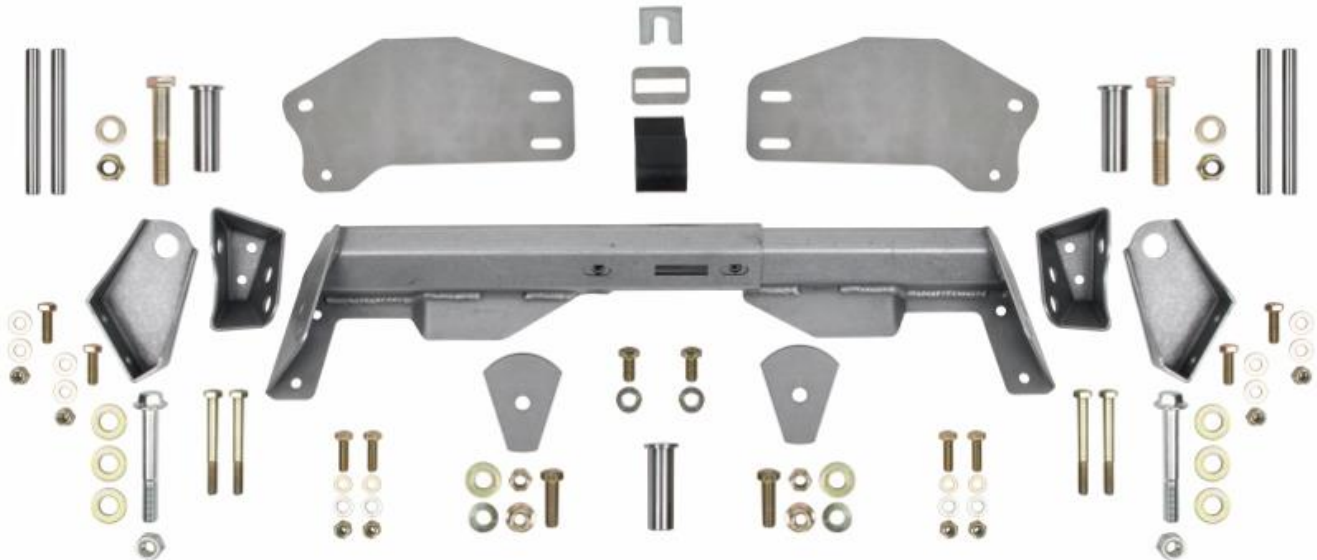




Detroit Speed
 Exo-Brace Kit
 1979-93 Mustang & 1979-86 Capri
 P/N: 010115DS

The Detroit Speed Exo-Brace Kit is an effective bolt-on solution that improves the rigidity of the upper torque box, prevent damage to the chassis and improves the safety of the vehicle. The factory torque boxes weaken over time and are known to tear or even rip completely out of the vehicle resulting in unpredictable handling. Detroit Speed has developed this kit to fix this notorious failure point on the Fox Body Platform and is a highly recommended addition to any Fox Body Mustang. All necessary hardware is included in the kit.



Scan the QR code to guide you through the step-by-step installation video of the 1979-93 Ford Mustang & 1979-86 Mercury Capri DSE Exo-Brace Kit installation.

Item	Description	Quantity
1	Upper Link Weld Assembly, LH & RH	2
2	Swivel Link Brace Weld Assembly, LH & RH	2
3	Floor Brace Weld Assembly, LH & RH	2
4	Doubler Plate	2
5	Installation Kit	1
6	Hardware Kit	1
7	Instructions	1

IMPORTANT:

All work should be performed by a qualified technician. Please read the entire set of instructions and fully understand all of the steps involved before beginning the project. Always make sure to wear the appropriate safety equipment for the job and properly support the vehicle. If you have any questions before, during, or after the installation, feel free to contact Detroit Speed by phone at (704) 662-3272 or by email at tech@detroitsspeed.com.

NOTE: This kit can also be welded in to support vehicles with 400+ Hp.

Installation/Hardware Checklist – DSE Upper Torque Box Reinforcement Kit			
Part Number	Description	Quantity	Check
200072	Installation Kit	1	
99010168	Jounce Bumper Shim	1	
99010169	Doubler Washer	2	
99010170	Allen Head Tapped Crush Sleeve	2	
99010171	Jounce Bumper	1	
99010172	1/2" OD x 3/8" ID x 5" L Crush Tube	4	
99020115	1/8" x 6" Extension Drill Bit	1	
99040669	Frame rail Drill Guide	1	
920009FS	1/8" Thick Body Shim	8	
920035FS	1/16" Thick Body Shim	8	
200073	Hardware Kit	1	
950133FS	1/4" x 1" L Self Drill Point Screw	2	
950027FS	3/8"-16 x 3/4" L Hex Head Bolt	2	
950132FS	5/16"-18 x 3" L Hex Head Bolt	4	
980082FS	M12-1.75 x 100 Hex Head Bolt	2	
980127FS	7/16"-20 x 1-1/2" L Hex Head Bolt	2	
980129FS	7/16"-20 x 3/4" L Hex Head Bolt	2	
980111FS	5/16"-18 x 1" L Hex Head Bolt	8	
960055FS	M12-1.75 Nylock Nut	4	
960050FS	7/16"-20 Nylock Nut	2	
960107FS	7/16"-20 Flanged Top Lock Nut	2	
960039FS	5/16"-18 Nylock Nut	12	
970020FS	9/16" SAE Washer	6	
970017FS	1/2" SAE Extra Thick Washer	4	
970026FS	M12 Flat Washer	4	
970042FS	7/16" SAE Washer	4	
970023FS	3/8" SAE Washer	2	
970043FS	5/16" SAE Washer	12	
980016FS	5/16" AN Washer	32	

Fastener Torque Specifications	
Application	Torque (ft-lbs)
M12-1.75 Hardware	75
7/16"-20 Hardware	50
3/8"-16 Hardware	35
5/16"-18 Hardware	25

Recommended Tools:

- Properly rated floor jack, support stands, and wheel chocks
- Combination wrench set and ratcheting socket wrench and socket sets.
- Torque Wrench: 0-75 ft-lbs. range
- Die Grinder/Cut off Wheel.
- Drill and/or 90° Drill.
- Drill Bit Set and 1/2" Uni-Bit
- 3/4" Hole Saw
- Snap Punch
- Safety Glasses
- 12" Extra Length 1/2" Drill Bit (available at Lowes, Home Depot, Amazon, etc.)

Installation:

1. Confirm that all components and hardware have been included in the kit using the parts list and picture for reference on page 1 and 2.
2. On a smooth level surface, block both sides of the rear tires. Loosen the rear lug nuts and jack up the front and then the rear of the vehicle. Support the car in the front and the rear by securely placing jack stands under the frame so the car is sitting level. Remove the rear wheels and tires. **NOTE:** It is strongly recommended to remove the rear axle from the vehicle to make for an easier installation.
3. From inside the vehicle, lift up the rear seat bottom to remove it from the inside of the vehicle. Remove the passenger side fold down rear seat back by removing the fastener at the side of the seat back. Remove the two fasteners under the center of the seat back at the transmission tunnel (Figure 1).

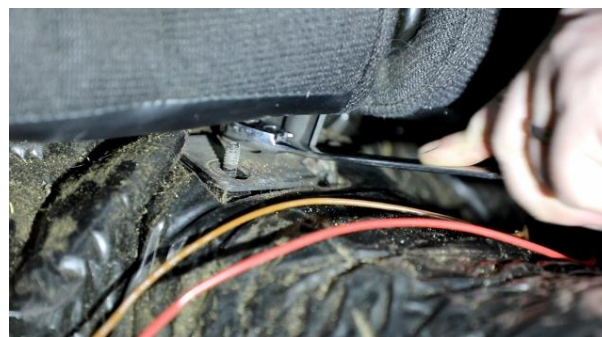
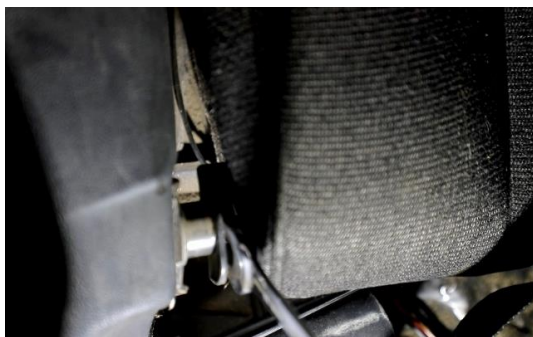


Figure 1 – Remove Rear Seat

4. Fold the seat back down and lift up the carpet to gain access to the fold down bracket bolts. Remove both bolts holding the seat back to the fold down bracket. Lift the fold down bracket up and remove the seat back from the vehicle (Figure 2).

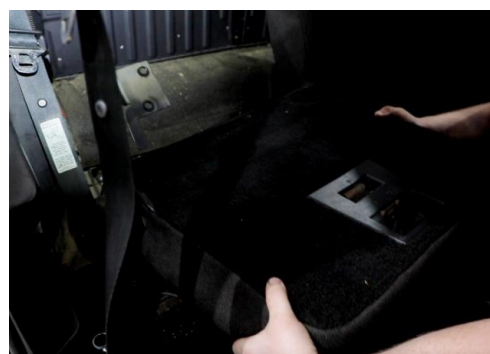


Figure 2 – Remove Passenger Seat Back

5. Remove the driver side fold down rear seat back by removing the fastener at the side of the seat back. Fold the seat down and remove the screws holding the carpet to the seat back. Remove the four bolts holding the seat back to the fold down brackets. Remove the seat back from the vehicle (Figure 3).



Figure 3 – Remove Driver Side Seat Back

6. Clamp the seat back carpet up so it's off the floor pan. Use a knife to cut loose the floor pan insulation from around the seat bottom bracket on both sides of the transmission tunnel. Remove this material from the vehicle (Figure 4).

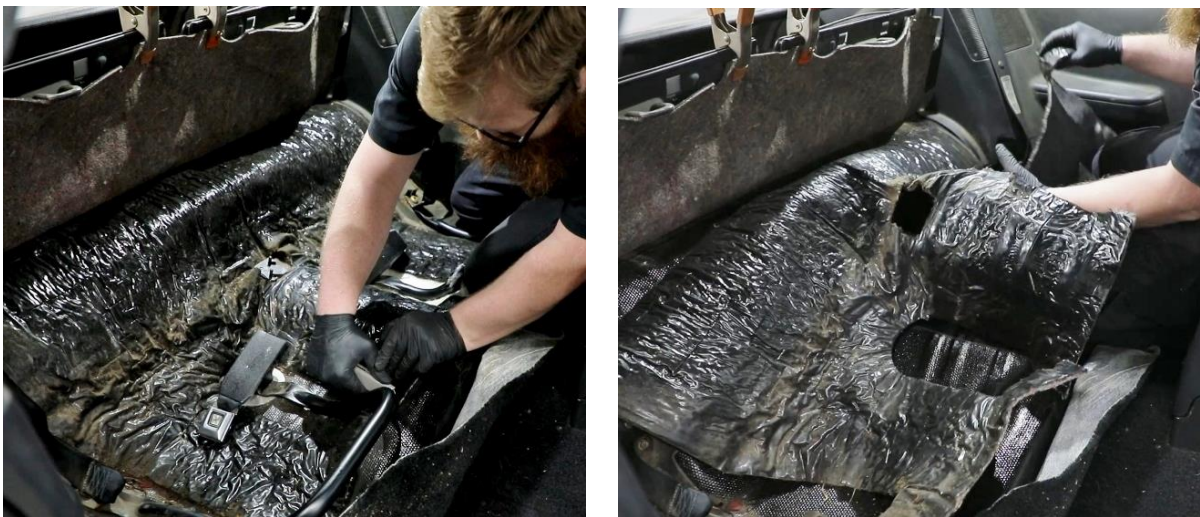


Figure 4 – Remove Sound/Heat Material

7. Remove the driver and passenger side seat back brackets from the floor pan by removing the three bolts holding down each bracket (Figure 5).

