

How to repair an ALPS Keyswitch - In 15 Steps!

by [LC_575](#) » 05 Jan 2011, 02:03

ALPS keyswitches are common on Apple keyboards, namely the Apple Extended, Apple Standard, M0116, etc. While they are rated for millions of actuations, sometimes they wear out a little early. This guide discusses how to fix these keyswitches.

This guide uses a 1988 Apple Keyboard (M0116), and assumes certain things pertaining to the removal of the keyswitch. You may have to adapt this guide for other keyboards.

Note that this operation will toughen the tactility of the keyswitch somewhat.

You will need the following:

Soldering Iron

Solder Sucker or other method for removing solder.

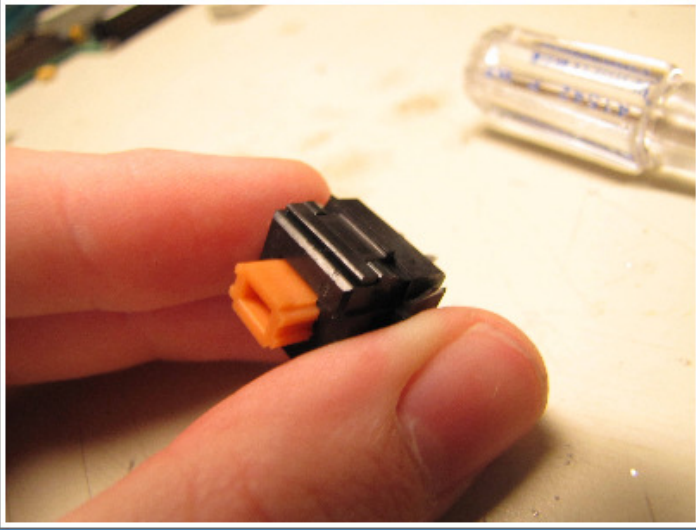
Fresh Solder

Phillips and Flathead Screwdrivers

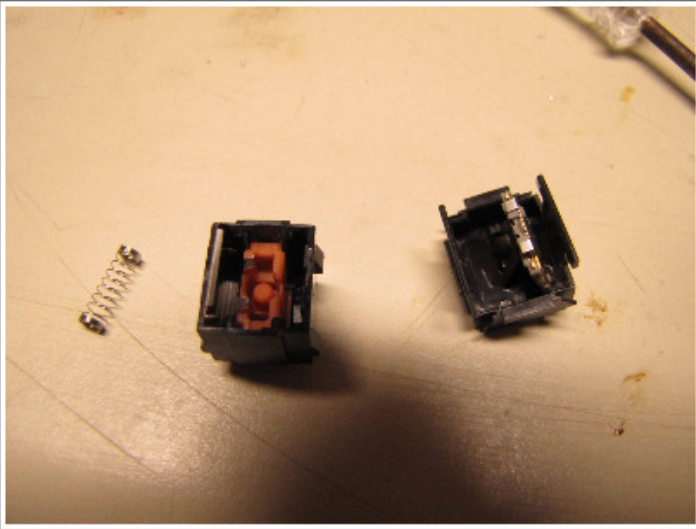
Some tin foil

Continuity tester, or Volt/Ohm meter

1. Disassemble your keyboard. There are several screws on the bottom of the case. Remove them and the two case pieces should come apart easily. On the Apple Keyboard, make sure to mind the two ADB dongles - they can be damaged easily.
2. Go over to your malfunctioning key. Flip over the keyboard and find the pair of solder contacts belonging to the keyswitch. Heat up your soldering iron.
3. Heat the first solder joint until the solder is liquid. Use your solder sucker to remove the liquid solder. Remove the iron and check that the keyswitch contact can move freely, or at least wiggle. Repeat as necessary for the other contact joint.
4. Remove the actual keyswitch by prying it upward and away from the circuit board with your flathead screwdriver. On the Apple Keyboard, only some light glue and pressure hold the keyswitch in place.
5. Remove the keycap. It is held on only by pressure - do not hesitate to pry it with the flathead.
6. View the photo below:

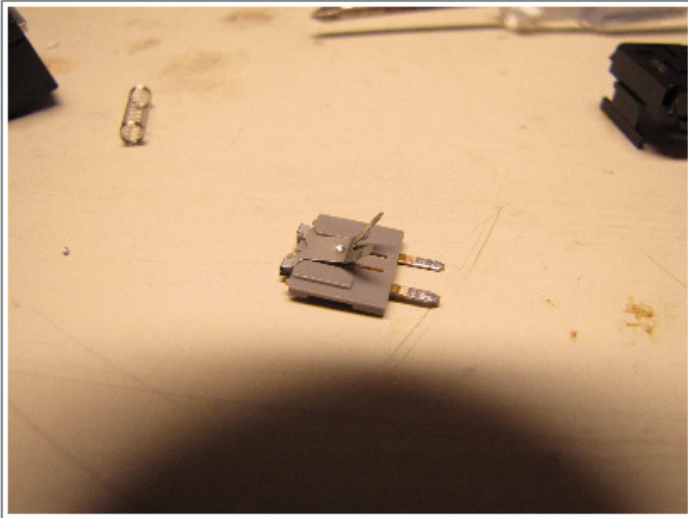


See the "T"-shaped tap on the side of the keyswitch? Use a thumbnail to pull away this one and the other one on the other side while applying pressure to the protruding contacts of the switch. This will make the assembly come apart:



