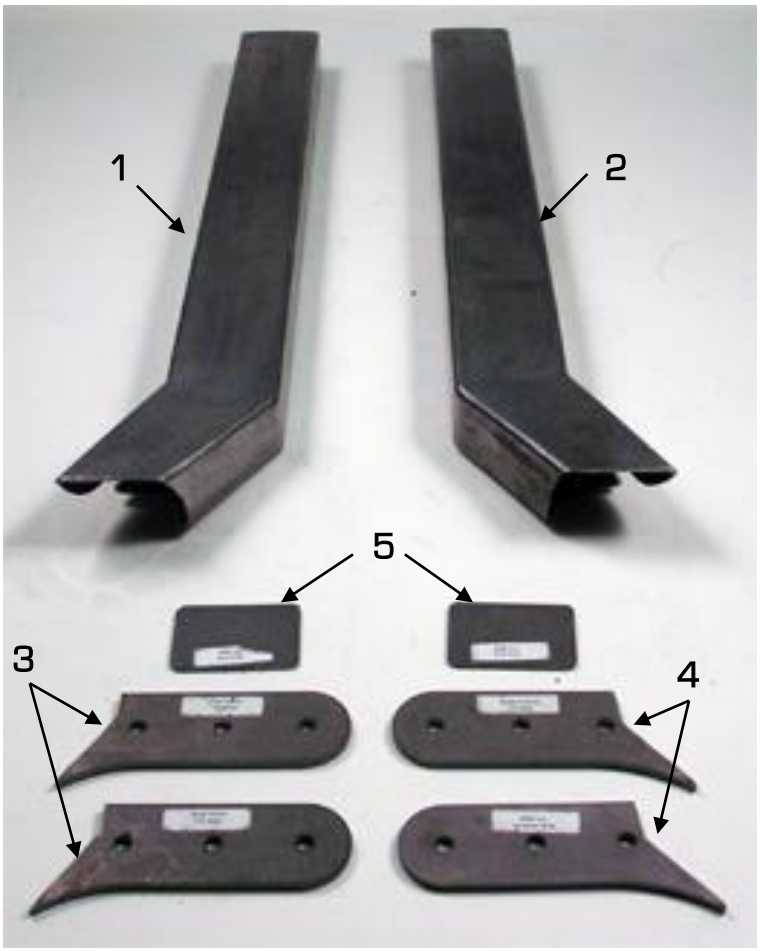
Detroit Speed
Subframe Connectors
1970-81 Camaro/Firebird
P/N: 010103DS

Detroit Speed Subframe Connectors are designed to give maximum longitudinal and torsional stiffness by integrating the connector into both the front and rear frame rails and the floor pan. Once installed, the subframe connectors are not visible from the side view of the vehicle and do not compromise vehicle ground clearance.



Item	Component	Quantity
1	LH Subframe Connector	1
2	RH Subframe Connector	1
3	Inside Bracket (P/N: 99010048)	2
4	Outside Bracket (P/N: 99010049)	2
5	End Cap (P/N: 99010050)	2
6	Instructions	1

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

NOTE: There is an installation video available through the Detroit Speed website in the tech/install video section shown here:
https://www.detroitspeed.com/1970-81-camaro-install-videos.

Please read the instructions carefully and completely before beginning the installation. Always make sure to wear the appropriate safety equipment for the job and properly support the vehicle. 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.

1. The first step is to inspect and/or install new body mount bushings and then correctly align the subframe to the body. This can be done by carefully checking measurements for wheelbase and diagonal corner measurements. Detroit Speed suggests replacing your rubber body bushings with our Billet Aluminum Body Mounts PN 010201DS (1/2 height) or 010301DS (stock height) for maximum stiffness.

2. Begin by properly supporting the vehicle under the rear axle and front subframe to avoid tension in the body when installing the connectors.

To square the subframe:

3. Locate the lower control arm forward mounting locations and drop a plumb line to the ground and mark locations.

4. On the rear of the car, locate the round flanged holes that are near the front of the rear frame rails. Drop plumb lines from these locations and mark on the ground. Measure diagonally between the marks from these holes and the marks from the front control arm bolt holes. These measurements should be within 1/8" of each other.

5. Loosen the core support and body mount bolts and position subframe as needed. Sheet metal measurements should also be checked by inspecting body fits and alignment.

6. Double check that the wheelbase is still within spec and is equal from side to side.

Once the subframe has been squared and the body mounts inspected or replaced, the subframe connector installation can begin.

7. Remove or reposition your fuel and brake lines to provide adequate clearance for placing the templates and cutting the floor pan.

8. The subframe connectors are not symmetrical; they are labeled driver side and passenger side for your convenience. The angled portion of the subframe connector should be positioned toward the rear of the vehicle and point outward (Figure 1 on the next page).

