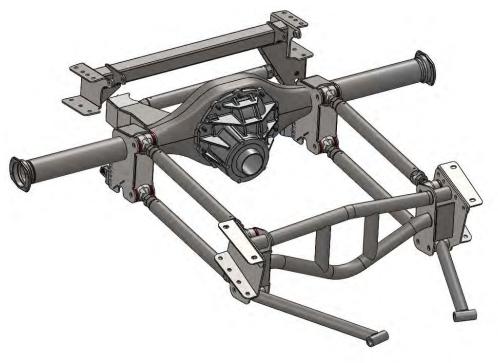




# **INSTALLATION INSTRUCTIONS**

# '67-72 CHEVY C-10

# 4-Link Rear End



Please read these instructions *completely* <u>**before**</u> starting your installation.

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



## PARTS LIST

- 1) Forward Crossmember
- 1) Drivers Side Axle Bracket
- 1) Panhard Bracket
- 1) Upper Shock Crossmember
- 1) Lower Shock Mount Passenger Side
- 2) Adjustable Shocks

- 4) Control Arm Links
- 1) Passenger Side Axle Bracket
- 1) Panhard Bar
- 1) Lower Shock Mount Drivers Side
- 2) Forward Struts
- 2) Chrome Springs

### HARDWARE PACKAGE

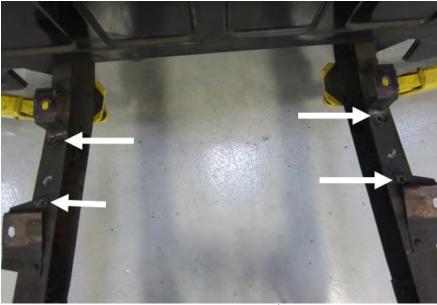
- 8)  $^{3}/_{8}$  Stainless Steel Washers
- 28)  $^{1}/_{2}$ -20 Nylock Nuts
- 8)  $^{1}/_{2}$ -20 Nylock Jam Nuts
- 72)  $\frac{1}{2}$  Flat Washers
- 12)  $\frac{5}{8}$ -18 X 3- $\frac{3}{4}$  Hex Bolts
  - 2)  $\frac{1}{2}$ -20 X 3 12Pt. Flange Head
- 12)  $\frac{5}{8}$ -18 Nylock Jam Nuts
- 2)  $\frac{1}{2}$ -20 X 2- $\frac{3}{4}$  Hex Bolts
- 4)  $\frac{3}{8}$ -24 X 3- $\frac{3}{4}$  Hex Bolts
- 2)  $\frac{3}{4}$ -16 X 4- $\frac{1}{2}$  Hex Bolts

## 4) $^{3}/_{4}$ Washers

- 24)  $\frac{5}{8}$  Washers
- 4)  $^{3}/_{8}$ -24 Nylock Nuts
  - 34)  $\frac{1}{2}$ -20 X 1- $\frac{1}{4}$  Hex Bolts
  - 2)  $\frac{1}{2}$ -20 12 Pt. Flange Nuts
  - 2)  $^{3}/_{4}$ -16 Nylock Nut



- Start by jacking up your truck and supporting it on sturdy jack stands. Remove the rear wheels. Remove the bed. Disconnect the drive shaft from the rear end. Disconnect the brake lines and emergency brake cables. Remove fuel tank. Remove the shocks, rear end, springs and truck arms. *BE SURE TO LABEL ALL HARDWARE FOR RE-INSTALLATION!* At this point the rear end of your truck should be stripped down the bare frame.
- 2) Remove the four rivets on the frame rails directly behind the cab. One method of doing this would be to use an air chisel and break the heads off of the rivet. Then use a punch and hammer out or impact drive out the rest of the rivet. Then the remaining holes must be drilled out to  $1/2^{n}$ . See **Figure 1**.

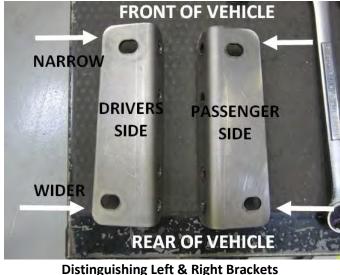


Remove Rivets, & Drill Out To <sup>1</sup>/<sub>2</sub>" Figure 1

3) Now you are ready to install the front upper axle brackets. The side with the two slotted holes is the side that mounts against the underside of the frame rails. You can distinguish the left and right brackets by putting them next to each other, and the section near the top of the bracket that is more narrow should be facing toward the front of the vehicle. The wider section should be facing the rear. See **Figure 2**.

