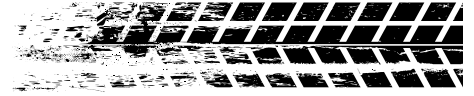




INSTALLATION INSTRUCTIONS



Part # 12297198



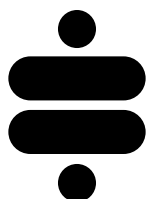
Bolt-On 4-Link System with C-Notch

2015-2026 F-150 2WD/4WD



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**Please Read And Understand All Instructions
And Warnings Prior To The Installation Of
This Product.**



THANK YOU

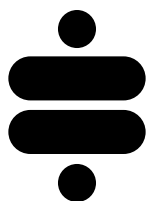
Congratulations on your new Ridetech product! It's an honor that you've selected the Ridetech brand to upgrade your ride. Our products are developed around quality and performance without compromise. We're confident you'll have many years (and miles) of pure driving enjoyment.
Thank you for choosing Ridetech!

Road Map

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NOTE:

Trucks with a factory or aftermarket dual exhaust system may require a lower crossover style exhaust to avoid interference with the panhard bar.



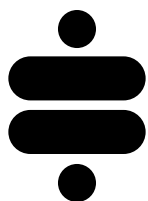
PARTS LISTING



COMPONENTS			
Item #	Part #	Description	Qty
4-LINK AXLE BRACKETS: 12297101			
1	90003976	Lower bar Axle Mount	2
2	90003977	Upper bar Axle Mount	2
4-LINK FRONT BRACKETS: 12297102			
3	90003978	Front Bar Mount - Driver	1
4	90003979	Front Bar Mount - Passenger	1
5	90003980	Front Bar Mount Frame Gusset	2
6	90003995	Nut Plate	8
4-LINK & PANHARD BARS: 12297103			
7	90002817	Upper 4-Link Bar	2
8	90003499	Lower 4-Link Bar	2
9	90003981	Panhard Bar Mount	1
10	90003982	Panhard Bar	1
11	70016702	Panhard Bar Bushing	1
12	90001318	R-JOINT 3/4-16 RH	5
13	90001319	R-JOINT 3/4-16 LH	4
14	70013334	R-JOINT SPACER 5/8	18
15	99752004	3/4-16 RH JAM NUT	5
16	99752006	3/4-16 LH JAM NUT	4
17	99506002	U-Bolt	1
FRAME RAIL BRACKETS: 12297105			
18	90003987	Frame Rail Mount - Driver	1
19	90003988	Frame Rail Mount - Passenger	1
20	90003989	Frame Rail Inside Mount Plate - Driver	1
21	90003990	Frame Rail Inside Mount Plate - Passenger	1
22	70015643	Bump Stop	2
23	70017732	C-Notch Template	1

HARDWARE

HARDWARE			
Item #	Part #	Description	Qty
99010318: 4-LINK AXLE BRACKETS			
SHOCK MOUNT			
24	99501005	1/2-13 X 3 1/2 HCS GR8	4
25	99502009	1/2-13 USS GR8 NYLOK NUT	4
26	99503014	1/2 SAE FLAT WASHER GR8	8
AXLE CLAMP BOLTS			
27	99621009	5/8-18 X 6 HCS GR8	8
28	99623001	5/8 SAE FLAT WASHER GR8	16
29	99622001	5/8-18 NYLON INSERT L/N GR8	8
WIRE/LINE MANAGEMENT BRACKET			
30	99371071	3/8-16 X 1/2 HCS GR8	2
99010319: 4-LINK FRONT BRACKETS			
RIVNUTS & NUT PLATES			
31	99502024	1/2-13 RIVNUT	4
-	90003448	RIV-NUT TOOL; 1/2"	1
-	99501043	1/2-13 X 2 HCS GR8	1
32	99501062	1/2-13 X 1 1/4 HCS GR8	12
26	99503014	1/2 SAE FLAT WASHER GR8	12
33	90002263	RED THREADLOCKER TUBE; 1ml	2
FRONT LEAF BOLTS			
34	99181001	M18-2.5 X 130 HCS GR10.9	2
35	99183001	M18 FLAT WASHER GR10.9	4
36	99182001	M18-2.5 NYLOK NUT GR10.9	2
FRAME GUSSET TO FRONT MOUNT			
37	99371005	3/8-16 X 1 1/4 HCS GR8	8
38	99372001	3/8-16 NYLON INSERT L/N GR8	8
39	99373002	3/8 SAE FLAT WASHER GR 8	16

