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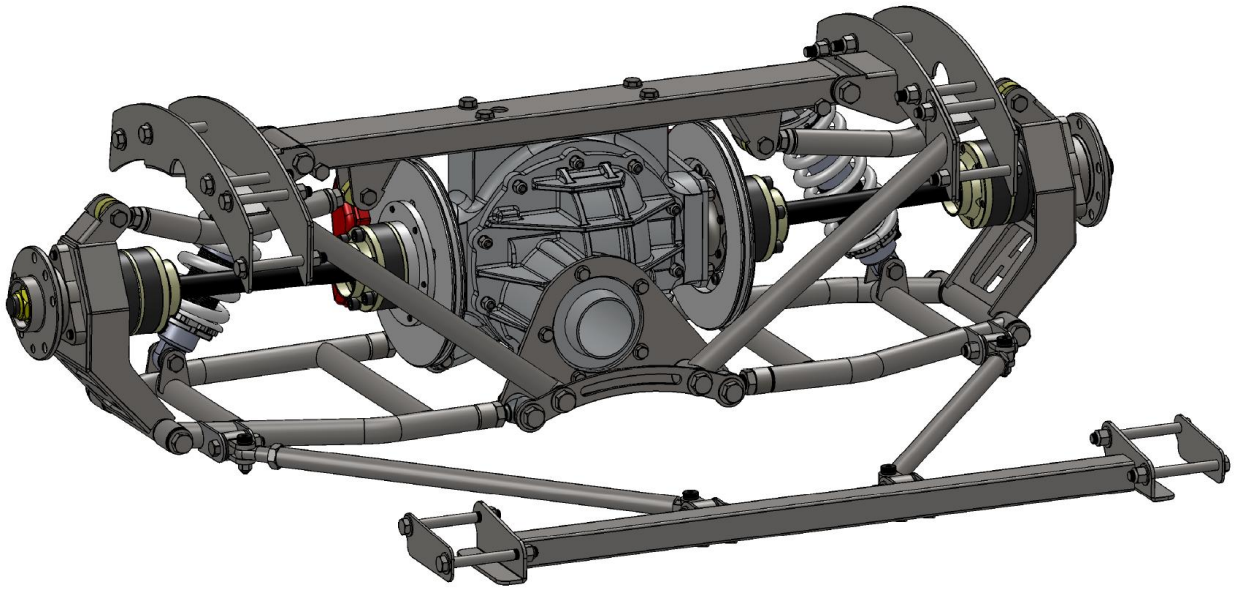
HEIDTS PRO G™ IRS

IRS-151

INSTALLATION INSTRUCTIONS
`55-‘57 CHEVY
INDEPENDENT REAR SUSPENSION



Please read these instructions completely before starting your installation.

Remember the basic rule for a successful installation:

****** Measure Twice, Weld/Drill Once. ******

******Do Not Paint or Powder Coat any suspension components before trial fitting all items ******

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

PARTS LIST

1) Center Housing
2) Stub Axles w/ Bearings
1) 3rd Member
1) Pinion Mounting Plate
2) Lower Control Arms
1) Tie Bar
2) Outer Uprights
2) Bearing Assemblies
1) Pinion Crossmember
2) CV Joint Axles
2) Strut Rods
2) Brake Rotors
2) Coilovers
2) Rotor Adapters
2) Coil Springs
2) Caliper Mounting Plates
1) Hardware Package
1) Top Crossmember
2) Saddles
2) Upper Links

HARDWARE PACKAGE

CV Joint Axles
12) M10 X 1.50 X 80MM Bolts

Rotors
12) 5/16-24 X ¾" Bolts
12) 5/16 Split Washers

Pinion Support Plate
5) 3/8-16 X 1 ¼" Bolts
5) 3/8 SAE Washers

Pinion Support Tubes
2) 5/8-11 X 3 ½" Bolts
4) 5/8 SAE Washer
2) 5/8-11 Nyloc Nuts

Top Crossmember
4) M-12 X 25MM Washers
4) 1/2-13 X 2 ½ Bolts
2) 5/8-18 Nyloc Jam Nuts
2) 5/8-18 X 4 ½" Bolts

Lower Control Arm Assembly
8) 5/8 Washers
2) 5/8-11 X 3 ½" Bolts
2) 5/8-11 X 5 ½" Bolts
2) 5/8-11 X 10 ½" Bolts
6) 5/8-11 Nyloc Nuts

3rd Member
10) 3/8-16 Nyloc Nuts

Saddles
16) ½" Washers
8) 1/2-13 Nyloc Nuts
2) 1/2-13 X 3 ½" Bolts
6)1/2-13 X 3" Bolts

Coil Over Shocks
4) ½" Washers
2) 1/2-13 X 6 ½" Bolts
4) 1/2-13 Nyloc Nuts
2) 1/2-13 X 2 ½ Bolts

Outer Uprights
8) Rod End Spacers
4) 1/2-13 Nyloc Nuts
4) 1/2-13 X 2 ½ Bolts
6) M 12 X 60 MM Bolts
6) M 12 X 25 MM Washers

Calipers
4) 0.015" Shim Washer
8) 0.031" Shim Washer
10) 3/8-16 Nyloc Nuts
4) 3/8-24 X 1 1/8" Bolts

Strut Rods
4) 1/2-13 Nyloc Nuts
4) 1/2-13 X 2 ½ Bolts

NOTE: Prior to working under the vehicle, there are a few things on the Pro-G IRS kit that should be pre-assembled on the bench. This will allow for a more comfortable working arrangement, which will save time, and prevent possible installations errors and/or frustration. Things are much easier to see, measure, and handle while on the bench. Also it allows a large installation like this to be broken down into smaller tasks, and possibly reduce some of the intimidation if this is your first Pro-G IRS install.

