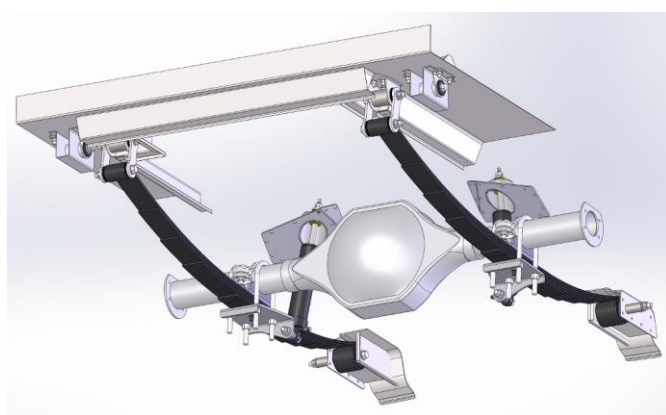
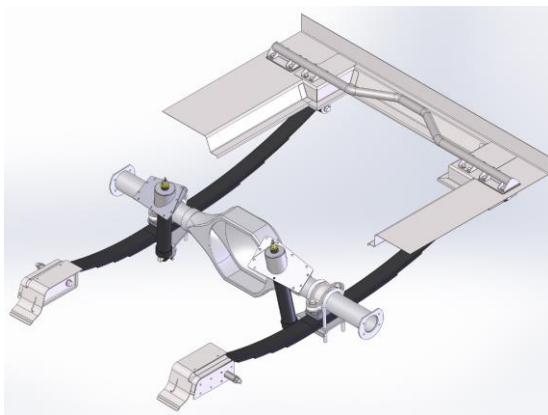
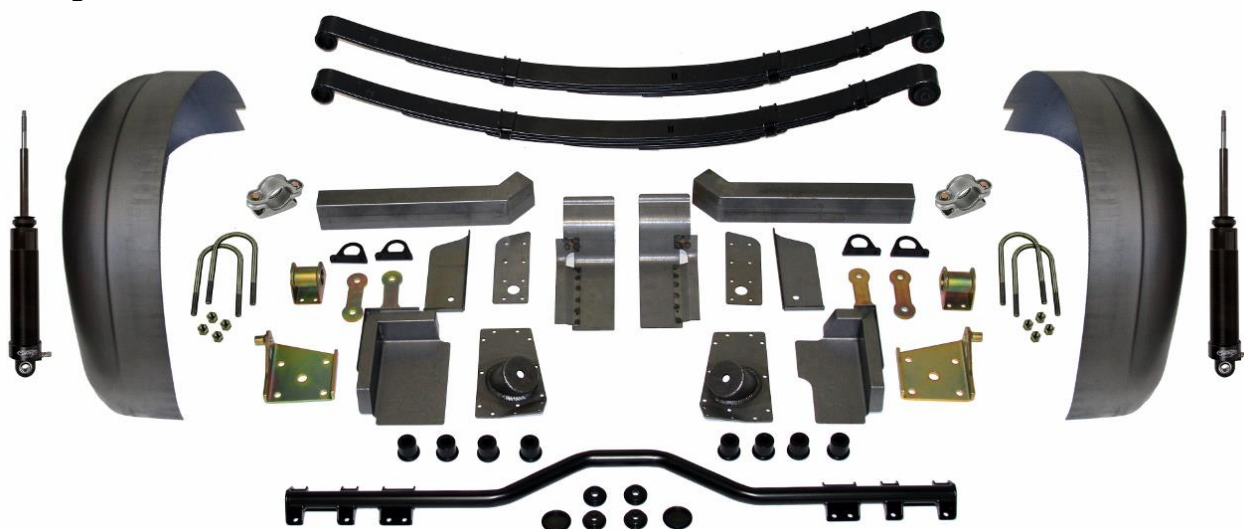




Detroit Speed
1964.5 - 1970 Mustang Mini-Tub Kit
P/N: 041231DS

The Detroit Speed Mini-Tubs are inner wheel housings designed to accommodate wider tire and wheel packages. They are designed for a perfect fit, retain a stock appearance, and are available exclusively through DSE. The Mustang Mini-Tubs come with a replacement frame rail section and doubler reinforcement plates to accommodate a wider rear tire. The Mini-Tubs are up to 2 1/2" inches wider than stock, stamped from 18 gauge steel, and made in the USA. This complete DSE rear Mini-Tub kit includes all necessary parts for a complete project package.



Item	Component	Quantity
1	DSE Mini-Tubs - 1964.5-70 Mustang	2
2	Frame Rail Sections (LH and RH)	2
3	90° Doubler Plate	2
4	Bottom Frame Rail Doubler Plate	2
5	Inside Frame Rail Doubler Plate	2

6	1" OD x 2-1/4" L Torque Box Crush/Tube Spacer	2
7	Torque Box OB Plate	2
8	Torque Box IB Plate - LH and RH	2
9	Torque Box Bottom Plate - LH and RH	2
10	Torque Box Top Assembly - LH and RH	2
11	Torque Box Weld Spacer (with Groove)	1
12	Upper Shock Mount Assembly - LH and RH	2
13	Mini-Tub Kit Rear Support Tube	1
14	Shackle Mount Assembly	2
15	Shackle	4
17	Leaf Spring Shackle Urethane Bushing	8
18	Support Tube Frame Locator	4
19	Support Tube Frame Locator Lower Bracket	4
20	Mini-Tub Kit Trunk Closeout - LH and RH	2
21	Adjustable Leaf Spring Pad	2
22	1/2"-20 U-Bolt Kit	1
23	Lower Shock Plate - LH and RH	2
24	DSE Rear Leaf Spring (1-1/2" Drop)	2
25	Mini-Tub Shock	2
26	Floor Pan Cut Template	1
27	Instructions	1

Hardware Checklist - Mustang Mini-Tub Kit			
Part Number	Description	Quantity	Check
9304188	Mustang Mini-Tub Hardware Kit	1	
950083FS	5/16"-24 x 1-1/4" L Hex Head Bolt Grade 8	8	
980041FS	5/16"-24 x 1" L Hex Head Bolt Grade 8	8	
960049FS	5/16" Grade 8 Nylock Nut	16	
970041FS	5/16" SAE Flat Washer	32	
980077FS	1/2"-20 x 7" L Hex Head Bolt Grade 8	2	
980039FS	1/2"-20 x 4-1/2" L Hex Head Bolt Grade 8	4	
980043FS	1/2"-20 x 4" L Hex Head Bolt Grade 8	2	
980058FS	1/2"-20 x 3" L Hex Head Bolt Grade 8	2	
960004FS	1/2"-20 Grade 8 Nylock Nut	10	
970037FS	1/2" SAE Flat Washer	18	
960083FS	M10-1.5 Hex Nut	4	
9304189	Mustang Mini-Tub Shock Hardware Kit	1	
99030189	Polyurethane Sway Bar End Link Grommets, Black	4	
99030190	Sway Bar End Link Stamped Washers	4	
99030169	3/4" OD x 1/2" ID x 1/4" L Spacer	2	
99040429	Shackle Crush Tube	4	
920025FS	1-3/4" Flush Head Button Plug	2	
9304362	Mustang Torque Box Hardware Kit	1	
960052FS	1/2"-20 Grade 8 Hex Nut	1	
970037FS	1/2" SAE Flat Washer	1	

INTRODUCTION

Congratulations on your purchase of the DSE Mustang Rear Mini-Tub Kit. Please read the entire set of instructions and fully understand all of the steps involved before beginning the project. If you have any questions before, during, or after the installation, feel free to contact us by phone at (704) 662-3272 or by email at tech@detroitspeed.com.

Wheel & Tire Fitment	Wheel Size	Tire Size
1964.5 - 1966 Mustang	17" x 11"	315/35R17
1964.5 - 1966 Mustang	18" x 11"	315/30R18
1967 - 1970 Mustang	17" x 12"	335/35R17
1967 - 1970 Mustang	18" x 12"	335/30R18

NOTES:

1. All work should be performed by a qualified welder and technician.
2. There is a mini-tub installation video available shown here:
<https://youtu.be/bKL2jNA3I9g>
3. The factory fuel tank will not work with the DSE Mini-Tub Kit. DSE does offer a Mini-Tub Kit fuel tank for a carbureted or fuel injected engine with multiple fuel pump options for the 1964.5-1970 Mustang application, P/N: 080126DS (Holley Fuel Pump).
4. The rear valence on a 1965-66 Mustang GT will not work with the DSE Mini-Tub Kit.

