

Detroit Speed
Mini-Tub Leaf Spring Relocation Kit
1962-67 Chevy II
P/N: 041228DS & 041229DS

The Detroit Speed Mini-Tub Leaf Spring Relocation Kit is a complete rear suspension designed to allow a wider than stock rear wheel and tire by relocating the leaf springs inboard on your Chevy II. This kit can be installed with the stock wheel tubs or can be used with the DSE Mini-Tubs for up to a 315mm tire size on some applications. This kit utilizes DSE drop multi leaf springs that will lower your vehicle 2" from stock. This kit includes all the necessary components for a complete project package with optional DSE Mini-Tubs.



PN: 041229DS Shown

IMPORTANT:

A qualified technician should perform all work. Please read the complete set of instructions and fully understand all 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: A narrowed fuel tank is necessary with the leaf spring relocation kit.

Item #	Description	Quantity
1	DSE Mini-Tubs (PN: 041229DS Only)	2
2	2" Drop Leaf Springs	2
3	Leaf Spring Front Mount	2
4	Leaf Spring Rear Mount, LH & RH	2
5	Upper Shock Mount, LH & RH	2
6	Mini-Tub Inner Frame Doublers, LH & RH	2
7	Shackle Mount Assembly	2
8	Lower Shock Plate, LH & RH	2
9	Adjustable Leaf Spring Pads	2
10	Torque Boxes, LH & RH	2
11	Leaf Spring Heavy Duty Shackle Kit	1
12	1/2"-20 U-Bolt Kit	4
13	Rear Shocks	2
14	E-Brake Cable Bracket	1
15	Leaf Spring Relocation Hardware Kit	1
16	Instructions	1

Hardware Kit Checklist – Detroit Speed Leaf Spring Relocation Kit			
Part Number	Description	Quantity	Check
200116	Leaf Spring Relocation Hardware	1	
980025FS	1/2"-20 x 5" L Hex Head Bolt	2	
980058FS	1/2"-20 x 3" L Hex Head Bolt	2	
980026FS	1/2"-20 x 2-1/2" L Hex Head Bolt	2	
960004FS	1/2"-20 Nylock Nut	6	
970037FS	1/2" SAE Washer	10	
950048FS	5/16"-18 x 1-1/2" L Hex Head Bolt	1	
980111FS	5/16"-18 x 1" L Hex Head Bolt	12	
960039FS	5/16"-18 Nylock Nut	8	
970043FS	5/16" SAE Washer	20	
99040768	5/16" ID x 3/4" OD x 7/8" L Spacer	1	
99030169	1/2" ID x 3/4" OD x 1/4" L Steel Spacer	2	

Installation:

1. Raise the vehicle up on jack stands so that the frame is level with the ground. Disconnect the battery cables. Raise the rear axle with a floor jack and place two jack stands to support the rear axle.
2. Remove the fuel tank and lines. **NOTE:** Make sure to eliminate all of the fuel vapors from the work area before continuing.
3. Remove the shocks and the U-bolt hardware from the lower shock plates. Remove the shock plates and U-Bolts from the vehicle.
4. Remove the shocks from the vehicle. Remove the front and rear leaf spring mounting hardware and remove the leaf springs from the vehicle.

5. Remove the E-brake cable brackets from the frame rail by drilling out the spot welds holding the brackets to the frame rails for both sides of the vehicle (Figure 1). Grind the frame rails smooth for a clean finish.