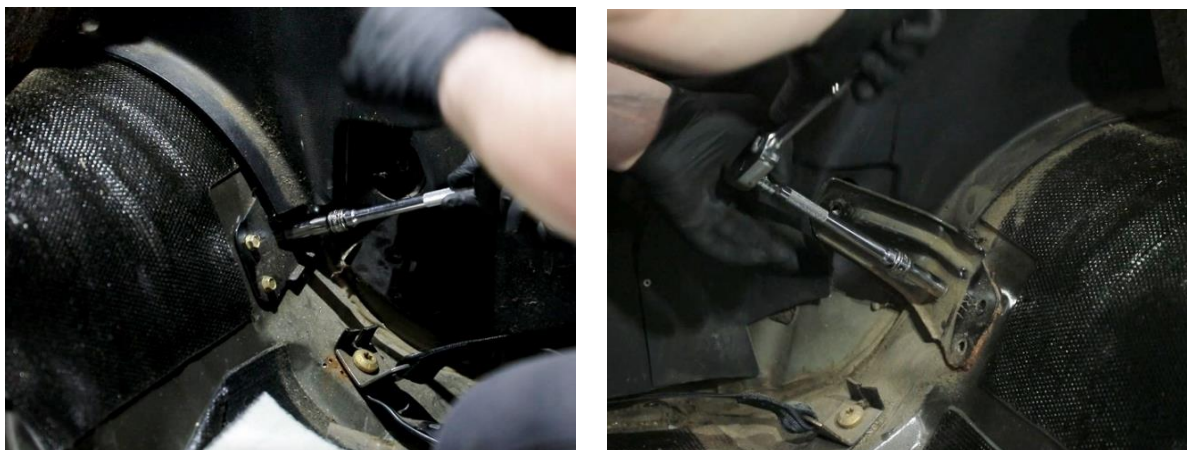


Figure 5 – Remove Seat Back Brackets

8. Use a straight edge and cut the sound/heat deadening material next to where the seat back brackets were removed in the previous step from the floor pan. Also remove a section of this material above the transmission tunnel where it meets the floor pan (Figure 6).

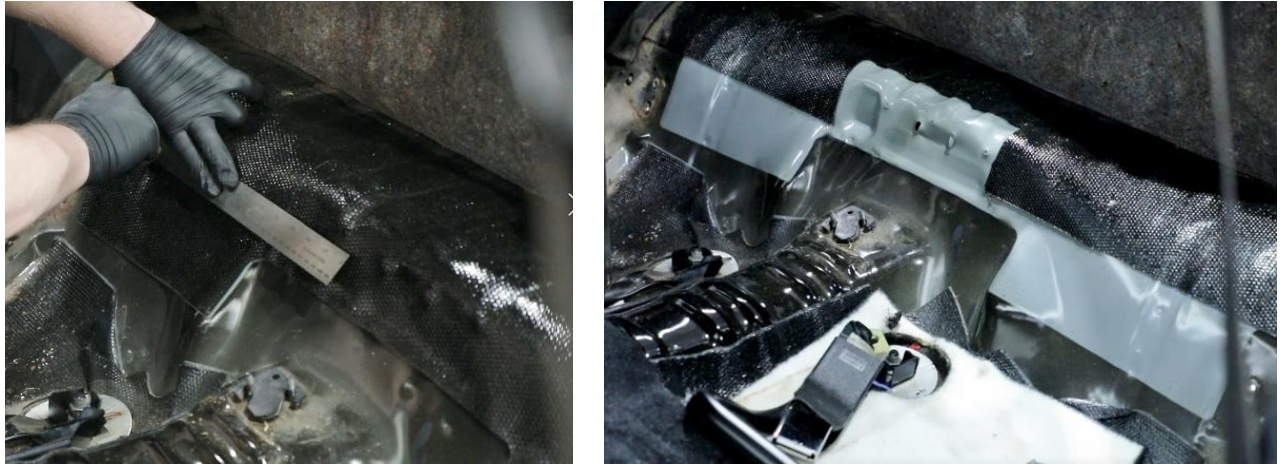


Figure 6 - Remove Sound/Heat Deadening Material

9. Support the rear axle under the center section and remove the lower shock bolts. Lower the rear axle to allow it to drop down (Figure 7).

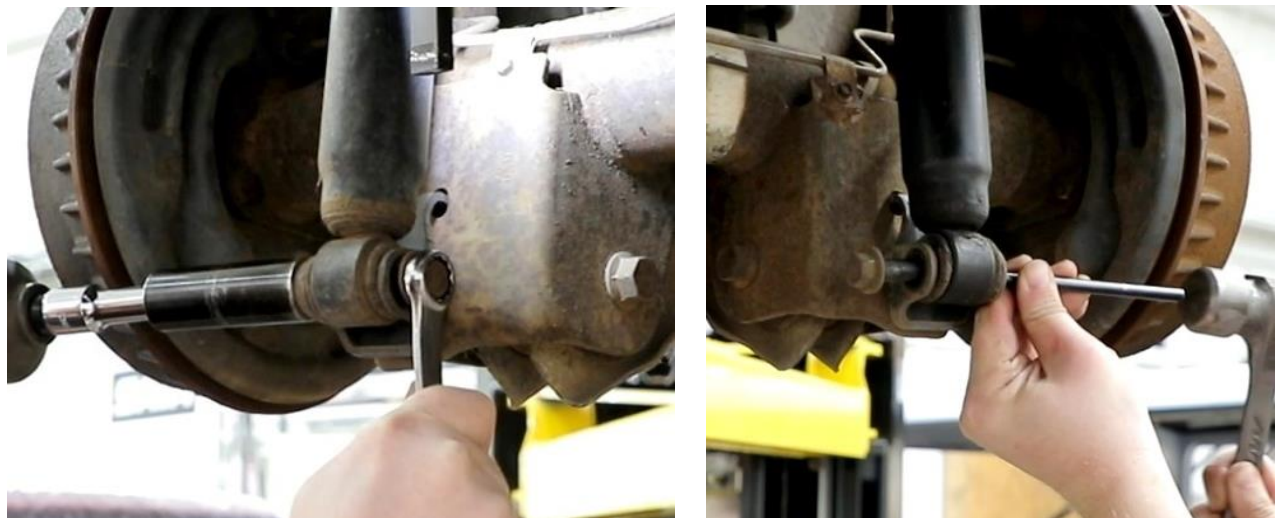


Figure 7 - Remove Lower Shock Bolts

10. Remove the driveshaft by removing the four bolts holding the driveshaft flange to the rear differential (Figure 8).



Figure 8 - Separate Driveshaft from Differential

11. Disconnect the E-brake cables from the T-bar under the vehicle. Remove the E-brake cables from the body by removing the screws holding the cables to the lower torque box. (Figure 9).

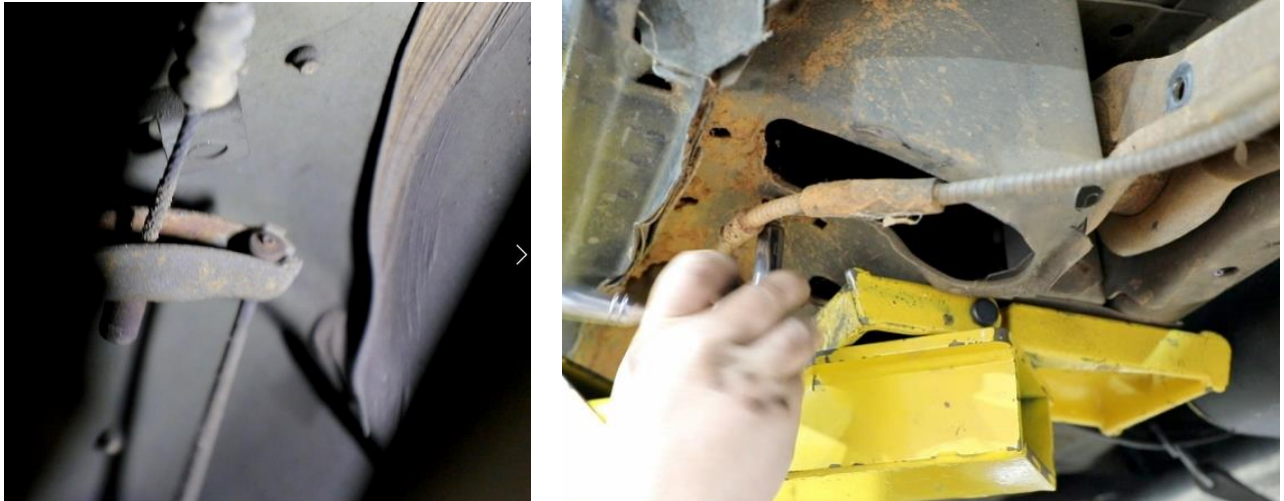


Figure 9 – Remove E-Brake Cables

NOTE: If you have a 4-cylinder vehicle, remove the E-brake cable bracket from the vehicle (Figure 10).



Figure 10 – Remove E-Brake Bracket

12. Separate the brake line from the rear axle at the body by removing the bolt on the body bracket near the driver's side upper control arm mount (Figure 11).



Figure 11 – Remove Brake Line

13. Place jack stands under the front of the pinion on the rear differential and at the axle tubes. Spray the trailing arm bolts with penetrant. Remove the bolts from both upper and lower trailing arms at the rear axle (Figure 12).

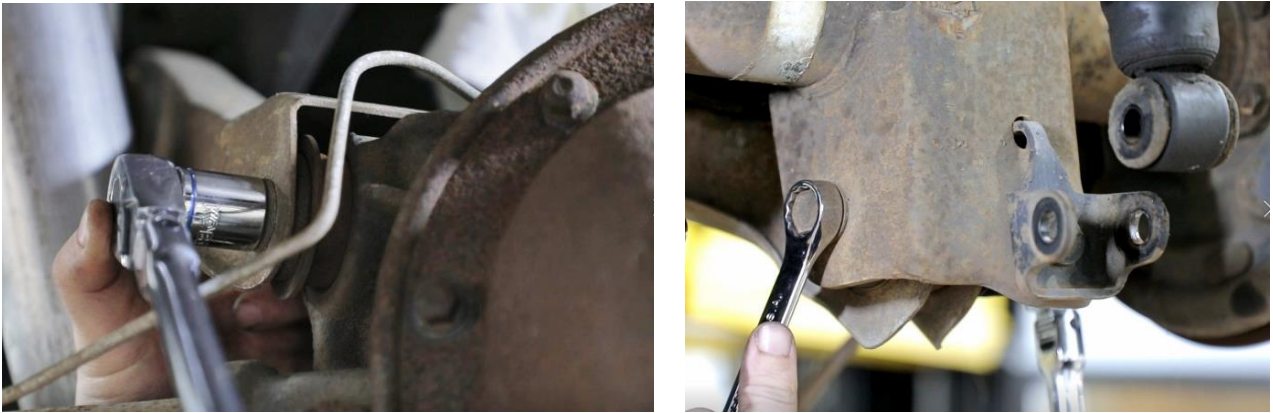


Figure 12 – Remove Trailing Arm Bolts

14. Pry the trailing arms from the rear axle mounts and drop the rear axle out of the vehicle (Figure 13).



Figure 13 – Remove Rear Axle

15. Remove the driveshaft from the vehicle (Figure 14).

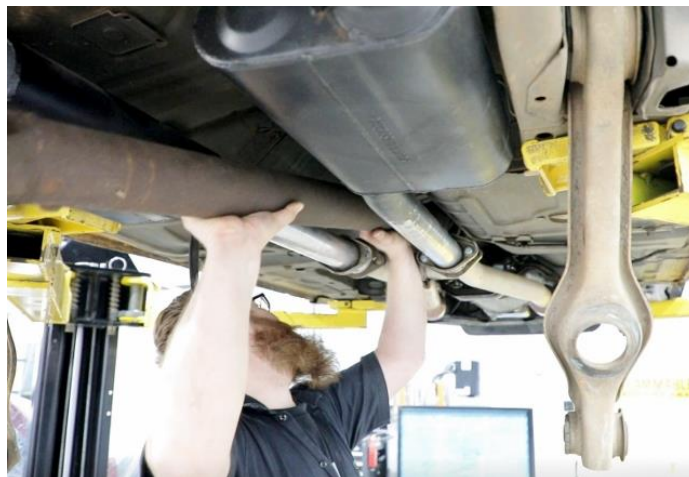


Figure 14 – Remove Driveshaft

16. Separate the rear exhaust system from the front and remove the exhaust hangers from the isolators (Figure 15). Set the rear exhaust system to the side.



Figure 15 - Remove Exhaust

17. Remove the upper trailing arms from the vehicle (Figure 16).



Figure 16 - Remove Upper Trailing Arms

18. Spray penetrant on the exhaust hanger bolts. Remove the exhaust hangers and isolators from the vehicle by removing the two bolts in each bracket under the upper trailing arm pocket. Remove the U-nuts from the trailing arm pocket (Figure 17).



Figure 17 - Remove Exhaust Hangers

19. Remove the pinion bumper and bracket by removing the three bolts from the vehicle. Remove the three U-nuts from the vehicle (Figure 18).



Figure 18 - Remove Pinion Bumper

20. Drill out the pop rivets holding the brake line bracket to the vehicle. Remove the bracket and carefully bend the brake line down at the clamp in the tunnel so it's out of the way (Figure 19). **NOTE:** Use this opportunity to inspect the brake lines.

