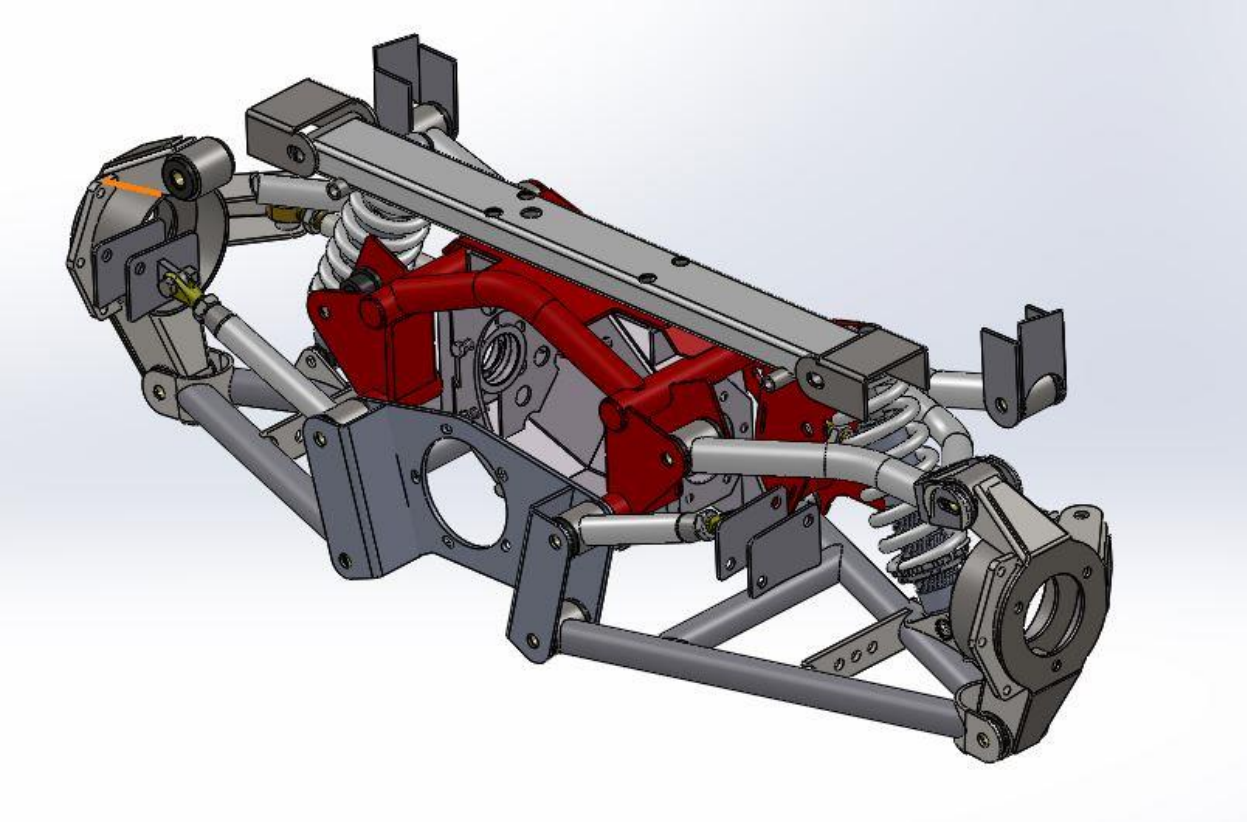
INSTALLATION INSTRUCTIONS

64 ½-70 MUSTANG

(IRM-101)

INDEPENDENT REAR SUSPENSION

U.S. PATENT 8,517,140



For questions on installations please call 800-841-8188 In Illinois (847) 487-0150

Please read these instructions *completely*
before starting your installation.

Assemble suspension on vehicle before powder-coating to ensure proper fitment, and to make modifications if necessary.

You are about to install your HEIDTS suspension system. The HEIDTS I.R.S. kits are designed so all that is taken care of for you. Just follow the instructions step by step, reading each step completely, and in a very short time your car will be sitting on the nicest riding I.R.S. kit available.

1) Begin your installation by placing 2 pieces of tape on your fender and marking axle centerline/wheel base for reference. Next jacki up your vehicle and supporting it on sturdy jack stands. The stands must be placed on the flat section of the frame rails close to the front and rear body mounts. Remove the rear wheels and shocks. Disconnect the brake lines, emergency brake Lines and leaf springs. Remove rear end assembly as shown in **Figure 1.**

Figure 1

2) After the rear end housing, leaf springs and shocks are removed, remove the factory bump stops and anything else in the frame rail area where the IRS saddles will be installed. Clean the frame rails after everything is removed. **See Figures 2 and 3**.

