

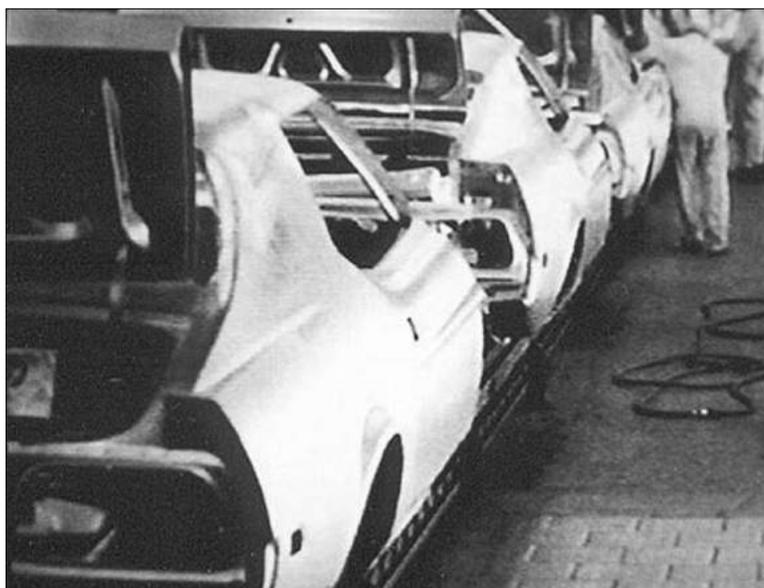
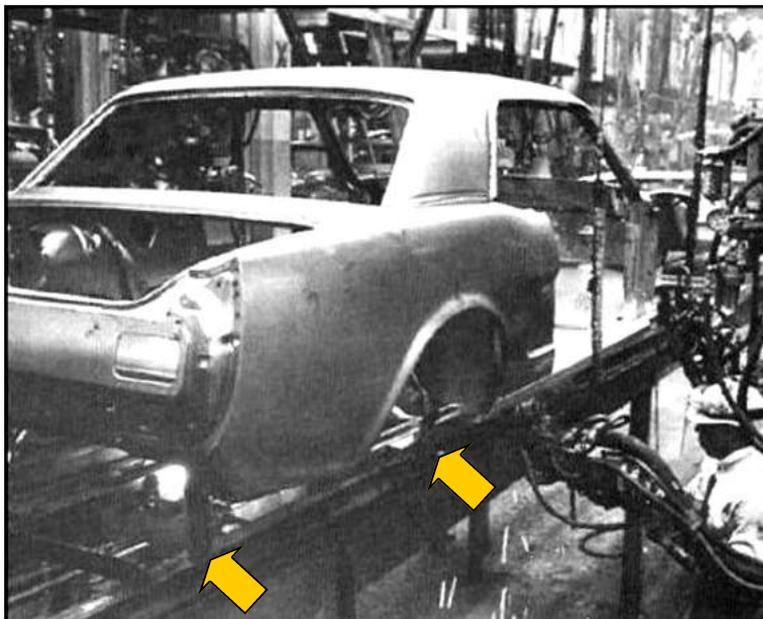


Concours How-to's

Reproducing Body Dolly Marks

During much of the time your car's unibody spent being assembled and painted it traveled down a series of tracks, for lack of a better term, traveling from one station to another during the assembly process. Each car was rested on the skid at eight points and at four of those points it was bolted to the skid which held it securely to the tracks as it the body rose, angled and dropped moving it through the plant.

Because the cars were attached prior to the primer or any part of the paint process, bare spots of metal were left at these locations and should be reproduced during the restoration process. The treatment of the metal prior to assembly helps us understand what we should attempt to reproduce at each of those points.



On the bare surface of the frame rails, we should be able to make out the galvanized metal surface, while in the trunk and in the interior of the car (where the car was bolted in place from the top) untreated bare metal should be present.

In the picture above we see an early Mustang in a welding station where it appears that a worker is spot welding the car.



Here is what has been reported as one of the rails or dolly's. Here at the bottom of the picture you can see the rear attachment points (one longer - for vehicles such as Cougars, one shorter for Mustangs)

These were described as two different styles of attaching hardware used with the rail to the left.

Dolly/ rack pictures taken at Bob Perkins Restorations



Here is a close up of the rear mounting stands (in this example from 69-70—see last page for explanation) . At this point (and one further forward) the car was bolted to the dolly.

Here is a close up of the forward standard. At this point and one further back the cars simply sat on the stand with locator tab inserted in the cars frame rail.

As mentioned, on the prior pages, each of these spots would leave unpainted locations on the frame when viewed from under the car. That bare metal should show a galvanized surface if part of the frame rail or just a bare, natural steel finish if located in the interior or the trunk.