BENCH ASSEMBLY

1) Starting with the center section, install the axle seals into the rear end housing. With the seal edges pointing inward, use a mallet to slowly tap the seals in until they bottom out on the shoulder in the bore. A seal installation tool should be used to ensure that the seals are installed square. Do not tap on the seal directly, as the mallet could deform the seal, and cause an axle leak.

2) Next, install the threaded studs into the housing. There are 20 studs total, 10 are 1-1/2" long, and 10 are 2" long. Using a high strength thread locking compound, apply a few drops to each stud before installation. The shorter studs get installed onto the housing ends (5 on each side) for the caliper brackets and the longer studs get installed on the mounting face for the third member housing. The short studs should be installed with 7/8" protruding from the housing ends, and the long studs should be installed with 1-3/8" protruding from the third member mounting face, see Figure 1.

3) Finally, install the breather vent into the top of the housing and the drain plug into the bottom.

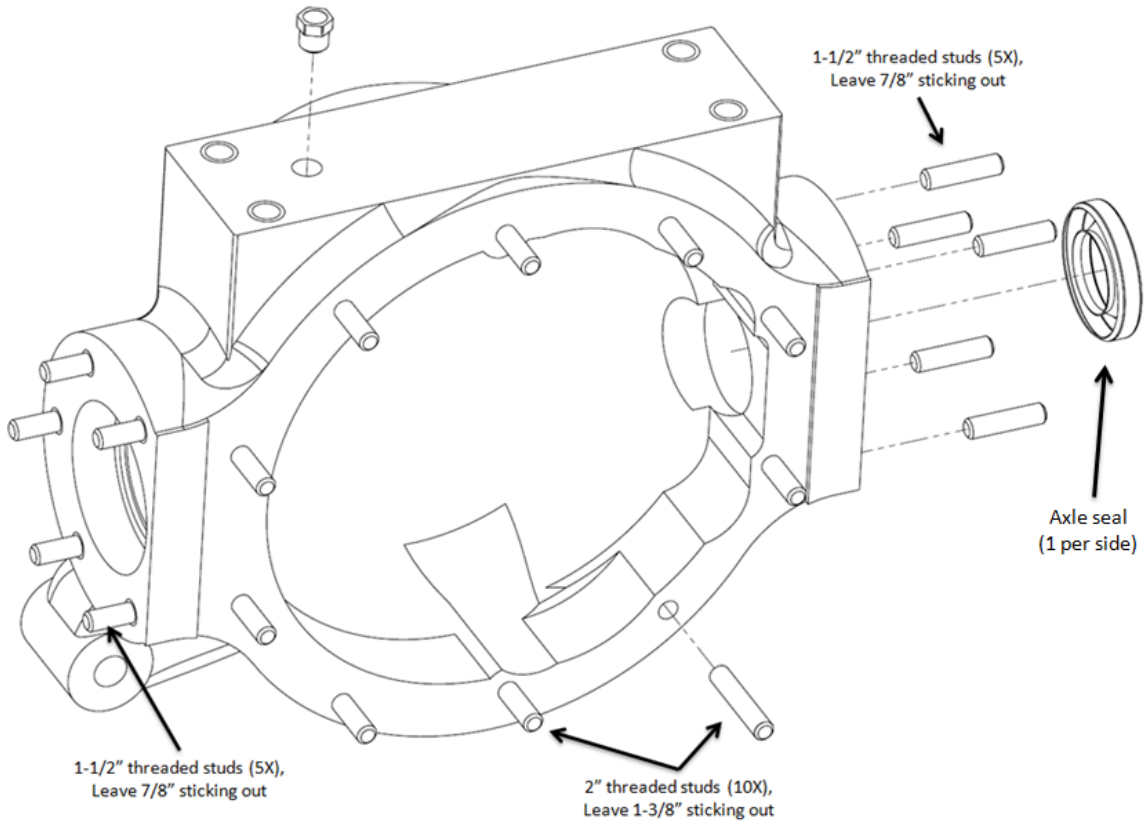


Figure 1. Install the vent, seals, threaded studs and drain plug (not shown) into the rear end housing

4) Bolt the top crossmember to the top of housing with the upper link mounts facing down towards the ground, and the vent hole on the right (passenger) side as shown in Figure 2. Attach using QTY=4, ½" X

2-½" bolts, and 12mm washers supplied in the kit (metric washers are used here due to their small outer diameter). **Torque to 70-75 ft lbs.** Slip QTY=2, ½ X 6 ½" Bolts into the upper shock sleeves. Make sure that the threaded end is facing the rear of the housing (it's easier to do this now, than when it's in the vehicle).

