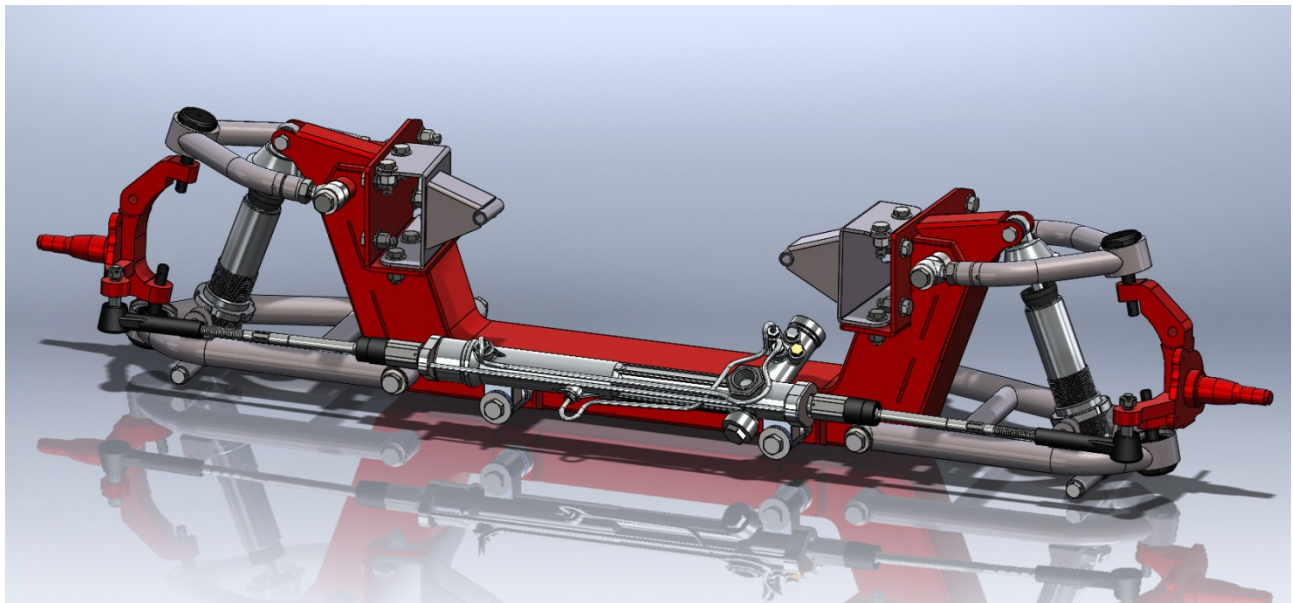




INSTALLATION INSTRUCTIONS

'73-87 CHEVY C-10

INDEPENDENT FRONT SUSPENSION



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.

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



PARTS LIST

- | | |
|------------------------------|------------------------|
| 1) Chevy Bolt-On Crossmember | 2) Spindles |
| 2) 1-1/4" Upper Control Arms | 1) Power Rack & Pinion |
| 3) 1-1/2" Lower Control Arms | 2) Adjustable Shocks |
| 2) Chrome Springs | 1) Wilwood Brake Kit |

Hardware Package

- | | |
|--|--------------------------------|
| 8) 1 ³ / ₈ " Stainless Steel Washers | 16) 1/2"-20 Nylock Nuts |
| 2) 5/8"-18 Nylock Jam Nut | 26) 1/2" Flat Washer |
| 2) 5/8"-18 Nylock Nut | 12) 1/2"-20 x 1-1/2" Hex Bolts |
| 2) 1/2"-13 x 1-1/2" Hex Bolts | 2) 1/2"-20 x 2-1/2" Hex Bolts |
| 2) 1/2"-20 x 8-1/2" Hex Bolts | 2) 5/8"-18 x 11" Hex Bolts |
| 2) 5/8"-18 x 13" Hex Bolts | |

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You are about to install your HEIDTS suspension system. You are probably wondering how complicated installing a complete I.F.S. system really is, with all those pieces, all the angles, anti-dive, geometry ...Don't worry. The HEIDTS I.F.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.F.S. kit available.

- 1) Begin your installation by jacking 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 body mounts. First remove the engine and transmission. **SAVE AND LABEL ALL FASTENERS FOR RE-INSTALLATION!** Remove the front wheels and shocks. Disconnect the brake lines and tie-rods . After this, unbolt the crossmember from the frame. The crossmember can be removed as one whole assembly (**See Figure 1**). Next, remove the old steering box, pitman arm, steering column and transmission mount. You can reuse the original steering column with the new rack and pinion if it is for an automatic transmission. You **cannot** reuse the original steering column if you have a manual transmission. We offer a steering hook-up kit (part number SC-311) if you cannot re-use your old steering column.