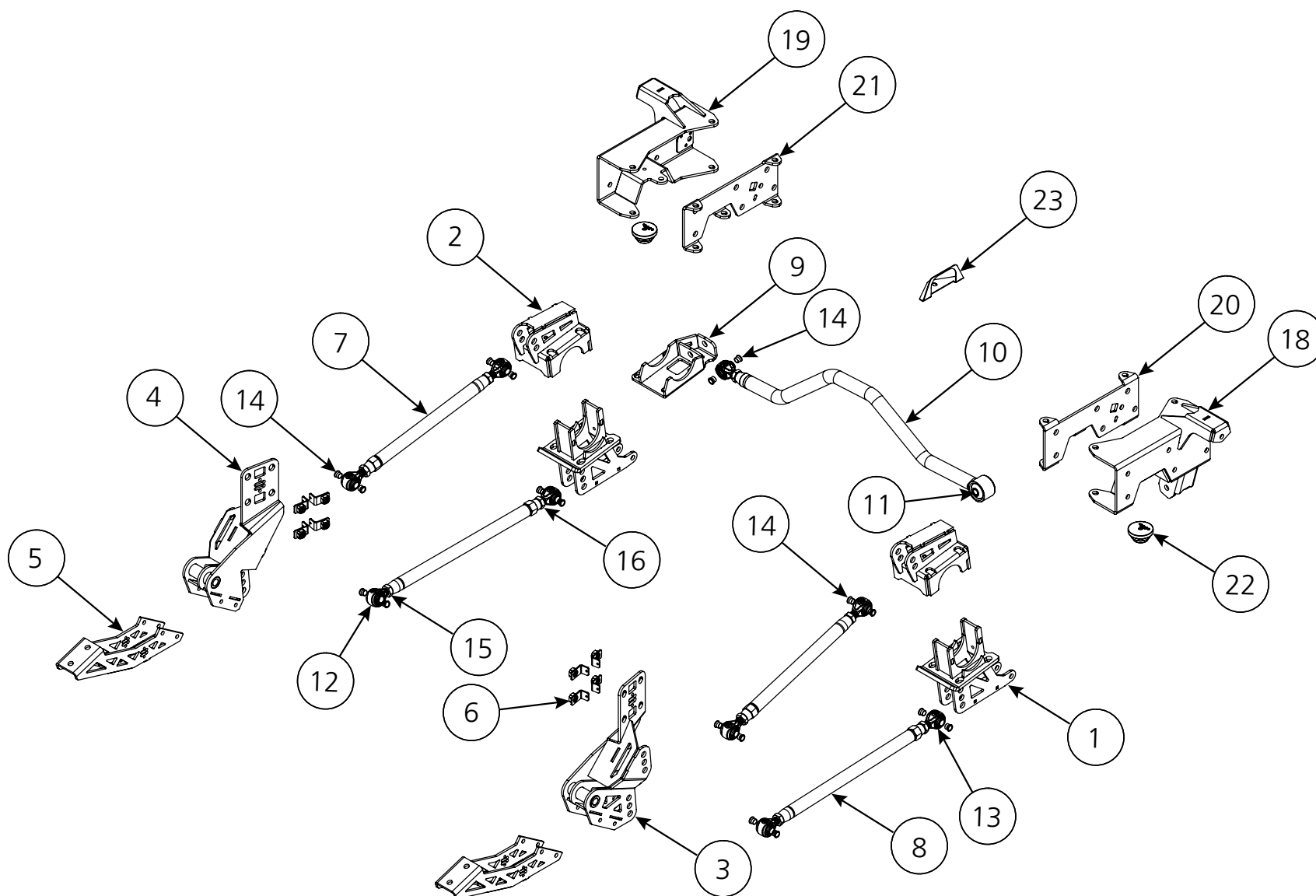


HARDWARE

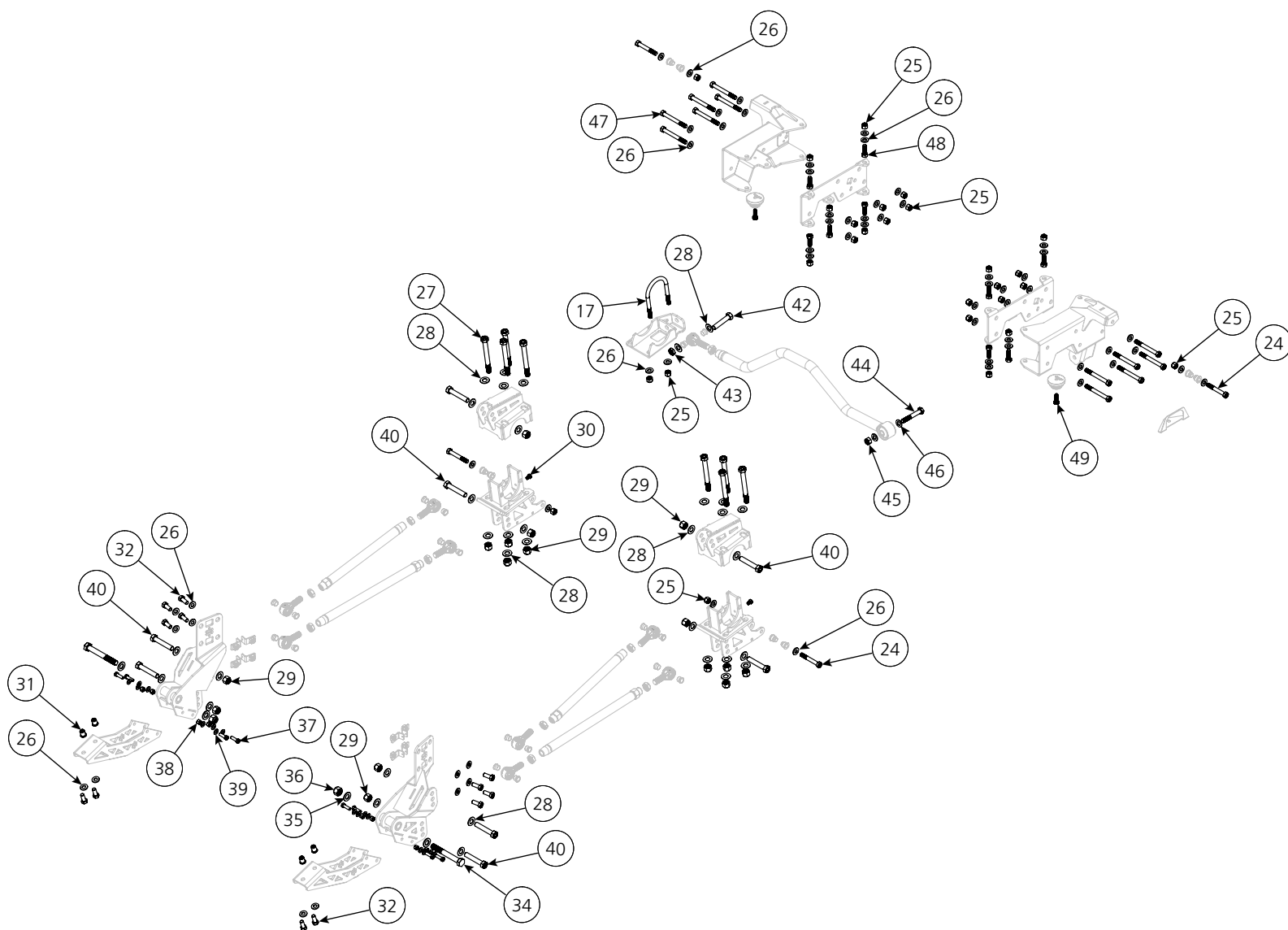


HARDWARE			
Item #	Part #	Description	Qty
99010320: 4-LINK & PANHARD BARS			
4-LINK BARS			
40	99621005	5/8-18 X 3 1/2 HCS GR8	8
28	99623001	5/8 SAE FLAT WASHER	16
29	99622001	5/8-18 NYLON INSERT	8
41	90002276	ANTI-SEIZE NICKEL COMPOUND 2ml	3
PANHARD BAR			
25	99502009	1/2-13 USS GR8 NYLOK NUT	2
26	99503014	1/2 SAE FLAT WASHER GR8	2
42	99621004	5/8-18 X 3 HCS GR8	1
28	99623001	5/8 SAE FLAT WASHER GR8	2
43	99622006	5/8-18 THIN NYLON JAM NUT GR2	1
44	99141011	M14-2.0 X 90 HCS GR10.9	1
45	99142002	M14-2.0 NYLOK NUT GR10.9	1
46	99143001	M14 FLAT WASHER	2
99010321: FRAME RAIL BRACKETS			
FRAME MOUNT TO FRAME			
47	99501034	1/2-13 X 4 1/2 HCS GR8	12
48	99501053	1/2-13 X 1 1/2 HCS GR8	10
25	99502009	1/2-13 USS GR8 NYLOK NUT	22
26	99503014	1/2 SAE FLAT WASHER GR8	44
BUMP STOP			
49	99115005	M10-1.5 X 30 SHCS BLACK	2

EXPLODED VIEW MAJOR COMPONENTS



EXPLODED VIEW HARDWARE



Disassembly

1. Raise the vehicle to a safe and comfortable working height, allowing the rear suspension to hang freely.

2. Support the rear axle, then remove the existing shocks and leaf springs.

NOTE: To remove the front leaf spring bolt without dropping the fuel tank, we cut the head off of the bolt with a sawzall (Figure 1) and then removed the bolt from the outboard side of the mount (Figure 2).

3. On the inside of the driver side frame rail near the bump stop mount, remove the one screw securing the wire management bracket to the inside of the frame rail (Figure 3). You **do not** need to disconnect any of the wiring.

4. The wire-management bracket is also attached at the top of the frame rail with a loom clip. Pry this clip from the top of the frame rail and allow the bracket to hang (Figure 4). The bracket will be reattached once the frame brackets are installed.

5. Remove the factory bump stop (Figure 5).

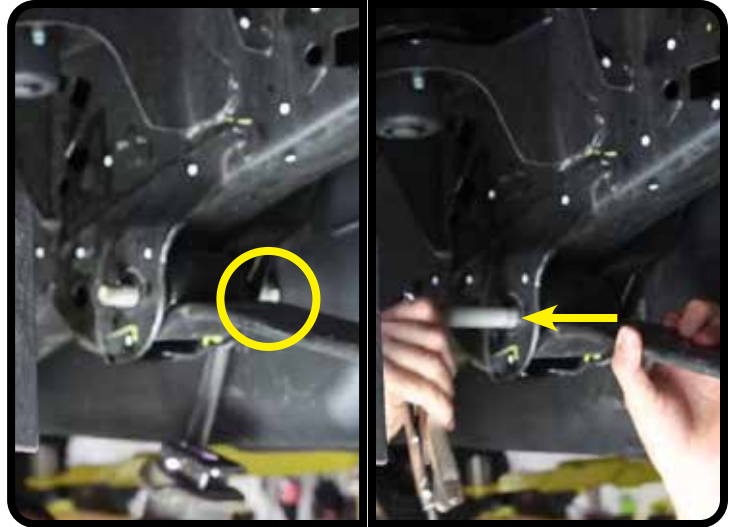


Figure 1

Figure 2



Figure 3

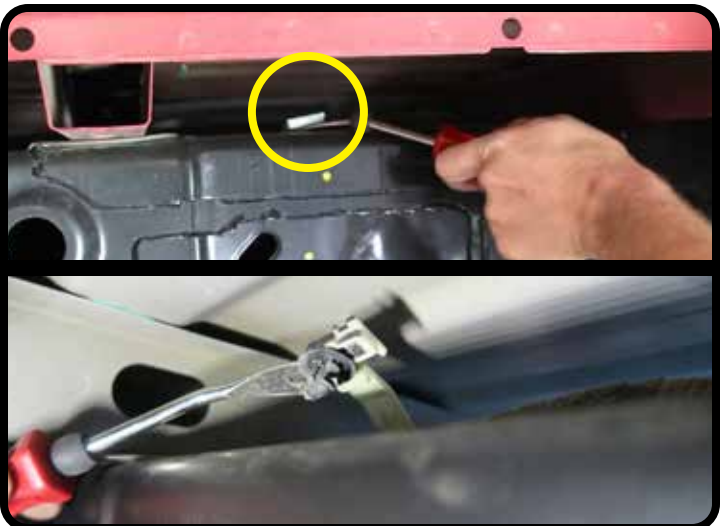


Figure 4



Figure 5

C-Notch Cutting

NOTE: Before cutting into the truck frame, we recommend using additional support at the rear of the truck just to be safe. **Only cut one C-Notch at a time.**

6. Position the C-Notch template on the outside of the frame rail. The hole in the bottom of the template should align with the mounting hole in the bottom of the frame for the original bump stop. Use the original bump stop bolt to secure the template to the frame. Driver side shown in Figure 6.

7. Trace the outside edge of the template with a pencil or marker, or score the outline with the cutting wheel (Figure 7). Do not forget to also trace along the bottom of the frame.