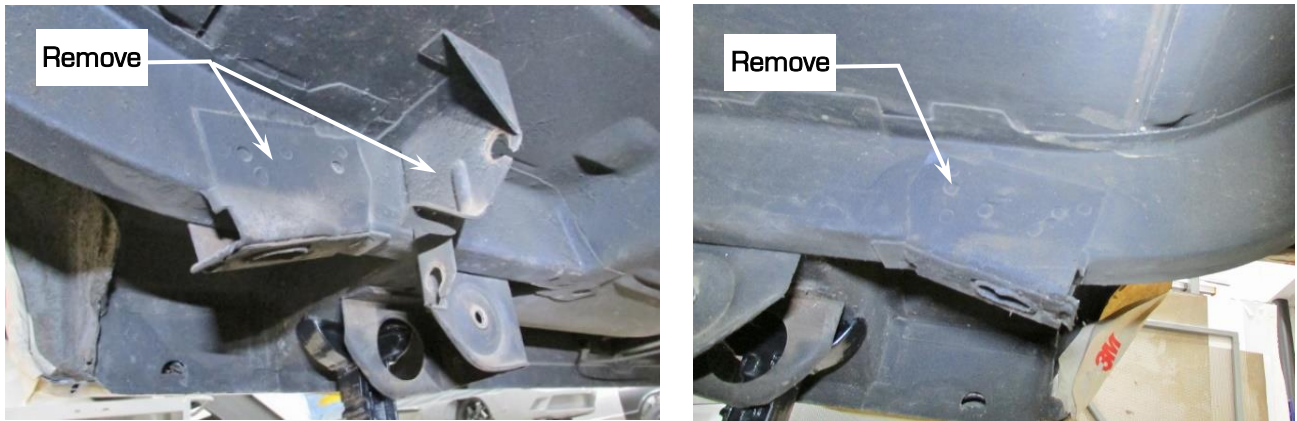


Figure 1 - Remove E-Brake Brackets

NOTE: If you plan on installing the DSE Mini-Tubs and narrowing your rear axle you will need to remove the axle jounce bumper brackets from both sides of the vehicle (Figure 2).

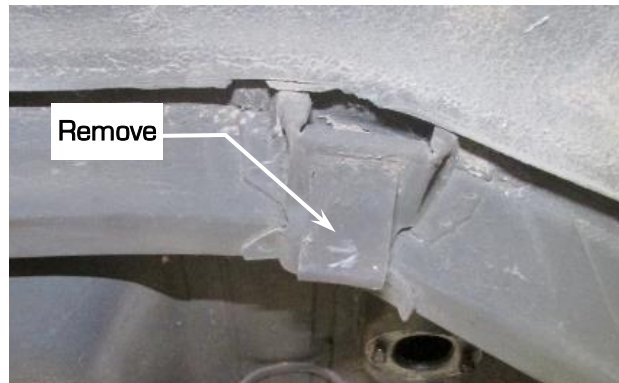


Figure 2 - Remove Jounce Bumper

6. Next, install the DSE mini-tubs. We recommend installing those before the leaf spring relocation kit. Refer to the instructions and video to install them as many steps will be the same during this process for the leaf spring relocation kit.
7. Once the DSE Mini-Tubs have been test fit, you will need to install the DSE Mini-Tub inner frame rail doublers next (Figure 3).

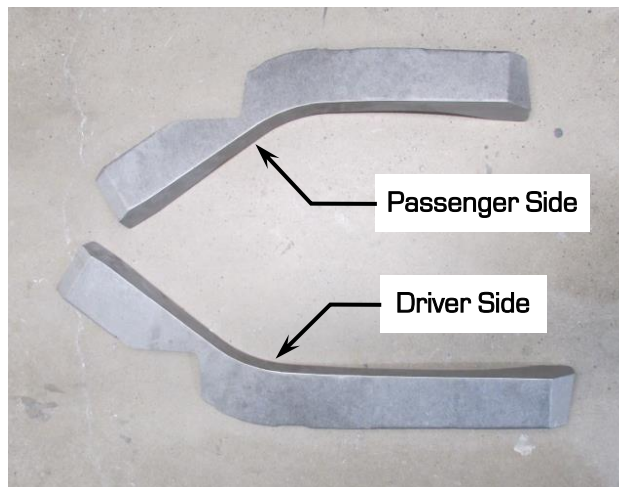


Figure 3 - Frame Doublers

8. Position the inner frame rail doublers and clamp them in place to the existing frame rails. Trim, fit and adjust the frame rail doublers to obtain the best fit with the DSE Mini-Tubs.
9. Tack weld the inner frame rail doublers to the original frame rails (Figure 4).

