

Nord Stage EX SW73 Compact Velocity Repair

Marc Siegel

www.marcsiegelphoto.com

September 2012

With thanks to Pablo Mastodon

Symptom : F6 key jumps from low velocity to full velocity with no intermediate sensitivity.

Diagnosis: Foreign matter in key switch.

Repair Procedure: Remove key bed, remove contact circuit board, clean, reinstall.

Tools and materials required: #2 Phillips screw driver (power screwdriver is a plus), keyboard stand or table to work on, can of compressed air, couple of soft cloths.

DISCLAIMER: You can destroy or damage your keyboard by following this procedure. This may void your warranty. Make certain the keyboard is unplugged before attempting. Working around electrical equipment can be dangerous. Proceed at your own risk.

Opening the Case

1) Remove screw shown in Figure 1.



Figure 1 – First screw removal

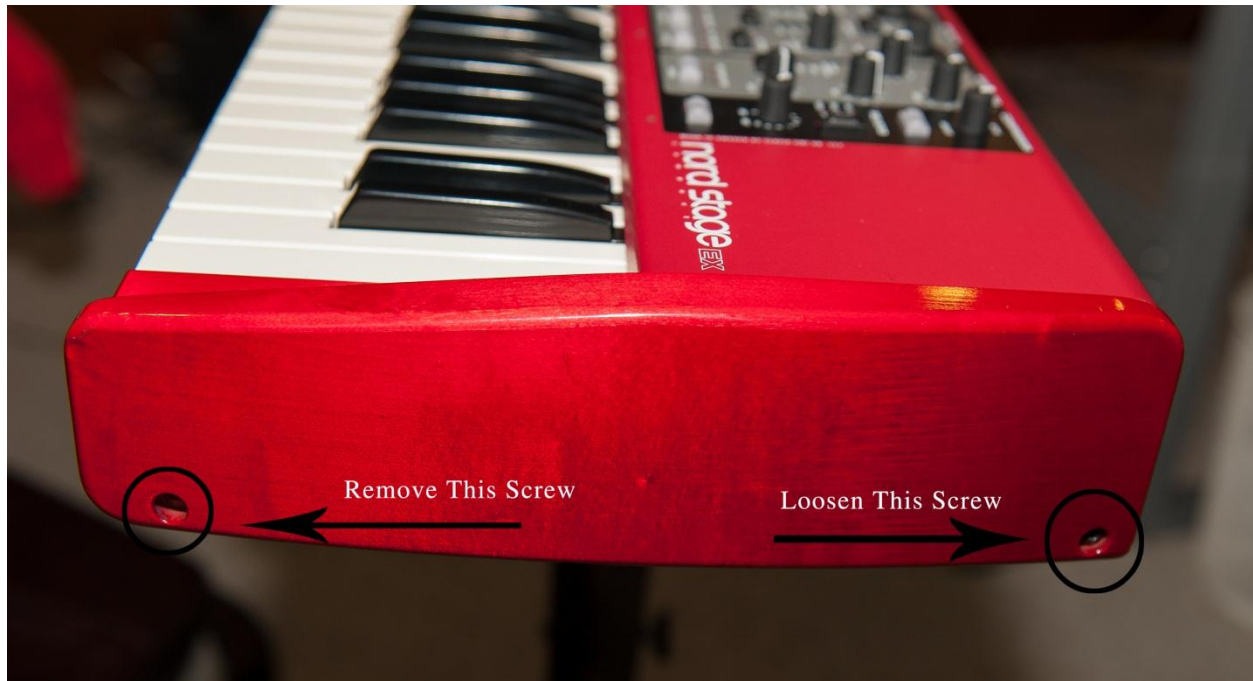


Figure 2 – Side screws

- 2) Remove one screw from each front corner.
- 3) Loosen, but do not remove the remaining screw in each rear corner.
- 4) Remove the five screws along the back of the keyboard.