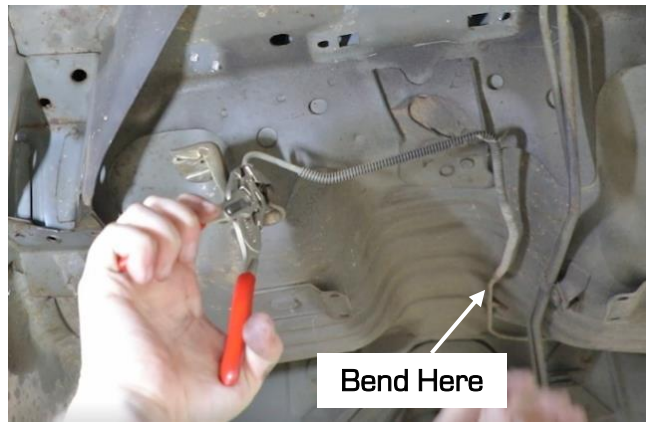


Figure 19 - Remove Brake Line Bracket

21. Use a punch to remove the remaining pop rivet from the floor pan (Figure 20).

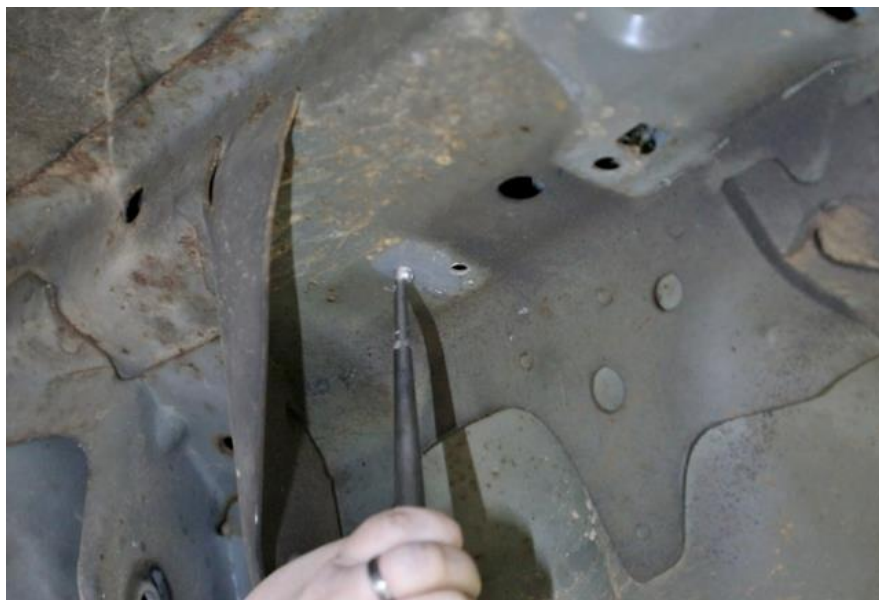


Figure 20 - Remove Pop Rivets

22. Carefully pull the fuel lines away from the vehicle to give you room at the floor pan between the upper trailing arm pockets (Figure 21).



Figure 21 - Bend Fuel Lines

23. Test fit each side to the upper trailing arm pocket. If the lower hole in the upper link assembly does not line up with the factory trailing arm hole, you will need to flatten the upper trailing arm pocket doubler (Figure 22). This will allow the upper link weld assembly to sit flat against the floor pan so the holes in the upper link assembly line up with the pocket holes. **NOTE:** If no other suitable tools, shape a 2x4 into a driver to beat the flange to the floor pan.



Figure 22 - Test Fit Upper Link Weld Assembly

24. Make sure the floor pan has no gap between the sheet metal. Figure 23 below shows a gap in the sheet metal on the left and the no gap in the picture on the right.

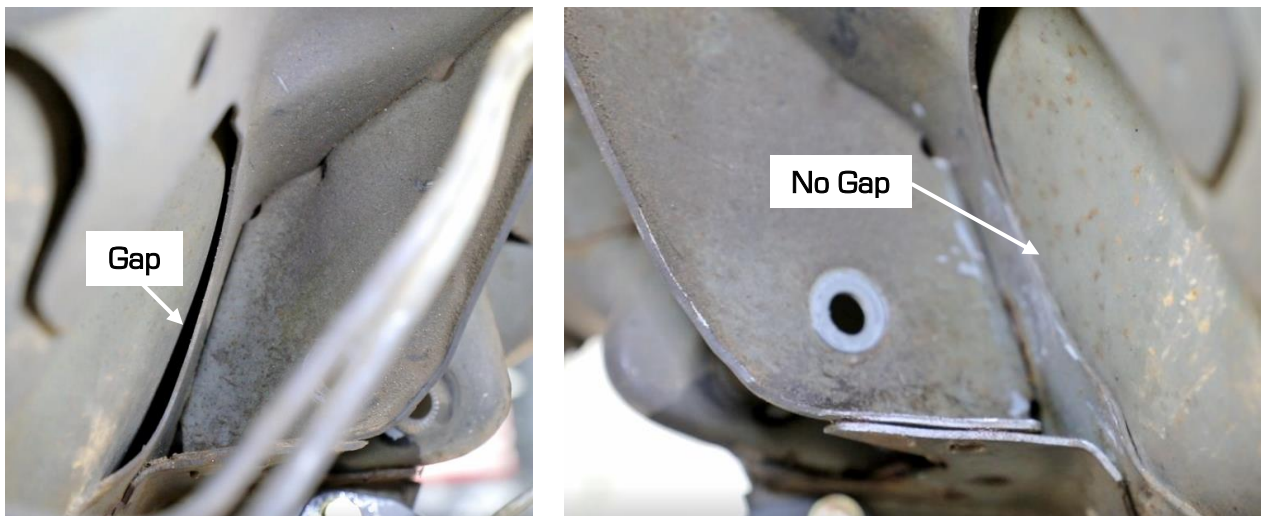


Figure 23 - Flatten Gap

25. For 1979-89 vehicles, continue to the next step. For 1990-93 vehicles, skip to **Step 33**.

1979-89 Vehicles:

26. Slide the left and right hand upper link weld assembly together so it is fully collapsed. Place the assembly into the vehicle so it sits against the floor pan and extend the upper link assembly, so it reaches the factory link pockets (Figure 24).



Figure 24 – Locate Upper Link Weld Assembly

27. Install the provided M12-1.75 x 100mm hex head bolts, washers and Nylock nuts through the lower hole in the upper link weld assembly and into the hole in the factory upper link pocket on both sides of the vehicle. (Figure 25).



Figure 25 – Locate Upper Link Weld Assembly.

28. Make sure the weld assembly is tight against the factory link pocket by clamping them together on both sides. Install two of the provided 3/8-16 x 3/4" L hex head bolts and washers into the slotted holes in the weld assembly and tighten. Tighten the M12-1.75 and 3/8"-16 hardware (Figure 26).



Figure 26 – Clamp Weld Assembly

29. Transfer punch the two seat belt threaded holes from inside the vehicle to the backside of the upper link weld assembly (Figure 27).



Figure 27 - Transfer Punch Weld Assembly

30. Remove the upper link weld assembly from the vehicle and drill out the two marked locations on the back of the weld assembly using a 15/32" (Figure 28). **NOTE:** It is recommended that pilot holes be drilled first before drilling the 15/32" holes.



Figure 28 - Drill Upper Link Weld Assembly

31. Paint the backside of the upper link weld assembly that goes against the floor pan. Re-install the weld assembly back into the vehicle using the existing M12-1.75 and 3/8"-16 hardware that has been previously used. Run a 7/16"-20 tap into the seat belt anchors through the holes that were drilled through the upper link weld assembly in the previous step (Figure 29).



Figure 29 - Re-Install Weld Assembly

32. Install the provided 7/16"-20 x 1-1/2" L hex head bolts and washers through the drilled holes in the weld assembly and thread them into the seat belt anchors (Figure 30). From inside the vehicle, install the provided 7/16"-20 Nylock nuts and washers on the bolts sticking through the floor pan. Skip to **Step 42**.



Figure 30 - Install Mounting Hardware

1990-93 Vehicles:

33. Locate the seat belt holes on both sides of the upper link weld assembly. Measure the gap between the welds on the upper link assembly, which should be 1-1/4". Divide this number by two, which should be 5/8" and scribe a vertical center line. Then, measure 3/4" up from the bottom edge and scribe a horizontal center line (Figure 31). **NOTE:** This hole location is not critical.

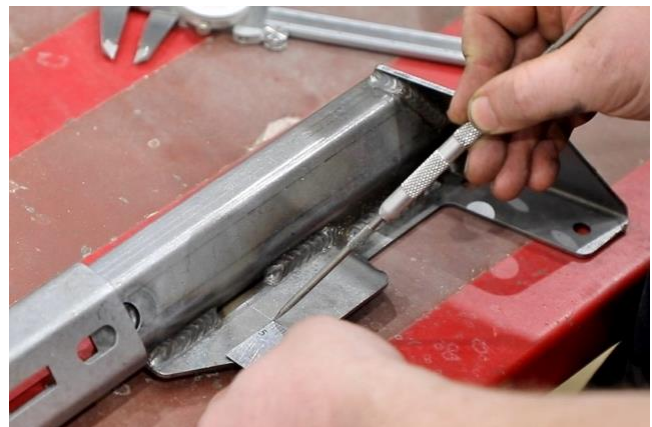


Figure 31 - Locate Seat Belt Holes

34. Center punch and drill both marked locations using a 1/2" drill bit (Figure 32). **NOTE:** It is recommended that pilot holes be drilled first before drilling the 1/2" holes.



Figure 32 - Drill Seat Belt Holes

35. Paint the backside of the upper link weld assembly that goes against the floor pan. Install the provided M12-1.75 x 100mm hex head bolts, washers and Nylock nuts through the lower hole in the upper link weld assembly and through the hole in the factory upper link pocket on both sides of the vehicle. (Figure 33).



Figure 33 – Install Upper Link Assembly

36. Make sure the weld assembly is tight against the factory link pocket by clamping them together on both sides (Figure 34).



Figure 34 – Clamp Upper Link Assembly

37. Install two of the provided 3/8-16 x 3/4" L hex head bolts and washers into the slotted holes in the weld assembly with medium strength Blue Loctite 242 on the threads. Tighten the M12-1.75 and 3/8"-16 hardware (Figure 35). Torque the 3/8"-16 bolts to 35 ft-lbs.

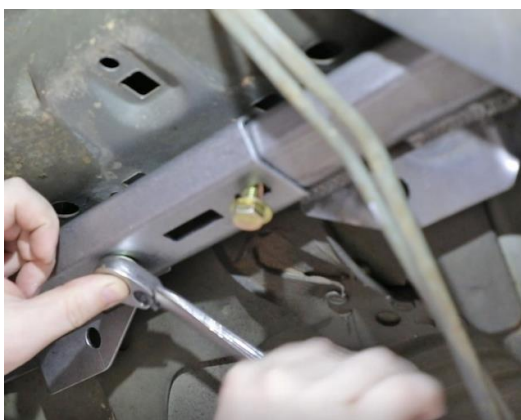


Figure 35 – Tighten Upper Link Assembly

38. Transfer punch the two holes that were drilled in the upper link assembly from Step 34 to the floor pan. Drill both marked locations using a 1/2" drill bit (Figure 36). **NOTE:** It is recommended that pilot holes be drilled first before drilling the 1/2" holes.



Figure 36 - Drill Floor Pan

39. Place one of the provided 7/16" washers on the 7/16"-20 x 1-1/2" L hex head bolt and place it through the hole drilled in the upper link assembly from Step 32. Place one of the provided 7/16"-20 flanged top lock nut in between the upper link assembly and the floor pan with the flanged side of the nut against the upper link assembly. Thread the bolt into the flanged nut. Place the extra thick 1/2" washer on the end of the bolt so it fits between the flanged nut and the floor pan (Figure 37).



Figure 37 - Install Mounting Hardware

40. Use a wrench on the flanged nut and tighten the hardware so the bolt passes through the floor pan (Figure 38). Repeat Steps 39 and 40 for the opposite side.



Figure 38 - Tighten Mounting Hardware

1990-93 Vehicles Only:

41. From inside the vehicle, place the doubler washers over the 7/16"-20 bolts sticking through the floor pan. Locate them so they sit flush against the floor pan. Install the provided 7/16"-20 Nylock nuts on the bolts and tighten (Figure 39). Torque to 50 ft-lbs.

