

Refurbishing TR6 Door Switches

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During the process of reassembling my 1971 TR6, I made it a point to check the function of all the switches before reinstalling them into their proper locations. When the time came to install the left door switch which controls the courtesy light and key buzzer, I discovered that one set of contacts was not working. This switch is set up as a dual circuit normally closed switch with continuity between the two tabs ("Lucar" tabs) forming one circuit and continuity between the wire lead and the ground ring (where the mounting screw is located) forming the second circuit.

Well, the switch is broken anyway so I began to figure out a way to dissect it. After looking at the switch, I (wrongly) concluded the front of the switch is a cap that can be simply popped off. A half hour and one bugged up switch later; I discovered my assumption was wrong. After looking at it a little further, I discovered a seam at the back end of the switch that was covered by grime (see fig 1 of a "new-er" but also defective switch).

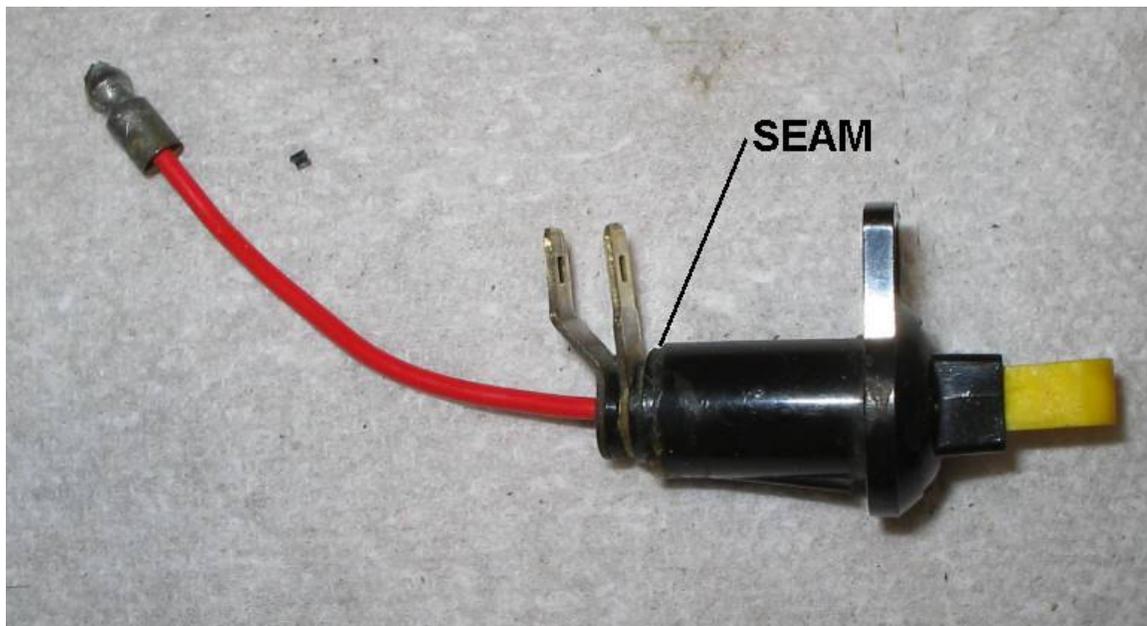


Figure 1

Using a razor blade, the glue seam was carefully split around the entire circumference of the switch body (fig 2). Go slowly and repeatedly score around the seam to a depth of around 1/32 of an inch. The whole idea is to score the glue seam that holds the inner switch assembly to the outer barrel.

