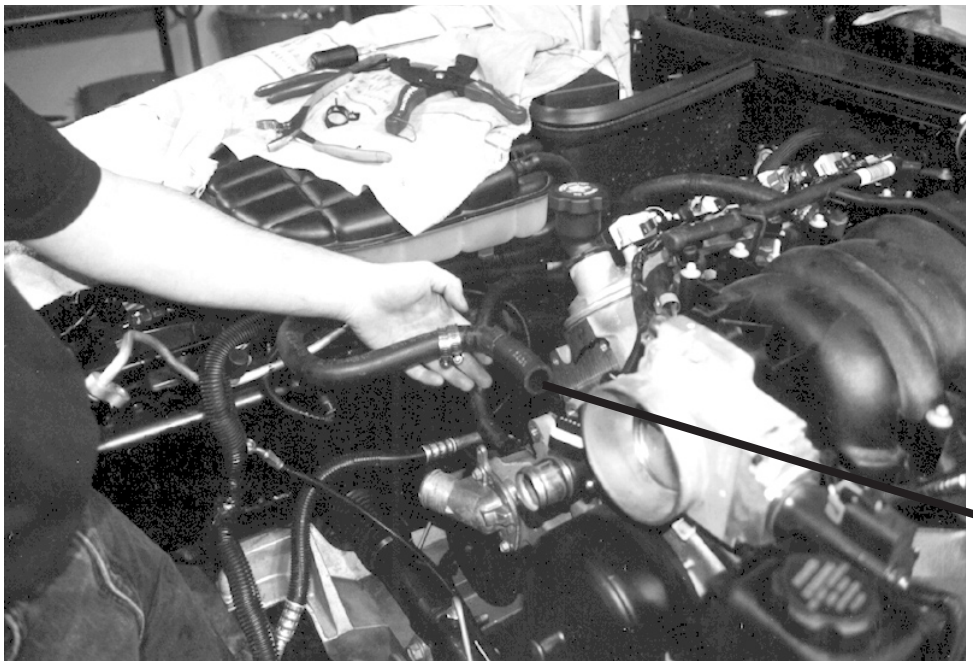


— FIGURE 6.21 —
CLOSE UP OF COMPLETED RE-ROUTING OF GM WIRING HARNESS & A/C REFRIGERANT LINE. NOTE HOW REFRIGERANT LINE IS NOW ROUTED UNDER GM WIRING HARNESS.

— NOTES —

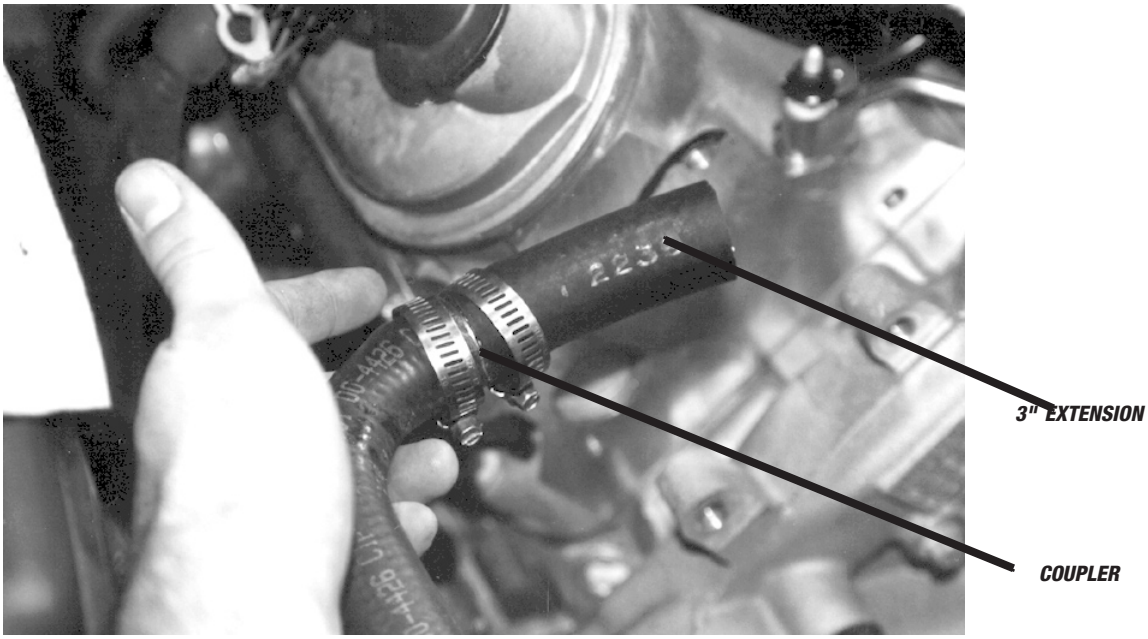
Section 7 • COOLANT HOSE EXTENSION & ROUTING

7.1 Remove 1" from existing GM Coolant Hose.



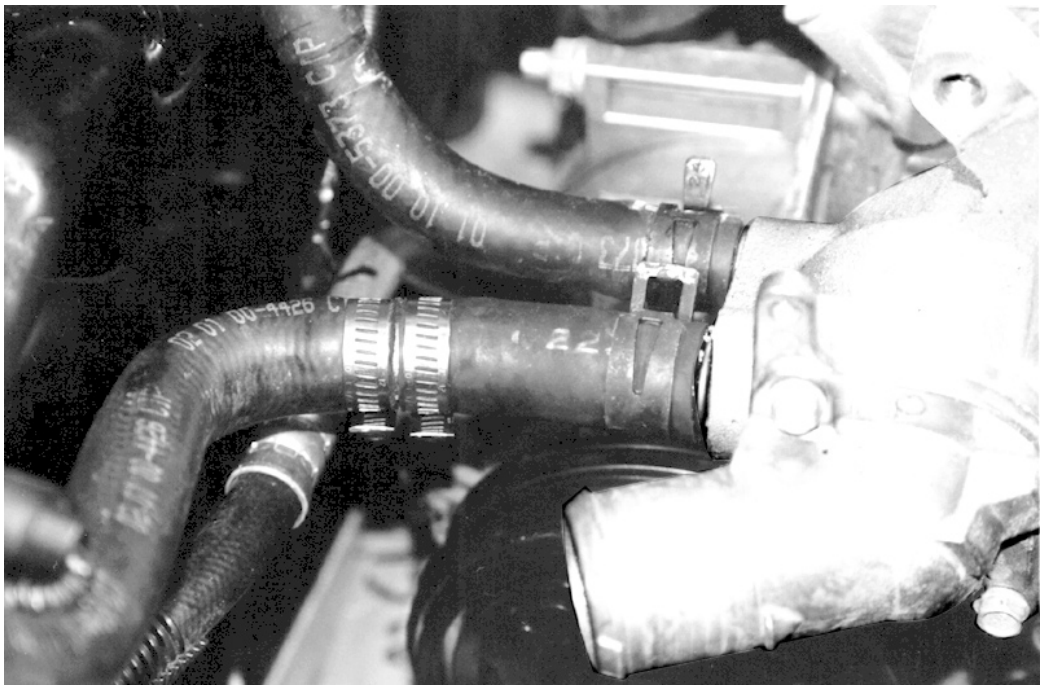
— FIGURE 7.1 —

7.2 Install Coolant Hose Coupler and 3" Extension.



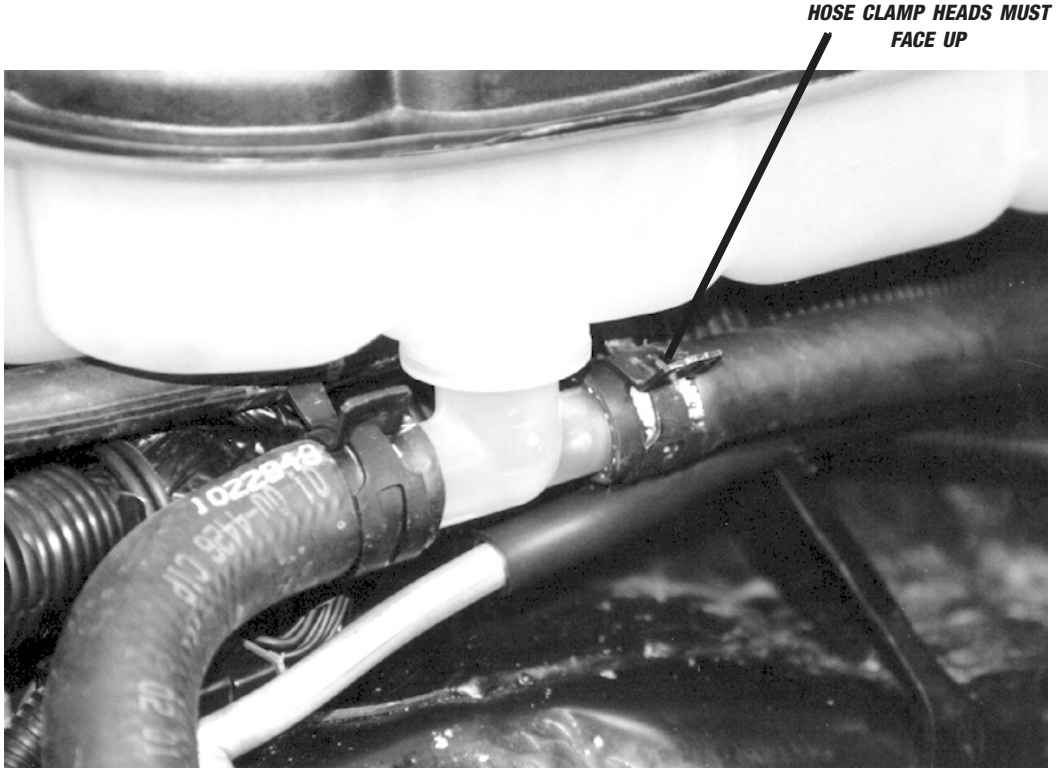
— FIGURE 7.2 —

7.3 Attach above Coolant Hose extension to Water Pump. Note carefully the position of all hose clamps.



— FIGURE 7.3 —

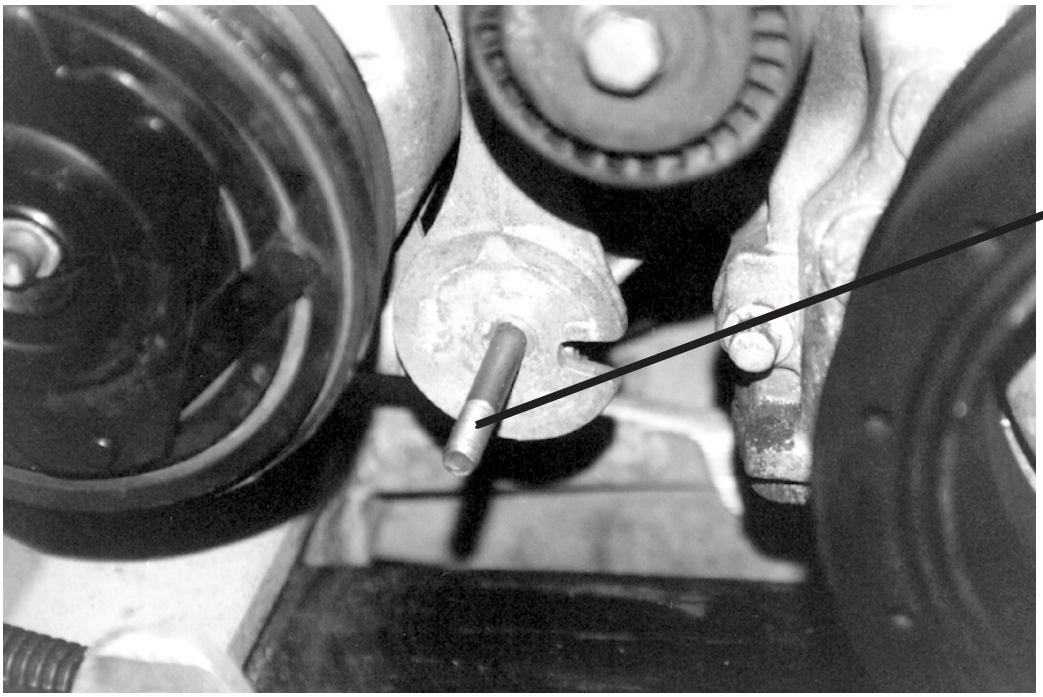
7.4 Install Coolant Reservoir Tank and re-attach hoses to bottom of Coolant Reservoir as shown below. Again, note position of hose clamps. Hose Clamp Heads must be facing up.



— FIGURE 7.4 —

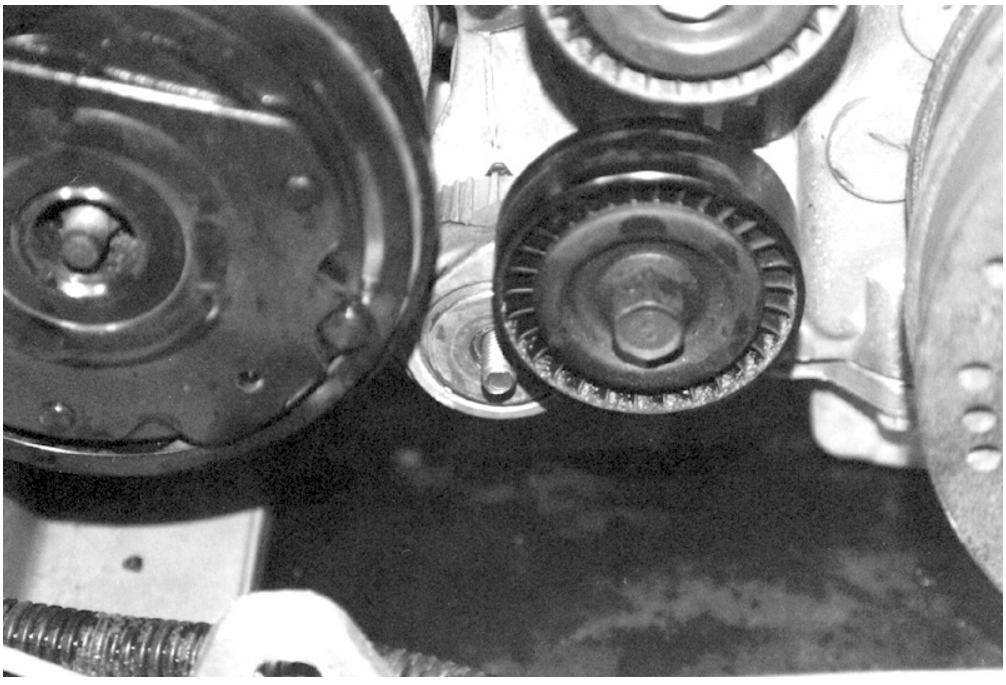
Section 8 • A/C BELT TENSIONER INSTALLATION

8.1 Install Metric Stud in place of Bolt that held A/C Belt Tensioner.



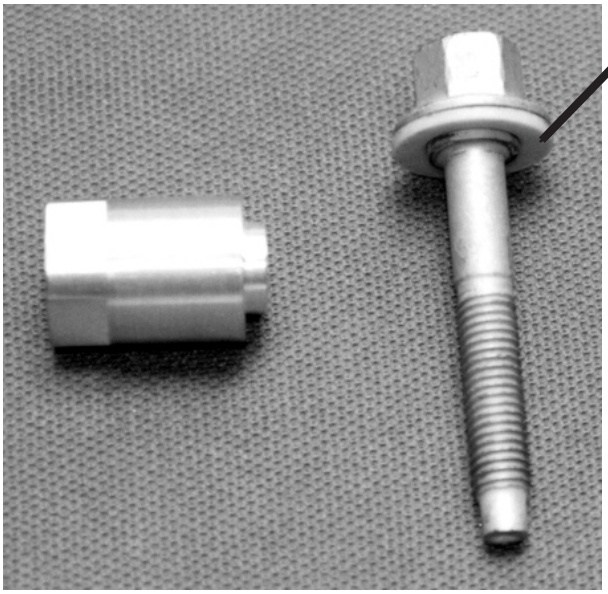
— FIGURE 8.1 —

8.2 Slip A/C Belt Tensioner over metric stud.

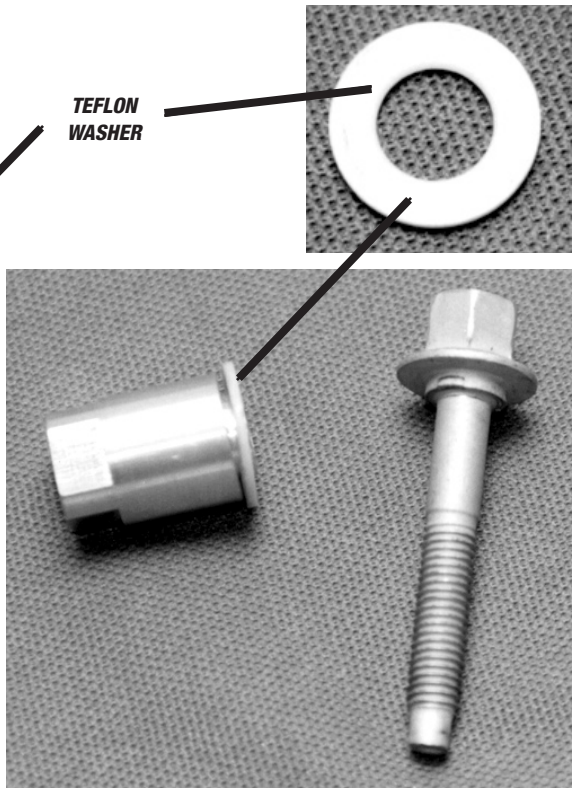


— FIGURE 8.2 —

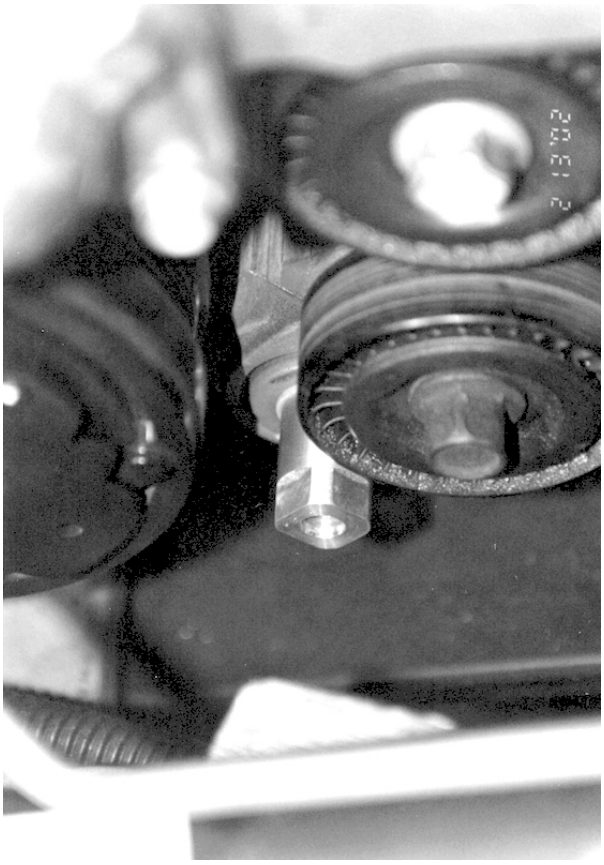
8.3 Remove teflon washer from original GM bolt and place onto new spacer/nut.