8. Remove the template once you have traced the cutout (Figure 8).

9. Drill a 1/2" hole at each of the two intersections of the horizontal and angled lines (Figure 9 & 10).



Figure 6



Figure 7



Figure 8



Figure 10

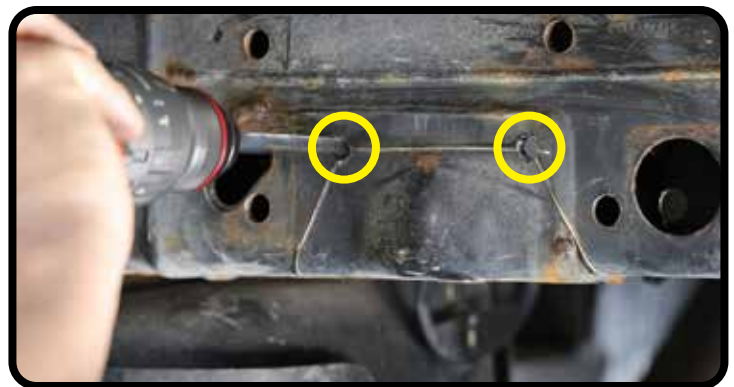


Figure 9

C-Notch Cutting

10. Use a cutting wheel to cut along your traced/scored line on the outside and bottom of the frame rail (Figure 11 & 12).

11. On the inside of the frame rail, opposite of the cuts you just made, disconnect any loom clips and/or brackets that might interfere when cutting the inner frame rail.

12. Position the C-Notch template on the inside of the frame rail. Align the bottom edges of the template with the cuts you made on the bottom of the frame rail.

13. Trace the outside edge of the template with a pencil or marker (Figure 13).

14. Drill a 1/2" hole at each of the two intersections of the horizontal and angled lines. Due to the limited space on the inside of the frame, you might find it easier to drill these holes from the outside of the frame, using the holes you drilled in step 9 as a point of reference.

15. Use a cutting wheel to cut along your traced/scored line on the inside and bottom of the frame rail (Figure 14).



Figure 11



Figure 12



Figure 13



Figure 14

C-Notch Cutting

16. Remove the C-Notch from the frame rail (Figure 15). A few taps with a hammer might be necessary.

17. Use a grinding disc to clean up any jagged or rough edges (Figure 16).

18. We recommend touching up any bare metal with a coat of paint to prevent corrosion (Figure 17).

⚠ To avoid compromising the structural integrity of the frame, do not cut the C-Notch in the opposite frame rail until you have installed the frame brackets on the current side.



Figure 15



Figure 16



Figure 17

Frame Brackets

19. Position the outside frame mount on the frame rail, aligning the C-notch in the bracket with the C-notch in the frame. Driver side shown in Figure 18.

20. Using the frame mount as a template, drill each of the six mounting holes in the outside of the frame rail with a 1/2" drill bit as shown in Figures 19 & 20.

21. Position the inner frame plate on the inside of the frame rail, aligning the C-notch cutout with the cutout in the frame. The upper/lower tabs of the inner plate should also mate up with the upper and lower tabs on the outer plate (Figure 21).

NOTE: Some vehicles may have another wire management clip on the inside of the frame rail that may need to be removed to properly position the plate.



Figure 18



Figure 19



Figure 21



Figure 20

Frame Brackets

22. Install a 1/2"-13 x 1.5" bolt w/washer (**threads facing up**) through each of the mated **upper** tabs on the inner & outer plate (Figure 22). Secure each with a 1/2" washer and Nylok nut.

23. Install a 1/2"-13 x 1.5" bolt w/washer (**threads facing down**) through each of the mated **lower** tabs on the inner & outer plate (Figures 23 & 24). Secure each with a 1/2" washer and Nylok nut.

NOTE: You may find it helpful to use a clamp to more easily align the holes in the lower tabs.

NOTE: We recommend tightening the upper and lower tab bolts before drilling the inner plate mounting holes in the next step. You may choose to loosen them again after drilling to make the installation of the 6 frame-mount bolts a little easier.

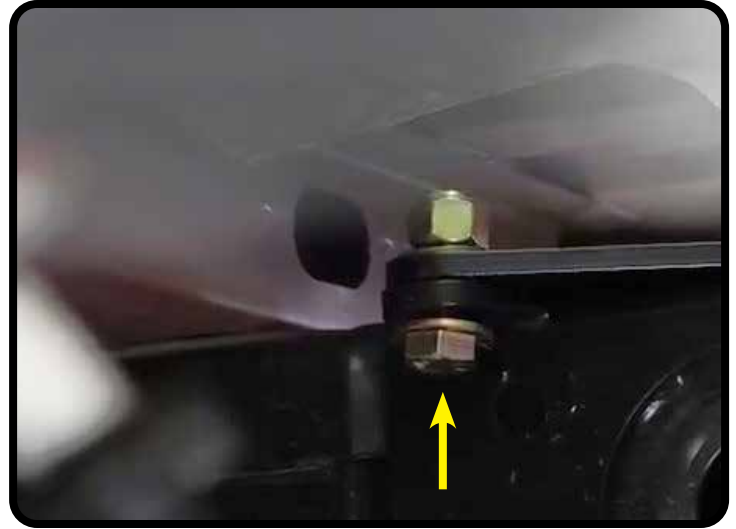


Figure 22

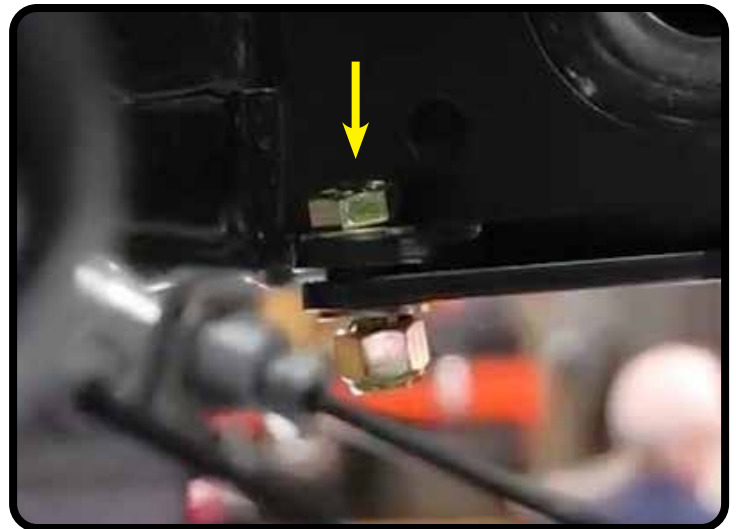


Figure 23



Figure 24

Frame Brackets

24. Once the inner frame plate is in position and secure, use the frame plate as a template to drill each of the six mounting holes in the inside of the frame rail with a 1/2" drill bit (Figure 25).

NOTE: On the passenger side, it may help to disconnect the exhaust hanger to gain more access for drilling.

25. From the outside of the frame rail, install a 1/2"-13 x 4.5" bolt w/washer through each of the 6 holes in the outer & inner frame plates (Figure 26). A light tap with a hammer may be necessary.

26. From the inside of the frame rail, install a 1/2" washer and Nylok nut on each of the frame-mount bolts and torque to **75 ft-lbs.** Torque the upper/lower tab bolts to **75 ft-lbs.**

NOTE: Do not forget to reattach any wire-management brackets and/or loom clips that were disconnected.

27. Install an M10-1.5 x 30 Socket-Head Bolt through the new bump stop and thread into the hole in the C-Notch (Figure 28).

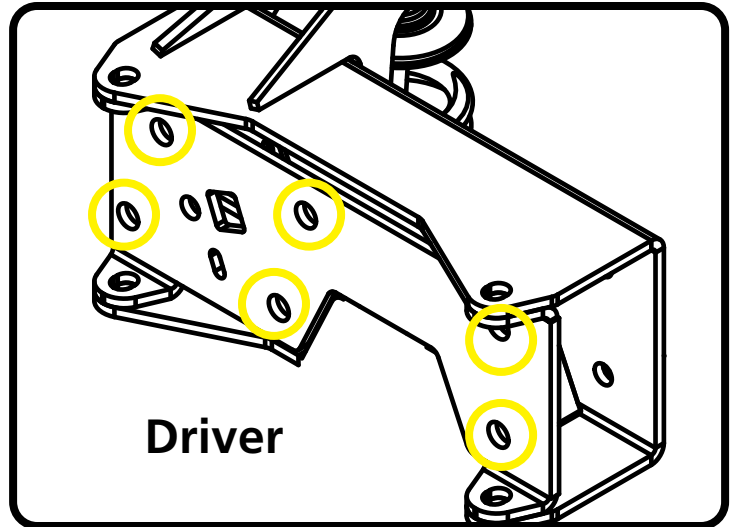


Figure 25



Figure 26



Figure 28



Figure 27

Front Bar Mount

NOTE: Before installing the front bar mounts, ensure the surface of the frame rail is smooth and free of any protruding defects. Figure 29 shows an example of a random spot of weld we had to grind down prior to our install.

