

Detroit Speed
Mini Tubs
1968-74 Chevy Nova, Oldsmobile Omega, Pontiac Ventura
P/N: 040402DS

The Detroit Speed Mini-Tubs are inner wheel housings designed to accommodate a wider wheel and tire package, including tires as wide as 315mm. They are engineered for a precise fit and retain a stock appearance. The DSE Mini Tubs are wider than stock, stamped from 18-gauge steel and proudly Made in the USA. The DSE Mini-Tubs include closeout and flange templates as well as instructions, so you have all components necessary to install this kit.



Scan the QR code to guide you through the step-by-step installation video of the 1968-74 Nova Full Suspension installation.

Item	Component	Quantity
1	Detroit Speed Mini Tubs - 1968-74 X-Body	2
2	Template (not shown)	5
3	Instructions	1

NOTE: All work should be performed by a qualified welder and technician.

NOTE: The DSE Mini-Tubs were designed to OEM sheet metal, therefore any aftermarket restoration sheet metal may require additional body work to fit to the DSE Mini-Tubs.

Wheel and Tire Fitment	
1968-74 Nova	
Wheel Size	Tire Size
17" x 11"	315/35R17
18" x 11"	315/30R18

NOTE: We recommend welding one mini-tub in at a time because it is easier to fit and install the upper shock crossmember without one of the mini tubs in place. Cut and fit both sides however only weld one side in place until the upper shock crossmember has been fitted.

1. Properly support the vehicle on jack stands with the vehicle square and level.
2. Remove the rear axle, drive shaft, shocks, leaf springs, and fuel tank.
3. Strip/remove all undercoating, paint and seam sealer from the inner and outer wheel houses. This will help identify seams and spot welds.
4. Remove the decklid and decklid torsion springs from the vehicle as shown in Figure 1. Use caution when removing the leaf springs as they are under tension.



Figure 1 – Removing the Torsion Springs

5. If the Detroit Speed Leaf Spring Mini-Tub Kit is being installed, **mark or scribe a line between the original upper shock point centerlines on the trunk floor.** This will be used as a reference line when installing the DSE Upper Shock Crossmember in the Leaf Spring Mini-Tub Kit. **NOTE: You must draw this reference line before you make any cuts, otherwise you will NOT be able to locate your upper shock crossmember.** The upper shock mounts are not visible from the trunk pan on an X-Body (Nova, Ventura, Omega) so it's necessary to drill a reference hole through the center of the shock mount and into the trunk pan. Draw a straight line between the two holes marking the original upper rear shock mounts.

If installing the QUADRALink Kit, follow the instructions included with the QUADRALink Kit to locate and install the DSE Upper Shock Crossmember.

6. Position the crossmember so that the shock crossmember centerline is near the centerline of the original upper shock mounts.
7. Mark and/or scribe the trunk pan for the cut lines that will be approximately 6" wide. Use the shock centerline as a guide and measure 3" on either side for your cut lines. It is always a good idea to cut inside your lines; the section can always be made wider during final fitting.
8. Once the crossmember can be placed in position, determine your mounting height. The top of the crossmember should be approximately 1-1/2" above the trunk floor measured from the frame rail area. This will provide additional shock travel if ride height is lowered.
9. With the crossmember in position scribe the underside of crossmember with the trunk pan and floor pan. The crossmember can be removed and trimmed to trunk pan contours.
10. Once fitted, the crossmember should be welded on both sides of the trunk/floor pan and to each wheel tub and frame rail once the mini-tubs have been fully installed.
11. The Detroit Speed Mini Tubs will be 2" wider than stock. Take your measurements and mark along the outside edge of the stock tub. Set your dividers to 2" as this is the difference in distance from the new DSE mini tub as compared to the stock inner tub. Scribe a line around the stock inner wheel tub as shown in Figure 2.



Figure 2 – Scribe Cut Line

12. Once you have scribed along the stock inner tub, use a marker to mark the cut lines on the trunk floor and back seat brace as shown in Figure 3.



