

A Method to Chrome Plastic Parts

In the pursuit of replicating my favorite toys parts there has been one issue that has frustrated me more than all others combined: What is the best method to chrome plastic? And by this I am referring to my search to achieve a really good “chrome look” on some of the plastic parts I make – like Johnny Express mirrors, air horns and tail lights. Of course there are many parts on many toys that require the chrome look to restore them to their rightful glory.

I believe that the method used to “chrome” many of the toy parts of the 1960s was vacuum metallization. While I do not really know anything about this type of process, I would imagine it was a process tailored to mass production and was cost efficient to some degree in the 1960s. How else would it have been possible to produce such big plastic toys that were the signature of that era – when U.S. toy making was at its peak?

When I spent time researching how to go about re-plating the chrome on a beat up set of (broken by the way) Johnny Express mirrors I had obtained several years ago, I came across some articles written by people about another cool toy – “Crusader 101.” This toy was a huge car that was about a yard long and made by the same company that produced the Johnny Express – The Topper Toy Company. The Crusader 101 was also a battery operated toy and it used the same remote control unit as Johnny Express (I believe that the lug nuts, lug wrench, and jack are common to both toys as well). Although I never had a Crusader 101 as a kid, I do remember the toy from seeing it in the supermarket I used to go to with my Mom, as toys used to be sold out of supermarkets in the 1960s. The Crusader 101 had many chromed plastic parts, and an article in Wikipedia mentions the need to re-plate these for avid toy restorers:

To those who might wish to restore a Crusader 101, replating the "chrome" parts can be done by a number of firms across the US specializing in vacuum-plating the chromed plastic parts found on vintage model car kits.

So after seeing the writing above, I set out to contact chrome plating houses. But I couldn't find any in my geographical area that would chrome plastic parts. In fact every place I contacted told me “we do everything but plastic.” This should have raised the red flag with me right away, but I continued my pursuit. After persistent searching, I did find several places in the country that do chrome plastic parts. So I sent out bunch of replication Johnny Express mirrors and air horns I made to multiple chrome plating houses – the results – not good to say the least. In some cases my parts were destroyed in the chroming process used by the companies, in other cases the chrome job was poor in quality. In fairness to the chroming houses, it seems as though the surfaces need to be near perfect to produce a near perfect finish; my plastics processes reproduce the detail of the parts that are molded exactly, and I had imperfect originals. Even after sanding the parts and washing them thoroughly, while the parts look real good to the naked eye, even the minutest surface irregularities would get exacerbated when the part was chromed. I was told by one chroming house that the plastic type that I use for making mirrors and air horns reacts and “contaminates” the chroming materials used. Additionally, there were

adhesion issues and pitting would occur in the part when subjected to the chemicals in the chroming processes used by some of the companies. So the parts that came back to me from the chroming houses were either damaged, didn't chrome at all or chromed poorly.

There was one independent chroming house that worked with me in attempts to get better results, but it was pretty expensive. This was the guy who told me I need to use another plastic type to work with his processes. While I could experiment with different types of plastics that would lead to better chroming results, however that activity is very costly. I also tried a local company that used a "Vapor Deposition Process" which yielded very promising results, but destroyed more than half of the plastic parts I sent them, and still cost me an arm and a leg in the process. Let's see, would anybody want to pay over \$50 for a set of replication Johnny Express mirrors?? I don't think so.

[Note that I have provided plastic parts to several customers who indicated they were going to have the parts chromed. If any of you are out there and are reading this article, please let me know how things came out!]