Figure 2

Figure 3

3) measure from the front of your rear leaf spring mount forward 30” and mark your frame rail. See figures 4 and 5. Tack in your upper crossmember mount.

Figure 4

Figure 5

4) With the primary mounts tacked in the correct location, assemble your IRS cradlediff housing, pinion mount and upper crossmember.

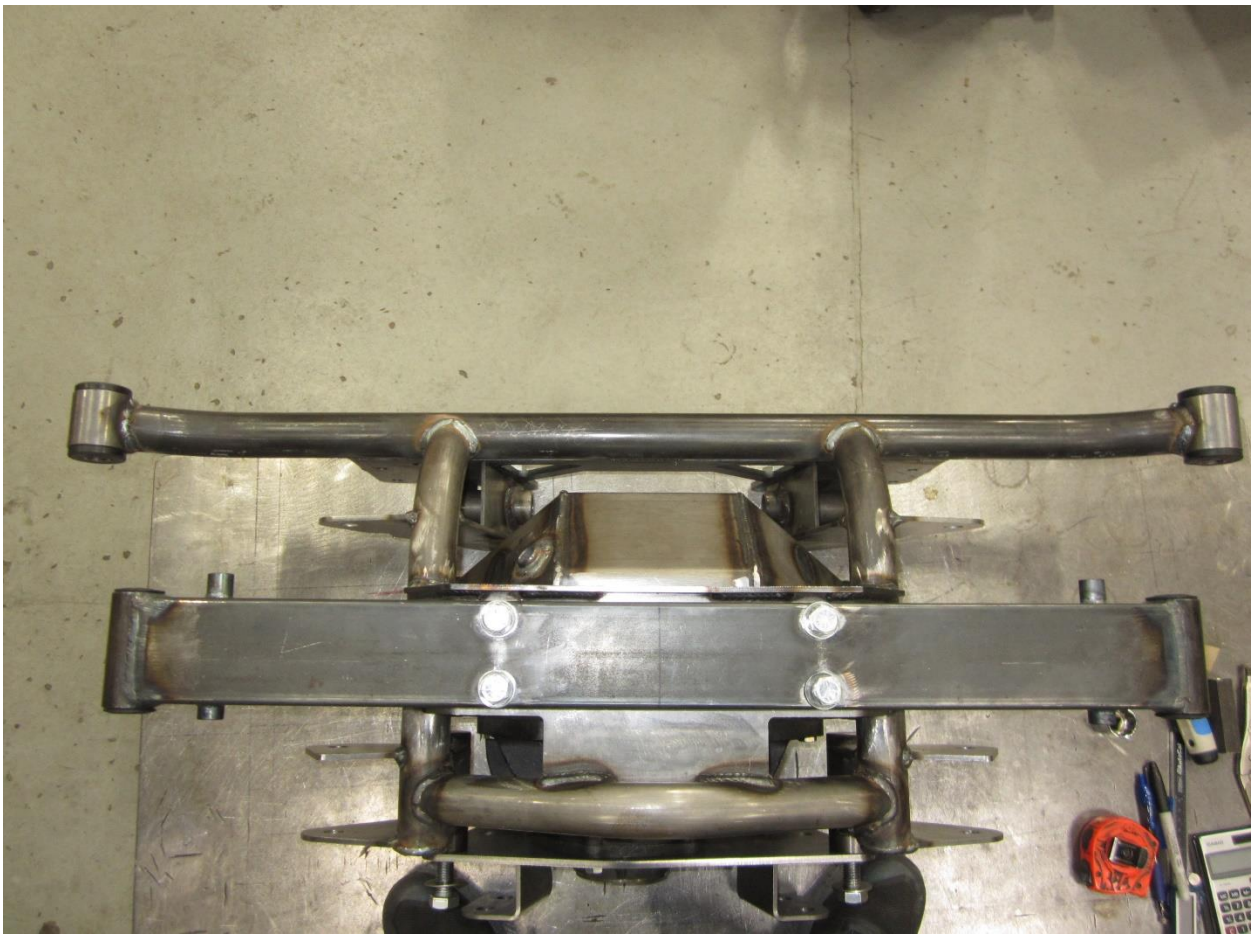


Figure 6

5) bolt the assembly into the car and verify axle centerline is correct. This step is important due to the age, condition and variances in each car.