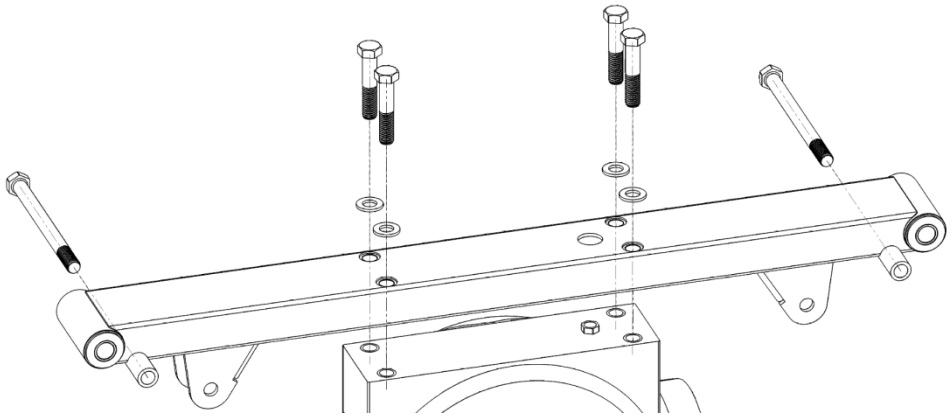


Figure 2. Install the cross member (make sure the vent hole is above the vent), and slip the upper shock bolts in place for now

5) Install the outer bearings into the outer uprights using the supplied 12 mm socket head bolts and washers as shown in Figure 3. The use of thread locking compound is recommended for this step. The hub is a tight fit into the opening in the hub, so let the bolts pull the hub in as they are tightened. Tightening the bolts in a spiral sequence, like lug nuts on a wheel, will allow the hub to be pulled in evenly. Verify the mating surface on the bearing has seated all the way to the upright then **torque to 65 ft lbs**

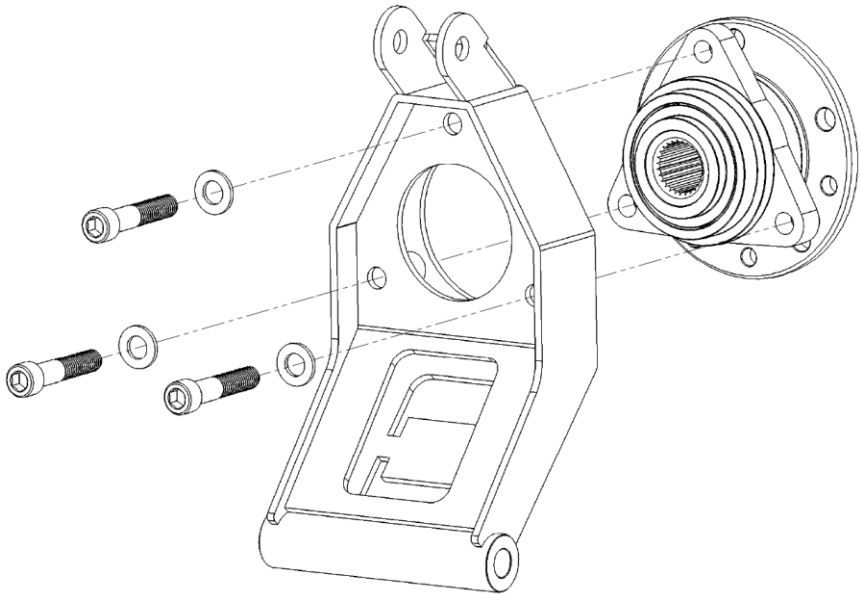


Figure 3. Install the hub as shown. Tighten the bolts in a spiral sequence to pull the hub in evenly.

6) Assemble the uprights to the lower control arms using the supplied 5/8" X 10 ½" long bolts. A washer should be used on the outside of the bushings as shown in Figure 4.