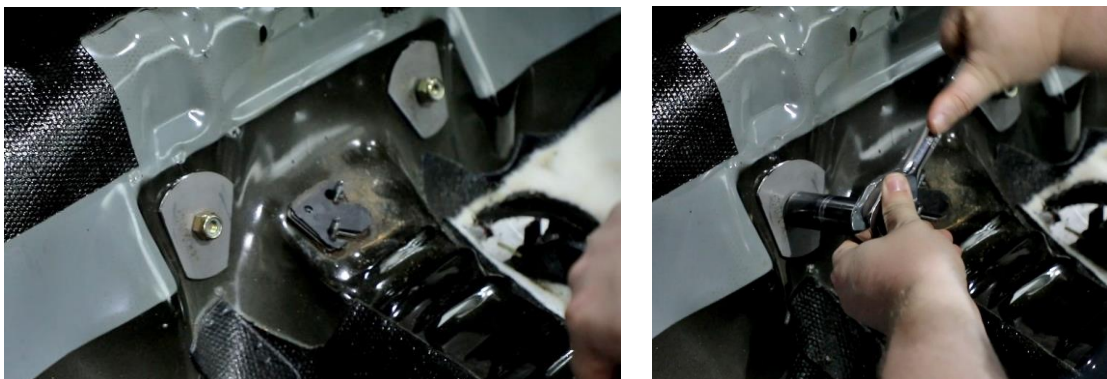


Figure 39 - Install Doubler Washers

1979-93 Vehicles:

42. Tighten the M12-1.75 x 100 hex head bolts that pass through the upper trailing arm pocket. Once both sides are tight, remove the clamps (Figure 40). **NOTE:** Do not overtighten as that would cause the pockets to collapse.



Figure 40 - Tighten Upper Link Assembly

43. Use the provided 1/8" extended drill bit to transfer the four 5/16" hole locations from the upper link weld assembly onto the trunk floor. Drill the four locations with the 1/8" drill bit (Figure 41). **NOTE:** The pilot drill will need to be drilled at an angle in relation to the floor pan, this is just a pilot hole location and will be corrected in the next step.



Figure 41 - Transfer Weld Assembly Holes

44. From inside the vehicle, locate your four pilot holes. Verify that the pilot holes are lined up with the holes in the upper link weld assembly. If they look close, drill out the four pilot holes using a 5/16" drill bit. If the pilot holes do not look lined up, gradually step up to a 5/16" drill size while correcting the hole location so it lines up with the 5/16" holes in the upper link assembly (Figure 42). **NOTE:** It is recommended that pilot holes be drilled first before stepping up to the 5/16" final drill size.



Figure 42 – Locate Upper Link Holes

45. Hammer the sheet metal around the four holes to sit against the upper link weld assembly (Figure 43).



Figure 43 – Hammer Sheet Metal

46. Place the provided 5/16" AN washers on the 5/16"-18 x 1" L hex head bolts and install them from underneath the vehicle through the upper link weld assembly and into the vehicle. Place the provided 5/16" SAE washers and 5/16"-18 Nylock nuts onto the bolts for all four holes. Tighten the hardware until the floor pan and the upper link assembly begin to crush and stop (Figure 44).

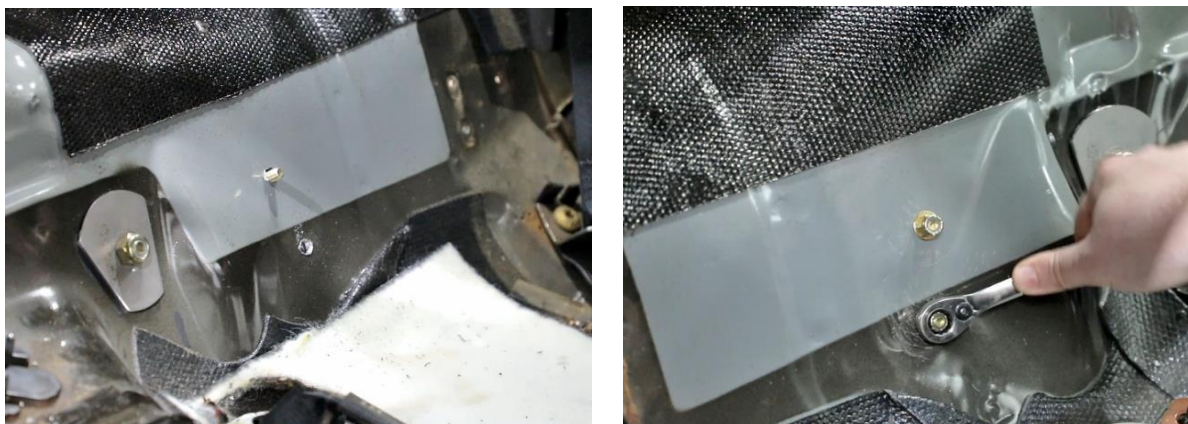


Figure 44 – Install Hardware

47. Install the provided 1/16" and 1/8" body shims as needed between the upper link weld assembly and the floor pan around the four 5/16"-18 bolts. They will take up the gap between the weld assembly and floor pan where the four bolts were installed (Fig. 45).

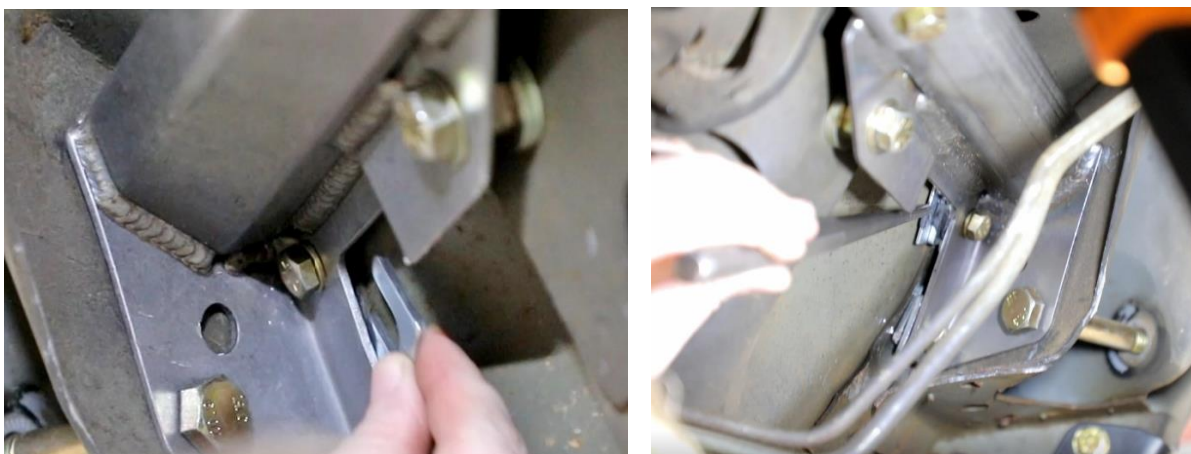


Figure 45 - Install Body Shims

48. Tighten all four 5/16"-18 bolts. Use a snap/center punch to locate the center of the upper hole in the upper link weld assembly. With a 90° drill and a short pilot drill bit sized to reach, drill through the inside of both upper trailing arm pockets (Figure 46).

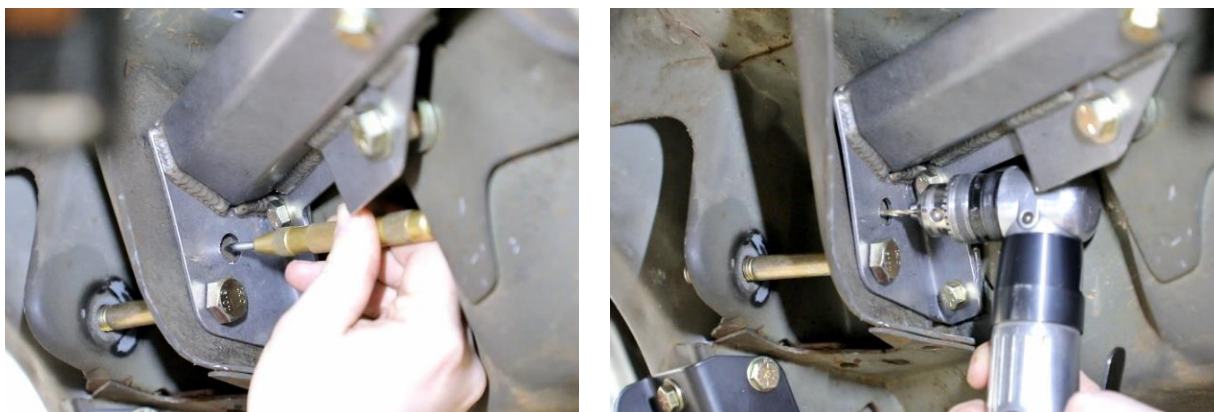


Figure 46 - Drill Pilot Hole

49. Using a Uni-bit, drill through the pilot holes on both upper pockets to a final size of a 1/2" (Figure 47). **NOTE:** Reference the video at 16:55 for a better explanation of this procedure.

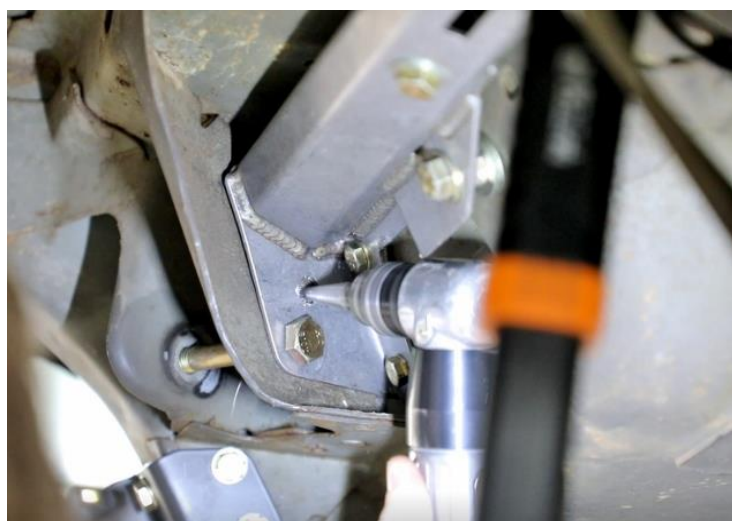


Figure 47 - Drill Upper Hole

50. Loosen the M12-1.75 bolts in the upper trailing arm pockets. Place the outer Swivel Link brace weld assemblies in between the frame rail and the upper trailing arm pockets. Install the M12-1.75 bolts back through the pocket and through the inboard side of the Swivel Link brace assemblies (Figure 48).

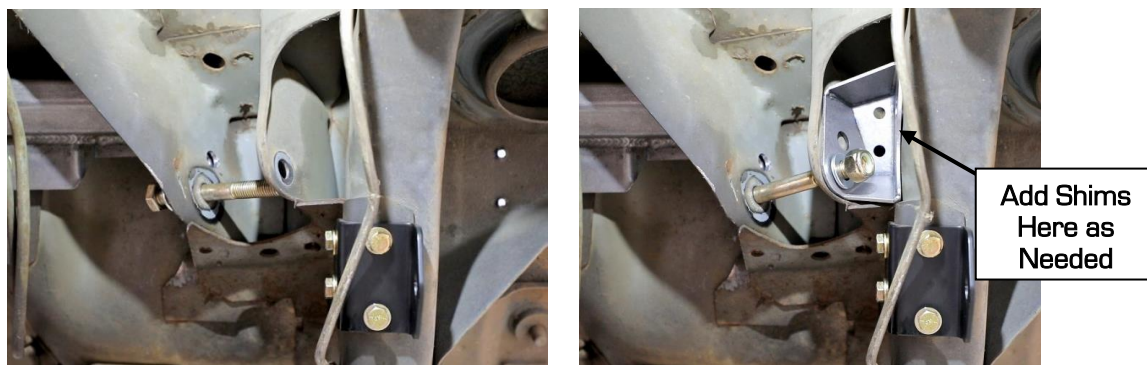


Figure 48 – Position Swivel Link Brace Weld Assembly

51. There are six provided 9/16" SAE washers that you can use for shims as needed to take up any gap between the inboard frame rail and the Swivel Link brace assembly. Line the washer(s) up with the hole on the outboard side of the Swivel Link brace assembly and up against the frame rail as needed (Figure 49). Tighten the M12-1.75 bolts to hold the Swivel Link brace assemblies in place.



Figure 49 – Install Washers as Needed

52. Use a snap/center punch to locate the center of the upper hole in the Swivel Link brace weld assemblies. Drill a pilot hole through the two marked locations. Drill to a final hole size using a 1/2" drill bit (Figure 50). **NOTE:** It is recommended that you gradually step up in drill size before drilling the 1/2" hole.

