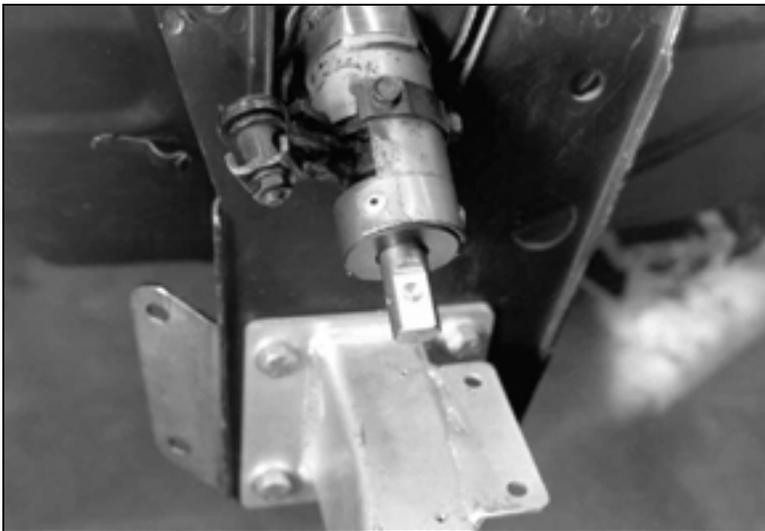


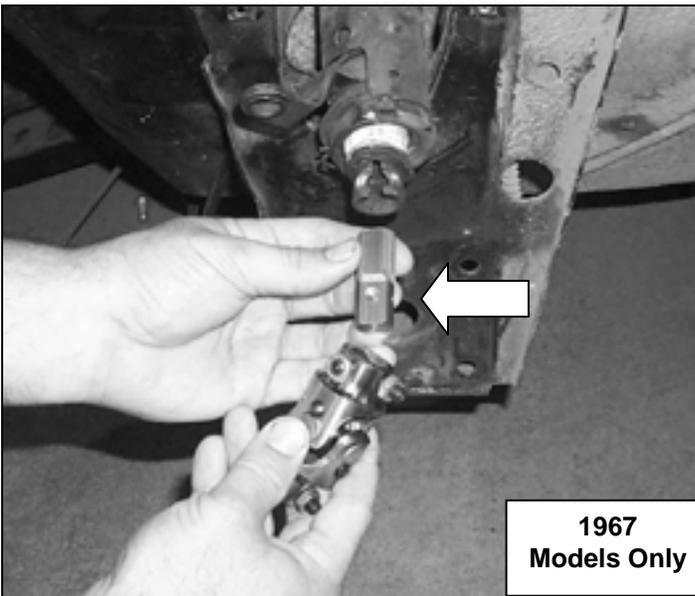


Slide the new steering column shaft through the steering column from the driver compartment.

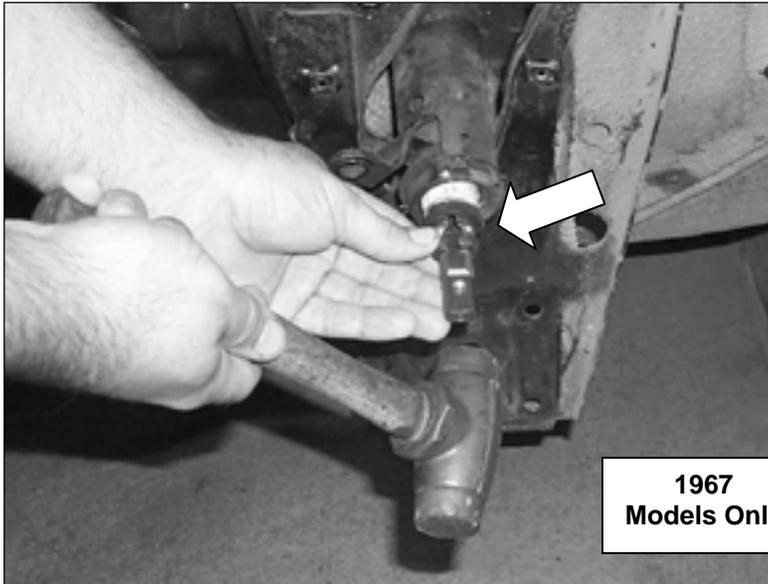


Push the column shaft through the steering column until the machined end is out past the column lower bushing.

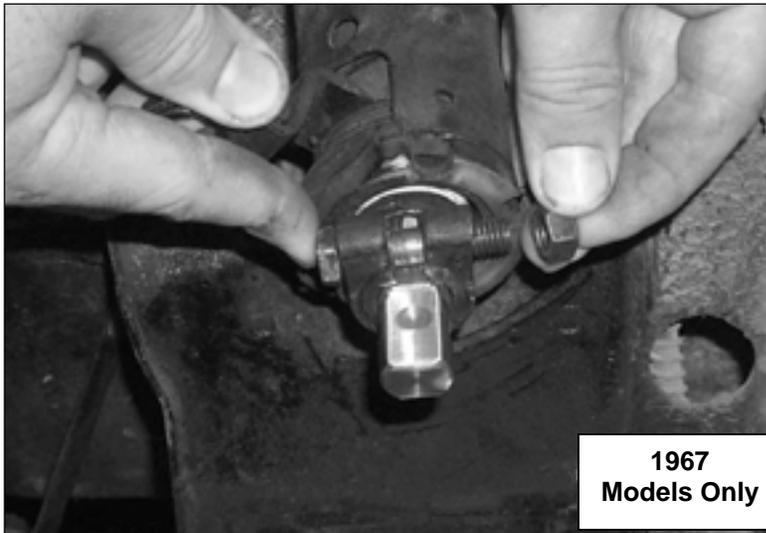
*For installations on 1962-1966 models, advance to Page 77 lower photo.*



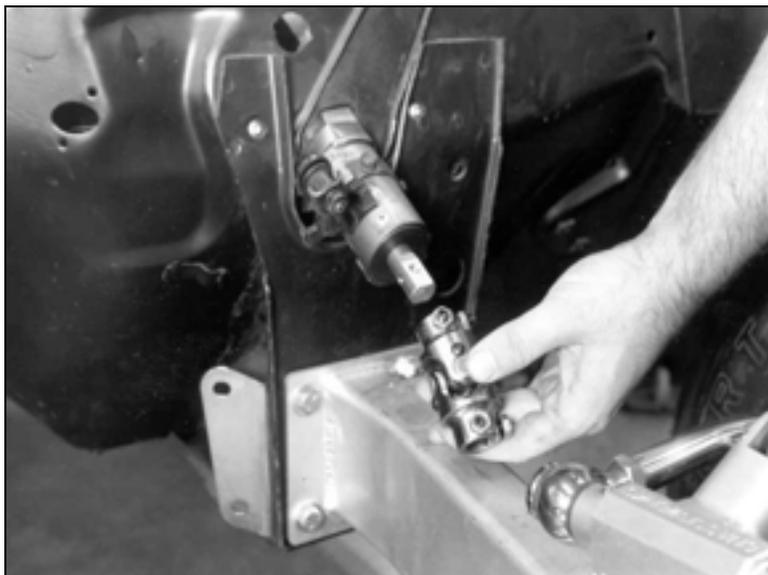
For the 1967 models you will be using the steering column adapter and U-joint included in your kit. Insert the steering column shaft adapter into the steering column shaft making sure the machined flat is parallel to the clamp bolt groove in the column.



Use a plastic hammer to install the steering column adapter shaft. Tap it in until the splined portion of the adapter is even with the end on the stock shaft.

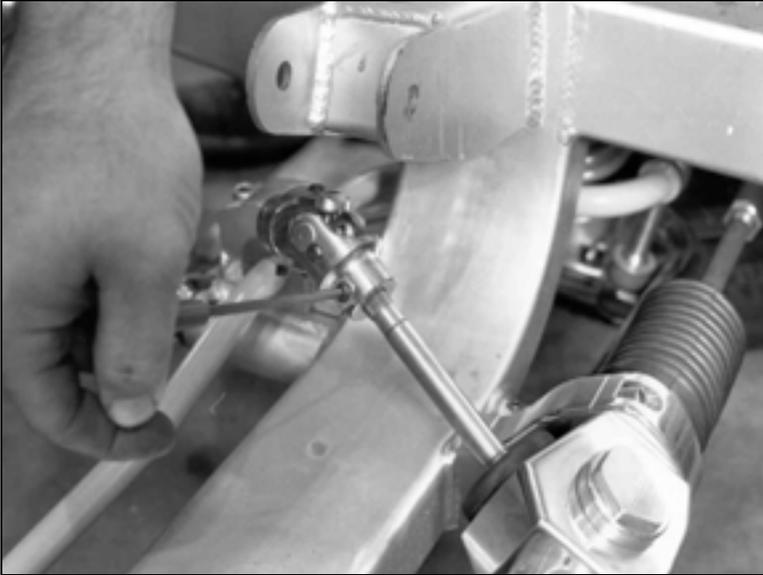


Slide the column shaft clamp into place and insert the original bolt and locknut. Tighten the clamp.