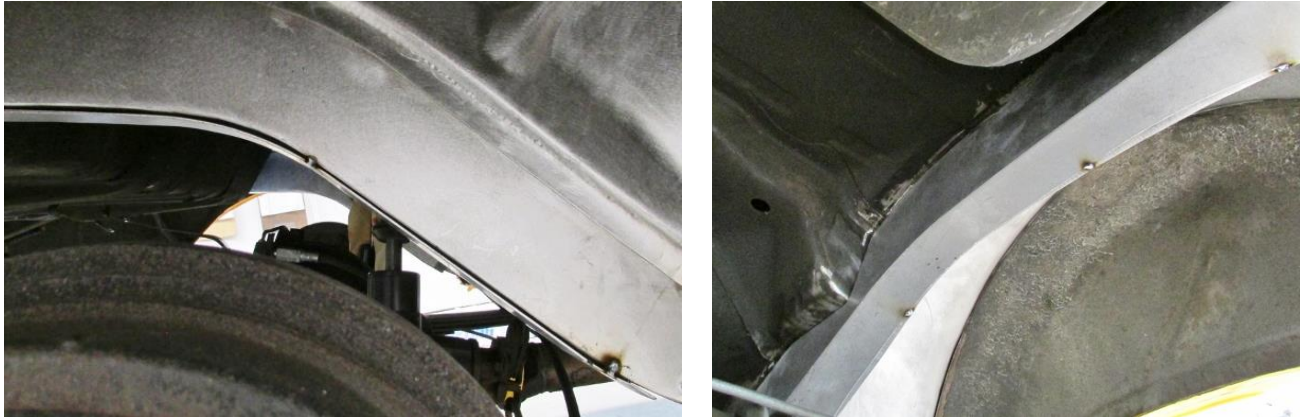


Figure 4 – Tack Weld Inner Frame Rail Doubler (Passenger Side)

10. Stitch weld the bottom cut section of the original frame rail to the top of the lower part of the frame rail (Figure 5).



Figure 5 – Stitch Weld Inner Frame Rail Doubler (Driver Side)

11. Fully weld the frame rail doublers in position. Refer back to the DSE Mini-Tub instructions to complete the mini-tub installation.
12. Next, position the torque boxes against the floor pan at the front inboard corner of the frame rails. Mark the inner frame rail flanges and floor board for plug weld locations on both sides of the vehicle (Figure 6).



Figure 6 – Mark Floor Pan for Plug Welds

13. You will need to cut a relief in the top of the torque boxes for the seat belt anchor depression in the floor pan (Figure 7). If your torque boxes already have a relief cut, skip to the next step.



Figure 7 - Relief Cut Torque Boxes

14. Drill holes for plug welding the torque boxes to the floor pan on both sides of the vehicle (Fig. 8).



Figure 8 - Drill Plug Weld Holes

15. Locate the torque boxes back in place against the floor pan and framerail. Weld the torque boxes in place around the perimeter to the floor pan and framerails. Plug weld the holes from inside the vehicle. Grind the welds smooth so the bottom of the torque boxes are flush with the bottom of the frame rails (Figure 9). Grind all welds for a clean finish. **NOTE:** Be careful of the rubber grommets in the floor when welding.



Figure 9 - Weld Torque Boxes

16. Trim the inboard flange of the front leaf spring pockets by roughly 1". Trim the front flange at an angle to match up with the outboard flange on both sides of the vehicle (Figure 10).