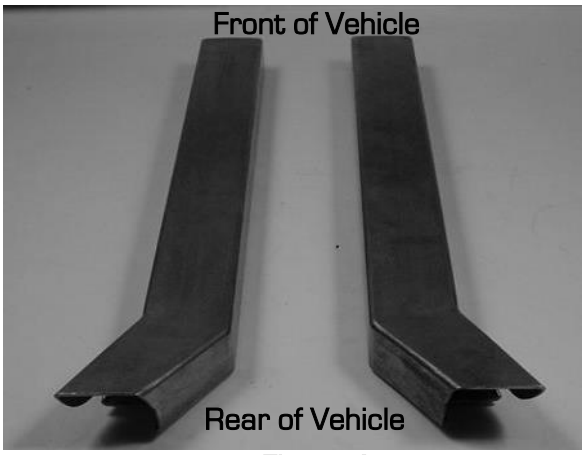


Figure 1

9. Measure inward from the pinch weld along the bottom of the rocker panel. Mark 6 7/8" inward at the rear of the floor pan (Figure 2). Mark inward 6-3/4" from the pinch weld on the rear front seat brace (Figure 3). Draw a line connecting these marks (Figure 4). Now draw another line 3" to the inside of the first line drawn. These will be the cut lines where the subframe connector will be installed.


Figure 2


Figure 3


Figure 4

10. A template is provided for the installer to mark the floor pan on the last page of the instructions, the template should be cut from the provided sheet (Figure 5 on the next page). We recommend transferring the template to poster board. The floor pan template should then be placed on the underside of the car (using tape or small magnets) and mark the edges for your cuts (Figure 6 on the next page). The template can be used on either side by flipping the template from side to side. The square end of the template should coincide with the lines drawn in step 9.

Figure 5

Figure 6

11. Once the cut lines are carefully marked, the sheet metal can be removed. Start by cutting on the inside of your marks. You can always trim more away as you begin fitting the subframe connector in the car. Cut the floor up to the front side of the rear front seat bracket. Further trimming of the floor pan toward the front of the car may be required to properly fit the top of the subframe connector flush to the top of the subframe (Figure 7). **NOTE:** The forward inboard flange of the rear frame rail may be separated from the floor pan. We recommend hammering this flange tight to the body and plug welding it to the floor pan.

Figure 7

12. Starting with the rear of the appropriate subframe connector (slotted end), insert the open slotted end into the rear floor pan from the bottom (Figure 8 on the next page). The lower portion of the connector will butt against the front of the rear frame rail.

Figure 8

13. Position the front of the connector as close as possible to the subframe. (The front of the connector may be longer than needed.)

14. From the top surface of the subframe, measure 1/2" back and mark the subframe connector. Cut the connector to length and weld the end cap (P/N: 99010050) in place (Figure 9). This will allow clearance between the front of the subframe connector and the rear of the subframe. The connector will attach to the subframe using the supplied inner and outer brackets.

Figure 9

15. Again, place the connector into position, keeping the top of the connector even with the top of the subframe. The connector should also be parallel with the rocker panel. Clamp the subframe inner (P/N: 99010048) and outer brackets (P/N: 99010049) onto the front of the subframe connector (Figure 10). The brackets are laser cut to match the contour of the stock subframe. If you have an aftermarket subframe, you may have to modify the bracket end to match the contour of your subframe.

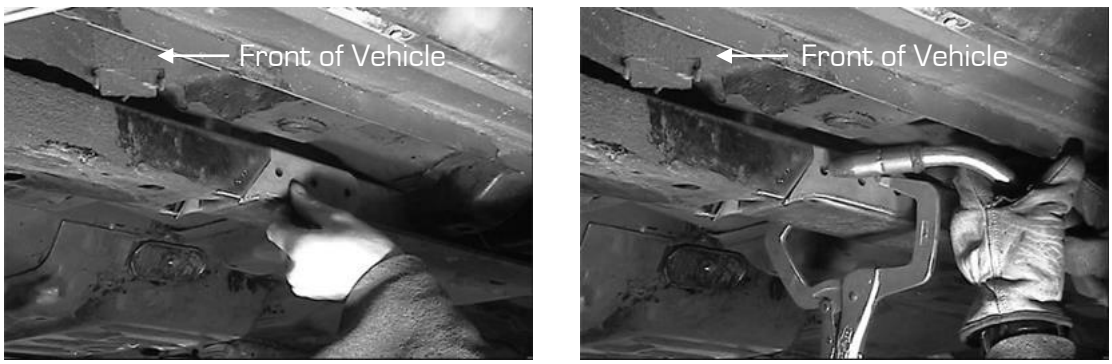


Figure 10

16. Once the brackets are positioned as desired, the inside and outside brackets can be tack welded to the connector. DO NOT WELD THE BRACKETS TO THE SUBFRAME AT THIS TIME. Remove the connector and bench weld the brackets to the connector. These brackets should be welded around the entire perimeter and plug welded in the holes in the bracket (Figure 11).