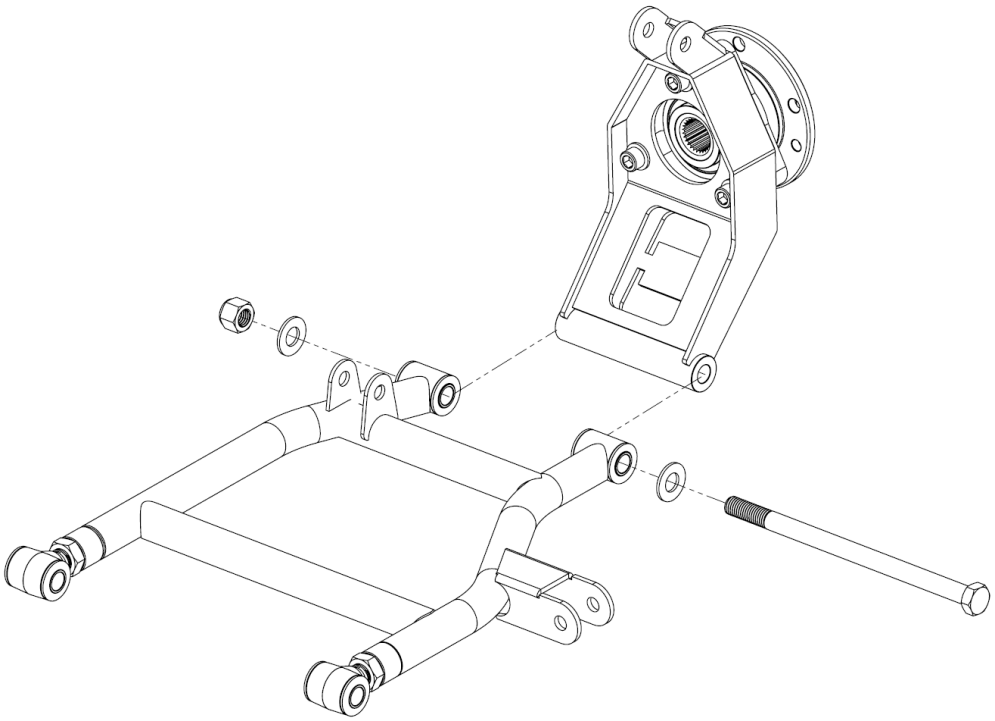


Figure 4. Assemble the upright to the lower arm using the 5/8 X 10-1/2" bolt and harware.

7) Now is a good time to install the coil springs over the shocks. To do so, the knob on the shock must be removed as shown in Figure 5. Unscrew the spring seat and the jam nut, slide on the spring, and re-assemble. Be sure not to lose the gasket behind the knob.

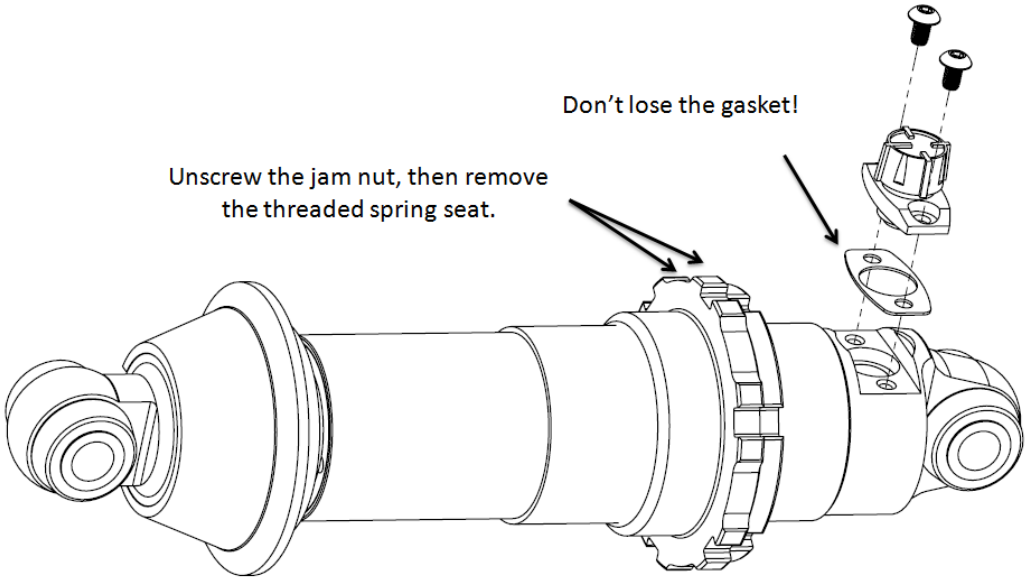


Figure 5. The shock adjustment knob must be removed for installation of the spring.

8) Assemble the rotors to the rotor adapter (i.e. rotor "hat") using the supplied 5/16 x ¾" button head screws and the 5/16 split lock washers. Each rotor needs 6 screws and washers as shown in Figure 6. Apply a few drops of thread locker on to the threads of the screw during assembly. **Tighten the bolts to 180 in lbs.**

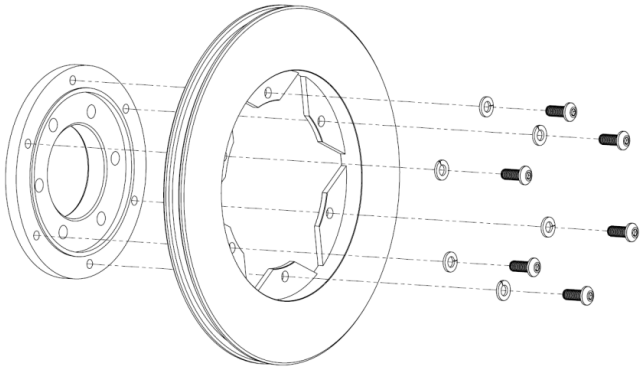


Figure 6. Use thread locker when assembling the 6 bolts and washers to each rotor sub-assembly.

VEHICLE INSTALLATION

9) With the subassemblies complete, now we can address the vehicle itself. Raise and support the vehicle and remove the existing suspension from the vehicle. Jack up the car and support it on sturdy jack stands. Remove the driveshaft, e-brake cables and rear axle assembly including leaf springs and shocks. Remove the rear section of the exhaust system. Also remove the front leaf spring mounts. Remove the bump stop mounts as well.