#### \*\*\*\*\*NOTE: Depending on the dimensions of your truck, you may have to slightly enlarge the slotted hole in the bracket in order to make it fit.\*\*\*\*





Distinguishing Left & Right Brackets Figure 2

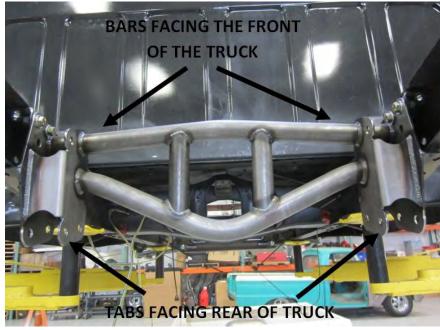
4) Now you are ready to install the front upper axle brackets. To do so, use the <sup>1</sup>/<sub>2</sub>-20 X 1-<sup>1</sup>/<sub>4</sub> Hex Bolts, <sup>1</sup>/<sub>2</sub> Flat Washers, <sup>1</sup>/<sub>2</sub>-20 Nylock Jam Nuts provided. Use a washer on both sides, one next to the bolt head and the other next to the nut. When installing, only <u>finger tighten</u>, as you need to leave the bracket loose for the next step. See Figure 3.



View of Drivers Side Frame Rail, Bracket Installed Figure 3

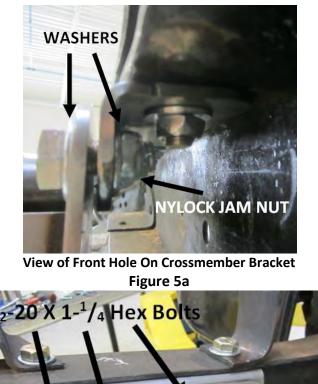


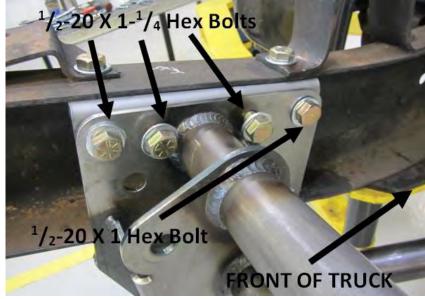
5) Now you are ready to install the front crossmember. To do so, position it under the truck, and raise it up, until the bottom bracket butts up against the bottom of the frame rails. To determine front to rear, the center bars will be facing towards the front, (closer to the front) and the tabs on the bottom of the bracket should be facing the rear, as seen in **Figure 4**. Also the angle of the crossmember brackets contacting the frame rails will guide the correct placement of the crossmember.



View From Rear Of Crossmember Figure 4

6) To install the front crossmember, use the <sup>1</sup>/<sub>2</sub>-20 Nylock Jam Nuts, <sup>1</sup>/<sub>2</sub> Flat Washers, <sup>1</sup>/<sub>2</sub>-20 X 1 Hex Bolts, <sup>1</sup>/<sub>2</sub>-20 X 1-<sup>1</sup>/<sub>4</sub> Hex Bolts, and the <sup>1</sup>/<sub>2</sub>-20 Nylock Nuts provided. Begin aligning the holes, and bolting the front crossmember, to the brackets previously installed in Step 4. <u>For the front-most bolt</u>, you must use a <sup>1</sup>/<sub>2</sub>-20 X 1 Hex Bolt with a <sup>1</sup>/<sub>2</sub>-20 Nylock Jam Nut, and washers on both sides. See Figure 5a. For the rest of the bolts, use the <sup>1</sup>/<sub>2</sub>-20 X 1-<sup>1</sup>/<sub>4</sub> Hex Bolts, <sup>1</sup>/<sub>2</sub>-20 Nylock Nuts, and washers on both sides. <u>BE SURE</u> <u>TO ONLY FINGER TIGHTEN THE HARDWARE</u>, as you will need everything loose for the next step (See Figure 5b).