6) Once you have verified the IRS is in the correct location use the rear mounts on the cradle to locate the rear brackets to the frame rail as seen in figure 7. Tack them in place. Install a lower control arm on one side and verify again your IRS is in level and equal. Once you are certain you can remove the cradle and fully weld in your mounting brackets. Use the rear boxing plates to enclose the outside of the rear mounts. See figure 8

Figure 7

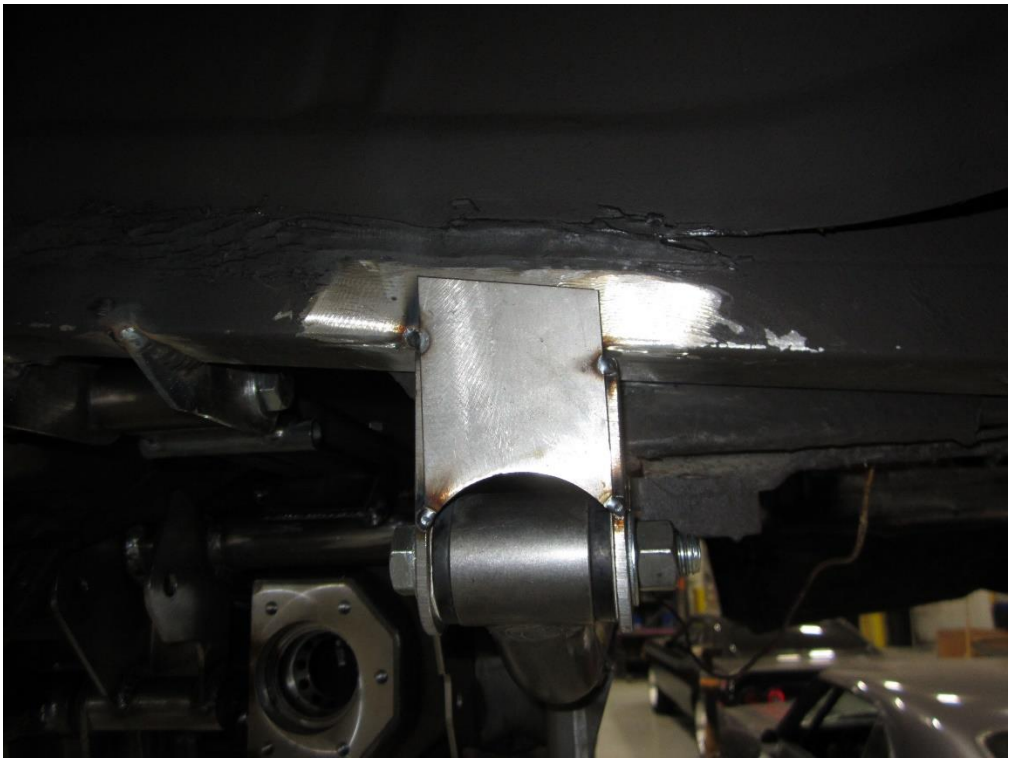


Figure 8

7) Steps 7 and 8 will be for the holes in the trunk area for crossmember and shock hardware to be inserted and removed. Open the trunk and pull the carpet back until half of the trunk is exposed. The vertical measuring point will be where the trunk area starts to flatten out. Measure 2 ½" up and 3 ½" in on the driver's side as shown in **Figure 10**. Measure 2 ½" up and 1 ¾" on the passenger side. Mark all lines with a sharpie. Center punch where the lines intersect. The center to center distance on the center punched marks should be around 28 ½" to 28 ¾". **See Figures 9-14**.

