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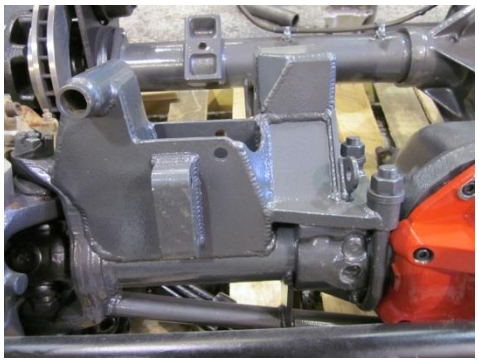
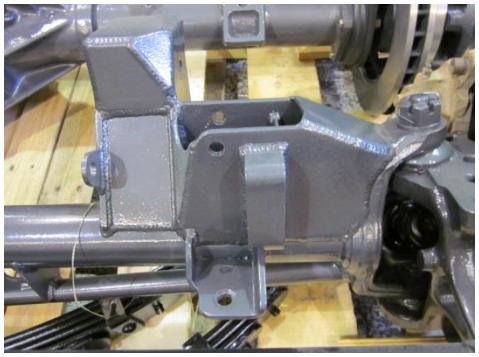
’67-’87 (’91) GM Front Coilover Conversion Instructions

There is extensive welding work required to install this kit. The welding involved will be critical to the safe operation of the vehicle. If you are not comfortable with your welding skills on a project of this type, find a qualified welder.

Begin by fitting the axle brackets to your axle. The brackets generally jig themselves onto the axle, the bracket on the differential side will fit onto the leaf spring perch and will use a u-bolt (Ford Dana 60 or GM 10 bolt/D44) or included 5/8” bolts (GM Dana 60). Make sure that both brackets are attached at the same angle (use an angle finder) and weld them to the tube, the inner “c” and to the cast iron housing if you have the capability (not absolutely necessary). The inner “C” on the housing is forged steel and will weld just like the axle tube steel. The axle mounts are shipped with one gusset tack welded in place so that you can remove that gusset, weld the inside of the bracket and then re-tack the gusset and final weld.

10 bolt/GM D44 axle brackets shown:



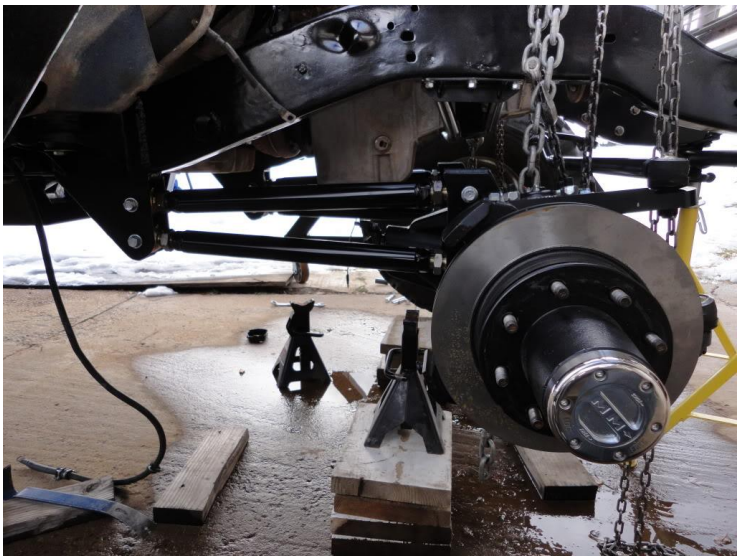


The next step is attaching the frame side link mounts.
For 6” of lift and less, remove the rivets that attach the body mount under the front of the cab. For the standard brackets (pictured), the body mount lays on top of our link bracket and bolts through the factory holes. Welding is optional. If using our high clearance brackets, the body mount will need to be modified/fabricated if it is necessary to retain it. For 8” of lift and more, it is advised to move the link bracket further back on the frame to make the links

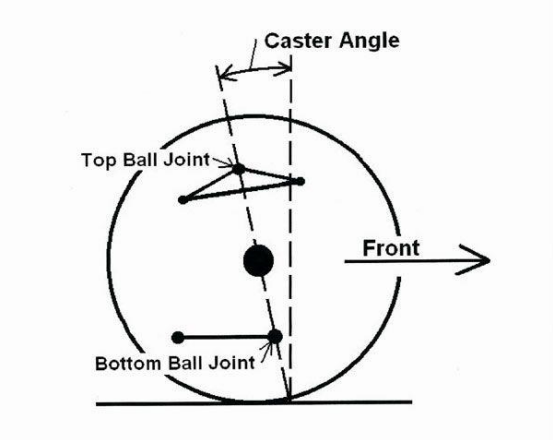
longer and flatten the link angles.