— FIGURE 8.3A —



— FIGURE 8.3B —
TEFLON WASHER HAS BEEN PLACED ONTO NEW SPACER/NUT



8.4 Secure A/C Belt Tensioner with new spacer/nut.

— FIGURE 8.4 —

8.5 Re-install A/C Belt.

RESERVED

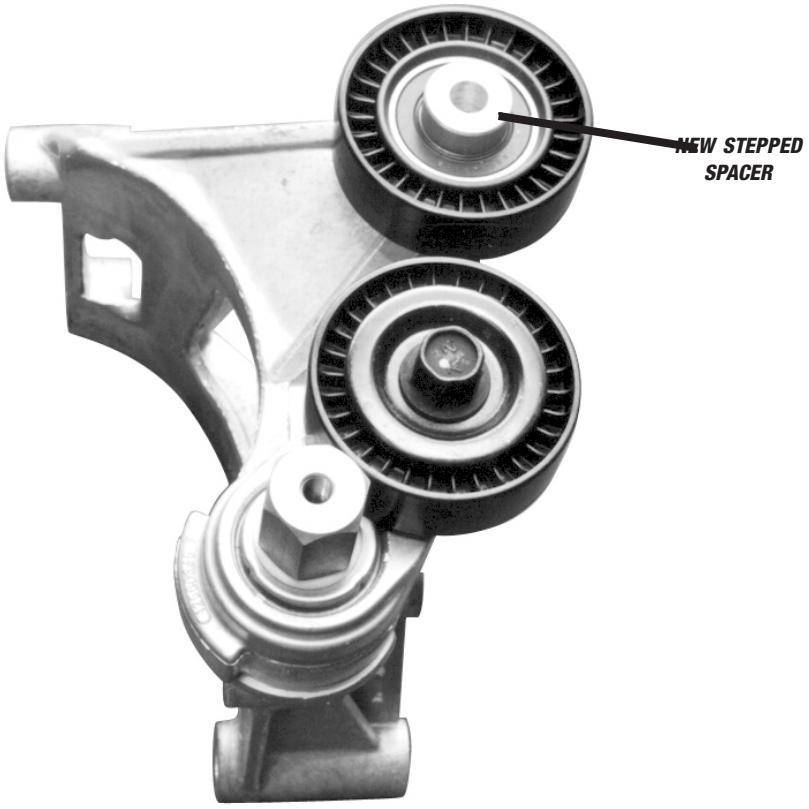
— FIGURE 8.5 —

8.6 Remove bolt that retains top A/C Belt Idler. Remove idler “dust/dirt cover shield”.

RESERVED

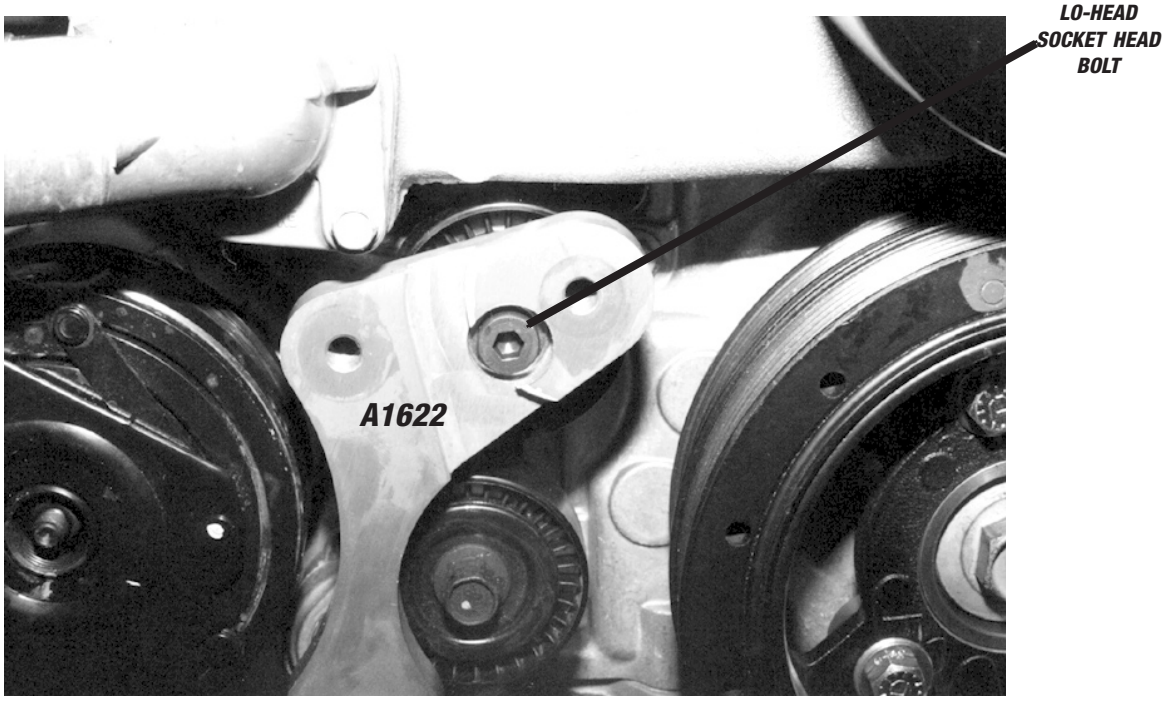
— FIGURE 8.6 —

8.7 Place stepped spacer #A1612-1 onto top A/C Belt Idler.

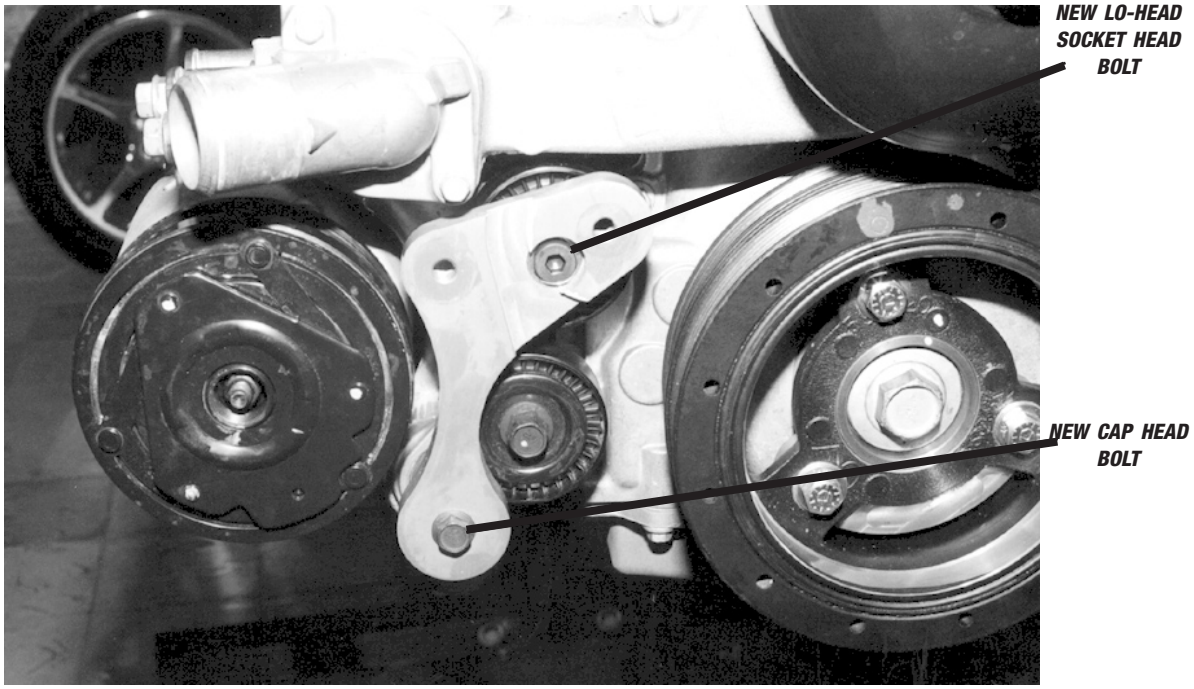


— FIGURE 8.7 —

8.8 Install new Tensioner Sub Bracket (A1622) using lo-head socket bolt for top position and cap head bolt for bottom position.



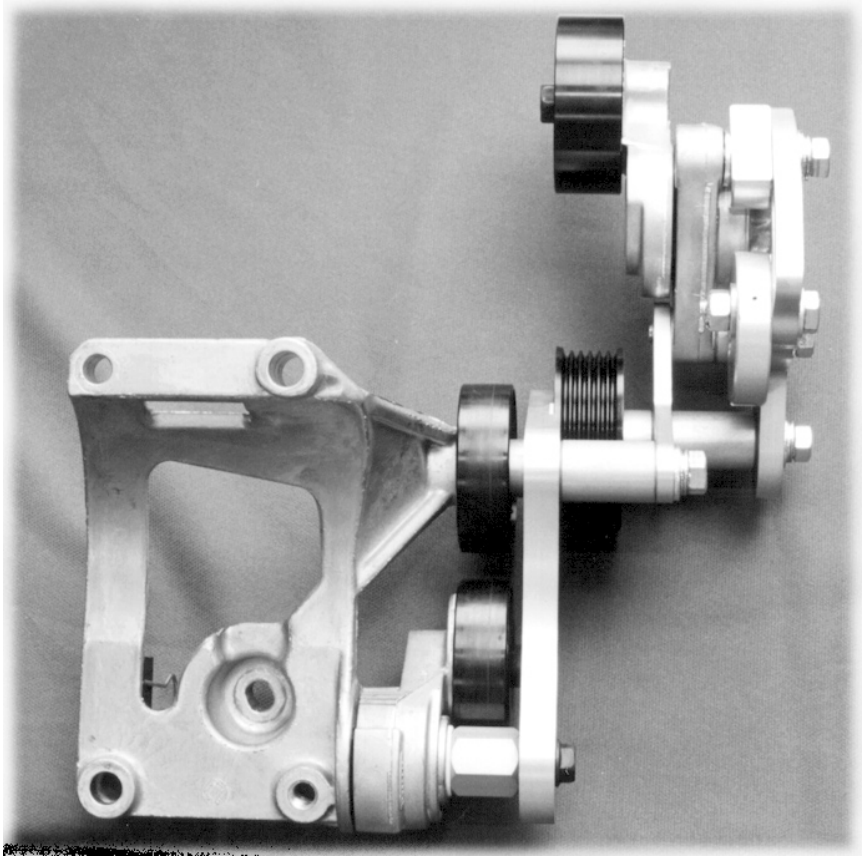
— FIGURE 8.8 —



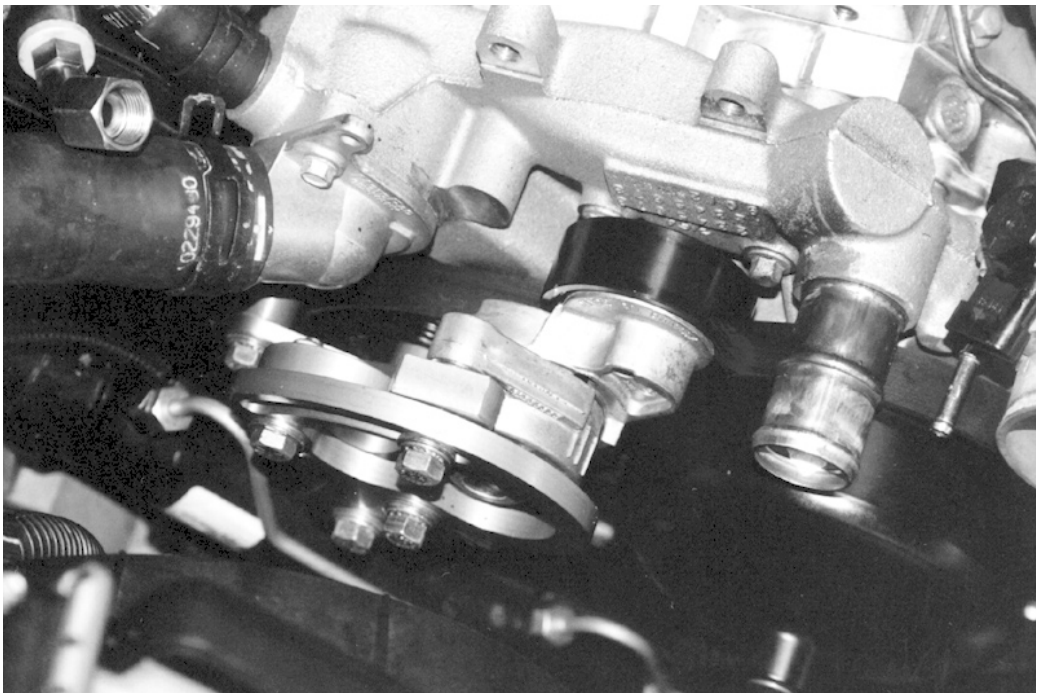
— FIGURE 8.9 —

8.9 Install new engine and supercharger belt tensioner assembly onto tensioner sub-bracket as shown in ***Figure 8.10***.

NOTE: BRACKET REMOVED FROM VEHICLE FOR CLARITY PURPOSES ONLY!

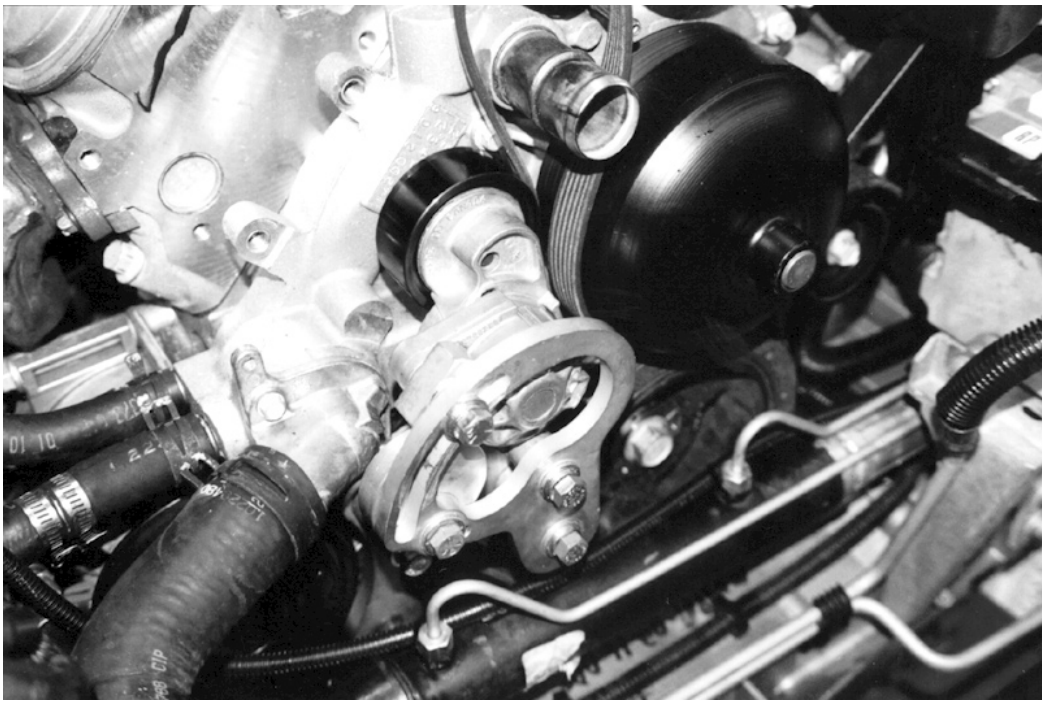


— FIGURE 8.10 —



— FIGURE 8.11 —

8.10 Install the new Supercharger and Engine Serpentine Belt. Note in ***Figure 8.12*** how belt is left loose up top by water neck.



— FIGURE 8.12 —

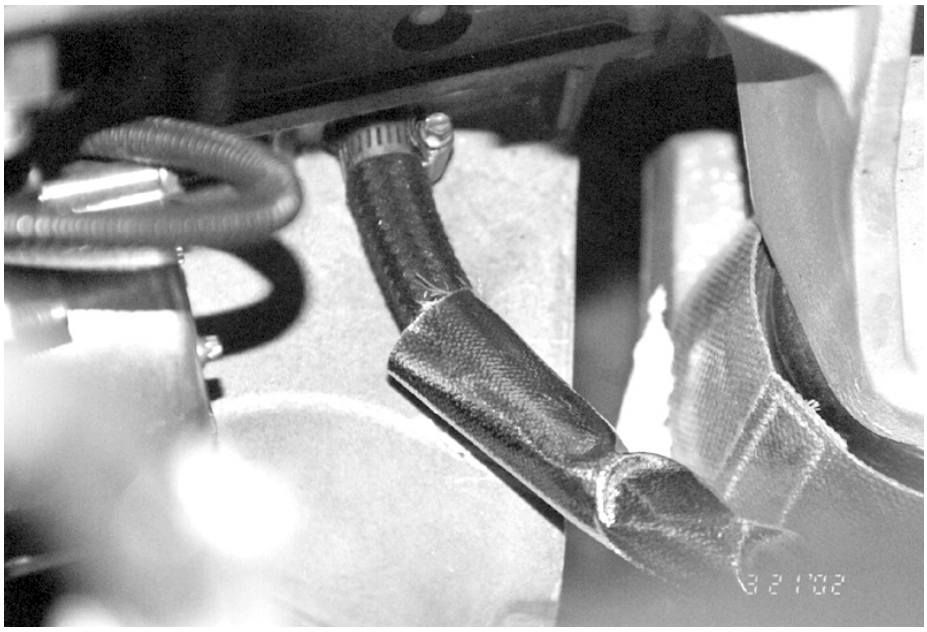
— NOTES —

— NOTES —

Section 9 • SUPERCHARGER INSTALLATION

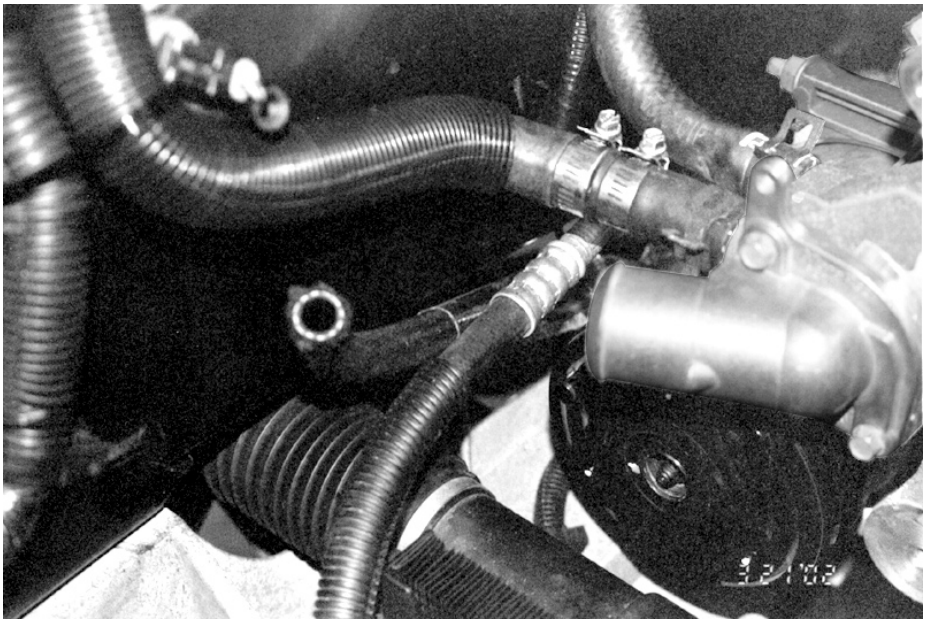
9.1 Install supercharger oil drain back line. Attach one end to oil pan. Route hose as shown. Be sure insulated foil is on the hose.

NOTE: Oil Drain Line from supercharger should be routed under the A/C compressor (not over the top). Routed in this manner the supercharger oil drain line is not close to the exhaust manifold.



— FIGURE 9.1 —

9.2 Temporarily remove radiator coolant line to water pump if not already done so. This step makes it easier to attach the supercharger oil drain back line to supercharger.

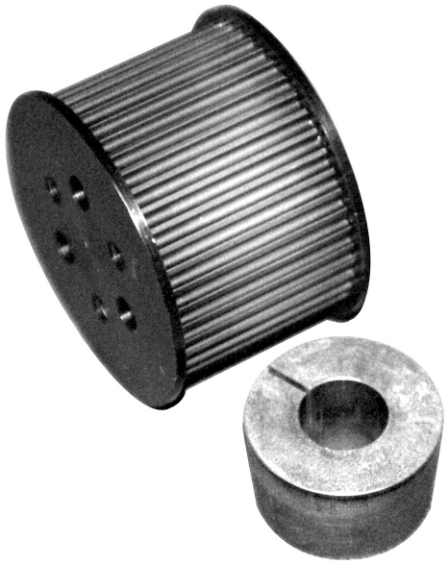


— FIGURE 9.2 —

9.3 Remove Cog Pulley from Blower. ***See TAPERLOCK INSTRUCTIONS located at the end of this installation guide for installation and removal of pulleys using taperlock collet.*** This is necessary in order to gain access to one of the bracket to head mounting bolts.

CAUTION: NEVER "TAP" ON SUPERCHARGER DRIVE SHAFT. EVEN LIGHT TAPPING CAN DAMAGE SUPERCHARGER BEARINGS.

9.4 Pull bolt and spacer out of supercharger bracket to gain access to allen head bolt.

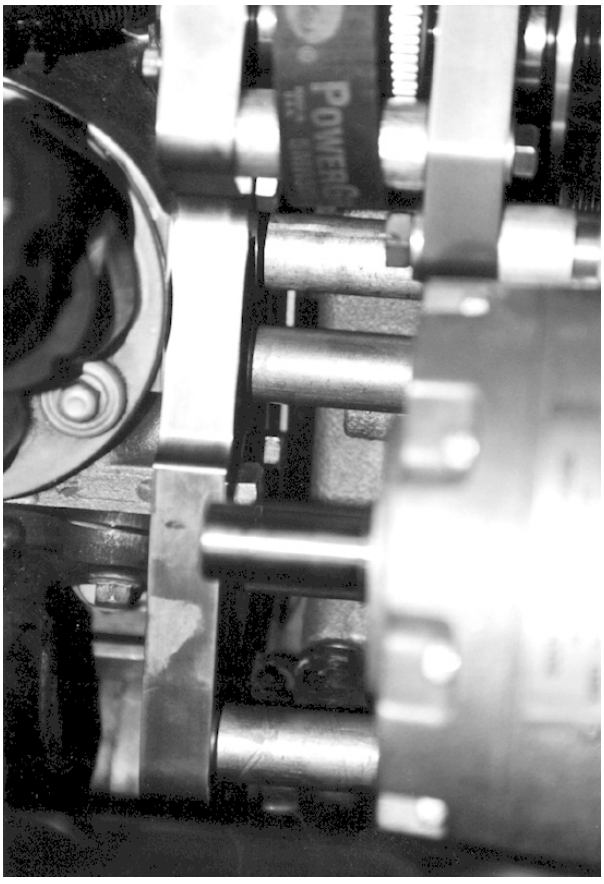


— FIGURE 9.3 —

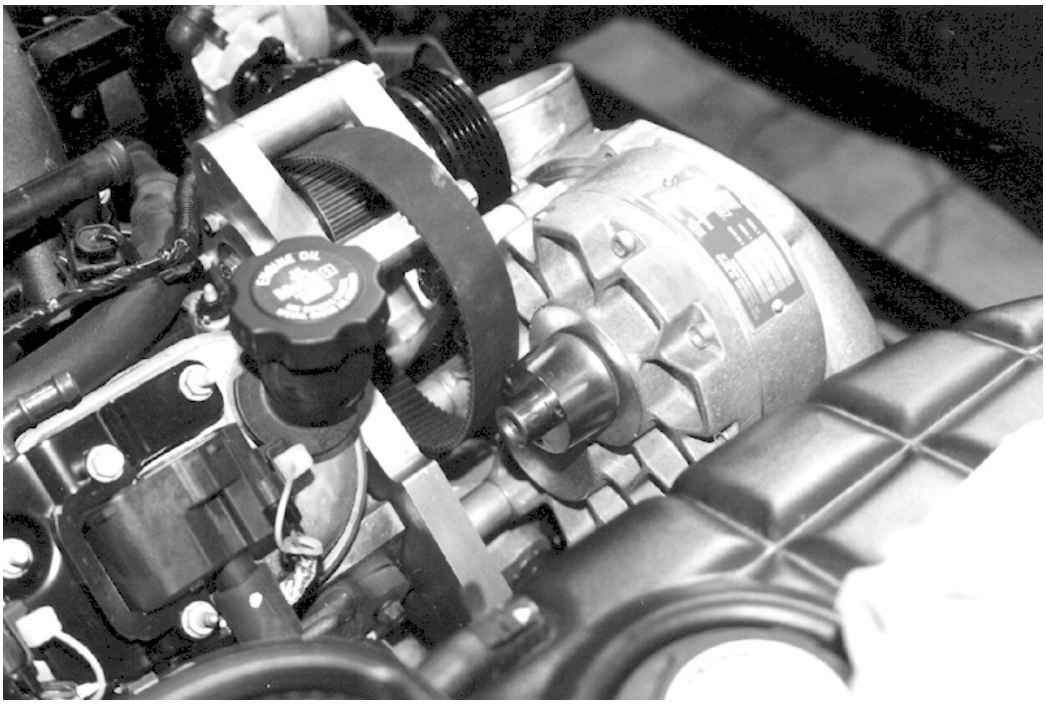
9.5 Lower blower and bracket into engine compartment. Before bolting bracket to head, attach Oil Drain Line to Blower and connect oil supply line to supercharger using M10 banjo bolt and two copper crush washers on either side of banjo fitting.