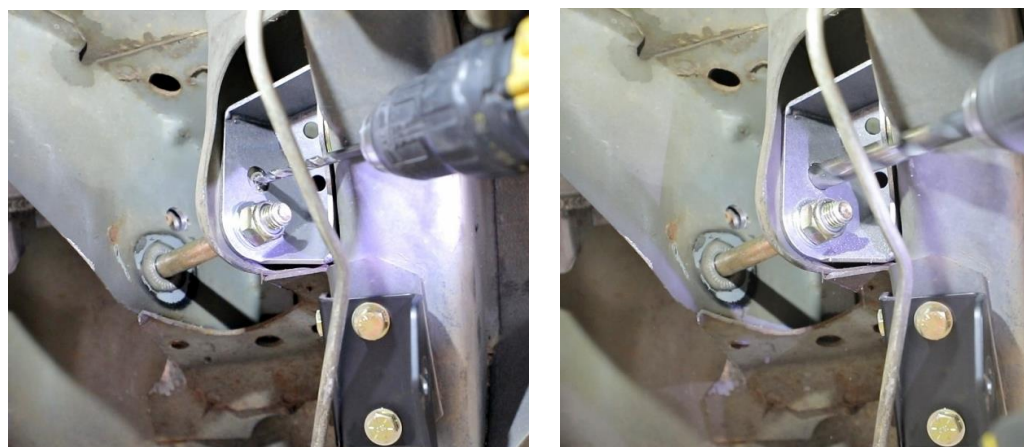


Figure 50 – Drill Upper Hole in Swivel Link Brace Assembly

53. Place the M12-1.75 hex head bolt and washer used in the opposite trailing arm pocket and place it through the upper hole in the other trailing arm pocket from the inboard side of the vehicle. If the bolt does not pass through both sides of the pocket, you may need to open up the inboard hole in the pocket (Figure 51).

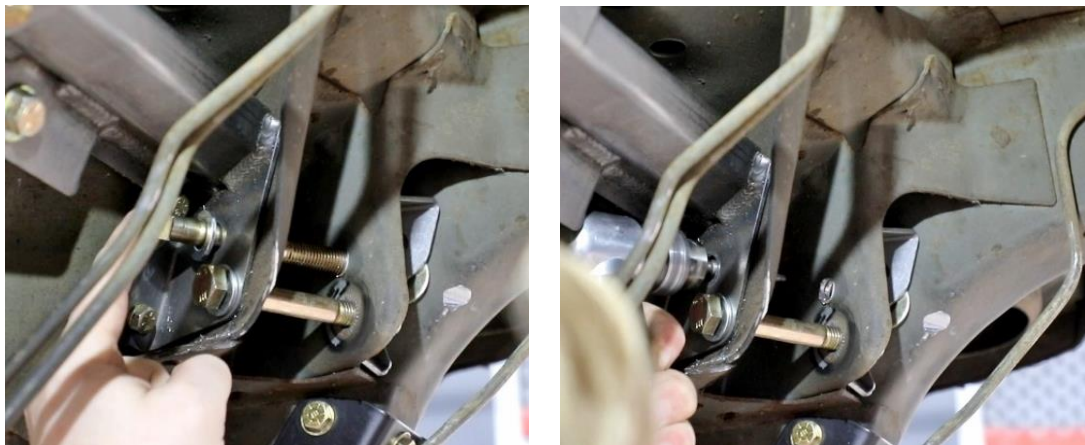


Figure 51 - Adjust Upper Hole as Needed

54. Once both bolts are installed through the pocket, they should be as close to parallel to each other as possible within about 1/8" (Figure 52).



Figure 52 - Verify Installed Hardware

55. Tighten the M12-1.75 Nylock nuts and washers on both M12-1.75 bolts installed in the upper trailing arm pocket. Position one of the floor brace weld assemblies against the outboard side of the frame rail and floor pan on the same side of the vehicle as the installed Swivel Link weld brace assembly. It should sit against the upper spring perch bracket and the outboard frame rail (Figure 53). If it does not sit flat against the frame rail, you can use a flat file to remove any high spots on the frame rail.

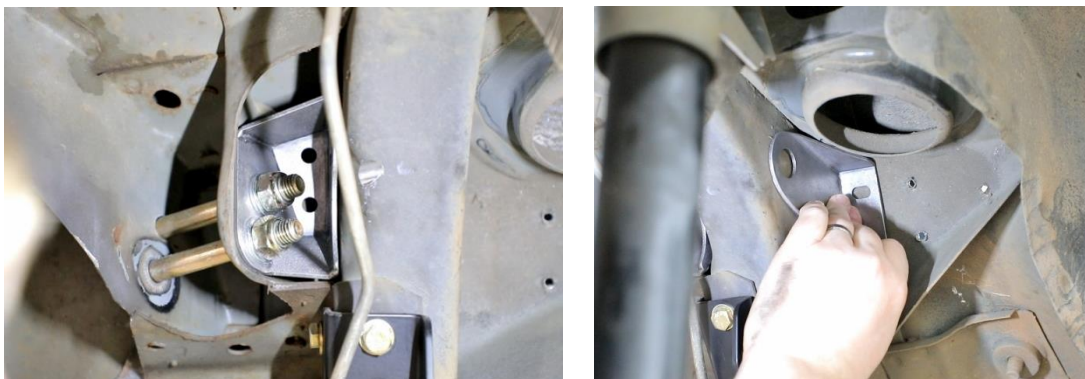


Figure 53 - Position Floor Brace Weld Assembly

56. Holding the floor brace assembly in place, scribe the hole in the bracket onto the outboard side of the frame rail. Use a snap/center punch to locate the center of the hole in the floor brace assembly onto the frame rail (Figure 54).



Figure 54 - Locate Floor Brace Assembly Mounting Hole

57. Spot drill a pilot hole location on your center punch from the previous step. Drill a 3/4" hole through the outboard side of the frame rail only. Use a 3/4" hole saw attached to a socket and extension in the drill to keep the drill away from the vehicle. Place the provided drill guide in the hole so it sits square to the hole and the inside of the inboard frame rail (Figure 55).

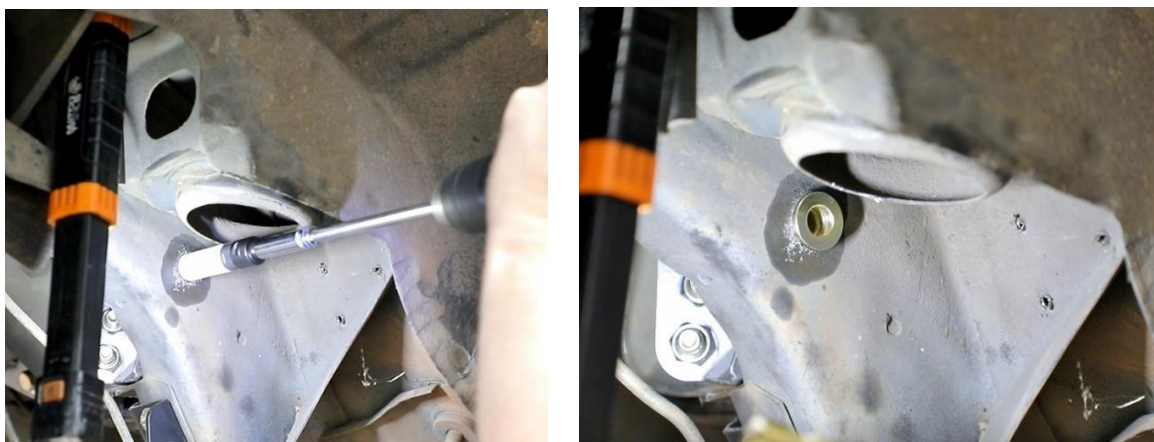


Figure 55 - Drill Outboard Frame rail

58. Place a 1/2" drill bit into the drill guide with a socket and extension in the drill to keep the drill away from the vehicle. Spot drill a center point on the inside frame rail with the 1/2" drill bit (Figure 56). Do not drill through the inboard frame rail with the 1/2" drill bit.

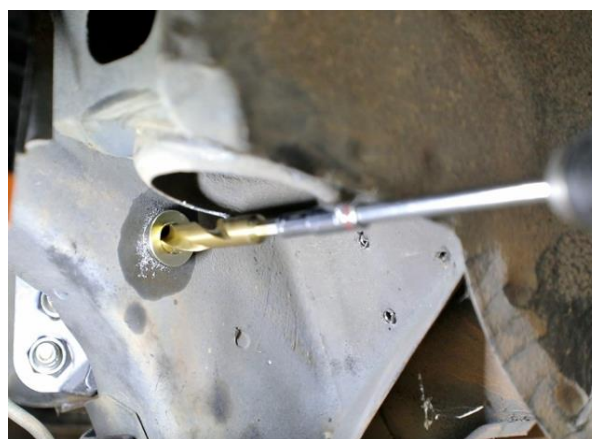


Figure 56 - Spot Drill Inside Frame Rail

59. Remove the drill guide from the frame rail. Use the provided 1/8" extended drill bit to line up with the spot drill from the previous step on the inside of the frame rail. Drill through the inside frame rail and locate the pilot hole in relation to the center of the hole in the Swivel Link brace weld assembly (Figure 57).

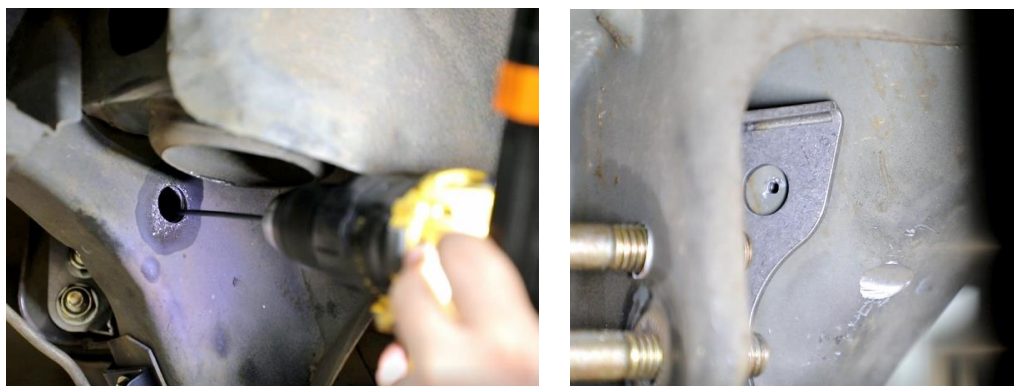


Figure 57 - Drill Pilot Hole

60. Drill a larger hole through the inside frame rail while correcting the pilot hole location to get it as close to the center of the hole in the Swivel Link brace assembly as possible. Once the hole is large enough, use a round file to open the hole so it is centered in the Swivel Link brace assembly (Figure 58).

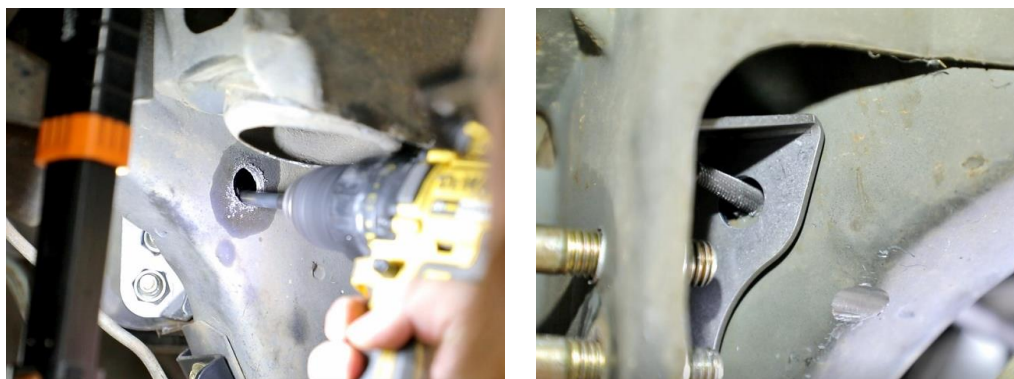


Figure 58 - Adjust Hole Location

61. Place the drill guide back in the frame rail along with the 1/2" drill bit. Drill out the inside frame rail with the 1/2" drill bit, keeping the drill centered on the hole that was adjusted in the previous step. Remove the drill guide.

62. Place the provided Allen head tapped crush sleeve (Figure 59) through the mounting hole in the floor brace weld assembly. Install the crush sleeve into the hole that was drilled in the frame rail from the previous step until it bottoms out on the inside frame rail.

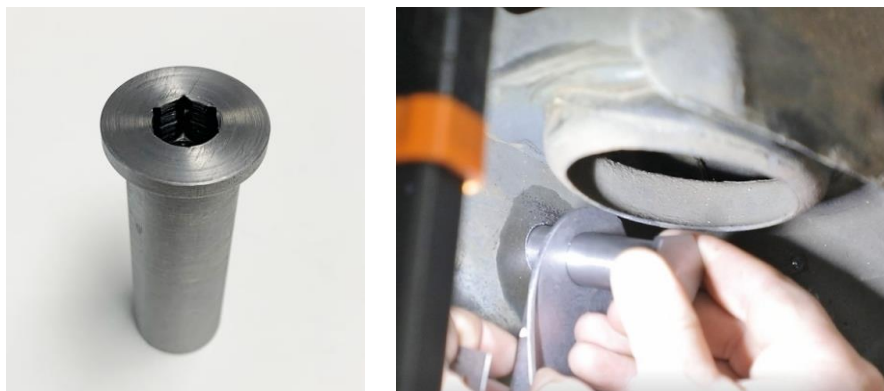


Figure 59 - Floor Brace Assembly

63. Measure the gap between the floor brace assembly and the bottom of the Allen head on the crush sleeve (Figure 60). **NOTE:** The tapped crush sleeve in the following pictures is an external hex head where the ones in your kit will be an Allen head crush sleeve.



