

Cadillac CTS seat retrofit into a 1969 Dodge Dart convertible

Purpose: To install seats with integral shoulder harnesses in a convertible 1969 Dodge Dart for improved crash safety and comfort.

Mechanical mounting of the seats: The first and most important modification was strengthening the floorboard so that, on impact, you don't fly through the windshield with the seat strapped to your back. This amounts to welding some plates to the underside of the floorboard to distribute the force. The actual seat brackets to transition the CTS frames to the floorboard were also taken into consideration for the same reason.

First, the floorboard was leveled. I could have cut out the raised section and welded in a flat plate instead of slicing and rewelding the hump. Although putting in a flat plate would look cleaner, I chose this method because to me it retained a great deal of strength knowing this is the exact area that the seats would attach. Either way, the point is to flatten out the floorboard so that the new seat brackets lay flat.



Second, reinforcement was added to the underside of the floorboard. At the same time, sub-frame connectors were added to provide some torsional rigidity in anticipation of more horsepower; since it's a convertible they would largely prevent any body twist. The seat reinforcements are the four 1/8" plates with a 1/2" NF lock nut welded to each. The sub-frame connectors run down the middle.

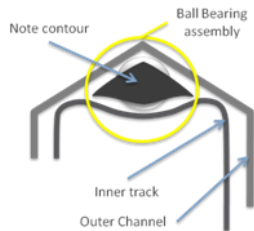


To fabricate the brackets that connect the seat to the floorboard, I started with a 6" square tube with 0.188" wall thickness. I chose this since I didn't have access to a brake to bend the bracket out of plate stock. I used a Sawzall to cut it to rough shape. I wanted the short 3/4" lip for added strength and the cuts gave me a right and left piece. The tall side was the side I trimmed to attach to the seat C-channel.



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Precise dimensions were taken from inside to inside between the seat C-channels while assembled to the seats. The channels were removed from the seats. There are two tangs on the top/front of the channels that must be bend upward to allow the seat channels to slide out.

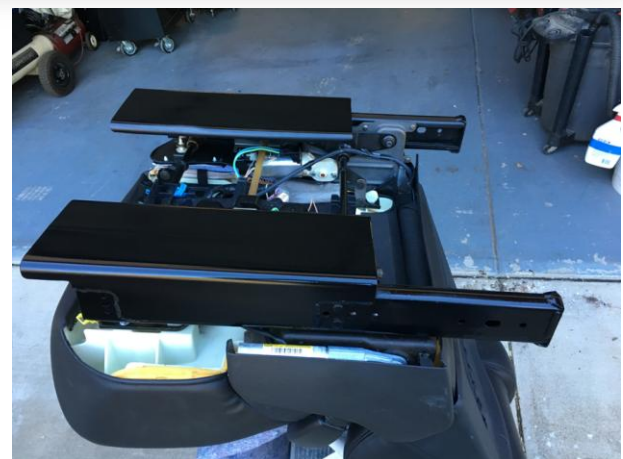
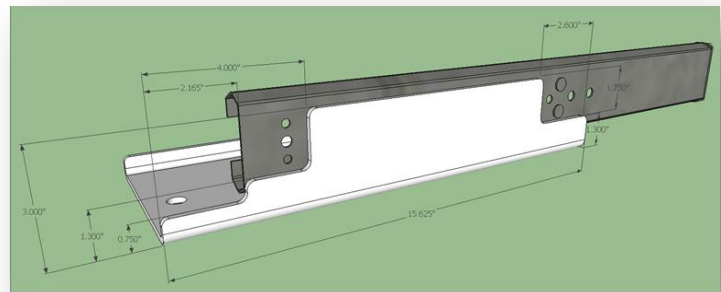


Also, after the channels are removed there is an orientation to the ball bearing assemblies. The side where the plastic is flat/triangular is the side that faces the inside of the channel. The rounder side faces the inner track assembly attached to the seat. Note this when reassembling.

The CTS brackets were ground-off and removed from channels, and then 2x4s were cut and planed to snugly fit on the inside of the C-channels and set the exact distance spanning the seats. Please note that the position of the new bracket in this image is not where it should be relative to the C-channel. I then used some wood screws to attach the 2x4s to each channel one very near the back and the other a bit more forward near the center.