PREPARING THE VEHICLE

1. Raise the vehicle a few feet off of the ground so the interior, trunk, and the underside of the vehicle are accessible. Ensure the vehicle is level and well supported.
2. Disconnect the battery cables.
3. Remove the gas tank and fuel lines. **NOTE:** Make sure to eliminate all of the fuel vapors from the work area before continuing.
4. Remove the rear suspension and axle.
5. Remove the seats, carpet, carpet padding, rear interior quarter trim panels, and package tray. Any other interior panels, headliner, door panels, etc., should be removed or masked well to protect them from grinding and welding sparks.
6. Remove the trunk lid, springs, and hinges. Take care when removing the trunk springs as they are under high tension when installed.

REMOVE THE STOCK INNER TUBS

1. Cut out the lower and upper seat brackets from the vehicle (Figure 1). These brackets will be re-installed into the vehicle later.



Figure 1 – Remove Lower & Upper Seat Brackets

2. Cut the back of the interior panel bracket away from the floor pan and move it out of the way (Figure 2). It will be re-attached later once the DSE mini-tubs are installed.



Figure 2 – Remove Interior Brackets

3. Go to Step 4 if you have a coupe, follow this step if you have a Fastback. Mark a horizontal line on the rear seat corner support above the stock inner tub and cut along this line. From underneath the stock tub, cut around the flange of the rear seat support that attaches to the stock inner tub. Remove this piece from the vehicle and save for re-installation later (Figure 3 on the next page). Continue to Step 5.

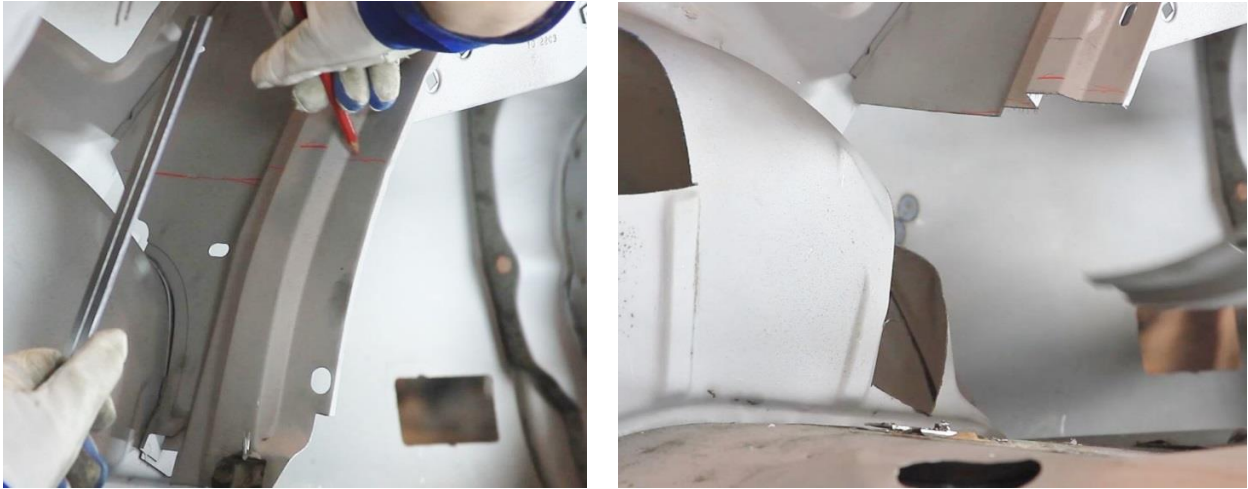


Figure 3 – Remove Seat Support (Fastback)

4. Drill the spot welds out of the upper decklid hinge mounting flange and separate. Cut the lower decklid hinge bracket out of the stock tub and remove the hinge assembly from the car. Remove the rear seat corner support completely from the car. First drill out spot welds in the upper areas of the bracket and separate from the body structure. Cut the remaining section out of the stock tub and remove the bracket from the car. After the bracket is removed from the car, grind spot welds and remove the stock tub material from the flanged area. Straighten and grind the part smooth for re-use later. (Figure 4).

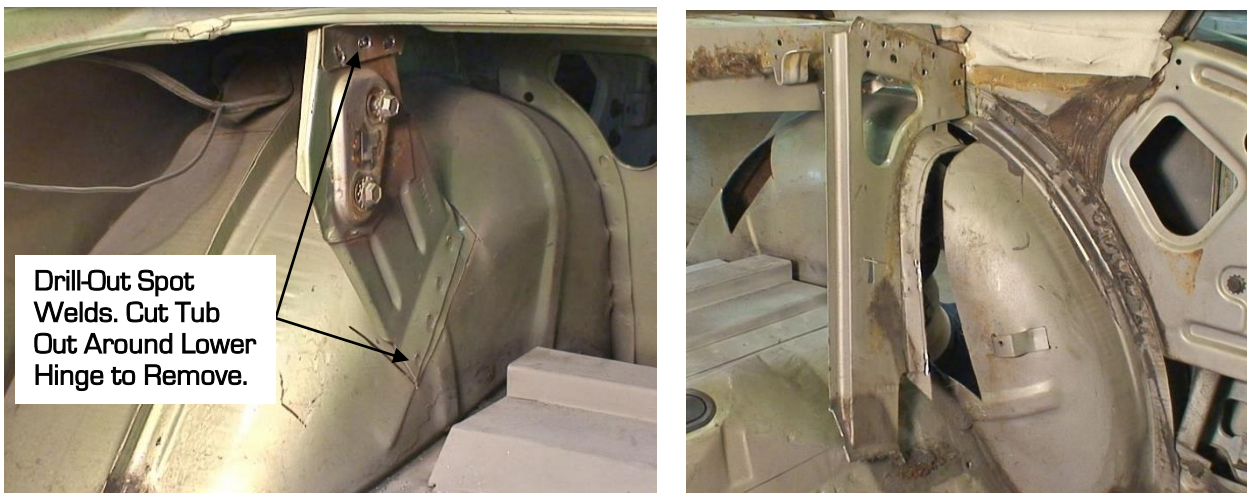


Figure 4 – Remove Seat Support & Decklid Hinge (Coupe)

5. Cut out the provided mini-tub floor pan cut template and place it up against the stock inner tub. Trace along the inside of the template as this will be your cut line for the DSE mini-tub. From underneath the stock inner tub, draw a cut line to the inside of the stepped seam between the inner and outer stock tub (Figure 5 on the next page).



Figure 5 – Trace Floor Pan Cut Template

6. Cut along this line around the top of the stock inner tub and then cut along bottom of the inner tub above the trunk floor (Figure 6). Connect your cut line and remove the stock inner tub from the vehicle.



Figure 6 – Cut Out & Remove Inner Tub

7. Make a vertical cut line on the inner tub flange behind and in front of the rear axle bump stop bracket that's welded to the outer frame rail. Cut away the flange section of the trunk floor pan above the bump stop bracket (Figure 7).

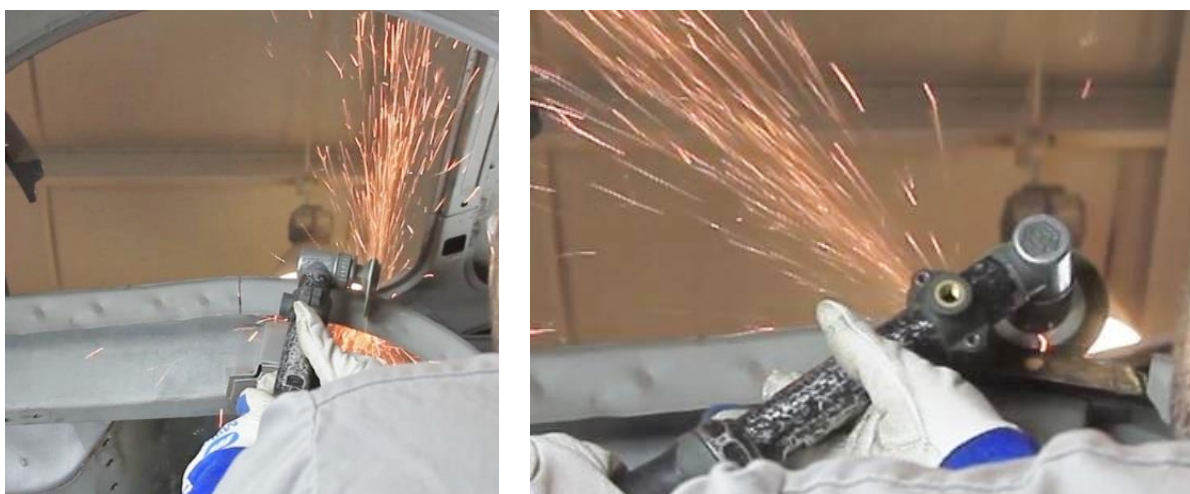


Figure 7 – Remove Flange above Bump Stop Bracket

8. Drill out the spot welds holding the bump stop bracket to the outer framerail and remove the bracket (Figure 8).



Figure 8 - Remove Bump Stop Bracket

9. Cut the inside trunk floor pan where you traced the mini-tub floor pan cut template inside the vehicle (Figure 9). Remove that section of trunk floor pan from the vehicle.