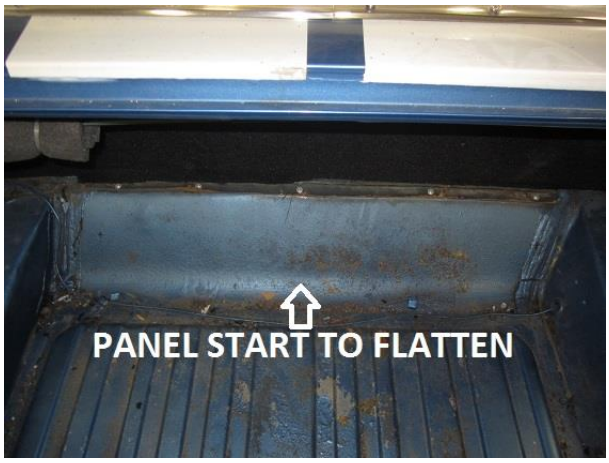


Figure 9

Figure 10

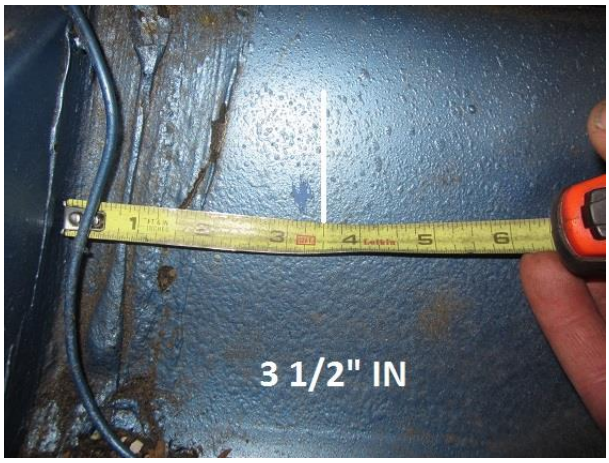


Figure 11

Figure 12

Figure 13

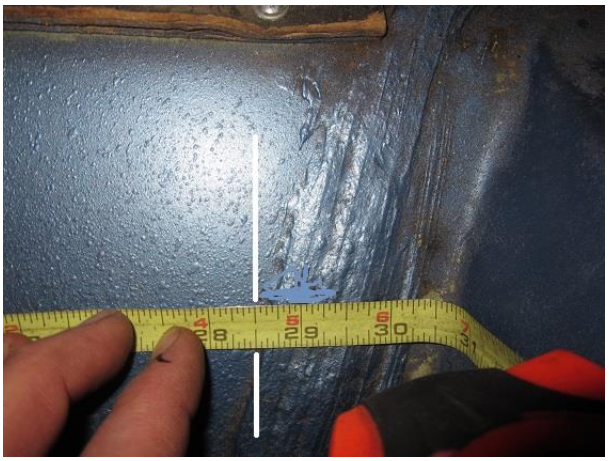


Figure 14

8) Use a 2 ¾” – 3” hole saw with a center point drill to create the holes in the trunk area. **See Figures 15-16**

Figure 15

Figure 16

9) At this point the rear end housing can be assembled. Install the stub axle seals into the housing ends. Use a suitable sealant and insert the seals into the housing ends, with lips of the seal pointing inward until they bottom out on the shoulder of the bore. A seal installation tool will ensure that the seals are installed square. **See Figures 17-19**.

Figure 17

Figure 18

Figure19

10) The studs can be installed next. The 1 ½" double threaded studs will be installed in the axle flanges and the 2" studs will be used for the 3rd member. Place the studs in a vice with the teeth of the vice covered to prevent damage to the threads. Using a wrench thread on the 3/8"

nylock nut until the elastic goes past the threads. For the 2” studs the nylock nut is installed on the less threaded end of the stud. **See Figures 20 and 21**

Figure 20

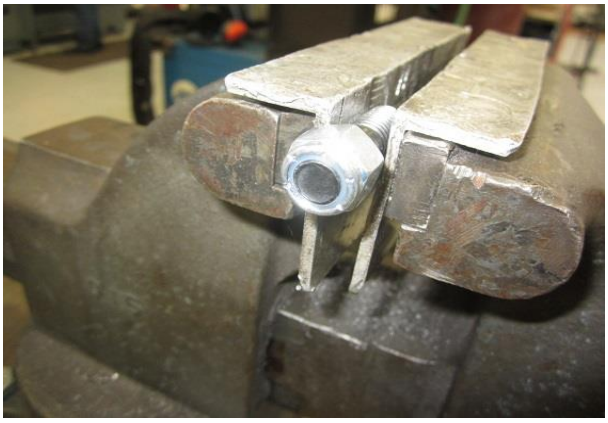


Figure 21

11) Install the 3RD member using the 3/8 x 2” double threaded studs, nylock nuts and gold AN washers. Install using the Ford 9” 3rd member gasket and or gasket sealer. If installing your own you will need a 31 spline unit. Use thread locker on the studs. **Torque studs to 40 ft-lbs**.

12) The front pinion plate can be installed after the 3rd member is installed. Uninstall the five front bolts from the pinion retainer. Install the pinion mounting plate on the pinion carrier as shown in Figure 34, using the 3/8-16 x 1 ¼” grade 8 bolts and washers. Use thread locker on the bolts. **Torque the 3/8 bolts 35-40 ft-lbs**. **See Figures 22 and 23**

Figure 22

Figure23

13) Install the stub axle into the housing using white grease on the splines for ease of installation. The longer stub axle goes into the passenger side. Slide the stub axle into the housing until the bearing bottoms out. Install the “C” plate bearing retainers using the 1 ¾”

double threaded studs with the previously installed nylock nuts and washers. The machined sides of the plates face the housing. **Torque 3/8 studs to 50 ft-lbs**. **See Figures 24 and 25**.

