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Installation Instructions
88-95 1500-Series
"Fleet Side Short Bed" Chevy Truck
Part # 10-506
Welded Frame Unit
(Ladder Bar Suspension)



CAUTION!!! - The most important requirement for a successful installation of this, or any, S&W chassis component is that you take your time and use good common sense. Check & recheck all measurements before cutting or welding. If at any time before or during the installation - STOP - and call our tech line at 610-948-7303 and we will gladly explain in more detail any step in the installation.

Please read complete instructions thoroughly before beginning!

Please read all instructions in full before beginning installation.

Preparation:

Installing S & W RACE CARS frame rails and rear suspension into a clean truck is a relatively easy job, although there are certain precautions that should be taken for your safety and to insure that the finished product is aligned properly. It is recommended that you wear eye protection during the removal of the stock floor, suspension and other components, and during welding and fabrication. Proper supports and jack stands must be used, not only for construction purposes (such as keeping the chassis level), but also for safety reasons. This work should be performed in a dry, well lit shop with a level or near-level floor.

While installing your frame rails and rear suspension, remember that the quality of your workmanship will directly affect the ultimate strength of the entire race car structure. It is important that all areas to be welded are clean, free of oil, slag, paint, undercoating and of course rust.

Quality work requires the proper tools. Here is a list of some of the tools you will need.

- A. Common hand tools - for removing the stock suspension components.
- B. Jack stands - for supporting the truck and new frame rails.
- C. Floor jack - for raising the truck and removing rear suspension components.
- D. Measuring tools - 12' tape measure, level, inclinometer, plumb bob, string, framing square, large square felt tip pen or soap stone.
- E. Cleaning tools - gasket scraper and wire brush to remove undercoating.
- F. Cutting tools - oxyacetylene torches, hand-held reciprocating saw or rotary grinder with a cutting disc.
- G. Welding equipment - a MIG welder is recommended. TIG welding is acceptable, but is unnecessary for this type of work.

**Warning: Effective Jan. 1, 1995 stick welding will be prohibited by NHRA.
S&W Race Cars strongly suggests that these components not be stick welded!**

- 1) With all the stock components still in the truck and the truck sitting on the floor at ride height measure and record the wheelbase and axle center line measurement from the center line of the axle to a mark on the quarter panel, for ride height.
- 2) Raise the truck to a comfortable working height, supporting it with at least 6 jack stands (2 at the very front of the truck, 2 at the back of the cab, and 2 at the very back of the bed), leveling the truck from front to back and side to side. This can be done front to back by placing the level on the rocker panel. Leveling the truck side to side by placing the level on the front crossmember and on a horizontal floor panel at the rear of the truck.

**Note: from this step to the final step always be aware
to maintain the truck's level condition!**

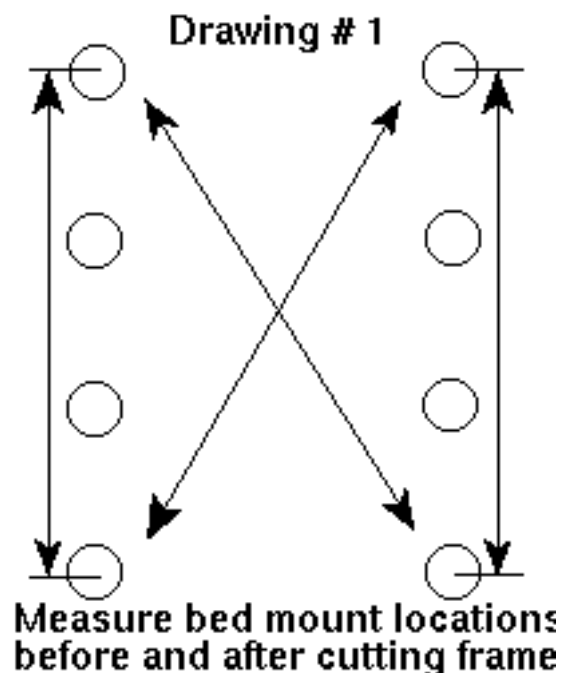
- 3) In order to insure that your frame rails are centered in the truck properly, you must find the chassis centerline (C/L). The chassis C/L is the midpoint line that runs the length of the truck. To find the C/L, drop a plumb line from the same two points on the opposite side of the truck to the shop floor and make a mark on the floor at these locations. Do this at the front and rear of the truck, then measure half the distance between each set of plumb line marks on the floor. Each of these half distances can be connected and a straight line can be drawn on the floor running from front to back, which represents the center line of the truck. It is a good idea to drop a plumb line to the C/L on the ground and transfer it onto the truck by center punching marks on a front & rear crossmembers. Now if you have to move the truck or when you do future work, the C/L can be quickly reestablished. The C/L can also be used for suspension alignment work.