9.6 Install Blower and Bracket as an assembly and tighten down three bracket to engine head bolts.

9.7 Replace push rod, rocker arm, and valve cover previously removed.

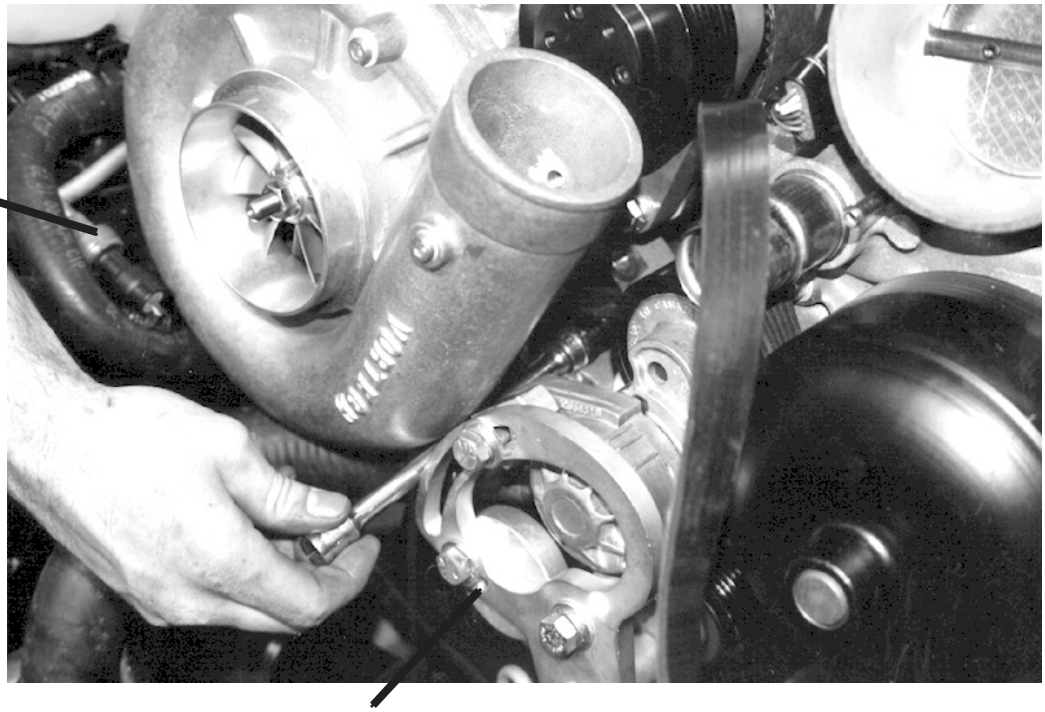


— FIGURE 9.4 —



— FIGURE 9.5 —

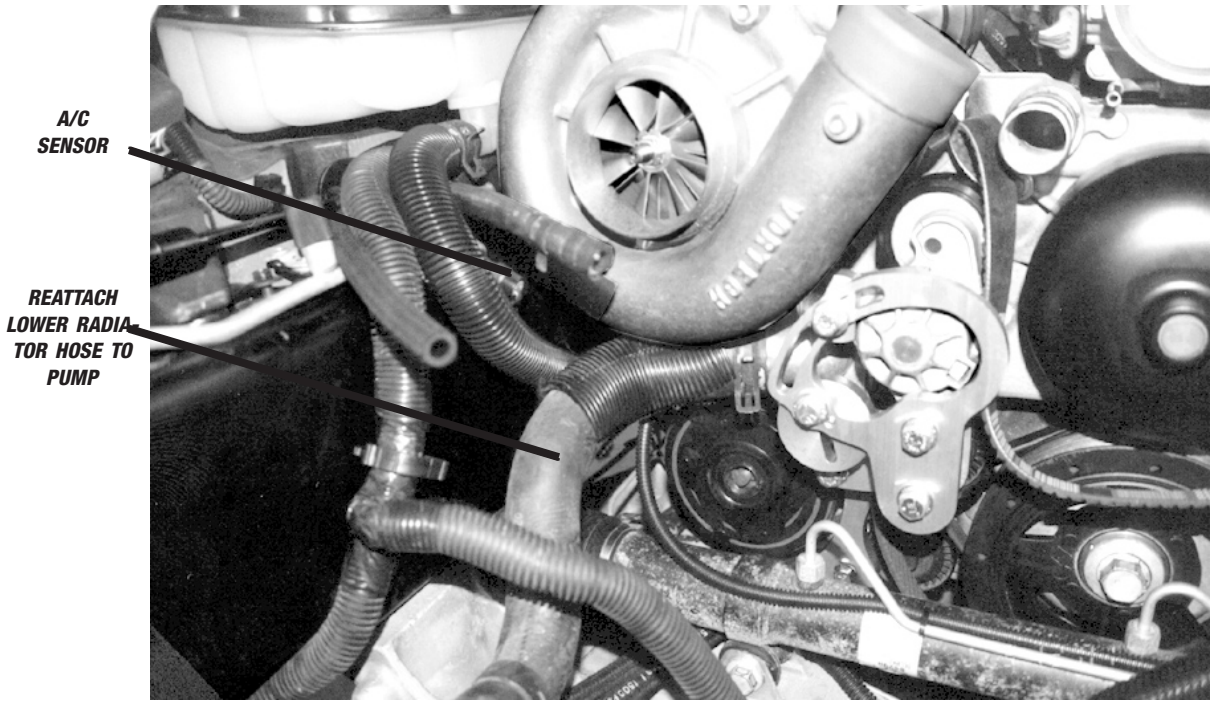
9.8 Bend A/C Refrigerant Line as necessary so A/C Sensor clears supercharger.



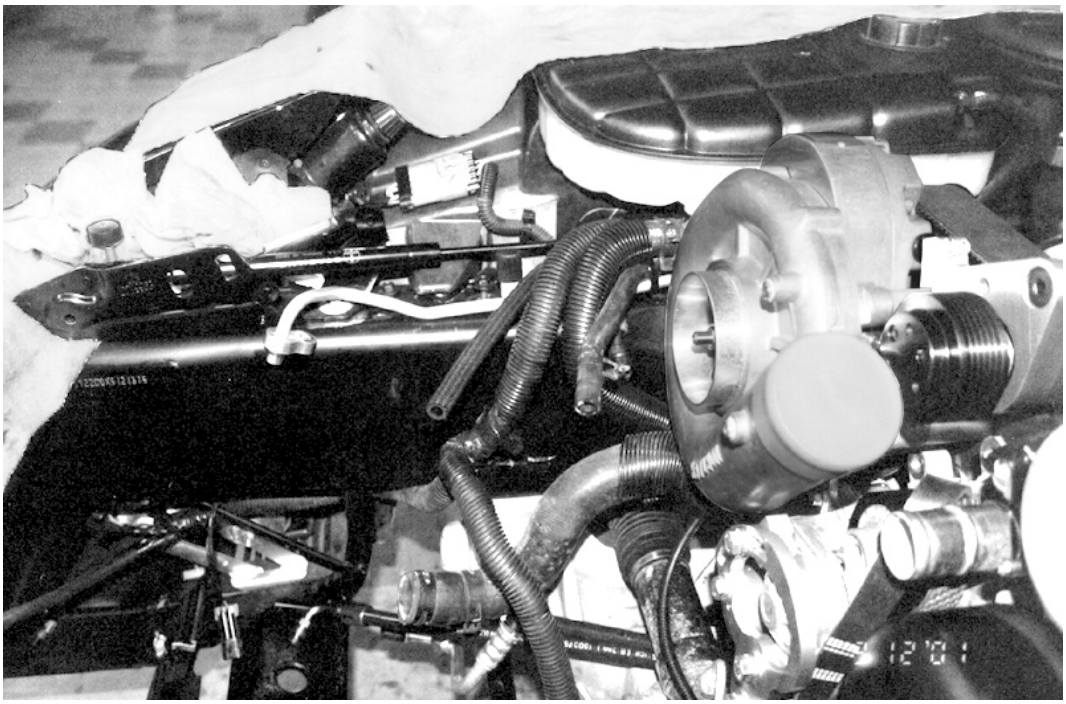
NOTE ALLEN HEAD SET SCREW. AFTER BELT IS PROPERLY TENSIONED USE THIS SET SCREW TO LOCK ROUND DISC IN PLACE SO IT DOESN'T RATTLE.

— FIGURE 9.6 —

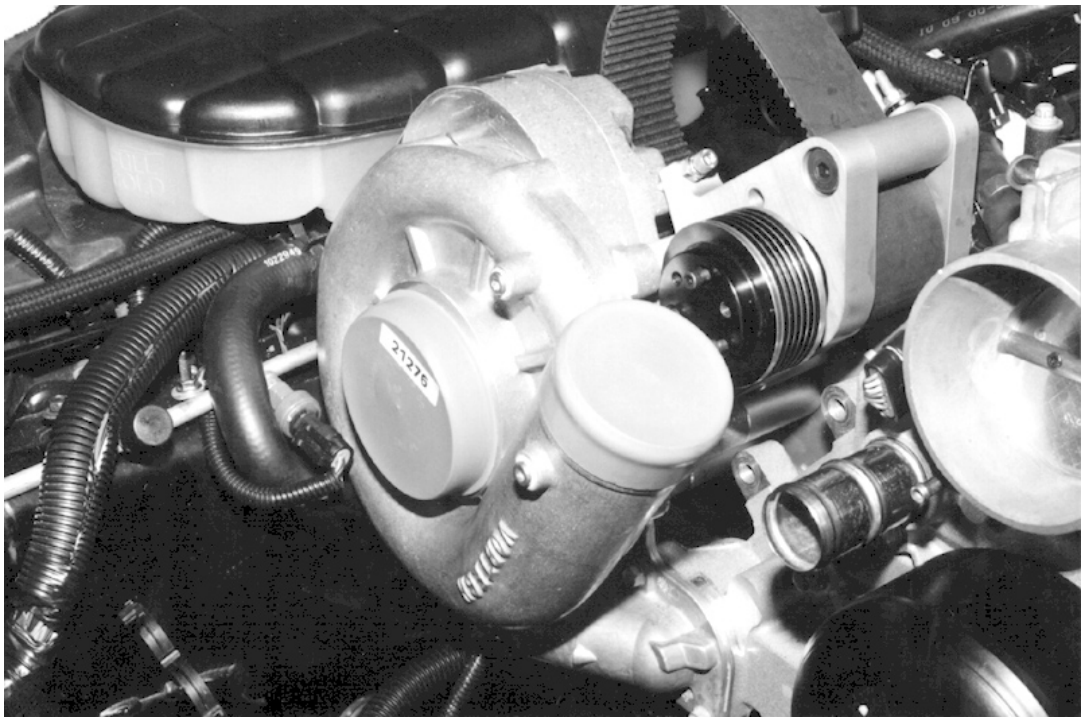
9.9 Remove lower radiator hose from radiator. Re-connect lower radiator hose to water pump. Push original GM split loom up under supercharger to protect hose.



— FIGURE 9.7 —



— FIGURE 9.8 —



— FIGURE 9.9 —

— NOTES —

Section 10 • INSTALL & TENSION ENGINE / SUPERCHARGER SERPENTINE BELT

10.1 Slip Serpentine Belt over Grooved Drive Pulley on Jackshaft. Ideally the belt will be super tight without adjusting the belt tensioner. Ideally you have to struggle to get belt on – perhaps even loosening the alternator. We want the belt to be this tight before applying any tension with the belt tensioner because of the tremendous belt stretch that will occur under heavy loads. If the belt goes on loose we suggest changing the 76mm GM idler for a 90mm idler available free from Carroll Supercharging or locally as Dayco P/N 89006.

— FIGURE 10.1 —

REPLACE STOCK 76mm GM IDLER WITH 90mm FLAT IDLER IF BELT IS LOOSE UPON INSTALLATION.

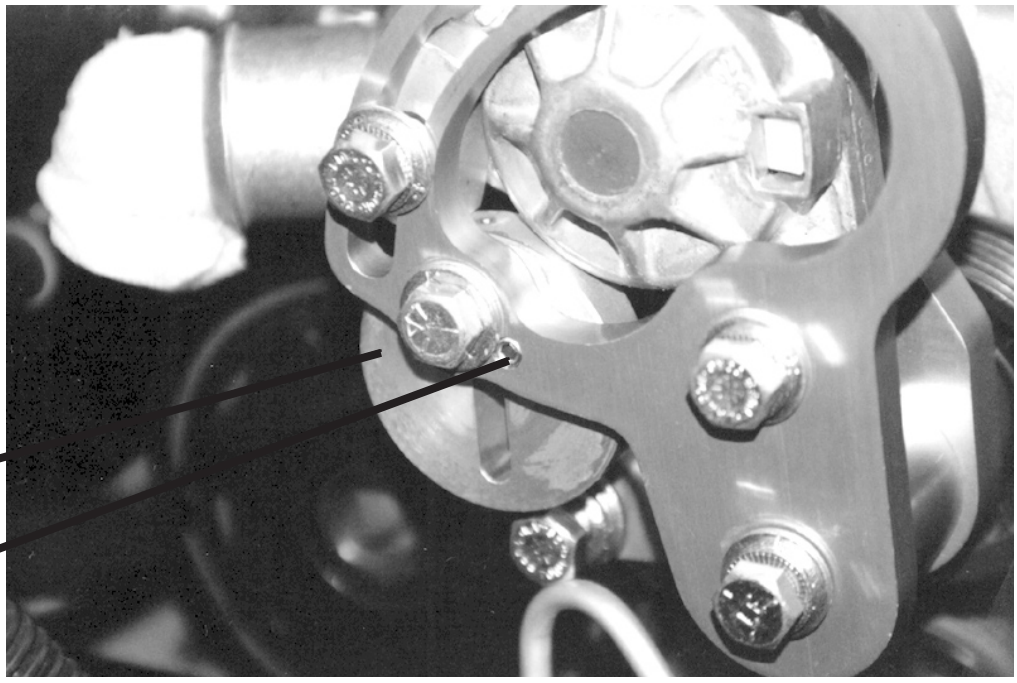
— FIGURE 10.2 —

10.2 Adjust Engine Belt Tensioner using a ratchet and 9/16 socket to turn the CAM loader until the Belt Tensioner is loaded.

NOTE: Do not tighten Grooved Drive Pulley on Jackshaft yet. Leave it loose!

— FIGURE 10.3 —

10.3 Be sure to lock round disc cam loader with allen head set screw so it doesn't rattle around.



— FIGURE 10.4 —

Section 11 • INSTALL SUPERCHARGER COGGED BELT & PULLEY

11.1 Reinstall supercharged cogged belt and pulley as an assembly. Tighten 10/32 screws on supercharger cogged pulley. Note cogged pulley will move towards supercharger as it “climbs” onto tapered collet. Therefore leave room. ***See TAPERLOCK INSTRUCTIONS located at the end of this installation guide for installation and removal of pulleys using taper lock collet.***

RESERVED

— FIGURE 11.1 —

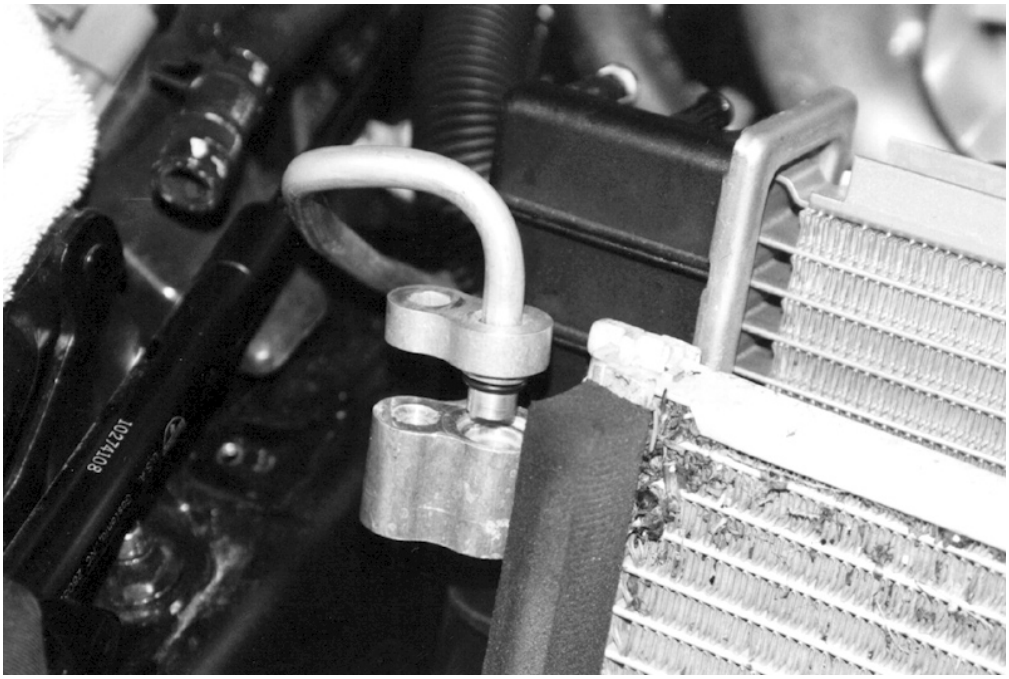
— FIGURE 11.2 —

— FIGURE 11.3 —

Section 12 • MISCELLANEOUS ASSEMBLY

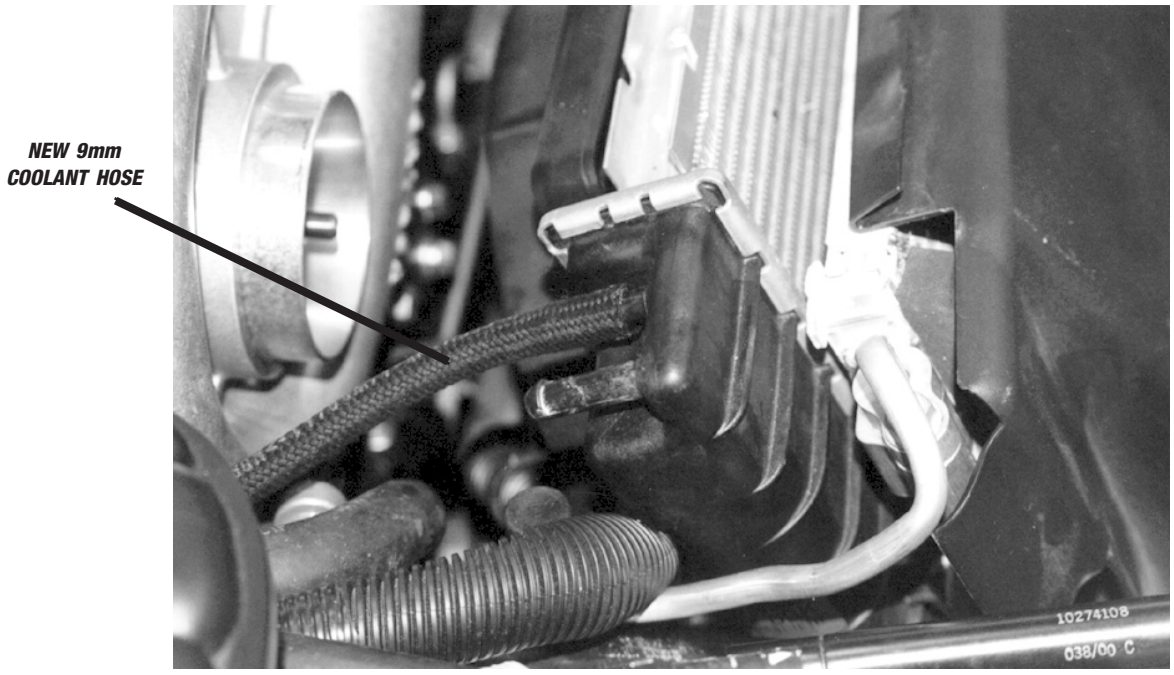
12.1 Install Radiator and A/C Condenser as an assembly with Shroud. Do not install Radiator–A/C Condenser Cover yet.