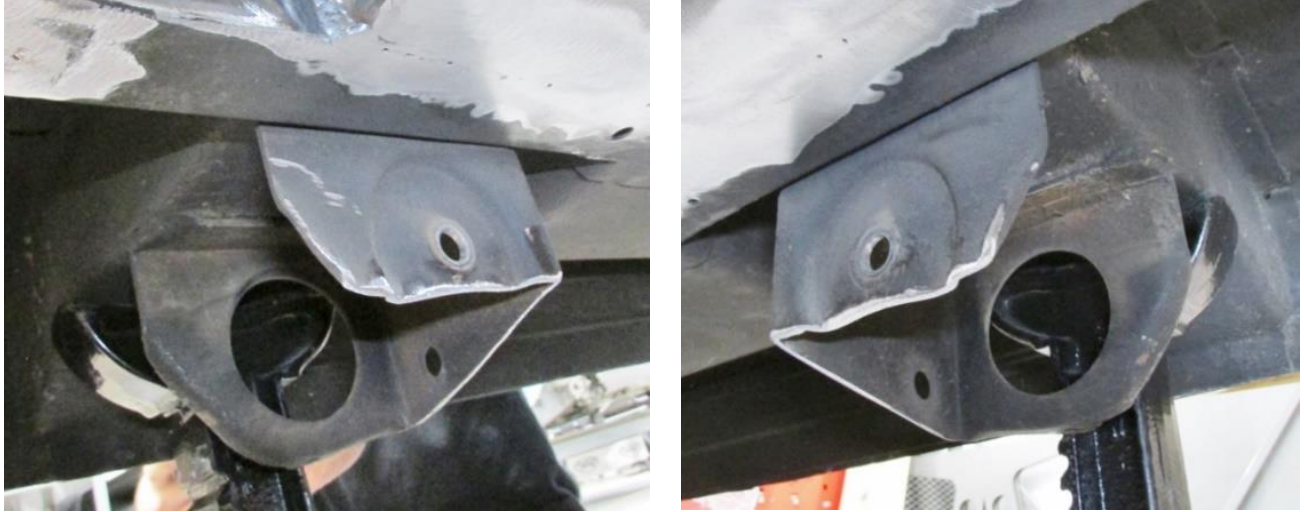


Figure 10 - Trim Leaf Spring Pocket

17. Place one of the leaf spring front mounts to the bottom side of the torque box, inboard of the factory leaf spring pocket. Place the provided 7/8" long spacer between the front mount and the leaf spring pocket. Install the provided 5/16"-18 x 1-1/2" L hex head bolt through the inboard side of the factory leaf spring pocket mounting hole, through the spacer and through the smaller of the two outboard holes on the front mount (Figure 11).



Figure 11 - Locate Front Mount

18. Tack weld the front mount to the bottom side of the torque box and the framerail. Use the holes in the front mount to plug weld the mount in place. Stitch weld the perimeter of the front mount to the torque box. Remove the spacer and hardware and repeat **Steps 17 & 18** for the opposite side of the vehicle. **NOTE:** DSE recommends cutting the factory leaf spring pockets out of the vehicle. This will give you more room to weld the leaf spring front mounts into the vehicle and give you more hardware clearance when the leaf spring is installed.

19. Next, you will need to install the leaf spring rear mounts. They will fit inboard of the framerails and up against the back trunk flange. From underneath the vehicle, measure inboard of the frame rail 10" and mark the bottom of the trunk floor. Measure forward of the rear trunk floor flange 6-1/8" and mark the bottom of the trunk floor.
20. Draw a line parallel with the framerail at the 10" mark and draw a line parallel with the trunk floor flange at the 6-1/8" mark until the two lines intersect. Drill an 1/8" hole in the trunk floor where the two lines intersect.
21. From inside the trunk, draw a line parallel with the framerail from the drilled hole location rearward until you reach the wall in the trunk floor depression. Then, draw a line parallel with the trunk floor flange from the drilled hole location to the inboard side of the frame rail.
22. Mark a location on the wall of the trunk floor depression directly above the drawn line. Make another mark 1-3/4" outboard of that mark. Draw a 45° line connecting the last marked location to the line drawn on the trunk floor depression.
23. Start cutting the trunk floor from inside the trunk along the two drawn lines from **Step 21**. Cut the trunk floor along the inboard side of the framerail up to where the framerail meets the trunk floor flange.
24. Cut from the end of the 45° line outward until you reach the intersection of the trunk floor flange and the inboard side of the framerail. Repeat **Steps 19 - 24** for the opposite side of the vehicle.
25. Test fit the leaf spring rear mounts into the cutouts in the trunk floor. You may need to trim your cut lines to get the mounts to sit cleanly in the trunk floor.
26. Next, you will need to drill plug weld holes in your trunk floor around the rear mount cutout. From inside the trunk, draw a 3/4" offset line from your rear mount cut lines so you have an area to drill your plug weld holes.
27. Drill plug weld holes about 1" apart along the trunk floor depression between the cut line and the 3/4" offset line.
28. Fit the rear mount back into the trunk floor cutout and tack weld them in place from underneath the vehicle (Figure 12). Then, plug weld the rear mount to the trunk floor using the holes that were drilled in the previous step.



