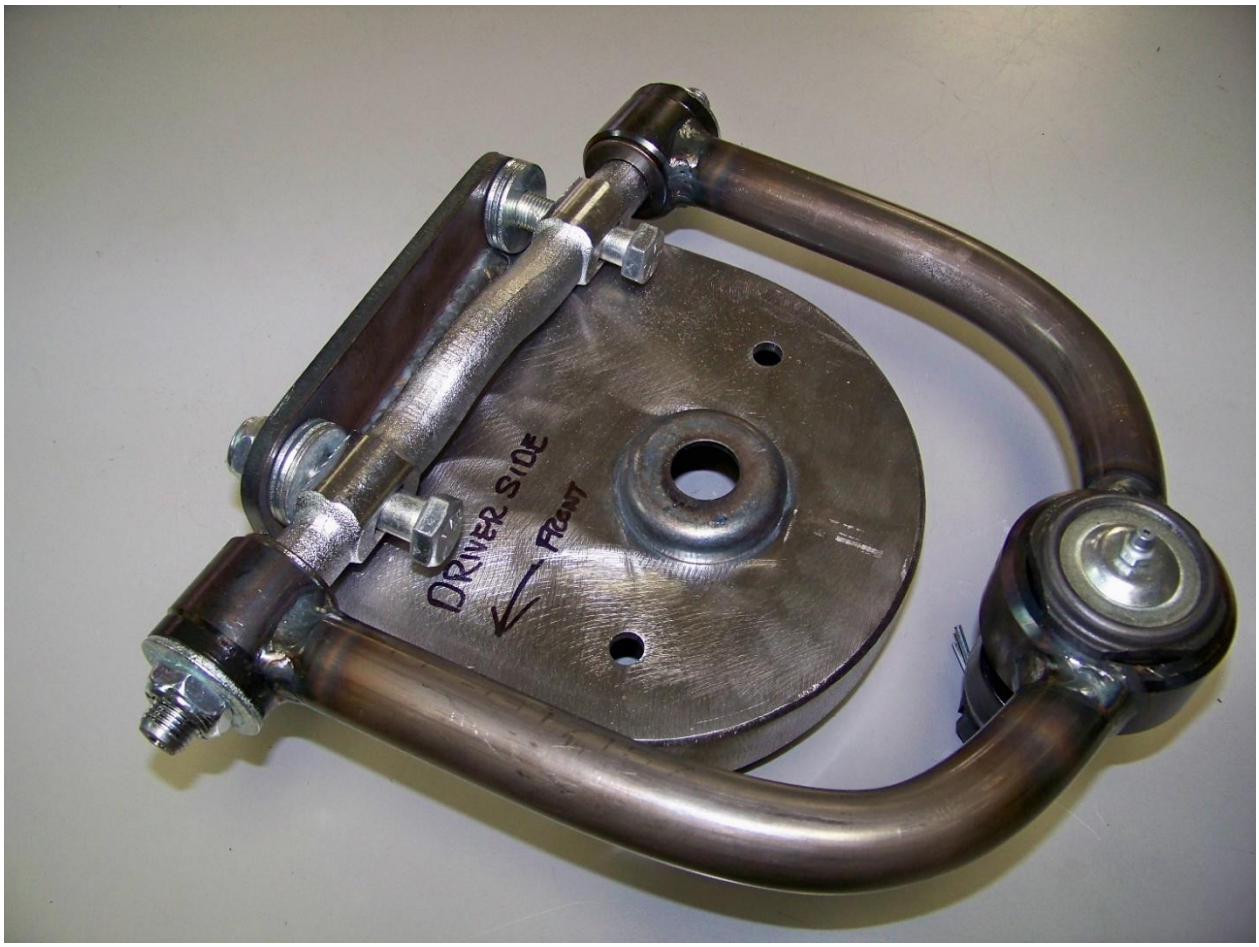
Installation Supplement for Frame Stub Components - Stages 2 & 4

We highly recommend that you FIRST read these directions from beginning to end BEFORE you begin. Many things will become clearer as the work progresses and much easier to understand when the entire process is considered. We also stand ready to answer any questions on the phone at 864-848-0601 or by email at sales@southernrods.com .

Our website www.southernrods.com has a section which lists links to a great number of installation articles that have appeared in print or a video. You can also go to YouTube channel for several video's that may help your installation.

Your frame stub has been installed and now we are ready to mount the suspension components. There are separate instruction sheets for the brakes, control arms, and steering but we'll repeat the assembly instructions here as well.