12.2 Attach A/C Refrigerant Lines to Condenser. Bend Lines as necessary. Use caution not to kink any refrigerant lines.



— FIGURE 12.1 —

12.3 Install new 9mm Coolant Hose between Radiator and Throttle Body. Re-use GM hose clamps to secure.



— FIGURE 12.2 —

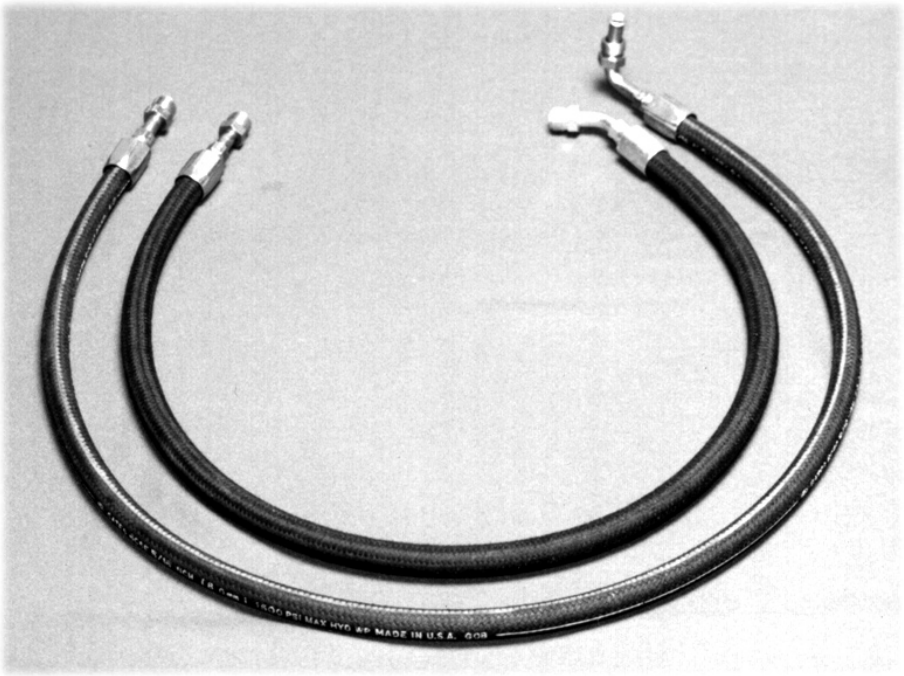
RESERVED

— FIGURE 12.3 —

12.4 Connect all other GM Coolant Hoses.

— FIGURE 12.4 —

12.5 If automatic transmission, replace lines from radiator to junction block with those supplied.

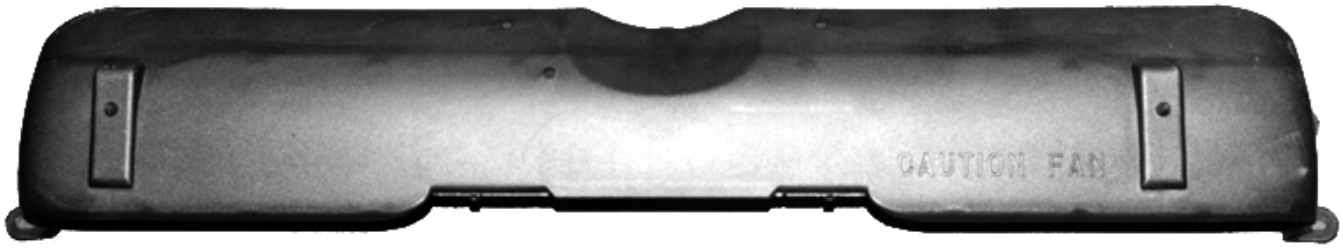


— FIGURE 12.5 —

RESERVED

— FIGURE 12.6 —

12.6 Cut out Rad – A/C Cover as shown.



— FIGURE 12.7 —
STOCK – UNMODIFIED

— FIGURE 12.8 —
MARK AREA TO CUT

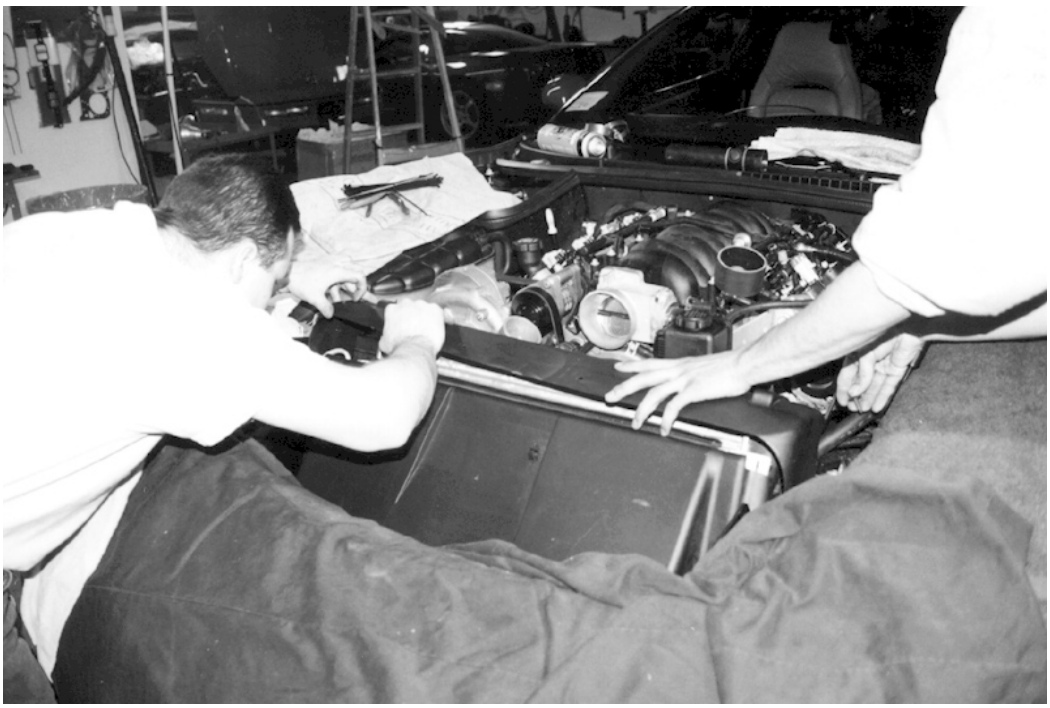
— FIGURE 12.9 —

— FIGURE 12.10 —
FINISHED SHROUD

RESERVED

— FIGURE 12.11 —

12.7 Re-Install Radiator–A/C Cover.



— FIGURE 12.12 —

Section 13 • INSTALL AIR INLET & AIR DISCHARGE PLENUMS

13.1 Remove Screens from MAF for extra pound of boost.

— FIGURE 13.1 —
1997–1999

— CAUTION —

DO NOT USE AN AFTERMARKET MAF. AFTERMARKET MAF'S ARE NOT COMPATIBLE WITH OUR REPROGRAMMED PCM AND MAY CAUSE DETONATION.

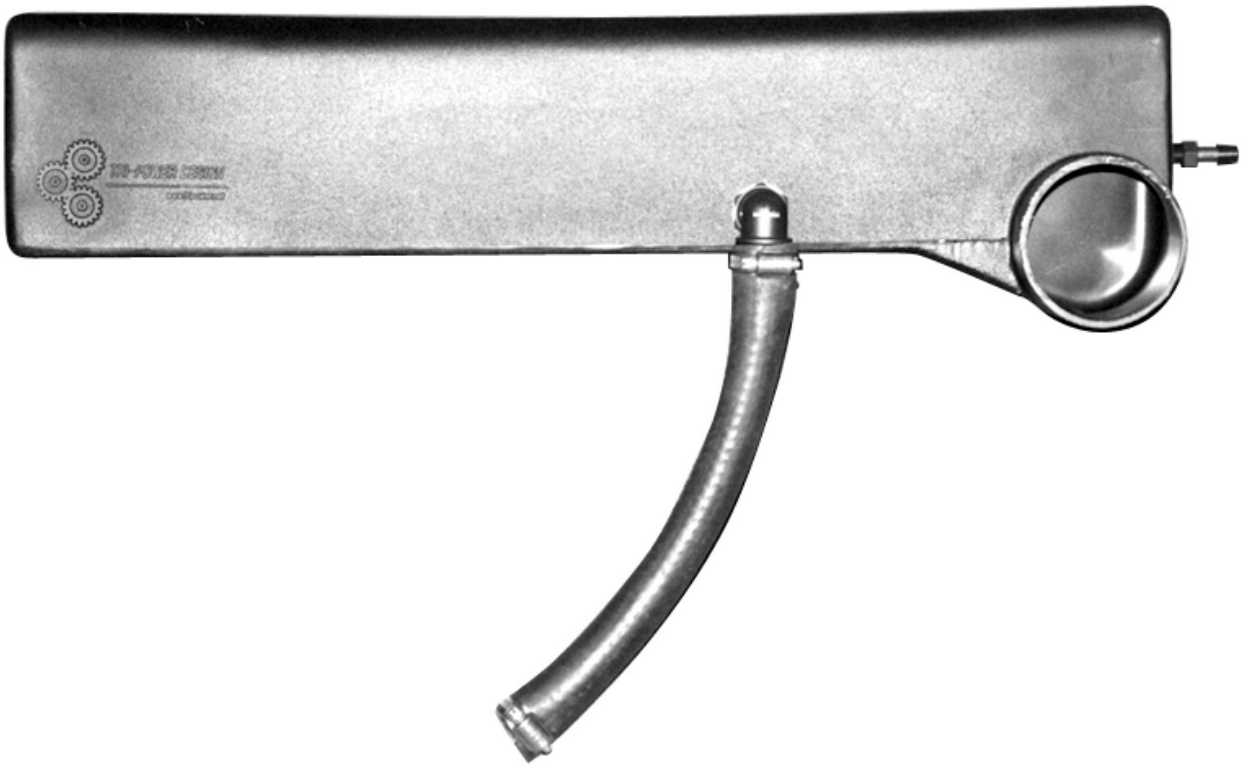
BEFORE SCREWS ARE REMOVED.

AFTER SCREWS ARE REMOVED.

— FIGURE 13.2 —
2000–2002

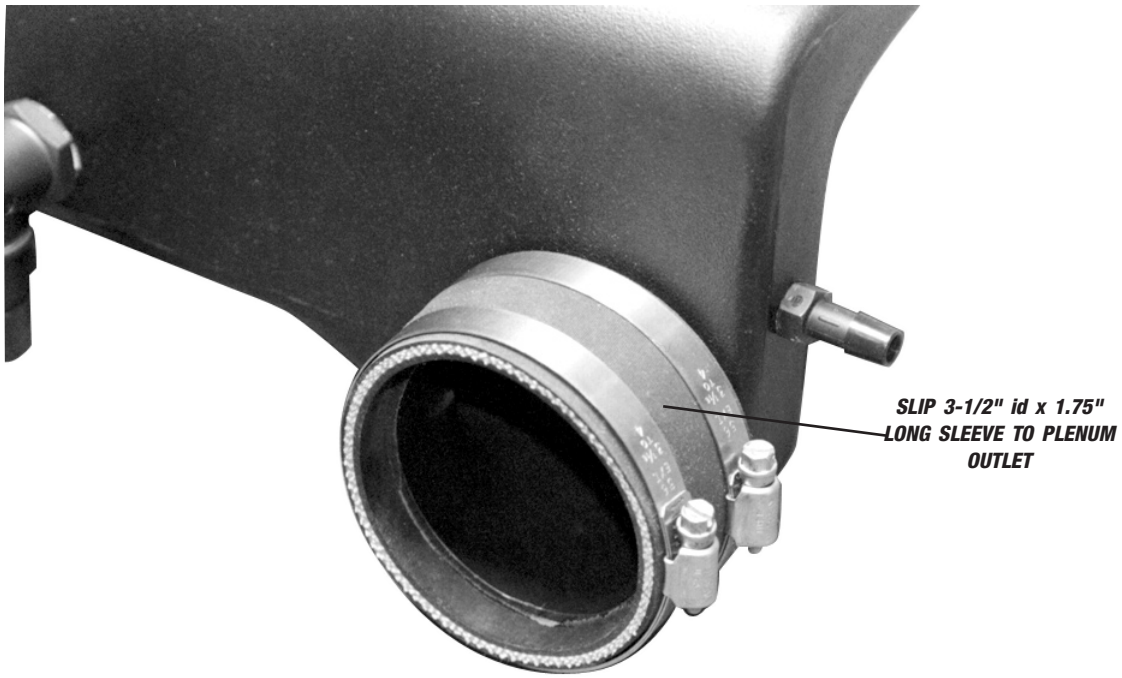
— FIGURE 13.3 —

13.4 Attach 12" long x 1" i.d. rubber hose to plenum as shown in ***Figure 13.4.***



— FIGURE 13.4 —

13.5 Attach 3-1/2" i.d. x 1.75" long Silicone Hose to Plenum Outlet.



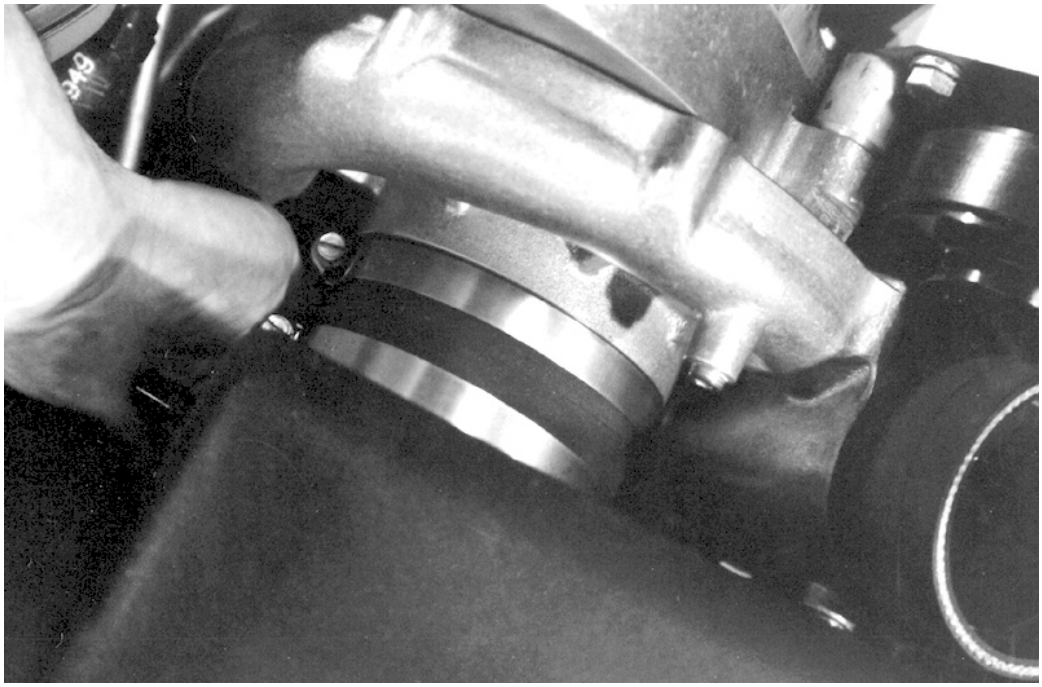
— FIGURE 13.5 —

13.6 Attach 3-1/2" i.d. x 3" long Silicone Hose to Plenum Inlet.

— FIGURE 13.6 —

13.7 Install Air Inlet Plenum connecting and tightening Silicone Hose to supercharger as you go along.

— FIGURE 13.7 —



— FIGURE 13.8 —

1997 through 2000 Corvettes Only:

13.8 1997 through 2000 Corvettes utilize an independent I.A.T. sensor. On these vehicles extend the I.A.T. wires and locate the sensor in the area of the MAF.

2001 & Newer Vehicles Only:

13.9 Extend MAF wires using supplied wire and butt splices. (2001 and newer vehicles have I.A.T. built into MAF. Extend all 5 wires).

RESERVED

— FIGURE 13.9 —

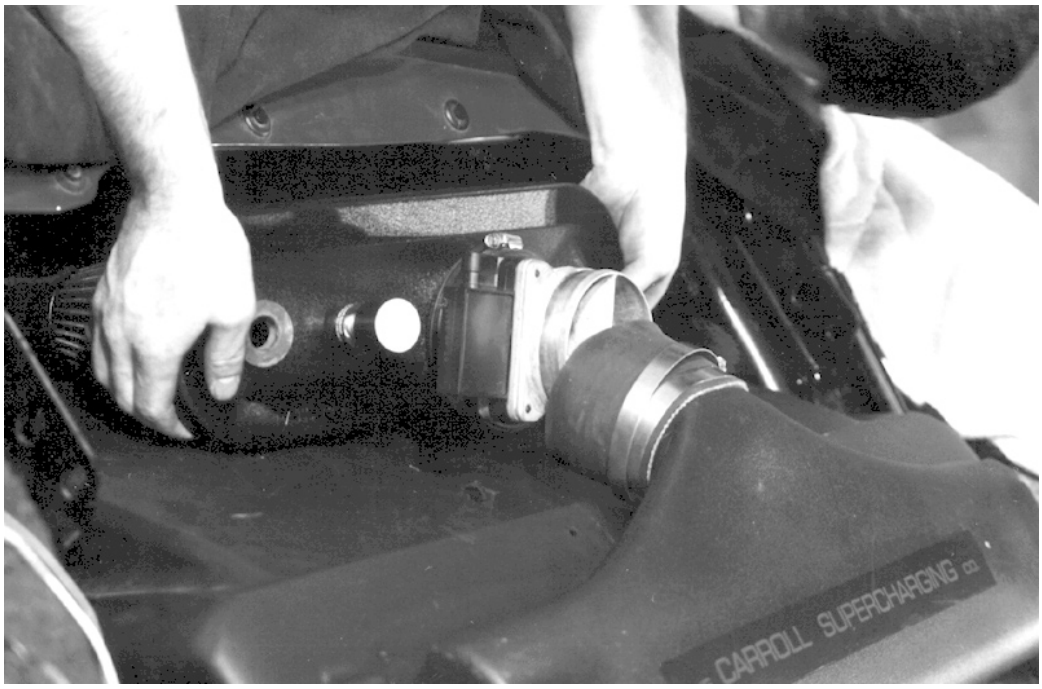
RESERVED

— FIGURE 13.10 —

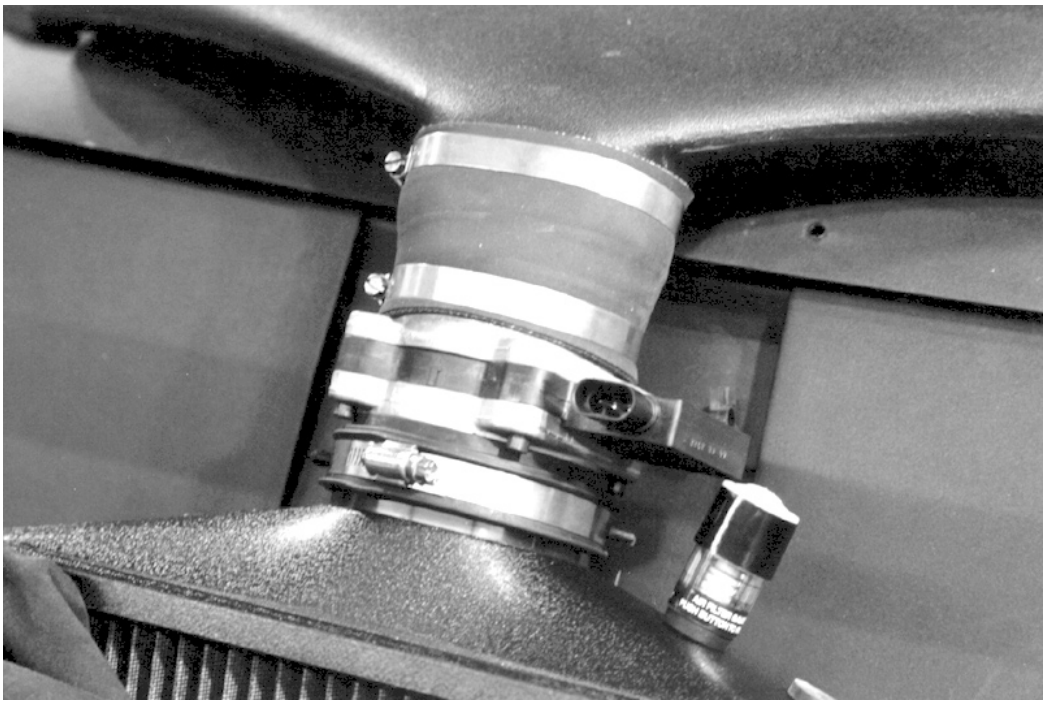
INSTALL AIR FILTER ASSEMBLY

13.10 Install Air Filter Assembly.

— FIGURE 13.11 —
DONALDSON AIR FILTER SHOWN. STOCK CORVETTE AIR FILTER SIMILAR.