Figure 12 - Tack Weld Rear Mount

29. From underneath the vehicle, weld the rear mount to the trunk floor flange as well as the inboard side of the framerail at the rear leaf spring mount reinforcement. Weld the rear mount flange to the floor pan where possible (Figure 13).



Figure 13 – Weld Mount to Vehicle

30. Once both of the leaf spring rear mounts are fully welded in place, grind your welds smooth for a clean finish (Figure 14). **NOTE:** The leaf spring mounts can be welded inside the trunk floor or they can be seam sealed depending on your preference.

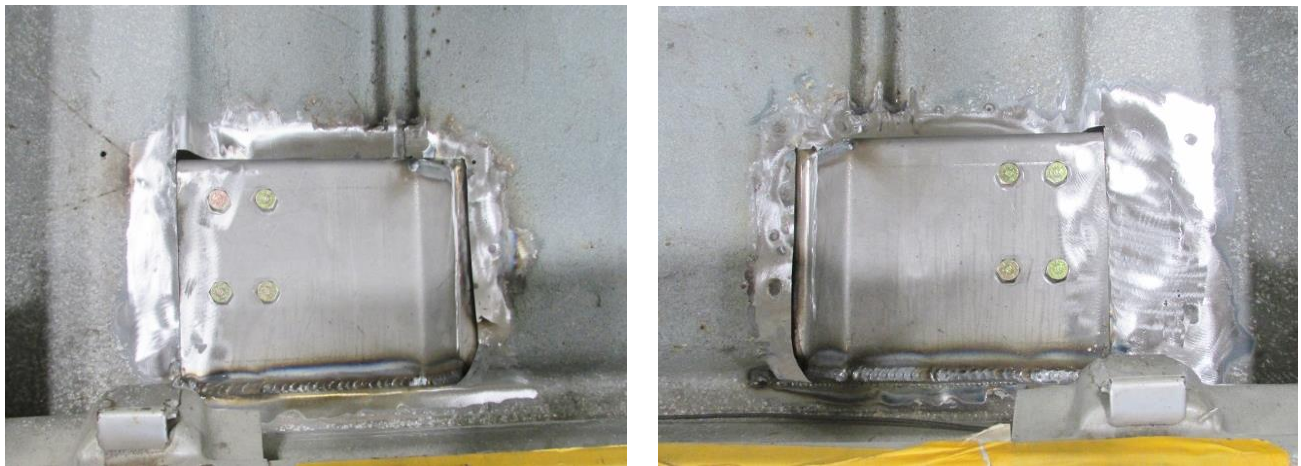


Figure 14 – Finish Weld & Grind Rear Mounts

31. With body fabrication complete, DSE recommends painting the rear mounts (Figure 15) as well as the torque boxes, front mounts and all bare metal to prevent the formation of rust.