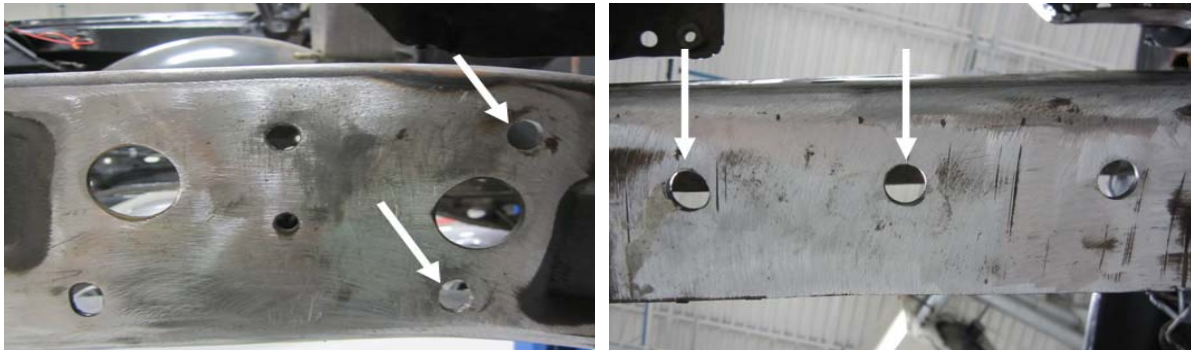


Figure 1

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- 2) After removing the old crossmember, the middle and front holes in the bottom of the frame rail must be drilled out from $\frac{7}{16}$ " to $\frac{1}{2}$ ", as well as the two holes on the side of the frame rail facing the rear. See **Figure 2**. Repeat step for other side.

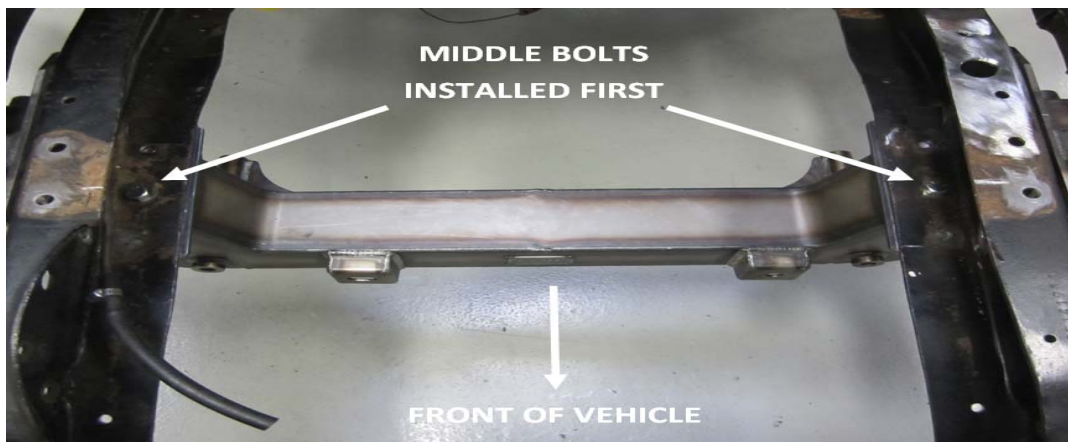


View From Drivers Side Wheel Well

Bottom View Drivers Side Frame Rail

Figure 2

- 3) Install HEIDTS crossmember (HEIDTS tag facing the front). The threaded middle hole of the crossmember that butts up against the bottom of the frame rail is the **most important** hole, because it locates the placement of the crossmember and therefore needs to be bolted up first using the using $\frac{1}{2}$ "-13 x $1\frac{1}{2}$ " coarse thread hex bolts. Repeat for the other side. See **Figure 3**. After **snugging** down the two bolts, continue to bolt the rest of the crossmember **finger tight** to the frame rails using the previously mentioned bolts and $\frac{1}{2}$ "-20 nylock nuts. You should only be able to put in three bolts (See **Figure 3b**) on each side. The rest of the holes will need to be drilled out, using the crossmember holes as a guide.