We recently developed or new Evolution upper control arm mounts for Stage 2 and Stage 4 front suspension kits. The upper control arm will now be mounted to that vertical chamber plate using the supplied 1/2” bolts, washers, and Nyloc nuts. We never want to run out of adjustment, so the three supplied washers are used outboard of the camber plate for a beginning alignment setting with the upper control arm shaft then added outboard of the washers. A little tip that aids installation of the upper control arms is to first insert the 1/2" x 2-1/4" bolts in the holes in the upper arm cross shaft pointing in toward the center of the car. Three washers per bolt are then added to the shaft spacing the cross shaft away from the camber plate. Then insert the bolts through the camber plate and rotate the cross shaft to ease them in. The washers are supplied as a starting point for alignment shims.



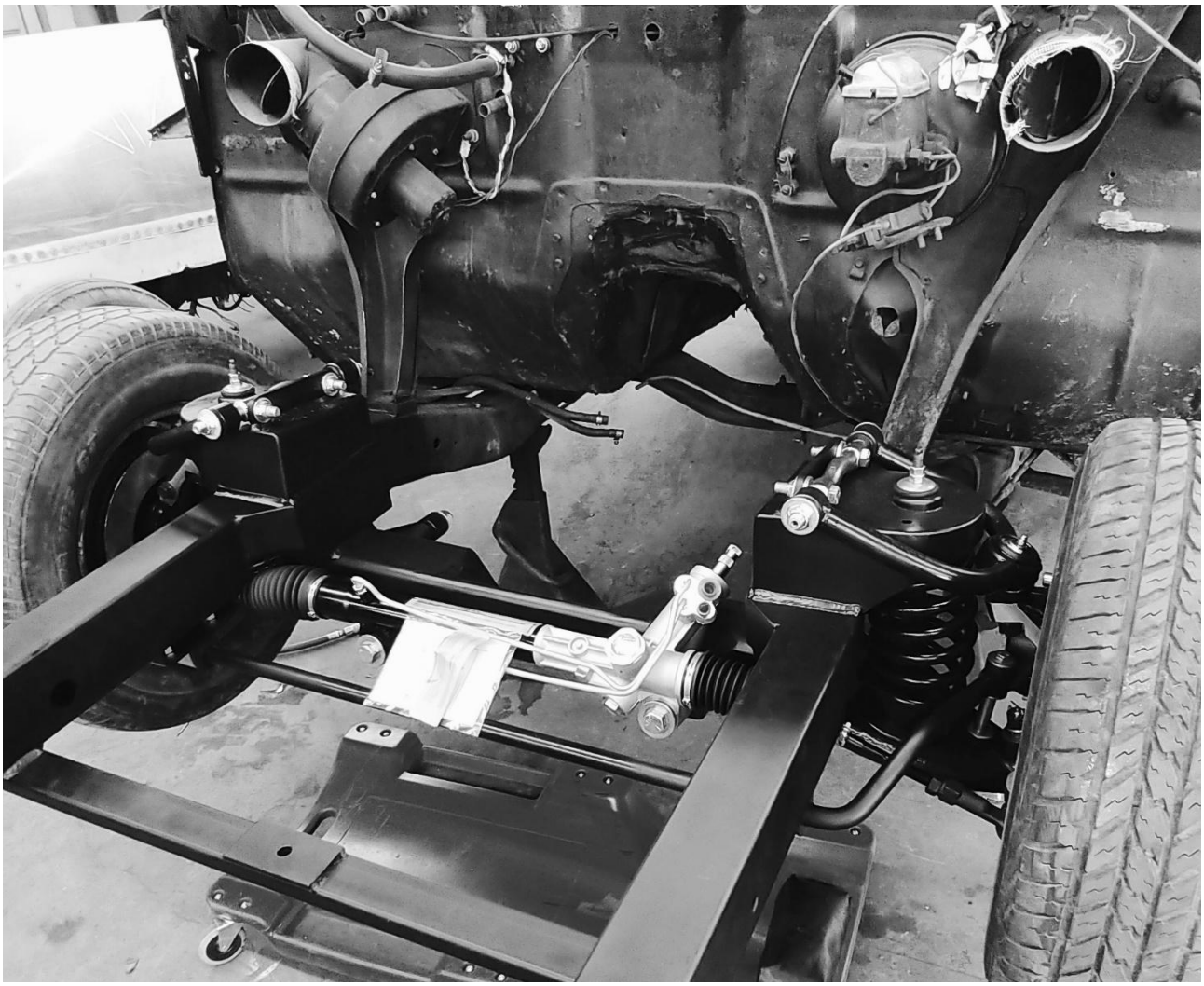
You won't be able to adjust your ride height until all the weight is on the car. This includes sheet metal, radiator, bumpers, body, glass, interior, and a complete engine. They just cannot be properly adjusted without **ALL OF THE WEIGHT** in place on the car! That will put the lower control arm about level. That is critical so that the shocks will neither bottom nor top out in their travel. If allowed to run out of travel parts will be damaged with handling and ride quality reduced greatly. The photo on the next page shows the springs installed on an incomplete vehicle.