10) Fit the IRS saddles to the frame rails, and clamp in place with large C-clamps. Make sure the saddles are firmly seated up against the bottom of the frame rail. Each saddle has 5 holes, where the rear most hole should be 24-1/2" forward of the rear leaf spring mount (see Figure 7). This equates to a wheelbase of 114".

Figure 7. Locate the saddles from the rear leaf spring mount.

11) Install the main crossmember & housing assembly onto the vehicle by attaching the cross member to the saddles. Fasten in place using the supplied 5/8" X 4-1/2" bolts and lock nuts. The center section should just clear the gas tank. Once again, check the wheelbase, making sure it is identical on both sides of the car.

12) Make sure the saddles are firmly seated against the bottom of the frame rail and drill QTY=5, ½"holes through the frame rails on each side using the holes in the saddles as a template, and then securely bolt the saddles in place with ½" X 3 ½" bolts, lock nuts and washers on each side. The 2 forward-most bolts may be left out at this time, as the pinion support still needs to be installed.

NOTE: If you plan to significantly lower the ride height of the vehicle, the frame rails may need to be notched for the upper control arm. There is a notch in the saddle that may be used as a guide for notching the frame rail. Always box in the frame rail if it is notched! If you are installing Heidts shocks, and setting the car up at Heidts recommended ride height, notching the frame rail is not necessary.

13) Install the 3rd member. If supplying your own, it will need to be a 31 spline unit. Install the gasket onto the housing using a suitable gasket sealer. Install the 3rd member into the housing, applying the gasket sealer to the contact surface. Use the 10 Nyloc nuts and small washers supplied in the kit to secure the 3rd member in place.

14) Now, install the pinion support plate (3/8" hardware), and pinion support tubes (5/8 Hardware) utilizing the 2 forward-most saddle bolts as shown in Figure 8.

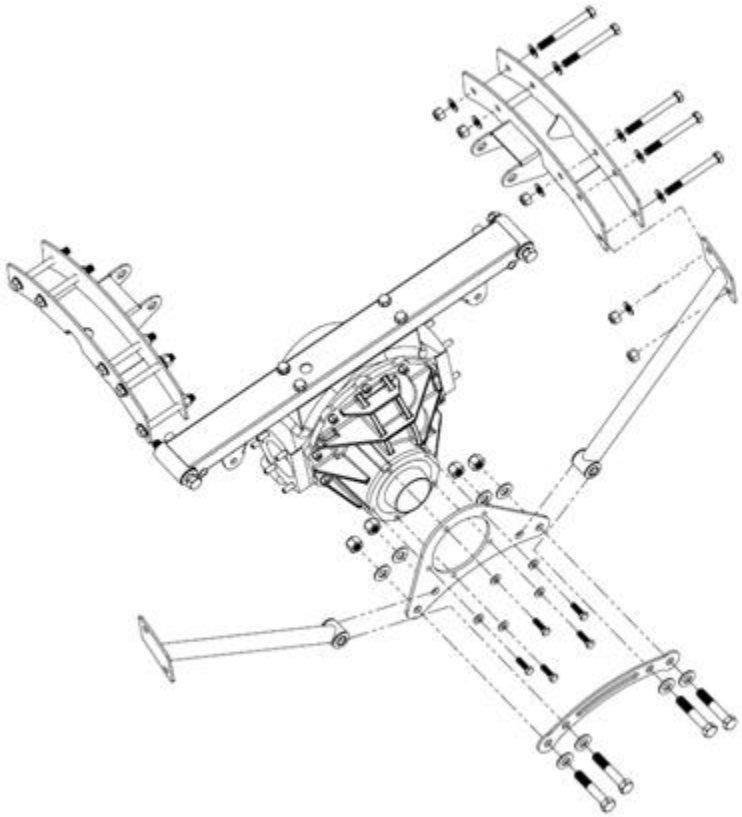


Figure 8. Overhead view of the saddles, center section with third member, and pinion support plate

15) Apply a small amount of white grease to the splines and seal area of the stub axles and seal lips. The longer axle installs on the passenger side. Carefully slide the axle assembly into the housing until the bearing bottoms out. Install the caliper plates and front plates onto the studs, with the threaded inserts in the caliper plates facing outwards, see Figure 9. Secure the plates using the supplied 3/8" Nyloc nuts and washers. There is a circular cutout in the stub axle flange that lines up with the studs so a socket can be used for the lock nuts. If a parking brake is being installed, the parking brake caliper mounting plates will replace the front plates.