Figure 9 - Remove Floor Pan Section

10. Repeat this process for the opposite side of the vehicle.

INSTALLING THE DSE FRAME RAIL SECTIONS

1. Do each frame rail modification one side at a time to avoid vehicle distortion.
2. On the passenger side inside frame rail, mark a vertical line at the front edge of factory rear leaf spring bushing sleeve. Draw a line on the bottom side of the framerail. Measure forward 11" from the front edge of the bushing sleeve and draw a line on the bottom surface of the framerail (Figure 10 on the next page). On the driver's side inside frame rail, measure forward 12" from the leaf spring bushing sleeve and draw a line on the bottom surface of the frame rail.

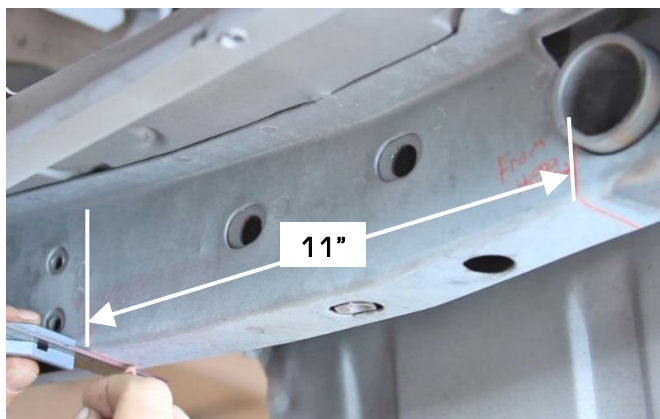


Figure 10 – Passenger Side Frame Rail

3. Measure forward 29" from the front edge of the rear leaf spring bushing sleeve and draw a line on the bottom side of the frame rail. Draw a cut line along the inside bottom corner of the frame rail forward to the rear cross member. Draw a vertical cut line at the corner of the frame rail and the cross member (Figure 11).

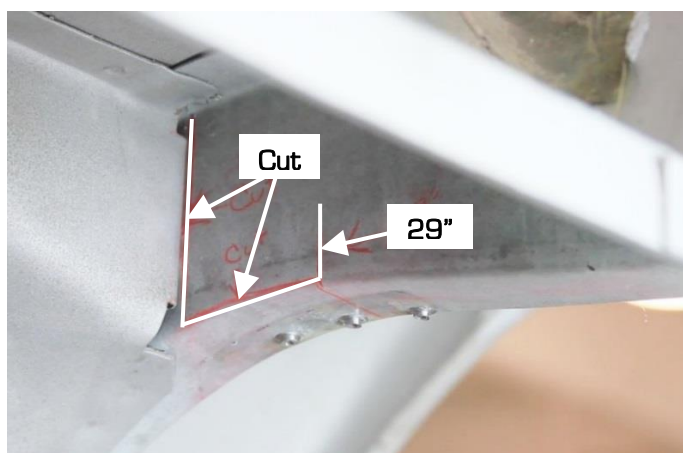


Figure 11 – Locate Inner Frame Rail Cut Lines

4. Draw a fold line on the bottom of the frame rail from the cross member and continue that fold line vertically on the outside frame rail. Continue the cut line drawn on the bottom side of the frame rail at the 29" marked location vertically on the outside frame rail. Draw a connecting cut line at the bottom outside corner of the frame rail connecting the 2 vertical lines on the outside frame rail (Figure 12).

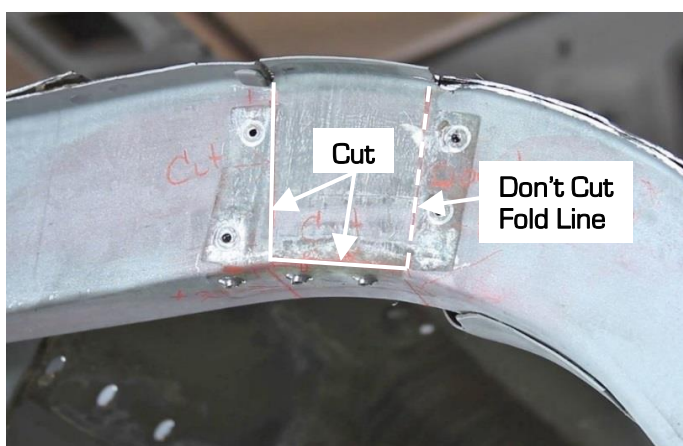


Figure 12 – Locate Outer Frame Rail Fold & Cut Lines

5. Position the provided DSE frame rail section to the bottom of the frame rail. The front of the DSE frame rail section will line up with the front fold line located at the back of the cross member in the previous step. Using the back of the angled DSE frame rail section, draw an angled cut line along the bottom of the frame rail (Figure 13).

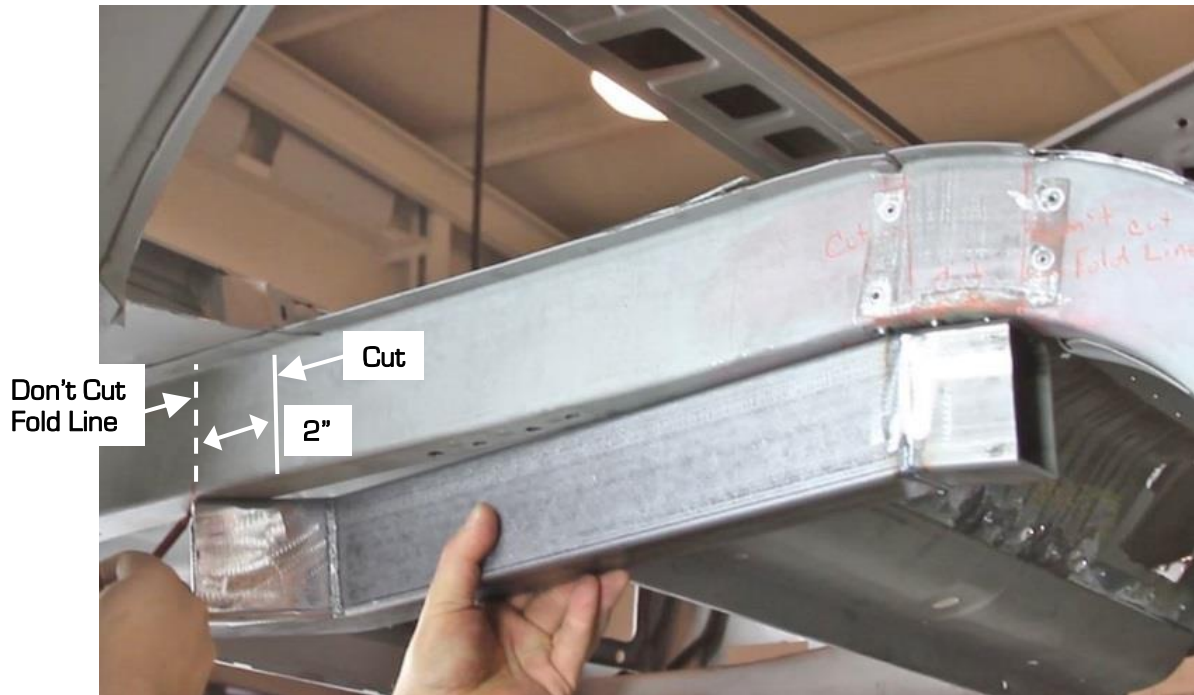


Figure 13 – Locate Detroit Speed Frame Rail Section

6. Draw a vertical fold line on the outside of the frame rail from the angled cut line drawn on the bottom of the frame rail in the previous step. Draw a cut line 2" forward of the vertical fold line drawn on the outside frame rail. Connect the two lines by drawing a cut line along the outside bottom corner of the frame rail (Figure 14). Draw a vertical cut line on the inside of the frame rail where the angled cut line was drawn on the bottom of the frame rail.