— FIGURE 13.12 —



— FIGURE 13.13 —

13.11 Connect GM Breather Hose to Air Filter Assembly.

— FIGURE 13.14 —

13.12 Install 4" i.d. x 1.5" Long Black Hose to Throttle Body.

— FIGURE 13.15 —

13.13 Install 2-3/4" i.d. x 1.75" long Silicone Hose onto Blower.

RESERVED

— FIGURE 13.16 —

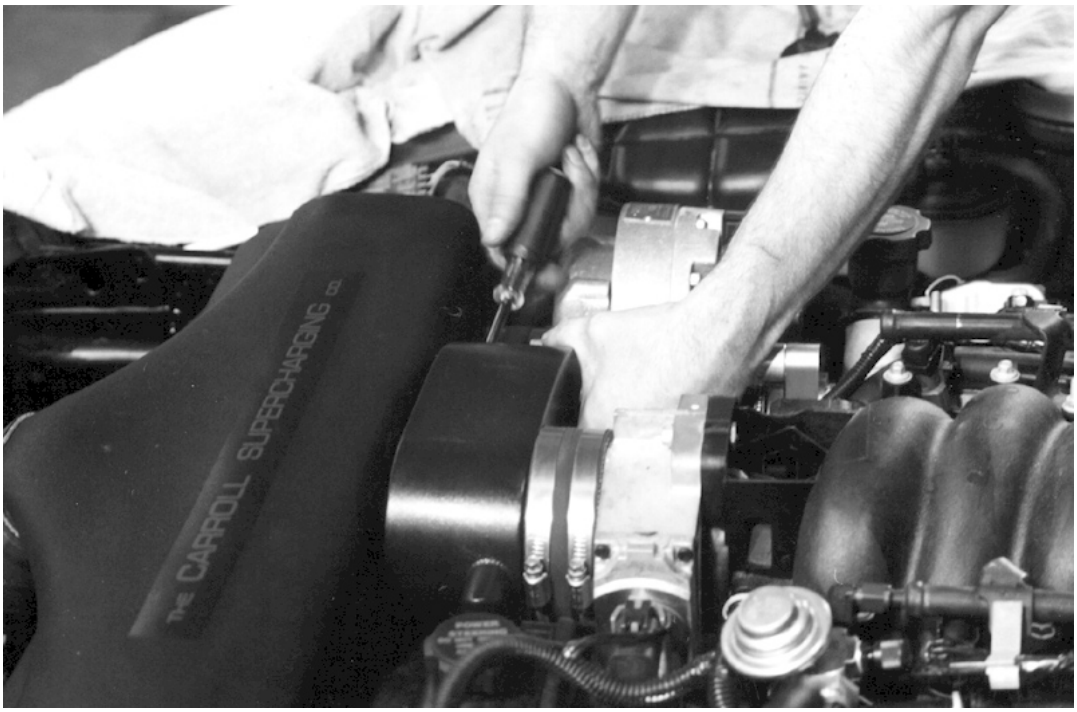
13.14 Attach 15" x 1" i.d. rubber hose onto air discharge plenum.

— FIGURE 13.17 —

13.15 Attach Surge Valve as shown.

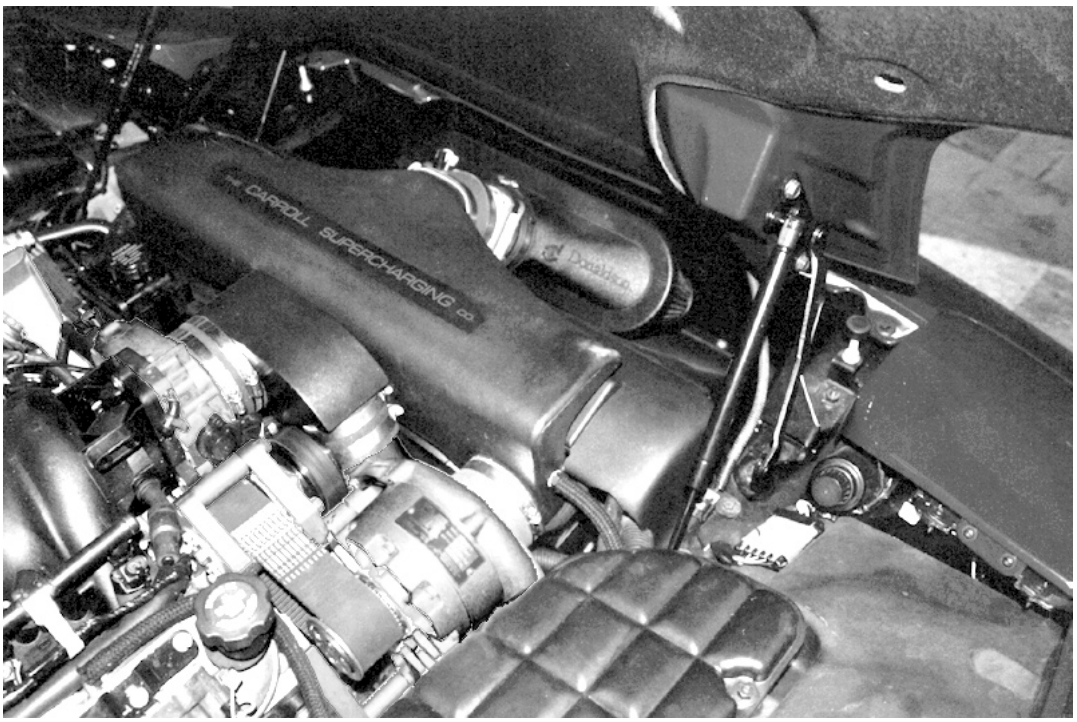
— FIGURE 13.18 —

13.16 Install Air Discharge Plenum between Supercharger and Throttle Body. Position and clamp hoses.



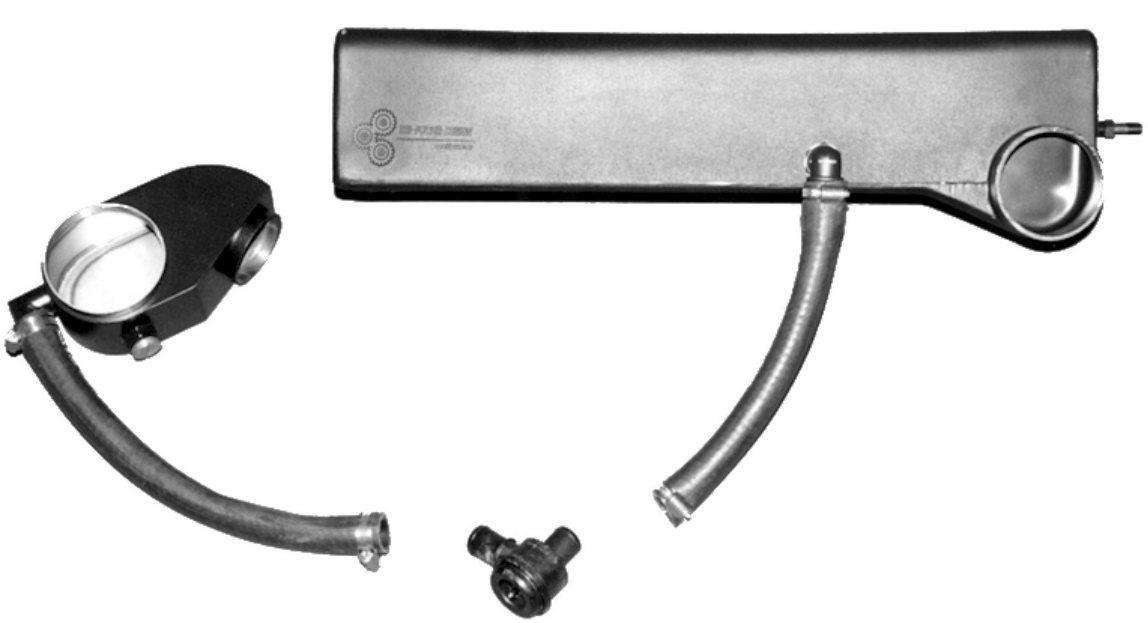
— FIGURE 13.19 —

13.17 From underneath vehicle attach Surge Valve to hose from plenum and tighten.

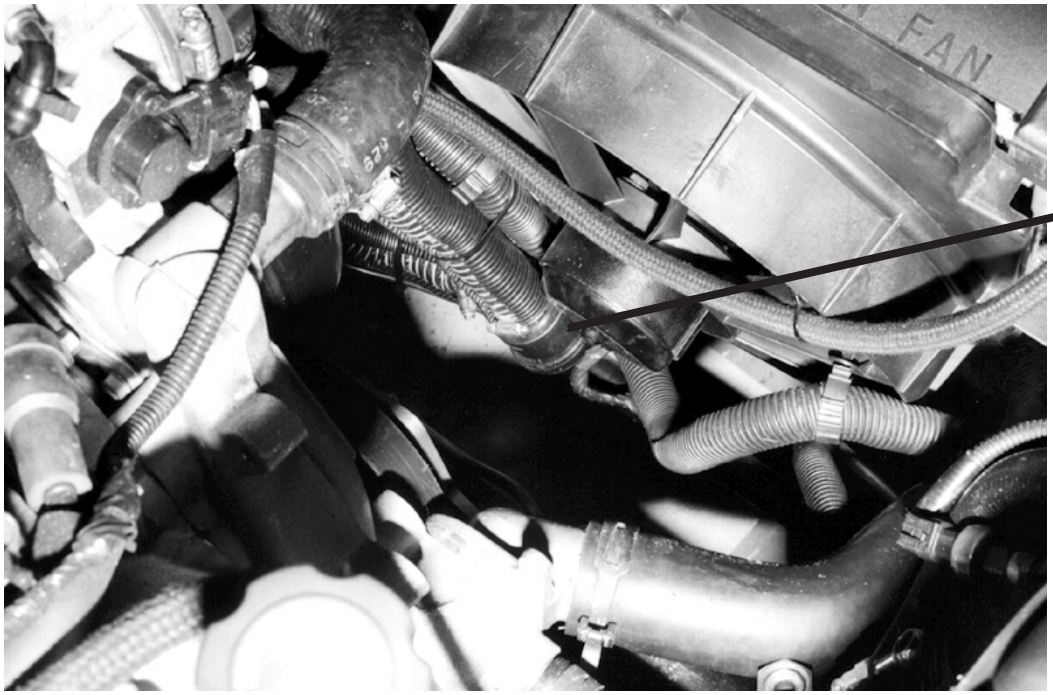


— FIGURE 13.20 —

13.18 Install Surge Valve between 2–1" i.d. rubber Hoses. Installs from under vehicle. Direction does not matter. Ty wrap Surge Valve away from Water Pump and Fans.



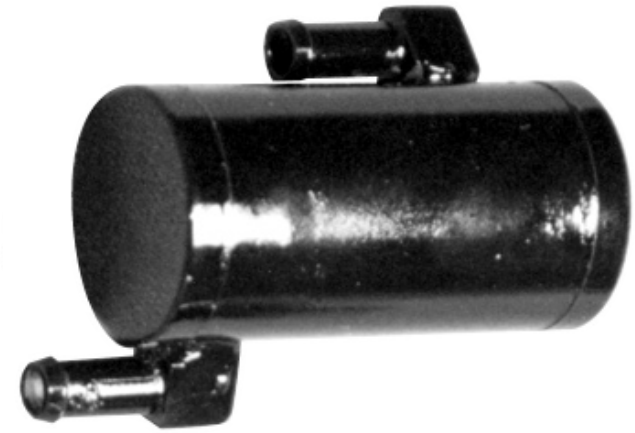
— FIGURE 13.21 —



— FIGURE 13.22 —
NOTE: BLOWERWORKS NOT SHOWN FOR CLARITY PURPOSES.

CRANKCASE VENTILATION
OIL CATCH CANS

"CATCH CANS" ARE FILLED WITH FINE COPPER MESH TO CATCH & CONDENSE HOT OIL VAPOR & RETURN OIL TO CRANKCASE.



LS6 PCV OIL CATCH CAN

TOP

BOTTOM FITTINGS CONNECT TO VALVE COVER ALLOWING CONDENSED ENGINE OIL TO DRAIN BACK.

LS1 PCV OIL CATCH CAN

Section 14 • POSITIVE CRANKCASE VENTILATION SYSTEM

LIGHT LOAD DESCRIPTION

The PCV or Positive Crankcase Ventilation System draws fresh filtered and metered air from just after the MAF or Mass Airflow Sensor.

The fresh air enters the engine through the passenger side valve cover under vacuum generated from the intake manifold through an orifice that also acts as a checkvalve. The orifice/checkvalve is called the PCV Valve located just behind the throttle body on the intake manifold. ***See Figure 14.1***. Under light throttle crankcase vapors are drawn into the intake and burned. This action keeps the engine clean and reduces emissions. Ideally the crankcase vapors contain little or no engine oil. However on the LS1/LS6 engine there is a tendency for engine oil to accumulate in the intake manifold. Apparently something in the design of tthe engine crankcase causes this undesirable effect.

Recognizing this GM changed the valley cover on the LS6 and vents the engine through a breather attached to the valley cover rather than venting through the valve covers. ***See Figure 14.5***. The venting through the valley cover is a common technique used amongst performance engine builders. There is less oil splash and vapor at this point. All LS1 valley covers and breather systems may be updated if so desired.

Even with the engine valley used as the point of venting there can be oil loss. Some or all of this engine oil loss can be prevented with the addition of an “oil catch can” in series with the PCV Valve. ***See Opposite Page.***

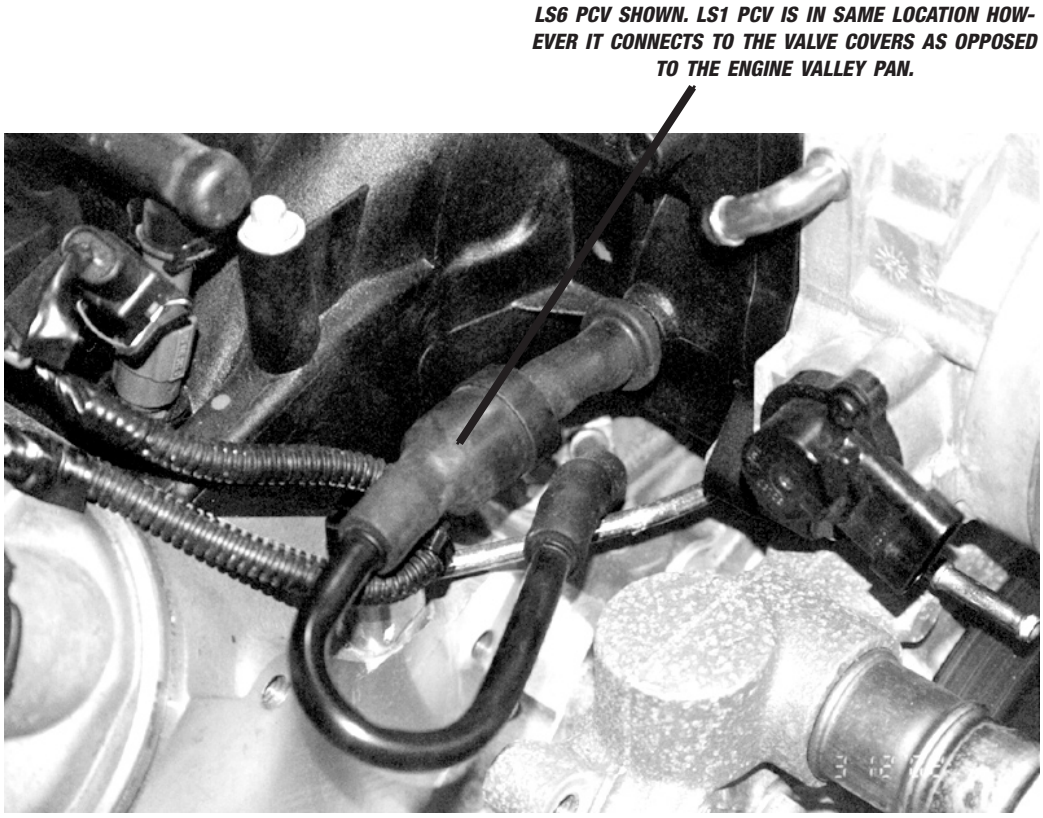
HEAVY LOAD DESCRIPTION

When adding a supercharger to any engine, under full throttle the manifold sees a positive pressure above the normal atmospheric pressure, i.e. boost pressure.

PCV Valves are not designed to close tight against positive pressures of 5 or more pounds. Therefore in order to prevent pressurizing the crankcase (with a resultant loss in power) we have added a “checkvalve” in series with the PCV Valve to prevent any boost pressure from entering the crankcase. This special checkvalve has a very low “cracking pressure” (3" of water) yet will withstand and close tight against positive manifold pressure. ***Figure 14.4*** shows this checkvalve.

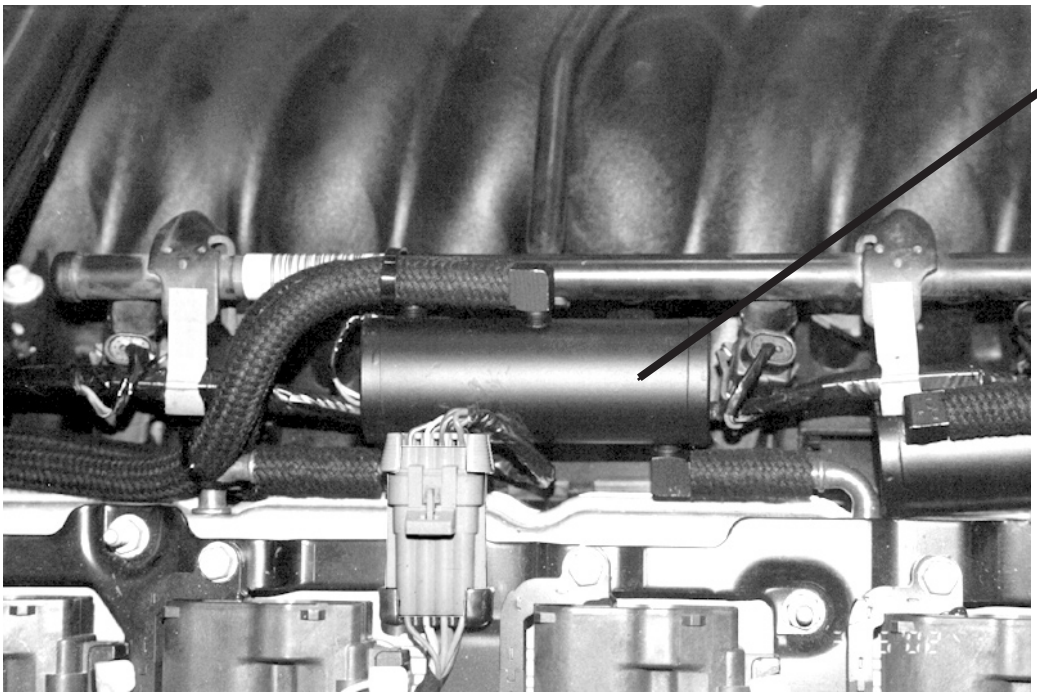
Under heavy loads, typically throttle openings of 50% or more the engine vacuum disappears and the intake manifold goes to zero vacuum (atmospheric pressure) or higher with a supercharger. In either case under heavy loads the engine starts to produce “blow-by”. Blow-by is the result of some of the combustion process leaking by the piston rings. The better the ring seal the less blow-by. All engines produce some blow-by. The blow-by pressurizes the crankcase which must be “vented” in order to prevent oil leaks and a loss of power. Under heavy loads the valve covers on an LS1/LS6 engine relieve the crankcase pressure back to the air filter where it is drawn in and burned. Under extreme loads the engine oil can get hot enough to produce a vapor which is also drawn into the intake and burned. Oil vapor thus lost results in a loss of engine oil and a loss of power.

In order to reduce this to an absolute minimum we at Carroll Supercharging have designed several “oil catch cans”. They are simply copper tubes filled with a very fine copper mesh designed to trap oil vapor, allow it to condense, then drain back to the engine through gravity under light loads. We have provided you with schematics and photos for this purpose. Additionally if you own a LS1 you may want to upgrade it to the LS6 specifications.

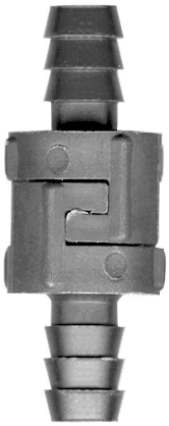


— FIGURE 14.1 —
STOCK LS6 PCV VALVE SHOWN. LS1 SIMILAR.

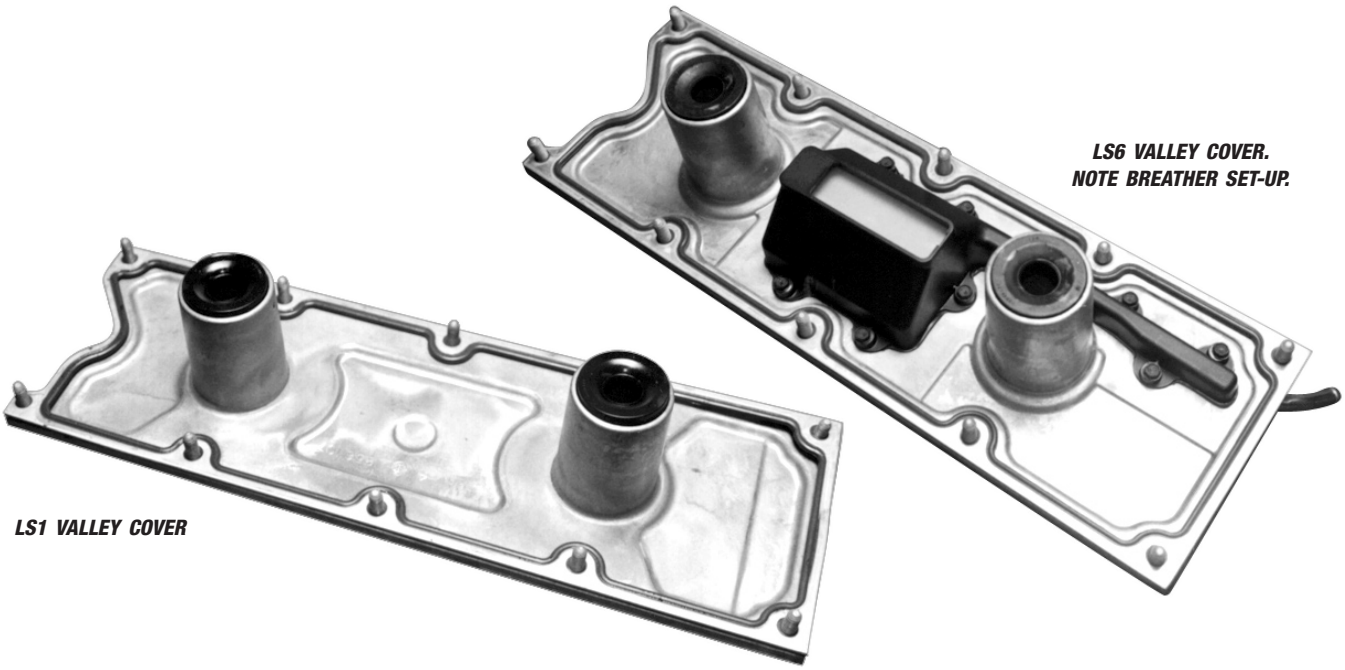
— FIGURE 14.2 —
LS6 PCV WITH NEW CHECKVALVE & OIL "CATCH CAN".