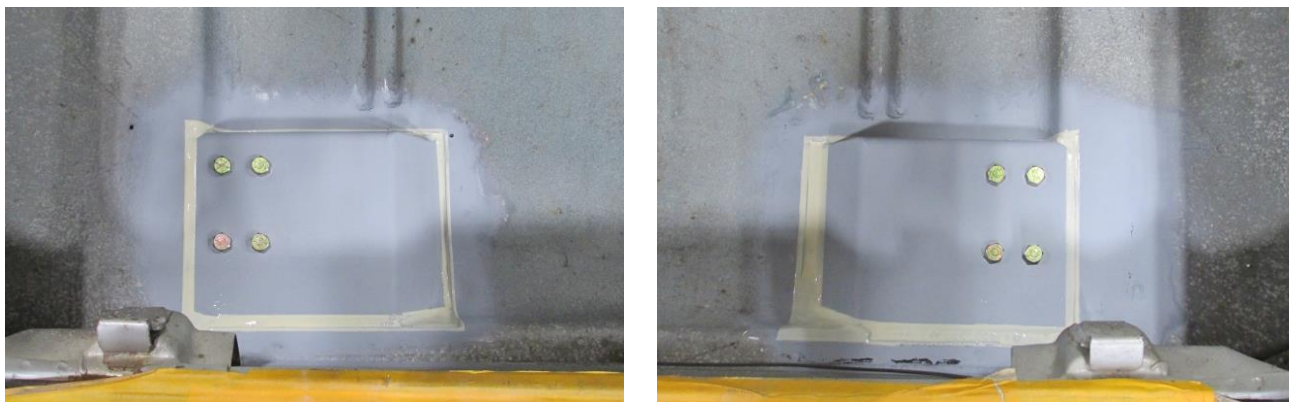


Figure 15 – Primed and Seam Sealed

32. Identify the left and right hand upper shock mounts (Figure 16).

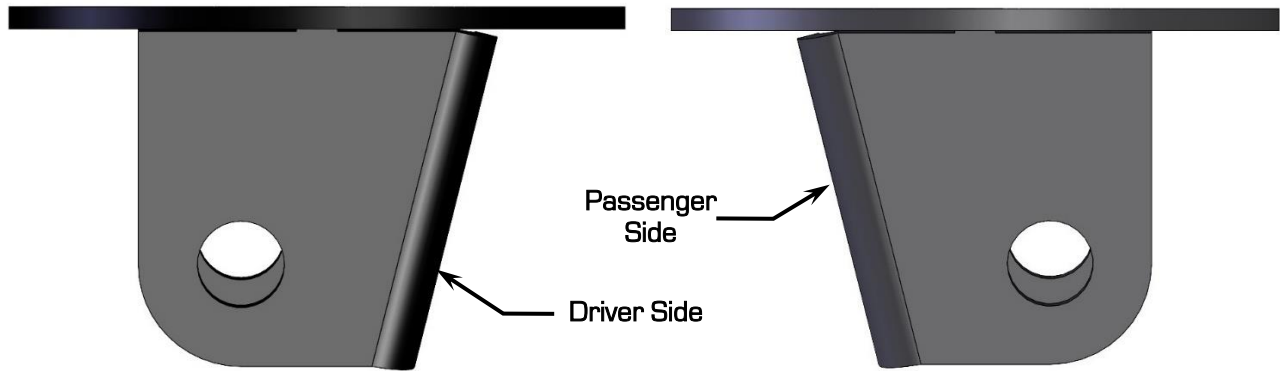


Figure 16 - Upper Shock Mounts

33. Install both upper shock mounts into the vehicle using the four of the provided 5/16"-18 x 1" L hex head bolts and washers. Use medium strength blue Loctite 242 on the threads of the bolts and tighten. Torque the 5/16"-18 hardware to 25 ft-lbs. (Figure 17).



Figure 17 - Install Shock Assembly (Driver Side)

34. Next, install the shackle mount assembly to the leaf spring rear mounts using the eight provided 5/16"-18 x 1" L hex head bolts, Nylock nuts and sixteen washers on both sides of the vehicle. Use anti-seize on the bolts and tighten. Torque the 5/16"-18 hardware to 25 ft-lbs.

35. Next, install the heavy duty shackle kit. **NOTE:** The polyurethane bushings for the frame will have a narrower flange and the leaf spring bushings have a wider flange. Lightly coat the ID of the shackle mounts, the ID, OD and flange of the frame bushings and the OD of the crush sleeves with the provided grease.