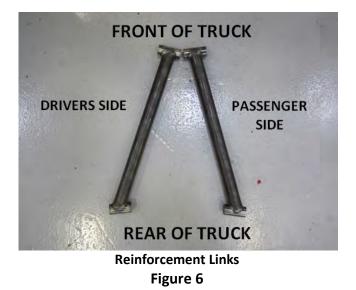




View of Driver's Side Frame Rail, All Hardware Finger Tight Figure 5b

7) The next step is installing the reinforcement links. To distinguish their right from left, the sleeve that has the larger hole should be facing towards the front. They should be angled outwards towards the rear, See **Figure 6**.





8) To install the links you must first bolt them up to the factory mounting point for the truck arms. To do so, use the  $3/4-16 \times 4-1/2$  Hex Bolts, 3/4 Washers, and 3/4-16 Nylock Nuts. Install the reinforcement link as pictured in Figure 7, with washers on both sides and <u>tightening finger tight</u>.



Installing Reinforcement Links In Factory Truck Arm Mounts Figure 7

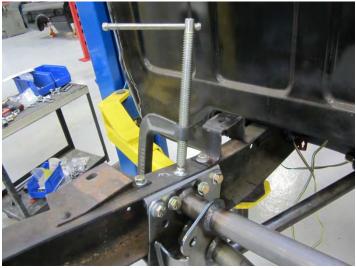
9) Next, install the reinforcement links into the front crossmember. Position links until they are aligned with the bottom, front most holes of the crossmember. It may take some light tapping with a mallet to get the reinforcement arm in, and aligned with the holes. Once the holes are aligned, use the <sup>5</sup>/<sub>8</sub>-18 X 3-<sup>3</sup>/<sub>4</sub> Hex Bolts, <sup>5</sup>/<sub>8</sub> Washers, <sup>5</sup>/<sub>8</sub>-18 Nylock Jam Nuts provided. Use washers on both sides, one next to the bolt head, and one next to the nut. Only <u>tighten finger tight</u>.

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# <u>\*\*\*\*\*NOTE: When installing $\frac{5}{8}$ hardware, the nylock nuts may screw on with a little difficulty. If this is the case, then put anti-seize on the threads for lubrication, and re-tighten \*\*\*\*\*</u>

10) Now you are ready to start tightening everything. Start tightening in the following sequence to properly align the crossmember: Start with the top two bolts on the frame rails, then tighten the four upper bolts on the crossmember, then the bottom bolt on the reinforcement link, and lastly the bolt in the stock truck arm location. In the pictures you will see that we used C-Clamps when tightening down the bolts to further align the crossmember, however <u>this is not necessary</u>. (See Figure 8).





View of Drivers Side Frame Rail C-Clamping Crossmember Figure 8

Outside View of Frame Rail

11) After tightening everything down, center punch the holes on the bottom of the crossmember bracket, on the lower section of the frame rails. Use the holes on the bottom of the crossmember bracket as a guide. See **Figure 9**. After center punching the holes, unbolt the two lower bolts securing the reinforcement links, and the top four bolts on the crossmember, and remove the crossmember. Drill out the center punched holes.





Center Punching Holes on Bottom of Frame Rail Figure 9

12) Re-install crossmember and links, re-tighten everything completely. See Figure 10.



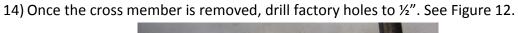
Installed Forward Cross Member Figure 10

13) To install rear shock cross member, a riveted factory cross member needs to be removed. See Figure 11.





Figure 11





#### Figure 12

15) Place shock mount next to the factory frame holes now drilled ½". Align the second hole down with the driver's side (See **Figure 13**) and the third hole down on the passenger side. See **Figure 14**.



Figure 13





16) Install the upper shock crossmember using the designated holes as seen in Figures 13 and 14 above. See Figure 15.



Figure 15

17) With Shock cross member installed by the two designated holes, Scribe lines along with mounting plates using a straight edge. This is critical for the next step. See **Figures 16** and **17**.







\*\*\*NOTE Scribe lines so they are visible for the next steps.\*\*\*



18) Uninstall the shock cross member and flip it upside down. Turn the cross member 180 degrees so the panhard mount is on the passenger side of the frame. Bolt the cross member on top of the frame using the existing bolt holes and aligned parallel to the scribe lines. See **Figures 18 and 19**.