Figure 60 - Measure Tapped Crush Sleeve

64. Remove the tapped crush sleeve and mark the distance measured in the previous step at the end of the crush sleeve. Cut this amount off the end of the crush sleeve (Figure 61). **NOTE:** When trimming the crush sleeve, you want the part to be $1/16$ " to $3/16$ " short to allow slight frame rail compression. The frame rail will crush until it bottoms out on the crush sleeve upon installation.



Figure 61 - Trim Tapped Crush Sleeve

65. Chamfer and grind the end of the tapped crush sleeve for a clean finish (Figure 62).

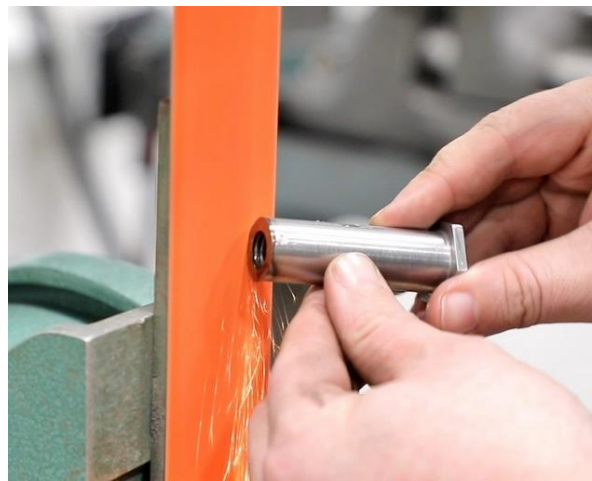


Figure 62 - Chamfer Tapped Crush Sleeve

66. Place the provided 7/16"-20 x 3/4" L hex head bolt and washer through the frame rail hole on the Swivel Link brace weld assembly side. Make sure the washers you added in Step 51 are in the correct location to allow the bolt to pass through the washers and into the frame rail (Figure 63).



Figure 63 - Install Frame Bolt

67. Place the Allen head tapped crush sleeve through the mounting hole in the floor brace weld assembly. Thread the crush sleeve onto the 7/16"-20 x 3/4" L frame rail bolt and tighten. Rotate the floor brace assembly so the flanged side with the two slotted holes rests on the floor pan (Figure 64).

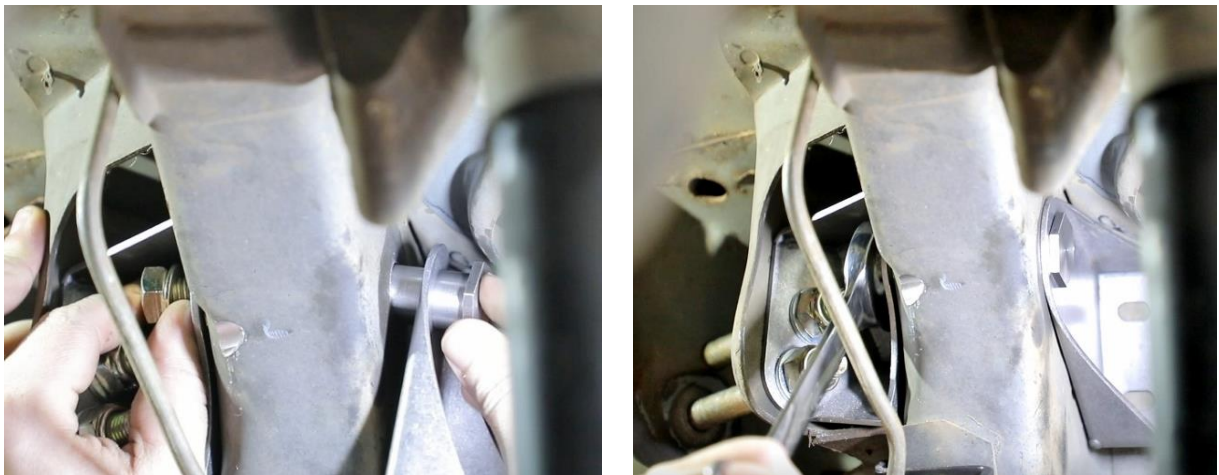


Figure 64 - Install Tapped Crush Sleeve

68. Center punch the two slotted holes against the floor pan. Use the 1/8" extended drill pit and drill a pilot hole through the floor pan (Figure 65).

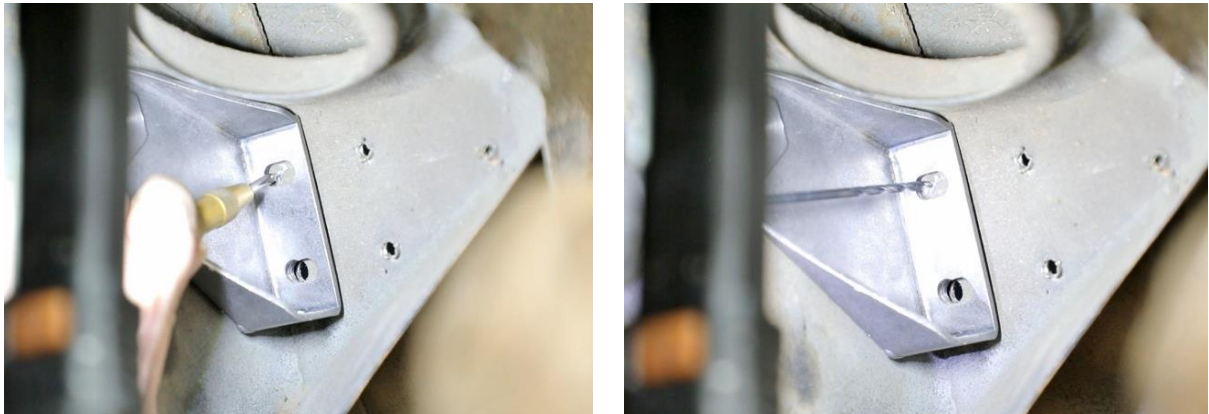


Figure 65 - Drill Pilot Holes

69. Drill out these holes to a final drill size of 5/16" (Figure 66). **NOTE:** It is recommended that pilot holes be drilled first before drilling the 5/16" holes. Remove the M12-1.75 hardware and the Swivel Link brace weld assembly.



Figure 66 - Drill Floor Pan Holes

70. Repeat Steps 53 through 69 for the opposite side of the vehicle.

71. From inside the vehicle, remove the 5/16"-18 Nylock nuts and SAE washers. Place the provided doubler plates on the floor pan from inside the vehicle where the 5/16"-18 hardware passes through. The hardware will fit through the inboard holes on the doubler plates. Re-install the Nylock nuts and SAE washers, so they are loose on the bolts. **NOTE:** Make sure you have the correct one on each side of the vehicle as they are mirrored parts (Figure 67). The slimmer AN washers will be under the vehicle and the thicker SAE washers will be inside the vehicle.



Figure 67 - Locate Doubler Plates

72. Place the provided 5/16" AN washers on the 5/16"-18 x 1" L hex head bolts and install them from underneath the vehicle through the floor brace weld assemblies and into the vehicle. Place the provided 5/16" SAE washers and 5/16"-18 Nylock nuts onto the bolts for all four holes. Tighten all four fasteners in each doubler plate until the floor pan begins to crush against the upper link weld assembly. (Figure 68).



Figure 68 - Install Doubler Plates

73. From underneath the vehicle, spot drill the floor pan through the bottom hole in the Swivel Link brace weld assembly using a 5/16" drill bit (Figure 69). **NOTE:** Let the drill bit find a good location on the floor pan even if it opens up the hole in the Swivel Link brace assembly. We recommend high drill speed with light pressure allowing the bracket to stabilize the drill and machine the irregular surface. This process will differ due to vehicle variation.



Figure 69 – Locate Bottom Mounting Holes

74. Once you have a good spot drill location, use the provided 1/8" extended drill bit to drill a pilot hole through the floor pan and the doubler plate inside the vehicle. Drill out the pilot hole using a 5/16" drill bit (Figure 70). **NOTE:** It is recommended to keep all hardware in the Swivel Link brace assembly at least until you have established a center point spot drilled on the floor pan behind the Swivel Link brace assemblies. If you have to remove the hardware, just remove the frame rail bolt. You don't want the brace assemblies to shift as they are acting as a drill guide to find a good location on the floor pan.

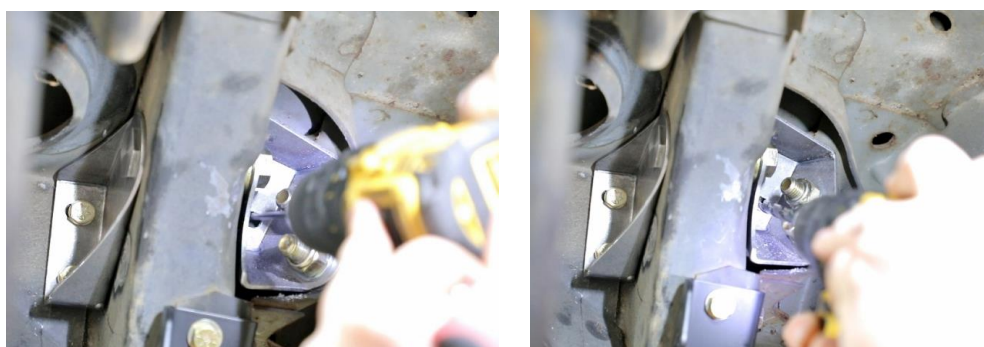


Figure 70 – Drill Floor Pan Doubler Plate

75. You may need to remove the frame rail bolt in order to drill the top hole through the Swivel Link brace weld assembly as well as the M12-1.75 hardware in the top hole in the trailing arm pocket. Spot drill the floor pan through the bottom hole in the Swivel Link brace weld assembly using a 5/16" drill bit (Figure 71).

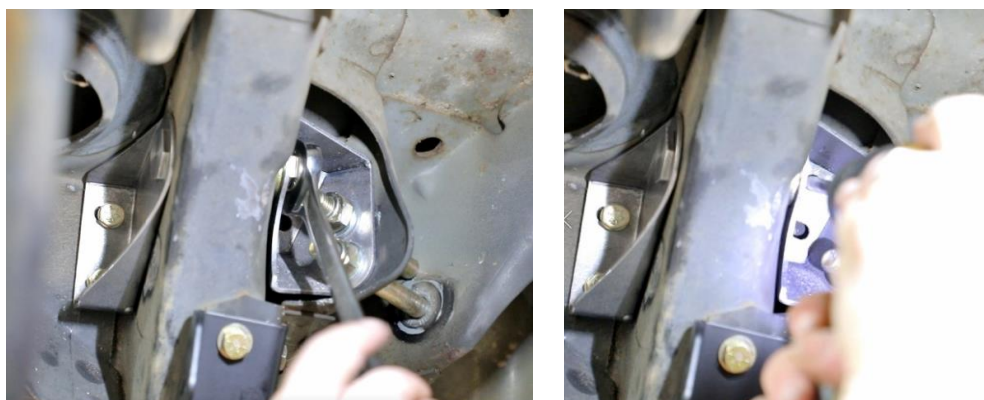


Figure 71 – Locate Top Mounting Hole

76. Once you have a good spot drill location, use the provided 1/8" extended drill bit to drill a pilot hole through the floor pan and the doubler plate inside the vehicle. Drill out the pilot hole using a 5/16" drill bit (Figure 72).

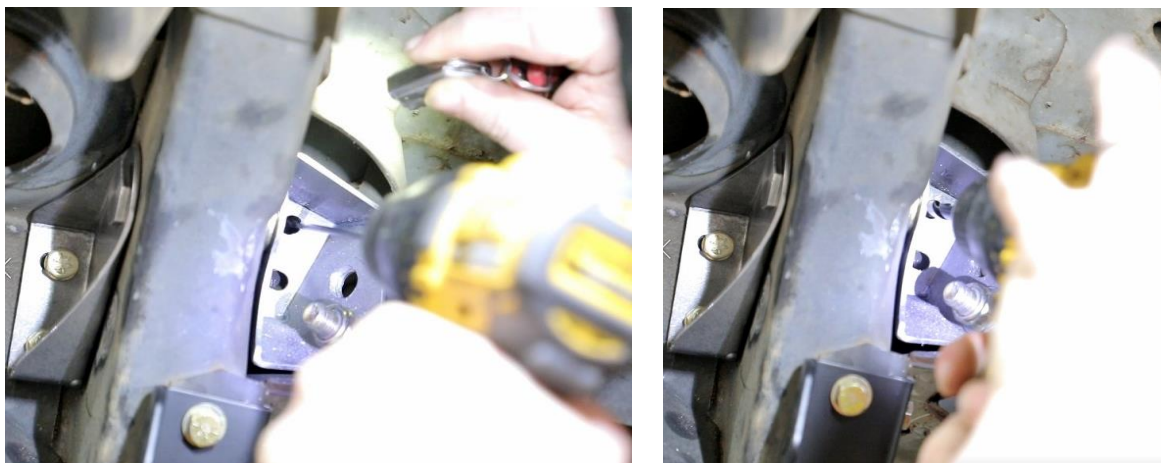


Figure 72 - Drill Floor Pan Doubler Plate

77. Remove the remaining hardware holding the Swivel Link brace weld assembly in place and remove it from the vehicle (Figure 73). Repeat Steps 73 through 77 for the opposite side of the vehicle.