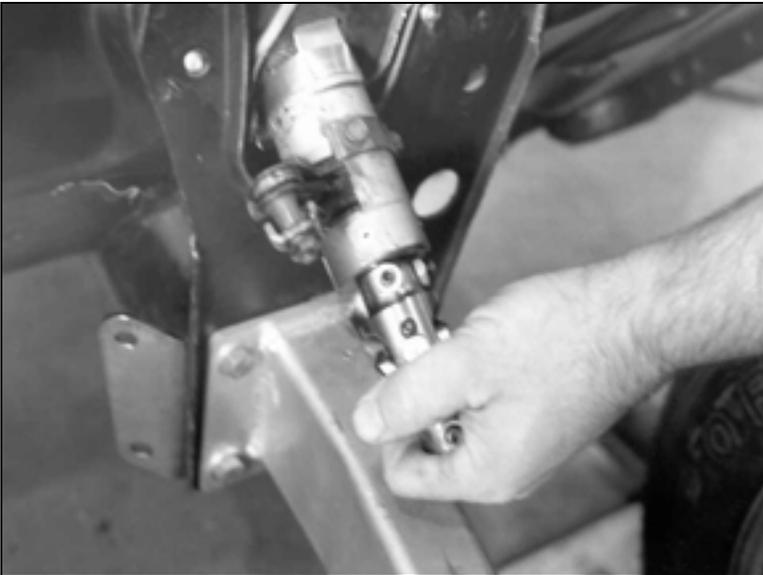


*From this point on the installation is the same for 1962-1967 models.*

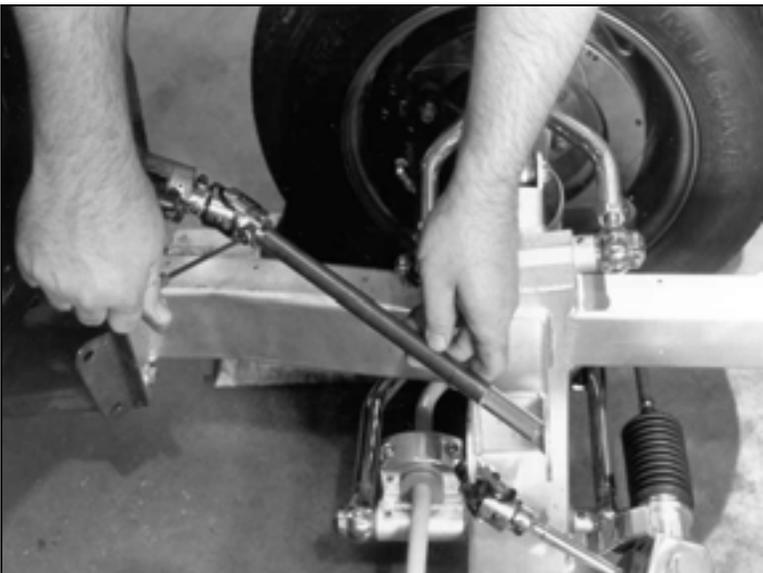
Slide one end of the Double-D U-joint onto the new steering column shaft. The set screws will line up with the indentations spot drilled in the shaft.



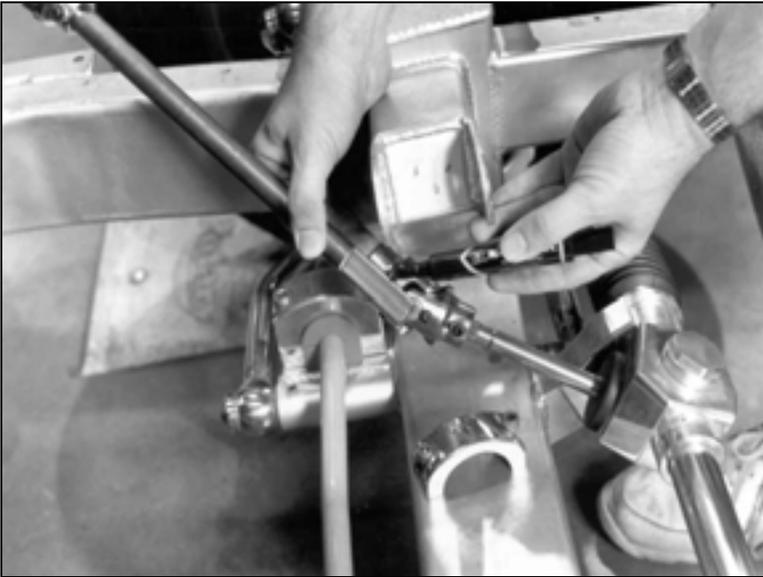
Install the splined U-joint onto the rack & pinion shaft, line the set screw up with the notch in the shaft, then tighten the set screw and jam nut.



Before installing the intermediate shaft, push the U-Joint on the end of the steering column shaft as far upward as possible, the U-joint should contact the bushing on the 1962-1966 cars. This will put the shaft in the proper location.



Slide the Double-D end of the intermediate shaft into the U-joint on the steering column.



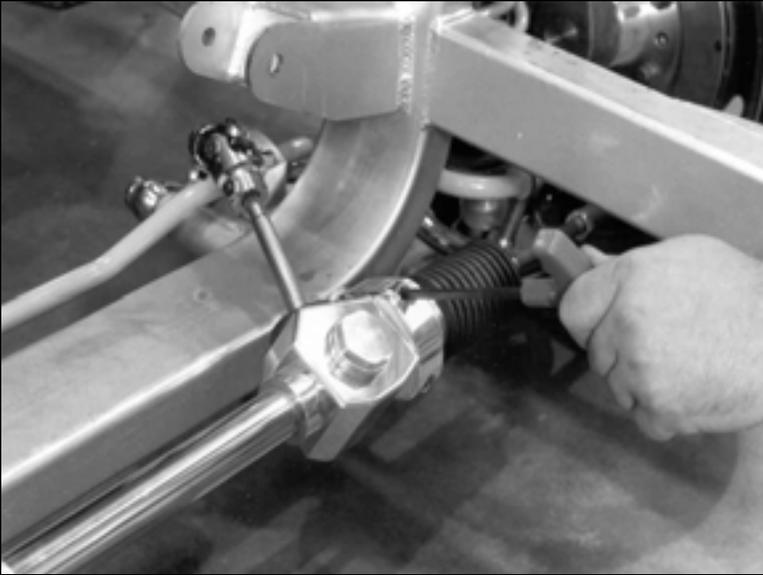
Rotate the rack up until the U-joint is 1/2 inch below the motor mount bracket on the frame. The intermediate shaft is made long so it can be fit in the car. The shaft should just come through the U-joint, mark it to be trimmed.



Clamp the intermediate shaft in a vise, and use a hack saw to cut it to length.



Use a sander to chamfer the end of the shaft before installing it. Also check the splines to be sure they are burr free.



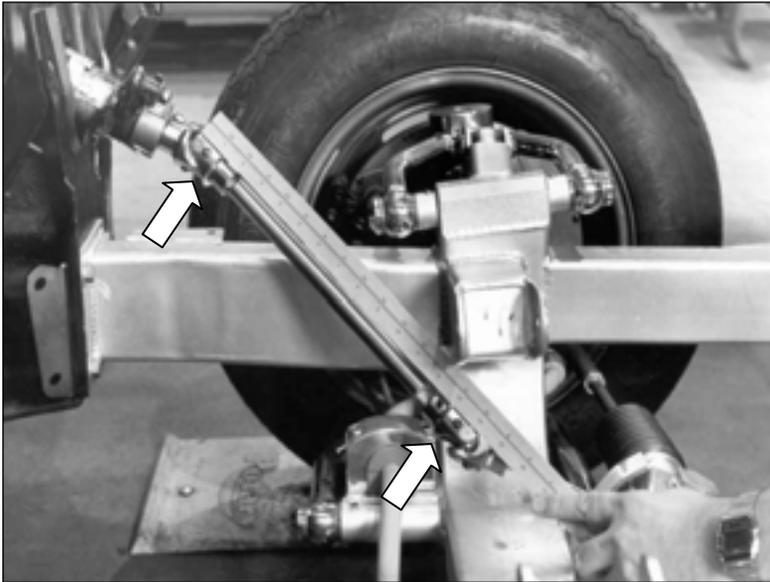
It will be necessary to move the steering rack forward to install the intermediate shaft. Remove both rack clamp caps.



Reinstall the intermediate shaft into the steering column U-joint. Rotate the rack down and move it forward until you can slide the intermediate shaft into the lower U-joint.



The intermediate shaft should be flush with the U-joint bore. If it protrudes more than the pointer shows, it will bind. Use a sander to shorten it for proper fit.



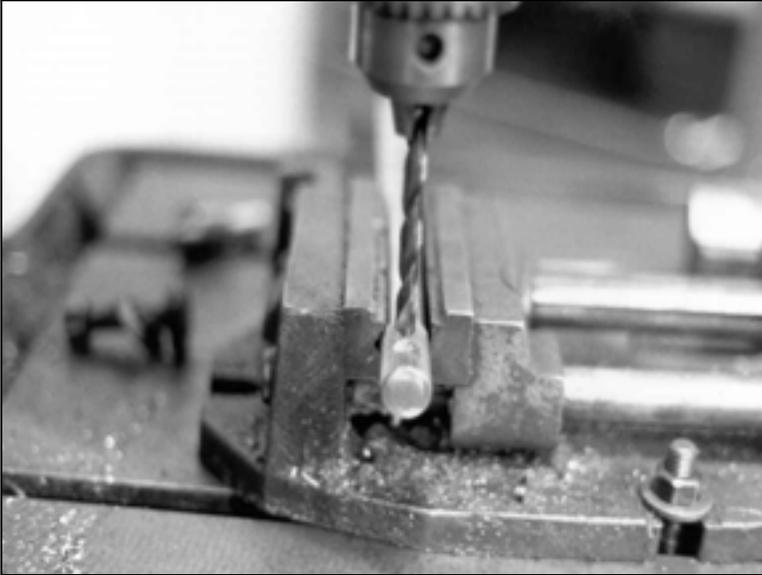
The intermediate shaft must be installed so the two U-joints are properly phased, with the pins inline with each other. Use a straight edge to verify their locations.



After you have the U-joints phased properly, use a felt tip marker to mark the location where the U-joint set screw contacts the intermediate shaft.