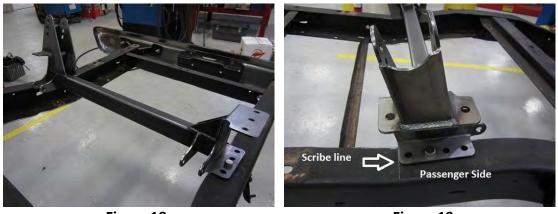


Figure 18

Figure 19

19) Once the shock cross member is installed upside down, scribe lines inside the bolt holes on both sides. Six holes all together. See **Figure 20**.



Figure 20

#### \*\*\*NOTE Scribe lines deep so they are visible for the next steps.\*\*\*



20) After the bolt hole location lines are all scribed, uninstall the shock cross member.
 Center punch all six existing bolt holes. Use a small drill bit to pilot drill the ½" holes. See
 Figures 21-24 below.

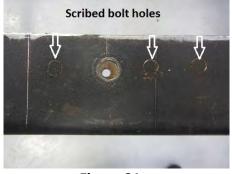


Figure 21



Figure 22



Figure 23



Figure 24

21) After pilot drilling all six holes, we recommend drilling 3/8 before drilling to ½" due to the strength of the frame. See **Figures 25 and 26** below.

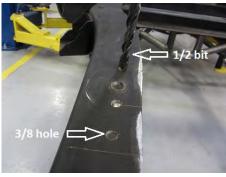


Figure 25







22) Reinstall upper shock mount to insure all 1/2" holes are aligned. Tighten all top bolts.
 Use a ½" center punch on the six lower holes of the shock mount. (Three per side)
 Drill the lower holes to ½" repeating the same steps as the top holes. See Figures 27-32.



Figure 27

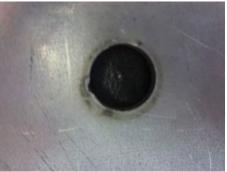


Figure 28



Figure 29



Figure 30



Figure 31



Figure 32

23) Tighten all ½" bolts on the upper shock mount.



24) Install the passenger side rear shock. (Figure 33) Use a sharpie to mark the frame for spring clearance. Uninstall the shock and grind away the marked area. We recommend using a sanding drum for this step. See Figures 33-37 below.



Figure 33



Figure 34



Figure 35



Figure 36



Figure 37

25) Repeat step 24 on the driver's side of the frame.



26) Set all four link bars to 25 ½" center to center from the bolt holes. This will be the starting point when aligning the rear end. Install the two lower links using two 5/8-18 x 3 ¾" bolts, four washers and two 5/8-18 jam nuts. Install the Ford 9" housing using stands on each axle tube. Connect the lower links to the housing finger tight. This will ease installation of the rear sway bar later. Grease fittings on bushings should be facing up. See Figures 38 and 39.



Figure 38



Figure 39

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27) Install the two upper links using two 5/8-18 x 3 ¾" bolts, four washers and two 5/8-18 jam nuts. Grease fittings on the upper link bushings should be facing down. Opposite of lower link grease fittings. See **Figures 40 and 41**.



Figure 40



Figure 41

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28) Set the Panhard bar to 24" center to center from the bolt holes. This will be the starting point when aligning the rear end. Install the panhard bar using two 5/8-18 x 3 ¾" bolts, four washers and two 5/8-18 jam nuts. Grease fittings on panhard bushings should be facing up. See **Figure 42**.



Figure 42

- 29) After rear end housing and Panhard bar are installed, it's time to square the rear end. First using a floor jack or stands lift the rear end housing till the panhard bar and upper and lower links are dead level.
- 30) Now that the rear end housing is level with the panhard bar, you can measure from the front of the rear end housing to a hole on the frame. There are many holes on the factory frame to utilize, however we are going to use this hole in **Figure 43** to square this rear end housing.



 Figure 43

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31) Measure from the front of the axle tube (**Figure 44**) to the start of the factory hole (**Figure 45**). Measure both driver and passenger sides and adjust accordingly using the adjustable links. Due to factory tolerances, this dimension should be in the vicinity of 29" as seen in **Figure 45**.