28. Position the front bar mount into the OEM front leaf spring mount as shown in Figure 30. The holes surrounding the Ridetech logo in the upper tab of the mount will align with the holes in the frame rail just beneath the body mount bracket.

29. Align the sleeve of the front bar mount with the OEM leaf spring bracket hole and install an M18 x 130 bolt (Figure 31). Install an M18 washer and Nylok nut on the threaded end of the bolt, but do not tighten yet.

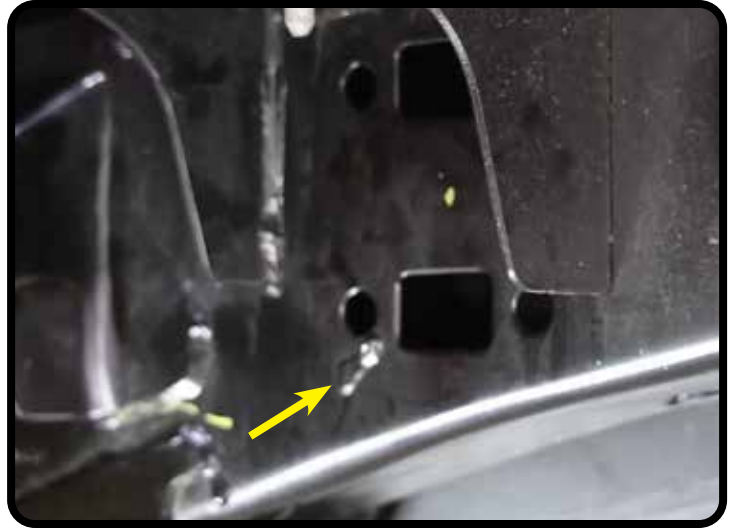


Figure 29



Figure 30



Figure 31

Front Bar Mount

30. Insert a nut plate into each side of the upper and lower rectangular cutouts of the bar mount and frame (Figure 32).

The side with the welded nut is inserted into the rectangular hole and the nut is then aligned with the 1/2" hole in the mount and frame. Figure 33 illustrates the position of the nut plates on the inside of the frame rail.

31. Apply red loctite to each of four 1/2"-13 x 1.25" bolts, align the nut on each nut plate with the hole in the frame/mount and thread a 1/2"-13 x 1.25" bolt w/washer into each plate as shown in Figure 34. Torque to **75 ft-lbs**.

32. Torque the M18 bolt at the leaf spring mount to **258 ft-lbs** (Figure 35).



Figure 32

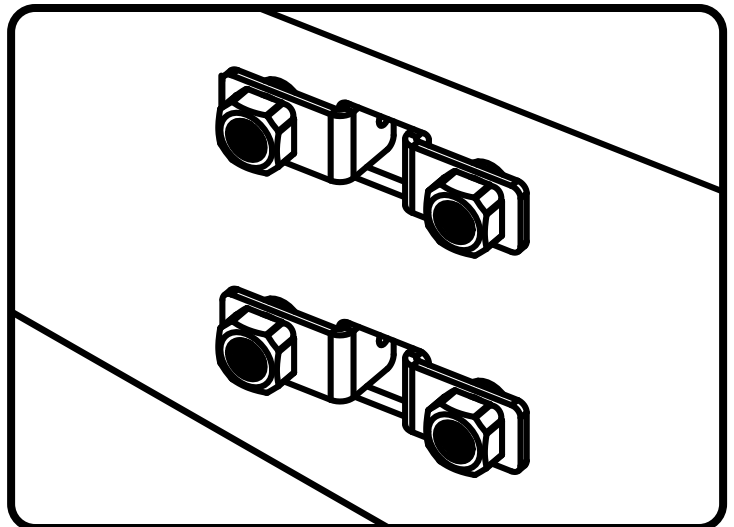


Figure 33



Figure 35



Figure 34

Frame Gusset

33. Position the frame gusset in the bar mount and against the bottom of the frame rail. Temporarily install the four 3/8"-16 x 1.25" bolts attaching the gusset to the bar mount (Figure 36).

Inserting only the bolts without the nuts should suffice.

34. With the gusset temporarily held in place against the frame rail, mark the location of the two gusset mounting holes that will need to be drilled in the frame (Figure 37). Once the holes are clearly marked, you may remove the gusset from the bar mount.

35. Use an 11/16" drill bit or unibit to drill the two mounting holes marked in step 34 into the bottom of the frame rail (Figure 38). riv-nuts will be installed in these holes on the next page.

36. To ensure a smooth mating surface, we recommend cleaning up any rough edges and/or burrs from the drilling (Figure 39). Touching up the ground surfaces with some black paint is also recommended to prevent corrosion.



Figure 36



Figure 37



Figure 39



Figure 38

Frame Gusset

37. Refer to the Riv-Nut Installation Guide on the next page and install a riv-nut in each of the 11/16" holes in the bottom of the frame rail (Figure 40).

38. Position the frame gusset in the bar mount and against the bottom of the frame rail (Figure 41).

39. Attach the gusset to the bar mount with four 3/8"-16 x 1.25" bolts w/washers as shown in Figure 42. Install a 3/8" washer and Nylok nut on each bolt, but do not tighten yet.

40. Secure the gusset to the bottom of the frame rail by threading a 1/2"-13 bolt w/ washer into each riv-nut (Figure 43). Torque to **55 ft-lbs**.

41. Torque the four gusset-to-bar-mount bolts to **37 ft-lbs**.

Repeat steps 5-41 on the opposite side.



Figure 40



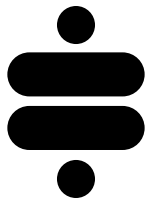
Figure 41



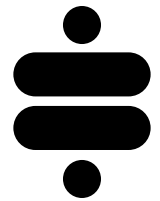
Figure 43



Figure 42



Riv-Nut® Installation & Specs



1. Drill an 11/16" hole in the frame using an 11/16" drill bit or stepped Unibit, keeping the drill square with the metal.

2. We recommend installing (2) 1/2" Flat Washers between the bolt head and the lower anvil of the installation tool. Thread a Rivnut® onto the supplied Tool. Thread the Rivnut all the way onto the Tool until it stops.

3. Insert the Tool and Rivnut® into the drilled hole 90° to the Frame Rail.

4. The Tool requires (2) 3/4" Wrenches to use. A Ratchet can be used on the top of the Tool.

KEEP THE TOOL AND RIVNUT 90° TO THE SURFACE WHILE TIGHTENING

5. Put a 3/4" Wrench on the Lower Hex of the tool. Use a Wrench or Ratchet on the Top hex to Tighten.

6. Hold the Wrench in one position and turn the TOP HEX CLOCKWISE to engage the Rivnut®. Keep Turning the TOP WRENCH until you feel a positive stop and you can't turn the TOP WRENCH anymore.

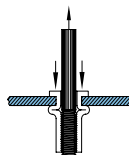
7. Break the Tool loose by turning the TOP HEX counterclockwise and thread the Tool out of the Rivnut®

THE DATA BELOW ILLUSTRATES THE STRENGTH OF THE RIVNUT®

RIVNUT® Fastener Engineering Data

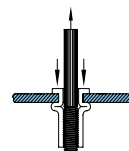
Upset Load (lbs.)		
RIVNUT * Size	Steel	
	Min. Grip	Max. Grip
1/2-13	5800	6300

Fig. 1



Ultimate thread strength (lbs.)		
RIVNUT * Size	Steel	
	Min. Grip	Max. Grip
1/2-13	17250	14500

Fig.2



Ultimate tensile strength (lbs.)	
RIVNUT * Size	Steel
1/2-13	4900

Fig. 3

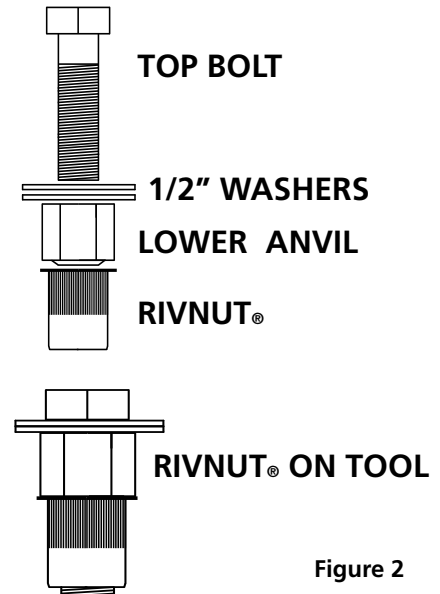
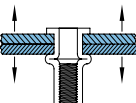


Figure 2

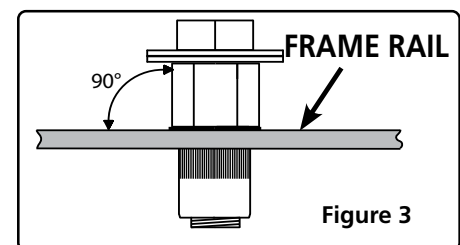


Figure 3

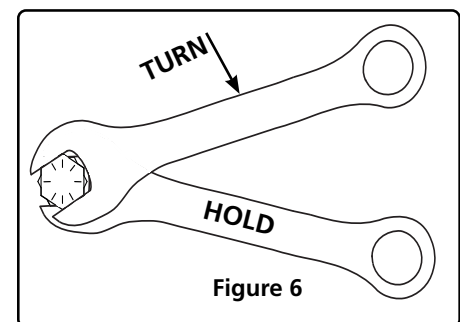


Figure 6

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Axle Mounts - Driver

42. Remove the one screw securing the ABS/brake-line bracket to the back of the OEM leaf spring mount (Figure 44).

NOTE: Before installing the upper bar axle mount, take note of the locating pin on the bottom of the mount. This pin must engage with the **forward** hole in the OEM leaf spring mount. See Figure 45.