Figure 3 – Mark the Cut Lines

13. Mark the floor pan next to the tub at 2" for your flange bend line. An additional line should be marked with your dividers set at 1-1/4" as shown in Figure 4. This additional line will be used on the interior floor pan; this will be the actual cut line. The 2" marked line will be used as a folding line for the new flange. See the cut-out schematic in Figure 5 for further details.



Figure 4 - Mark the Flange Bend Line

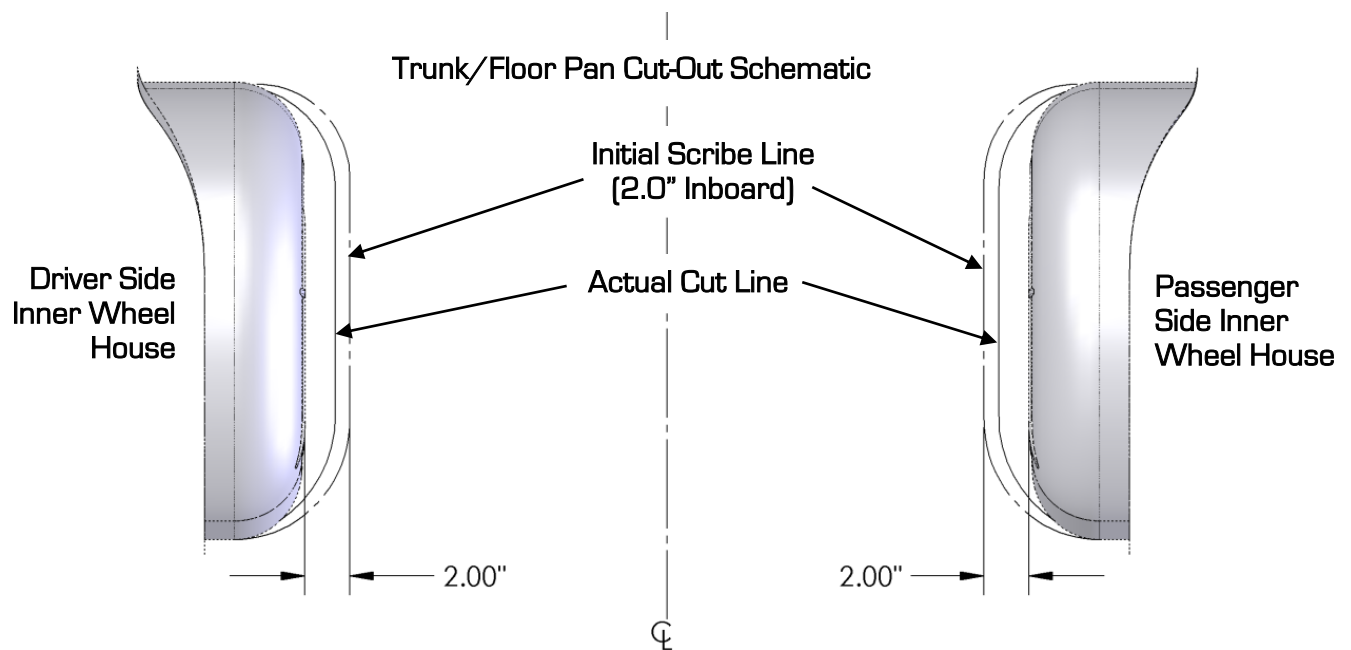


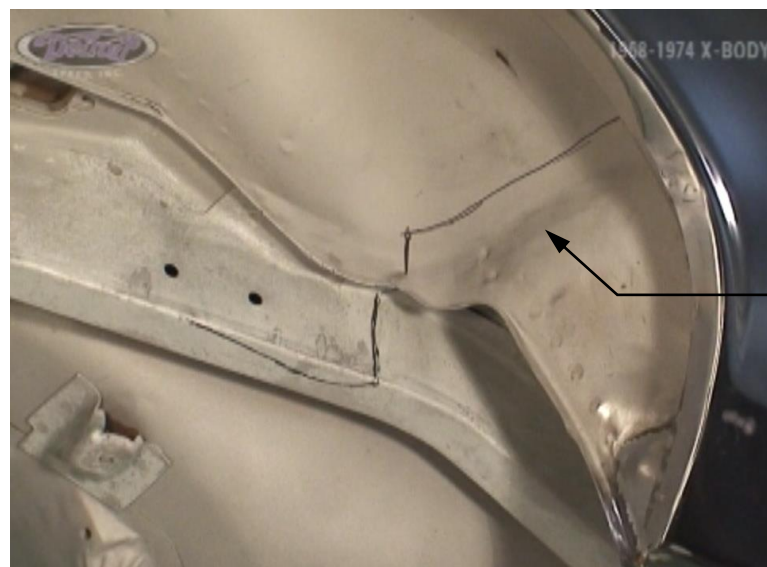
Figure 5 - Actual Cut Line is 3/4" Outboard from Initial Scribe Line
 (The Initial Scribe Line will be used as a folding line for the new flange)