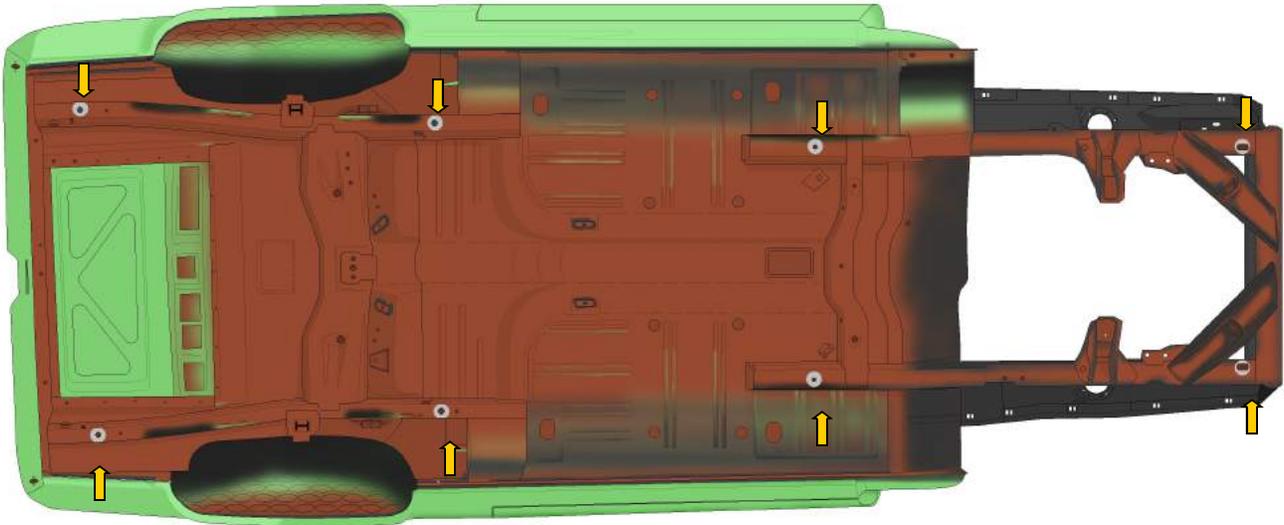
The diameter of the circles on the frame rails normally measures about 1 3/4" in diameter but can measure slightly different depending on if the car shifted (elongating the circle) during the building process. The size of the circle seen in the trunk or interior can vary a fair amount between years and plants (even during the same year) so it appears that some of the items used to secure the cars may have been lost, damaged or replaced leading to an inconsistency. Good for the restorer is the fact that most of the time these were tightened enough to leave a distinct impression for us to measure and reproduce

Since these stands produced a shadow when exterior body color and pinch weld black out was applied, (since both were applied from the sides of the car the overspray often takes on a U shaped look) we should attempt to reproduce this when applying those details.



Dolly Mark Placement

Drawing below illustrates the placement of the stands/dolly marks as found on original cars.



Dolly Reproduction Tools



Now many restorers have come up with their own way of reproducing the look of these circular, unpainted areas on their restorations. Some have reported using magnets, corks, tape and other items to accomplish the effect.

One of the challenges is that the method needs to produce “soft” edges since the stands or washers did not always sit very tightly against the metal and the edge of the washer or top of the stand appears to have not have had a sharp edge. Also one of the challenges was to reproduce the look of the extended stand since, as mentioned prior, this stand often created a U shaped overspray area towards the inside of the car of body color and or pinchweld

black, and thin washer alone (or other masking tools) do not reproduce this detail.

I designed the following tools in two styles. One that would pass through the body (as the originals did) and tighten, holding them in place during the paint process. The second, since they must hold themselves in place from one direction, incorporate a short piece of rubber hose that expands, when tightened.

They appear to do the job and can be used over and over again, or loaded to your friends to help them with their projects. I hope this article provides you with some direction, information and ideas.

Constructing the Dolly Tools

Supplies/Equipment Needed:

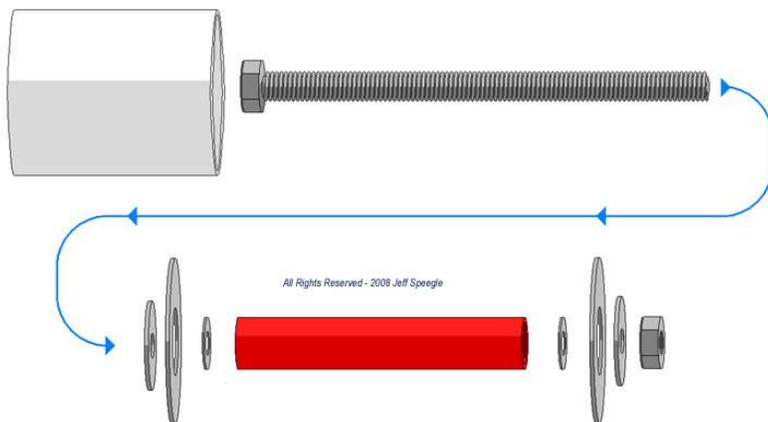
- Bolts
8 - 9/16 x 4 1/2"
- Nuts 16 - 9/16"
- Washers
12 - 1 3/4" Dia
12 - 5/8" Dia
(I used an additional 12 smaller washers since the 1 3/4" ones had large center holes)
- 20" Total length 1 1/2" dia PVC pipe cut into 2 1/2" sections
- 18" of 1/2" rubber hose cut into four 1 1/2" and four 3" sections
- 8 oz of liquid epoxy

Using the list of hardware it should be pretty easy to assemble the tools. But a few assembly notes might help you from my effort at making these. Please feel free to improve on what I made.