43. Position the upper bar axle mount over the OEM leaf spring axle mount (Figure 46). Ensure you have proper engagement of the pin with the OEM mount as noted above.

44. Insert a 5/8"-18 x 6" bolt w/washer into each of the four axle mount holes (Figure 47).



Figure 44

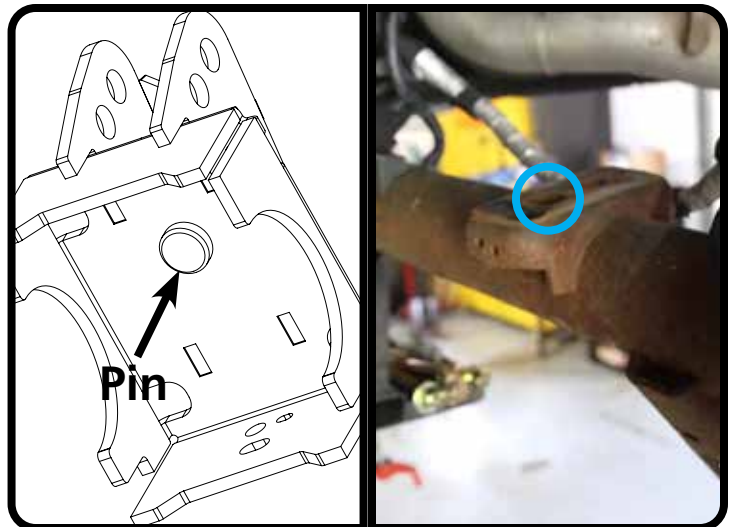


Figure 45



Figure 47

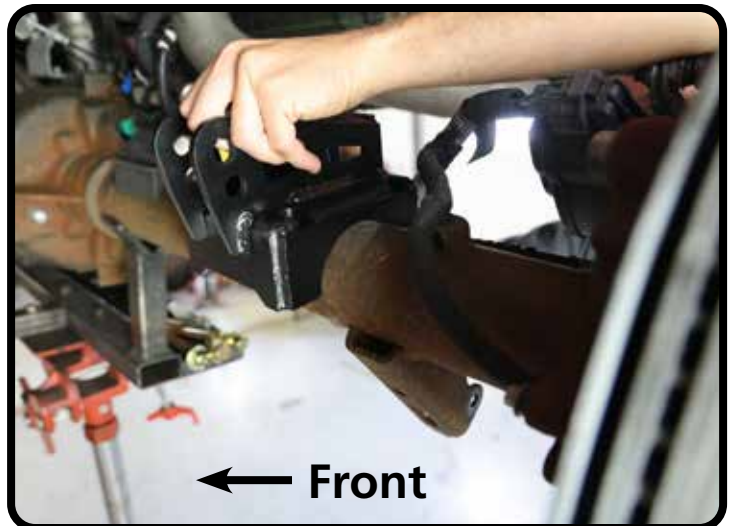


Figure 46

Axle Mounts - Driver

45. Engage the lower bar axle mount with the four bolts that are installed in the upper bar axle mount (Figure 48).

The “tail” of the lower mount should be facing to the rear (Figure 49).

46. Install a 5/8” washer and Nylok nut on each of the four axle mount bolts (Figure 50).

48. Tighten the bolts evenly in a criss-cross fashion and torque to **180 ft-lbs.**



Figure 48

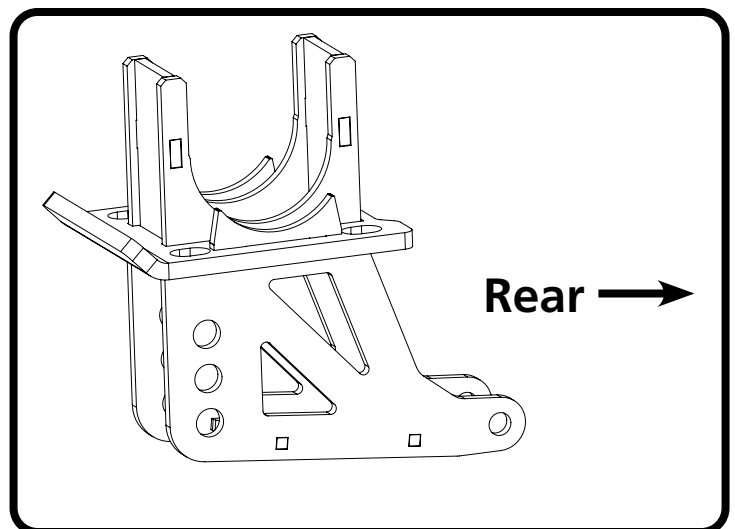


Figure 49



Figure 51



Figure 50

Axle Mounts - Passenger

49. Remove the one screw securing the ABS/ Brake-Line bracket to the back of the OEM leaf spring mount (Figure 52).

50. Position the upper bar axle mount over the OEM leaf spring axle mount. Ensure you have proper engagement of the pin in the bottom of the mount with the **forward** hole in the OEM mount (Figure 53 & 54).

51. Position the lower bar axle mount onto the axle directly below the upper mount and insert a 5/8" -18 x 6" bolt w/washer into each of the two **outboard** holes (Figure 55). Then Install a 5/8" washer and Nylok nut on the two bolts to hold the lower mount in place, but do not tighten.



Figure 52



Figure 53



Figure 55



Figure 54

Axle Mounts - Passenger

NOTE: The two inboard bolts of the upper/lower bar mounts are shared with the two offset holes of the panhard bar mount. See Figure 56. The panhard bar mount will overlap the side of the lower bar mount.

52. Insert a 5/8"-18 x 6" bolt w/washer into each of the two **inboard** holes in the upper/lower bar mounts, then slide the panhard bar axle mount over the two bolts and into position on the axle (Figure 57).

53. Install a 5/8" washer and Nylok nut on the two shared bolts, but do not tighten.

54. Slide the U-bolt over the axle and through the remaining two holes in the panhard bar axle mount, then install a 1/2" washer and Nylok nut on each of the U-bolt threads (Figure 58).