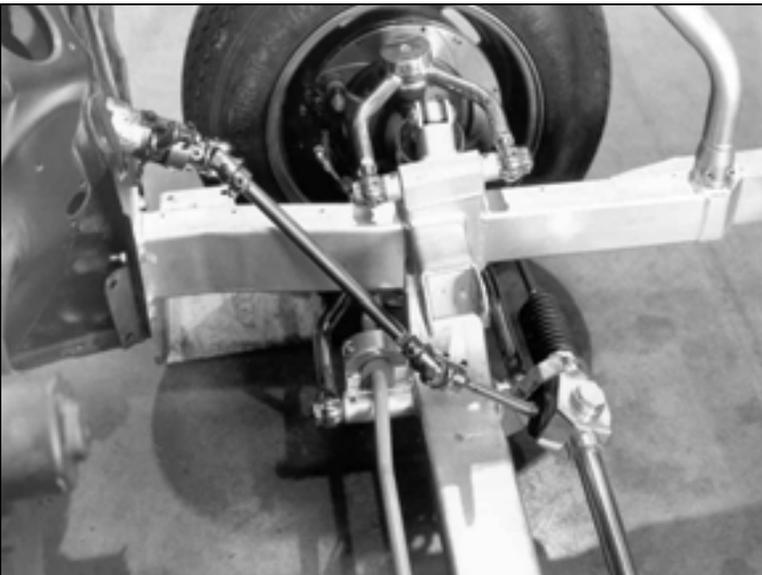
This mark shows the location the set screw contacts the intermediate shaft.



Use a 5/16 inch drill bit to spot-drill the intermediate shaft for the set screw. A drill press and vise work best for this procedure.



Reinstall the intermediate shaft. Apply a drop of Loctite™ to the U-joint set screws and tighten. Thread the jam nuts on the set screws and tighten also.



Reinstall the rack & pinion clamp caps. Your steering shaft installation should look like this.



With the engine installed, you can see steering shaft allows plenty of room for the exhaust. Paint the U-joints and steering column shaft to prevent rusting.



Before installing the steering wheel, slide the column tension spring over the shaft.



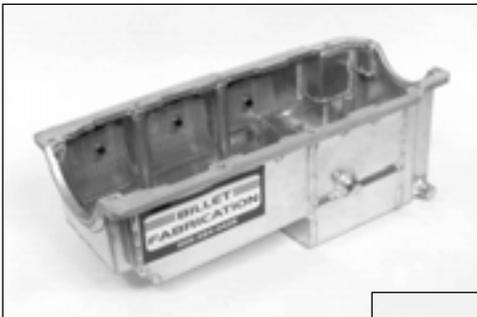
Make sure the rack is centered before positioning the steering wheel. With the rack centered your wheels should be straight forward.

Once the rack and wheels are correct, center the steering wheel and tighten with the factory locknut.

***Installing Billet Engine  
Mounts & Automatic  
Transmission Mid Plate***



Before you install the engine we will need an oil pan that will clear the front suspension. Most rear sump pans will fit fine. Bolt the oil pan on the block before starting the installation.



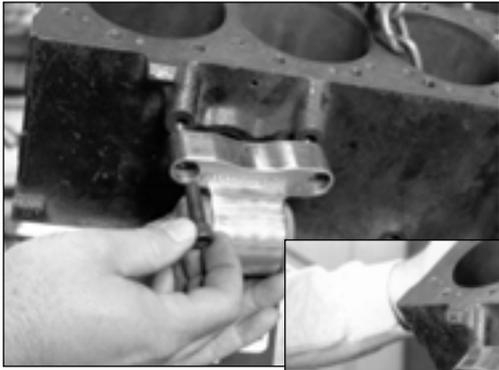
Here is a close-up look at the Billet Fabrication oil pan designed for the Chevy II front frame clip. This high tech oil pan is available for small block engines.



Insert one urethane bushing into each side of the billet mount. Install the steel sleeve into the bushings.

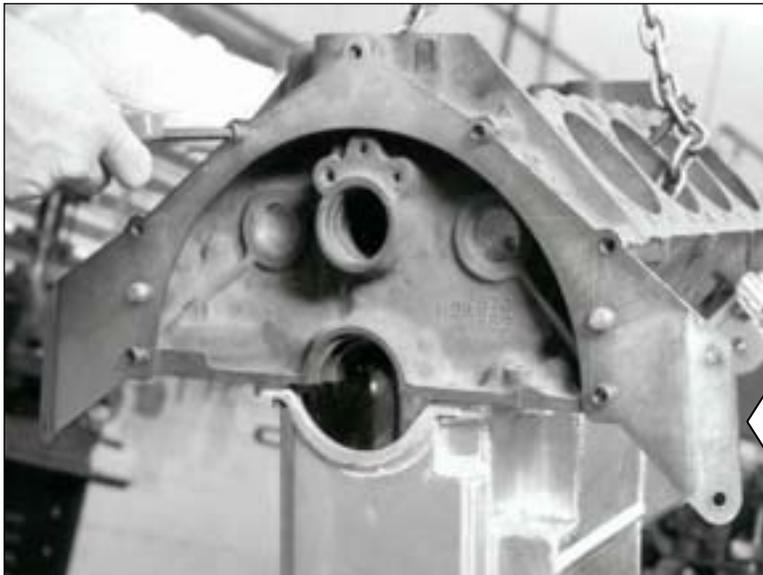
There is no need to lubricate the urethane bushing assembly, it does not rotate.

Repeat the bushing and sleeve installation for the other billet side mount.

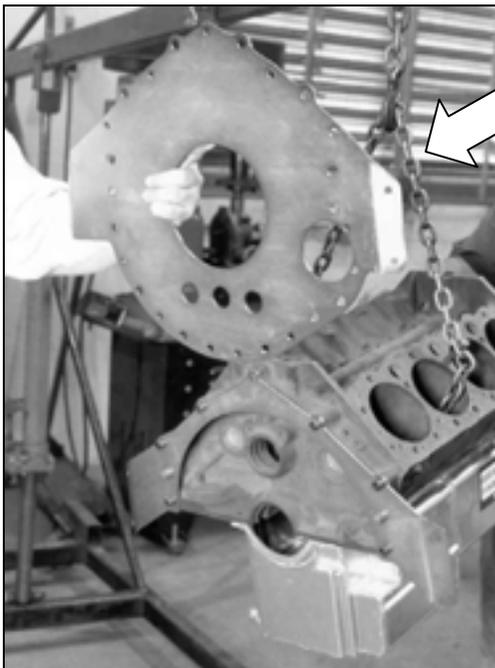


Install the assembled billet mount to the engine block with the stainless steel 3/8-16 x 1 1/2 inch socket head allens and 3/8-inch high collar lockwashers provided. It is best to start all three fasteners before final tightening the billet mount to the block.

Once both billet mounts are installed, you can install the mid plate.

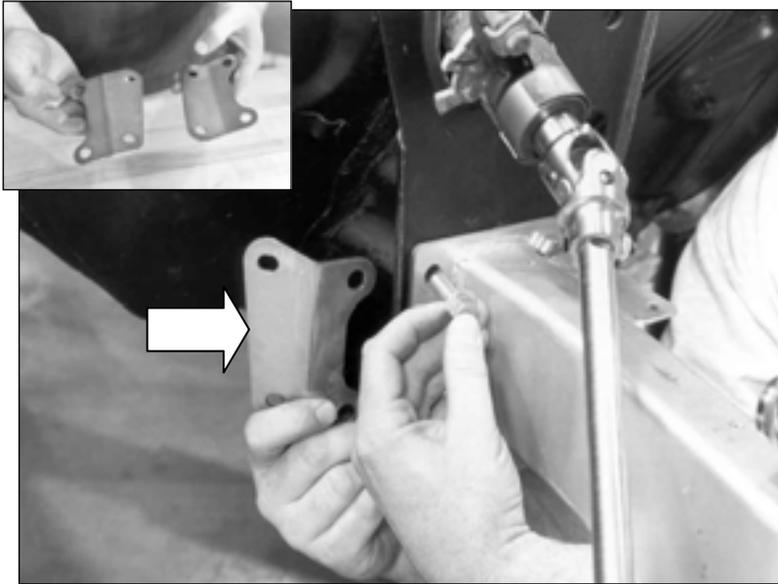


Bolt the automatic transmission mid plate to the back of the engine block with the bent ends facing the front of the engine.

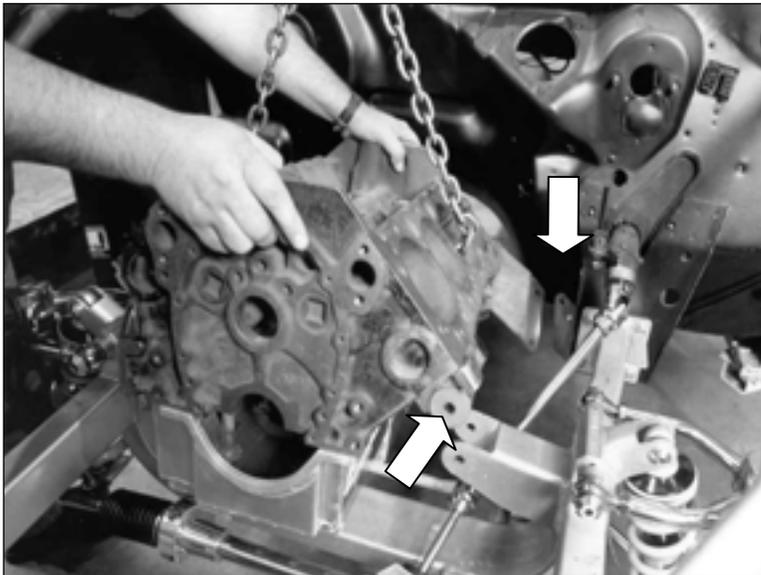


Installation of a manual transmission and Lakewood bell housing will require the mid plate shown here.