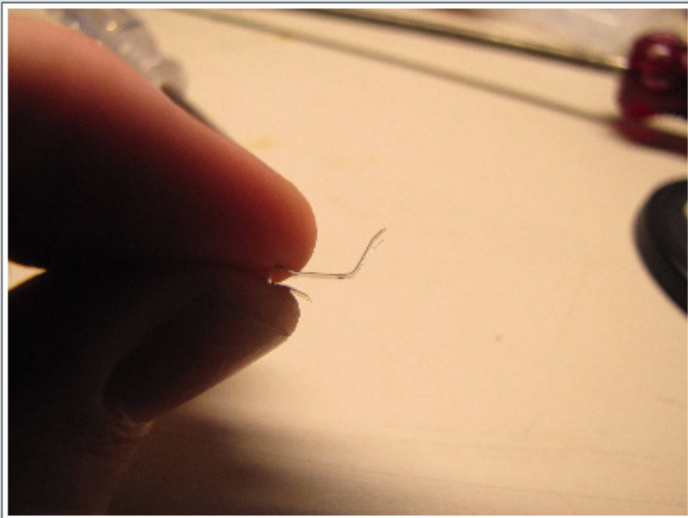
There are four important parts to the keyswitch: the spring, the tactility spring, the plunger, and the contact assembly.

7. Take out the contact assembly:

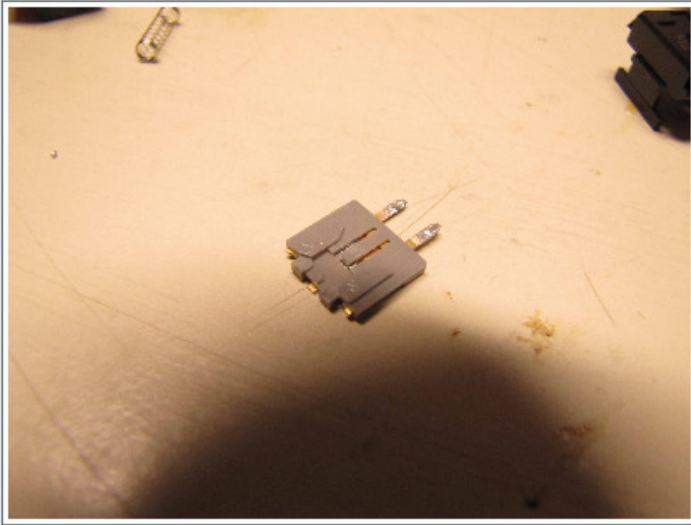


It consists of a pair of metal plates and a bent piece of metal similar to the tactility spring. When the plunger moves down, this actuator pushes down on a plastic tab underneath that in turn presses together the contact plates, completing the circuit.

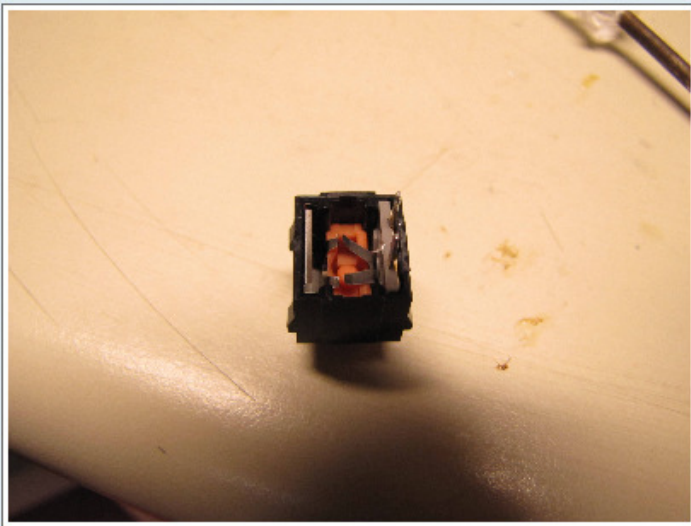
8. Remove the metal actuator - it just slides off with some force. Bend it at the folding point to make a more acute angle - this way it will apply more pressure on the contacts. Your bent actuator should look similar to this in terms of angles:



9. Additionally, for more pressure, cut and fold up a very small piece of tin foil. Slip it underneath the plastic tab with the aid of a flathead screwdriver, as shown below:



10. Replace the metal actuator, and then place all components into the upper half of the keyswitch assembly like shown:



Note that the metal arms should be nearly touching. Otherwise the metal actuator hasn't been bent enough. Insert the spring into the middle:



11. Replace the cover and press it into place. It will only go on one way - make sure the contact holes line up with the contacts. Ensure the tabs have locked into place. Test your switch with your continuity tester - the switch should be on when the plunger is pressed.

12. Push the keyswitch back into it's spot on the keyboard:



13. Resolder the keyswitch contacts to the circuit board.

14. Test the keyswitch again via the solder contacts. If you use an ohm meter you may notice the meter jump around with high ohms when the switch is off

15. Replace the keycap by pressing it down. You're done! Repeat as necessary for additional keys and enjoy your keyboard!

