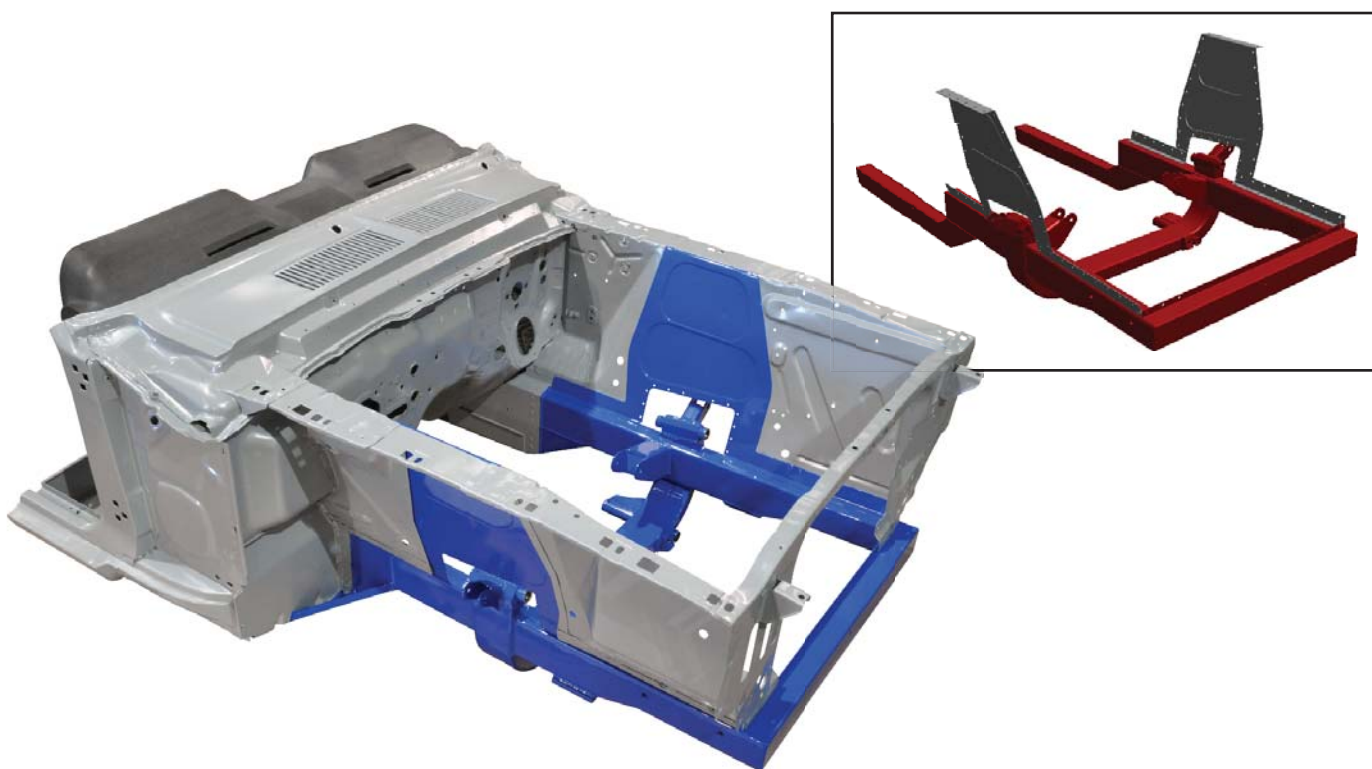


READ ALL INSTRUCTIONS COMPLETELY AND THOROUGHLY UNDERSTAND THEM BEFORE DOING ANYTHING.  
CALL TOTAL CONTROL PRODUCTS TECH SUPPORT (916) 388-0288 IF YOU NEED ASSISTANCE.