*For detailed installation procedure advance to page 90.*

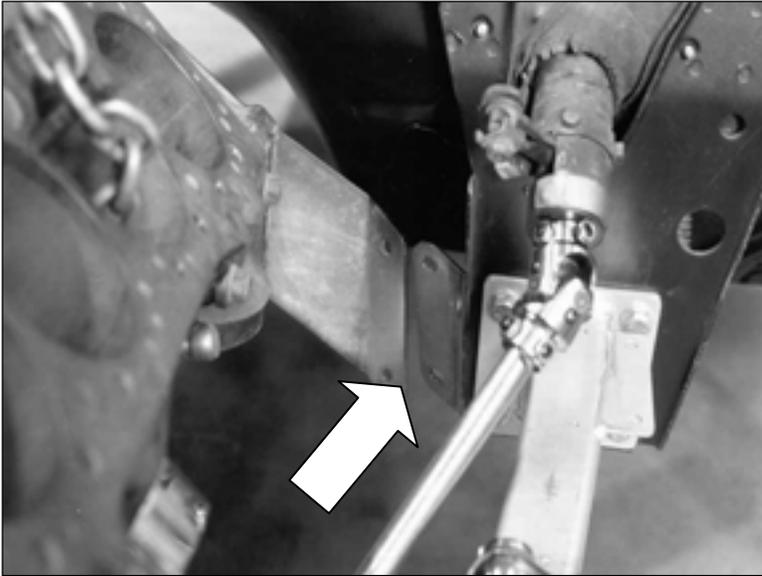


The mid plate mounting brackets (shown far left) attach on the back side of the car's lower frame mounts using the inner bolts that attach the frame clip to the car. Remove the inner bolts to install the driver mid plate mount bracket. Note the bent portion of the bracket faces the rear of the car. With the bolts in place, torque them to 45 lb-ft. Repeat this for the passenger side bracket.

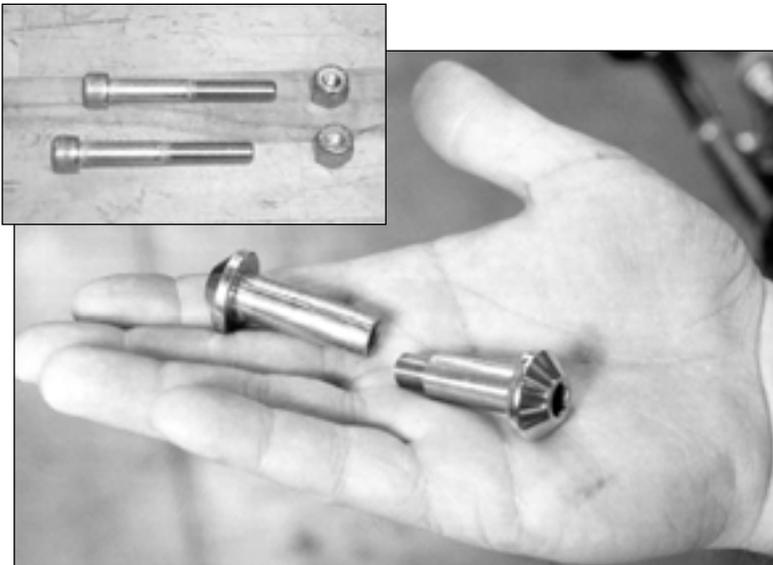


Set the engine in place lining up the billet motor mounts with the frame motor mount brackets. Maneuver the engine into place carefully checking that all parts have sufficient clearance.



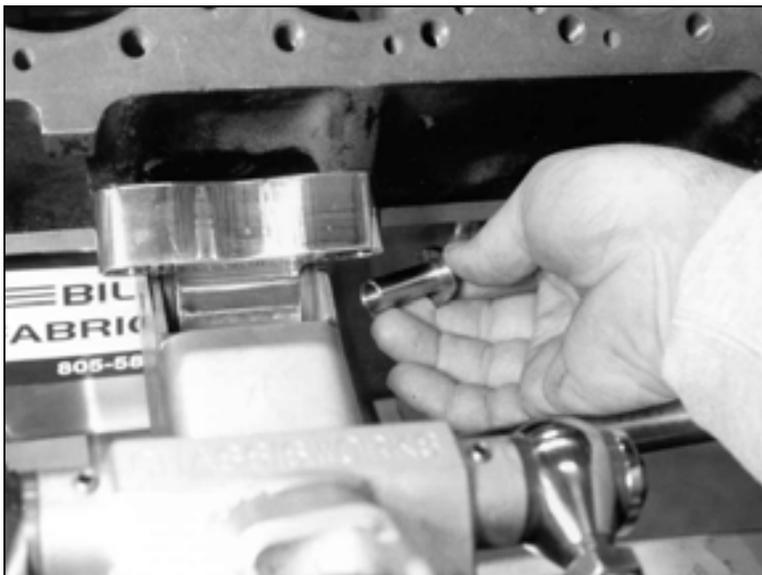


Make sure the mid plate is on the front side on the mounting bracket when setting the engine in place.



These optional stainless steel "spuds" will be used to fasten the billet motor mount to the frame.

If you did not purchase the spuds, use the stainless steel 1/2-13 x 3 1/2 inch socket head allens and locknuts provided in the billet motor mount kit (shown in upper left).

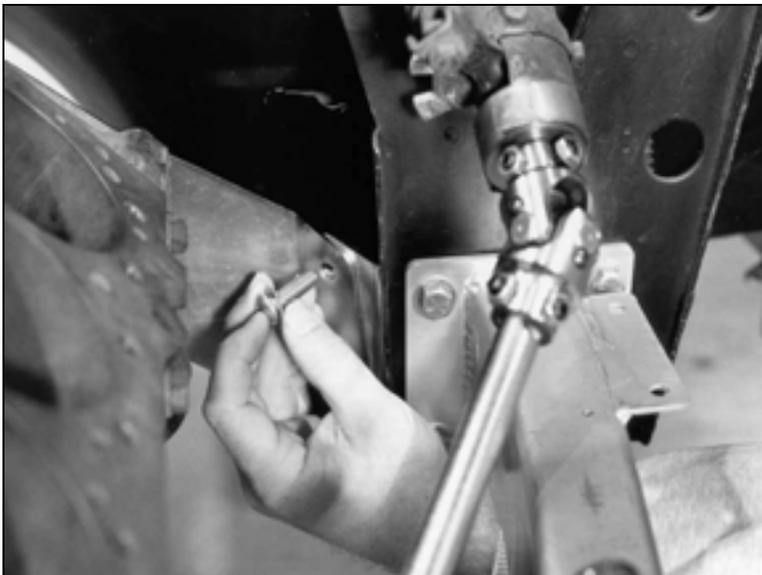


Insert the female spud through the frame mount into the billet motor mount assembly from the rear.



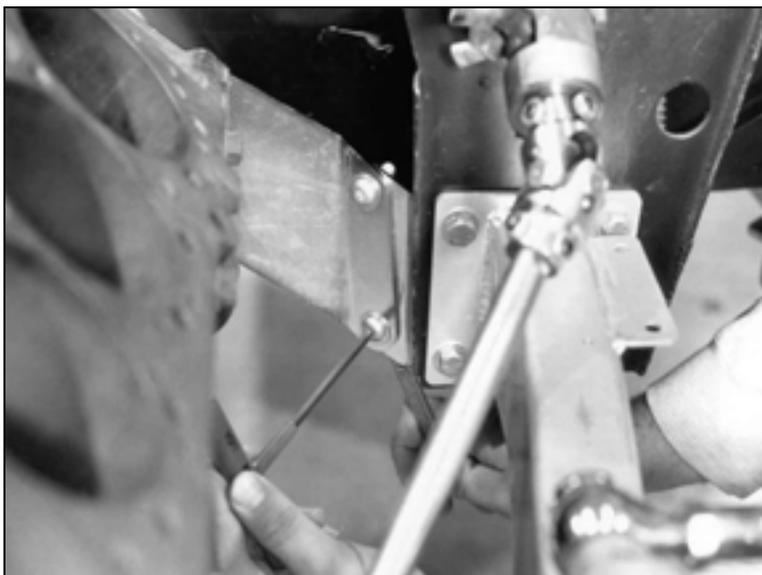
Apply a small amount of Loctite™ and insert the male portion of the spud through the motor mount bracket and into the billet motor mount assembly. Thread the male and female spuds together and just finger tighten for now.

Repeat this on the passenger side before going to the next step.

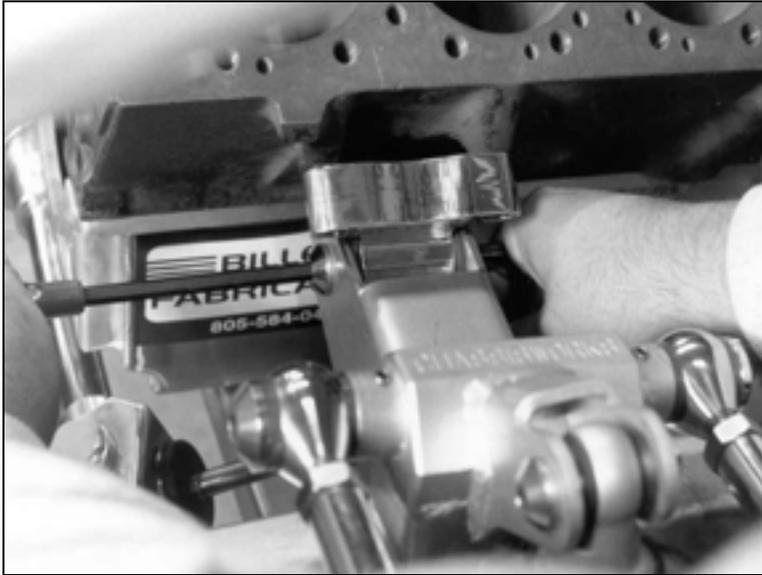


Use the stainless steel 3/8-16 x 1 1/4 inch button head allens, flat washers and locknuts to attach the mid plate to the mid plate mount brackets. Put a flat washer against the button head and another one on before the locknut.