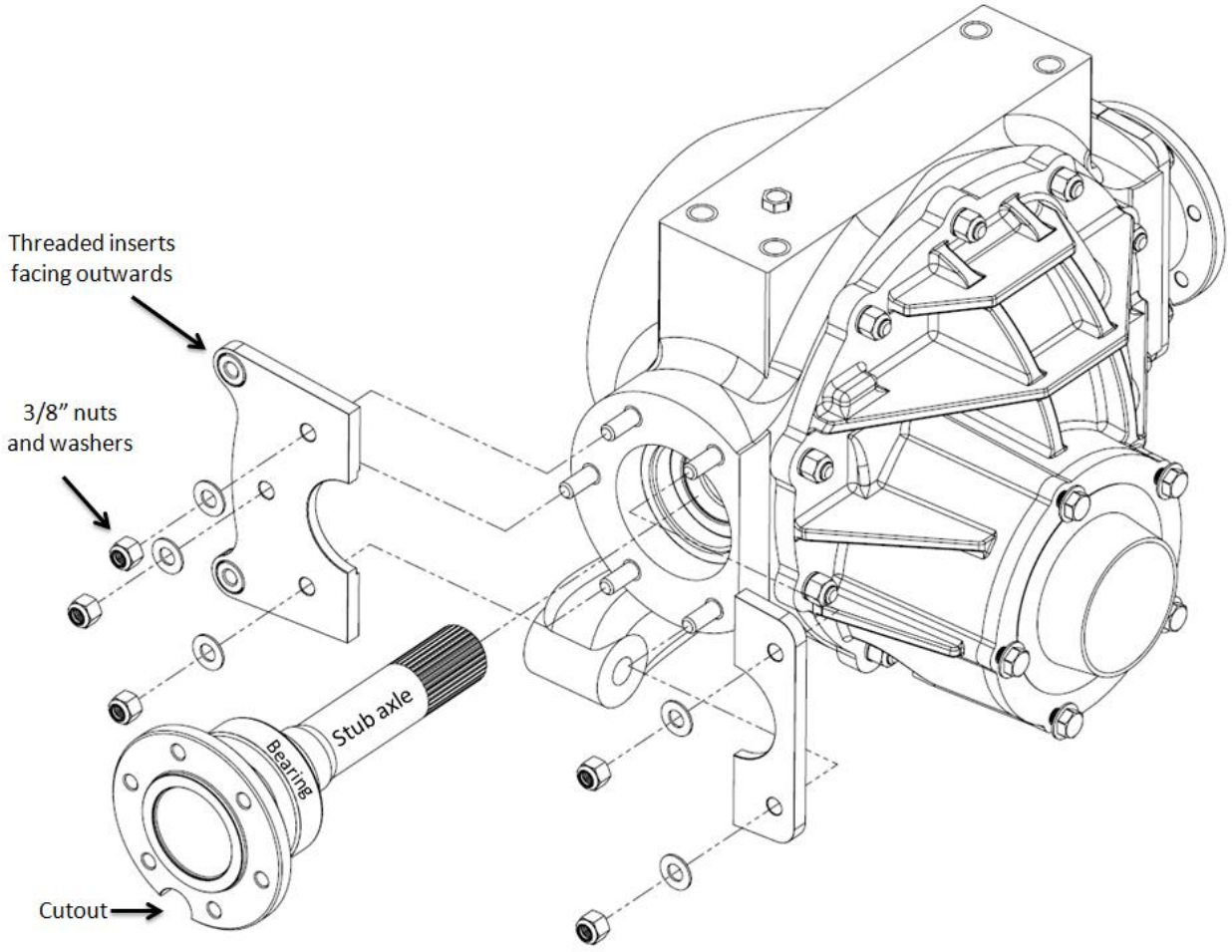


Figure 9. Passenger side axle (longer axle) being installed with the caliper plates (some parts removed for clarity).

16) Install the lower control arms to the housing and the pinion plate with the tie bar at the front and rear as shown in Figure 10 using the 5/8" bolts, nuts and washers supplied. One tie bar will be in front of the forward control arm mount, and the pinion support will be behind the forward control arm mount as shown. The second tie bar will be behind the rear control arm mount as shown in Figure 11. Be certain to use washers between the rear adjusters and the housing. Do not tighten the bolts and nuts yet, as the camber is adjusted here by turning the adjusters in our out. The arms should be set with the adjusters with an equal amount of thread showing to make the arms straight out and parallel for now.