Figure 24

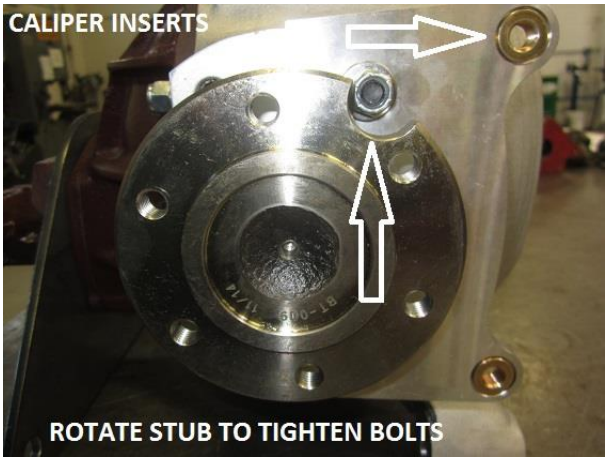
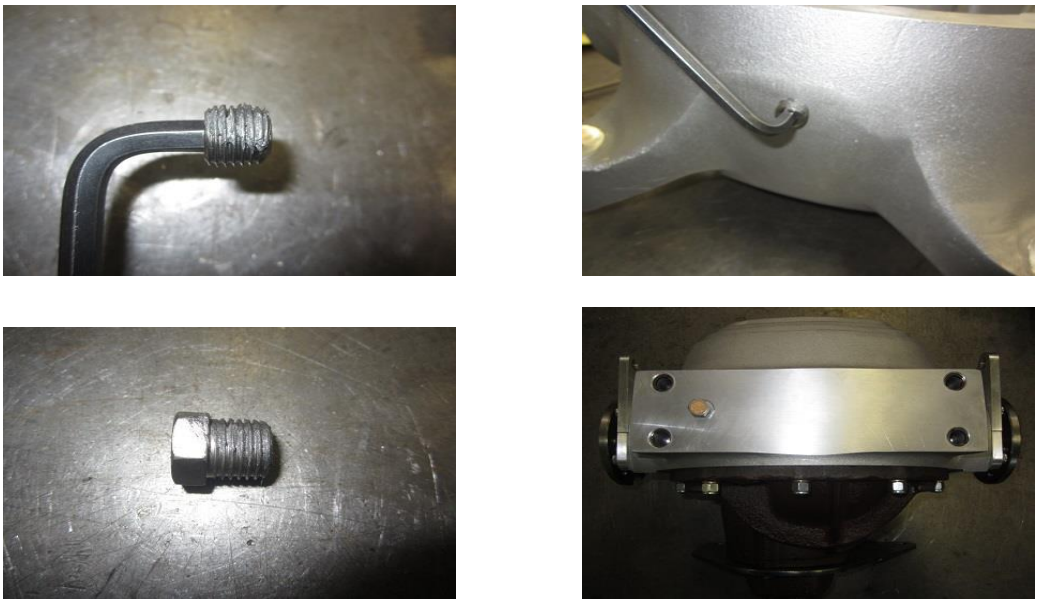


Figure25

14) Install the drain plug on the bottom of the housing and the vent on top. Use anti seize on the plug and vent. **See Figures 26-29**.



Figures 26-29

15) Install the assembled housing and crossmember on to the cradle and install the forward pinion supports as seen in **Figure 30**