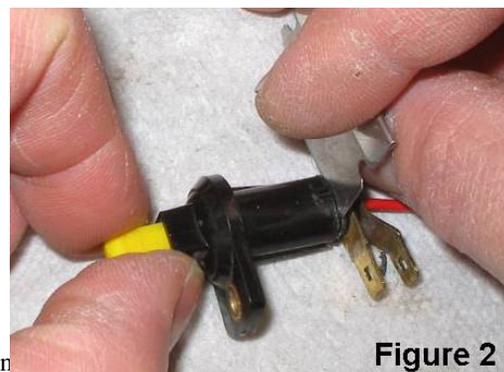
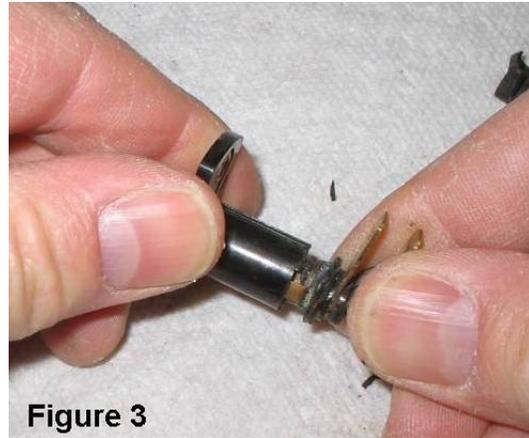
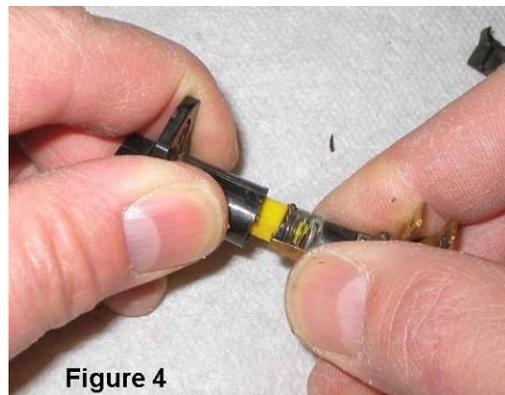


Figure 2

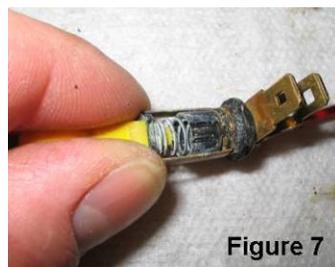
The next step is to gently rock the inner switch assembly back and forth by the tabs while pulling on the switch body. There's still a little glue in between the two that still needs to be fractured. After 35 years of aging, the glue is brittle but so is the plastic so be patient! Eventually, it will break free and pull out as shown in figure 3. DON'T immediately pull it all the way out.

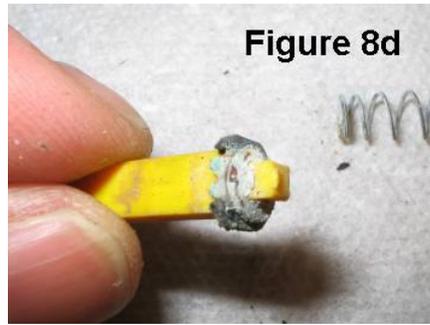
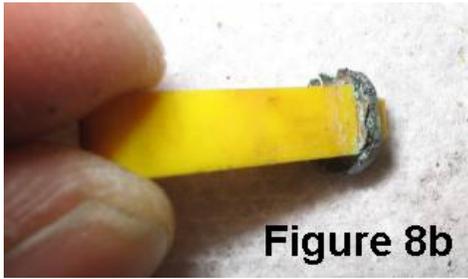


Grasp the two contact fingers firmly on each side as shown in figure 4 and continue to pull the entire inner switch assembly free from the switch body.

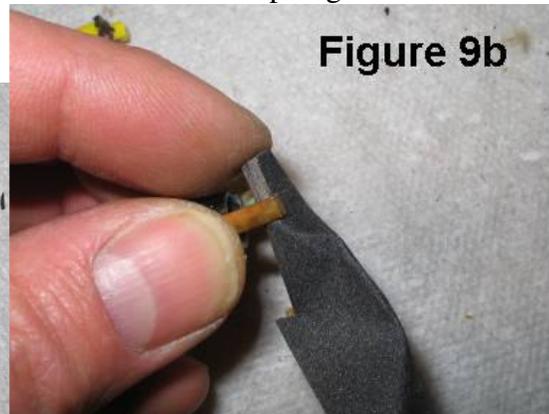
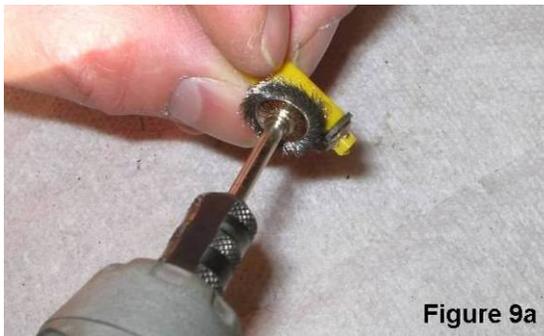


At this point, you'll probably see a lot of corrosion on the contacts as seen in fig 6-8 below. It also uncovered why one circuit works and the other doesn't. The switch truly is a poor design and it amazes me it even worked to begin with. By nature of the contact arrangement, both sets of contacts attached to the plunger need to contact three different points at the same time for the switch to work. Through normal stress relaxation of the metal and corrosion buildup, eventually, one of the contact points bends away further than the others and the switch no longer works.