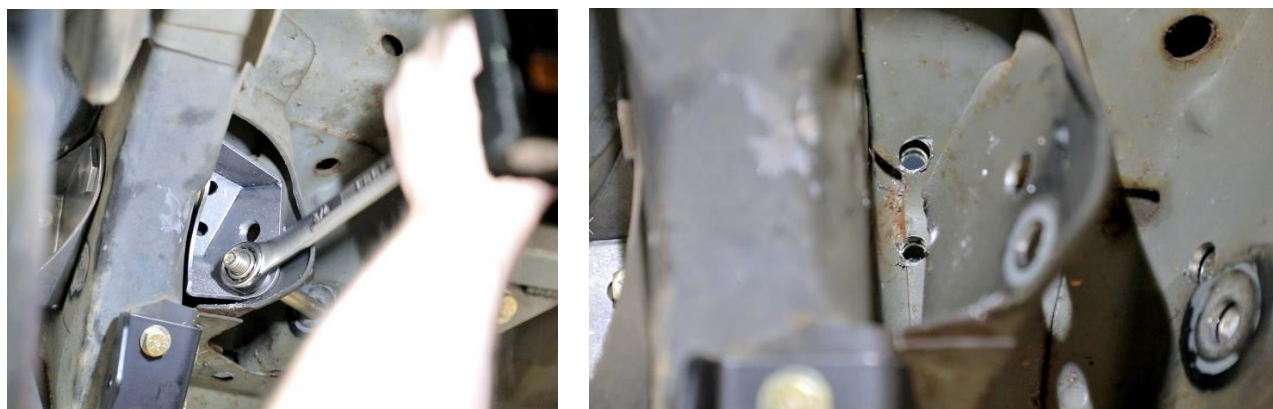


Figure 73 - Remove Swivel Link Brace Weld Assembly

78. Locate all four of the 1/2" OD x 3/8" ID x 5" L crush tubes. Measure 1-3/4" from each end of two of the crush tubes and scribe a line. Cut at the scribed lines on the tubes so you have four tubes that are 1-3/4" long (Figure 74). **NOTE:** There are four 5" long crush tubes in this kit so there will be extra material if you need.

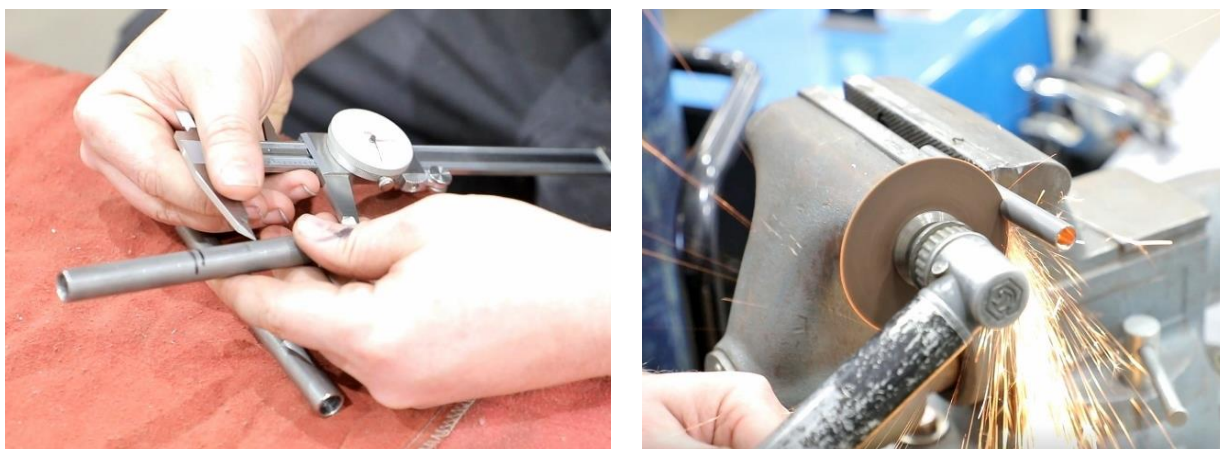


Figure 74 - Trim Crush Tubes

79. Clearance the sheet metal around the drilled holes under the doubler plates using a 1/2" extended length drill or die grinder with a carbide burr. You will need to make room for the 1/2" OD crush tubes to fit against the backside of the doubler plates (Figure 75).

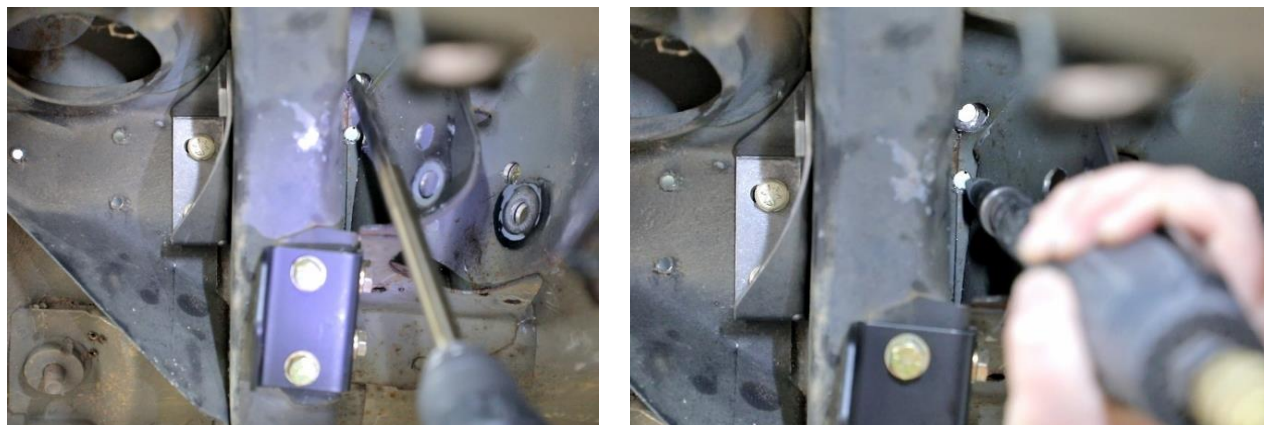


Figure 75 - Clearance Sheet Metal

80. You may need to trim the outboard side of the factory trailing arm pocket to allow the Swivel Link brace weld assembly to fit properly (Figure 76).

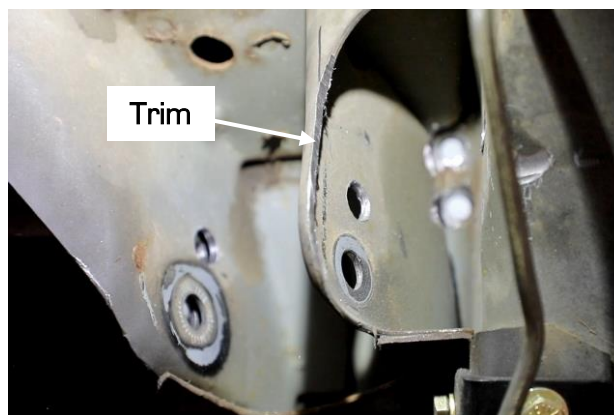


Figure 76 - Trim Pocket Flange

81. Place two of the provided 5/16"-18 x 3" L hex head bolts and 5/16" SAE washers through each hole in the Swivel Link brace weld assembly. Stack two or three 5/16" AN washers over the threads of the bolts followed by a crush tube on each bolt (Figure 77). **NOTE:** The 5/16" AN washers will act as shims to get the correct spacing to take up the gap between the Swivel Link brace assembly and the backside of the doubler plate.



Figure 77 - Swivel Link Weld Brace Assembly

82. Test fit the Swivel Link brace weld assembly with the hardware back into the vehicle. The two bolts will pass through the drilled holes in the doubler plates on the inside of the vehicle. Verify that the crush tubes will seat against the doubler plates with the Swivel Link brace assembly bolted in place. The M12-1.75 hardware will need to be able to pass through the trailing arm pocket and Swivel Link assembly (Figure 78). If not, remove or add 5/16" AN washers between the crush tubes and Swivel Link brace assembly. **NOTE:** When testing the hole alignment, test with the hardware fully tight.

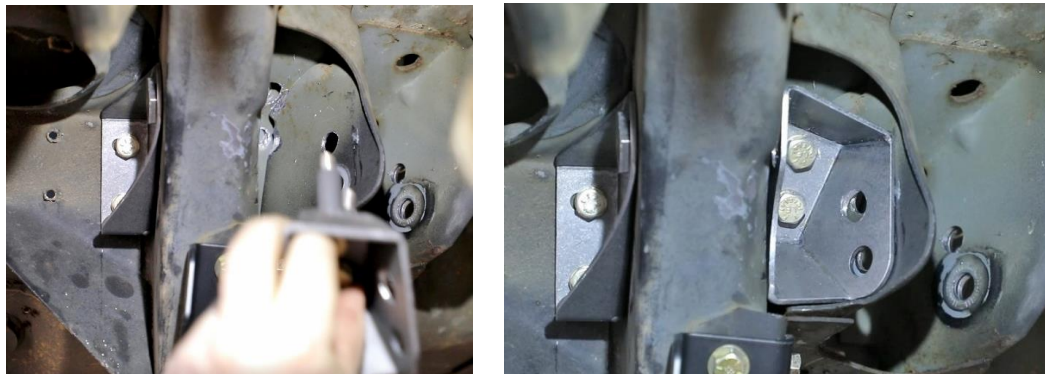


Figure 78 - Test Fit Swivel Link Brace Weld Assembly

83. From inside the vehicle, place two of the provided 5/16"-18 Nylock nuts and 5/16" SAE washers onto the 5/16"-18 x 3" L bolts passing through the doubler plate. Tighten the hardware. You may need to pry on the Swivel Link brace weld assembly, so the M12-1.75 bolt holes line up with the trailing arm pocket (Figure 79).



Figure 79 - Install Swivel Link Brace Weld Assembly

84. Tighten the 5/16"-18 hardware in the floor brace weld assembly if they are not tight at this point. Re-install the frame rail bolt and tapped crush sleeve using medium strength Blue Loctite 242 on the threads of the bolt (Figure 80). Torque the 5/16"-18 hardware to 25 ft.-lbs. and the frame rail crush sleeve to 40 ft.-lbs.

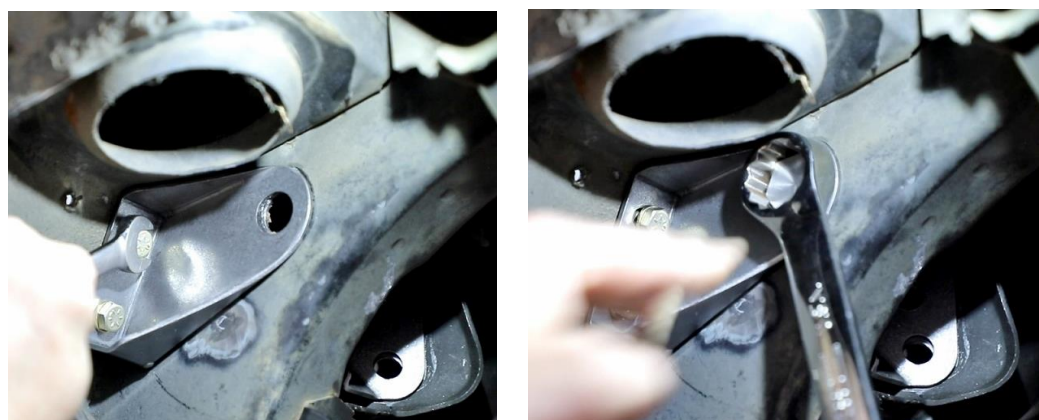


Figure 80 - Re-Install Frame rail Hardware

85. With the Swivel Link brace weld assembly tightened in the vehicle, use an extended 1/2" drill bit to line up the bolt holes on the Swivel Link brace assembly and the trailing arm pocket. Verify that the M12-1.75 hardware will pass through freely (Figure 81).