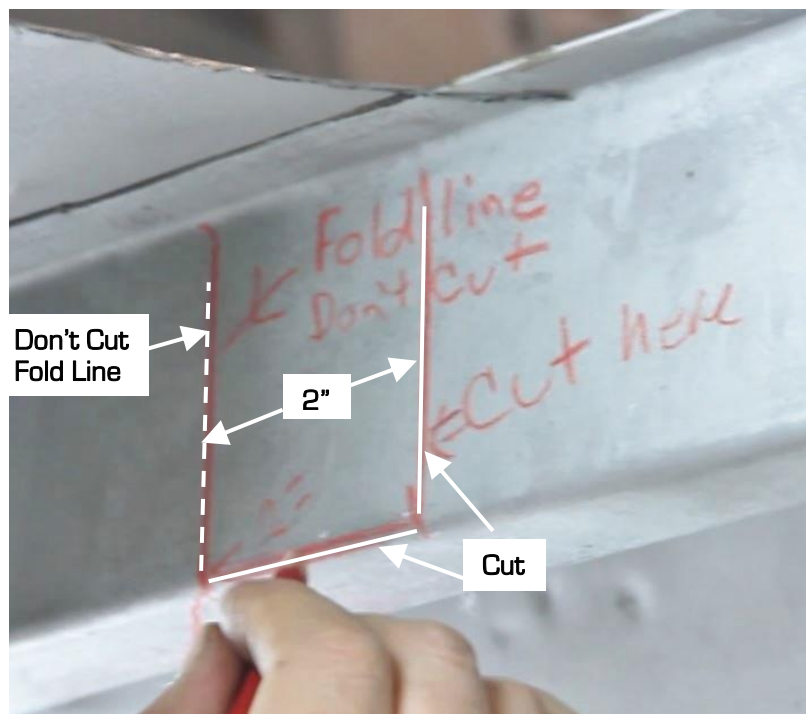


Figure 14 – Locate Fold & Cut Lines

7. Locate and drill out the spot welds from inside the trunk above the frame rail (Fig. 15).



Figure 15 – Drill-Out Spot Welds

8. Cut the frame rail where you previously drew the cut lines to remove this section of the factory frame rail (Figure 16).

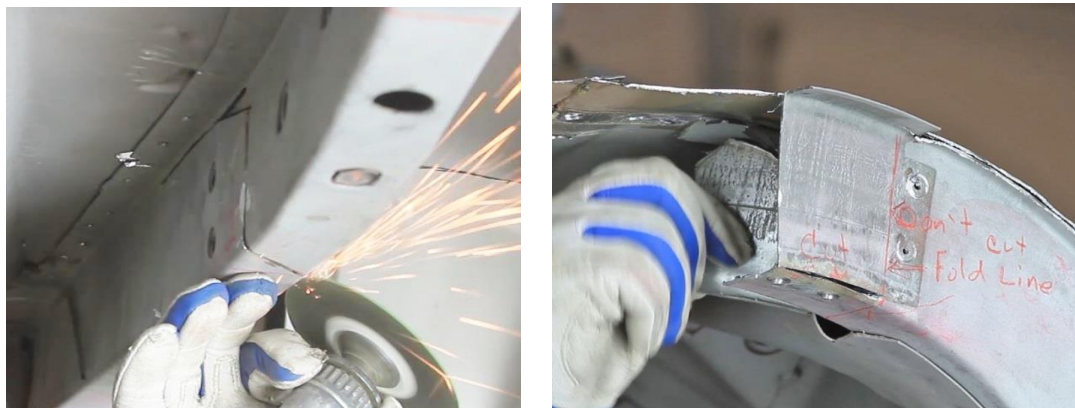


Figure 16 – Remove Frame Rail Section

9. Using the front corner radius of the mini-tub floor cut template, draw an arc connecting the outside of the frame rail to the front cut line where the factory inner tub was removed (Figure 17).



Figure 17 – Connect Frame Rail to Inner Tub Cut-Out

10. Measure the flange overhang from the outside framerail where the front radius of the factory inner tub meets the parallel cut line on the floor pan. Transfer this dimension point to the inside of the floor pan as it should be close to your traced template line. (Figure 18).



Figure 18 – Transfer Flange Dimension

11. Place the template back on the framerail and use it as a straight edge to connect this transferred point straight back to where the floor pan flange meets up with the outside frame rail (Figure 19).



Figure 19 – Connect Transferred Lines

12. Cut this section of floor pan flange away. Weld the two layers of sheet metal together above the frame rail (Figure 20).



Figure 20 – Cut & Weld Sheet Metal Layers

13. Drill plug weld holes in the outside and bottom side of the folded sections of the framerail. Place the DSE frame rail section into the vehicle, placing the front edge inside the folded cut sections of the factory frame rail. Line up the back edge of the Detroit Speed frame rail section with the 11" and 12" marks that were made in Step 2 (Figure 10). Clamp the DSE frame rail section in place (Figure 21).



Figure 21 – Clamp DSE Frame Rail in Place

14. Tack weld and plug weld the folded section of the factory frame rail to the DSE frame rail section. Continue welding the folded flange to the DSE frame rail section. Fully weld the DSE frame rail section in all locations to the factory frame rail (Figure 22).



Figure 22 – Weld-In DSE Frame Rail Section

15. Grind the welds in the back inside corner of where the DSE frame rail section meets the factory frame rail. Bend the provided inside frame rail doubler plate and fit it to the inside of the frame rail. Clamp it in place and tack weld it to the frame rail. Remove the clamps and plug weld the pre-drilled holes in the double plate and fully weld it to the frame rail (Figure 23).



Figure 23 – Weld Inside Frame Rail Doubler Plate

16. Clamp the provided 90° doubler plate at the front corner where the cross member meets the inside frame rail. Once its tack welded in place, remove the clamp and plug weld it to the cross member and frame rail (Figure 24).

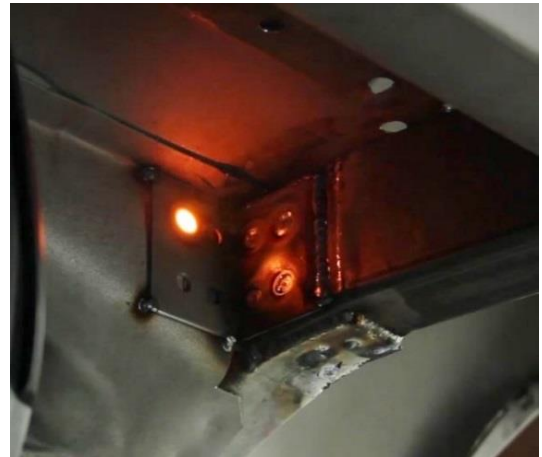


Figure 24 – Weld 90° Doubler Plate

17. Place the provided bottom frame rail doubler plate on the bottom side of the framerrail at the back corner of the DSE frame rail section. Tack weld it in place. Plug weld the pre-drilled holes in the doubler plate and fully weld it in place (Figure 25).

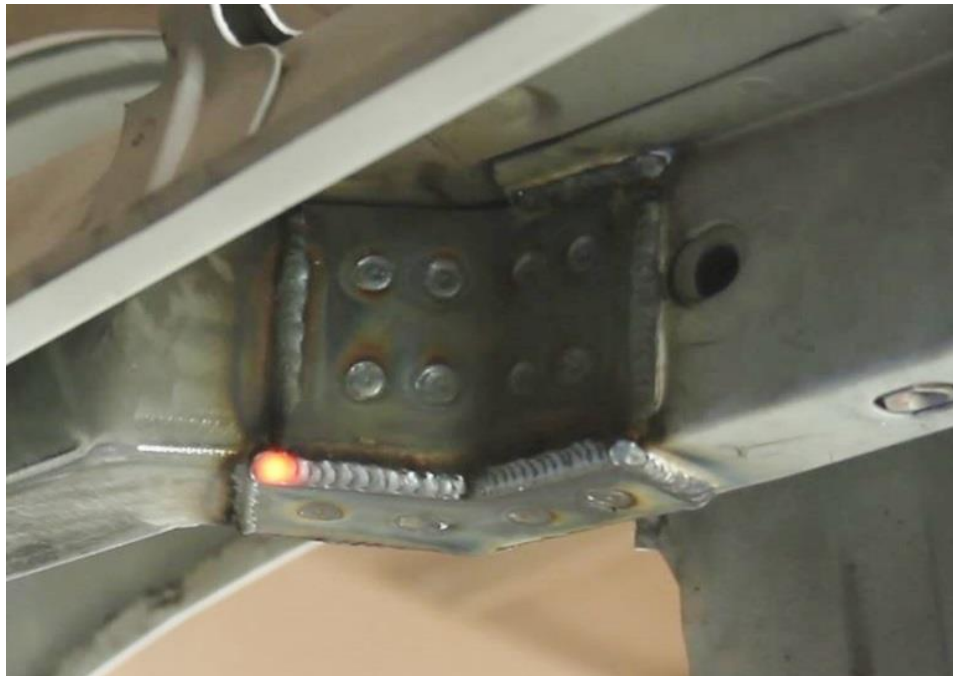


Figure 25 – Weld Bottom Frame Rail Doubler Plate

18. Repeat this process for the opposite side of the vehicle.

INSTALLING THE DSE MINI-TUBS

1. Fit the DSE mini-Tub into the vehicle. Clamp it in place to the frame rail.
2. Begin welding the front corner of the DSE mini-tub to the stock outer tub. Continue stitch welding around the DSE mini-tub to the stock outer tub from underneath the tub as well as fully welding it to the floor pan inside the vehicle (Figure 26 on the next page).