14. Use your dividers to scribe and mark a 2" line underneath your vehicle as shown in Figure 6 on the next page. You will be removing a small section of the framerrail towards the rear of the wheel tub. This will be replaced with 1/8" thick steel which will be created using the provided templates later during the install.



Figure 6 – Mark the Frame Rail

15. The DSE Mini-Tubs do not have provisions for the back lower portion of the inner wheel tub so you must leave that section attached to your vehicle. Mark a line about an inch above the framerrail and draw a line to the outside edge of the stock tub above where the floor of the trunk would be as shown in Figure 7.



Leave this section of the stock inner tub

Figure 7 – Stock Tub Cut Line

16. Finish marking your cut lines on the outside section of the frame rail and stock tubs as shown in Figure 8.



Figure 8 – Mark Cut Lines

17. Continue marking your 2" cut line down the outside edge of the framerail with your dividers. After making your 2" mark, scribe another line at 1-1/4" as we did on the inside of the vehicle for the flange cut line as shown in Figure 9.



Figure 9 - Mark Flange Line

18. With all of your lines marked and using the cut lines as a guide, start to cut out the stock tub with a cut off wheel, die grinder or plasma cutter. This line will be inboard of the frame rail as the frame rail runs outward, rear of the axle centerline. See Figure 10, start at the rear section of the stock tub that you will be leaving in place shown in Figure 7.



Figure 10 - Start Cutting the Stock Tub

19. Mark around the visible weld area of the trunk mounts from underneath the stock tub. Cut and remove them along with the rear section of the stock tub as shown in Figure 11.



Figure 11 - Mark the Trunk Mounts

20. After cutting around the bottom side of the trunk mount, next cut the decklid hinge mount to remove it from the vehicle as shown in Figure 12. Continue to cut out the stock tub on all of your pre-marked lines in the trunk as well as inside the vehicle as shown in Figure 13.



Figure 12 - Cut and Remove the Hinge Mount

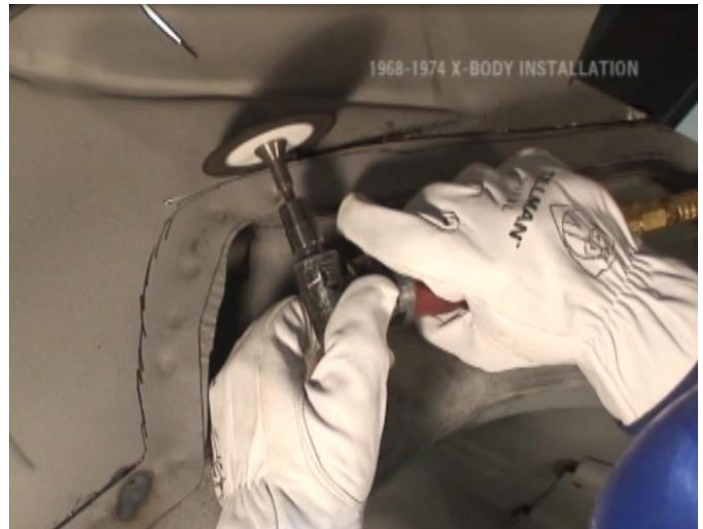


Figure 13 - Cut Pre-Marked Lines

21. Leave the 2" cut lines that you have marked for the flanges and just cut the lines you marked off at 1-1/4" as shown in Fig. 14. You will also need to mark around the visible welds of the seat back brace underneath the vehicle and remove that section as shown in Fig. 15 on the next page.