# INSTALLATION GUIDE

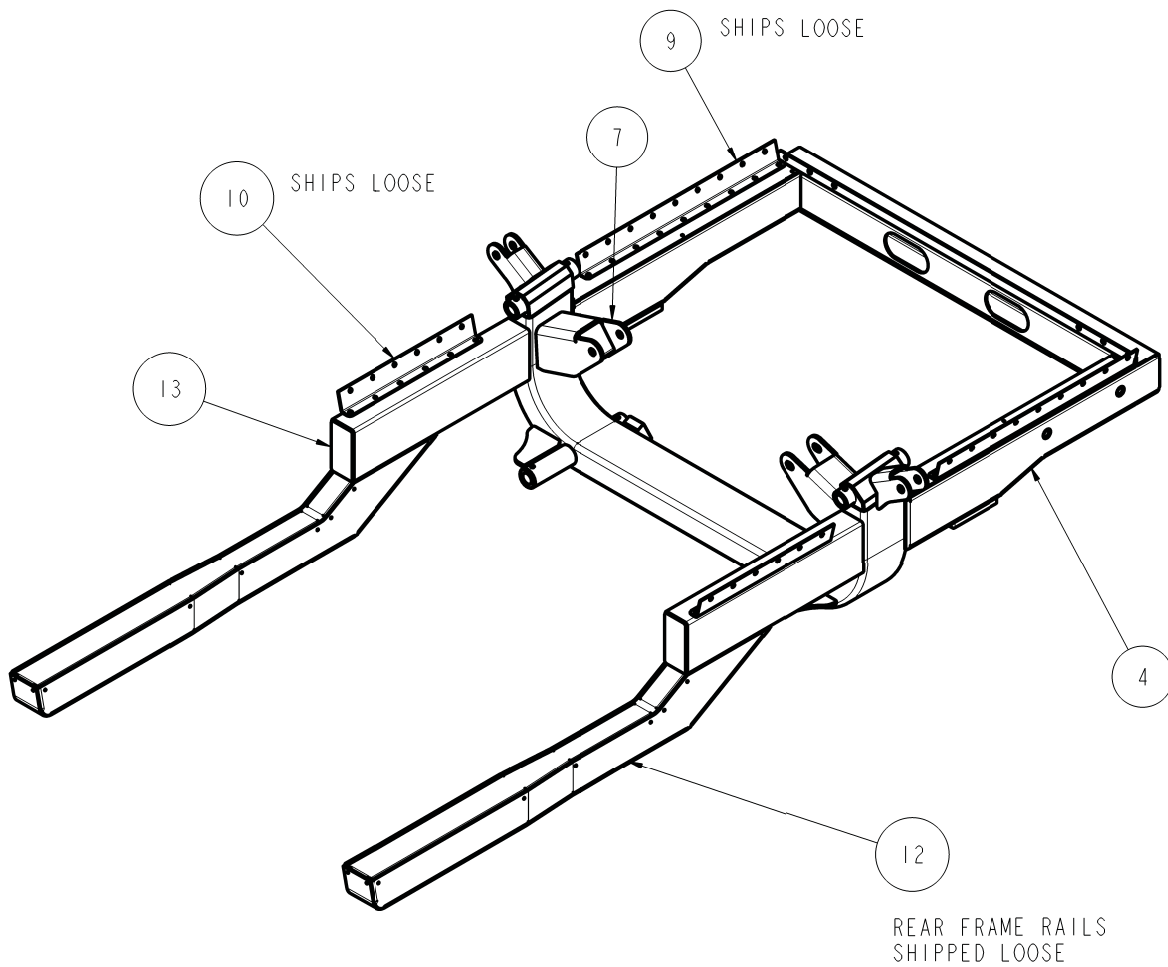
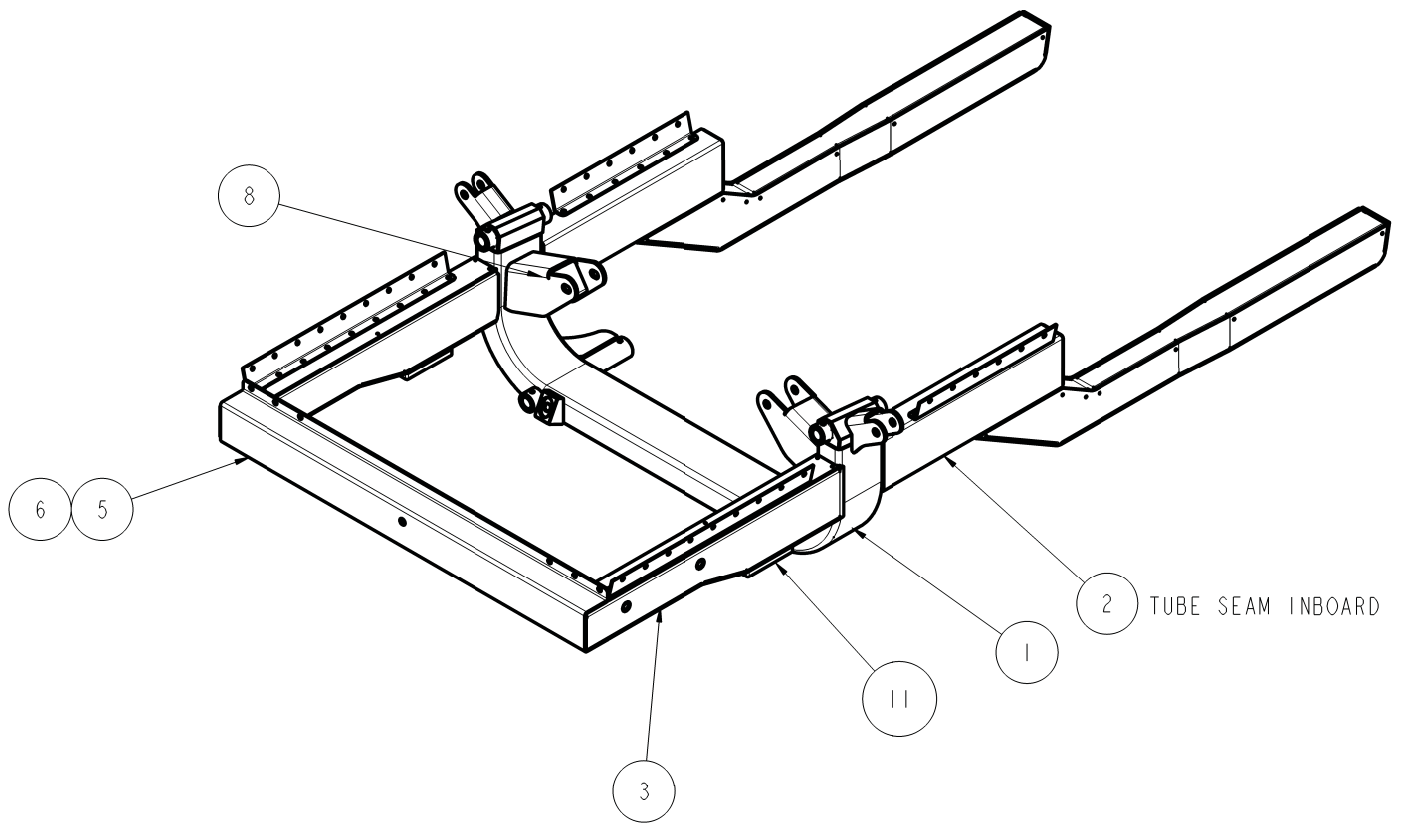


## TCP KCSXX Weld-In Full-Length Subframe Clip for 1964-70 Mustang and 1967-73 Cougar



**Description:** Weld-in front subframe clip system replaces factory frame rails, lower radiator core crossmember and shock towers.