Figure 26 – Weld Mini-Tub to Stock Outer Tub

3. Stitch weld the DSE mini-tub to the frame rail. Tap the factory tub flange down to meet the DSE mini-tub. Stitch weld the factory tub flange to the DSE mini-tub (Figure 27).



Figure 27 – Stitch Weld Mini-Tub to Frame Rail & Outer Tub Flange

4. Go to Step 6 if you have a coupe, follow Step 4 & 5 if you have a fastback. Trim the rear seat corner support to sit flush with the new DSE mini-tub. Once the rear seat support fits correctly, fabricate a weld flange with pre-drilled plug weld holes (Figure 28). Continue to Step 7.



Figure 28 – Modify Rear Seat Support

5. Clamp the rear seat corner support in place and tack weld it to the existing rear seat support. Remove the clamp and fully weld the rear seat support in place (Figure 29). Grind the welds smooth for a clean finish.



Figure 29 – Weld Rear Seat Support to Mini-Tub (Fastback)

6. Modify and fit the lower section of decklid hinge bracket to the DSE Mini-Tub. Weld the upper part of the hinge mount back to the original flange piece still on the vehicle. Stitch weld and plug weld the lower section into position. Fit the rear seat corner support that was removed earlier to the DSE Mini-Tub. A small extension piece will probably have to be added to the top outboard edge since the bracket will be shifted inboard by the Mini-Tub. Drill holes for plug welding in the applicable areas and tack weld the bracket into position. Weld any other remaining brackets back into position that were removed from the stock tubs (Figure 30).

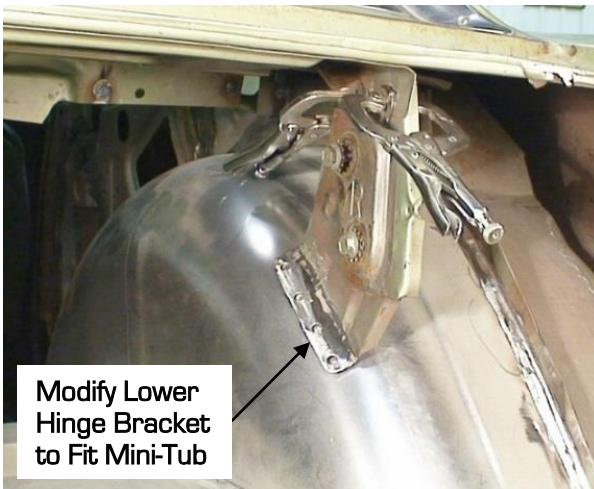


Figure 30 – Weld Rear Seat Support & Decklid Hinge to Mini-Tub (Coupe)

7. Position the upper and lower seat brackets that were removed earlier and weld them back in place (Figure 31 on the next page).



Figure 31 – Re-attach Upper & Lower Seat Brackets

8. Bend the rear interior panel bracket back in place and trim as needed to fit against the DSE mini-tub. Fully weld the interior panel bracket to the DSE mini-tub (Figure 32).



Figure 32 – Re-attach Rear Interior Panel Bracket

9. Re-position the seat belt anchor and weld it back in place. If you are installing the DSE QUADRAlink, it needs to be placed to the inside flange of the upper link pocket (Fig. 33). Drill a hole in the floor pan for the new seat belt anchor and weld the bracket in place.

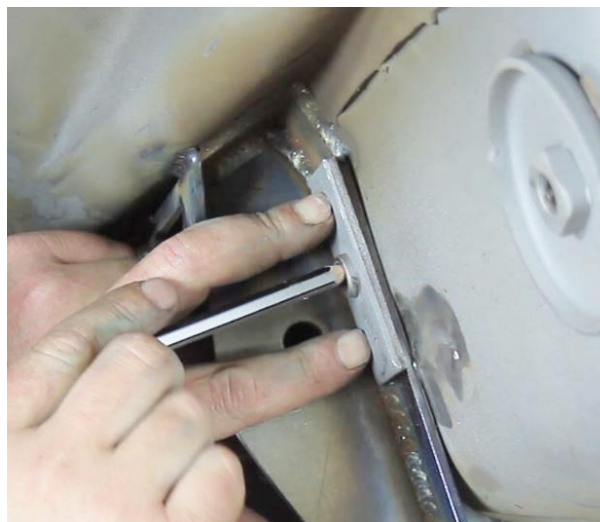


Figure 33 – Re-position the Seat Belt Anchor

10. Repeat this procedure for the opposite side of the vehicle.



Figure 34 – Installed DSE Mini-Tub

TORQUE BOX INSTALLATION

1. Drill out the spot welds that hold the e-brake cable bracket to the framerail and remove the bracket (Figure 35).

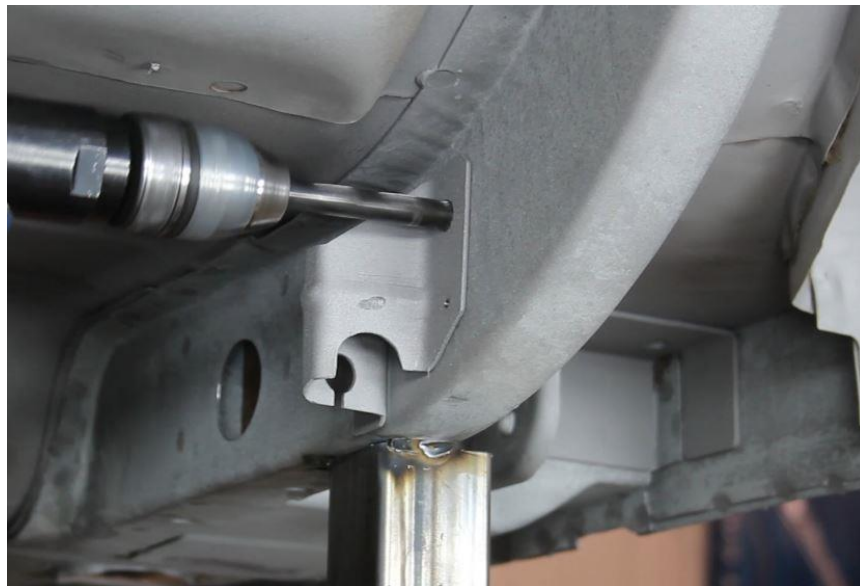


Figure 35 – Remove E-brake Bracket

2. [64.5 – 66 years only] Locate the two spot welds in the bottom of the frame rail for the factory leaf spring bolt crush tube. Drill out one spot weld and use a screwdriver or pry bar to pry the factory crush tube out of the way. [Can be accessed through the hole in the frame rail]. Drill the inboard leaf spring bolt hole in the frame rail to 1-1/16" [Figure 36 on the next page].



Figure 36 – Remove Factory Crush Tube

3. Install the provided 1/2"-20 x 7" L hex bolt and 2-1/4" L spacer from the torque box kit provided with the rear suspension through the inside frame rail (Figure 37).