Top View of Engine Bay

Figure 3

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View from Drivers Side Wheel Well



Bottom View Drivers Side Wheel Well

Figure 4

- 4) Once the HEIDTS crossmember is bolted up finger tight, make sure that the crossmember is seated firmly against the frame rails. Using the holes in the crossmember as a template, center-punch the remaining three holes. Repeat for the other side of the vehicle. Unbolt the crossmember and remove it. Then drill out the holes to $\frac{1}{2}$ ". See **Figure 5**. Don't forget to punch and drill the holes on the bottom of the frame rail!



Drivers side wheel well



Drivers Side Wheel Well, Drilled Holes

Figure 5

- 5) After drilling out the holes, the crossmember can be re-installed. In addition to re-installing the crossmember, the motor mounts can now be installed. Our motor mounts offered are a direct bolt on application.

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6) **To install motor mounts:** Insert motor mounts into the frame rails and align the holes. The mounts should slide tightly into the frame rails. The mounts have a cutout section that should be facing the rear. The cut-out will distinguish the left and right mounts. Also, the three holes are the bottom side of the mount. Those three holes will line up with the inner bottom section of the frame rail, while the upper two holes will **need to be drilled**. Aligned the motor mount using the lower slots and the lower cross member mounting bolts. Center the bolts with the motor mount slots. See **Figure 6**. Clamp the motor mount on top checking alignment one more time and center punch and drill the two top motor mount holes to the frame rail $\frac{1}{2}$ ". See **Figure 7**. It is important that the same middle bolts from **Step 3** are installed **first**. When installing the middle bolt, be sure to apply anti-seize to the threads. See **Figure 6**. Install all hardware ***finger tight*** to ensure proper fitment first before fully tightening.

*****Note: If you are having trouble getting the holes to line up, remove crossmember again and ream out holes. Be careful not to enlarge holes.*****

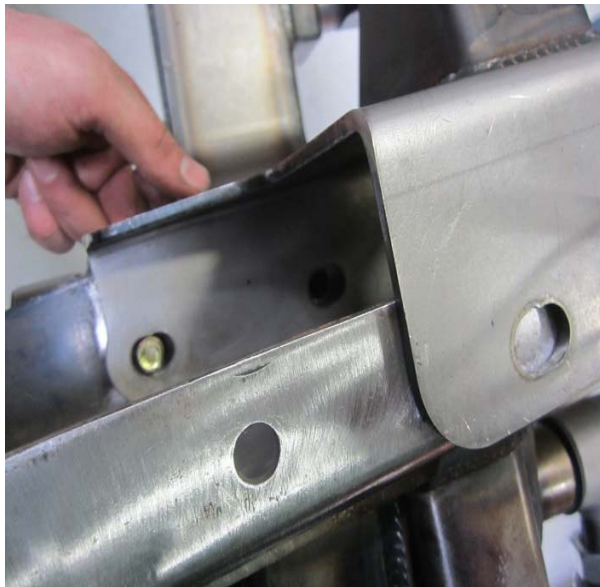


Figure 6

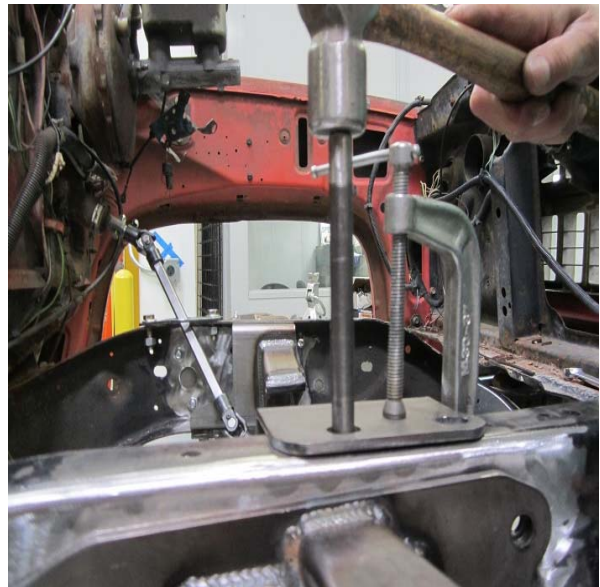
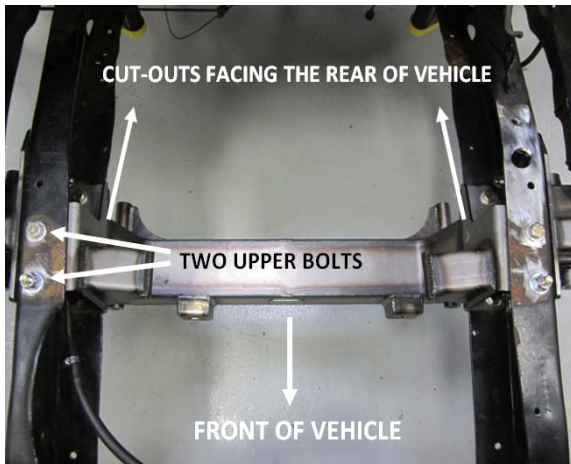