Figure 44



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32) To ensure rear end housing is square side to side, we will utilize a factory rivet on the bump stop mount. Use a straight edge on the axle flange and a tape measure for this step. Make adjustments from the panhard bar until both driver and passenger side are the same dimensions. Dimensions will vary with different track width rear ends. See **Figure 46** for example.



Figure 46

33) After the rear end is squared there needs to be frame clearance for the four link mounts. The steps are similar to the shock clearance steps 24 and 25. Lift the rear end housing till the mounts hit the lower frame and mark with a sharpie. Cut away the frame using a sanding drum similar to **Figure 35**. See **Figures 47-50**.



Figure 47



Figure 48





Figure 49



Figure 50

#### 34) \*\*\*Install rear sway bar before installing shocks. See IN-180.\*\*\*

35) Set the shocks at 13 ½" center to center from the bolt hole. Once the shocks are assembled, install the shocks to the upper shock mount first. The upper shock mount spacer is mounted on the outboard side. This is to keep the shock straight up and down. See **Figure 51**.



Figure 51



36) Install aluminum lower shock mount to the rear end housing. Use the 3/8-24 x 3 <sup>1</sup>/<sub>2</sub>" grade 8 bolts, 3/8-24 nylock nuts and washers. See **Figure 52**.



#### Figure 52

37) Complete the shock installation by bolting the shock to the lower shock mount using  $^{1}/_{2}$ -20 X 3 12Pt. Flange Head bolts and  $^{1}/_{2}$ -20 12 Pt. Flange Nuts. Make sure adjuster faces towards the rear of the truck. See **Figures 53 and 54**.

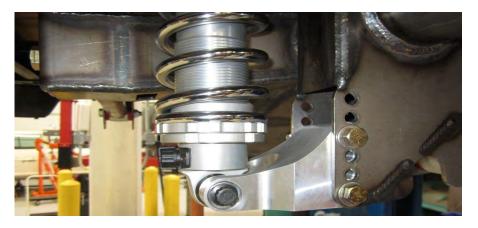


Figure 53



Figure 54



38) Install both shocks so both adjusters are facing out. This is for ease of adjustment.
 \*\*\*Make sure all nuts and bolts are tightened before driving on the road. \*\*\*
 See Figure 55.



Figure 55

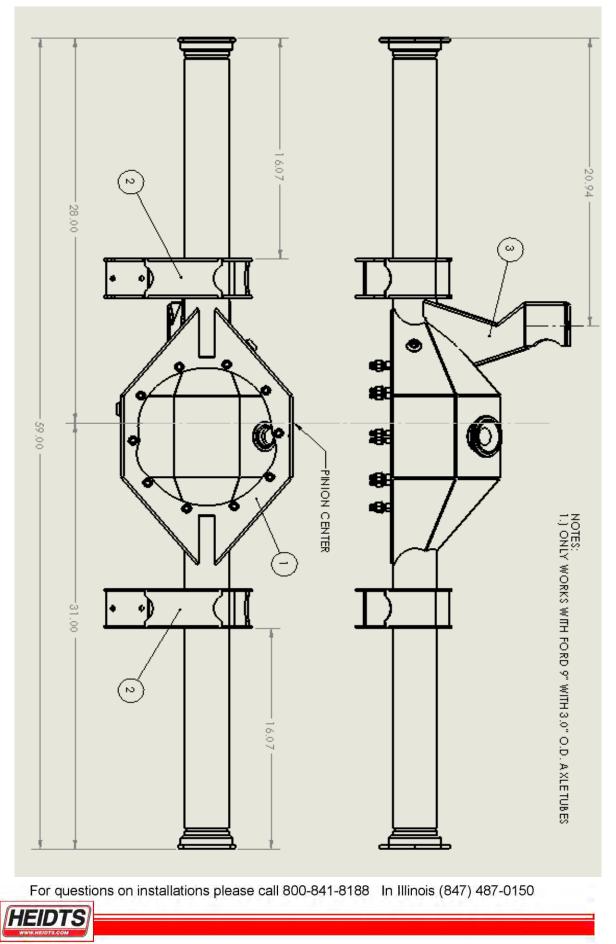
39) Install rear end housing bump stops in existing factory bump stop slots. Bump rubber may have to be modified for shock travel. We recommend using grease on the rubber for ease of installation. See **Figures 56 and 57**.



Figure 56

Figure 57





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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. 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.

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