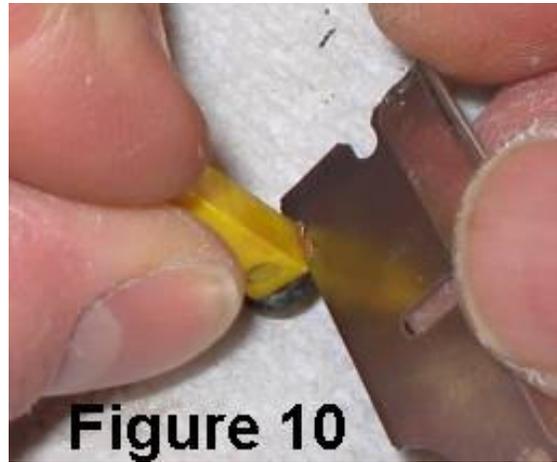




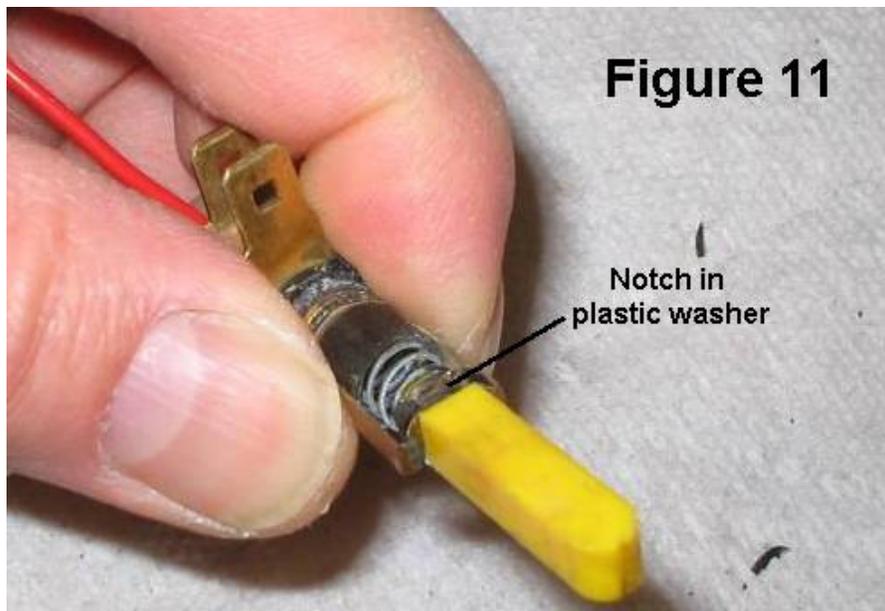
Using a stainless steel wheel in a Dremel and some 400 grit sandpaper, clean off all the corrosion on the contacts. I used a small loop of sandpaper on a toothpick to clean the contact located in the barrel of the switch body. Thoroughly clean the spring ends since it is a current carrying member. If you're careful and take note of the assembly, the contacts can be pulled apart by first prying off the brass locking clip on the end of the plunger. The individual contacts can then be cleaned and reassembled after re-bending the locking tabs of the brass clip inward so they will retain the stack on the plunger.



Next, using a razor blade, gently pry each set of contacts on the plunger forward slightly as shown in figure 10. Aside from the corrosion, I believe contact over-stress is the main reason one set of contacts may work and the other doesn't.



Reassembly the completed stack as shown in figure 11. The assembly is now ready to re-insert into the switch body. Make sure the contact visible in the notched plastic washer on the plunger is located in the same direction as the Lucar tabs.



The last step is to reassembly the inner switch assembly into the switch body. Check continuity between the circuits. At this point, you'll probably have only one set of contacts closed but this is not a problem. Depress the plunger and let the switch quickly snap closed a few times. This "seats" the contacts and slightly re-bends them to fit. Recheck with a meter and repeat until you get continuity on both circuits as shown in figure 12a & 12b.



Once you have continuity on both, slightly withdraw the inner assembly and using a toothpick, dab a little Duco cement on the flange that was originally split with a razor. Squeeze closed and clamp until the glue is set. DON'T use superglue since it wicks between small gap and will eliminate any possibility of repair in the future.



That's about it for rebuilding the switch. Since the switch was dead anyway to begin with, the above offers a way to bring it back to life although I must mention that success is not guaranteed. The above steps worked well for me which is why I've documented the steps. These switches are no longer available so a little time and patience to get a switch working again may be time well spent!