Figure 14 - Cut 1-1/4" Marked Lines



Figure 15 – Remove the Seat Brace

22. Remove the stock inner wheel tub as it will not be re-used as shown in Figure 16. Do not damage the outer wheel house. If the outer wheel house is rust free it will not need to be modified.



Figure 16 – Stock Inner Tub Removed

23. With the stock tub removed from the vehicle, finish your cuts along the framerrail to make room for the new 2" wider DSE mini tubs. Due to space constraints around the stock upper shock mounts, use the appropriate tool for the space provided as shown in Figure 17.



Figure 17 – Cutting along the Framerrail

24. The outer frame rail wall can now be removed with a plasma cutter or die grinder. The section to be removed will start approximately at the wheel/axle centerline and continue rearward to the inner tub radius as shown in Figure 18 on the next page.



Figure 18 – Notch the Frame Rail

25. With the stock inner tub removed, grind the edge however make sure to leave the seam from the stock outer tub. That way you have a thicker edge with more material to weld the new DSE mini-tub as shown in Figure 19.



Figure 19 – Grind Seam

26. Carefully trim and clean up the rest of your floor cut lines to prepare the mini-tub for test fit. Finish by grinding down the edges to the pre-marked cut lines as shown in Figure 20.



Figure 20 – Finish Cut and Grind Pre-Marked Lines

27. The 3/4" sheet metal flange can now be folded down using the initial scribe line as a reference. A flange tool or Vise Grips™ can be used to start working the metal. A body hammer and dolly can be used to finalize the shape of the flange only on the floor area inside the car and under the back seat as shown in Figure 21.



Figure 21 – Folding & Shaping of the Flange

28. With the new flange created, the stock inner tub removed and the framerrail cut and clearance, it is now time to test fit the mini tub as shown in Figure 22. **NOTE:** DSE recommends placing your wheel and tire in the mini tub to make sure you have sufficient clearance between the tire and the mini tub before you weld them in place. DSE recommends using your rear axle to help locate your wheel and tires.



Figure 22 – Test Fit

29. A new outer frame rail section can now be fabricated from 1/8" steel. This will close and strengthen the frame rail. The section should follow the rear inner tub radius. Close out panels should be made from 1/8" steel to close the upper trunk/stock shock area. All pre-made closeout and flange templates for your project are included in the kit. The provided templates are to be used as a general guide. Due to vehicle variation, you can also create new templates to properly fit your vehicle as shown in Figure 23.



Figure 23 – Framerrail Templates

30. Once you have transferred your template to 1/8" steel, as you can see in Figure 24, we attached a tab to the outside surface to make it easier to hold onto. Once it's welded in place you can remove that tab. We also added a small step to the closeout, so it fits it doubles over into the frame rail.



Figure 24 - Frame Rail Closeouts

31. Tack weld both closeouts in place and check for fitment before final welding. Once they are completely welded in place, you can grind your welds smooth, so it is ready for the DSE mini-tub as shown in Figure 25.