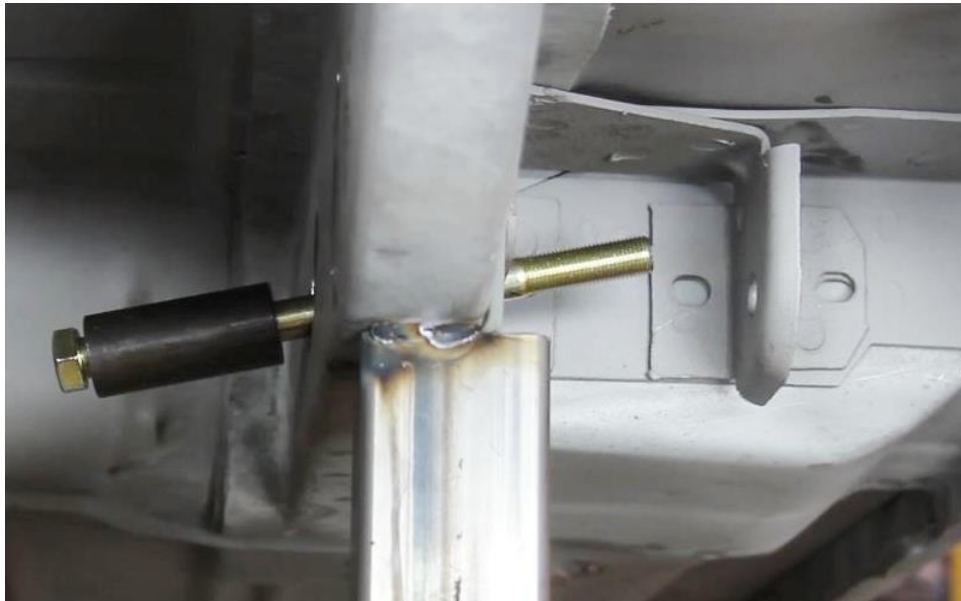


Figure 37 – Install Frame Rail Crush Tube

4. Install the weld spacer with the groove onto the bolt and pass the bolt through the factory front leaf spring mount. Install the provided 1/2"-20 hex nut and washer on the bolt and tighten (Figure 38). This will set the crush tube to proper alignment position.



Figure 38 – Install Weld Spacer

5. Place the outboard torque box plate over the crush tube and against the inside framerail so it is level to the framerail. Tack and plug weld the plate to the framerail. Then finish weld around the perimeter of the plate (Figure 39).



Figure 39 – Weld Outboard Torque Box Plate

6. Remove the 1/2" hardware and spacers from the framerail. Modify the floor pan so that the torque box top assembly sits flush against the framerail and floorpan (Figure 40).



Figure 40 – Modify Floor Pan

7. Once the top assembly sits tight against the floor pan and framerail, tack weld it in place. Stitch weld the top assembly to the floor pan, then weld it to the outer torque box plate (Figure 41 on the next page). Finish weld the top assembly to the floorpan.



Figure 41 – Weld Top Assembly

8. Install the inboard torque box plate onto the 1/2"-20 bolt used earlier along with the weld spacer with the groove. Install the bolt through the inside frame rail and tighten with the provided 1/2"-20 hex nut and washer. The inboard plate should sit square to the top assembly and parallel with the outboard plate (Figure 42). **NOTE:** It may be necessary to grind on the front edge of the plate to fit the profile of your specific floor pan.

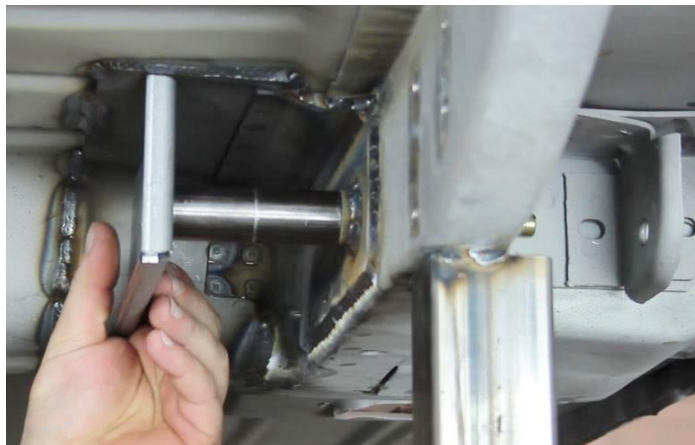


Figure 42 – Install Inboard Torque Box Plate

9. Tack weld the inboard plate to the top assembly, then finish weld on the outside and inside of the inboard plate (Figure 43).



Figure 43 – Weld Inboard Plate

10. Fit the bottom torque box plate into position between the inboard and outboard plates. The bottom surface should be about $\frac{3}{4}$ " below the center of the factory leaf spring bolt hole. The vertical closeout may need to be trimmed to achieve the $\frac{3}{4}$ " dimension (Figure 44). Tack weld in place and then finish weld around the perimeter of the bottom plate.



Figure 44 – Fit Bottom Torque Box Plate

11. Leave the weld spacer in place and finish weld all areas at this time. Remove the weld spacer once everything has cooled to room temperature (Figure 45).



Figure 45 – Finish Weld Torque Box

12. Repeat the above process for the other side of the vehicle.

INSTALLING THE REAR TRUNK CLOSEOUTS

1. With the fuel tank removed, grind any paint, etc. at the back corner of the trunk pan so you have a smooth surface to install the rear support tube and trunk closeouts.

2. Set the mini-tub closeouts in position in the trunk pan. With the closeouts square to the vehicle, trace the side that overlaps the trunk pan. (Figure 46).



Figure 46 – Trace Mini-Tub Closeouts

3. Using a set of dividers, set them to $\frac{3}{4}$ " to leave a flange on the trunk pan to weld the closeouts. (Figure 47). Cut this section of the trunk floor and check fitment with both closeouts. As a reference dimension, the distance between the inside of the trunk closeouts should be about $26\frac{1}{2}$ " across depending on vehicle variation.



Figure 47 – Locate Cut Flange

4. Pre-assemble the shackle mount assembly to the rear support tube using the $\frac{5}{16}$ "-24 x 1" L hex head bolts, washers and Nylock nuts. Position the support tube assembly in the trunk pan. Using the frame locators, measure 3" from the inside frame rail on each side of the vehicle using the factory frame rail shackle mounts and clamp in place. (Figure 48).



Figure 48 – Locate Support Tube

5. Once the support tube is squared in the vehicle, locate the support tube bracket mounting holes on the trunk pan. Drill one hole using the bracket as a template and install the provided 5/16"-24 x 1-1/4" L hex head bolt, washer and Nylock nut to help locate the support tube brackets. Do not tighten the hardware at this point as you will just be using the hardware to keep the holes lined up. Transfer-punch the remaining 3 holes and drill for the 5/16" hardware. Repeat this process on the other side of the vehicle. (Figure 49).



Figure 49 – Drill Support Tube Mount

6. Remove the support tube from the vehicle in order to install the closeouts. Drill plug weld holes in the closeouts and plug weld to the trunk pan. (Figure 50).

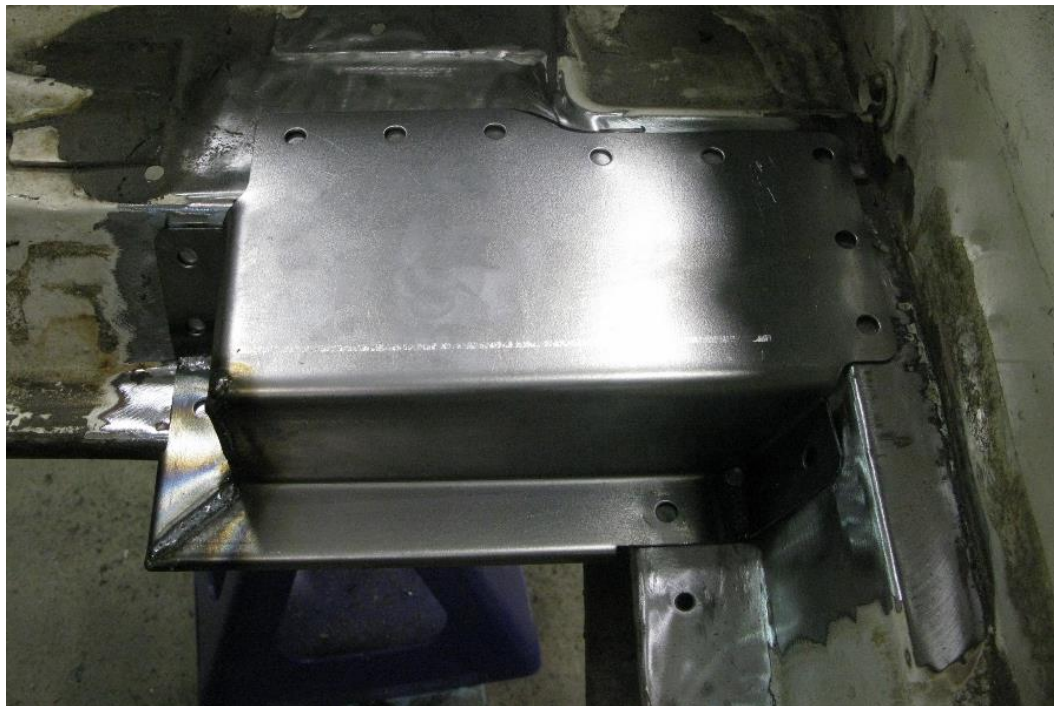


Figure 50 – Plug Weld Closeouts

7. Once the closeouts are welded, re-install the support tube in order to locate the shackle mount brackets onto the closeouts. Using the support tube brackets as a template you can locate and drill the 8 holes through the closeouts. Using the provided 5/16" x 1" L hex head bolts, washers and Nylock nuts to make sure all bolts will line up through the support tube brackets and both closeouts. (Figure 51 on the next page).