**Applications:** Cougar '67-73, Mustang '64-73



ITEM	QTY	PART NO.	DESCRIPTION
1	1	5030-32-S	A-ARM CROSSMEMBER ASSEMBLY 32 IN OUTSIDE WIDTH, NON-ARB GUSSETS
2	2	7962-5001	FRAME RAIL TUBE, REAR, S/M CLIP, 64-70 MUSTANG
3	1	7962-5004	FRAME RAIL, FRONT DRIVER, S/M CLIP, 64-70 MUSTANG
4	1	7962-5005	FRAME RAIL, FRONT PASSENGER, S/M CLIP, 64-70 MUSTANG
5	1	7962-5017	FRONT FRAME CHANNEL ASSEMBLY, S/M CLIP, 64-70 MUSTANG
6	1	7962-5016	REAR WALL, FRONT FRAME CHANNEL, S/M CLIP, 64-70 MUSTANG
7	1	7962-5021	ENGINE FRAME ADAPTER, DRIVER, FORD SB/BB, 64-70 MUSTANG
8	1	7962-5022	ENGINE FRAME ADAPTER, PSGR, FORD SB/BB, 64-70 MUSTANG
9	2	7962-5023	WELD FLANGE, FRONT, S/M CLIP, 64-70 MUSTANG
10	2	7962-5024	WELD FLANGE, REAR, S/M CLIP, 64-70 MUSTANG
11	2	7962-0119	MOUNTING BLOCK, 2 WIDE, S/M HD ANTI-ROLL BAR
12	2	7962-5042	FRAME RAIL WELDMENT, S/M FULL FRAME CLIP, 64-70 MUSTANG
13	2	7962-5043	FRAME END CAP 2 x 4 RECTANGLE

<b>DESCRIPTION</b>			
<b>WELD ON FULL FRAME CLIP, 64-70 MUSTANG SB/BB ENGINE MNTS, SPLINED ARB, BARE</b>			
Chris Alston's CHASSISWORKS INC. 8661 YOUNGER CREEK DRIVE SACRAMENTO, CA 95828 (916) 388-0288 FAX 388-0295			
SIZE	PART NO.	PART REV.	
B	<b>5623-01</b>	<b>0</b>	
SCALE: 3:32	DWG: 5623-01	REV: 0.4	SHEET 1 OF 1

# PARTS LIST

## TCP KCSXX - Subframe Clip Weldments, 1964-1970 Mustang

You will receive one of the following items.

Qty	Part Number	Description
1	5620-00	For tubular anti-roll bar without engine mount frame adapters
1	5620-01	For tubular anti-roll bar with Ford small block or big block mounts
1	5620-02	For tubular anti-roll bar with Ford modular motor mounts
1	5620-03	For tubular anti-roll bar with Chevy LS mounts
1	5621-00	For splined anti-roll bar without engine mount frame adapters
1	5621-01	For splined anti-roll bar with Ford small block or big block mounts
1	5621-02	For splined anti-roll bar with Ford modular motor mounts
1	5621-03	For splined anti-roll bar with Chevy LS mounts

## TCP KCSXX - Full-Subframe Clip Accessories, 1964-70 Mustang

You will receive each of the following items unless otherwise noted.

Qty	Part Number	Description
1	7918-071	Weld flange and alignment tab set
2	7962-5042	Full frame rail weldment
1	7962-5048	Frame gusset, driver side
1	7962-5049	Frame gusset, passenger side
1	TCP JA1	Shock tower delete panels (pair), 1964-66 only
1	TCP JA2	Shock tower delete panels (pair), 1967-70 only

## TCP KCFXX - Engine Mounts - OPTIONAL

Qty	Part Number	Description
1	TCP MM-C1S	Ford Small Block, Steel
1	TCP MM-C2S	Ford Big Block FE, Steel
1	TCP MM-C3S	Ford Modular, Steel
1	TCP MM-C4S	Ford Small Block Adjustable, Steel
1	5917-LSR-S	Chevy LS, Steel
1	5917-CV8-S	Chevy V8, Steel

## Additional Components - OPTIONAL

Qty	Part Number	Description
1	TCP MTC-U4	Weld-in transmission crossmember
1	TCP JC1	Shock-tower-delete splash flaps (pair)
1	7962-5050	Body outrigger, driver side
1	7962-5051	Body outrigger, passenger side

# INSTRUCTIONS

*NOTE: A 1965 Mustang was used for the following images and may show slight differences from the later Mustang and Cougar platforms. The installation procedure is identical.*

*Procedures shown must be repeated for both sides of vehicle.*

Total Control Products front subframe clip replaces the factory frame rails, lower core support crossmember and shock towers.



The replacement subframe ships as a factory-welded assembly. Additional accessories include shock tower delete panels, inner fender weld flanges, replacement lower rail and outer frame gussets (lower rail and gusset not shown).



1. We begin with a completely bare chassis. All components forward of the firewall must be removed. The floorboard areas of the interior must also be cleared to avoid risk of fire while welding.

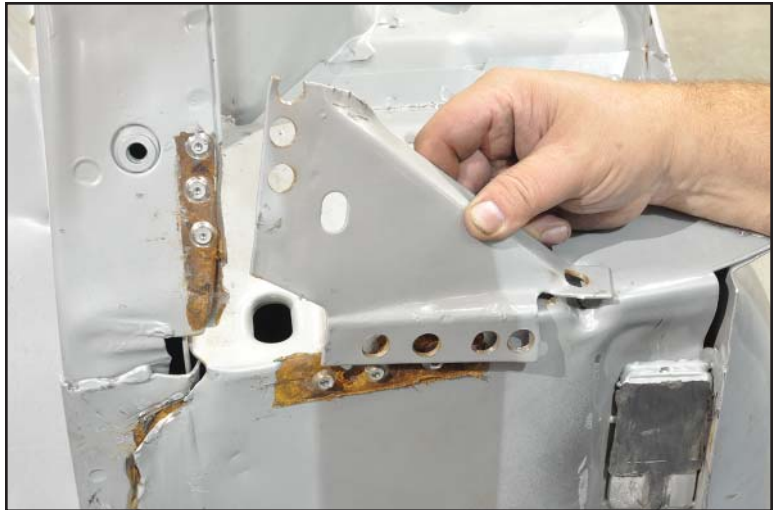




2. If the vehicle has torque boxes installed, the triangular gusset must be removed by drilling out the spot welds. A replacement gusset is provided. The torque box structure can remain in place during the rest of the installation.