Figure 7

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View From Top of Engine Bay
Figure 8



Drivers Side Motor Mount
Figure 9

- 7) Now the suspension components can be installed. Start with the upper control arms. There isn't a specific right or left. Position the upper control arms where the threads for the ball joint are facing up. See **Figure 10**. Before screwing in ball joints, remove boot, washer and castle nut that came with it in the package. It is **VERY IMPORTANT** to apply Anti-Seize to the threads before screwing in ball joints. Screw in ball joint by hand, until you cannot tighten it any further. Use a large crescent wrench or socket and tighten it further to ensure that it is completely screwed in all the way. Screw in grease fitting .See **Figure 11**.

- 8) Next is installing the adjusters. Before screwing them in, **apply Anti-Seize to the threads**. Screw in until approximately four threads are left exposed. See **Figure 12**. The adjusters will later be adjusted when setting the alignment of your vehicle. **Finger tighten** nuts to secure adjusters.

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Installing Ball Joint



Tightening Ball Joint

Figure 10



Figure 11



Figure 12

- 9) To install upper control arms use the $\frac{5}{8}$ "-18 x 11" Hex Bolts, $1\frac{3}{8}$ " Stainless Steel Dished Washers, and $\frac{5}{8}$ "-18 Nylock Jam Nuts provided. Position upper control arm against the upper control arm mount of the crossmember. If you are having trouble getting the control arm to fit, apply some silicon lubricant to the face of the mount on the crossmember. When installing, use washers on the outside of the control arms. See **Figure 13**. *Finger tighten* for alignment later.

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View From Drivers Side Wheel Well

Figure 13

10) Next is preparing the lower control arms for installation. Repeat the process in **Step 8** for installing the ball joint and grease fitting. Remember, **you must apply anti-seize to the ball joint before installing it!** After installing and tightening the ball joints in both lower control arms, install the bushings and bolt sleeves into the bushing cup. Install both bushing halves. Slide sleeve through the hole in the middle of the bushing. Apply silicon lubricant to sleeve if needed. Now you are ready to install the arms to the crossmember. To differentiate between which arm is right and left, observe where the sway bar mounts are. The sway bar mounts are facing the front of the vehicle. See **Figure 14.**

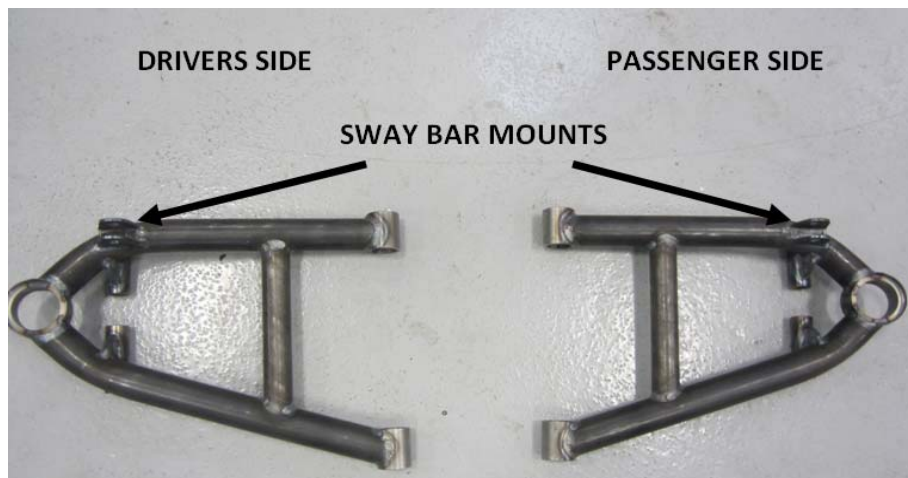


Figure 14

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- 11)** To install the arms, use the $\frac{5}{8}$ "-18 x 13" Hex Bolts, $1\frac{3}{8}$ " Stainless Steel Dished Washers, and $\frac{5}{8}$ "-18 Nylock Nuts provided. Use one washer directly between the bolt head and bushing, and another one between the bushing and nylock nut. See **Figure 15**.