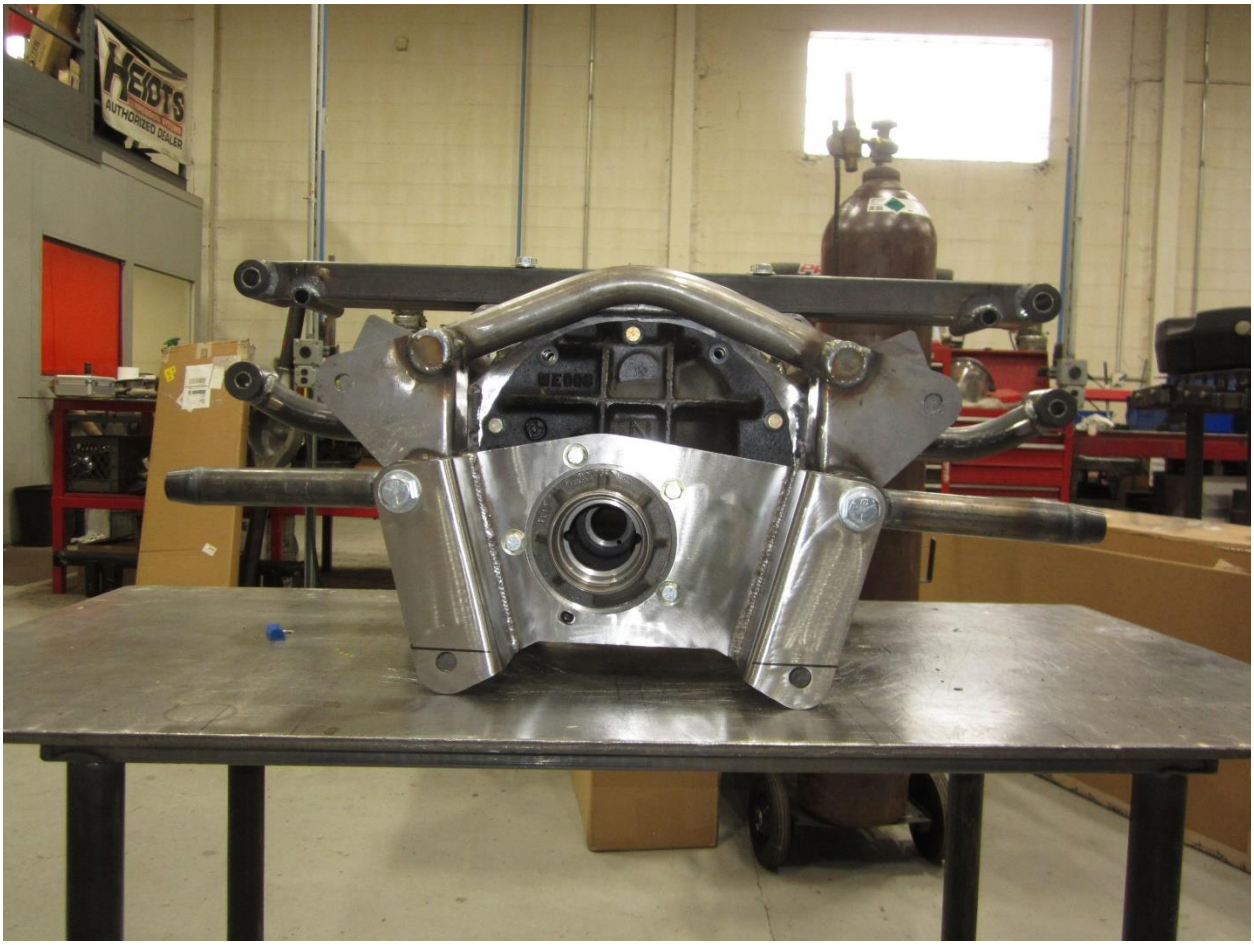


Figure 30

16) Install the complete assembly into the car and use the forward pinion supports to locate the mounting plates on the frame rail. Drill your holes and install the pinion support mounts use the doubler plates on the outside of your frame rail for reinforcement. **See figures 31-32**

Figure 31

Figure 32

17) Install the outer bearing hub assemblies using the six M12 x 60mm long bolts and washers on the uprights. If the hub assembly does not seat flush against upright, carefully open the hole using a barrel sander. Use thread locker on the M12 x 60mm bolts. **Torque bolts to 65 ft-lbs** ext insert the eight polyurethane bushings in to the left and right uprights. Then insert the four bushing sleeves, use grease to help installation. **Note:** If you opted for the bearing upgrade you will be installing them at this time

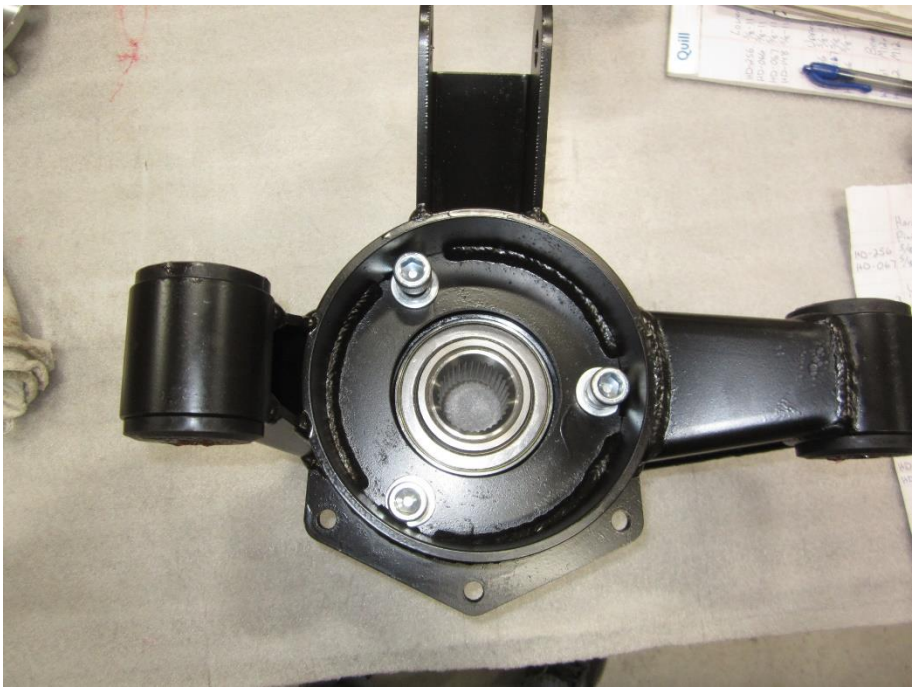


Figure 33

18) Install your bushings and sleeves into the upper and lower control arms. Install the upper and lower control arms onto the IRS cradle