3. With spot welds drilled the gusset can be cleanly removed.



4. The first cuts are made from the engine compartment along the corner where the inner fender and frame rail meet.
5. Make two 3"-long cuts centered over the bumper mounting holes located on the outside of the frame rail. The first begins against the radiator core support panel. The second is spaced approximately 3-4" apart.



6. Bolt the alignment tabs to the bumper mounting holes.



7. Securely tack weld the alignment tabs to the inner fender. These tabs are used to locate the replacement subframe later on.



8. Measurements for the next few steps are taken from the inside surface of the lower control arm mounts.



9. Measure and mark 15" back from the lower control arm mount.



10. Use a square to extend the line perpendicular to the top of the frame rail.



11. This is our inside cut-off line.





12. Using a straight edge, measure 15" back from inside of the lower control arm mount.
13. You will need to use the square along the above sheet metal seam to mark a perpendicular line.
14. Visually compare the lines to make sure they meet squarely at the bottom of the rail.



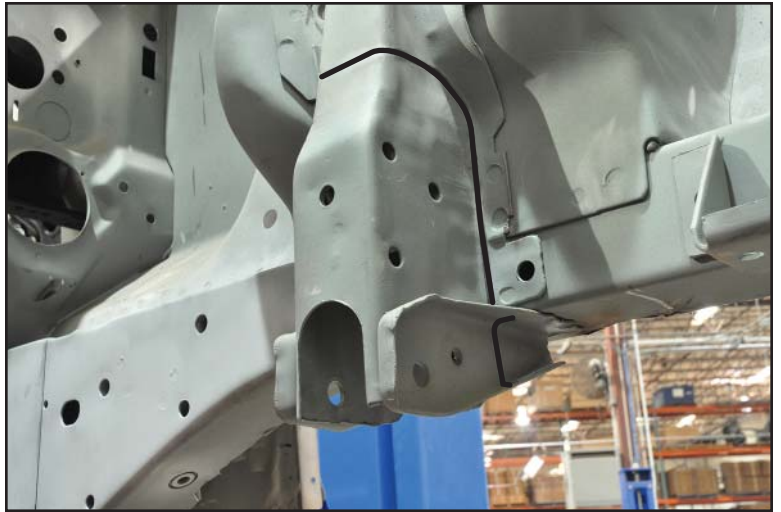
15. Continue marking the cut lines along the inner fender. From the radiator core support to the shock tower overlap seam forward of the tower. And from the 15" line forward to the tower overlap seam.



16. The core support crossmember is cut from the front side.



17. Mark the lower control arm mount along the inside corner to just above the curved area.



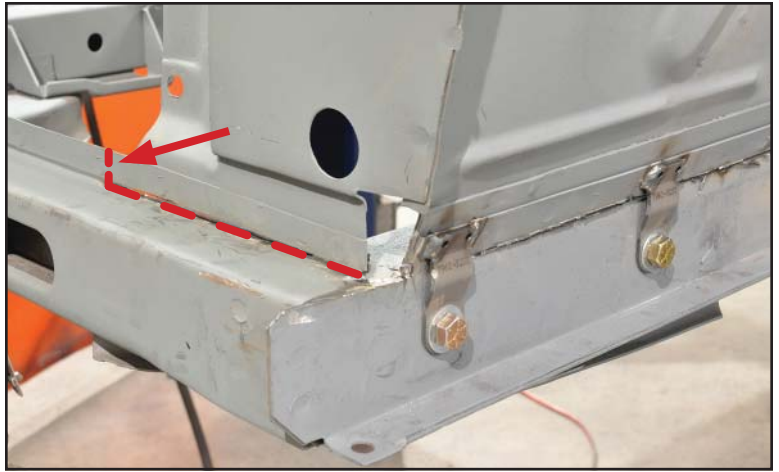
18. The shock tower should look similar to this. Remaining tower cuts are made from opposite side.



19. Make sure to avoid cutting through the alignment tabs when finishing the cut along the forward length of the inner fender.



20. Make the final cuts along the front of the core support. The vertical cut is left a little long, but can be trimmed to match the radiator opening once the subframe has been removed.



21. From the outside, cut away the flange that spans the shock tower opening.



22. Cut up and around the shock tower along the line shown. The bottom legs of this cut must meet the cuts along the inner fender and frame rail.





23. At this point make sure that the subframe is well supported by jack stands. The next few steps will detach it from the chassis.



24. Make the vertical cuts on the outside and inside of the frame rail. Do not cut through the bottom part of the rail at this time.



25. Remove the two bolts at the alignment tabs on each side of the vehicle.



26. Make the final cut through the bottom of the frame rail.



27. The factory subframe can now be lowered out of the way.



28. Drill three 3/8" rosette holes, 1" in from the edge, and at 3/4", 2", and 3-1/4" down from the top edge of the frame rail. This is repeated for the inside and outside walls of each frame rail.





**29. Weld Preparation** - Use a scotch brite wheel to clean the following areas down to bare metal.

Frame Rails - inside and outside past the rosette holes

Inner Fenders - bottom 2" along engine side

Core Support - bottom 1" along engine side



**30.** Raise the new subframe assembly into position. Factory frame rail position will vary between vehicles and minor working of the factory rail may be required.



