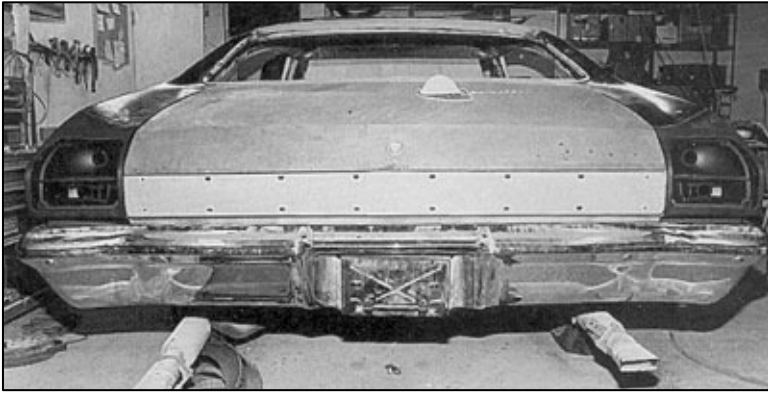


## Removing Rust during Restoration (Author: [Jeff Lilly Restorations](#))



This Chevelle SS 396 has a deep rust problem on its decklid. This can be removed by acid dipping this body panel with a homemade solution and the proper technique.

When any car has been exposed to the hot western sun or the harsh winters of the north, you can count on thin paint and steel parts that have been contaminated with rust.

Although surface rust can be eliminated by some sanding techniques, deep rust - even if it hasn't

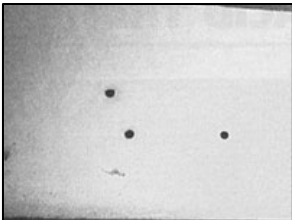
gone through the metal - is much more difficult to remove. In fact, it is impossible to get this rust out with normal hand scuffing, phosphoric acid methods. Many restorers count on acid dipping the vehicle and its metal parts to thoroughly remove rust from the vehicle.

This may be an excellent way to remove rust, but to many home restorers, it can also be a costly one. There is, however, an acid-dipping method that you can use at home. Just remember that safety comes first. As long as you keep in mind that any kind of acid (or any type of chemical) should be kept away from children and stored in an area where children cannot get into it. We will show you the step-by-step procedure for rust removal.

*NOTE: this must be done in a well ventilated area to avoid sickness and contaminating any other parts nearby.*



1. A small acid dipping tank can easily be built using 4 two-by-fours. Build a square frame large enough and deep enough to handle the part you are working with. You should also use plywood for the bottom of the frame, and line the box with four to six millimeter thick plastic. Black or clear will be fine. This should be available at any home improvement or hardware store. If you are cleaning a fender, you can build up the sides as high as you need them with plywood.



2. As shown on this decklid, the paint is very thin with deep, grainy rust.

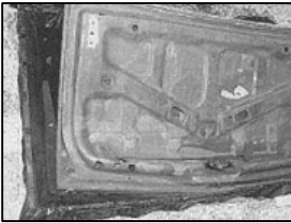
3. In this step, you want to shave down the remaining thin paint first in order to clean it up. A liquid stripper is useless on thin paint that is weathered. Sanding will slice the rust down to help the acid work well.



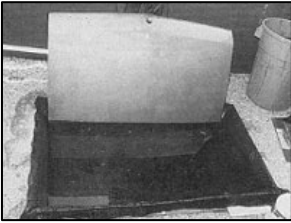
A variable-speed grinder (1200 rpm) with 80-grit paper and a backing pad should be lightly used over the rusted area. Just slice the surface, and stay away from the edges. The edges should be done by hand using 80-grit paper. Please note: Do not put pressure on the sander/metal surface or you will risk warping from excessive heat.

**Note:** For this application, you will need muriatic acid (swimming pool acid) which can also be purchased from a hardware store for a reasonable price. You will also need litmus paper to test the pH balance of the solution before disposing of it. Lastly you will need baking soda to neutralize the solution to an environmentally safe level before disposing of it. Remember to always use goggles, gloves and a respirator. When you have finished with the muriatic acid and baking soda stage, pour a quart of phospho or OxiSolve phosphoric acid inside all panels without diluting it, and let it sit for one hour before rinsing with water. Phosphoric acid is also available at any hardware store.

**Mixture:** Mix the muriatic acid with water - one gallon of acid to two gallons of water. Submerge the panel you are working on, and let it sit for three to four hours. Check it periodically. Mix more if needed.



4. Remember to tilt the panel up on all its edges to get them clean. The acid will go inside the panel and clean the seams too. It will need time to soak for an effective job. Let the solutions sit for two to four hours.



5. Pick the panel up to see how clean it is. It took four hours to completely clean the deep pits of this panel. Each panel will vary in the time it requires. Just make sure you check it every 20 to 30 minutes. Make sure all the necessary materials are ready to work on the panel before it starts to rust again.



6. About a pound of baking soda is then added to the acid solution. The soda will bubble and neutralize the solution. The panel should be completely submerged in the neutralized solution to thoroughly clean it. After three to four minutes the panel should be removed and washed out with water. Then it should be blown dry with an air hose.

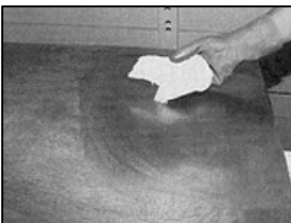
**Note:** Now take the litmus paper and test the pH level of the acid solution. Waste management companies will tell you the acceptable range for your city. Pour in baking soda until the level is in the proper range for disposal.



7. Shown here is DX579 by Ditzler, a metal prep that is a phosphoric acid to condition and ready the panel for primer and paint. There is also a bucket of clean water and Norton pads.

8. Use clean, damp cloths to wipe down the section you are working on. Run a towel over the surface after each pass. Work quickly to keep it from drying. The towel will be filled with metal particles from the cleaning action. Keep wiping until there are no metal particles left. Change rags if necessary, and never put dirty towels back into the clean water.

9. The panel should be scuffed thoroughly in a circular pattern. Only one-foot, square sections should be done at a time for optimum results.



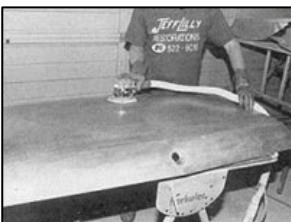
10. Immediately wipe the area down with a new dry towel. Then blow dry the area. A blue tint will appear in the metal. If there is a white film, you are not working fast enough.

11. When each square-foot section is done, use a loop or preferably a 30x microscope to look over the section. You should see what appear to be silver highways. If you see any brown or copper spots, mark them and rework those areas.



12. Once you are satisfied, take a six-inch sander (we like to use a Hutchings 4500) with 80-grit sand paper. This particular sander feathers steel very well and provides superior paint adhesion. Go over the entire panel, and then blow off the debris.

13. The next step is to take a clean towel and wet it with lacquer thinner to completely wipe the panel down. You will see that there are still more metal particles coming from the panel. When it is thoroughly clean, you are ready to do the body work or priming if the panel is straight.



14. We went ahead and sand blasted the entire back side of the panel as well and removed the caulking in the seams with a wire wheel.

15. A heat lamp is perfect to completely dry the panel and remove any trace of moisture. Now the panel can be primed and painted.