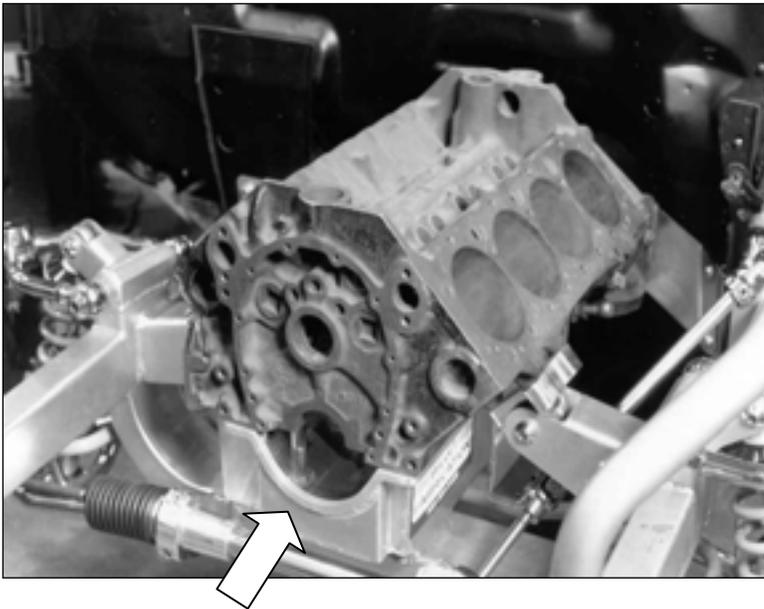
Do not final tighten these until you have the driver and passenger side button head allens installed.



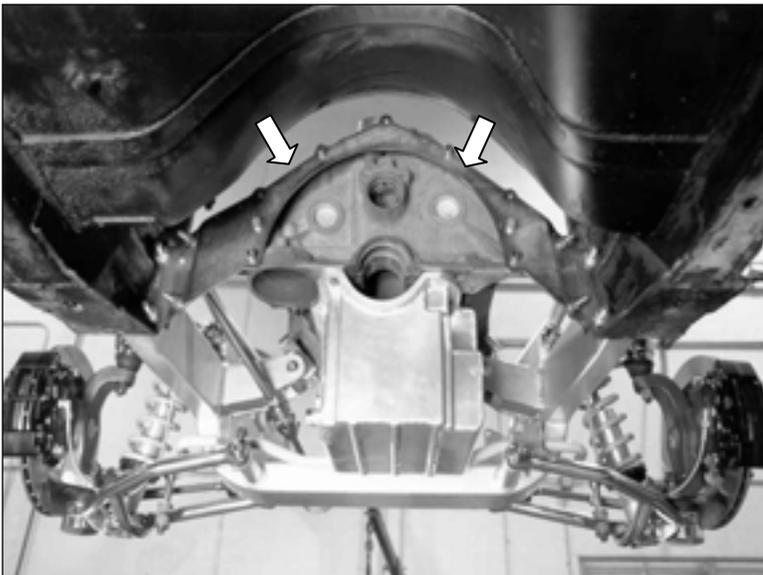
Use an allen wrench and a 9/16 inch wrench to final tighten the mid plate button heads allens.



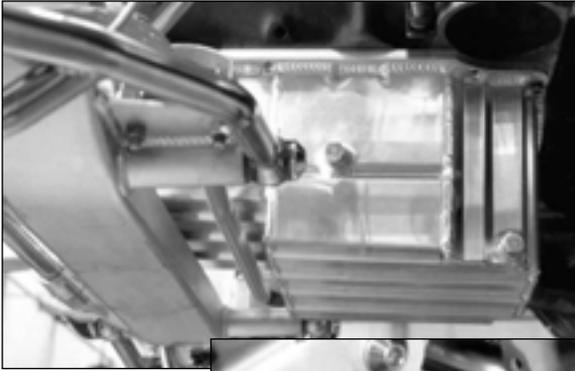
Final tighten the motor mount spuds using two allen wrenches. Torque them to 20 lb-ft.



The engine is now mounted. Notice that the Billet Specialties oil pan has plenty of clearance for the rack & pinion.



With the engine supported by the mid plate, installing the transmission is easy. Notice the firewall to mid plate clearance.



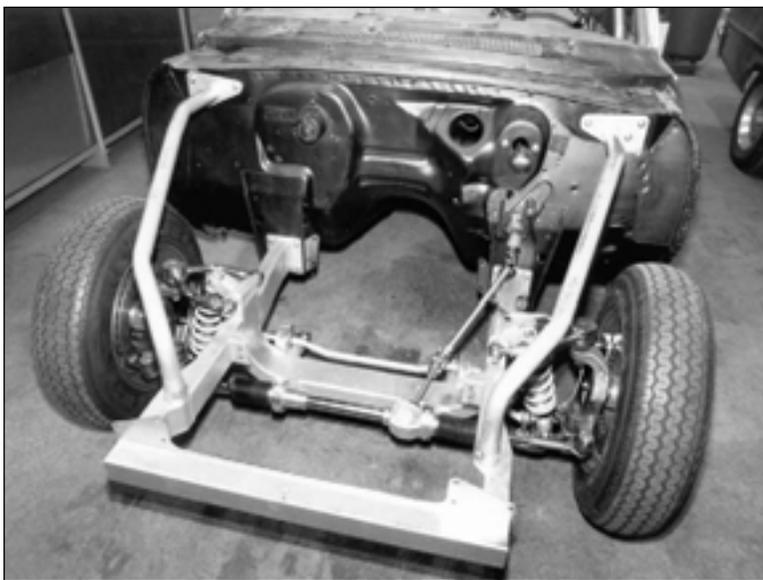
The Billet Specialties oil pan gives you needed clearance for the antiroll bar and crossmember. It is a large capacity oil pan that fits without modification.

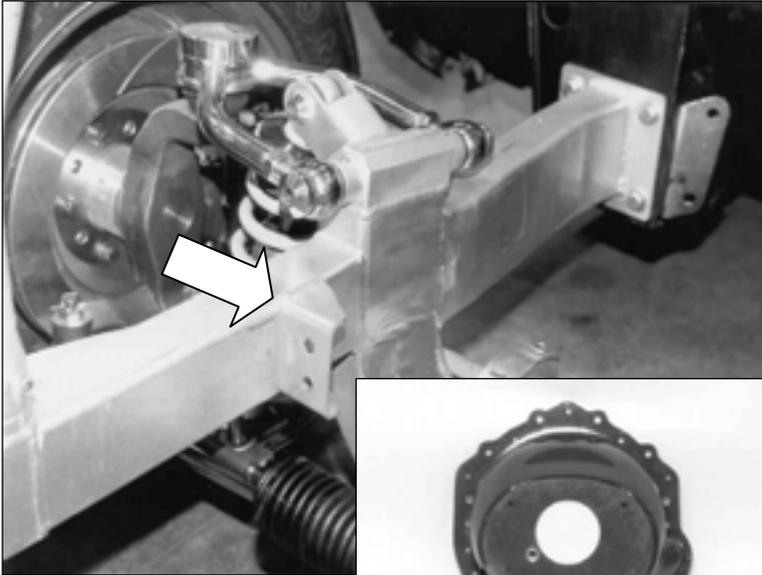


***Installing Motor Plate,  
Manual Transmission Bell  
Housing & Mid Plate***

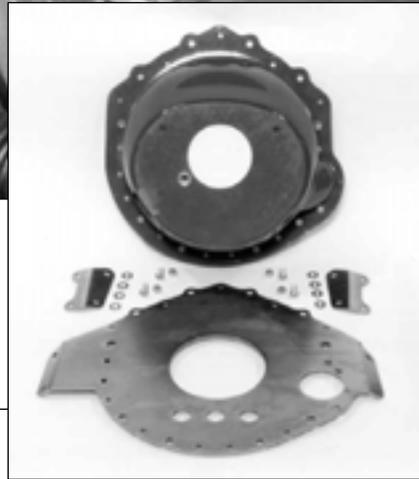
In this section we will be installing the engine with motor plate, mid plate and Lakewood bell housing.

This is the front frame with the motor plate engine mounts.

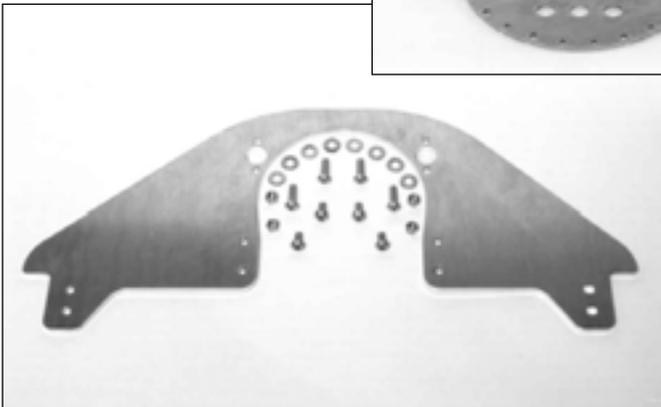




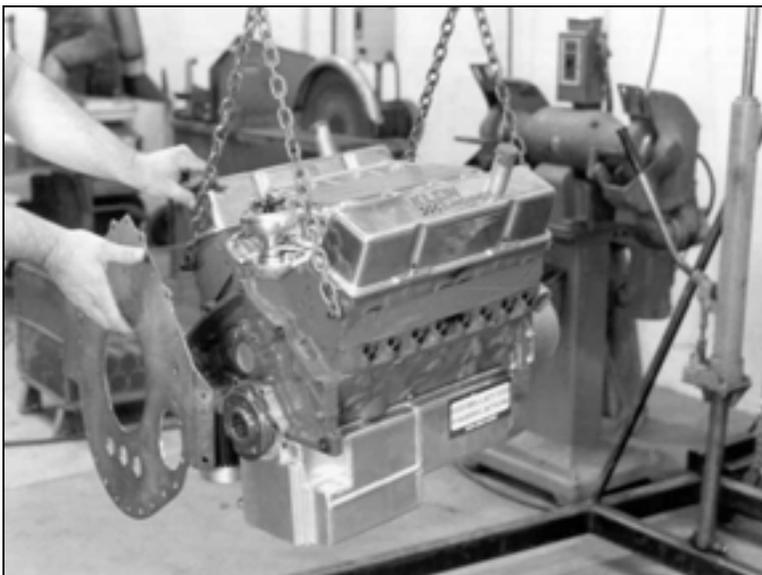
The motor plate mounting brackets are prewelded to the frame.