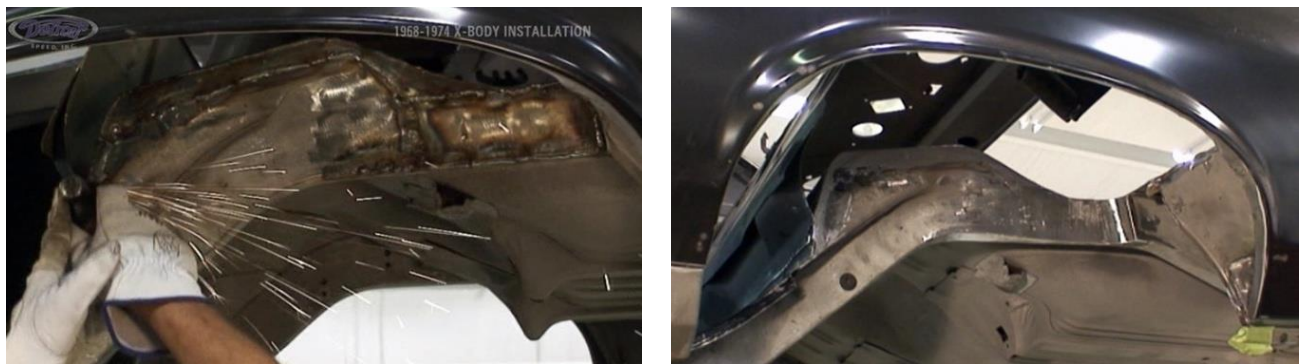


Figure 25 - Grind Closeouts

32. With everything prepped and ready, position and line up your mini-tub along the seams and clamp into place. Once it is clamped, come in from the trunk side and mark your lines at the backside of the tub and also on the inside at the back seat area. Also make a reference line around the seam of the mini-tub at the outside framerail so you have a good return point after you punch your spot weld holes in the mini-tub as shown in Figure 26.



Figure 26 - Mark the Mini-Tub

33. Drill or punch $9/32$ " holes in the mini-tub flange and along the lower edge of the mini-tub as shown in Figure 27. With all of the holes punched in the mini tub, fit and secure it to the vehicle and prepare to weld it in place.

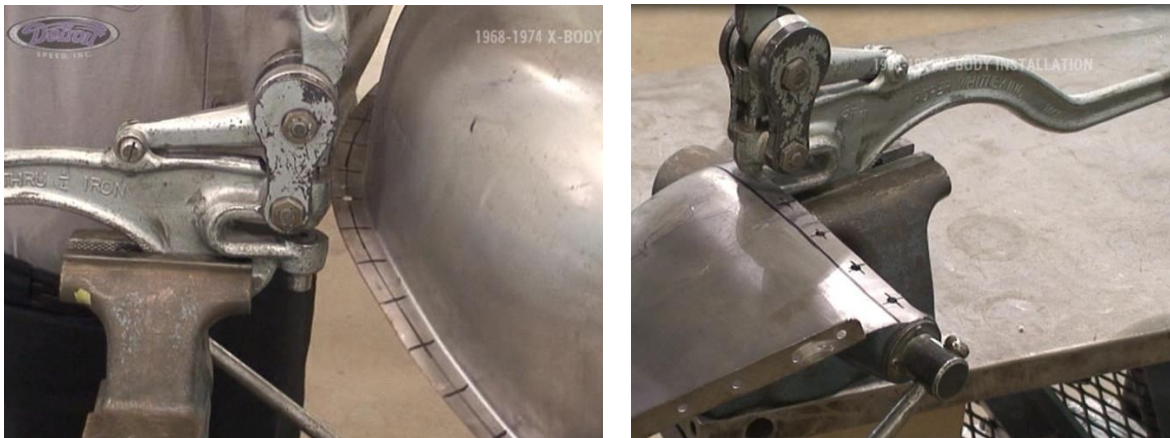


Figure 27 - Punch Spot Weld Holes

34. Pre-drill a few location holes in the mini-tub and the frame rail on your last fitment so you can hold it in place with Cleco fasteners. Then you can clamp the mini tub tightly in place for welding as shown in Figure 28.



Figure 28 - Secure the Mini-Tub for Welding

35. With the mini-tub lined up and clamped in place, start welding it to the vehicle in different locations as shown in Figure 29.



Figure 29 - Welding the Mini-Tub

36. Grind off the welds at the bottom side of the mini-tub at the front of the wheel well. Mark around the welded area and use a template to create a doubler plate using 1/8" steel. Before welding in place, grind the welds and any high spots in that area so the doubler plate will sit flat as shown in Figure 30.