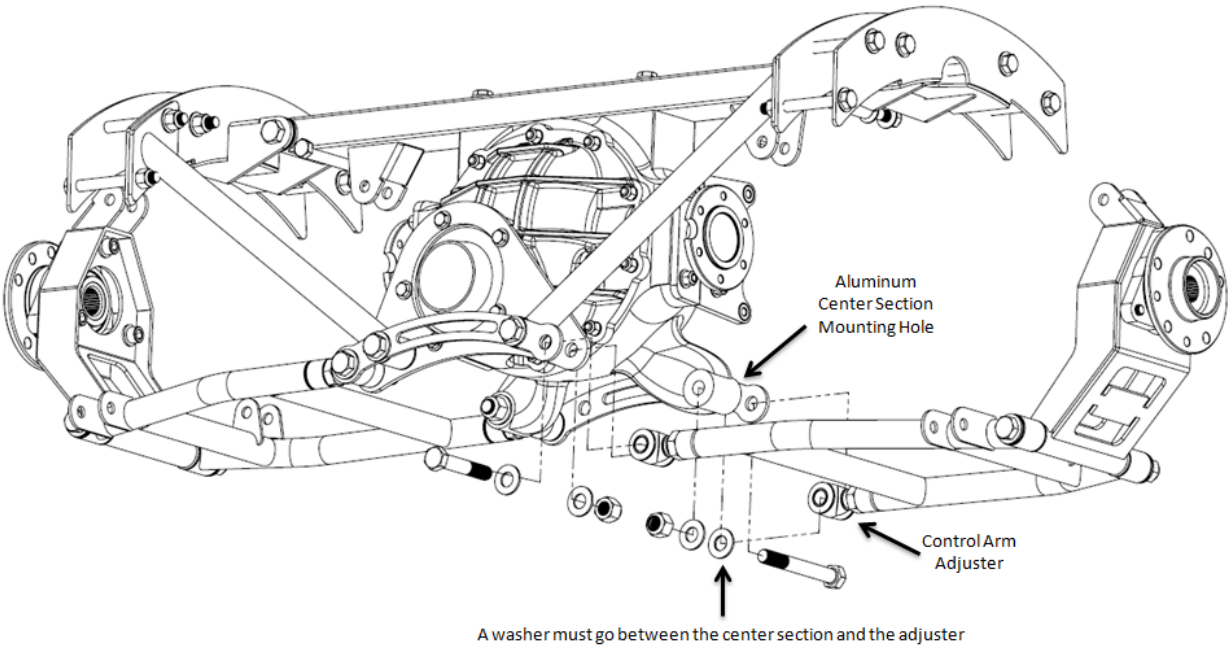


Figure 10. Exploded view of the driver side lower control arm assembly being installed.

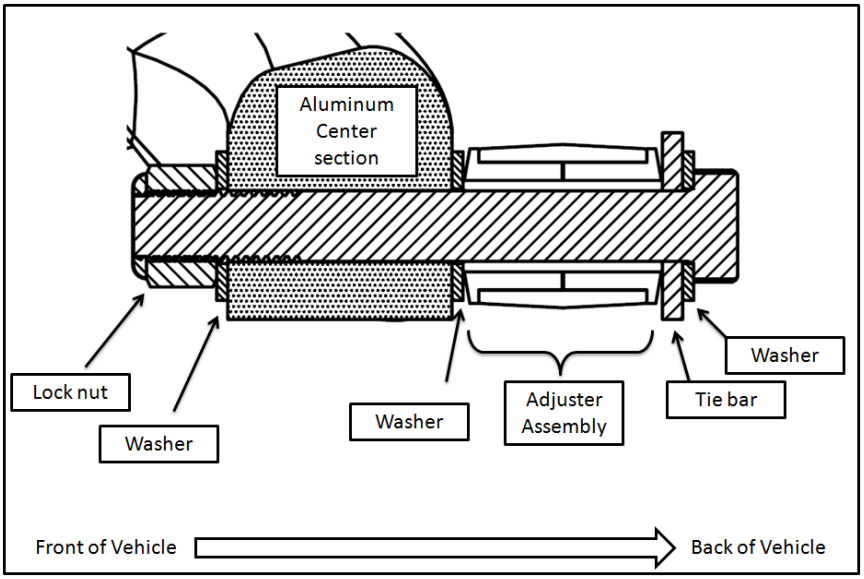


Figure 11. Cross Section of Rear Lower Control Arm Joint

17) Place the rotor assemblies onto the CV-joints with the recessed side of the rotor assembly facing the stub axle. Hold in place and raise the assembly up and place it onto the rotor adapter. Secure with the supplied M10 x 80mm Grade 8 bolts. Tighten the bolts per the sticker located on the CV-joint (57 ft. lbs.). Use of thread locking compound is recommended for this step. Also, verify the pre-assembled bolts on the outer CV joint are also torqued to 57 ft-lbs.

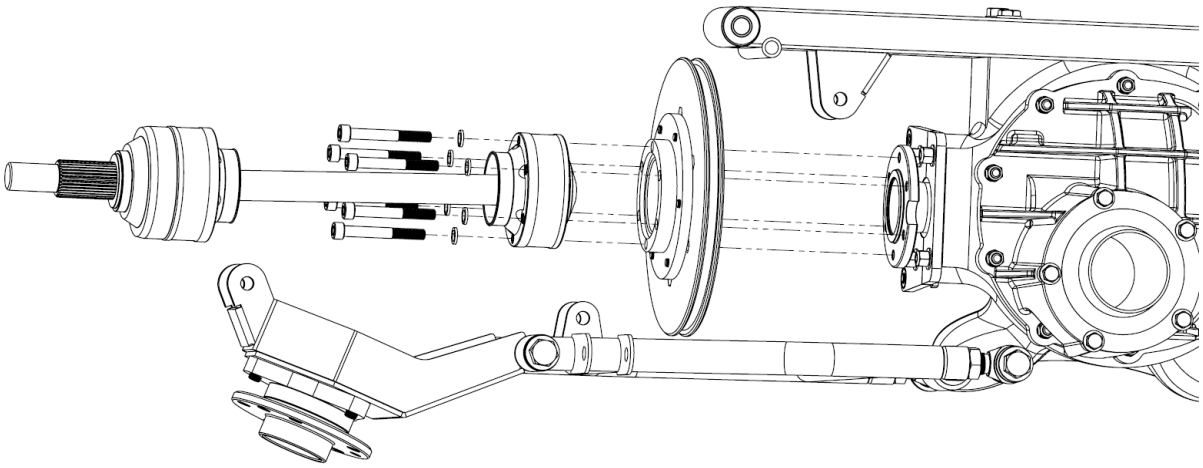


Figure 12. Assemble the CV shafts using the M10 bolts and lock washers (Some parts removed for clarity)