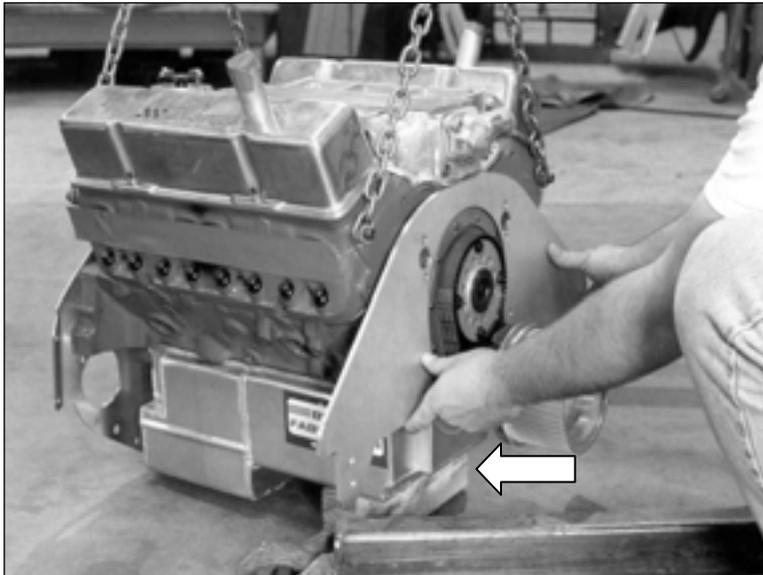
This is the bolt in mid plate kit. The mid plate will go between the engine block and the Lakewood bell housing.



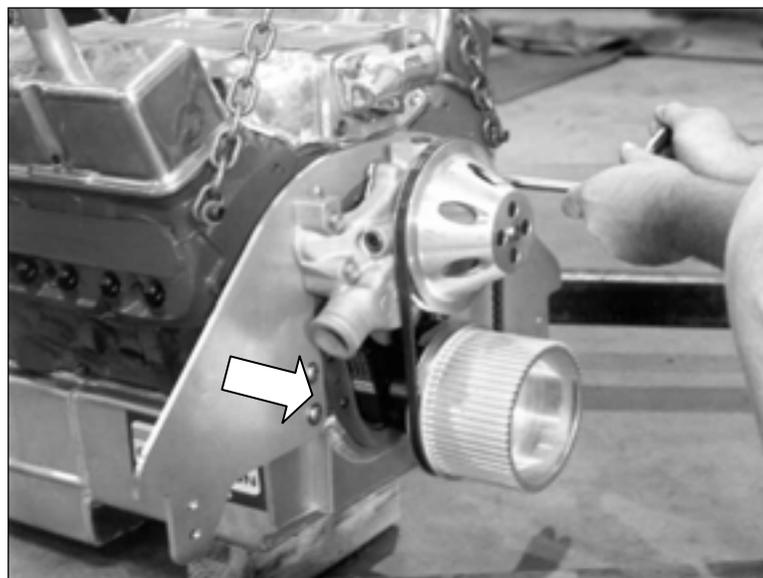
The profile milled billet front motor plate bolts directly onto your front frame. The engine will be in the stock location.



Start by bolting the mid plate to the engine block with the 6 bolts included with the Lakewood bell housing. This will keep the mid plate in place while the flywheel and clutch assembly is installed.

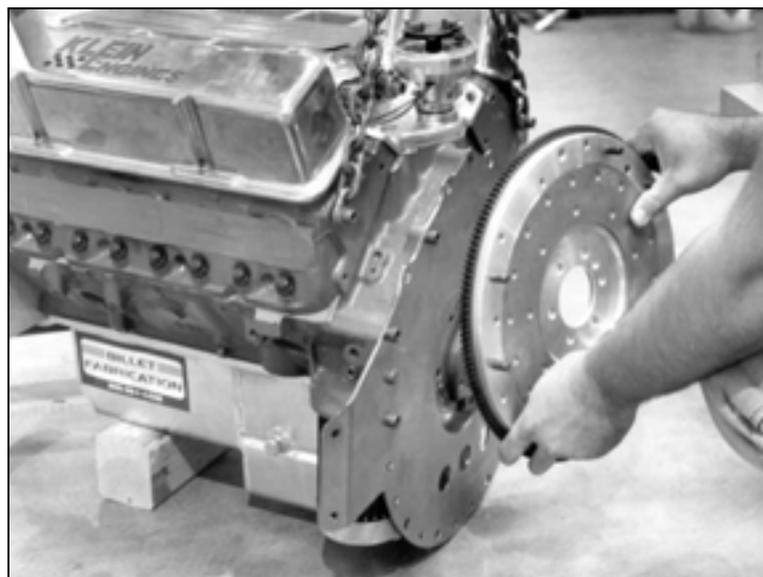


A piece of wood is used to support the engine under the oil pan while installing the profile milled front motor plate.

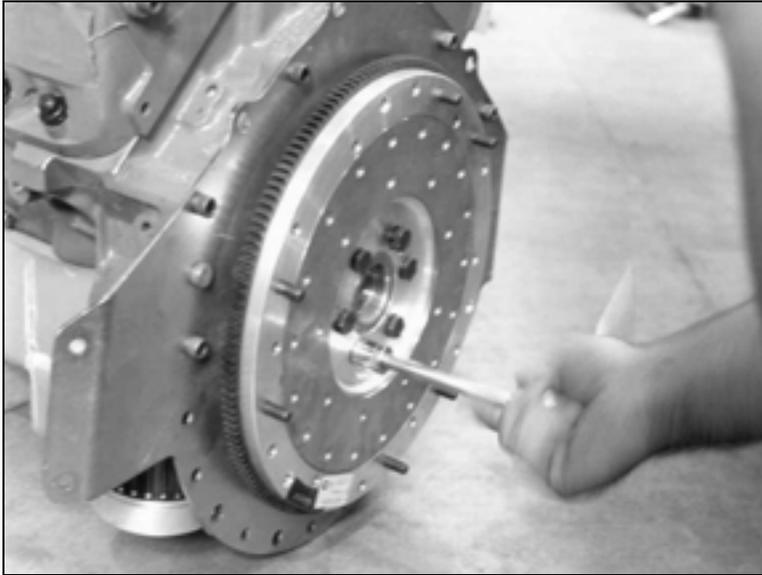


The plate attaches to the engine block with the four 3/8-16 x 3/4-inch stainless steel button head allens, and flat washers. Apply anti seize to the bolts before installation.

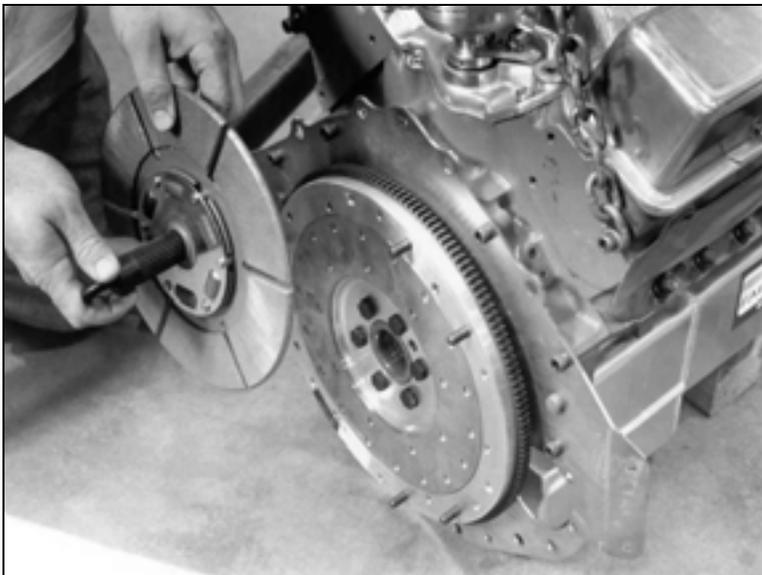
Install the water pump with the fasteners included with the pump. It is also a good idea to put a bead of silicone sealant on the block around the water pump holes and on the water pump for a water tight seal.



