

Cup Holder Repair

1995 X300 VDP

Broken Hinge Pin Receptacle

I've been removing and replacing the rearview mirror a lot of late, and doing so from the passenger seat. Stupidly, I've been unwittingly putting too much downward pressure on the closed cup holder with my elbow whilst doing so and seem to have fractured the hinge mechanism on the right hand side.

Unfortunately, I didn't do a bang-up job in focusing when photographing the failed state. This is the best of the lot.

The bottom is broken out of this little receptacle for the hinge-pin, allowing the cup holder to shift forward under spring pressure, which prevents the latch from engaging, causing it to flip open.



Idea Generation

I could see that I needed a mechanism to retain the hinge-pins in proper position in order for the latch to engage.

I have experienced very limited success in past ventures getting adhesives to bond with plastics. Casting about in the shop wondering what to do, I spied a cut-off from a zip tie on the floor. At the time, my thought process was to somehow utilize the safety wire I had obtained to complete the rear brake job to stabilize the hinge. However, there were absolutely no holes or other features I could tie off to. It occurred to me that I may be able to complete the loop with the spare piece of zip-tie and possibly have a large enough bonding surface to endure.



Step 1: Anchor

First step was to mix up a bit of fake J. B. Weld obtained a number of moons ago on a “Hazard Fraught Tools” stopover on the way home from work. Despite appearances...I then “carefully” applied it to the pointy end of the zip-tie and to the ramp-area of the cup holder directly aft of the hinge point. I wasn’t creative enough to envision a way to clamp this, so I sat and held it in place for about 5 mins or so. I quickly tired of this approach, positioned it on the workbench after a number of tries where there were no disturbing stresses and left it overnight.



Mistake-Proofing

As you can see, I smeared a bit on the spring-loaded pushrod as well. Before I left it to cure up, I ran a small string up and down the pushrod, dental-floss-style, hoping for movement the following day. Everything turned out fine.



Step 2: Tension Strap

My idea was to wrap the free end of the zip-tie around the bottom and adhere it to the bottom of the console door with enough tension to bear on the hinge pin and keep it in place. For this, it was obvious I was going to need to devise a clamping arrangement for the curing process.



Open

Holding the free end tightly against the bottom of the door with thumb and as much tension on it as I could muster one-handed



Closed

Closed the cup holder while holding the strap and confirmed the fix was theoretically sound.



Clamp-up

Rube Goldberg would be proud!



Fixing the Free End

I mixed some more fake Weld and slathered it on the bottom of the console door where the zip-tie would go.

I stretched the zip-tie against the door and painted more Weld on top of it, intending to encase it in the epoxy, hoping to use the adjacent right angle in the door.

Knowing my clamp arrangement would involve smearing the epoxy, I covered it with a bit of plastic wrap first. Had to employ a small wood shim to account for the raised feature on the door.



Here is a view with the plastic wrap lifted up, just before I left it all to cure.

Best laid plans and all that...walking away I feared I did not have sufficient tension on the zip-tie to achieve success.



Preventative Actions

While inspecting the opposite hinge under magnification, I noted some telltale markings indicative of stress cracks. I elected to “paint over” same with the leftover epoxy in hopes of forestalling the next break



This is (almost) the view that greeted me upon removal of the clamp and plastic wrap. (Ignore the extra piece in the photo for now)

And ignore that I already cut the excess tail off the zip-tie before I took the pic.



Tuning Strap

Testing confirmed my fears that tension was inadequate to reliably engage the latch. I used a much smaller zip-tie around the glued-on scrap at the hinge pin to take up the extra space. (Also shown in previous photo)



Tuning



Cleanup

I'm concerned about the durability of my fix given the ease with which I removed this bit of excess epoxy. I simply scored it along the edge, and as soon as I slipped the tip of the utility knife under the edge, the whole piece flaked off cleanly

I placed it in-service Monday night, and it was still working 4.0 as of Friday evening. So far, so good!