Disassembly:

- 4) Disconnect battery. Disconnect and remove any rear wiring and/or electrical components (wiring to tails lights, tag light, fuel tank sender and fuel pump).
- 5) Un-bolt fuel tank neck from bed and disconnect all fuel lines from tank. **Note: after disconnecting fuel lines from the tank, make sure you cap the fuel lines and tank off, to keep them from leaking any fuel.**
- 6) Un-bolt and carefully remove the bed from the frame.
- 7) Un-bolt and remove the fuel tank.
- 8) Remove all rear brake lines, fuel lines, and emergency brake cable.
- 9) Remove the drive shaft and all the factory rear suspension from the truck.
Caution: Be aware, when you remove the weight of the rear suspension, the rear frame of the truck may raise up off the back 2 jack stands, this is okay. At this time you can remove the 2 jack stands on the back of the factory frame, but make sure that you keep the stands in place at the back of the cab and the front of the truck.
- 10) Disconnect and remove the rear exhaust pipes and mufflers.
- 11) Measure and record the bed mounts as shown in drawing # 1.

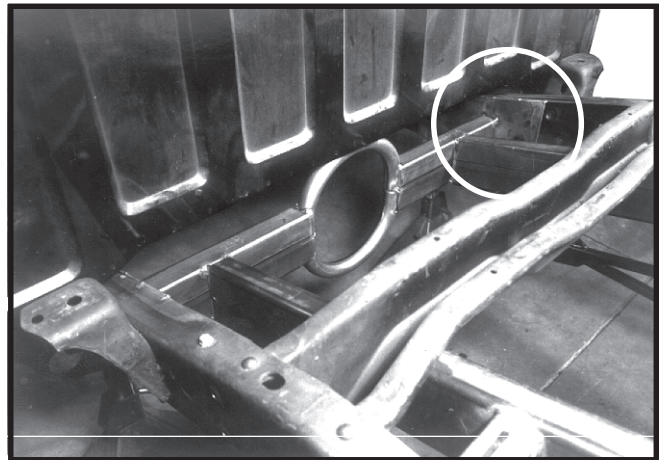
Warning: During any cutting, welding or grinding, the sparks can damage the windows. Be sure to sufficiently cover or remove the windows, to avoid damaging them.

- 12) Measure on the bottom of the frame rail, on both sides, back 7-7/8" from the center of the bottom rivet, on the crossmember just behind the cab. Then make a 4" notch on the bottom of the frame rails from this point back.
- 13) Cut and remove back crossmember.



- 14) Cut upper shock mounts off the frame. Note: When cutting the front shock mount be careful and do not cut the rivet for the crossmember, because they are located very close together!!

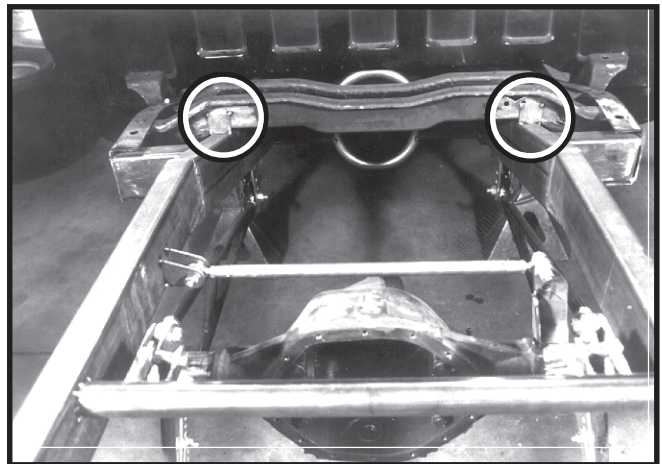
Photo # 1



Assembly:

- 15) Position and tack weld in place the frame reinforcing plates on the inside of each factory frame rail, with the front edge of the plates located approximately 3 3/4" in front of the back of the cab.
See photo # 1.
- 16) Position your new S&W Race Cars welded frame unit under the rear of the truck, with the front crossmember facing toward the front of the truck.
- 17) Pull the S&W frame toward the back of the truck, lifting the back of the S&W frame up, then slide the S&W frame forward, sliding the four back bed mounting outriggers into the "C" channel of the factory frame.
- 18) Lift the front of the S&W frame up, sliding the second from the front outriggers into the notches you made in step #12 in the factory frame, once you have the outriggers up into the factory frame continue sliding the S&W frame forward aligning the holes in the back four outriggers with the back four bed mounting holes in the factory frame.
- 19) Secure the S&W frame to the factory frame, with nuts and bolts through the back four bed mounting holes.
- 20) Tack weld the front crossmember to the frame reinforcing plates that you installed in step #15.
- 21) Tack weld the second from the front outriggers to the factory frame.
- 22) Tack weld the two 2" x 2" x 1/8" plates, to the upper crossmember and the top of the new frame rails, as shown in photo #2.
- 23) Recheck chassis centerline and all bed mounts as shown in drawing # 1, that you recorded in step #11.
- 24) If all bed mounting hole locations are correct, finish welding the front crossmember, outriggers and 2" x 2" plates to the factory frame.
- 25) Cut the factory frame off flush with the back edge of the outriggers you tack welded in step #21. See photo # 2.
- 26) Un-bolt and remove the cut off section of the factory rear frame.
- 27) Recheck bed mounting locations.
- 28) Place the bed upright on the front end of the bed, so you can work on both, the top and the bottom of the bed.
Note: Place a pad (we used cardboard) under the bed to keep from damaging the bed.

Photo # 2



- 29) Remove the bed reinforcing rib between the wheel wells as shown in **photo #3**.
- 30) At the back of the bed, on the bottom side of the bed you will find a "C" channel, that the wiring runs through. Cut the inside lip of the "C" channel and two lips on the center edge of the back bed mounts off flush with the two back bed mounts as shown in **photo #4**.
- 31) Un-bolt and move the four quarter panel braces, from the inner wheel well to the reinforcing rib, and tack weld in place as shown in **photo #5**.
- 32) Place the bed back on the rear frame of the truck, aligning the mounting holes.
- 33) Secure the bed to the frame with four mounting bolts and nuts (through the front 2 mounting holes and the back 2 mounting holes).
- 34) From under the truck, mark the bed to widen the wheel wells, at the outer edge of the new frame rails.
- 35) Remove the bed and place it upright on your pad again.
- 36) Remove