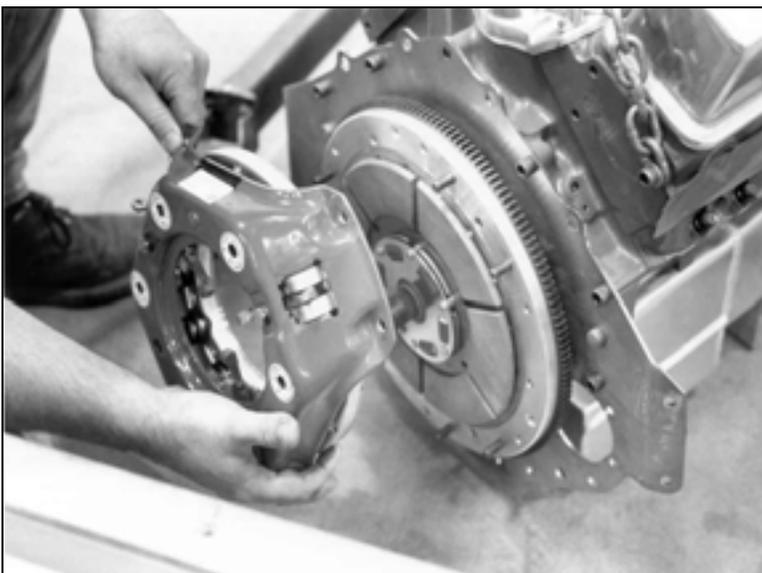
To install the flywheel, align it with the bolt pattern on the engine crankshaft.



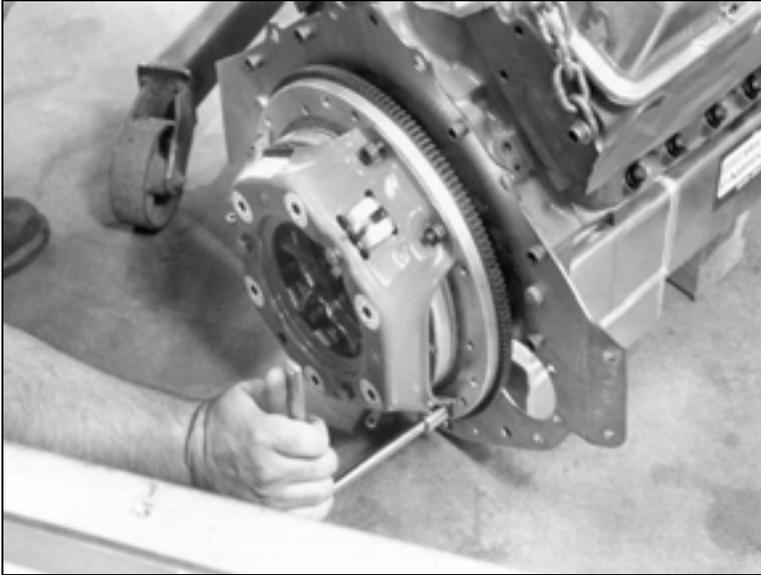
Slide the GM locking star washers onto the flywheel bolts and apply Loctite™ before tightening. Torque the fly wheel bolts to 75 lb-ft.



Insert a pilot bearing alignment tool into the clutch disk. Slide the assembly into the end of the crankshaft, the clutch disk is marked "engine side" make sure it on correctly. This will assure the clutch disk is properly aligned while the pressure plate is installed.



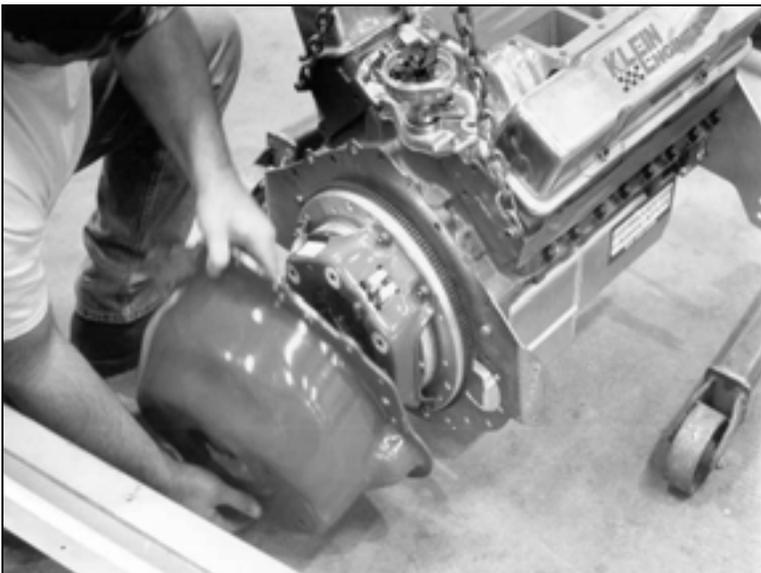
Install the pressure plate over the studs on the flywheel.



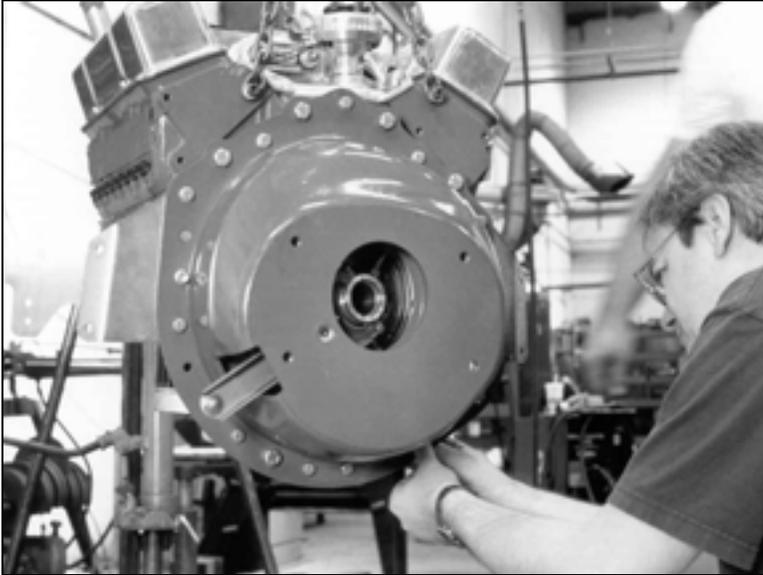
Apply Loctite™ to the pressure plate nuts and torque to 45 lb-ft.



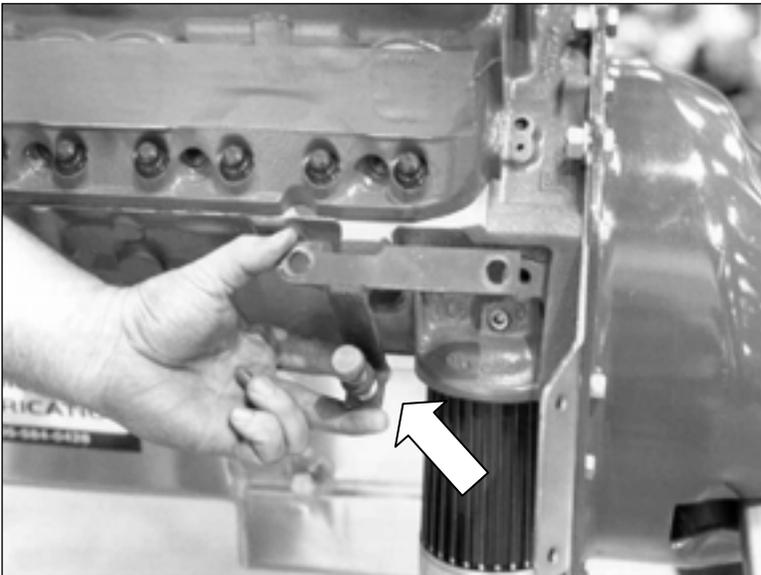
Install the throw-out bearing and clutch fork onto the pivot stud in the bell housing.



Remove the bolts holding the mid plate to the engine block. Set the bell housing in place. Make sure the throw-out bearing is centered on the pressure plate release arms.



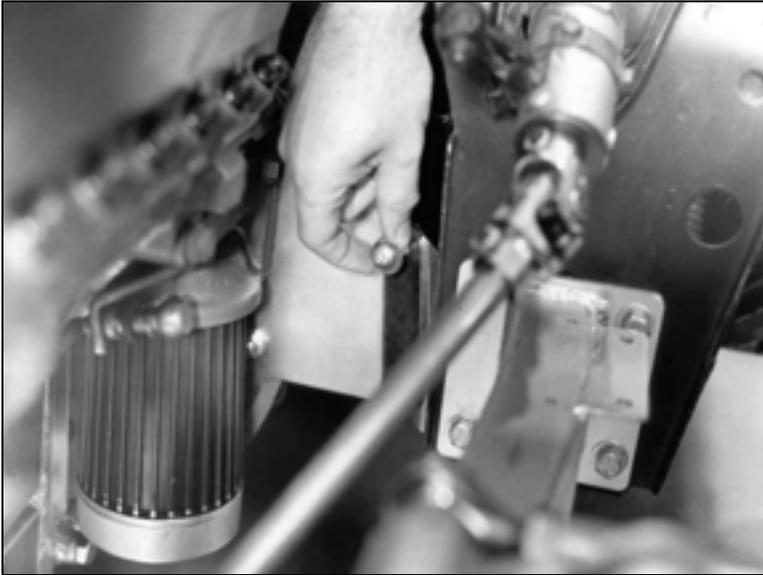
Install all the bolts surrounding the bell housing. There is a combination of 3/8 inch and 1/2 inch bolts attaching the bell housing to the engine block and mid plate.