Fugure 34

19) Next install the aluminum CV adapter spacer, to the end of the half shafts and use the twelve M10 x 80mm long bolts and split lock washer to fully install the CV joint axles to the axle stubs. Use thread locker on the bolt and **Torque to 51-57 ft-lbs**

Figures 35-36

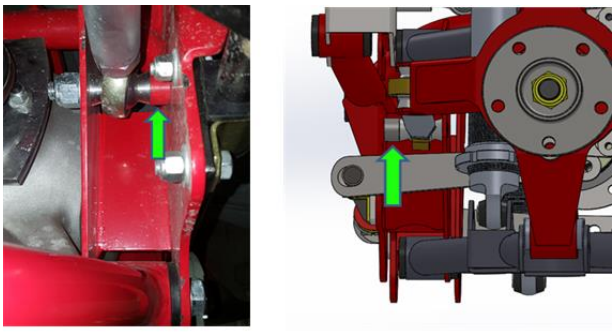
20) Install the upright to the lower control arm. Apply grease to the splines of the CV axles. Install the axles into the bearing assemblies until the CV joint bottoms out against the hubs. Place the nut back onto the threads but DO NOT tighten.

Figure 37

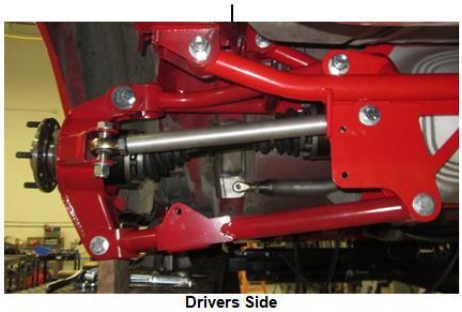
21) Next use the Cam adjuster bolts to attach the upper control arms to the uprights. Make sure the Cam bolt washers fit into the “C” shaped grooves welded on each side of the uprights. At this time you can tighten the axle nut

Figure 38

22) Then install the steering arms, placing the steel spacer on the rear side, and the two misalignment spacers on each end of the rod ends. Attach the steering arms to the main cradle and then the uprights where you will only have the misalignment spacers