Figure 51 – Locate Support Tube

INSTALLING THE UPPER SHOCK MOUNTS

1. Position the upper shock mount assemblies underneath the vehicle in the same location as the factory upper shock mount. The trunk pan area will need to be opened up to fit the tube section of the upper shock mount assembly through the trunk pan.
2. Using the plug weld holes in the upper shock mount assembly base plate, drill out the trunk pan and tack weld both mounts in place.
3. At this time, you can mock up your rear axle and mini-tub shocks to make sure the upper shock mount assemblies are in the correct location. Once verified, you can finish weld and plug weld each of the upper shock mount assemblies and then finish grind the welds for a smooth, finished look. (Figure 52).

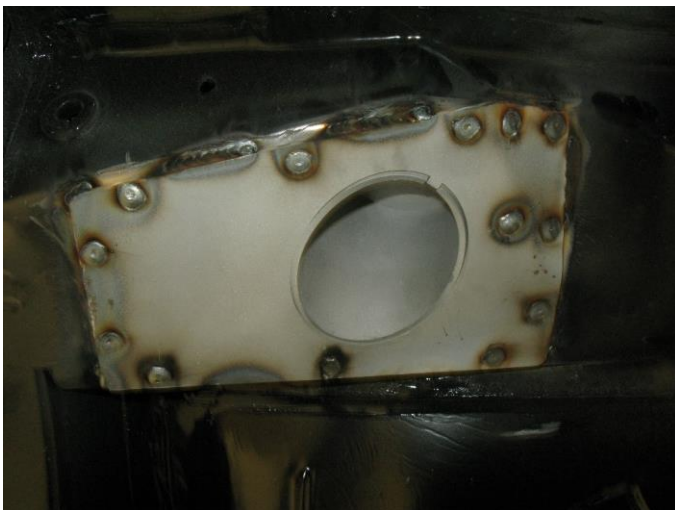


Figure 52 – Weld Upper Shock Mounts

MINI-TUB ASSEMBLY

1. Paint all bare metal to prevent the formation of rust.
2. 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. Re-cover the seat bottom.
3. Modify rear interior trim panels as necessary to fit the DSE mini-tubs.

INSTALLING THE SUPPORT TUBE AND SHACKLE MOUNT ASSEMBLY

1. Once all the welded components have been ground smooth, prepped and painted, the fuel tank can be installed into the vehicle. You can install the support tube before the fuel tank however it is much easier to install the fuel tank first. The rear support tube assembly can now be installed.
2. Before installing the shackle mount assemblies to the support tube, pre-assemble the rear shackles to the shackle mounts using the provided $1/2$ "-20 x 4- $1/2$ " L hex head bolts, washers and Nylock nuts.
3. Install the $5/16$ "-24 x 1" L hex head bolts that were used in the previous step through the support tube and trunk closeouts. Install the shackle mount assemblies to the closeouts using the $5/16$ " washers and Nylock nuts and torque to 25 ft-lbs. Install the shackle mounts so that the head of the $1/2$ " bolts are closest to the fuel tank and the Nylock nuts are towards the outside of the vehicle [Figure 53].



Figure 53 – Install Shackle Mounts

4. Position the frame locator lower brackets on both sides of the vehicle so they sit against the factory shackle tube. Install the support tube frame locators into the lower brackets and install the provided $1/2$ "-20 x 4" L hex head bolts, washers and Nylock nuts. Install the bolts so that the Nylock nuts are on the inside of the frame rail and the head of the hex bolt is towards the outside of the car [Figure 54 on the next page].



Figure 54 – Position Frame Locator Brackets

5. Install the provided 5/16"-24 x 1-1/4" L hex head bolts, washers and Nylock nuts through the trunk pan and the frame locator brackets that were used in the previous steps and torque to 25 ft-lbs (Figure 55).

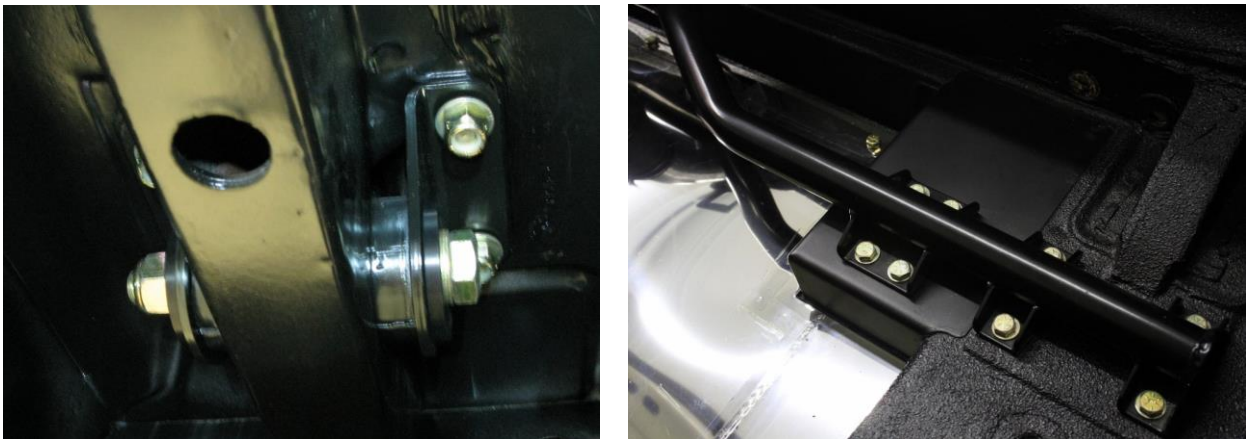


Figure 55 – Install Frame Locator Brackets

INSTALLING THE URETHANE REAR BUSHINGS

1. Before installing the new bushings and crush sleeves into the rear leaf spring eye, lightly coat the following areas and parts with the grease supplied:
 - I.D. of the rear spring eye
 - I.D. of the shackle bushing brackets
 - I.D., O.D. and flange of the polyurethane bushing
 - O.D. of the crush sleeves
2. Install the urethane bushings by first gently tapping in the bushings and then tapping in the crush sleeves.

INSTALLING THE ADJUSTABLE LEAF SPRING PADS

1. It is recommended 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. DSE recommends the pinion angle to be set at -3° to -4° down towards the ground.

2. Remove the leaf springs and permanently attach the pads by welding the lower spring pad bases to the axle tubes. Use care when welding, excessive heat can distort the axle tubes (Figure 56).

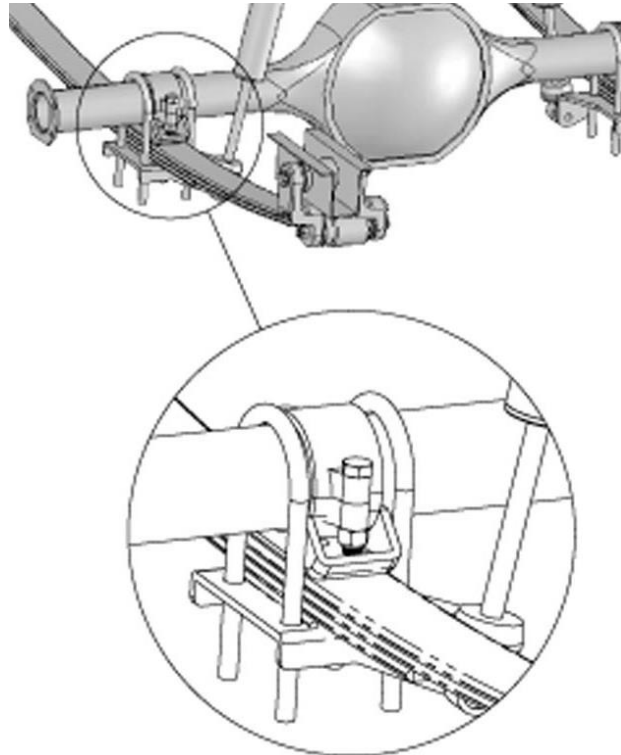


Figure 56 – Adjustable Leaf Spring Pads

INSTALLING THE LEAF SPRINGS AND LOWER SHOCK PLATES

1. Install the leaf springs into the vehicle using the front torque box leaf spring perch and the rear shackles. Do not torque at this time.
2. Install the rear leaf springs to the shackles with the provided $1/2$ "-20 x 4- $1/2$ " L hex head bolts, washers and Nylock nuts to mount the leaf springs to the shackle mounts. Install the leaf spring bolts from the outside so that your Nylock nuts will be on the inside closest to the fuel tank (Figure 57).