**31.** Once the rear of the subframe is raised completely into position, install the bolts through the alignment tabs.



32. With the subframe now in it's final position, we can begin tack welding.



33. Close up any gaps along the outside of the rail before securely tack welding the top and bottom corners of the main frame rail.



34. Fitment of the lower rail requires cutting along the inside and outside corners of the factory frame rail.

In the image to the right, gray is factory sheet metal and blue is the replacement lower rail and subframe.

Mark the position of the end of the factory frame rail. The replacement rail must match.



35. The top corners are cut along the torque box area and the tunnel reinforcement.

36. Free-standing areas of the frame rail are cut at the corner where the rail meets the floor, leaving the original rail flange attached to the chassis.



37. Trim the front lower corner of the factory rail to follow the angle of the replacement rail.

38. Once fit, remove the gusset before drilling two additional evenly spaced 3/8" rosette holes through each wall, 1" in from the edge.



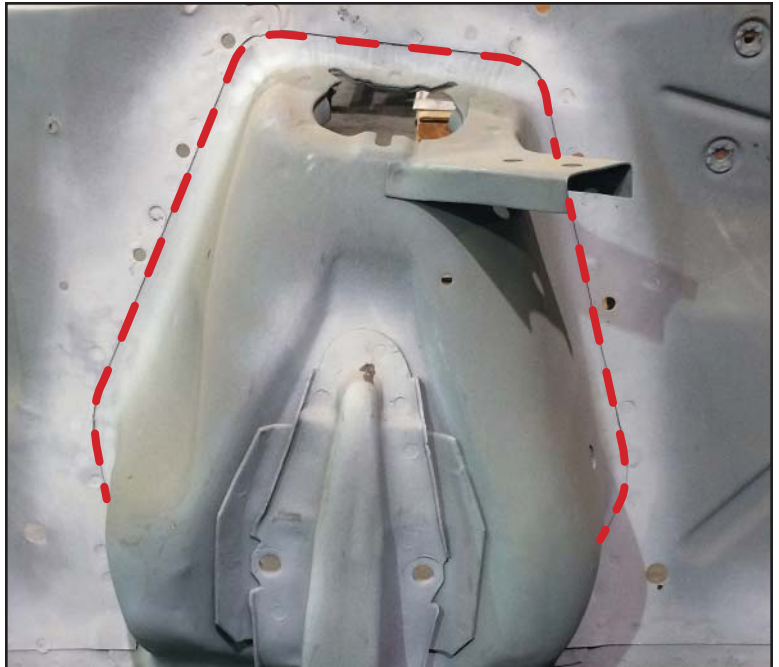


39. Weld the rosette holes before fully welding all seams.

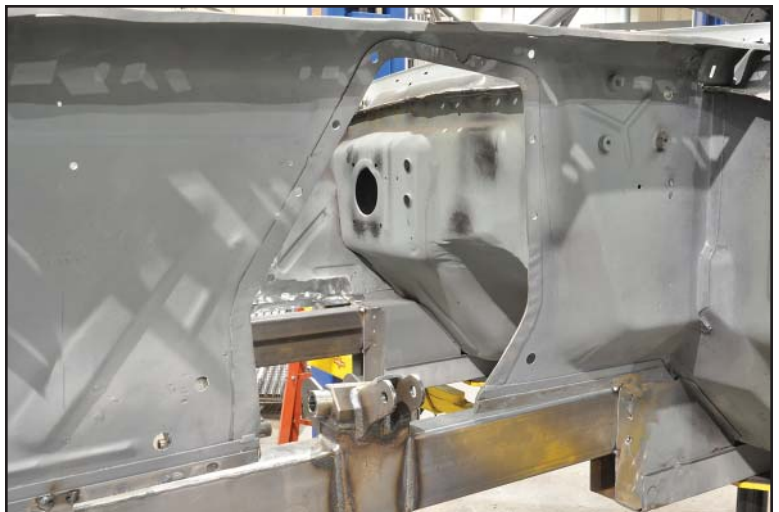


**40. TOWER REMOVAL 1965-1966**

From the engine side, use the overlap seam as a guide to cut completely around and remove the shock tower.



41. From the outside we're left with a double-thick flange on which to weld the tower delete panels.

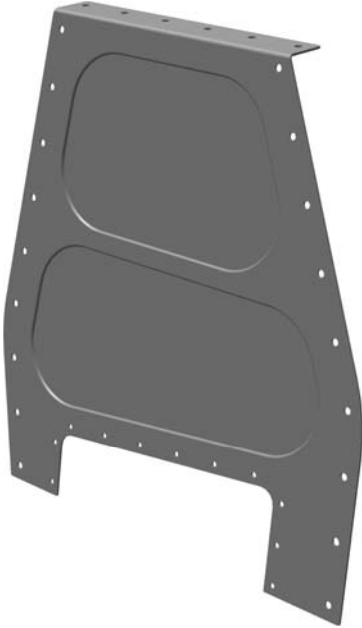


#### 42. TOWER REMOVAL 1967-1970

From the engine side, use the overlap seam as a guide to cut completely around and remove the shock tower. Extend the two outside cuts to meet the top corner of the inner fender.

43. Cut a 1" slot extending along each top edge.

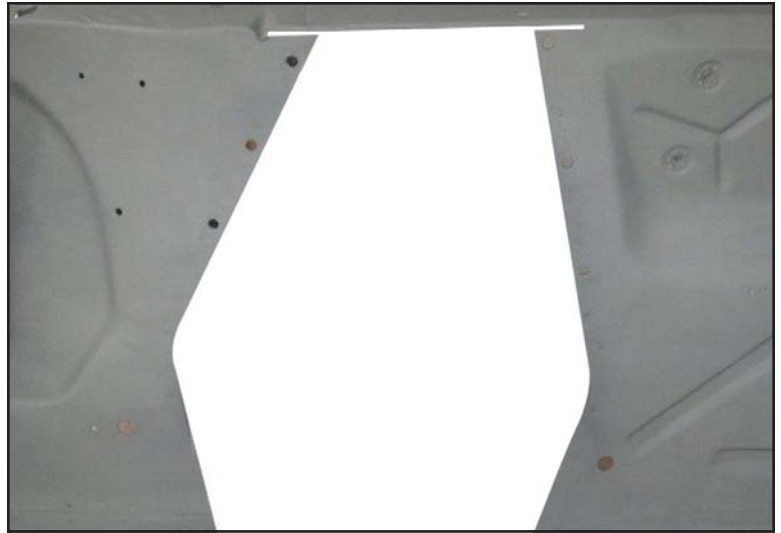
44. From the engine bay side, the delete panel folded lip inserts through the slots to sit underneath the top of the inner fender.