Through Hole Dolly Assembly

- The general idea is to epoxy the washer to the bottom of the PVC section so that it will allow the bolt to rotate separately.
- The piece of hose is used on this tool in an effort to keep the heavy handed, tightening the tool too tightly. Just enough tension to hold it in place is needed.

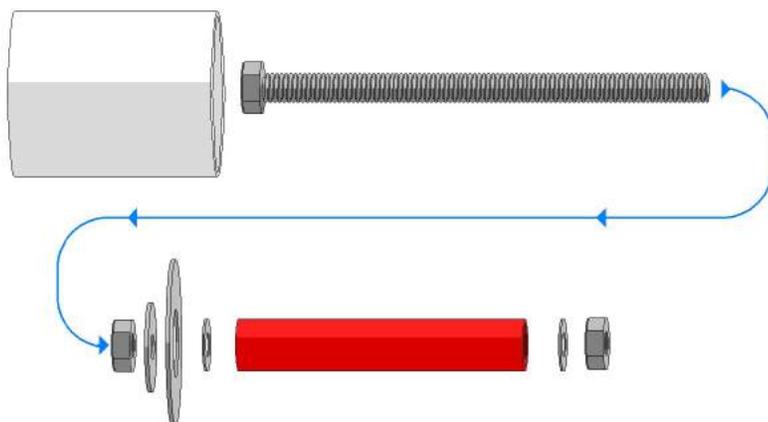
Through Hole Dolly Tool



Single Side Dolly Assembly

- The general plan is to epoxy the washers and upper nut shown in the picture, to the left, to the bottom of the PCV section. This will allow you to hold the PVC section with one hand while tightening the bolt with a socket and extension when attaching the tool to the car..
- You should weld or epoxy the nut on the end of the single side dolly. This will keep it from turning allowing the rubber hose to expand.. Also you don't want the washer or nut at the end becoming disconnected from the tool when you loosen it to remove it. Falling into the frame rail.
- By tightening this tool the rubber hose expands and holds the tool in place.

Single Side Dolly Tool

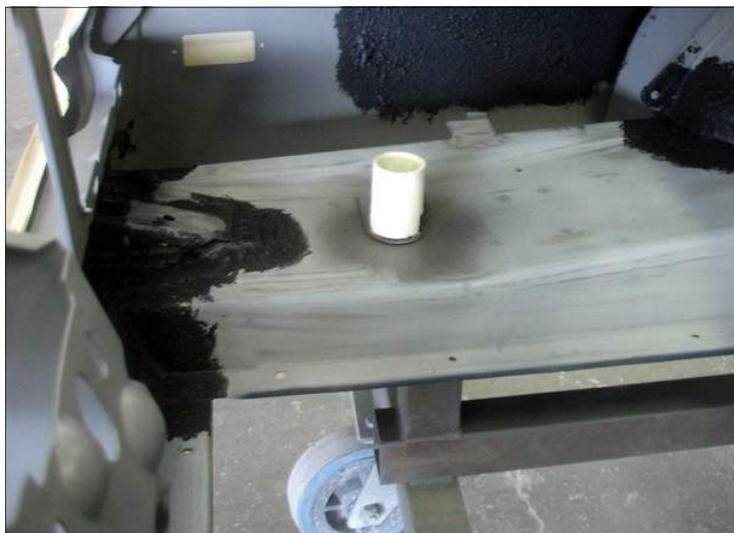


Installation

Installation is fairly straight forward.. Prepare the metal where the tool will cover than install.



An earlier design had a cut out in the side of the tube to allow me to hold the nut while I tightened the bolt (single sided tool). As I discovered, gluing the nut to the tube and washers allowed me to do away with this extra work.



Unfortunately due to the design of this paint dolly at this shop (notice the casters below) this tool had to be inserted up side down for a time. It was installed correctly before the overspray's were applied



Things do happen. In this case the plastic tube was knocked off and I had to reattach before the overspray was applied



What the final results were on this particular car. On this car the floor pans were shot with batch color used during some of 69 Dearborn production.

Additional Notes

At some plants and years the skids were designed to hold a number of different cars as mentioned earlier. The examples that have been found are from Dearborn and San Jose where it is possible that the same skids were also used to hold Cougars. Since the Cougars were slightly longer two stands (located slightly rearward from the Mustang ones at the very rear) still left a shadow just like the other points.

For these I plan to use the same design. Washer epoxied to the section of PVC but this time attach them using a magnet I will attach, from the inside of the PVC tube) to the washer that is glued to a section of PVC. Of course this design will require that I double check that it has not been bumped or moved between paint applications.



Special Thanks

Wanted to express a special thanks to Bob Perkins for making the original set of rails available for pictures. Bob is always there to provide interesting details, great low mileage examples of these vehicles and technical support. In this instance the help was very timely.

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