36. Install the polyurethane bushings on both sides of the vehicle by first gently tapping in the frame bushings and then tapping in the crush sleeves. Repeat this same procedure with the leaf spring bushings and crush sleeves. Make sure to use the provided grease on the OD of the leaf spring eye, the ID, OD and flange of the leaf spring bushings and the OD of the crush sleeves before they are installed.

37. Next, install the leaf springs into the front leaf spring mounts using the provided 1/2"-20 x 5" L hex head bolts, Nylock nuts and washers. The bolts will have to be installed pointing outboard of the vehicle. Hold the Nylock nut in between the new and the factory front leaf spring mount (if still there) and install the bolt through the mount and the leaf spring. (Figure 18). Use anti-seize on the bolts and tighten. **NOTE:** You may need to lower the mufflers to install the bolts. Do not torque the hardware at this time.

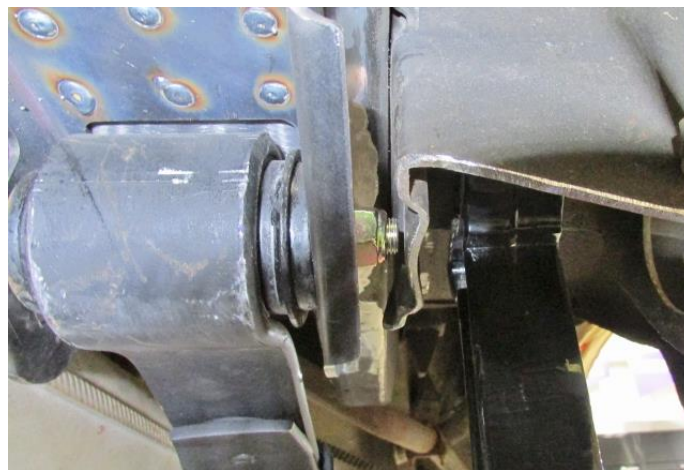


Figure 18 - Install Front of Leaf Spring

38. Install the provided rear shackles and the 1/2"-20 x 5" L hex head bolts from the shackle kit to mount the leaf springs to the frame using the provided 1/2"-20 Nylock nuts and AN washers. Install the frame bushing bolts from the outside of the framerrail so the Nylock nuts will be closest to the fuel tank. Install the leaf spring bushing bolts from the inside of the framerrail so the Nylock nuts will be on the outside. Use anti-seize on the bolts and tighten (Figure 19). Do not torque the bolts at this time.



Figure 19 - Install Rear of Leaf Spring

39. Next, install the adjustable leaf spring pads around the rear axle tubes, inboard of the factory leaf spring pads. Make sure the rear axle housing is centered underneath the vehicle. DSE recommends that the spring pads be clamped securely in position once the pinion angle and spring widths are set by mocking up the leaf springs in the vehicle. Use anti-seize on the bolts and tighten the hardware. **NOTE:** Failure to draw the bolts down evenly will cause permanent damage to the spring pads. Do not torque the spring pad hardware.

40. Lower the rear axle off the jack stands so the leaf spring pads sit evenly on the top of the leaf springs. Place the provided 1/2"-20 U-bolts around the top of the rear axle tubes and through the lower shock plates. **NOTE:** The lower shock mount flange will be on the front side of the rear axle.

41. Install the 1/2"-20 tall hex nuts onto the U-Bolts and tighten them evenly using anti-seize on the threads of the U-Bolts. Make sure the leaf spring bolt lines up with the center hole of the shock plates (Figure 20). Do not torque at this time.



Figure 20 – Install Lower Shock Plates

42. Next, install the shocks to the upper shock mounts. The provided shock hardware will include a steel sleeve that will need to be placed in the upper shock bushing before it can be installed into the upper shock mount. **NOTE:** The upper shock bushing will be on the end of the shock with the larger diameter shock body. The other hardware included with the shocks will not be used.