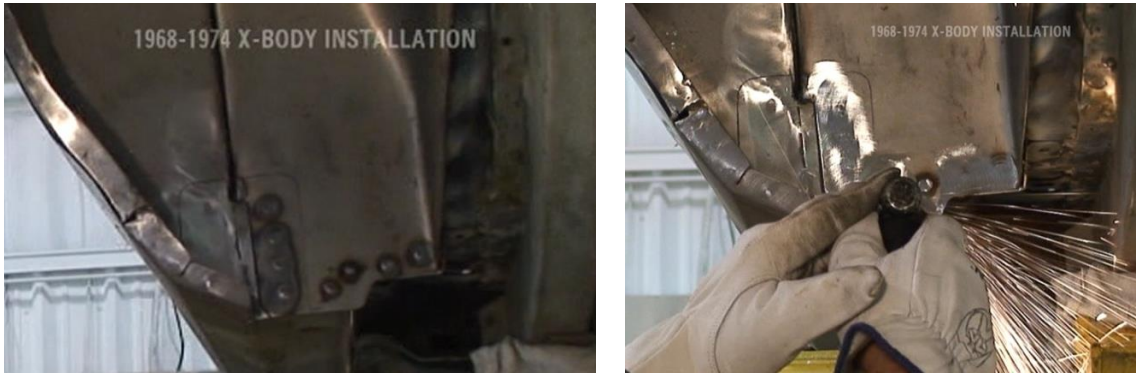


Figure 30 – Prepare for Doubler Plate

37. Once you have the plate fit and ground, plug weld in place. Once it is plug welded, grind the doubler plate smooth. When finished it will be the same as what you had from the factory as shown in Figure 31.

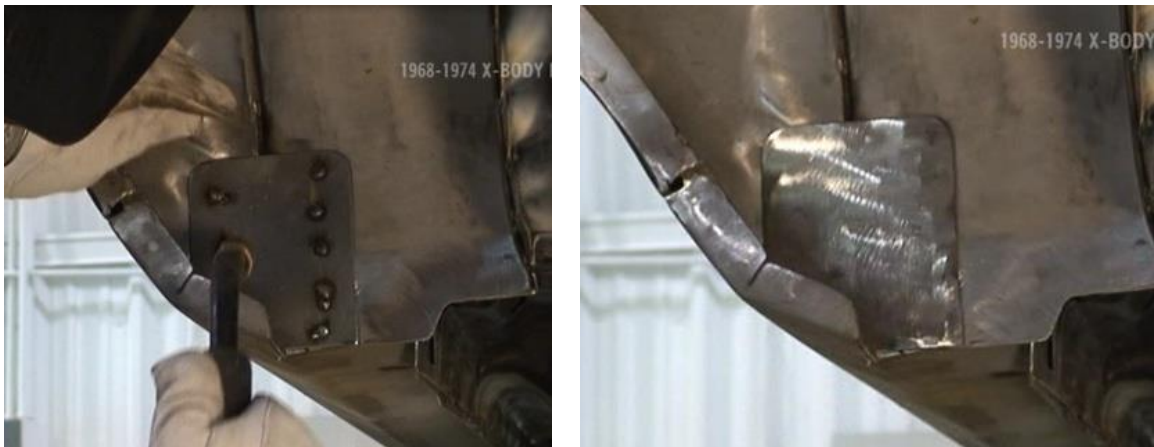


Figure 31 – Welding Doubler Plate

38. Fabricate a new decklid support mount to replace the factory one that was removed earlier to fit the new mini-tub. After fabricating a new decklid mount, clamp it to the vehicle and weld it in place as shown in Figure 32.



Figure 32 – Fabricate and Weld the Decklid Support

39. After welding the deck lid support into place, grind the decklid support mount and the mini-tub welds to a smooth finish as shown in Figure 33.



Figure 33 – Finish Grind Mini-Tub

40. Start the passenger side mini-tub installation by cutting the decklid support mount. Follow the same steps you used in removing the driver's side tub to remove the passenger side stock inner tub as shown in Figure 34.