18) At this point, the lower arm should be supported so that it is parallel to the ground. Insert the outer CV shaft into the center of the upright, using a small amount of grease on the splines. This can be done easily by tilting the CV shaft downwards, and then swinging the upright upwards. Go slowly, and wiggle it a bit. Careful not to bind the spline in the bearing. You should feel it bottom out on the bearing. Install the flanged lock nut onto the CV shaft – DO NOT USE THE NUT TO PULL THE SHAFT THROUGH THE SPLINES. **Tighten the nuts to 100 ft. lbs**. **DO NOT USE AN IMPACT GUN!** You can torque the nut after the brakes are installed to hold the half-shafts from turning, but don't forget to do it! A piece of masking tape over the nut can serve as a reminder. Now is a good time to double check that the bolts on the outer CV joint are torqued.

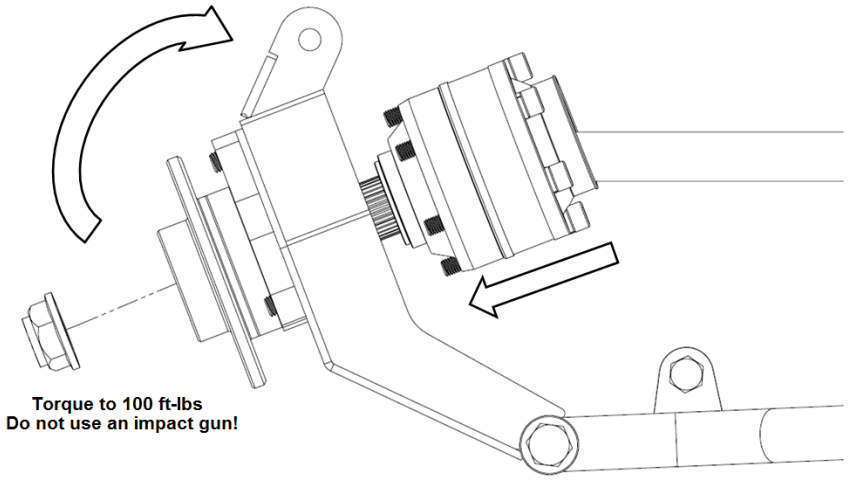


Figure 13. Tilt the shaft downwards, and rotate the upright upwards to slide the spline through the bearing.

19) Install the upper links. Begin by installing the Rod End Spacers onto each end of the upper link. Two rod end spacers go on each end as shown below. Fasten the arms in place using the supplied ½-13 X 2 ½" Bolts and nuts.

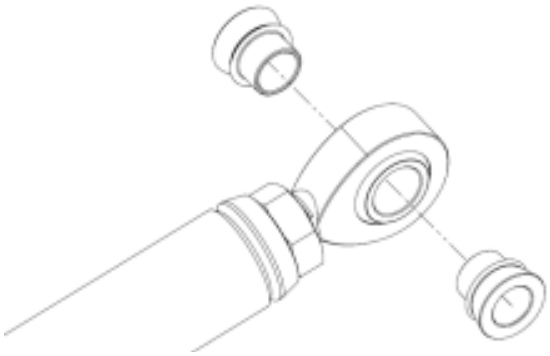


Figure 14. Each rod end gets 2 rod end spacers (also known as misalignment bushings)

20) Install the calipers into the caliper plates using the 3/8" Fine Thread Grade 8 bolts, and shims supplied in the caliper mounting kit. The shims may be used to center the calipers onto the rotors. Tighten the caliper bolts to 20 ft-lbs using a thread locking compound on the bolts. It is a good idea to install your brake line fittings into the calipers before installing them on the rear end.

21) The strut rods are the last part to install. Insert the adjustable ends of the strut rods into the lower control arm and install the ½" bolts and nuts supplied. Leave a ½" of threads showing on the adjuster. Now, attach the non-adjustable end of each strut rod into the strut rod cross member. Swing the cross member up into place until the "L" brackets bottom out on the frame rail. This should put the rearward mounting hole of the cross member 3 ¼" forward of the body mount, see Figure 15.

Figure 15. Passenger side location of the Forward Strut Crossmember holes

22) Now you can install the coil overs using the supplied bolts, nuts and washers. After all the weight is on the vehicle, adjust the lower spring seats on the coil overs to level the CV shafts.

23) Connect the drive shaft, fill the center section with the proper gear lube, bleed the brakes and cruise down the road, independently. That's all there is to it!

Alignment (at ride height, which is with the CV shafts horizontal):

Camber: 0° to ½° Negative
Toe: 0" to 1/16" In