With the axle and frame side link mounts attached, you can decide where you want the axle to be located and measure for the length of your link arms. Place the axle in the full compression location to begin and verify your clearances are adequate. Be aware, if you’re using a crossover steering system, the axle cannot be moved forward more than about 1” due to the stack up of the steering box, pitman arm, panhard bracket and coilover. It is possible to move the steering box forward on the frame if moving the axle forward is necessary. Custom built coilover mounting spacers can also allow you to move the coilover back in the axle mount a little bit. It may help to clamp the panhard bar bracket to the frame and use a broomstick as a mockup device to make sure everything clears.

Cut the link tubing (2” OD x 1/4” wall) to length (too long is better than too short!) and tack weld the inserts into the tubing. Thread the joints into the links and install the links on the vehicle.



Verify that you can adjust the links to position the axle where you want it and set the caster at 5 degress +/- 1 degree (same applies for ball joint or kingpin axles)



Set the axle and frame as they will be at final ride height, tack weld the panhard bracket on the frame and measure the length that your panhard bar will need to be. Cut the 1-1/2” x ¼” tubing to length and tack weld the inserts into the tube, thread the heim joints into the bar and install it. The panhard length should be very close to your draglink length.

Keep in mind that the axle doesn’t have to be exactly centered under the truck, most with 4” of lift and more will choose to center the axle under the truck but it can be moved one way or the other for clearance reasons.

Set the truck at ***final*** ride height i.e. set the body/frame at the lift height you want to end up with, tires don’t matter at this point, just distance from axle to frame. Once that is set, you can set the shock hoop height. The springs that we provide should settle halfway through the shock’s travel, so we’ll set up the shock hoops with the shocks midway through their travel (typically 7” of shock shaft showing).

If you’re using 14” travel King 2.5” remote reservoir shocks (the shocks we send with most kits), you’ll want the shock eye to eye mounting distance to be 30-1/4”. If you’re using your own shocks, you’ll want them at the center of their travel. When setting the shock hoop height make sure to account for the length of the shock tabs that weld to the hoop. One trick for mocking up the shock mounting parts is to cut a piece of material (wood, steel, whatever) to length at half the shocks travel (7” for a 14” travel shock) and tape it to the shock shaft so that the shock will easily sit at halfway through its travel.

Now you’ll have to set the angle of the coilovers, looking at the shock from the side of the vehicle (as pictured), the shock needs to be roughly vertical. Running the shock tipped a few degrees forward or back won’t hurt anything and could help your clearances. Use an angle finder to make them match side to side.

Looking at the front of the truck, the shocks will likely need to be angled in a bit for tire clearance. A good starting point is 3 degrees. Tack weld the shock hoop (with shock tabs on it) or a piece steel (with some way to attach to the shock eye) on to the frame to support the shock so that you can cycle the suspension. Leave one spring on the shocks so you can still compress the shock with no spring force but can slide the spring up and down to check clearances. Attach both shocks to the frame and axle.

Now you need to cycle the suspension. There are six main positions you’ll need to check, those are:

Both tires at full compression
Both tires at full droop
Driver’s side at full compression, passenger’s side at full droop
Passenger’s side at full compression, driver’s side at full droop
Driver’s side at full compression, passenger’s side at ride height
Passenger’s side at full compression, driver’s side at ride height

An engine hoist is a good tool to use to cycle the suspension. A simple floor jack and wood blocks works fine too. As the suspension cycles check everything you can: steer the axle back and forth at all positions, make sure joints aren’t bottoming out, check panhard bar clearance, differential to crossmember clearance, exhaust clearance, etc. You ***cannot*** cycle the suspension enough,

finding clearance issues now will save a lot of time later. Make sure to install one of the tires you’re going to use on the compression side of the axle as you cycle the suspension, this will help you determine fender clearance issues and you’ll be able to see if there are tire to spring clearance issues.

A note on clearances: with a link and coil system the axle path is very well defined compared to other suspension systems like leaf springs that are much less precise. It IS POSSIBLE for you to check EVERY location the axle could ever achieve relative to the frame and body. Don’t build your tolerances so tight that a change/adjustment will cause interference and allow some room for bushing deflection, bump stop deflection, etc.

With very large tires (typically 40” plus, but it depends on wheel width, backspacing, ride height, etc) it is possible that the coilover will interfere with the steering shaft. If that is the case, we can supply a steering shaft similar to the one pictured to avoid the coilover:

Once you have fixed any clearance issues and determined at what angle the shocks need to be mounted, install the “engine cage” (1-3/4” x .120” wall tubing) and the tube clamps (so that you can remove that tube to service the engine, if necessary) in between the shock hoops.

Finish weld everything that has been tacked to this point and install the springs. Charge the shocks with Nitrogen or CO2 to 150 psi.

Torque specs:
7/16” bolts - 38 ft. lbs.
½” bolts – 59 ft. lbs.
9/16” bolts (Johnny Joints in link arms) – 94 ft. lbs.
5/8” grade 8 bolts into GM D60 housing – 100 ft. lbs.
5/8” U-bolts - 135 ft. lbs.

Bumpstop setup: The bump pad on the axle is the top of the link arm bracket. This gives you a reinforced location for the stops to strike