55. Tighten the upper/lower bar-mount bolts evenly in a criss-cross fashion and torque to **180 ft-lbs.**

56. Tighten the U-bolt nuts evenly and torque to **75 ft-lbs.**

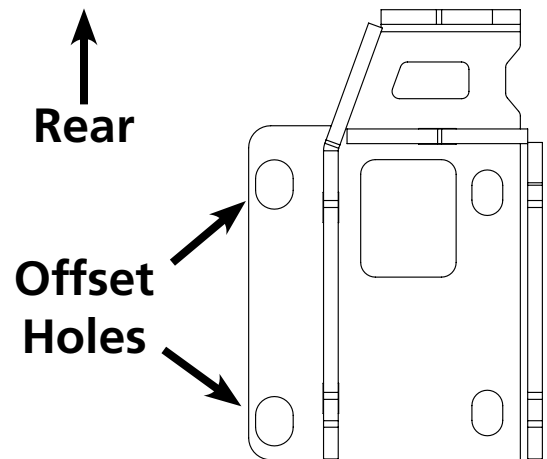


Figure 56



Figure 57



Figure 59

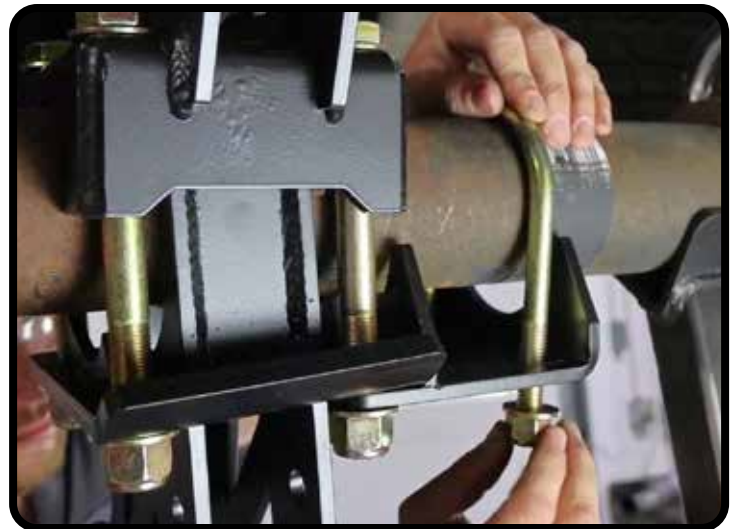
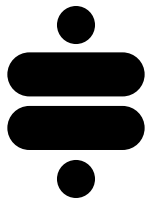
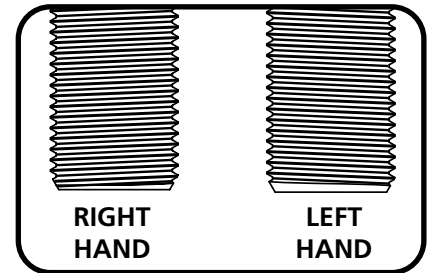
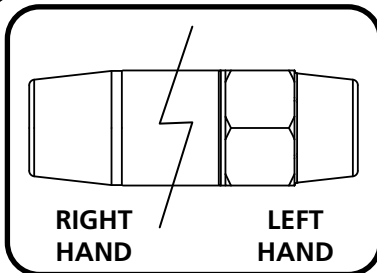
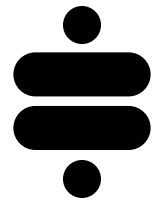


Figure 58



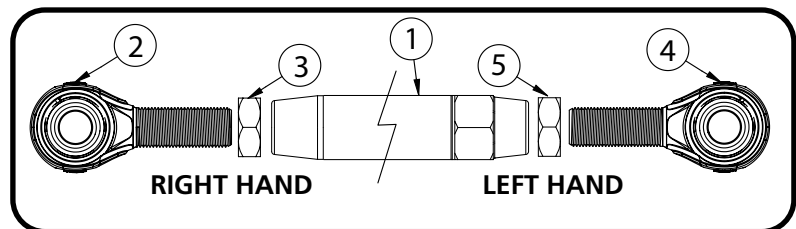
R-Joint Bar Assembly



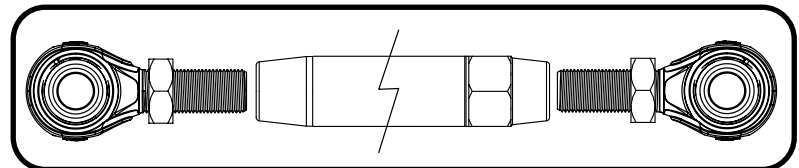
THE 4-LINK BARS, R-JOINTS, AND JAM NUTS HAVE RIGHT HAND AND LEFT HAND THREADS. THIS ALLOWS THE BAR TO BE ADJUSTED WITHOUT REMOVING IT. THE HEX END OF THE BAR IS LEFT HAND THREAD. THE LEFT HAND JAM NUT HAS A COUNTERCLOCKWISE ARROW STAMPED INTO IT. IMAGE 3 WILL HELP YOU DETERMINE THE THREADS OF THE R-JOINTS.

a. Component List:

1. 4-Link Bar
2. Right Hand Thread R-joint
3. Right Hand Thread Jam Nut
4. Left Hand Thread R-Joint
5. Left Hand Thread Jam Nut



b. Thread the jam nuts onto the threaded shank of the r-joints. Thread the nuts all the way on to the r-joint.



c. Apply anti-seize to the threads of the r-joint. This will prevent the threads from galling.



d. Thread the r-joints into the panhard and 4-link bars. Thread them in evenly until you achieve the correct center-to-center length.

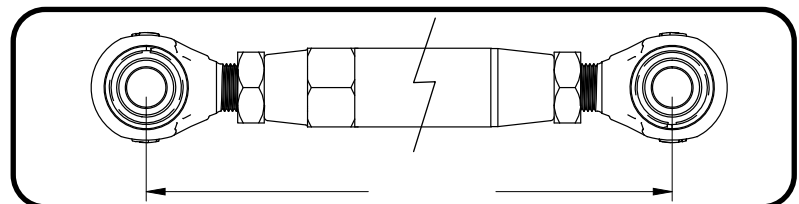
Upper Bar Length: 20"

Lower Bar Length: 24 1/4"

Panhard Bar Length: 34 7/16"

Nominal R-Joint Threads Exposed: 1/4"

Maximum R-Joint Threads Exposed: 5/8"



e. After getting one bar length set, you can put a 5/8" bolt through the r-joints to simplify setting the next bar. Adjust the bar length of the 2nd bar until it will slip on and off the bolts. Torque the jam nuts 65-75 ft-lbs using an 1 1/8" crows foot on a torque wrench.



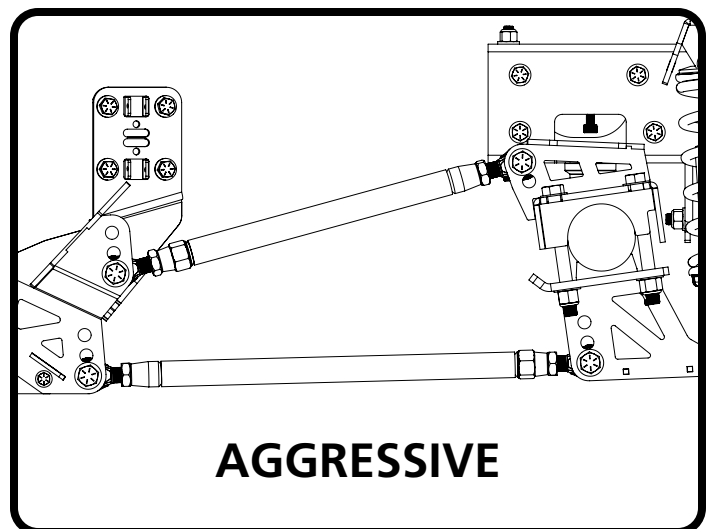
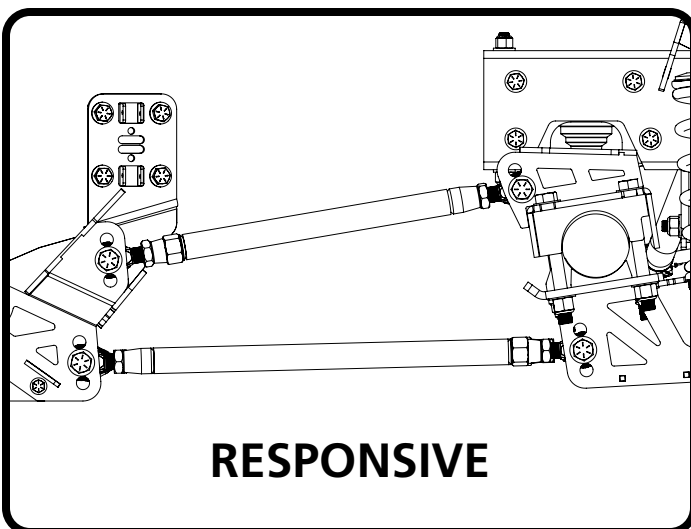
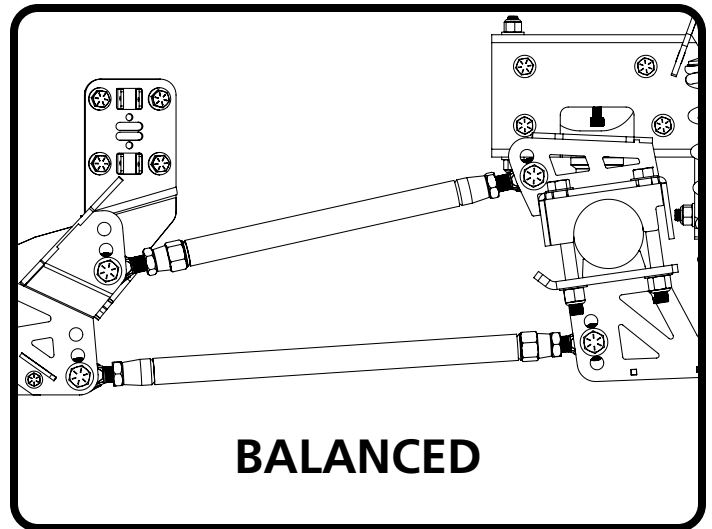
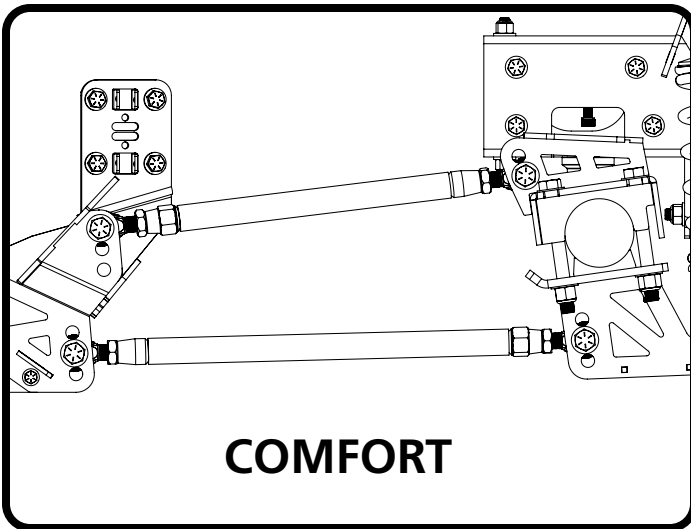
4-Link Bars

57. Assemble the upper and lower 4-link bars and panhard bar. Refer to the "R-Joint Bar Assembly" guide on the previous page.