Figure 57 – Install Leaf Springs

3. Install the lower shock plates to the vehicle using the provided 1/2"-20 U-Bolts. (Figure 58). The detailed view is showing the lower shock plate from the front of the vehicle. In this kit you will have a left and a right hand shock plate as both shocks are located on the front side of the rear axle (Figure 59).

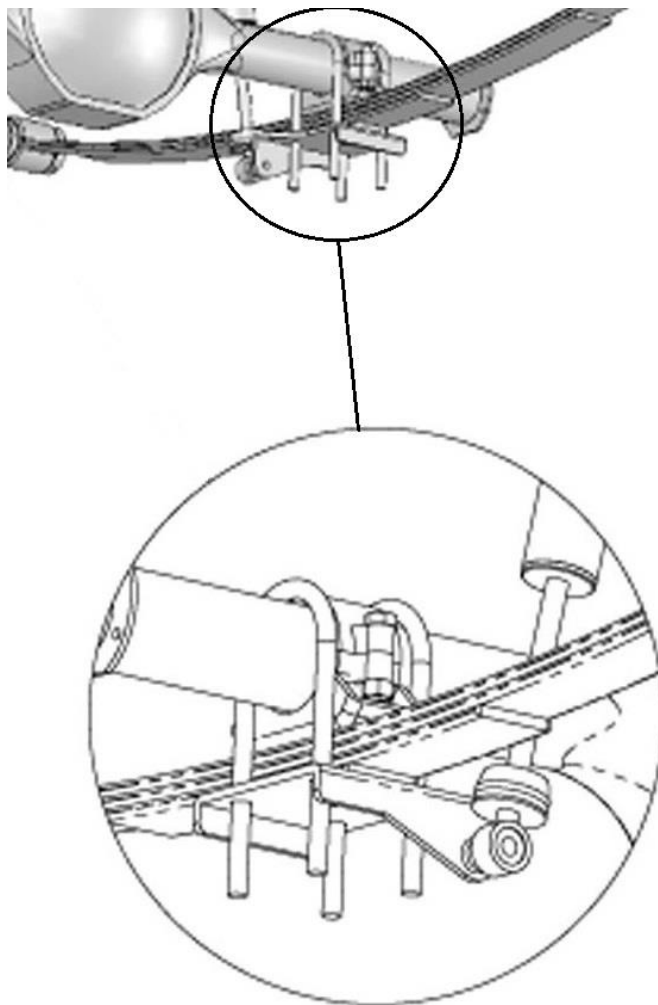


Figure 58 – Install Lower Shock Plates



Figure 59 – Shock Plate Location

INSTALLING THE MINI-TUB SHOCKS

1. Slide one shock washer and bushing over the top of the shock in that order and install the mini-tub shock with the body side down through the upper shock mounts. (Figure 60).

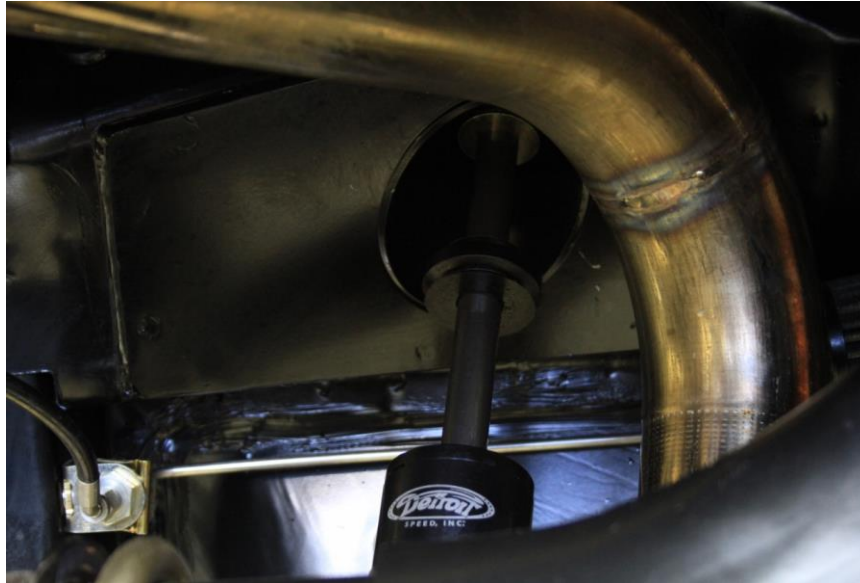


Figure 60 – Upper Shock Mount

2. Install another shock bushing and washer in that order over the stud and fasten the two M10 x 1.5 hex nuts and tighten. Repeat this procedure on the other side of the vehicle to install the other mini-tub shock.
3. Attach the shocks to the lower shock plates using the provided 1/2"-20 x 3" L hex head bolts. Install the bolt with the 1/4" thick spacer though the lower shock eyelet. Install the bolt through the lower shock plate and tighten with the 1/2"-20 Nylock nut and washer. The bolt will be pointing towards the rear of the vehicle with the head of the bolt at the front of the vehicle. Repeat this procedure on the other side of the vehicle to attach the mini-tub shock to the lower shock plate. Torque the lower shock 1/2"-20 bolts to 90 ft-lbs. (Figure 61).

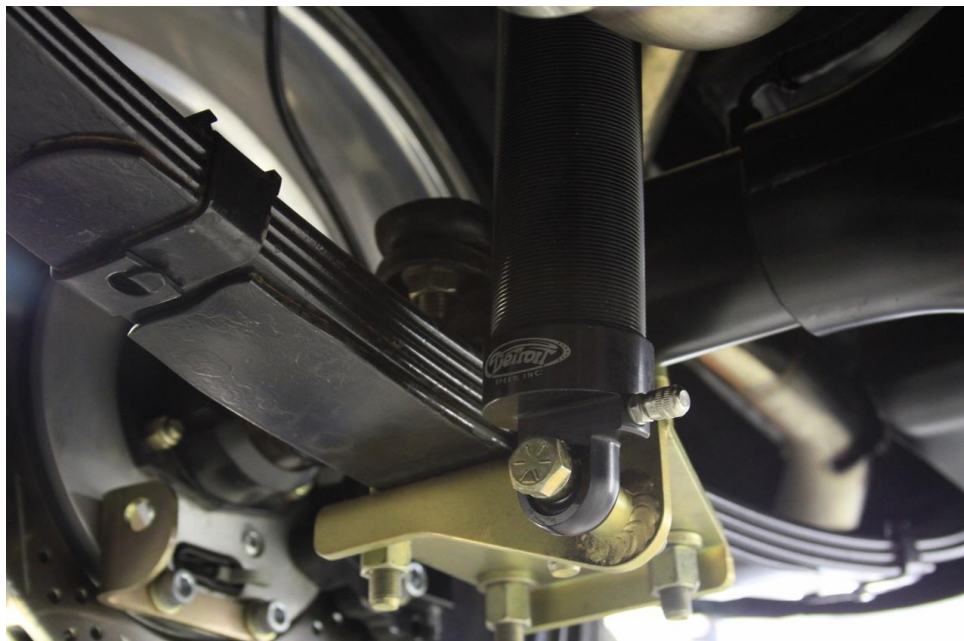


Figure 61 – Lower Shock Mount

4. With the weight of the vehicle on the rear axle, a reference length of the rear shocks at ride height should be around 13" from eyelet to the stud mount with the DSE mini-tub shocks.

FINAL ASSEMBLY

1. Install the DSE Mini-Tub Fuel Tank. Refer to the instructions that are included with the DSE fuel tank for installation.
2. Reinstall the package tray, rear interior quarter trim panels, carpet padding, carpet, seats, and any additional interior panels that were removed for the installation process. Use the provided black plastic plugs and install them in the upper shock access hole in the rear crossmember.
3. With the wheels/tires installed and resting the vehicle on all four tires, check that the rear axle is positioned correctly in the vehicle. It should be centered from side to side, and the wheelbase should be correct on both sides of the vehicle at 108.0"
4. Once the rear suspension is loaded with the weight of the vehicle, torque the front leaf spring eye bolts and rear shackle bolts to 90 ft-lbs.
5. Check all rear clearances before driving the vehicle and make sure all hardware is tightened 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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