So I retreated from my pursuit of having a chroming company plate the plastic parts that I make, and I set out to find a method to do it myself. I purchased a set of chrome plating chemicals from an internet company (see related article on our website) and played around with that a bit, but it was laborious, time consuming and costly since the conductive paint I had to use was \$50 for a very, very small can... I have seen other reproduction toy parts offered with a chrome finish that just uses a spray paint that is chrome in color. The art of spray painting is not an expertise of mine, but this is the route I have decided to take, albeit with some modifications to "just spray painting" the plastic. The details of the materials and procedure I use follows:

Materials: The best stuff I have used is Spaz Stix Mirror Chrome available from <http://www.spazstix.com/Spazindex.html> or at your local hobby store. This is available in an aerosol can or can be purchased in Airbrush form also. You must also use the Spaz Stix Surface Pre Prep Spray and High Gloss Black Spray. If you wish to use these items in the Aerosol form, the part numbers are: Surface Pre Prep #90059, High Gloss Black #119, Mirror Chrome #10009. You will also need to choose a plastic primer. I have had success with both Duplicolor Grey primers (regular build formula and high build formula) and Rustoleum Plastic Primer, which are available in aerosol cans. There are hobbyist articles written and communications forums where people also state a positive experience with using Plasti-Kote primer on plastics.

The Procedure: These painting items were designed for R/C body parts usage and are supposed to be sprayed on the inside with a backer coat (the high gloss black) at the end. I believe that the Spaz Stix paints were formulated to work on Lexan, but I have had good success using them for surface applications on my replication parts. Proceed as follows:

- 1) Sand the part very well. Use wet/dry sandpaper and start with the lowest number grade paper and work your way up. I usually use 400 grit, followed by 600 grit.
- 2) Wash the part well. Use a mild degreaser and rinse it off well.

- 3) Spray the part with the plastic primer you have chosen to use.
- 4) Depending on the finish you desire and the primer you used in step 3, wet/dry sand the part at this point. Start out with a lower grade paper and work your way up to higher grade sanding.
- 5) Wash and rinse the part again.
- 6) If using a high build primer, or sandable primer, and depending on the finish of the part with primer at this point – repeat steps 3 through 5.
- 7) Important step – put the part away and let it sit for awhile, like a week or two if you can. I had more than one auto body paint guy tell me that they don't touch any plastic part for at least a week after they prime it. This really does make a difference with the adhesion of the paint to the plastic. So leave the part alone for awhile after priming.
- 8) Spray the part with the Surface Pre Prep Spray. Let dry.
- 9) Spray the part with the High Gloss Black Spray. It is OK to make repeated sprays from side to side until you get the look you want. Let dry.
- 10) If you are satisfied with the look you have at this point, consider this step optional. Depending on how tenacious you are at this point, sand the part with the Micro Mesh cloths. Start with the lowest grade cloth and work your way up to the highest number cloth. Sand until you produce a mirror like finish.
- 11) Spray the part with the Mirror Chrome Spray. It is OK to make repeated sprays from side to side until you get the look you want. Let dry
- 12) Depending on how you plan to use the part, you may wish to apply a clear coat finish at this point. This is recommended by the Spaz Stix company if the part will be subjected to handling. Be warned that the appearance of the part will be changed by the application of a clear coat and you could ruin the look you have achieved, and for this reason – I do not recommend finishing with clear coat, even if the parts are to be handled.

A few notes here. I have used the above procedure and have obtained pretty good results. It might seem like I'm a promoter of the Spaz Stix company, but I'm not affiliated with them in any way – I just think they make a terrific product that is definitely a cut above using a conventional chrome spray paint. The Spaz Stix paints are extremely fast drying, and whatever their formula is – they figured something out to permit applying as much of the mirror chrome spray you want to achieve the look you want without the stuff beading up or running. While the procedure above seems lengthy, once you start spraying the Surface Pre Prep, you can do the black and mirror chrome successively a short time later (if you choose to omit step 10) as soon as the part is dry. Some of the best results I have achieved with this process were obtained when I let the parts sit a week or longer after priming (step 7); it is really advisable to wait a good period of time after the priming step.

If you choose to try out this procedure, good luck! Please Email me at the AEP website to let me know how it works out for you. Or if you have another method that works for you and that you want to share, let me know. Good luck again.

-Bob Lansing