4-Link Bar Setup Options:

The upper and lower bar mounts in this kit have multiple mounting positions designed to accommodate a wide range of performance objectives. We have provided four initial setting options below as suggestions for daily-driving setups that should satisfy most people, depending on their desired handling characteristics. Simply choose the option that matches your driving style, and mount the 4-link bars in the front & rear positions as shown for that particular setup.

If you have a desire to operate outside of these parameters, or simply enjoy tinkering and want to explore the full range of your suspension's capability, refer to the table on page 33 for a more comprehensive list of setup options and the associated performance data.



4-Link Bars

58. Once you have determined which set of mounting holes to use, insert a 70013334 spacer into each side of the R-Joint on one end of the lower bar (Figure 60). The small end of the spacer snaps into the center pivot ball of the R-Joint.

59. Position the lower bar with spacers into the lower front bar mount. Line up the R-Joint/spacers with your preferred mounting position and insert a 5/8"-18 x 3 1/2" hex bolt with 5/8" flat washer through the axle mount and R-Joint (Figure 61).

60. Install a 5/8" washer and Nylok nut on the bolt. Tighten the bolt/nut enough to eliminate any gaps between the R-Joint spacers and mounting flanges.



Figure 60



Figure 61



Figure 62

4-Link Bars

61. Insert a 70013334 spacer into each side of the R-Joint on the rear end of the lower bar (Figure 63).



Figure 63

62. Position the lower bar with spacers into the rear lower bar mount. Line up the R-Joint/spacers with your preferred mounting position and insert a 5/8"-18 x 3 1/2" hex bolt with 5/8" flat washer through the axle mount and R-Joint (Figure 64).



Figure 64

63. Install a 5/8" washer and Nylok nut on the bolt. Tighten the bolt/nut enough to eliminate any gaps between the R-Joint spacers and mounting flanges

64. Insert a 70013334 spacer into each side of the R-Joint on one end of the upper bar (Figure 65).



Figure 65

65. Position the upper bar with spacers into the front upper bar mount. Line up the R-Joint/spacers with your preferred mounting position and insert a 5/8"-18 x 3 1/2" hex bolt with 5/8" flat washer through the axle mount and R-Joint (Figure 66).



Figure 66

66. Install a 5/8" washer and Nylok nut on the bolt. Tighten the bolt/nut enough to eliminate any gaps between the R-Joint spacers and mounting flanges.

4-Link Bars

67. Insert a 70013334 spacer into each side of the R-Joint on the rear end of the upper bar (Figure 67).

68. Position the upper bar with spacers into the front upper bar mount. Line up the R-Joint/spacers with your preferred mounting position and insert a 5/8"-18 x 3 1/2" hex bolt with 5/8" flat washer through the axle mount and R-Joint (Figure 68).

69. Install a 5/8" washer and Nylok nut on the bolt. Tighten the bolt/nut enough to eliminate any gaps between the R-Joint spacers and mounting flanges.

70. Using the supplied 3/8"-16 x 1/2" hex bolt, attach the ABS/Brake Line bracket to the back of the upper bar axle mount (Figure 69). Torque to **37 ft-lbs**.

Repeat steps 58-70 on the opposite side.



Figure 67



Figure 68



Figure 69

Panhard Bar

71. Position the end of the panhard bar with the rubber bushing into the panhard bar mounting flanges on the driver side frame mount (Figure 70). **The bend in the bar should be facing up.**

72. Install an M14-2.0 x 90 bolt w/washer through the rubber bushing and secure with an M14 washer and Nylok nut (Figure 71). Do not tighten until the truck is on the ground and at ride height.

73. Swing the R-Joint end of the bar up, insert a 70013334 spacer into each side of the R-Joint, and slide it into the mount on the back of the panhard bar axle bracket (Figure 72). You may have to nudge the axle left or right to get the holes to align.

NOTE: Before making any adjustments to the length of the panhard bar, measure axle centering with the truck on level ground and at ride height.

74. Insert a 5/8"-18 x 3" hex bolt with 5/8" flat washer through the axle mount and R-Joint (Figure 73). Secure with a 5/8" washer and thin Nylock nut. Torque to **110-115 ft-lbs.**



Figure 70



Figure 71



Figure 73



Figure 72

Coil-Overs/ShockWaves

NOTE: The steps below apply to Coil-Over or Shockwave installation. The shock kits are purchased separate and will include the shock spacers & O-rings. The mounting hardware is included with this 4-link kit.

75. Slide an O-ring onto two aluminum shock spacers, and then insert the small diameter of the shock spacers into each side of the shock bearing in the shock eyelet (Figure 74).

76. Slide the shock eyelet with spacers into the upper shock mount, then insert a 1/2"-13 bolt w/washer through the mount/eyelet and secure with a 1/2" washer and Nylok nut.

77. Slide an O-ring onto two aluminum shock spacers, and then insert the small diameter of the shock spacers into each side of the shock bearing in the shock body (Figure 76).

78. Slide the shock eyelet with spacers into the lower shock mount, then insert a 1/2"-13 bolt w/washer through the mount/shock and secure with a 1/2" washer and Nylok nut.

Torque the upper & lower shock-mount hardware to **75 ft-lbs**.

Repeat steps 75-78 on the opposite side.

79. Double check all fasteners, install the wheels/tires and place the truck back on the ground. Do not forget to torque the panhard bar bushing bolt once the truck is at ride height.

80. Use the guide on the next page to check your pinion angle.

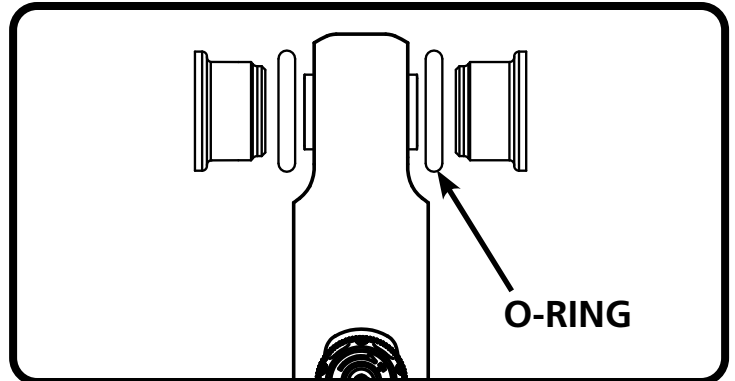


Figure 74



Figure 75

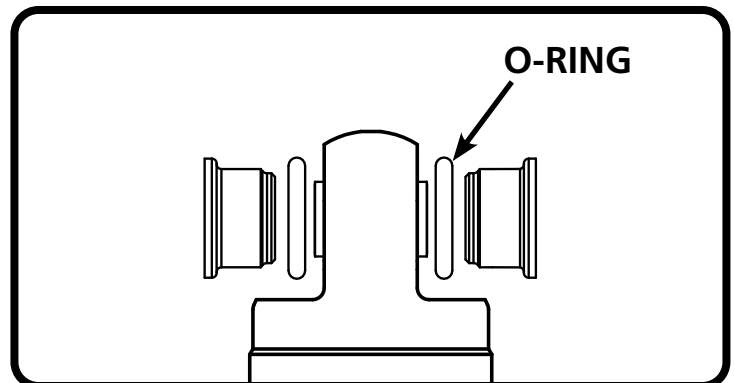
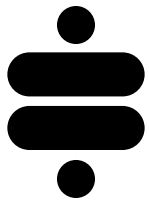


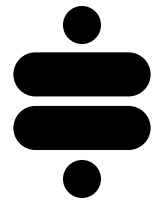
Figure 76



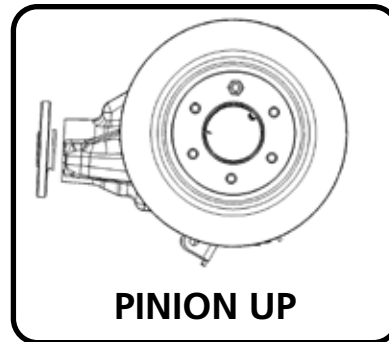
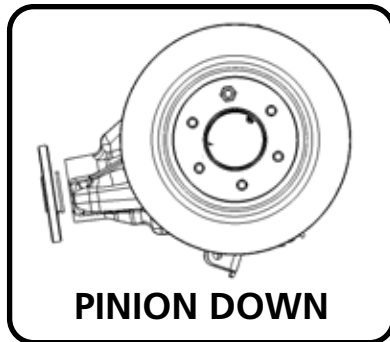
Figure 77



PINION ANGLE ASSESSMENT



To avoid any confusion in how we define “Pinion Down” and “Pinion Up”, please see the side-views illustrated below.