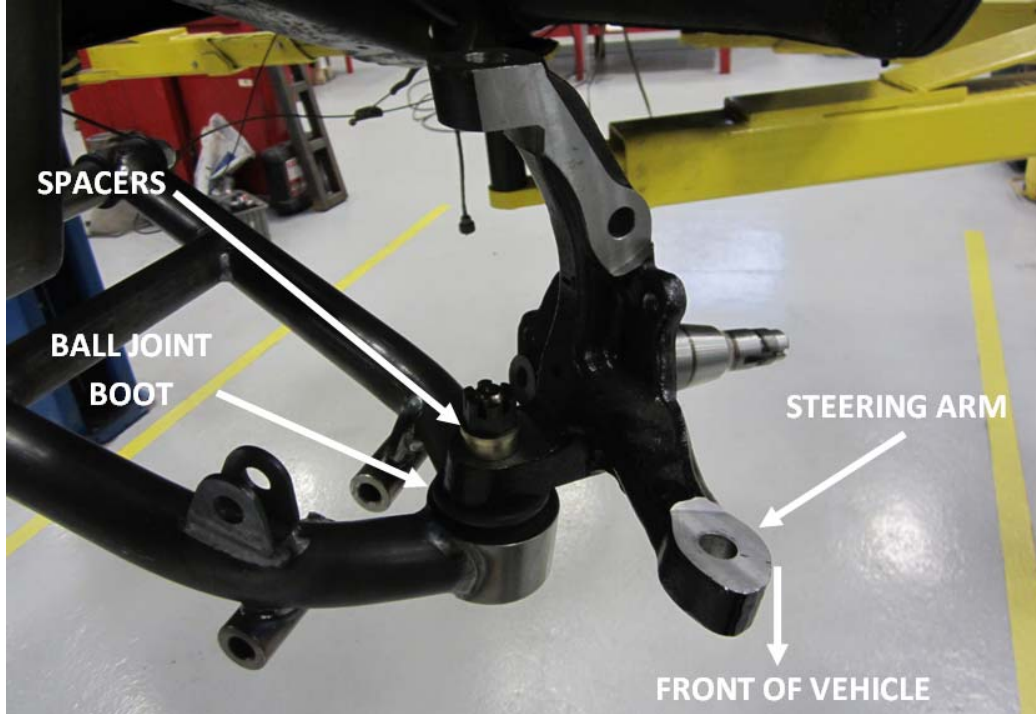


View From Drivers Side Wheel Well
Figure 15

- 12)** Next, the spindles can be installed. To differentiate between right and left, the steering arms should be facing the front of the vehicle. Also, to distinguish between the top and bottom, the section for mounting the lower ball joint is very short, and the part of the spindle that mounts to the upper ball joint is elongated. See **Figure 16**. Before installing the spindle, first place the boot on top of the ball joint cup. After mounting the spindle on the ball joint, install the provided gold-colored spacers. Next, screw on the castle nut. After tightening down the castle nut all the way, install the cotter pin and secure it by bending the tangs out. See **Figure 17**. Repeat for the passenger side.

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View From Drivers Side Wheel Well

Figure 16



Figure 17

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- 13) The next step is to bolt down the upper ball joint to the top of the spindle. Repeat the same procedure from **Step 11**, except this time using the single black spacer **See Figure 18**. Install castle nut and cotter pin. Repeat for the passenger side.