43. With the steel sleeve in the upper shock bushing, place the shock into the upper shock mount. Install the provided 1/2"-20 x 2-1/2" L hex head bolts and washer through the upper shock mount and shock. Use anti-seize on the threads of the bolts and tighten them using the provided 1/2"-20 Nylock nuts and washers on both sides of the vehicle (Figure 21).



Figure 21 – Install Shocks to Upper Shock Mounts

44. Next, install the shocks to the lower shock plates using the provided 1/2"-20 x 3" L hex head bolts and washers. Place the washer on the bolt and install it through the bushing of the shock and through the lower shock plate. Use anti-seize on the bolts and tighten them using the provided 1/2"-20 Nylock nut and washer on both sides of the vehicle (Figure 22). Do not torque at this time.

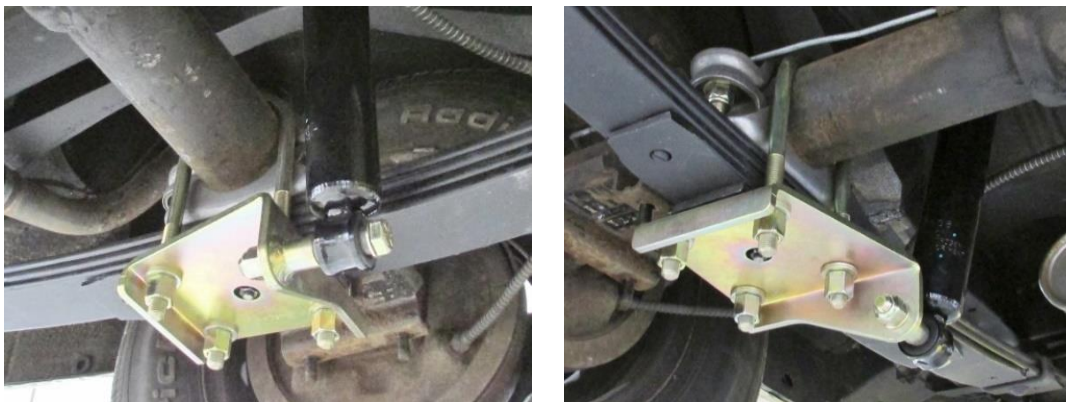


Figure 22 – Install Lower Shock Hardware

45. Next, install the provided E-brake cable bracket. It will be located on the outside of the driver's side frame rail where the crossmember extends out to the rocker panel. With your E-brake cables hooked up, move the bracket forward until the slack in the cable is tight. Tack weld the bracket in place. Adjust the cables as needed and then finish weld (Figure 23).



Figure 23 – Install E-Brake Cable Bracket

46. Now that the rear suspension is together, you can check your pinion angle. Install the rear wheels and tires and lower the vehicle down on blocks so the suspension is at ride height. DSE recommends the pinion angle to be set at -3° to -4° down towards the ground.

47. With the rear axle fabrication complete, DSE recommends painting the leaf spring pads and all bare metal to prevent the formation of rust.

48. Once the pinion angle has been determined, raise the vehicle back up on jack stands and remove the leaf springs from the axle housing. Permanently attach the leaf spring pads by welding the lower spring pad to the axle tubes. Use care when welding as excessive heat can distort the axle tubes. **NOTE:** The spring pads must be welded to the axle tubes before driving the vehicle.

49. Re-install the leaf springs to the rear axle. Draw the U-bolts up evenly and torque to 75 ft-lbs. The upper and lower shock bolts can be torqued to 60 ft-lbs.

50. With the wheel and tires installed and the vehicle resting on all four tires, check that the rear axle is positioned correctly in the vehicle. It should be centered side to side, and the wheelbase should be correct on both sides of the vehicle at 110.0".

51. Once the rear suspension is loaded with the weight of the vehicle, then torque the front leaf spring eye bolt and the rear shackle bolts to 90 ft-lbs.

52. Check all rear clearances before driving the vehicle and make sure all hardware is tight and has been installed with the correct torque settings.

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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