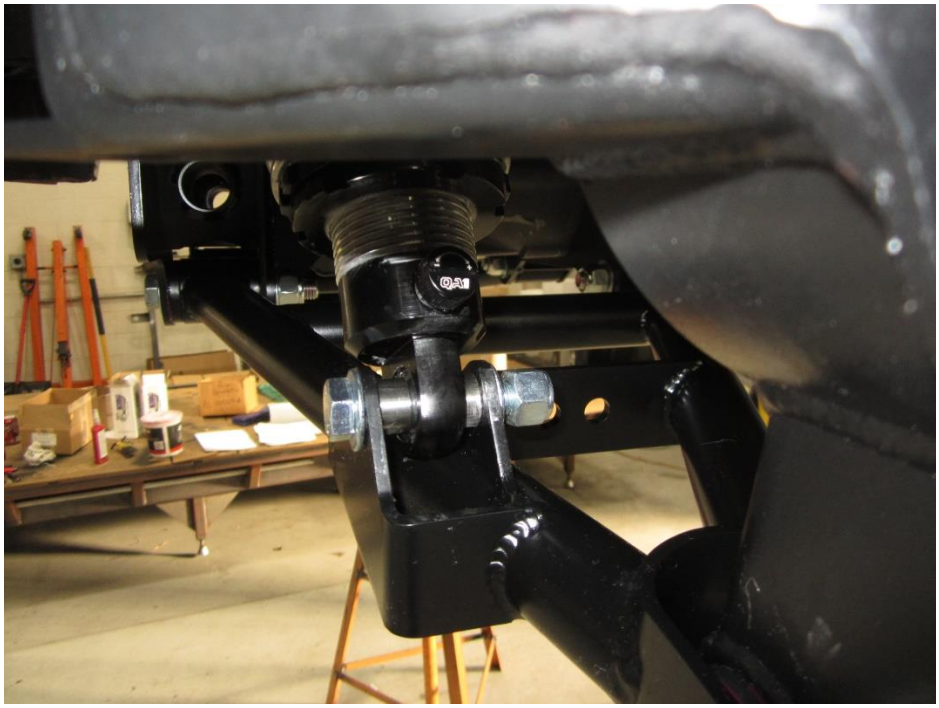
Drivers Side Passenger Side

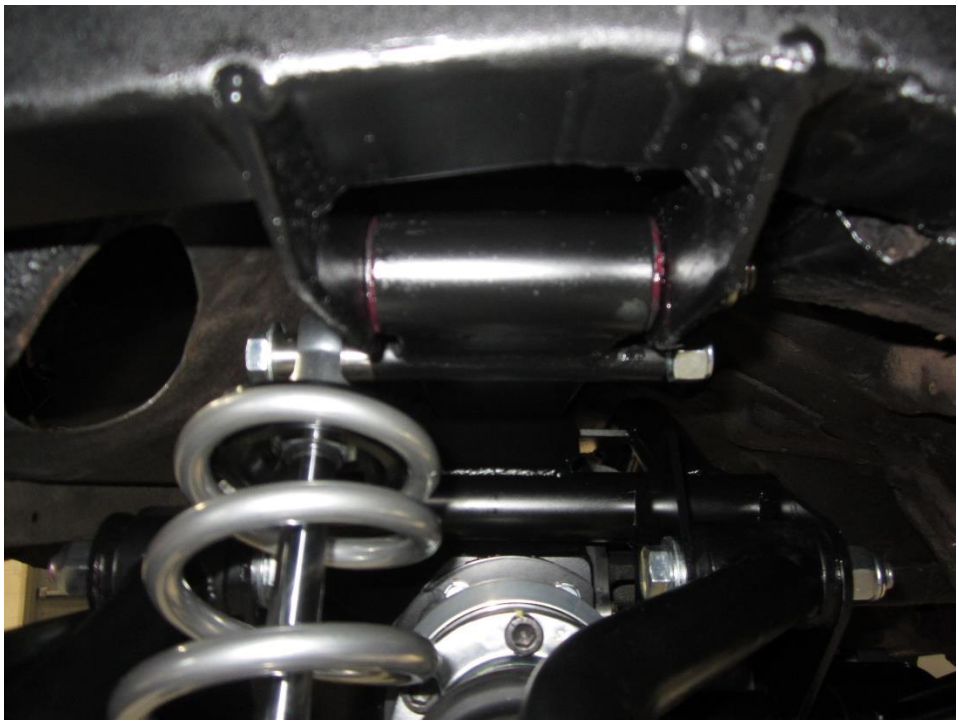


Drivers Side

Figure 39

23) Now it is time to assemble and install the shocks. Mount the coil over shocks using the ½-13 x 6 ½" bolts, washers and nylock nut. Use the hole sawed hole in the trunk for the placement of this bolt. Use the bolt spacers and nylock nut for the lower mount on the lower control arm.





Figures 40 & 41

24) On to the rear sway bar, mount the sway bar bushing and brackets on the bar. Use the two rectangular sway bar spacers in between the cradle and the sway bar mounts. Use the four 3/8”-16 x 1.25” long hex bolts, 3/8” AN washers and 3/8” Nylock nuts to attach the sway bar mounts to the rear of the main cradle. **Torque the four 3/8” bolts to 20 ft-lbs**, Assemble the spherical bearing rod end links as shown**.** There are three pairs of holes that can be used to change the rear sway bar rate. Move the link toward the front of the car softens the sway bar rate. Moving the rod end rearward stiffens the sway bar rate. Note you can vary the left and right side to get in between rates for a total of six different bar rates, one being the disconnected, i.e. no rate

Figures 42 & 43

25) Next you will install the brake kit you chose, run your lines and bleed the brakes

Finally, you are ready to set the alignment of your vehicle. Be sure to do so with the arms and shocks set at ride height (the lower control arms should be 1 to 2 degree going downhill towards the wheels). You may want to take you car to an alignment shop for an alignment. If you have a digital angle finder and toe plate and want to align it yourself it's pretty easy. Start by loosen the cam bolt adjuster nut located in the top upright adjuster to set camber. The cam bolts are on eccentric cams, so when the bolts are rotated about the center, the cams will tilt the upright and very your camber. When you achieve your desired camber setting; tighten the cam nut assembly down to lock the setting in place. Just be sure that both sides have equal camber settings, or the car will tend to pull to one side and have uneven tire wear.

To set the vehicle toe, loosen up the jam nut on each side of the steering arm. Turn the steering arm to set the toe to the specification below. Use the machined flats on steering arms to lengthen or shorten the link. When you achieve your desired toe setting, lock both jam nuts down while holding the steering arm across the machined flats.

Here are the recommended alignment specifications:

Alignment Specifications:

Camber: 0° - .5° Negative

Toe: 0 - 1/16 Toe-In

Since you are now to the point where you have a finished, running truck it is time to test drive it. After a few hundred miles, double check the ride height and the alignment. The springs may have settled, which would change the ride height. Re-adjust the ride height before changing the alignment. After this initial setting period, the springs and bushings should have pretty much taken their final set, so you should be on your way to many miles of cruising in style.