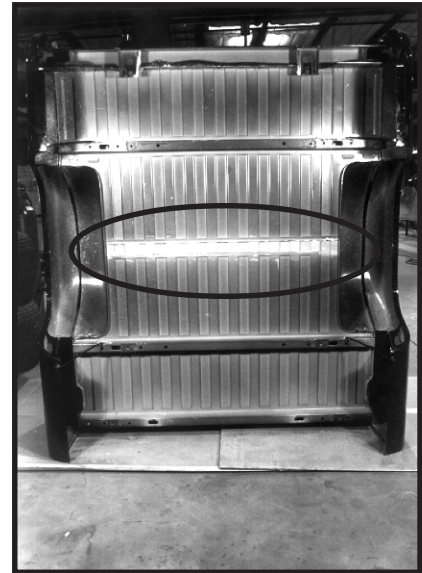


PHOTO #3

PHOTO #4

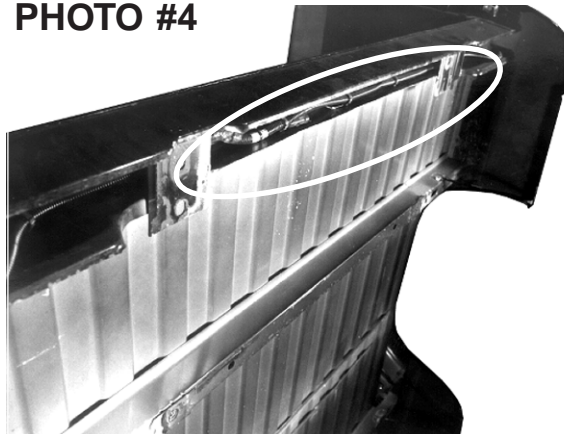


PHOTO #5

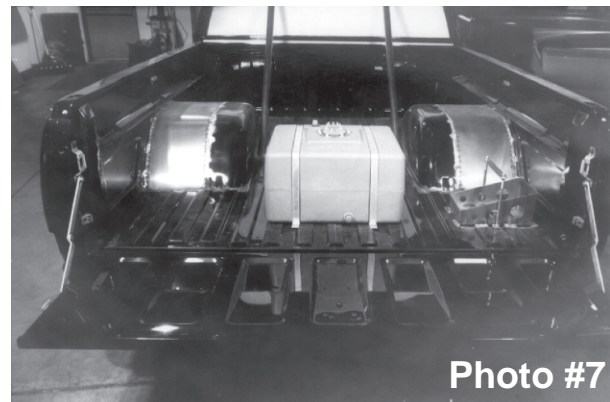
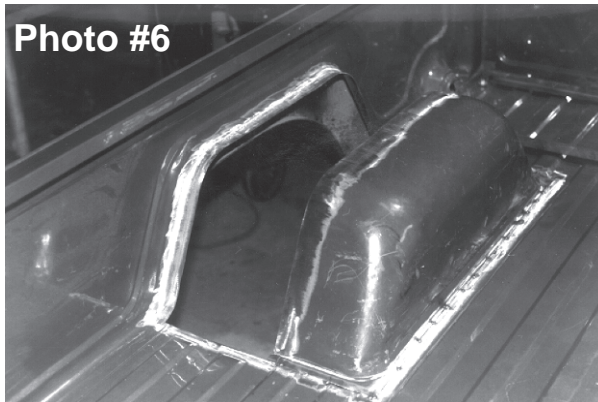


the stock inner wheel well, by cutting along the outside edge of the sealing line that you can see from the under

side of the bed. Note: when cutting the sealing lip , do not damage it because you will reuse it.

- 37) With the inner wheel well removed, draw four lines under the truck from the frame rail reference lines you made in step # 34 to the out wheel wells on both sides of the truck. After all lines are drawn, cut this section of the stock bed out between the lines.
- 38) Tack weld the stock inner wheel wells to the inside edge new bed openings on both sides of the truck as shown in **photo #6**.
- 39) Tack weld the pieces of sheet metal supplied in your hardware kit, in the gap between the inner wheel wells and the inner quarter panel on both sides of the truck as shown in photo # 7. Note : Try to tack the wheel well widening sheet metal in as many spots as possible.

- 40) Before installing the bed, you should install all the rear suspension components and rear axle housing. Refer to ladder bar and shock with springs and mounts instructions for installation of the rear suspension components. If you did not purchase a part # 45-471 or 45-571 welded rear housing for this welded frame package, **refer to drawing #2**, for the dimensions of all your suspension brackets.
- 41) Install part # 40-506 welded panhard bar for this welded frame unit. This panhard bar has left hand threads at one end and right hand threads at the other end for easy adjustment , keep this in mind when installing the rod ends so you do not damage the threads. After installing the rod ends with jam nuts into each end of the panhard bar, install the assembled panhard bar onto the two mounting tabs on the driver side frame rail above the rear housing and a bracket located on the top passenger side of the of the rear housing, with a half moon on each side of each rod ends.
- 42) With the rear housing and tires installed adjust the panhard bar until you have the same distance on both sides of the truck between the frame rails and the side of the tires.
- 43) Reinstall the modified bed and secure it in place with all eight bed mounting bolts and nuts to complete the installation of your new welded frame package.
- 44) After the completion of the installation of your new frame, to add to the total strength and safety of your chassis you should add an 8 point roll bar part # 11-040 or a 10 point roll cage part #11-540.



This welded rear frame package was designed & built, at S&W Race Cars, using the truck shown in the photos. It was designed to make the installation as easy as possible for the do-it-yourselfer. However, the key to a successful installation of this or any frame package is good common sense. Please double check all measurements and that the location of the rear axle housing is correct and centered within your wheel well opening before beginning any final welding!!

If you have any questions during or after the installation of your frame unit , call S&W Race Cars tech line (610)948-7303.

**For detailed explanation of tuning you new chassis
DOORSLAMMERS - The Chassis Book by Dave Morgan
and
DOORSLAMMERS - The Video Parts 1 & 2
are available through S&W Race Cars.**

Drawing #2

NOTE:

1. 1/2" PINION OFFSET.
2. HOUSING TO BE JIG WELDED.