#### IMAGES AT RIGHT

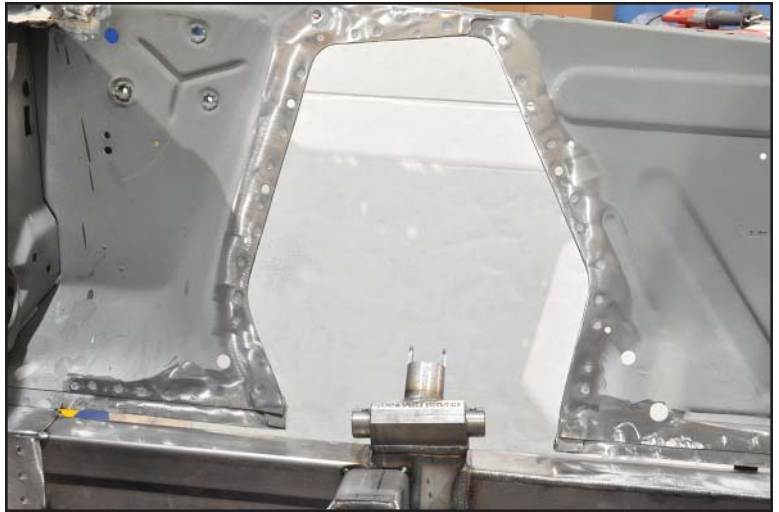
Gray is factory sheet metal  
Blue is 1967-70 delete panel

45. When welded the top flange is plug welded to the bottomside of the inner fender and the main panel body welds on top of the inner fender.





46. On the engine bay side, use a scotch brite pad to clean 1" around the shock tower opening down to bare metal.



47. If purchased, temporarily install the rubber splash flaps with a few screws to help with alignment of the tower delete panels.

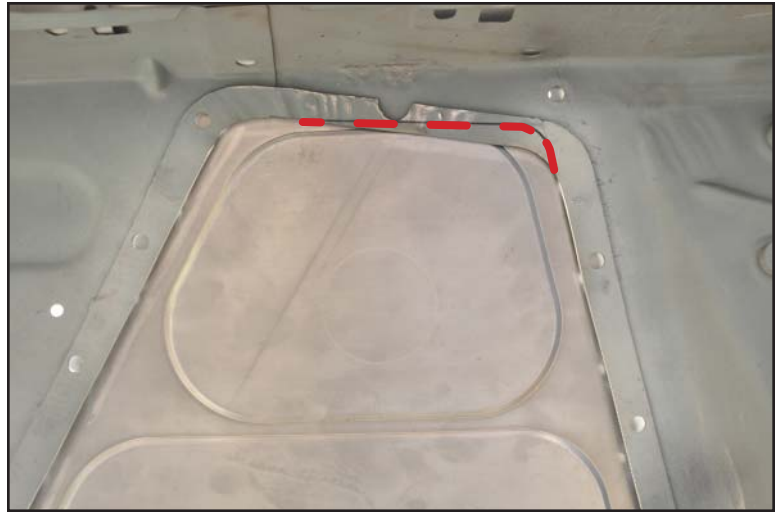
48. Align the shock tower delete panels approximately 3/16" down from the top of the inner fender panel and centered over the opening.



49. When viewed from the outside, spacing between the bead-rolled edges and the opening is not critical. Splash flap alignment and the top edge alignment determine the correct position.



