



S&W Race Cars and Components, Inc.

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Installation Instructions for 10-006 Frame Rails

Please read complete instructions thoroughly before beginning!

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 you have any questions - STOP - and call our tech line at 610-948-7303 and we will gladly explain in more detail any step in the installation.*

Preparation:

Installing S&W RACE CARS frame rails and connectors into a clean car 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 connectors, 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 and car interior.
- B. Jack stands - for supporting the car and new frame rails.
- C. Floor jack - for raising the car, removing the rear housing.
- D. Measuring tools - 12' measuring tape, level, inclinometer, plumb bob, string, 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: As of Jan. 1 1995 stick welding has been prohibited by the NHRA!!
S&W Race Cars strongly suggests that these components not be stick welded!!**

- 1) With all the stock components still in the car, measure and record the wheelbase and mark the axle centerline on the car body, directly above the wheel opening.
- 2) Raise the car to a comfortable working height and level it 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 car side to side by placing the level on the front crossmember and on a horizontal floor panel at the rear of the car.

Note: From this step to the final step always be aware & maintain the cars level condition!!

- 3) In order to insure that your frame rails are centered in the car properly, you must first find the chassis centerline (C/L). The chassis C/L is the midpoint line that runs the length of the car. To find the C/L, drop a plumb line from the same two points on the opposite side of the car to the shop floor. Do this at the front and rear of the car. We suggest using the front control arm mounting points and the seam between the rear of the rocker panel and the quarter panel. Now 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 car. It is good idea to drop a plumb line to the C/L on the ground and transfer it onto the car by punching marks on a few crossmembers. Now if you have to move the car 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) Remove the rear wheels and tires, rear axle assembly, rear springs and shocks, gas tank, brake lines, fuel lines (remove electric fuel pump if rear mounted) and any rear mounted electrical components or wires.
- 5) Mark both sides of the stock frame for removal, using the measurements on the drawing that apply to your year vehicle.
- 6.) Remove the stock section of the frame that you marked in step 5.

Note: Do not remove any stock floor or wheel tubs at this time

Assembly:

Note: During the installation it is a good idea to just tack weld all your suspension and frame rails in place until you get completely finished, that way if you make a mistake you can fix it relatively easy.

- 7) Place the 2" x 3" crossmember of your new frame package into the the rear section of the stock frame with the 3" sides facing toward the front & rear of the car. **note: the front edge of the 3" side of the crossmember should be flush with the front edge of the stock rear section of the frame.**
- 8.) If you have a 64-67 you will need to mark & cut approximately 2" off one end of the crossmember.
- 9.) Locate where the frame rails will mount to the crossmember by measuring the length of the crossmember, divided this measurement in half and make a mark at this point. Measure from the halfway mark or center of the crossmember out to each end 16-1/2" and make a mark at these points on the crossmember. This will place the frame rails 33" apart, outside to outside of the frame rails.
- 10.) TACK! the rear crossmember in place on the front edge of the rear section of the stock frame. Note: with the weight of the front crossmember on the front of the stock rear frame the stock frame may drop down in the front. You should support the frame so that it runs parallel with the floor above it..

- 11.) Determine where the floor will need to be notched for frame clearance by positioning the outside of the frame rails up to the crossmember at the marks you located in step #9. With the frame rails in position, mark the floor where the rails come in contact with it. Double check that you frame rails are centered in the car using the chassis centerline you located in step# 3
- 12.) Remove the frame rails and notch the floor. After you notch the floor, reposition the frame rails in the car up to the crossmember in the back, with the 2" x 3" extensions of the new frame rails flush with the bottom, back edge of the stock half of the frame. Check the clearance between the floor and the frame. If you do not have enough clearance remove the rails and renotch the floor.
- 13.) If all clearances are OK - TACK WELD the new frame rails in place.
- 14.) Position the round tube, front frame supports in the car up to the front of the new frame and the inside of the stock frame, as shown in the drawing. Then mark and cut the round tubing at the angle needed to mount it to the new & stock frame rails.
- 15.) TACK weld the round tube supports in position.
- 16.) Recheck all measurements. If all measurements check OK, finish weld all connecting and mounting points.
- 17.) With the frame fully welded, weld the floor to the new frame where possible.
- 18.) After all welding is complete, remove the stock wheel wells and install you wheel tubs. See your wheel tub instructions before removing the stock wheel wells.

The installation width of your new frame rails is based on using a 15" wide tread width tire.

The installation of these rails does not result in a completed chassis!! S&W Race Cars recommends that you install a minimum of an 8 point roll bar, Not only for safety reasons but for higher strength of your chassis.