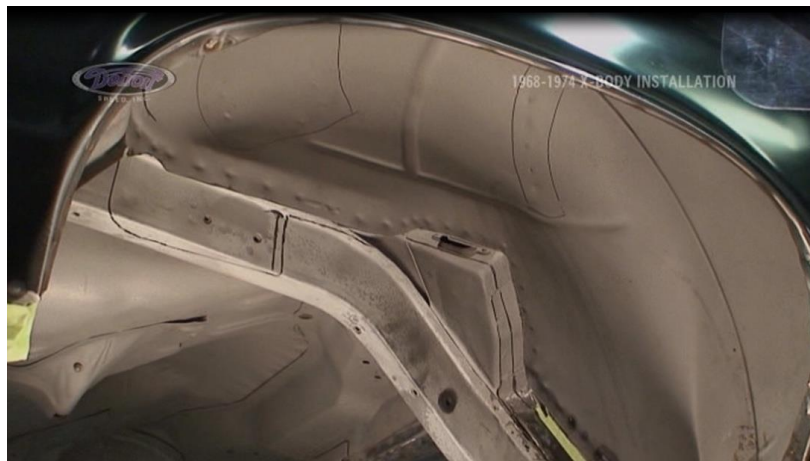


Figure 34 – Passenger Side Stock Tub

41. With most of the stock inner tub removed, finish cutting out the marked area of the vehicle's framerails as shown in Figure 35.



Figure 35 – Passenger Side Framerrail

42. Cut and fit the passenger side mini-tub however do not weld it in place until the upper shock crossmember has been fitted. Whether you will be installing the Detroit Speed Leaf Spring Mini-Tub Kit or the Detroit Speed QUADRALink kit, it will be easier to fit and install the crossmember without one of the mini-tubs in place. Refer to the corresponding instructions to install the upper shock crossmember for your rear suspension.
43. You will need a flat surface to have the passenger mini-tub seal up against. Due to framerail and the inner sheet metal variations on this application you may need to create a template and than a steel part to weld in place as shown in Figure 36.



Figure 36 – Passenger Side Closeout

44. You will also need to make a steel closeout for the rear section of the framerail. When both frame rail pieces are tacked in place, finish welding them to the framerail. Then grind your welds to a clean smooth finish as shown in Figure 37.



Figure 37 – Finished Closeouts

45. Now it's time to test fit the passenger side mini-tub. With it in place, mark the top and bottom and around the points on the vehicle so when you remove it, you can mark for your plug weld holes. With your lines marked and your holes punched, fit the mini-tub into place. Secure it with clamps and begin welding the mini-tub to the vehicle as shown in Figure 38.



Figure 38 - Clamp and Weld to the Vehicle

46. When finished welding, grind your plug welds to a smooth clean surface. With both mini-tubs welded to the vehicle, mark lines at every 1-1/2" and stitch weld both mini-tubs to the floor pan as shown in Figure 39.



Figure 39 - Stitch Weld

47. To finish your passenger side mini tub, create a trunk mount template and fit to your application. Then create your mount out of steel and weld it to the vehicle as shown in Figure 40. Then grind your welds to a smooth flat finish.



Figure 40 - Trunk Mount

48. The seat back brace can be reinstalled to the Mini-Tub and original seat back structure. At the start of this installation, we had to cut the rear seat brace loose from the factory tub so now it is time to put that connection back in place. Start by creating a template to fit the vehicle and then fabricate a steel part as shown in Figure 41.



Figure 41 - Seat Back Brace

49. Secure the new seat back brace and weld it to the vehicle. Do this for both sides of the vehicle and grind your welds to a flat smooth finish as shown in Figure 42.



Figure 42 - Weld and Grind Seat Back Brace

50. Remove the rear seat cover and padding. Modify the seat frame to clear the DSE Mini-Tubs. Install the bare seat frame and mark points of interference between the seat frame and tubs. These points will have to be modified to clear the new tubs.

51. Modify rear interior trim panels as necessary to fit the DSE Mini-Tubs.

52. The installation of the Mini-Tubs is complete. We recommend that all seams receive seam sealer to prevent the possibility of water intrusion and all bare metal be primed and painted.
53. Re-cover the seat bottom and then reinstall the package tray, rear interior quarter trim panels, carpet padding, carpet, seats, gas tank, rear suspension, and any additional interior panels that were removed for the installation process.
54. Detroit Speed does have a narrowed stainless steel gas tank available for either the DSE Mini-Tub Leaf Spring Kit or the QUADRALink.
55. Enjoy your new Detroit Speed Mini Tubs!



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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