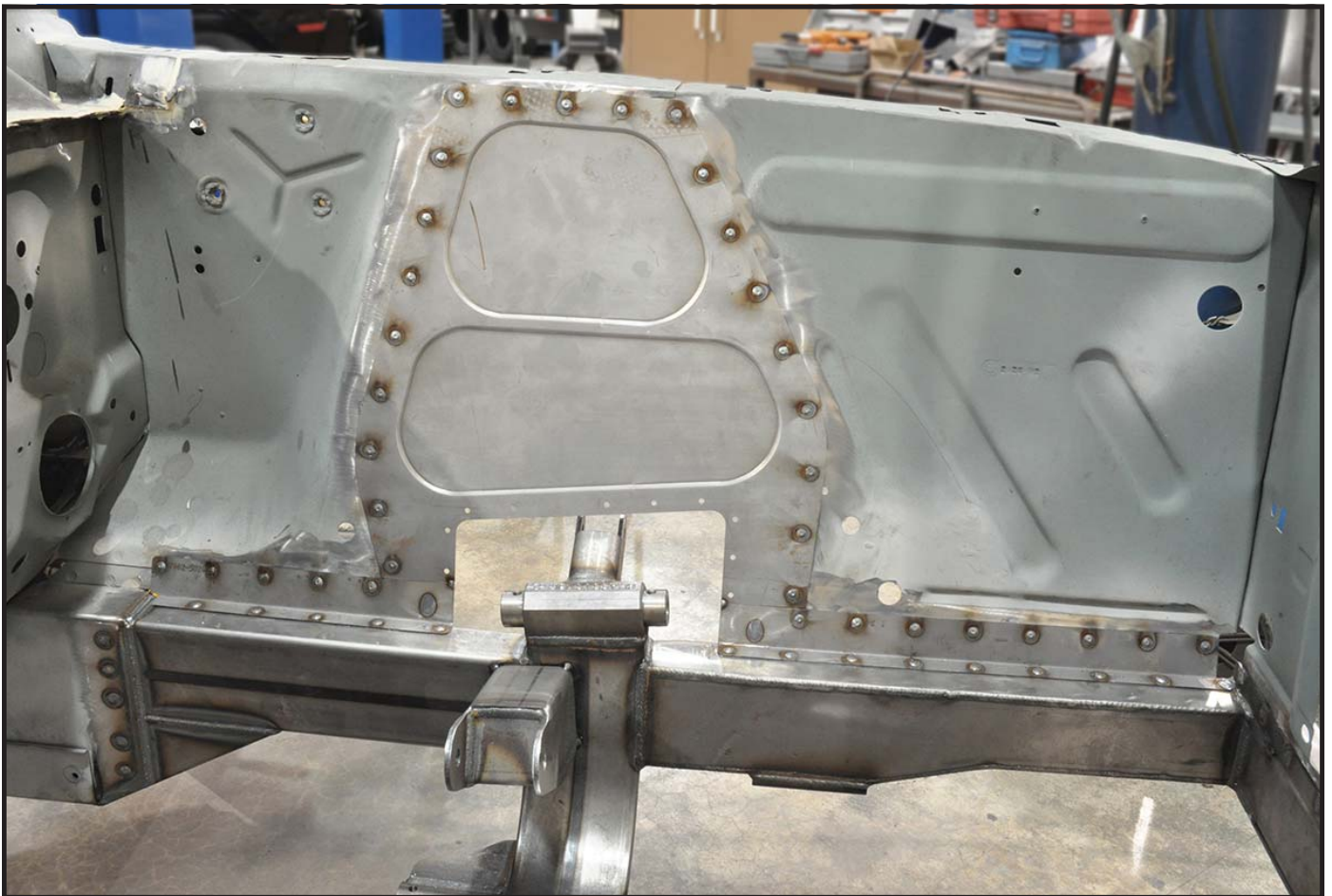
50. To clear the top bead-rolled edge, cut a horizontal line tangent to the highest radius to meet the other side of the opening.



51. Fitment of the delete panel and forward and rear weld flanges, that tie the inner fenders to the frame rail, needs to be done simultaneously.

Align the delete panel using the top of the inner fender and the splash flap. The bottom extensions of the delete panel are then trimmed to sit atop the weld flanges.

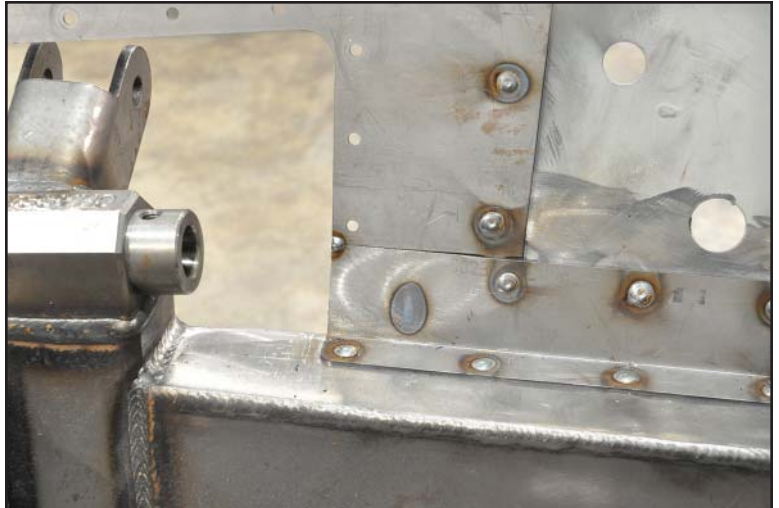
Read through the next few steps before beginning to weld.



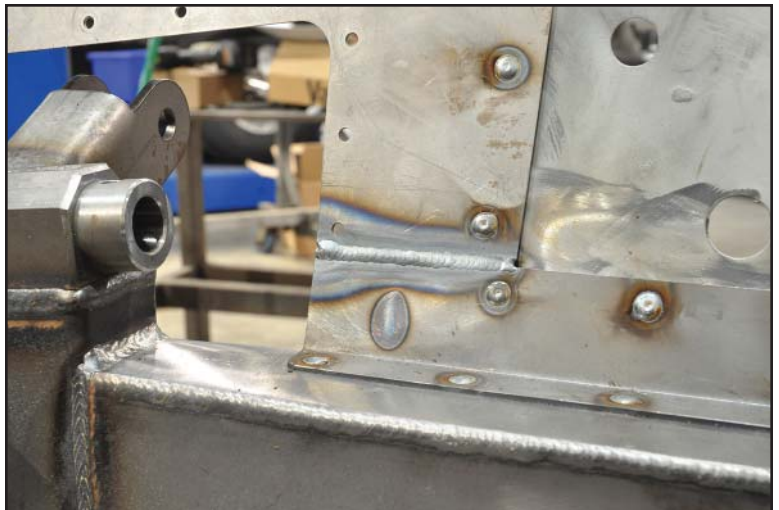
52. Rear Weld Flange - Front edge is flush with splash flap opening. Rear edge is notched for tighter fit over factory rail.



53. Forward Weld Flange - Rear edge is flush with splash flap opening. Front edge is trimmed at core support if needed.



54. Beginning at the joints between the delete panel and weld flanges, plug weld each of the rosette holes before fully welding the seam.





- 55. Continue plug welding the remaining rosette holes along the weld flanges, delete panels, and core support.
- 56. The edge of the core support is welded as a short stitch to better blend the two surfaces.