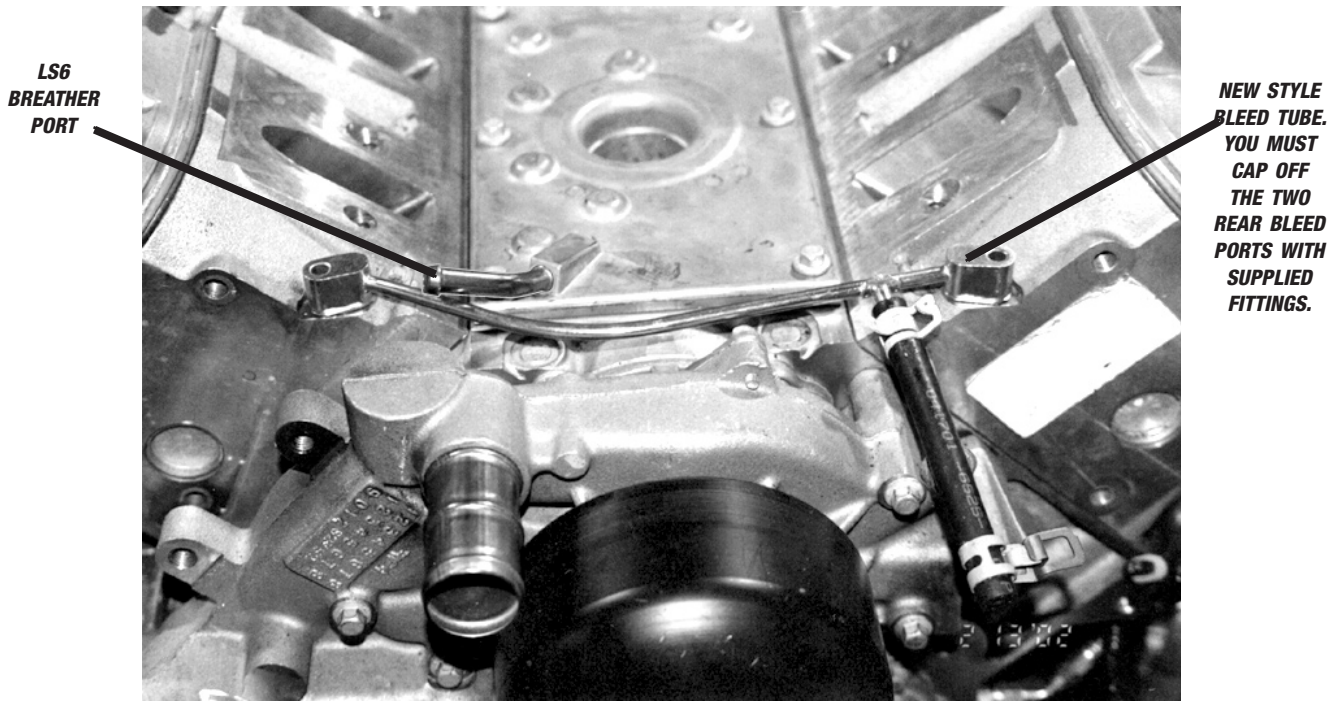
— FIGURE 14.3 —
PCV OIL CATCH CAN ON LS1



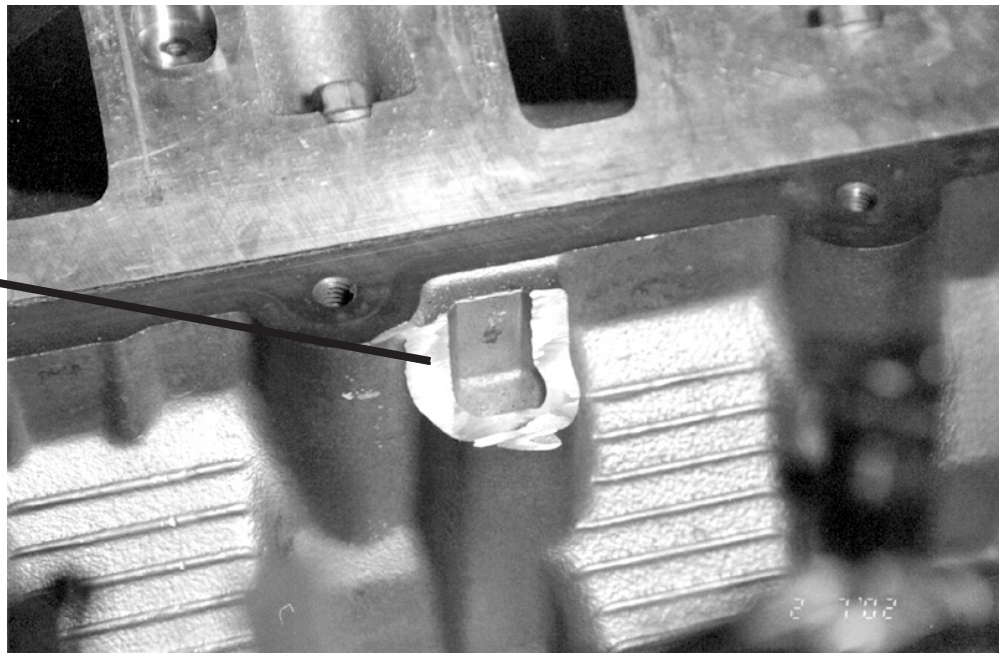
— FIGURE 14.4 —
CHECKVALVE



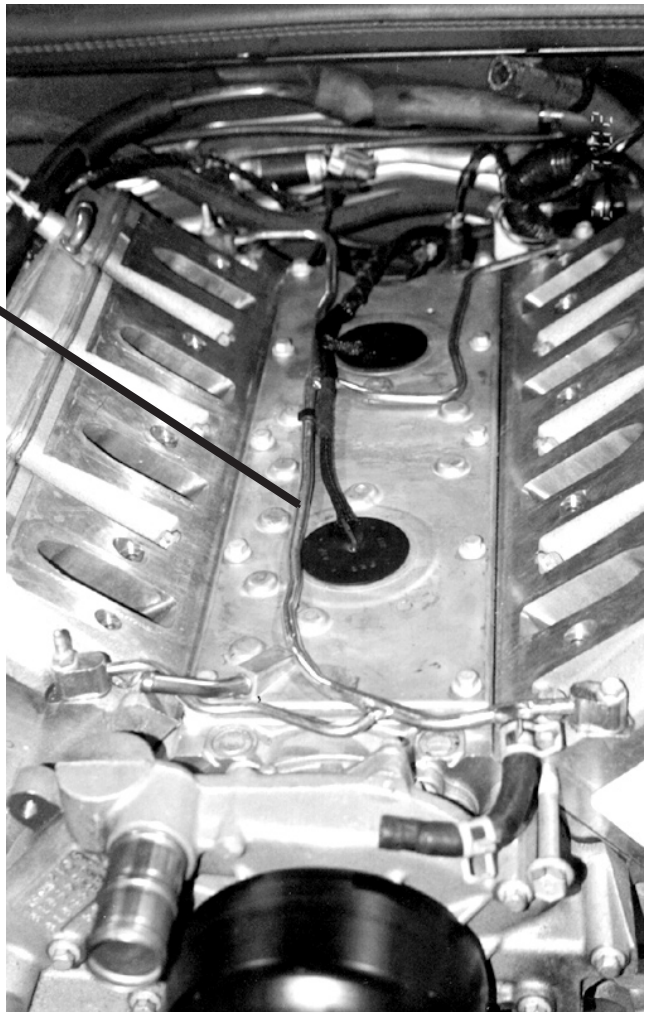
— FIGURE 14.5 —
VALLEY COVERS



— FIGURE 14.6 —

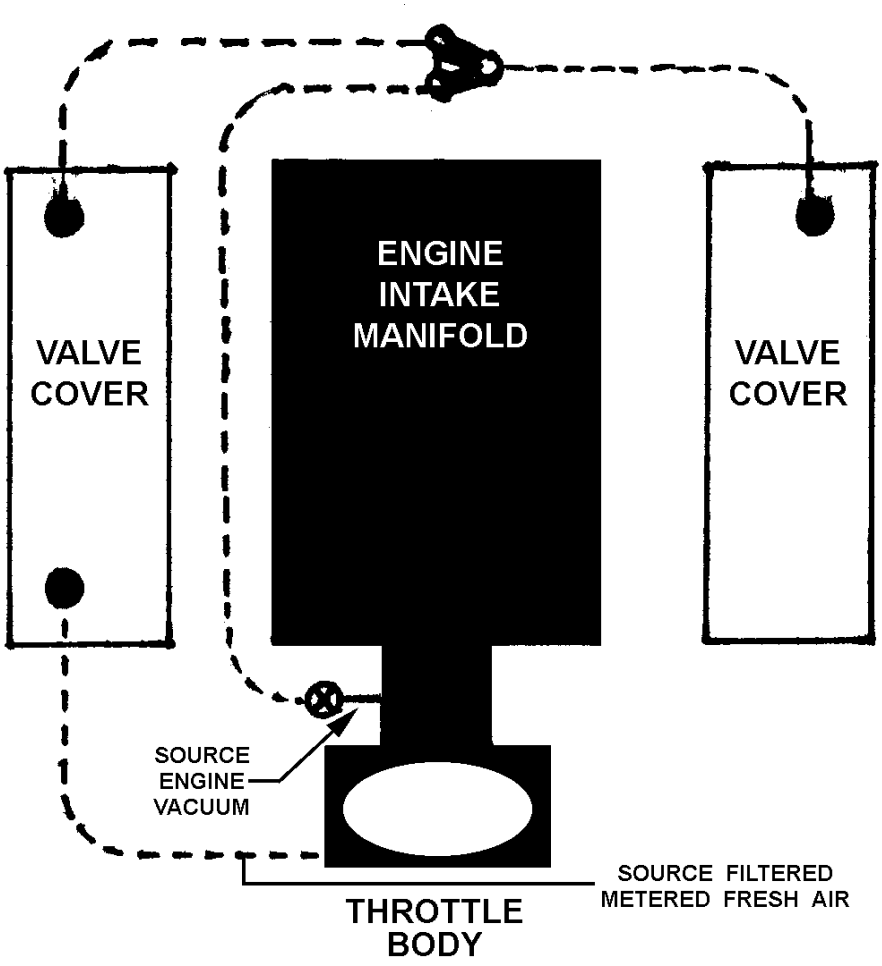


— FIGURE 14.7 —
PRIOR TO INSTALLING LS6 VALLEY COVER YOU MAY HAVE TO GRIND AS SHOWN.



— FIGURE 14.8 —

SCHEMATIC FOR STOCK LS1 CRANKCASE VENTILATION SYSTEM



SYMBOLS:

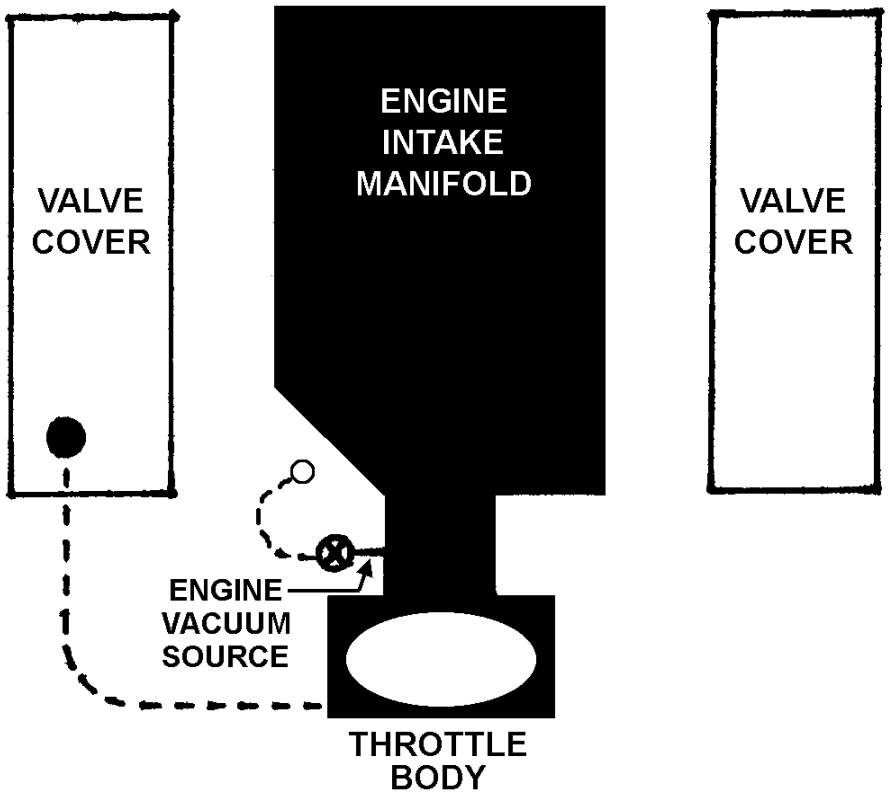
---- EMISSIONS HOSE

PCV VALVE

11-01-01

— PICTORIAL #1 —

SCHEMATIC FOR STOCK LS6 CRANKCASE VENTILATION SYSTEM



SYMBOLS:

