Shimming a C2 Body

This information comes from the April, 2000 issue of Corvette Fever in the Resto Clinic section authored by Noland Adams.

The question that was answered by this info was from a gentleman that had purchased a '66 convertible. At the time of purchase, the body had been removed from the frame and the frame had been blasted and painted, any frame marks at the mounting points had not been noted and the shim counts had not been noted as well. In paraphrase form, here's the information about properly mounting and shimming the body.

There was a gauge used at the St. Louis assembly plant to measure variations in the frame. Color coded stripes were placed near each body mount to help figure out the final shim count for each body mount. These stripes were only a starting guideline. Due to inaccuracies in the gauge or variations in the body, shims were often added or subtracted as required. The gentleman with the above mentioned '66 simply lost his starting point.

The first thing to do is to identify the body mount locations. '64 and later convertibles have 10 body mounts, five per side. Coupes have four on each side, but the procedures are the same.

The front body mount (#1) is between the radiator support and the frame. The shims are welded in place at the factory and rarely need to be modified.

The second body mount (#2) is under the ends of the windshield. You reach this mount from under the hood - the left one is under the brake master cylinder, but a little more towards the rear and outside of the car.

The third mount (#3) is only for ’64 to ’75 convertibles and it's located under the sill plate.

The fourth mount (#4) is in the rear corner of the passenger compartment, hidden behind a metal rectangular cover in front of the rear tire.

The last mount (#5) is in the rear of the body and is the last mount to be shimmed and adjusted.

To mount the body to the frame, we are concerned with the adjustments to six body mounts. They are #2 left and right, #3 left and right and #4 left and right. Start with a minimum number of shims, which is either three or four at each mount. Hold them in place with masking tape and align them for the mounting holes. Lower the body onto the frame.

Install the body mount bolts, washers, shims, nuts, etc. on the six body mounts that surround the passenger compartment - left and right sides #2, #3 and #4. Correct placement for parts is shown in the Assembly Instruction Manual (AIM). AIM shows

rough drawing and part numbers, but most body mount kits come with an instruction sheet. Tighten the six body mount bolts to firm, just a little more than finger tight. Look closely at the shims at each of the six locations. The weight of the body should hold each stack of shims solidly in place. If any of the shims have spaces, remove the bolts and add shims as required. Replace the bolts and again firmly tighten all six bolts. The bolts are slowly tightened until two things happen: the six bolts are evenly adjusted, but are all quite tight, and there are no gaps between the shims. These are the ideal body mounting conditions for the mounts around the passenger compartment.

The doors are installed next. Each door hinge has six bolts and there are a number of shims at each hinge, varying from none to six. Getting the doors adjusted can be rather difficult. There are two vertical gaps, one at the front of the door and one at the rear. The goal is to get both door gaps even. The front door gap is changed by adjusting the shims on the front mounts, #1 right and left, under the radiator support. Adding shims to mount #1 closes the front door gap at the top.

Each corner of the body is adjusted with more or fewer shims under the four corner body mounts. These are #1 left and right and #5 left and right. If the doors adjust properly, you're done. Some body work may be required for a perfect fit and you may have to adjust the doors a few more times.

If the body has to come off again for paint, the shims are already in place. You still need to adjust the doors after the body is placed back on the frame. Expect this whole procedure to take quite a bit of time.

Again, credit for this procedure should be given to Noland Adams.