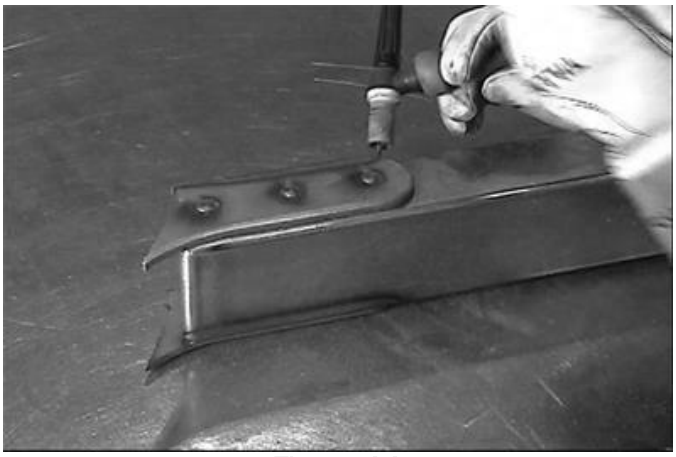


Figure 11

17. With the connector back in position, begin by only tack welding the connector to the rear rail and the front subframe (Figure 12).

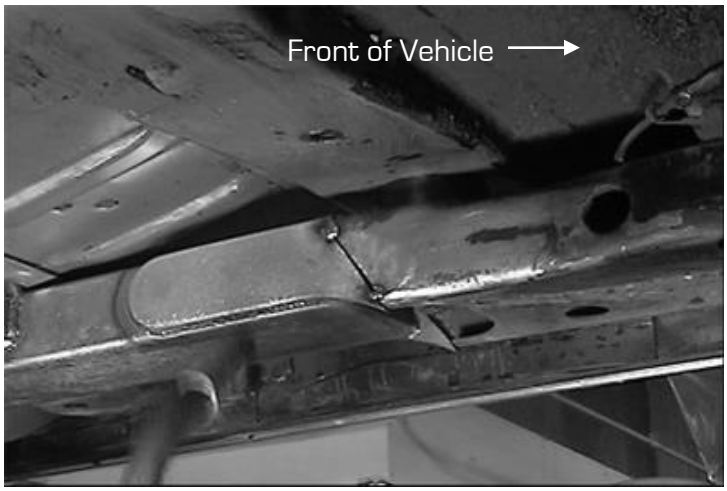


Figure 12

18. Next, weld the floor pan and rear frame rail to the connector; this should be done in short segments to avoid excessive heat build-up in the thin floor pan. The connector should be welded from both the top and the bottom of the floor pan (Figure 13).

Figure 13

19. Lastly, weld the front of the connector to the rear of the front subframe (Figure 14). Finish by painting the newly installed parts to protect from corrosion. Reinstall fuel and brake lines, lower vehicle, and enjoy your dramatically stiffer F-body.

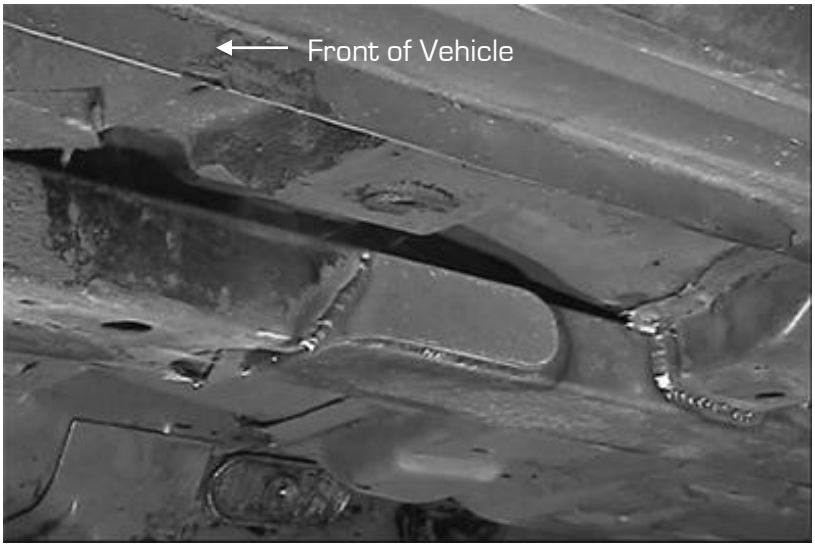


Figure 14

If you have any questions before or during the installation of this product, please contact Detroit Speed at tech@detroitspeed.com or 704.662.3272

LEAVE THIS PAGE BLANK

(position toward
outside of vehicle)

(position toward
front of vehicle)

Detroit Speed & Engineering, Inc.
info@detroitspeed.com
704.662.3272

Cut this unshaded area from sheet.
Transfer template to poster board.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ±1/64
ANGULAR: MACH ±3°, BEND ±5°
TWO PLACE DECIMAL: ±.01
THREE PLACE DECIMAL: ±.005

INTERPRET GEOMETRIC
TOLERANCING PER:
ASME Y14.5M-1994

TITLE

Subframe Connector Template
DSE-F501-69

APPLICATION(S)

1970-1981 F-body