Here are the brackets welded up and mounted back on the seats. The steps not shown (since I forgot to take pictures) were:

- I drew up a dimensioned drawing for the position of the brackets relative to the holes in the floor, the back/forth travel of the seats, and the distance to the steering wheel (which I mounted in the car to make the measurements.
- I cut the brackets to final shape based on the drawing
- I clamped the brackets to the C-channel/2x4 assembly and put them in the car and positioned them and leveled the C-channel assembly so that the bottom of the C-channel assembly was $\frac{3}{4}$ " from the top surface of the bracket and the top of the C-channel assembly was level across. (i.e. so you would sit level side to side) The rearward cant was OK with the floorboard cant since the CTS seats already



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assumed some of this and they has power adjustment for this as well.

- The brackets were tack welded to the C-channel assembly and then the 2x4s were removed and final welded. Please understand that that unless you really control the heat, the brackets will distort. Mine did, so I had to make them straight again longitudinally but also open them up so that the gap between top and bottom was consistent. If they are not straight, the seats won't travel all the way back.

Now that the brackets were mounted, I put the seats in the car. I put them in the intended position and, from below, marked the hole positions on the bottom of the brackets.

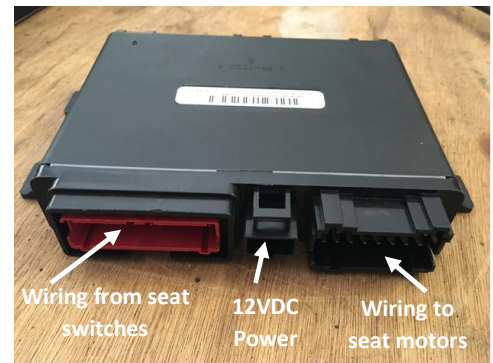
I removed them from the seats, drilled the holes, painted them, mounted them back on the seats, and in the car.



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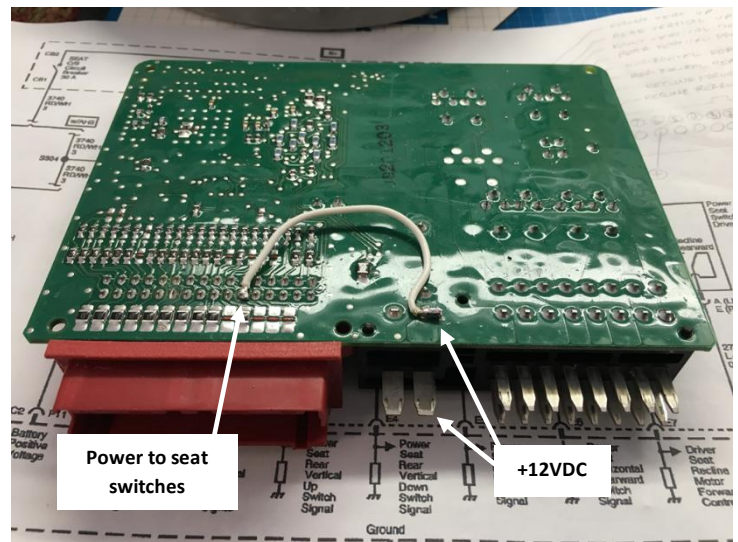
Hooking up the electrical source to power the seats: All I cared about was the seat motion so I didn't bother with the seat heaters. I was told the seats are out of a 2003 CTS. However, in a few junkyard runs, the connectors from a wrecked 2003 CTS don't match. So they are either newer or older, not sure but the idea should still hold true.

First off, the passenger seat was easy. There is an orange and black wire in the main connector. The orange is +12VDC and the black is ground. There are no relays in this seat.



The driver's seat is another issue since it has a Seat Memory Module. To figure it out took some time but the fix was easy enough. The Seat Memory Module has electronics that prevent the memory circuitry from activating when the car is moving, etc., and is always communicating to the Memory Module controls on the door and other data from other parts of the car communications...

The idea is to bypass all that since we simply want the seats to move when we hit the buttons on the side of the seat. Under the seat is a black box and inside there is a circuit board. The way it prevents the driver's seat from moving is by interrupting the 12VDC to the seat switches. That power is supplied by the red wire with the white stripe in the harness with the red connector. To bypass the memory module electronics, all you need to do is to put a jumper from 12VDC to the bottom side of the board to the pin that corresponds to the red/wh wire.



The motor wiring connector, the red connector and the small black power connector go to the memory module. Reconnect those connectors and reinstall the memory module. The last step is to hook up 12VDC and Ground to the large black connector. Black is ground and the other (Orange or Red) heavy gauge wire is the +12VDC. I believe the yellow connector is for the seat air bags; don't connect.