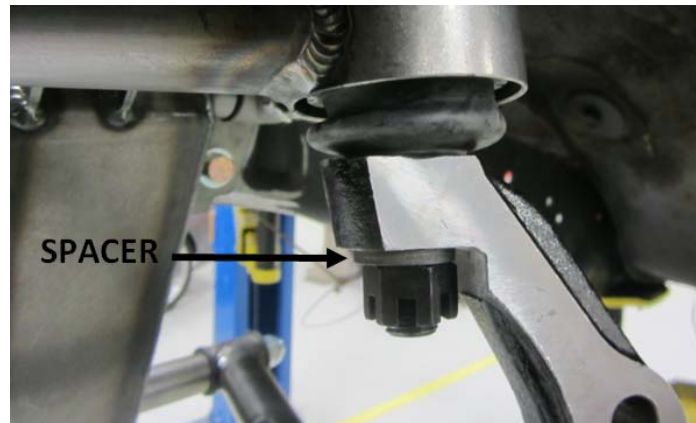
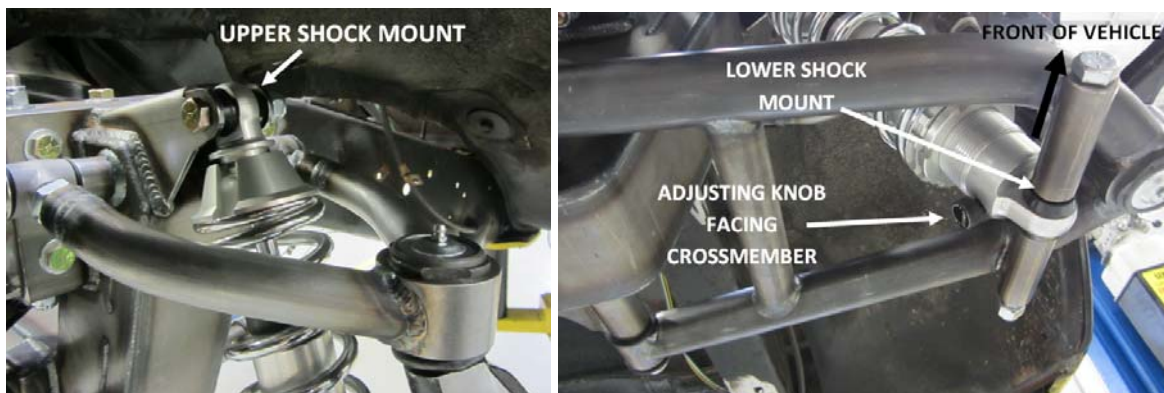


Figure 18

- 14) At this point you are ready to install the shocks. To do so, use the $\frac{1}{2}$ "-20 x $2\frac{1}{2}$ " Hex Bolts, $\frac{1}{2}$ "-20 x $8\frac{1}{2}$ " Hex Bolts, and $\frac{1}{2}$ "-20 Nylock Nuts. The adjusting knob will distinguish the bottom of the shock. Make sure that the adjusting knob is facing the crossmember. Slide the $\frac{1}{2}$ "-20 x $8\frac{1}{2}$ " Hex Bolts through the shock sleeve in the lower control arm, and use a $\frac{1}{2}$ "-20 Nylock Nut and tighten all the way down. Do the same for the top in the upper shock mount, using the $\frac{1}{2}$ "-20 x $2\frac{1}{2}$ " Hex Bolts and another $\frac{1}{2}$ "-20 Nylock Nut. See **Figure 19**. Do the same for the passenger side.



View From Drivers Side Wheel Well

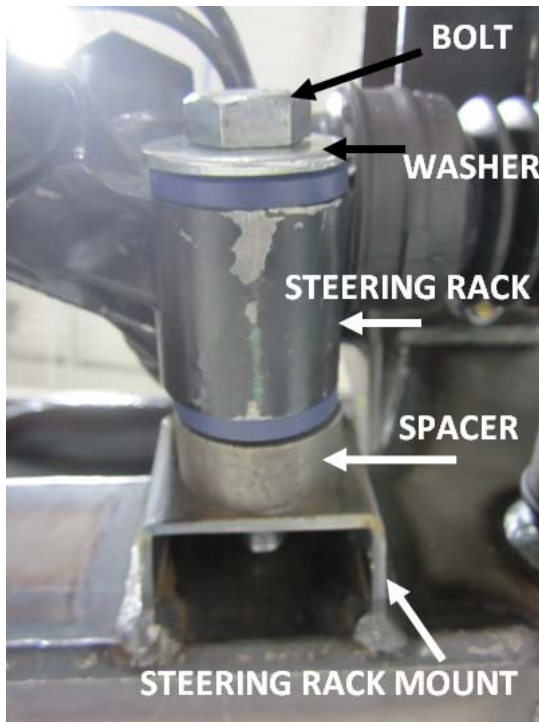
View From Bottom Drivers Side Control Arm