WE DO NOT RECOMMEND INSTALLING THE SPRINGS AT THIS POINT OF THE BUILD.

This can cause damage or failure of the ball joints over time, especially if the shocks are not installed. The suspension will be at full extension under the heavy force of the springs trying to return to their uncompressed height. Two large friends standing on the front of the frame will not simulate the extra weight of the drivetrain, sheet metal, etc., and the suspension typically will NOT move much if at all since you are now trying to overcome the friction of the tires on the ground. The wheels travel in an arc as they move up and down. It's why an alignment rack has moveable turntables to place the tires on when doing an alignment. The ride height is correct when the lower control arms are extending from the crossmember at level. The allows for proper geometry and suspension travel. If the ride height is not to your liking with the lower arms level you can swap out to a different spindle (standard, 2" drop, or 1 ½" raised) to achieve the desired stance.

Once installed, the springs will need some time to properly settle prior to determining if they will need to be trimmed. If the vehicle is not road ready at this point and stationery you will want to roll the vehicle back and forth a few times every few days to allow the suspension and tires to overcome the friction previously mentioned. Always use a cold cutting method when you do have to trim the springs, such as an abrasive cut-off wheel. Torches and plasma cutters induce too much heat causing a softening of the spring, just like the old backyard (and totally incorrect) method of heating the springs with a torch to lower the car.

When trimming the springs be very careful to not cut too much off at one time. A general rule of thumb is that each ½ of a coil will lower the vehicle approximately 1". We have also sold many sets of replacement springs to our customers because they decided to take a "big swing" at cutting only to find that they've now cut too much off once the spring re-settled. You can cut up to 1 ½ coils off with a negligible effect on the spring rate or ride quality. After that you will start to feel a bit of suspension stiffening the more you cut, so getting the spring "in the ballpark" the first time is important. With over 30 years' worth of experience, we've gotten pretty good at knowing what will work with a minimal amount of trimming.



The stage 4 suspension uses firestone #6781 air springs. Although height can be controlled by using an outside air fill, like air shocks an onboard air compressor with tank and control panel with gauges is highly recommended. Be sure to pay careful attention to the labels on the air spring mounts as it isvery easy to over torque the fasteners and ruin the air springs. The lower control arm is installed with the shock tab to the rear and pointingdown from the underside of the arm. Monroe #59041 front shocks are usedand supplied if you purchase a complete Fat Man hub-to-hub suspension kit.

The upper air spring mount has a 3-1/2"diameter hole to fit snugly over thespring retainer ring inside the shock tower. Slip it over the ring from underneath and clamp it in place with the lower oval plate extending outboard from the frame. Use the upper mount as a guide to drill two 3/8" holes which will be used to fasten the mount to the shock tower.

Bolt the air spring to the upper mount being careful to not over torque the bolts. Attach the air line and feed it up through the original shock mountinghole as you attach the upper mount using the 3/8" holes just drilled. Bolt theair spring to the lower control arm and check for clearance throughout full suspension travel. The air spring should be at 5" installed at normal ride height plus or minus 1/2". Finish welding the upper shock mounts to the frame rails.

Install the rest of the suspension parts per the instructions provided with your kit. Connect your air supply and test the system. Record the air pressure which sets the car at normal ride height with the lower control arms LEVEL(parallel with the ground). ALWAYS DRIVE THE VEHICLE AT THIS HEIGHT!!! Driving it lowered or raised from this position can and will causedamage to the ball-joints and tie-rod ends, wear the tires prematurely, and cause erratic handling. ALL of these issues are UNSAFE!!!

Much of this information and more are included in the Coolride supplement in these instructions.

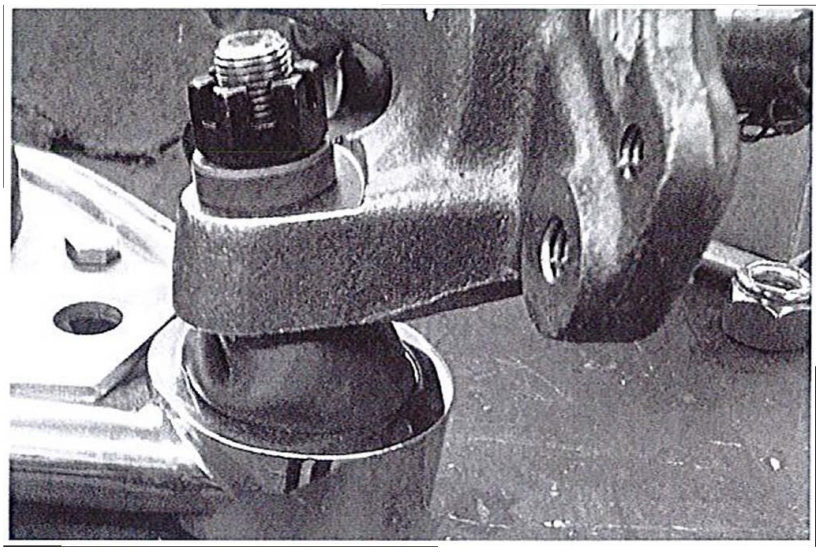
The rack and pinion will have its mounting bushings in a plastic bag inside one of the boxes of your order. The bushings install with the flange to the rear against the crossmember rack mount bracket. The easiest way to get them in place is to pull out the inner steel sleeve from the rubber bushing first, tap the rubber into the rack body, and then tap the steel sleeve into place.