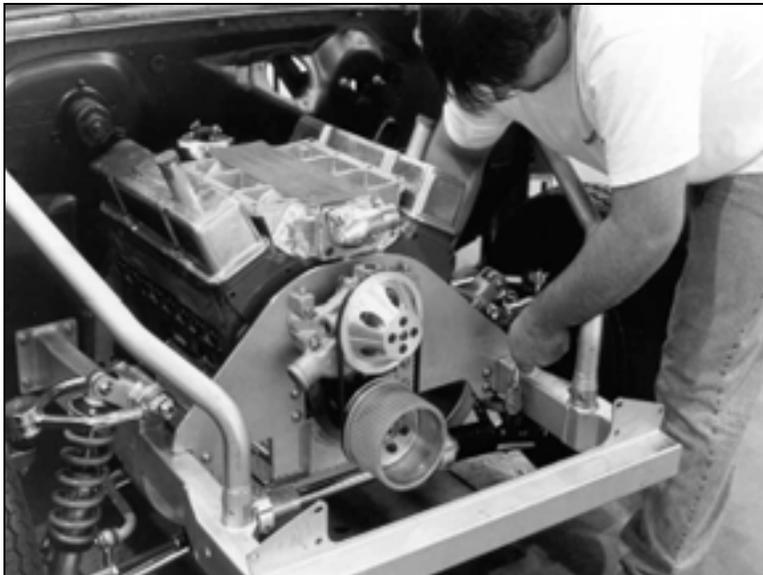
Bolt the inner clutch bell crank pivot ball and mount to the engine block.



Lower the engine into the frame, the motor plate and mid plate both set in front of their mounting brackets.



Use the stainless steel 3/8-16 x 3/4 inch button head allens, flat washers, and locknuts to attach the mid plate to the mount brackets. Do not final tighten these until the motor plate bolts are installed.



The front motor plate will set on the frame rails. Use the stainless steel 3/8-16 x 1 1/4 inch button head allens, flat washers, and locknuts to attach the motor plate to the frame mount brackets. Tighten the driver side first, then the passenger side.



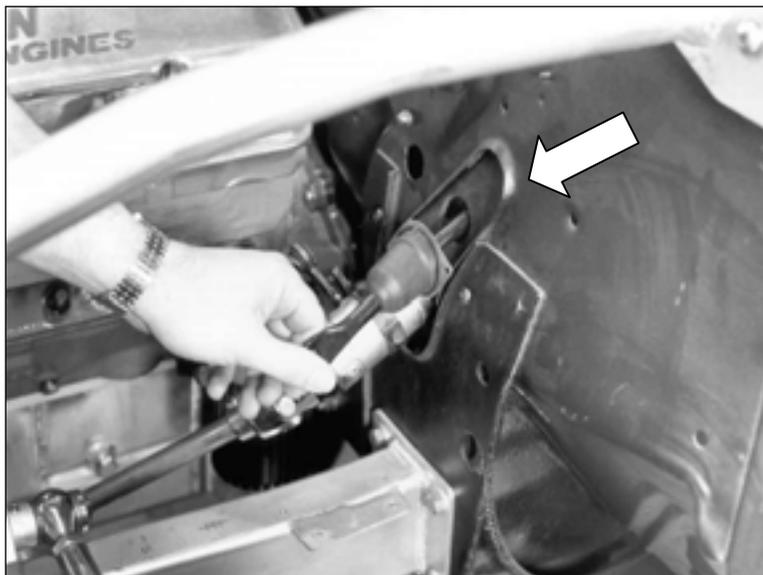
You can now tighten the mid plate on the driver and passenger sides.



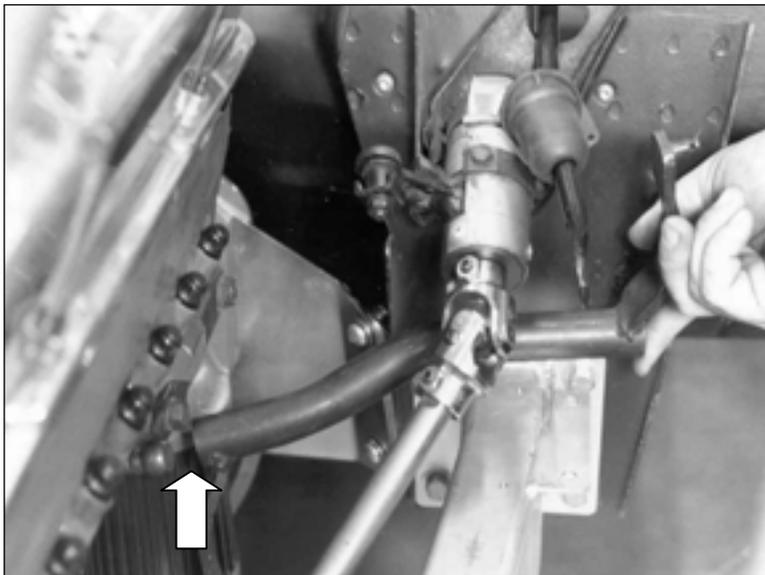
On cars originally equipped with an automatic transmission, cut the clutch linkage hole outlined on the factory steering column firewall seal with a sharp knife.



Before installing the clutch linkage rod, slide the boot over the rod. Now install the linkage through the firewall and attach it to the clutch pedal. The arrow shows the clutch pedal end of the linkage.



The boot covers the hole in the firewall seal.



Place the clutch bell crank over the pivot ball mounted to the engine.



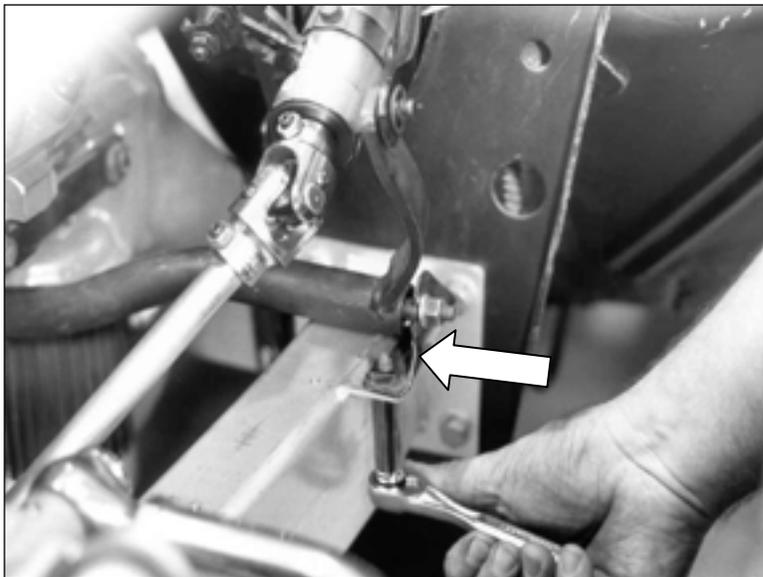
Slide the linkage rod over the pin on the bell crank arm.



Secure with the spring retainer clip.



Attach the outer pivot ball to the mount bracket and insert the ball into the clutch bell crankshaft.



Bolt the outer pivot ball bracket to the mount welded to the frame.



Slide the clutch linkage boot up against the steering column firewall seal and secure with sheet metal screws.

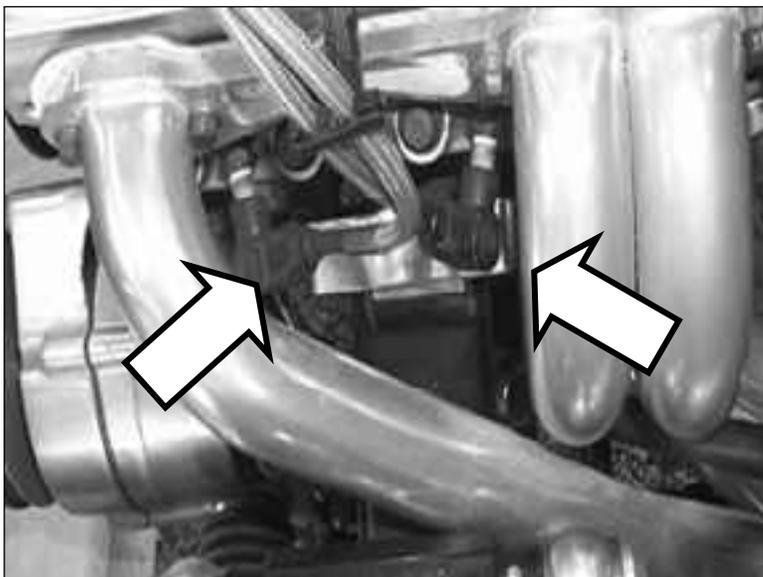


## ***Installing Headers***

**Special Note:** We suggest leaving the headers in their plastic bag during the initial fit. If the headers do not fit your application, you can return them within 30 days of the purchase date for credit of the purchase price only. The returned parts must be in new condition (no scratches, dents or dings). Chassisworks reserves the right to return to the customer any header kit that is returned in substandard condition.

There are many manufactures of cylinder heads and several of them have made changes to the basic dimensions of the stock head. These changes will affect how our headers fit because we have built our headers to a close tolerance. Below are suggestions of modifications that can be made during your installation to insure the best fit.

1. Bolt hole resizing of the header flanges.
2. Different spark plugs to gain clearance for spark plug wires.
3. Different spark plug boots or wires to clear the header tubes.
4. Shimming the transmission mount up or down for additional tube clearance to the frame. If the transmission has been relocated from the stock location or replaced with a different model, the header fit may be affected.
5. Minor dimpling or denting of the header tubes.
6. Minor grinding of the header flange around the head bolts.
7. Changing the cylinder head fastener style for more clearance ( i.e. 12 point bolts or nuts, no washer or head studs).
8. The shape of the exhaust port may require a gasket change or modification for best seal.
9. Not all cylinder head manufactures use the same specifications on the width, height, and angle of the exhaust ports. If the ports are changed from the stock location in any way, the headers will be too wide to fit between the frame rails.
10. It is a good idea to test fit the headers on the engine prior to installing them. Make changes before you have the headers in the car.



We suggest angle plug heads for better fit. The spark plug clearance will be very tight on the straight plug heads. A shorter length spark plug is available from most vendors. Champion C63YC is a good starting point for a street small block with straight plugs. However, even this spark plug will come very close to some tubes. MSD makes a heat shield material that should be wrapped around the tubes that have spark plug boot interference.