Figure 19

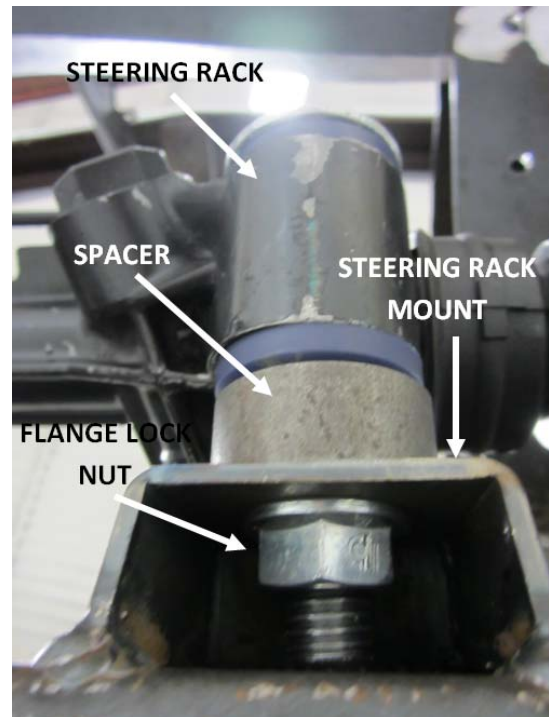
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15) Now you are ready to install the steering rack. To do so, use the hardware package that came with the steering rack. Use the $\frac{5}{8}$ -11 x 4- $\frac{1}{2}$ " Hex Head Bolts, $\frac{5}{8}$ Flat Washer, Spacer, and $\frac{5}{8}$ x 11 Flange Locknut. The input to the steering rack should be positioned on the drivers side. The order of the hardware is as follows: $\frac{5}{8}$ -11 x 4- $\frac{1}{2}$ " Hex Head Bolt, $\frac{5}{8}$ Flat Washer, Steering Rack, Spacer, Steering Rack Mount on the Crossmember, and lastly the $\frac{5}{8}$ x 11 Flange Locknut. **DO NOT TIGHTEN.** See **Figure 20.**



Bottom View of Steering Rack



Rear View of Steering Rack

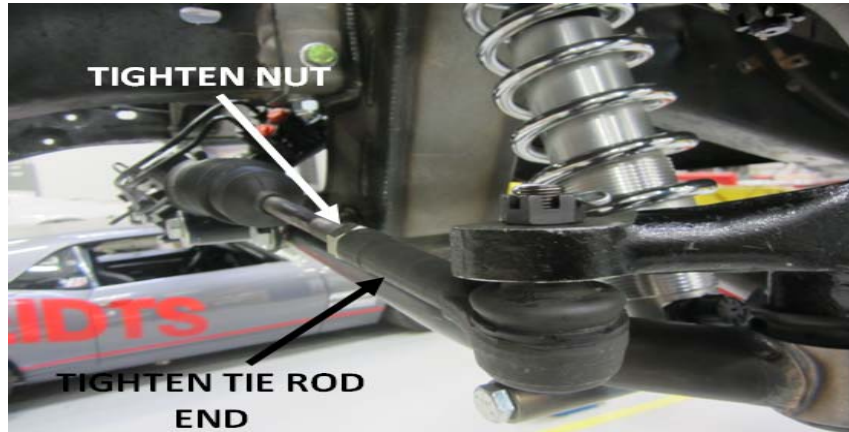


Figure 20 Front View of Steering Rack

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16) The next step to installing the steering rack is bolting on the tie rod ends. Using two crescent wrenches, tighten up the nut and the tie rod end, (you'll adjust them later when setting the alignment of your vehicle), slide the tie rod end through the steering arm of the spindle. DO NOT tighten. The tie rod will be removed for sway bar installation. See **Figure 21**.



View From Drivers Side Wheel Well

Figure 21

17) With the steering rack pre-installed, you can connect the steering shaft.

18) Cut a roughly 2 1/4" piece from the Double D steering shaft material. This is will be used to insert into the stock steering column. See **Figures 22 and 23**. Grind slightly 1/2 of the 2 1/4" double D material so it slides tightly into the steering column. Center punch and drill a 3/8" hole in the center to hold the double D to the steering column. A 3/8-24 bolt and nylock nut are supplied in the kit.



Figure 22



Figure 23

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19) Bolt the 2 ¼" piece into the steering column. See Figure 24. Attach the double D ended steering U joint to the 2 ¼" double D piece. DO NOT tighten set screws until the entire steering column assembly is completed. See **Figures 24 and 25**.