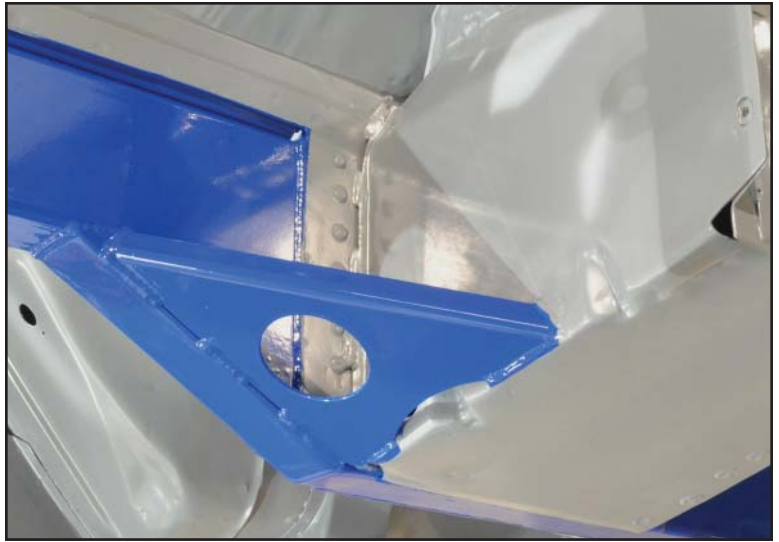
- 57. A coarse scotch brite pad can be used to bring the welds flush.



- 58. Optional frame outriggers are used on vehicles without torque boxes. Position them along the leading edge of the flat section of floor board.
- 59. Once fit, the areas along all edges must be cleaned to bare metal before welding completely around.



60. Frame Gusset (with torque box) - Test fit, prep for weld, then stitch weld along edges.



61. Frame Gusset (without torque box) - A small bit of trimming is required along the gusset edge that meets the outrigger closest to the frame rail.



62. Once fit, prep for weld, then stitch weld along edges.



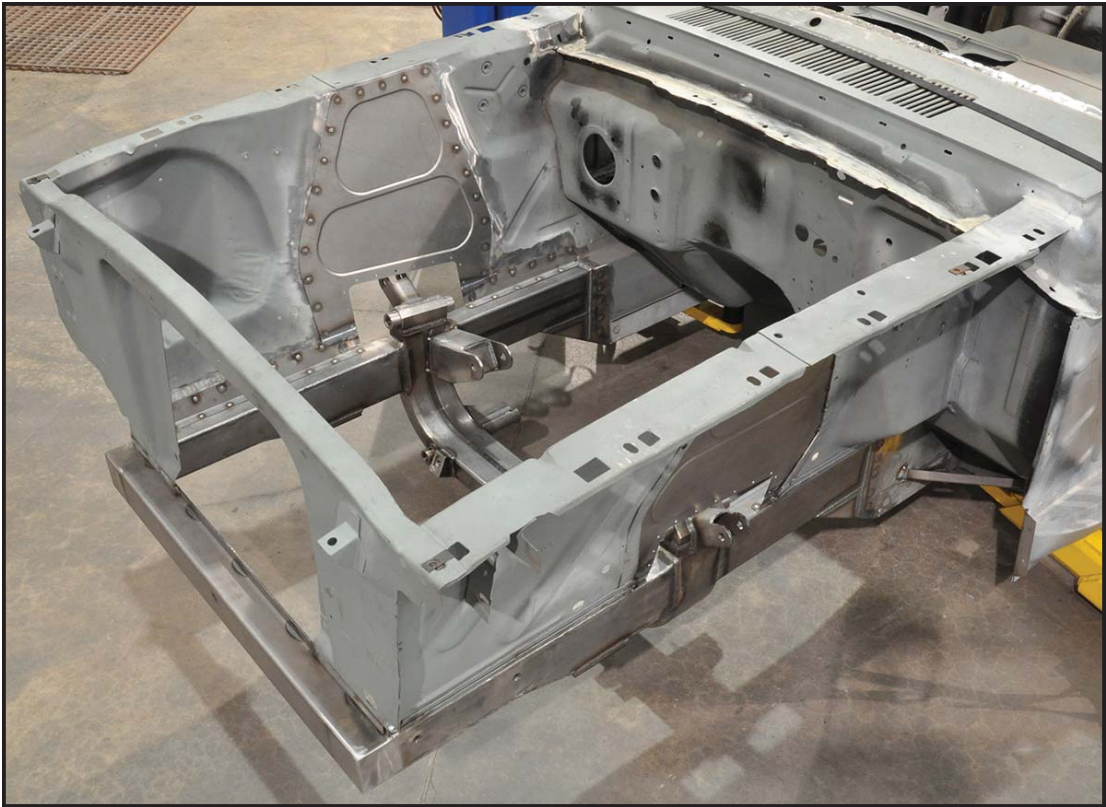


63. Unbolt the alignment tabs.



64. Welding portion of the installation is complete.





## NOTES:



## NOTES:

**WARRANTY NOTICE:**

There are NO WARRANTIES, either expressed or implied. Neither the seller nor manufacturer will be liable for any loss, damage or injury, direct or indirect, arising from the use or inability to determine the appropriate use of any products. Before any attempt at installation, all drawings and/or instruction sheets should be completely reviewed to determine the suitability of the product for its intended use. In this connection, the user assumes all responsibility and risk. We reserve the right to change specification without notice. Further, Chris Alston's Chassisworks, Inc., makes **NO GUARANTEE** in reference to any specific class legality of any component. **ALL PRODUCTS ARE INTENDED FOR RACING AND OFF-ROAD USE AND MAY NOT BE LEGALLY USED ON THE HIGHWAY.** The products offered for sale are true race-car components and, in all cases, require some fabrication skill. **NO PRODUCT OR SERVICE IS DESIGNED OR INTENDED TO PREVENT INJURY OR DEATH.**

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