If you are installing a widened kit, be sure to look at the enclosed instructions which explain how to install the rack extension.

Some cars can have the steering connected by using only 2 U-joints. Most vehicles will require 3U-joints with a center bearing to get around the exhaust manifolds. We offer a nice kit with all the Borgeson joints, shafts, and bearing to make it easy. Most pickup truck installations work well with block hugger headers or Ram's Horn manifolds. Most street rod applications do best with either Sanderson's block huggers which keep the exhaust closer to the block and away from the frame rail, or Hedman's ultra-close block hugger headers.

A steering hookup example is shown below. It shows a 1969 Camara stub with our Stage 3 coilover suspension, but the basic design is fairly universal. We offer this as a kit supplying the proper U-joints, shafts, and center bearing.

There are a couple other things installers often seem to miss when reading the instructions. With Chevy pattern disc brake kits, the instructions tell you that the GM bearing races must be removed, and the races packed with the supplied A-12 and A-13 bearings installed. If you don't, the rotor will sit too far out on the spindle, and the cotter pin hole will not be accessible. The control arm instructions explain that the lower ball joint requires a spacer we supply to raise the castle nut enough so that the nut can be securely tightened against the ball joint boss on the spindle.



The additional 5/8” hole you see on the plate is for the sway bar link if being installed on your vehicle.

Remount the front sheet metal and cut out the inner splash shields to 1" clearance around your new suspension. It'soften easier and prettier to make new inner splash shields from steel or aluminum with a few louvers for style.

Bleed the brakes, check the steering for strength and smoothness, and enjoy a low smooth ride!

Please be sure to provide those recommended specs to the alignment shop as they generally will not see these instructions, and will use OEM Mustang II specs, which do not call for enough positive caster for the improved road feel that our specs provide.

Mustang II alignment specs are as follows:

Camber: +1/2 degree
Caster (manual steering): +1/2 to +1 degree
Caster (power steering): +3-1/2 to +4 degrees
Toe: -1/8”

* Use only genuine power steering fluid with the power racks we provide.

Handy Part Numbers:

Brake Hoses NAPA #36959 fits 1985 Buick Riviera front and accepts 3/15" hardline. This hose is 17" long and works well on almost any front disc setup. Discard the steel bracket on the hose. It accepts a metric banjo (hollow) bolt at the caliper and fits non-metric calipers by simply passing a 7/16" drill through the caliper end block. An excellent rear hose is NAPA #36799 which comes from 1975 Jeep CJ-5. It is 17" long and accepts 3/15" hard lines. Metric banjo bolt is NAPA #82703, while the 7/15" - 20 thread version is #82698.

Mustang II Power Steering Hoses The smaller line is the pressure side. Both O-ring and flare fittings are used, and most rebuilt racks include adapters to use flare fittings which we prefer. With a standard GM power steering pump use NAPA 7-1874 pressure and 7-1880 return lines for rack using O-Ring fittings. See the notes in the back of our catalog regarding swivel O-Ring fittings. For flare fittings use Gates pressure hose #35637 and #35287 return.

Mustang II Springs

- NAPA #277-3039 (1974 Mustang II 4 cyl. w/o air) 1933-34 Fords, 1933-35 Chevy
- NAPA #277-3036 (1978 Mustang II 6 cyl. w/air) 1934-48 fat fender cars
- NAPA #277-3038 (1978 Mustang II 8 cyl.) 1950's cars and pickups
- NAPA #277-3057 (1984 Mustang 5.0) very heavy engines in 1950's & 1960's pickups - 460, 454, HEMI (above assumes small block engines - increase up one step for big blocks)

Motor and Trans Mounts Small block Chevys use NAPA #602-1054 motor mounts. Big block Chevys use #602-1127. All GM transmissions using mount #620-1031 (This GM transmission mount is easily adapted to Chrysler transmissions). Ford small blocks use #602-1152 motor mounts and #620-1040 transmission mount. Cleveland engines can use NAPA #602-1151. The 429-460 work well with #602-1694/1695 and a #620-1058 transmission mount for the C-6.