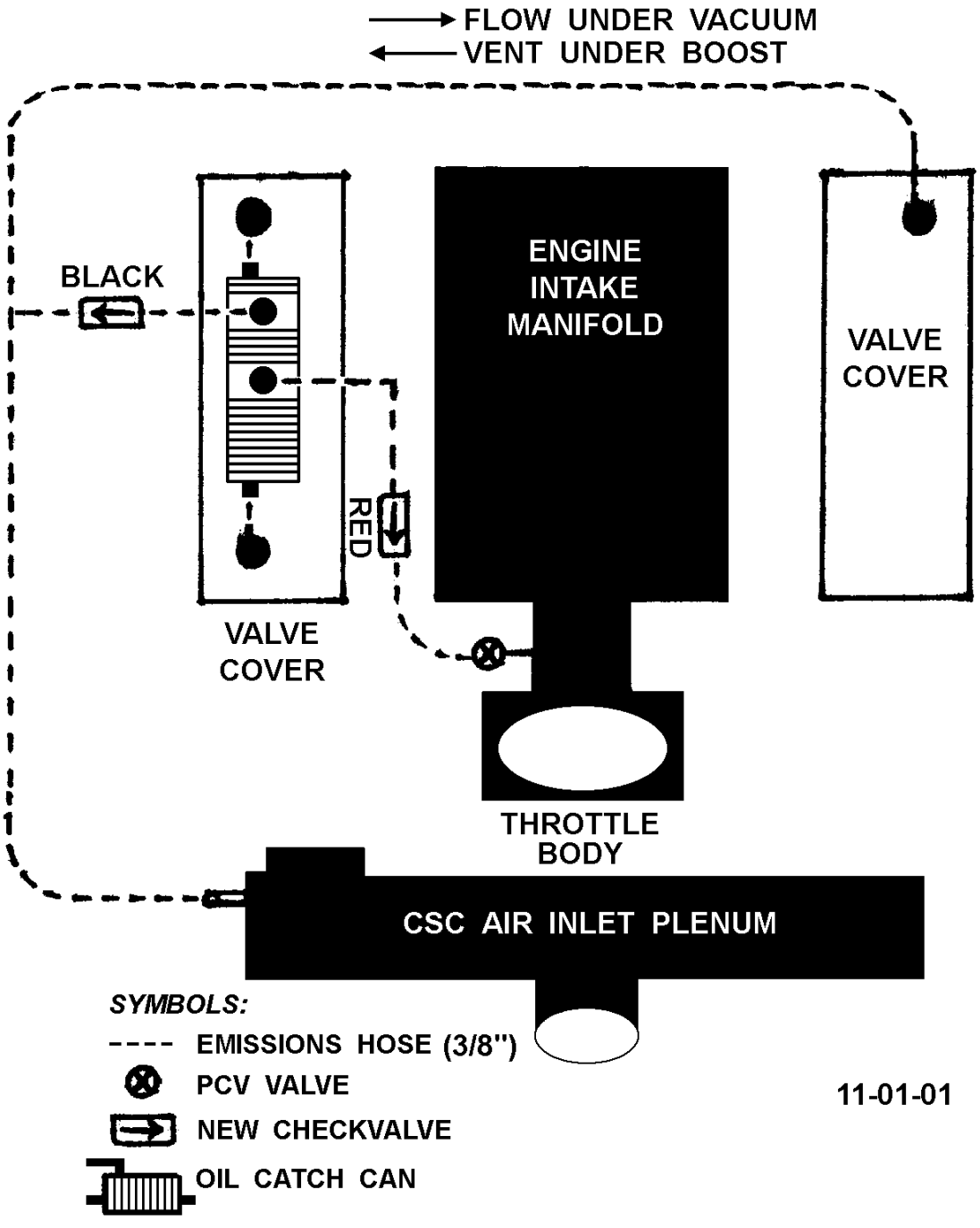
---- EMISSIONS HOSE

PCV VALVE

11-01-01

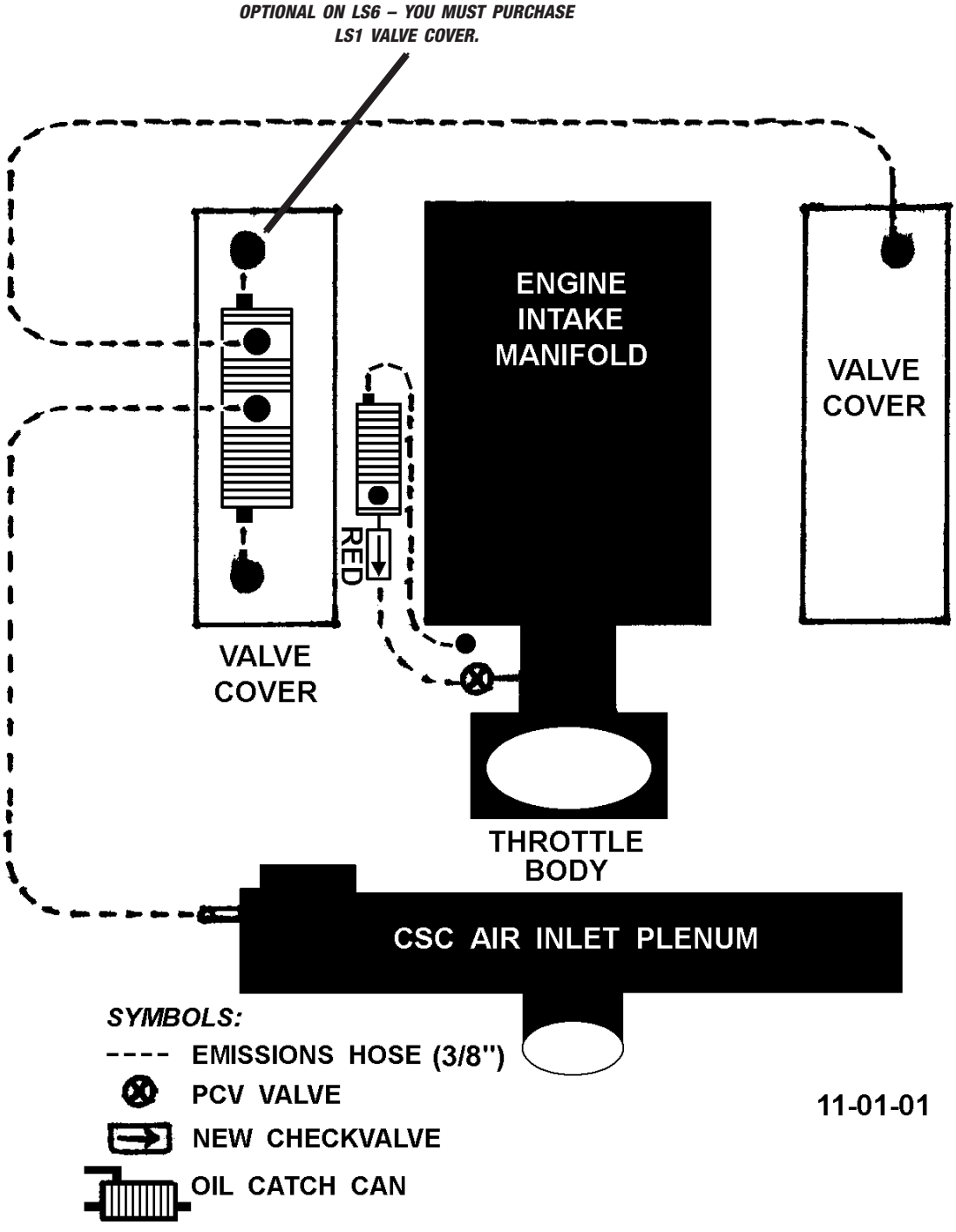
— PICTORIAL #2 —

SCHEMATIC FOR SUPERCHARGED LS1 WITH OIL CATCH CAN



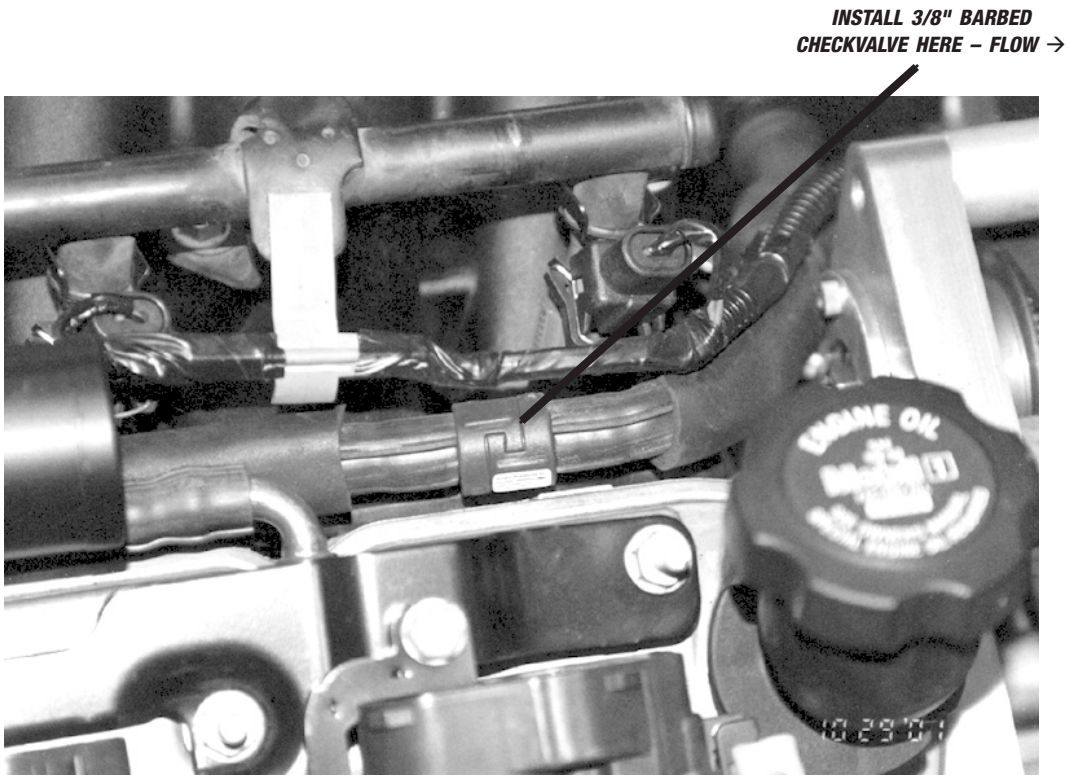
— PICTORIAL #3 —

SCHEMATIC FOR SUPERCHARGED LS6 WITH DUAL OIL CATCH CANS

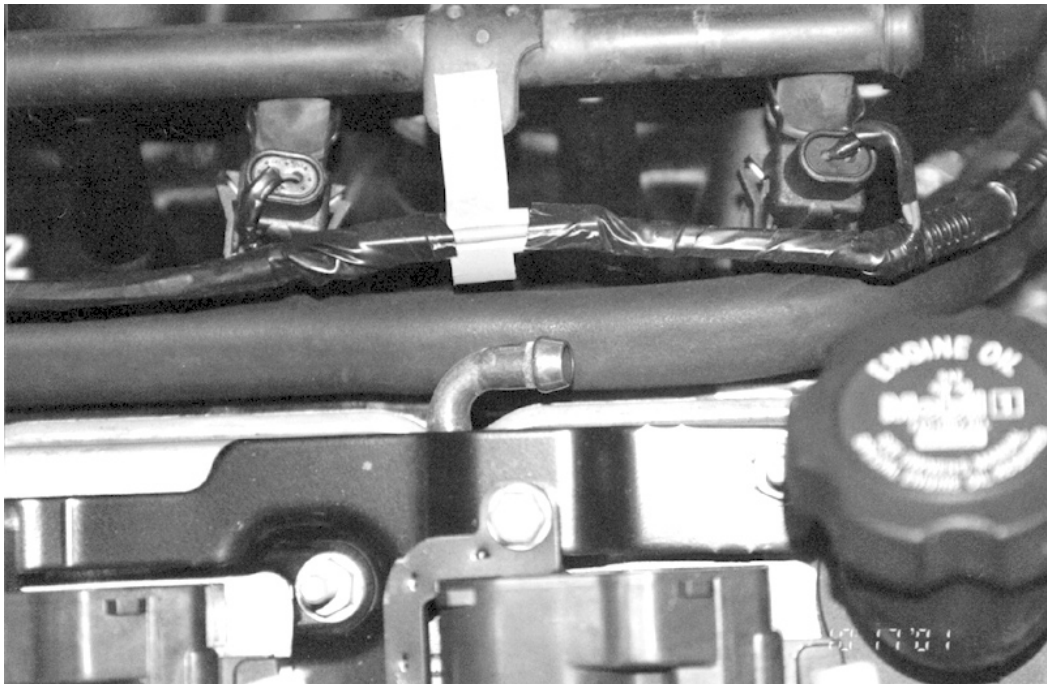


— PICTORIAL #4 —

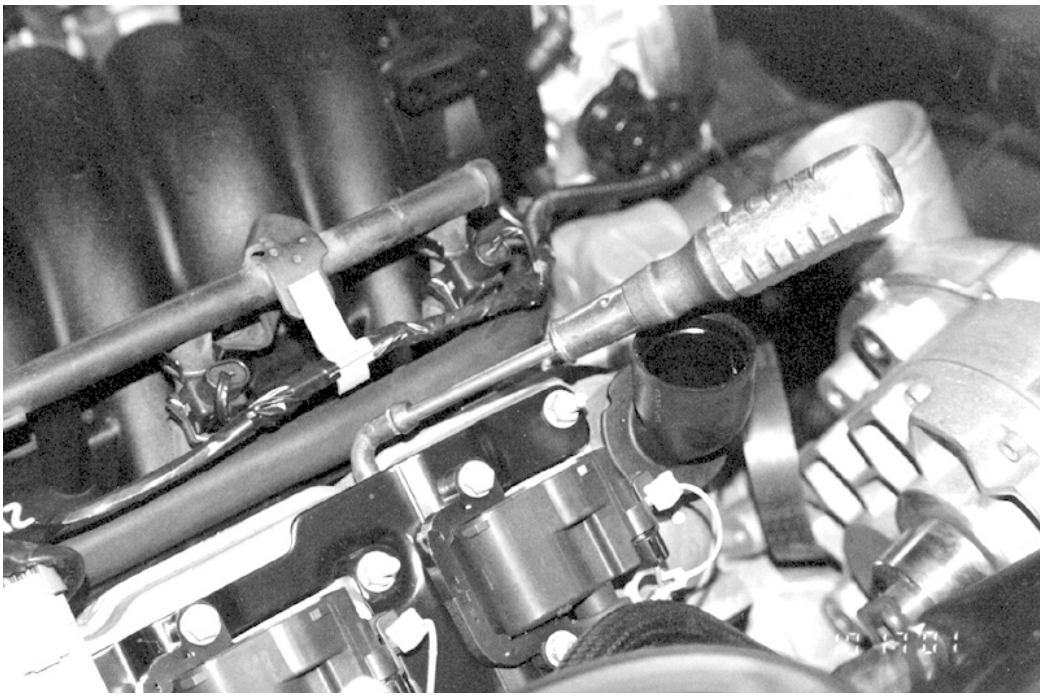
CRANKCASE VENTILATION



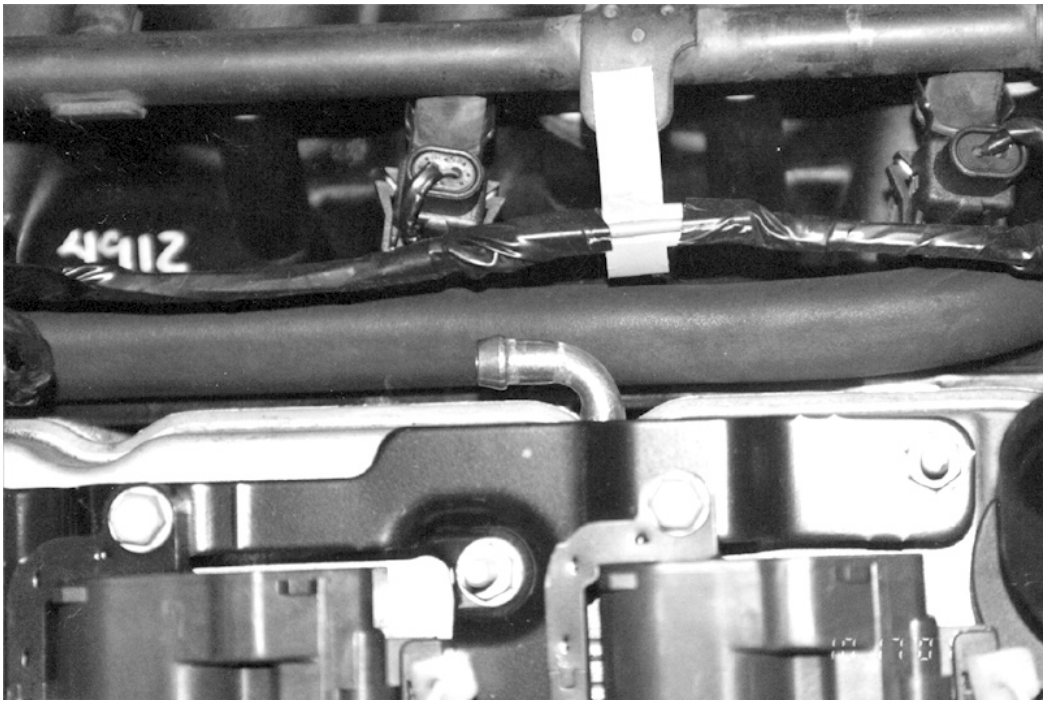
— FIGURE 14.9 —
INSTALL CHECKVALVE TO PREVENT MANIFOLD PRESSURE UNDER BOOST FROM REACHING CRANKCASE. CHECKVALVE FLOWS TO RIGHT INTO THROTTLE BODY.



— FIGURE 14.10 —
VALVE COVER VENT TUBE SHOWN IN STOCK POSITION.

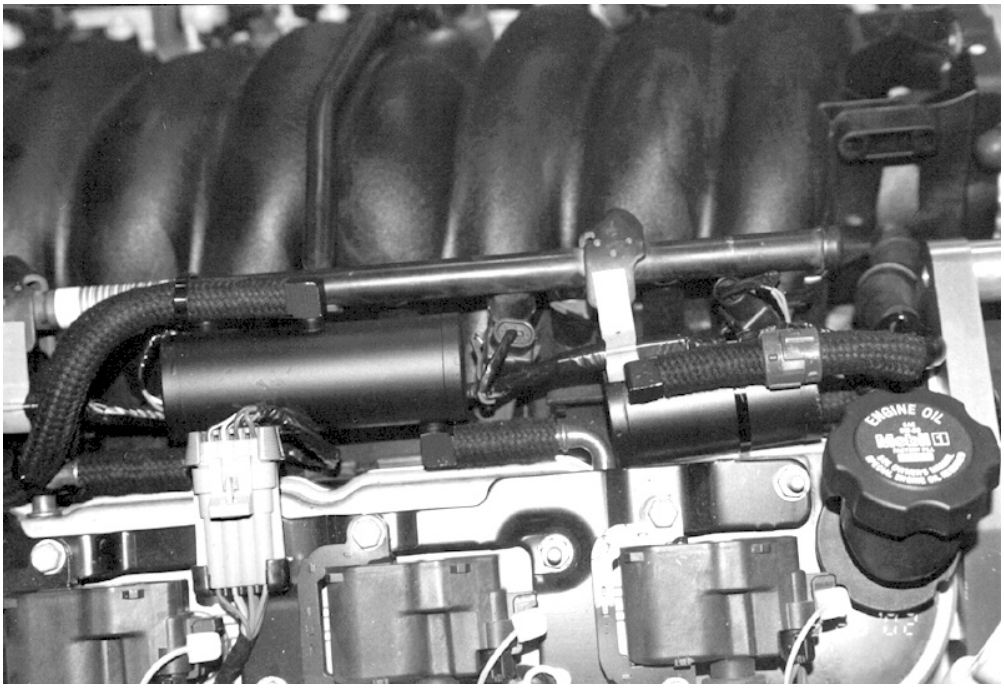


— FIGURE 14.11 —
USE SCREWDRIVER TO ROTATE TUBE 180°



— FIGURE 14.12 —

14.1 Install Catch Can. ***Figure 14.13*** shows dual catch cans on an LS6 engine. LS1 engine uses single larger catch can.



— FIGURE 14.13 —

14.2 Install new Breather Hose between Valve Cover and New Air Inlet Plenum. Refer to ***Pictorial 3*** on ***Page 130*** for LS1 and ***Pictorial 4*** on ***Page 131*** for LS6.

— FIGURE 14.14 —

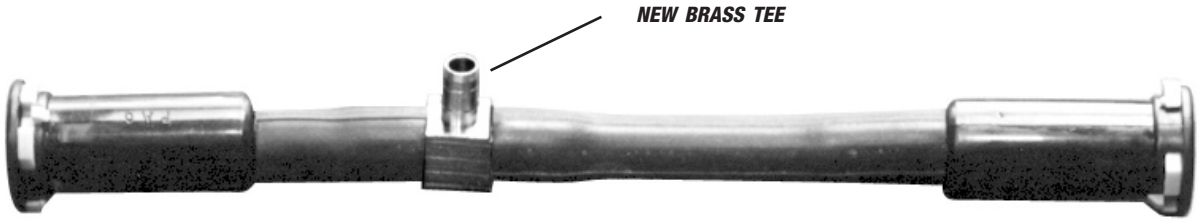

CARROLL SUPERCHARGING
BREATHER HOSE CONNEC-TION POINT AT AIR PLENUM

— FIGURE 14.15 —

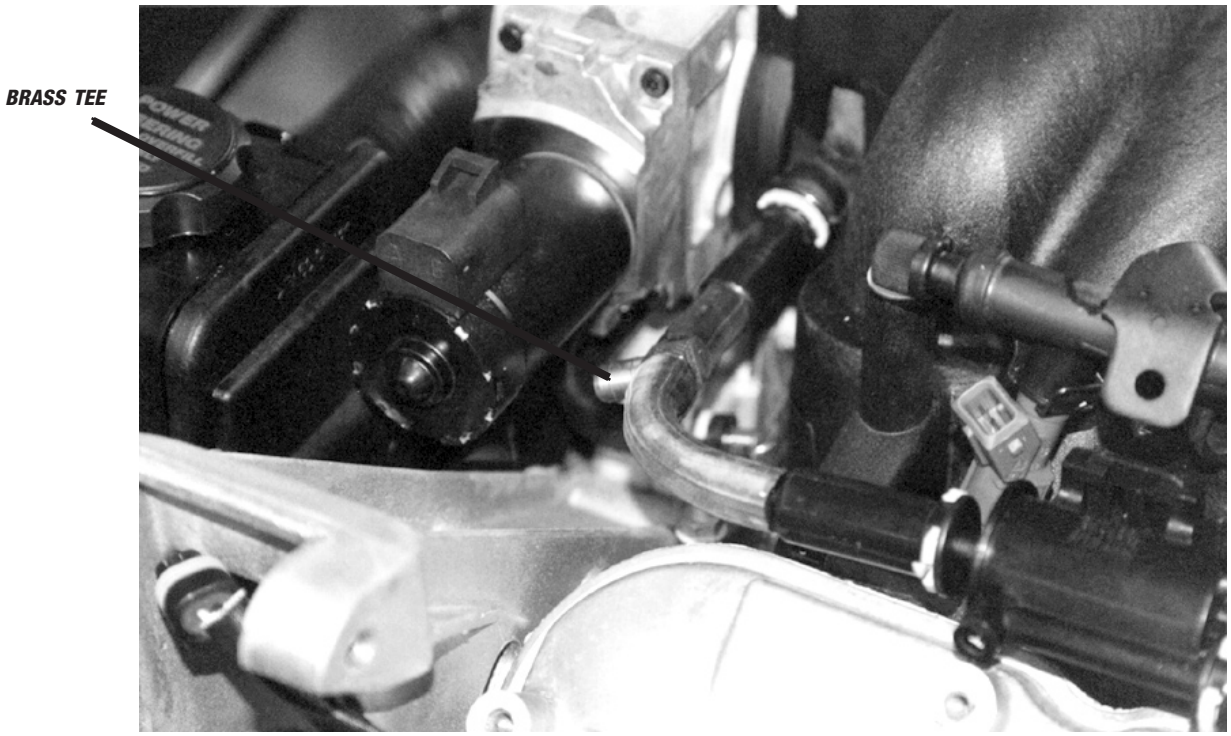
— NOTES —

Section 15 • VACUUM/BOOST CONTROL SIGNAL HOSE ROUTING & CONNECTIONS

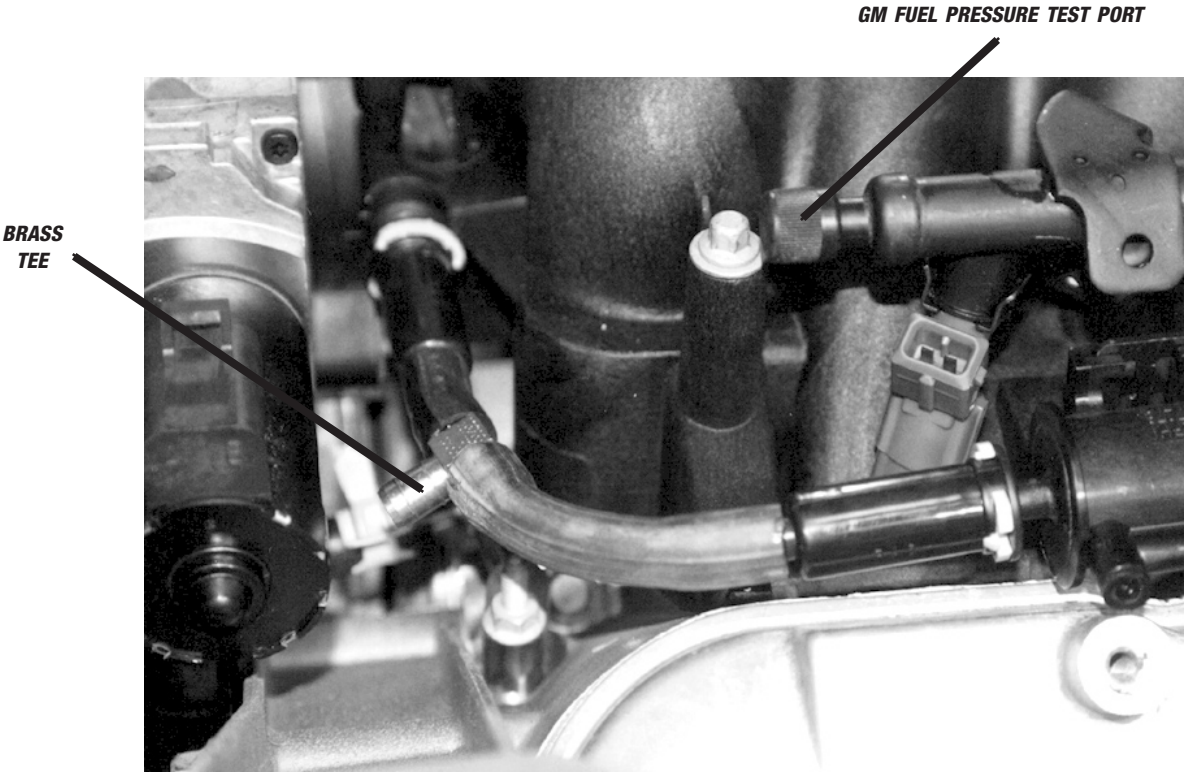
15.1 Install Brass Tee into GM Vapor Recovery/Vacuum Line. From the new Tee run a Vacuum/Boost Line to Surge Valve (also MAP Sensor if '99 and up) and connect.