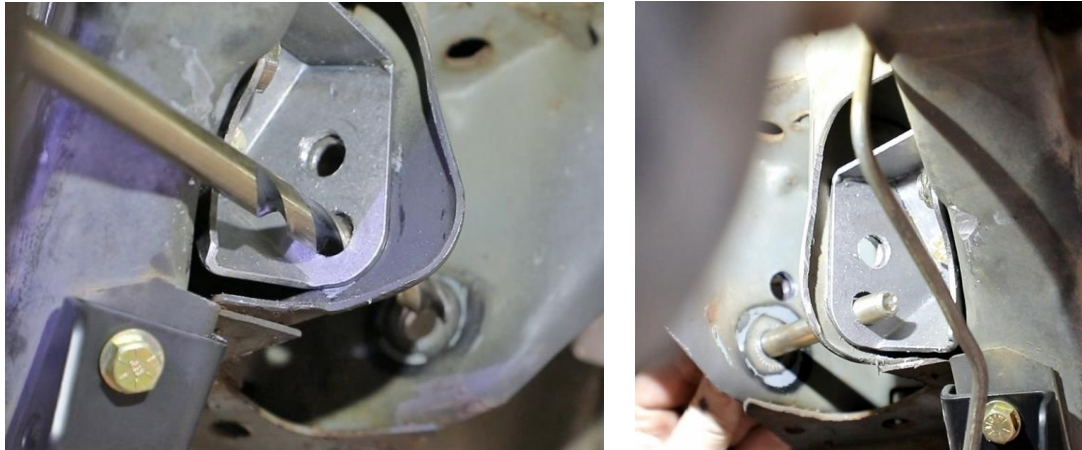


Figure 81 – Line-up Trailing Arm Holes

86. Repeat Steps 79 through 84 for the opposite side of the vehicle.

87. Install the jounce bumper shim onto the end of the jounce bumper. **NOTE:** Spray the bumper with lubricant to help install the shim. Push the jounce bumper into the rectangular slot in the upper link weld assembly (Figure 82).

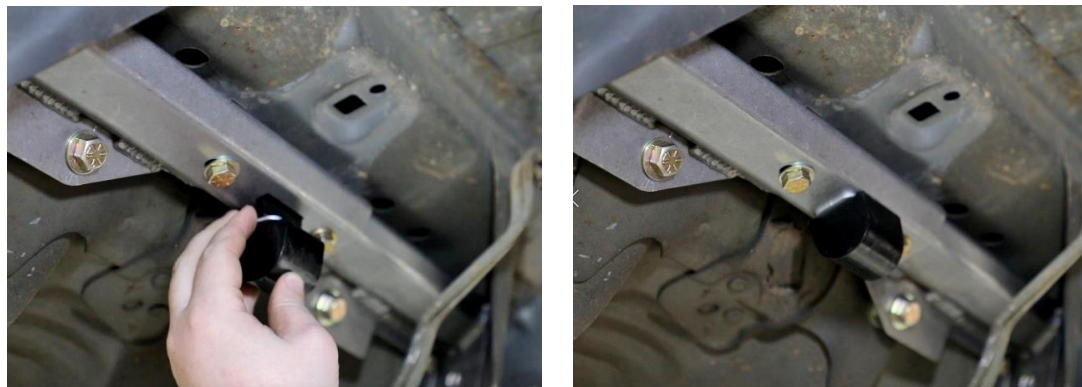


Figure 82 – Install Jounce Bumper & Shim

88. Carefully re-mold the brake lines around the Exo-Brace so that the brake line bracket locates just rearward of the factory position (Figure 83). Use two of the provided 1/4" x 1" L self-tapping screws to mount it in a new position. **NOTE:** If the brake line has corrosion, it may need to be replaced because it will likely crack at this step. Check closely for leaks and cracks.

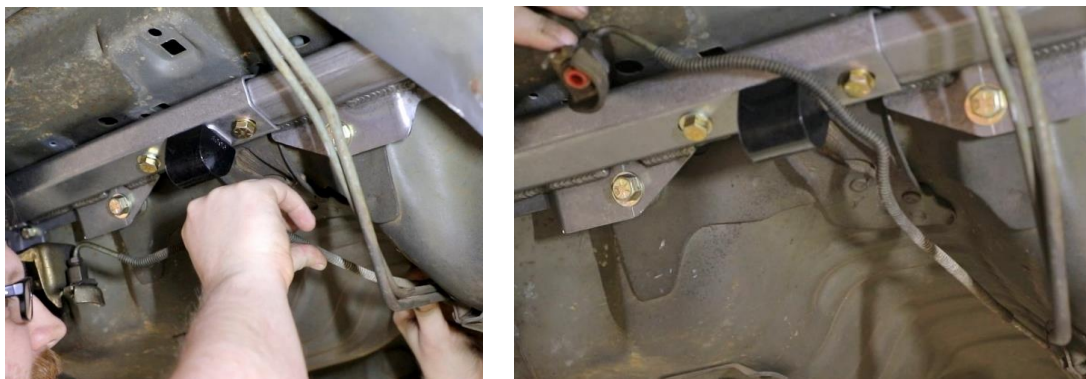


Figure 83 – Re-position Brake Line

89. Carefully bend the fuel lines back into position around the Exo-Brace (Figure 84). **NOTE:** If the fuel lines have corrosion, they may need to be replaced.



Figure 84 - Re-position Fuel Lines

90. Completed Exo-Brace installation from inside the vehicle (Figure 85). Now that installation is complete, you can paint any of the raw components in the Exo-Brace to prevent corrosion.



Figure 85 - Inside View

91. Re-install the exhaust hanger bracket U-nuts back into the upper trailing arm pockets. Re-install your exhaust hangers and isolators back into the vehicle.

92. Re-install the upper trailing arms into the vehicle (Figure 86). Tighten the bolts, however do not torque them at this time. **NOTE:** Use the two upper link mounting holes in the Exo-Brace as a tuning option once you have your vehicle back on the road (Figure 87 & 88 on the next page).



Figure 86 - Re-install Upper Trailing Links

NOTE: Adding the Detroit Speed Lower Link Drill Guide (PN: 010117DS) will give you the lower link adjustment options at the chassis side (Figure 87 & 89 on the next page). Adding the Detroit Speed Rear Coilover Kit (PN: 042442DS) will give you the lower link adjustment options on the axle side (Figure 87 & 90 on the next page).

NOTE: The measurements listed in the tables below were derived from actual measurements of the DSE test car. 4-13/16" center of axle tube to the bottom of the frame rail, CG is 19" off the ground. Entries in **bold** are recommended starting locations.

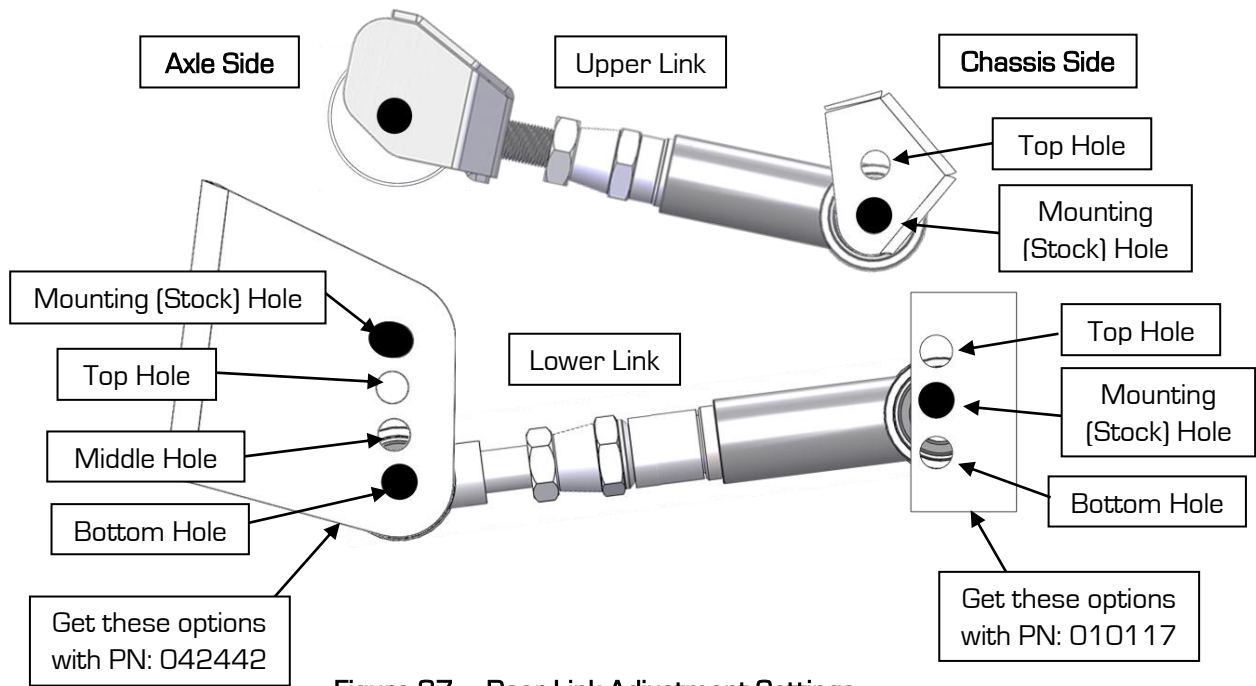


Figure 87 – Rear Link Adjustment Settings

NOTE: Instant center numbers are expressed as distance forward of rear axle centerline, then height above ground level.

Lower Link Axle Side Position	Instant Center	Anti-Squat
Stock Hole	41" / 8.5"	108%
Top Hole	36.7" / 9.5"	138%
Middle Hole	33.3" / 10.2"	162%
Bottom Hole	31" / 10.6"	182%

Figure 88 – Lower Link Adjustment Settings Using Coilover Kit

Upper Link Chassis Side in Stock Hole			
Lower Link Chassis Side Position	Lower Link Axle Side Position	Instant Center	Anti-Squat
Top Hole	Stock Hole	33.3" / 10.1"	162%
	Top Hole	30.5" / 10.7"	186%
	Middle Hole	28.5" / 11"	206%
	Bottom Hole	27" / 11.4"	223%
Middle (Stock) Hole	Stock Hole	41" / 8.5"	108%
	Top Hole	36.7" / 9.5"	138%
	Middle Hole	33.3" / 10.2"	162%
	Bottom Hole	31" / 10.6"	182%
Bottom Hole	Stock Hole	56.3" / 5.7"	54%
	Top Hole	46" / 7.7"	89%
	Middle Hole	40" / 8.9"	117%
	Bottom Hole	36.2" / 9.6"	141%

Figure 89 – Lower Link Adjustment Settings Using the Coilover Kit & Drill Guide.

Upper Link Chassis Side in Top Hole			
Lower Link Chassis Side Position	Lower Link Axle Side Position	Instant Center	Anti-Squat
Top Hole	Stock Hole	83.1" / 11.4"	73%
	Top Hole	60.5" / 12.8"	113%
	Middle Hole	49.5" / 13.5"	145%
	Bottom Hole	43" / 13.9"	172%
Middle (Stock) Hole	Stock Hole	173" / 5.8"	18%
	Top Hole	91.9" / 10.9"	63%
	Middle Hole	66.4" / 12.4"	100%
	Bottom Hole	54" / 13.2"	130%
Bottom Hole	Stock Hole	N/A	N/A
	Top Hole	186" / 5"	14%
	Middle Hole	99.7" / 10.4"	55%
	Bottom Hole	72" / 12.1"	89%

Figure 90 – Upper & Lower Link Adjustment Settings Using the Drill Guide, Coilover Kit & Exo-Brace Kit

93. Re-install the rear exhaust back into the vehicle. Place the driveshaft back into the tail shaft of the transmission. **NOTE:** If you have a 4-cylinder vehicle, re-install the E-brake cable bracket back into the vehicle.

94. Position the rear axle back under the vehicle. Re-position the springs back in between the lower trailing arms and the body. Install the trailing arms to the rear axle (Figure 91 on the next page).



Figure 91 – Re-install Rear Axle

95. Re-install your driveshaft flange to the rear differential. Re-install the shocks to the rear axle brackets.
96. Re-install the E-brake cables to the body at the lower torque box. Reconnect the E-brake cables back into the T-bar under the vehicle.
97. Re-install the driver and passenger side seat back brackets into the floor pan. Re-install the seat back into the vehicle. Re-install the seat back into the fold down brackets. Lay the seat down and install the screws that hold the carpet to the seat back. Re-install the driver side fold down rear seat back.
98. Re-install the fasteners to the center of the seat back at the transmission tunnel. Re-install the passenger side fold down rear seat back.
99. Re-install the floor pan insulation and place the rear seat bottom back into the vehicle.
100. Re-install the rear wheels and lower the vehicle to the ground. Torque the rear wheels to the manufacturer's recommended torque specifications. Settle the suspension by bouncing the vehicle several times and then torque all of the rear suspension pivot bolts to the factory recommended specifications. (Detroit Speed – 75 ft-lbs.) Installation is now complete.

If you have any questions before or during the installation of this product, please contact Detroit Speed at tech@detroitsspeed.com or 704.662.3272

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