Figure 24

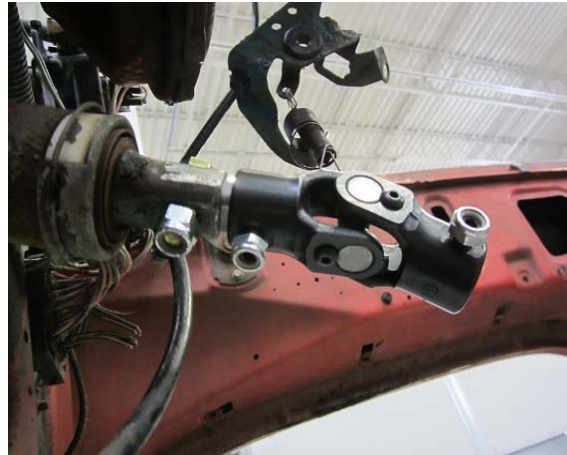


Figure 25

20) The steering rack was installed on Step 15. The reason for not tightening the steering rack was for this step. However the steering rack needs to be snugged to the cross member to ensure a well cut double D steering shaft can be installed. Attach the splined steering U Joint onto the steering rack. Measure and cut the double D shaft so the shaft has a solid fit on both steering U joints. See **Figures 26 and 27**.



Figure 26



Figure 27

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21) The U Joints cannot be connected at this point due to frame rail interference. The frame rail will have to be grounded for clearance. There is a re-enforcement plate in the kit to make up for the grounded frame rail. This plate can also be used as a template for scribing and grinding a notch for steering shaft clearance. For insurance place the double D steering shaft against the frame rail where the steering shaft might set. Scribe or sharpie around the area. DO NOT GRIND AWAY YET. See **Figures 28 and 29.**



Figure 28



Figure 29

22) Place the re-enforcement plate on the frame rail. Line up the front $\frac{1}{2}$ " hole of the re-enforcement plate with an existing hole in the frame. This existing hole will have to be drilled $\frac{1}{2}$ ". After the hole is drilled place the re-enforcement plate on the frame rail and place a $\frac{1}{2}$ " bolt in the front hole. Square the edge of the plate with edge of the frame rail. Scribe a line around the center circle. See **Figures 30 and 31.**



Figure 30



Figure 31

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23) With lines scribed slowly grind away the frame rail for the steering shaft clearance. Keep placing the plate over the frame rail to check for appropriate clearance. You don't want too much or not enough steering shaft clearance. Keep checking steering shaft clearance by installing the steering shaft and re-enforcement plate along with making full lock to lock turns with the steering wheel. Once the appropriate clearance has been established, the back hole on the re-enforcement plate can be center punched and drilled. See **Figures 32-35**.



Figure 32



Figure 33



Figure 34



Figure 35

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24) The Steering rack, U joints and re-enforcement plate can be fully installed and tightened after the lock to lock test has been done several times to ensure clearance. See **Figure 36**.



Figure 36

25) The Transmission mount is the last step in the IFS assembly. Once the engine and transmission are installed, the transmission mount can be bolted in. Bolt the transmission mount to the transmission loosely. Square the transmission to the cross member by measuring from the back of the front cross member to the transmission mount. Measure both driver and passenger sides. Once you have established a square number clamp the transmission mount to the frame rails. Our instructions read 30", however different transmissions and engine block sizes will vary. See **Figures 37 and 38**.



Figure 37



Figure 38

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26) The transmission is now clamped to the frame rails on both sides. Measure twice to be sure there is a consistent measurement on both sides of the transmission mount. Due to engine block size, transmission size and various factory frame holes the transmission mount has no pre-existing holes. Some factory holes may be in place but others are not. Drill $\frac{1}{2}$ " holes where you think the transmission mount will be secured. There is six $\frac{1}{2}$ -20 x $1\frac{1}{4}$ " Grade eight bolts, twelve washers and six nylock nuts for securing the transmission mount. See **Figures 39 and 40**.



Figure 39



Figure 40

Lastly, 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 level). The caster and camber settings are done with the adjusters in the upper control arms. Both adjusters are screwed in or out an equal amount to change the camber, and they are adjusted opposite each other to change caster. Approximately 3° of caster is built into the crossmember already, so not much change is required there. The interesting thing about the caster setting is that you can experiment with different settings and actually "tune" the characteristics of the handling of your truck to your driving style. 3° of caster will give a nice road feel and good low speed drive-ability. 4° or 5° will yield better high speed stability and tracking, putting a better self-centering characteristic in the steering wheel, but will tend to start to make parking slightly more difficult. Have fun with this one, as it truly makes your truck your own truck. Just be sure that both sides have equal caster settings, or the truck will tend to pull to one side.

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Alignment Specifications:

Caster: 3° - 4° Positive

Camber: 0° - .5° Negative

Toe: 0 - 1/16 Toe-In

Since you are now to the point where you have a finished, running truck (we hope!) 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 and the camber setting. Readjust 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.

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