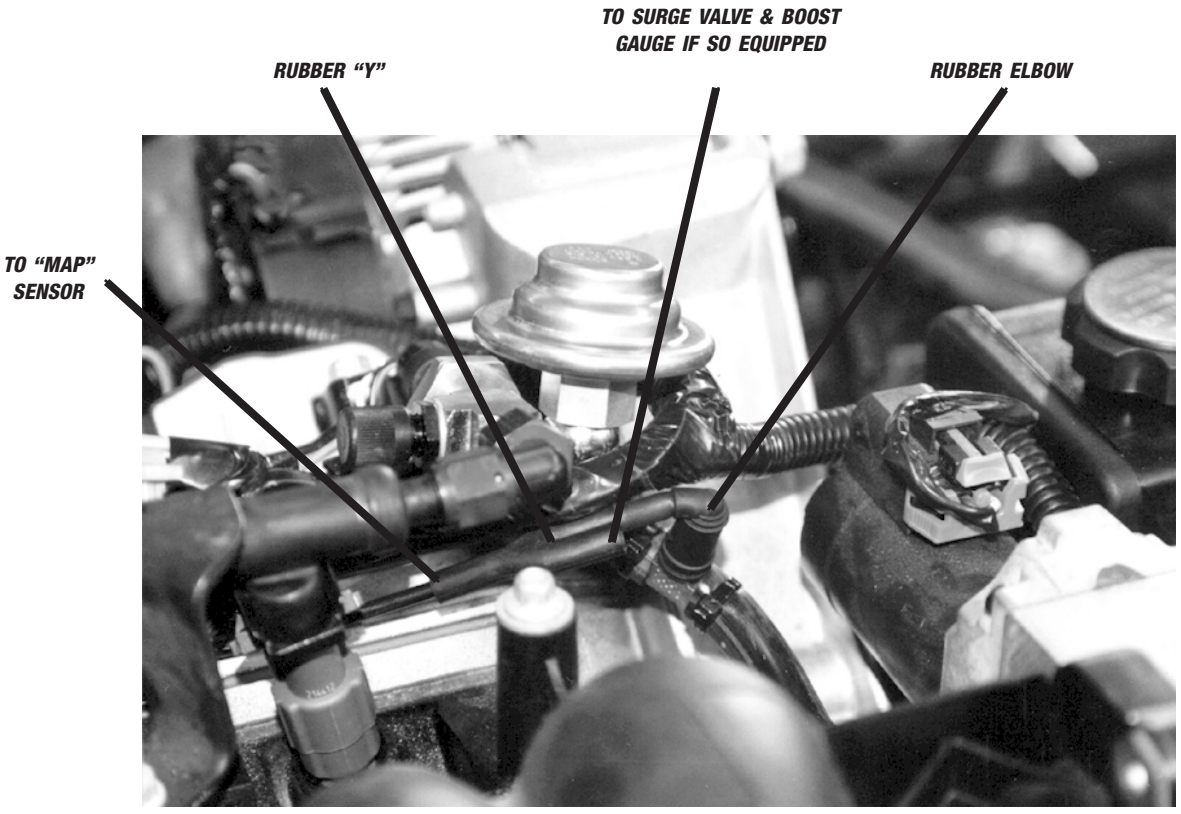
— FIGURE 15.1 —



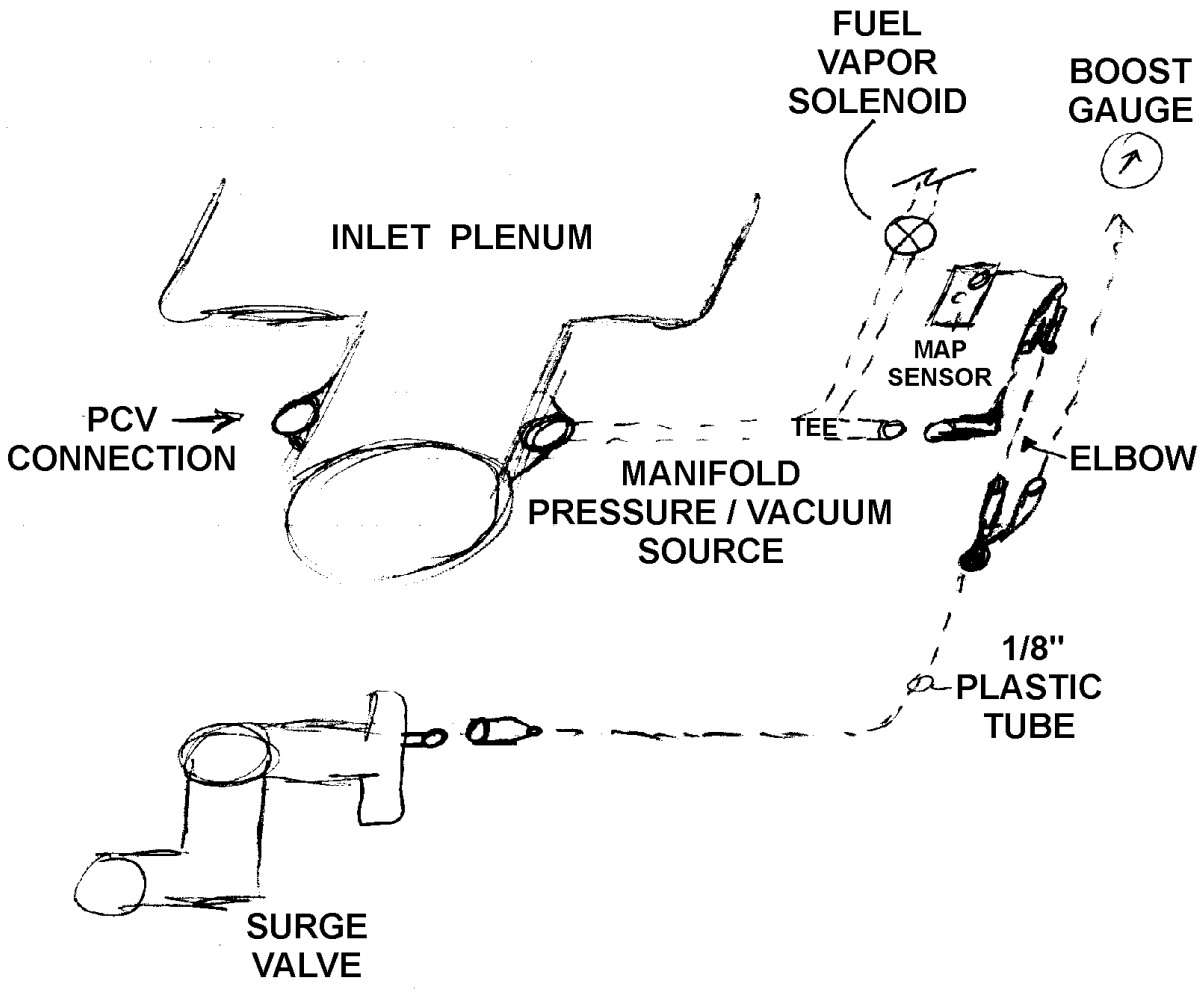
— FIGURE 15.2 —



— FIGURE 15.3 —



— FIGURE 15.4 —



LEGEND:

IN-LINE CONNECTOR

RUBBER ELBOW CONNECTOR

RUBBER 'Y' CONNECTOR

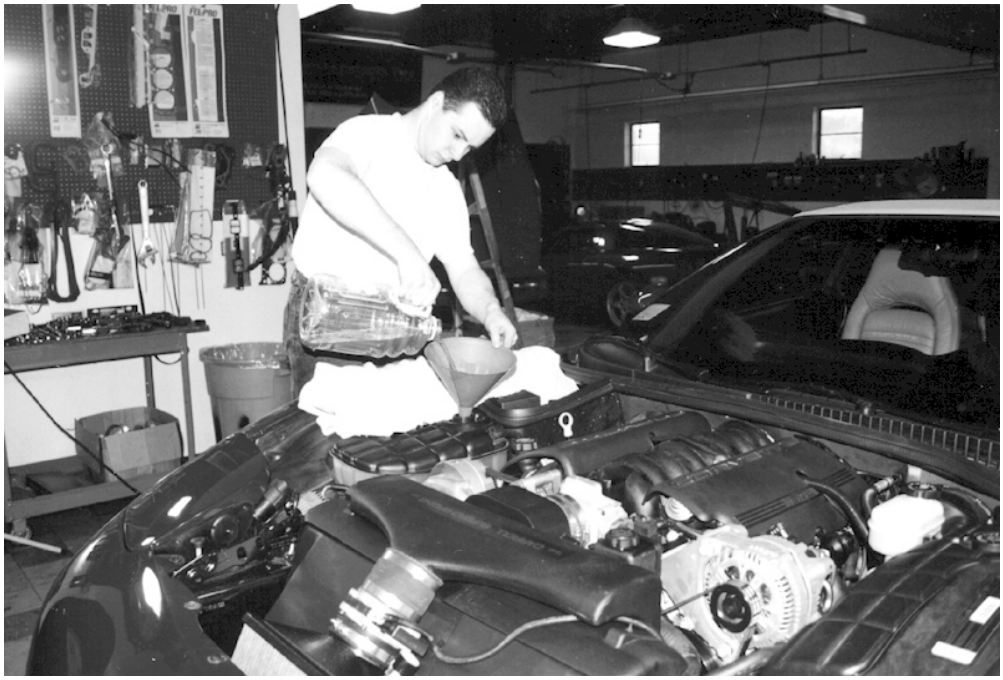
1/8" PLASTIC TUBE

— FIGURE 15.5 —

— NOTES —

Section 16 • FINAL ASSEMBLY

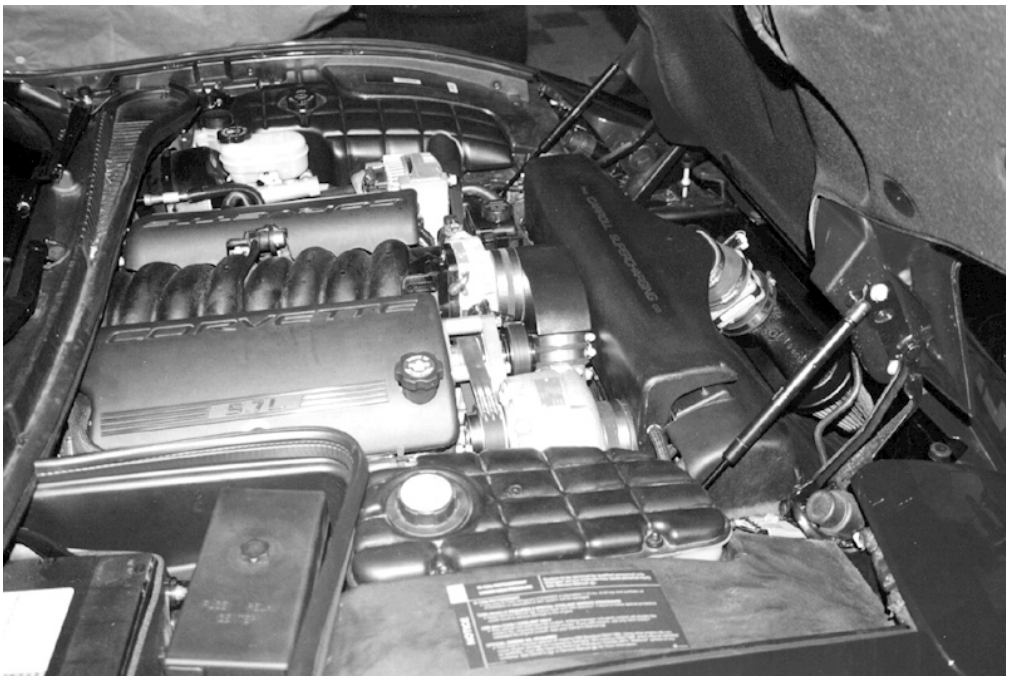
16.1 Install all fluids (Engine Oil, Engine Coolant, Power Steering Fluid).



— FIGURE 16.1 —

16.2 Install Vehicle Computer. Note if computer is not same computer as the one vehicle came with you'll have to go through learning curve. See details on the following page.

16.3 Install Injector Covers.



— FIGURE 16.2 —

16.4 Connect Battery.

16.5 Crank over Engine – if it starts IMMEDIATELY turn it off. The purpose for cranking the engine is to allow the engine Serpentine Belt to align the Grooved Drive Pulley on the Supercharger Jackshaft.

16.6 Tighten Supercharger Jackshaft Serpentine Drive Pulley. You will have to slowly turn over Engine to get at all 3 #10/32 screws on Pulley.

SEE TAPERLOCK INSTRUCTIONS located at the end of this installation guide.

16.7 Start Engine. If all OK let idle until coolant reaches 200°F. Recheck all fluids. Check tension on Supercharger Cogged Belt. There should be no slack. Any slack will cause cogged Belt to skip and strip under load!

16.8 Check Fuel Pressure: at idle fuel pressure should be 60 psi.

16.9 Test Drive.

16.10 Re-torque 10/32 screws on supercharger cogged pulley and jackshaft 6 rib pulley to 100 inch/lbs. These two pulleys should be checked once more after 100 miles.

PCM INSTALLATION NOTE FOR ALL C5 CORVETTES

When re-installing the original PCM that has been reprogrammed no special procedure is necessary other than disconnecting the vehicle battery.

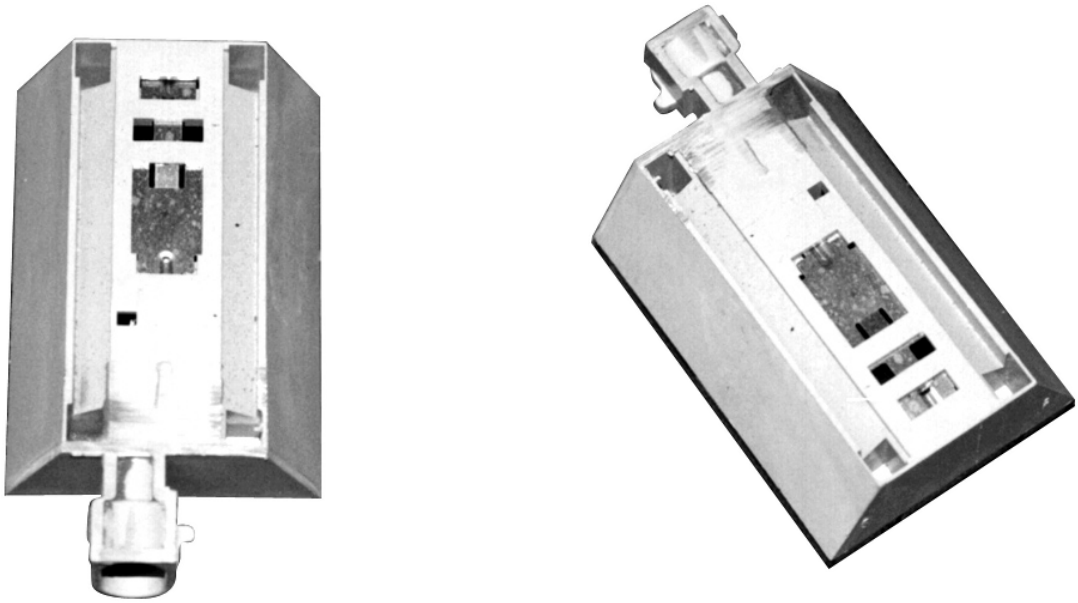
However when re-installing a reprogrammed PCM that is not the original unit (i.e. a reprogrammed core) you must perform the following learning procedure.

1. Install PCM.
2. Re-connect vehicle battery.
3. Turn ON the ignition leaving the engine OFF for 11 minutes.
4. Turn OFF the ignition for 30 seconds.
5. Turn ON the ignition leaving the engine OFF for 11 minutes.
6. Turn OFF the ignition for 30 seconds.
7. Turn ON the ignition leaving the engine OFF for 11 minutes or until DTC P1630 sets.
8. Turn OFF the ignition for 30 seconds.
9. Turn ON the ignition leaving the engine OFF and wait 30 seconds.
10. Attempt to start the engine.
11. Engine should start and operate normally.

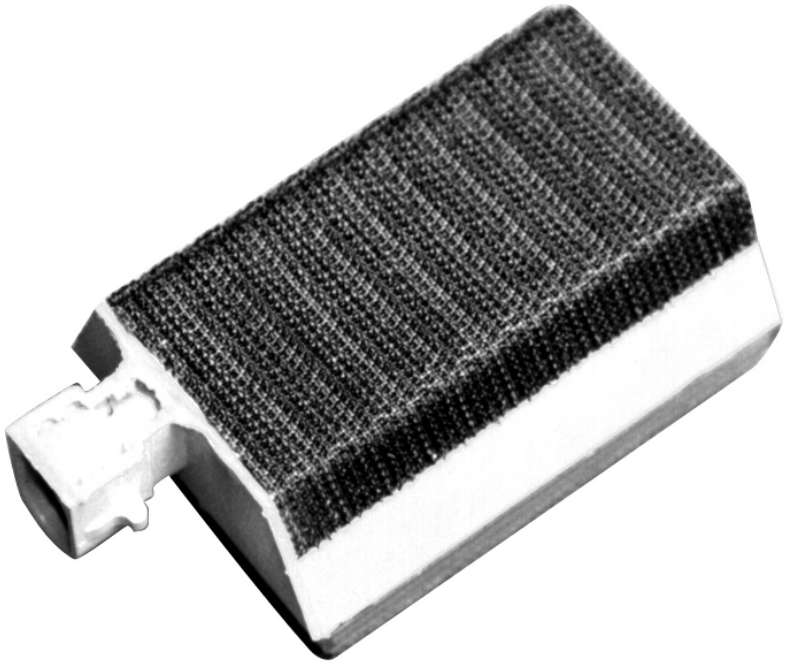
Section 17 • UNDERHOOD LAMP ASSEMBLY MODIFICATION

— FIGURE 17.1 —
UNDERHOOD LAMP ASSEMBLY PRIOR TO MODIFICATION

17.1 Remove and modify Hood Lamp as shown.



— FIGURE 17.2 —
USE DISC OR BELT SANDER TO MODIFY LAMP ASSEMBLY AS SHOWN

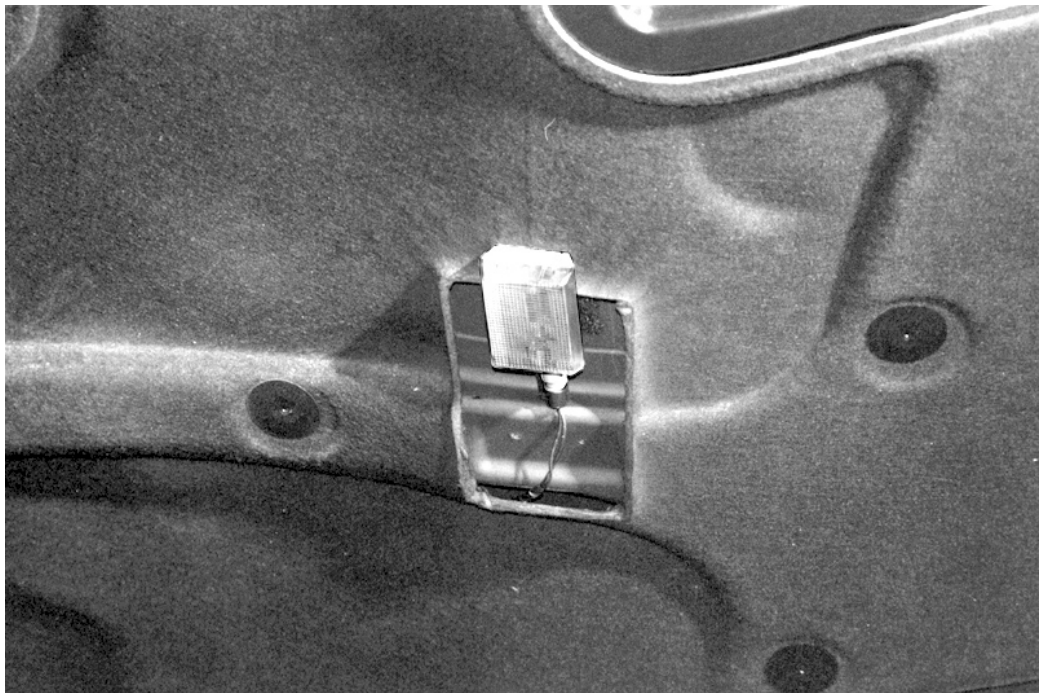


— FIGURE 17.3 —
ATTACH VELCRO TO LAMP ASSEMBLY

RESERVED

— FIGURE 17.4 —
ATTACH VELCRO TO HOOD

NOTE: FOR A REALLY NEAT INSTALLATION REMOVE HOOD INSULATION & PAINT AREA UNDER LAMP CUTOUT FLAT OR SATIN BLACK.



— FIGURE 17.5 —
RE-INSTALL LAMP ASSEMBLY

— FIGURE 17.6 —
FROM CUTOUT PIECE OF HOOD INSULATION CUT PIECE AS SHOWN

Section 18 • TAPER LOCK REMOVAL INSTRUCTIONS

A. Remove the three 10/32 socket head cap screws on the pulley front face using a 5/32" allen wrench. Note the holes are counterbored (recessed).

These screws should be coated with Never-Seize™, a graphite grease.

B. Your collet has three 1/4-20 threaded holes that are used to “push” the pulley off of the tapered collet that locks the pulley to the shaft.

Generously coat the three 1/4-20 removal screws with graphite grease. Insert one each into the three non-counterbored threaded holes. The screws will push on the taper lock as you tighten them thus pushing the pulley off of the shaft and the taper lock.

Remember the above 10/32 screws must be removed first!

C. Gently tighten the three screws one by one. Go round and round. The pulley will pop off.

Section 18 • TAPER LOCK INSTALLATION INSTRUCTIONS

A. Coat the inside of the pulley with Never-Seize™.

B. Insert the collet into the rear of the pulley and rotate to spread the Never-Seize™. Remove excess Never-Seize™.

C. Coat the three 10/32 socket head cap screws with Never-Seize™ and insert into the counterbored holes through the front of the pulley. Be sure the 10/32 screws have lockwashers.

D. Align the threaded holes of the collet with the 10/32 screws. Use your fingers to start all three screws.

E. The shaft of the supercharger must be absolutely clean. use something like “Brake Kleen” to remove all oil, grease, or dirt. If the supercharger shaft is rusty, clean it with a fine emery cloth. The collet bore (for the supercharger shaft) must also be free of all oil, grease, etc.

F. If supplied, slide the correct pulley spacer onto the supercharger shaft for your application. The spacer(s) between the rear of the pulley and the face of the supercharger are used to determine the correct belt alignment. If no spacers are supplied, be sure to check belt alignment after installing.

G. Slide the pulley onto the supercharger drive shaft and push all the way on if using belt alignment spacer.

H. Progressively tighten the three peripheral 10/32 screws to 100 inch/lbs. in 25 inch/lb. increments.

I. Re-torque the three peripheral 10/32 screws to 100 inch/lbs after test driving the vehicle.

J. Check for proper belt alignment. Move pulley in/out to correct as necessary. If you must slide the collet out away from the supercharger use a screwdriver.

K. Re-check torque on 10/32 screws after one hour or more of vehicle operation.

— NOTES —