

Tear Repair

What can be expected from a DIY vinyl repair kit

by Bruce Smith

I had been looking for a survivor cabriolet for a while and recently found a gem. It was nothing too special, but a mostly original, sound, and solid Ivory T5 in nearly the condition as it was when put away some 40 years ago. Repainted back in the 1970s, most of its soul will be left intact, limiting cosmetic repairs to some minor bits.

One repair on the to-do list had been to fix a tear in the otherwise good driver's door card. Because sourcing a used replacement panel would probably lead to more problems than it would solve, I decided to give DIY repair a try.

Heat-curing vinyl repair kits have been around for many years and you may have seen them used with varying results. Color matching can be nearly impossible, but the door panel that needed repair was black vinyl. This, I figured, would increase the probability for success. With panel replacement as a backup plan, repair was certainly worth a try. I hadn't expected a concours-eligible outcome, so I'm quite happy with the end result.

Heat Cure Vinyl Repair Kits

Vinyl repair kits are sold under several brand names, but all appear to be about the same. These kits use liquid plastisols, and the science behind their heat curing has been around for quite a while. Repair compounds are based on dyed vinyl resins (usually PVC) mixed with a plasticizer that will change phase to solid form at temperatures above about 350°F. Auto parts stores sell kits from Permatex, 3M, and other, possibly lesser-known names. There are also no-heat kits, but these are simply dyed cements that are bound to disappoint.

The heat-curing versions are the better ones and generally contain all of the needed components, including a tube of repair adhesive, some backing fabric, a heating iron, several textured transfer sheets, curable vinyl repair compound of various colors, and a hardener for use on hard surface repair. An example of such a kit is shown in Fig. 1.



The contents usually found in a heat-curing vinyl repair kit.

The Repair Process

The vinyl door panel tear was about an inch long but had no missing parts. As with anything, preparation is the key to success. Starting with a surface that isn't free of dirt, oil, wax, and so on, is going to lead to failure of the repair to bond well. Once cleaned with a detergent and rinsed, a follow-up with alcohol is a good measure to ensure the best starting surface.

The panel tear is shown in Fig. 2A, where frayed areas have been trimmed with a razor blade to give nice clean edges. Beneath the opening is a small piece of cloth backing (from the kit), inserted to provide a support for the loose portion of the tear. In Fig. 2B, the clear repair adhesive has been used to cement the torn portion and surrounding area onto the cloth backing. This is then left to dry for several hours until it's no longer tacky. The adhesive will shrink upon curing, leaving a void in the opening that will be later filled with the vinyl repair compound. The adhesive will also cause the vinyl to curl, but this will flatten out during the heating stage.

The next step involves either selecting or mixing the repair compound to match the color of the original vinyl. For a repair to fabric like this, no hardener is added so the vinyl will remain flexible. If you need to mix-to-match a color, don't expect a repair to disappear into the background. If you're very good at it, you might get pretty close. The curing process won't do too much to change the color, making it a bit easier than endless trial-and-error. Black is the simplest color to match, but do realize what painters know—that all black isn't necessarily black.

The repair compound should be applied into the damaged area as shown in Fig. 2C and feathered away from the tear slightly into the surrounding area. The kit included several samples of textured transfer paper with various graining to match the pattern of the vinyl you are repairing. After the proper grain-transfer paper is selected, tape it so it will hinge and cover the repair area. In the next step, the preheated heating iron is used to cure the applied repair compound, adhere it to the surrounding vinyl, flatten the repair region, and grain it with a texture to match the original. This is shown in Fig. 2D, where the heating iron is passed over the repair area in a circular motion for 30–60 seconds to fully cure the compound.

After the iron is removed, the paper is left on to cool for a few minutes and then lifted to inspect the results, as shown in Fig. 2E. Additional heating can be done if the compound has not fully cured. At this point the results may not look impressive, as the surface sheen of the cured material might be flatter than the original vinyl. But a light buffing will bring up the shine, as shown in Fig. 2F, which can be followed by surface protectant to give a close match to the surrounding area.

Did it do the Job?

The final repair is quite good, but not perfect. The graining matches the original quite nicely, and both the color and sheen are pretty close. A more artful repair job may have resulted in less encroachment of the repair into undamaged regions, but may also have left a larger void in

The vinyl repair sequence: A) The repair region cleaned and trimmed with cloth backer in place. B) The torn area cemented to the cloth backer. C) The repair compound applied into the repair area. D) The heat curing step through the transfer paper. E) The lifting of the hinged texture paper after cooling. And F) The final result after a light buffing.



Fig. 2A



Fig. 2B



Fig. 2C



Fig. 2D



Fig. 2E



Fig. 2F