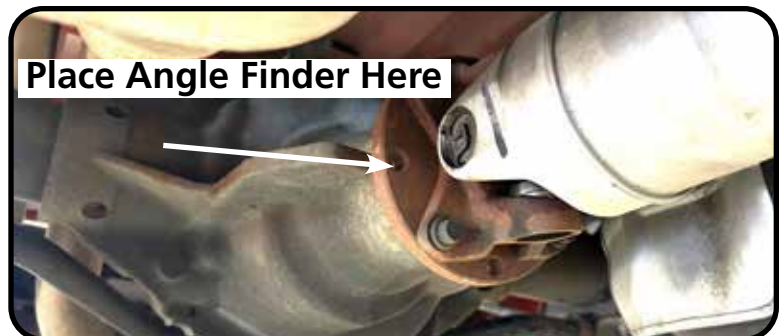
We suggest using a Klein digital angle finder (shown below) to measure the rear pinion angle. The measurements should be taken at ride height and with the truck on the same surface every time.

We suggest measuring pinion angle by placing the gauge on the flat of the pinion flange as shown in the picture below. You may need to roll the truck forward or backward to ensure the angle gauge is not rotated.

THE PINION ANGLE SHOULD BE APPROXIMATELY 3° UP.

If your pinion angle is not close to 3° up, loosen the jam nuts on the 4-link bars and shorten and lengthen the bars as necessary to correct the angle. Once complete, be sure to re-torque the jam nuts to 65-75 ft-lbs.

If you have a PowerBoost truck, check to ensure there is adequate clearance between the driveshaft and the PowerBoost battery.





TORQUE SPECIFICATIONS



LOCATION	TORQUE SPEC
1/2"-13 Frame-Mount Bolts	75 ft-lbs
1/2"-13 Nut-Plate Bolts	75 ft-lbs
M18 Front Bar-Mount Bolts	258 ft-lbs
1/2"-13 Riv-Nut Bolts	55 ft-lbs
3/8"-16 Gusset Bolts	37 ft-lbs
5/8"-18 Axle-Mount Bolts	180 ft-lbs
U-Bolt Nuts	75 ft-lbs
3/8"-16 ABS Bracket Bolt	37 ft-lbs
M14 Panhard Bar Bolt	110-125 ft-lbs
5/8"-18	110-115 ft-lbs
1/2"-13 Shock-Mount Bolts	75 ft-lbs

4-LINK BAR SETTINGS & ANTI-SQUAT DATA

Squat Resistance	Bar Position				Anti Squat % CoG= 24		Anti Squat % CoG=22		Instant Center		Ride Notes
	Upper Frame	Upper Axle	Lower Frame	Lower Axle	Crew Cab 145.4"	Reg Cab 122.8"	Crew Cab 145.4"	Reg Cab 122.8"	Forward	Height	
Not Recommended	1	5	8	9	-33.0	-27.7	-36.0	-30.2	940	-51	
	1	4	8	9	8.6	7.2	9.4	7.9	145.8	2.1	
	2	5	8	9	16.6	13.9	18.1	15.2	125.5	3.4	
	1	5	8	10	24.0	20.2	26.2	22.0	165.4	6.59	
Low	1	5	7	9	34.4	28.9	37.5	31.5	144.1	8.19	Softer response with more visible squat. Allows more rear suspension compression during acceleration. This can produce a softer, more comfortable response but may result in noticeable rear-end squat and slower weight transfer control.
	2	4	8	9	51.0	42.8	55.6	46.7	78.2	6.6	
	1	4	8	10	54.0	45.4	58.9	49.5	94.5	8.4	
	2	5	8	10	63.3	53.2	69.1	58.0	83.4	8.7	
Moderate	3	5	8	9	64.0	53.8	69.8	58.6	68.42	7.3	Controlled squat and comfortable street manners. Allows some controlled squat while providing better support under acceleration. This range generally offers a good balance of ride quality, traction, and predictable street manners.
	1	5	8	11	68.0	57.1	74.2	62.3	101.32	11.39	
	1	5	7	10	82.5	69.3	90.0	75.6	89.9	12.3	
	2	5	7	9	82.8	69.6	90.3	75.9	73.1	10	
Neutral	1	4	8	11	89.9	75.5	98.1	82.4	73.9	11	Balanced, level response under acceleration. Geometry closely balances the forces that cause the rear suspension to squat. The vehicle should remain relatively level during acceleration, providing a controlled and responsive feel without excessive squat or chassis rise.
	3	4	8	9	92.5	77.7	100.9	84.8	54	8.2	
	2	5	8	11	99.3	83.4	108.3	91.0	66.2	10.9	
	1	5	6	9	100.9	84.8	110.1	92.5	78.6	13.09	
High	3	5	8	10	101.0	84.8	110.2	92.6	56.3	9.4	Firm response with increased squat resistance. Actively resists rear suspension compression and may begin to lift or separate the chassis from the axle under acceleration. This can sharpen the vehicle's response and improve initial tire loading, but may feel firmer or more aggressive.
	1	4	7	10	108.0	90.7	117.8	99.0	66.6	11.9	
	2	4	7	9	111.6	93.7	121.7	102.3	56.5	10.4	
	2	4	8	11	117.7	98.9	128.4	107.9	55	10.7	
	1	5	7	11	119.5	100.4	130.4	109.5	69.74	13.76	
	2	5	7	10	121.0	101.6	132.0	110.9	89.6	12.2	
	3	4	8	10	121.5	102.1	132.5	111.3	47.9	9.6	
	3	5	7	9	129.3	108.6	141.1	118.5	49.6	10.6	
	3	5	8	11	129.6	108.9	141.4	118.8	49.5	10.6	
	1	4	6	9	130.5	109.6	142.4	119.6	59.3	12.8	
	1	4	7	11	138.3	116.2	150.9	126.7	57.2	13.1	
	2	4	7	10	142.0	119.3	154.9	130.1	49.7	11.6	
Very High	3	4	8	11	144.8	121.6	158.0	132.7	44.0	10.52	Aggressive tire loading and chassis separation. Produces strong chassis separation under acceleration and transfers load to the tires quickly. This may benefit certain high-traction or performance applications, but can reduce suspension compliance and make traction more sensitive on uneven surfaces.
	3	4	8	11	145.0	121.8	158.2	132.9	44	10.5	
	2	5	7	11	150.1	126.1	163.7	137.5	51.4	12.7	
	3	4	7	9	151.7	127.4	165.5	139.0	42.9	10.8	
	3	5	7	10	157.7	132.5	172.0	144.5	44.3	11.5	
	1	4	6	10	161.5	135.7	176.2	148.0	51.6	13.7	
	2	4	7	11	165.5	139.0	180.5	151.7	45.3	12.4	
	1	5	6	11	170.3	143.1	185.8	156.1	53.3	15	
	3	4	7	10	174.1	146.2	189.9	159.5	39.87	11.5	
	3	5	7	11	179.8	151.0	196.1	164.8	40.9	12.1	
	1	4	6	11	186.0	156.2	202.9	170.4	46.7	14.4	
	1	4	6	11	186.0	156.2	202.9	170.4	46.7	14.4	
Extreme	3	4	7	11	192.0	161.3	209.5	175.9	37.7	11.9	Specialized setup requiring careful suspension tuning. Creates a very aggressive chassis reaction with substantial separation under acceleration. This range is generally suited to specialized applications and can cause harsh response, sudden tire loading, reduced compliance, or wheel hop if the rest of the suspension is not properly matched.
	3	5	6	9	193.2	162.3	210.8	177.0	39.1	12.5	
	2	5	6	11	200.3	168.3	218.5	183.5	42.01	13.9	
	3	4	6	9	210.0	176.4	229.1	192.4	35.74	12.4	
	2	4	6	11	212.8	178.8	232.1	195.0	38.6	13.6	
	3	5	6	10	213.5	179.3	232.9	195.6	36.56	12.9	
	3	4	6	10	226.0	189.8	246.5	207.1	34.2	12.75	
	3	5	6	11	229.0	192.4	249.8	209.8	34.84	13.2	
	3	4	6	11	238.8	200.6	260.5	218.8	33.02	13.02	

Notes: Roll center height = 16.8"

Anti-squat percentage describes the suspension geometry's tendency to resist squat. Actual vehicle behavior also depends on power, tire grip, spring rate, shock tuning, vehicle weight, center of gravity, and road conditions.

4-LINK BAR POSITIONS