Figure 3 – Lifting control surface

- 5) As shown in Figure 3, Lift top control surface of keyboard like an automobile hood, but ONLY about 15 – 20 degrees. This will allow access to the ribbon cables, which must be disconnected before the control surface is removed.

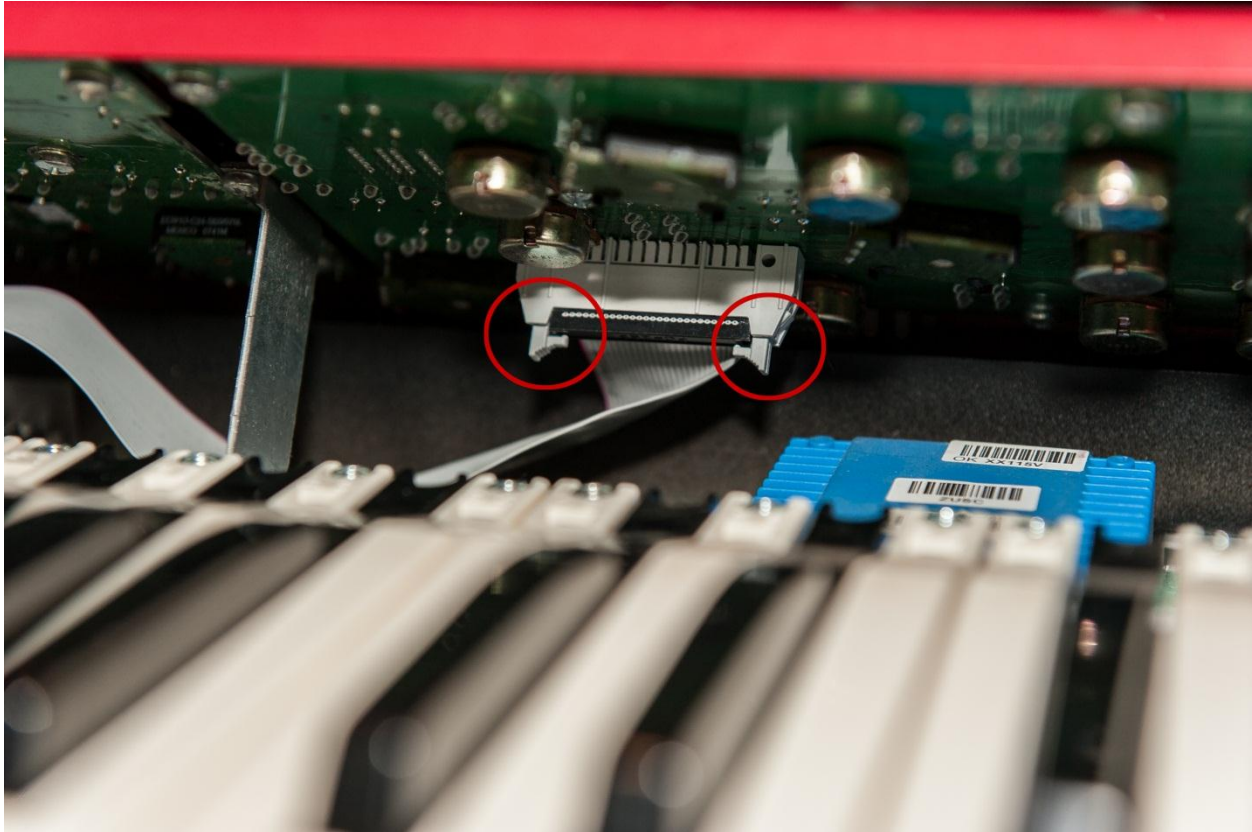


Figure 4 – Disconnecting ribbon cables

6) Move the thumb levers (Figure 4) located on both sides of the connector slightly outward, each side a little at a time. Be gentle – if you break these, you’re going to be rather unhappy. Pay attention to which cable goes where.

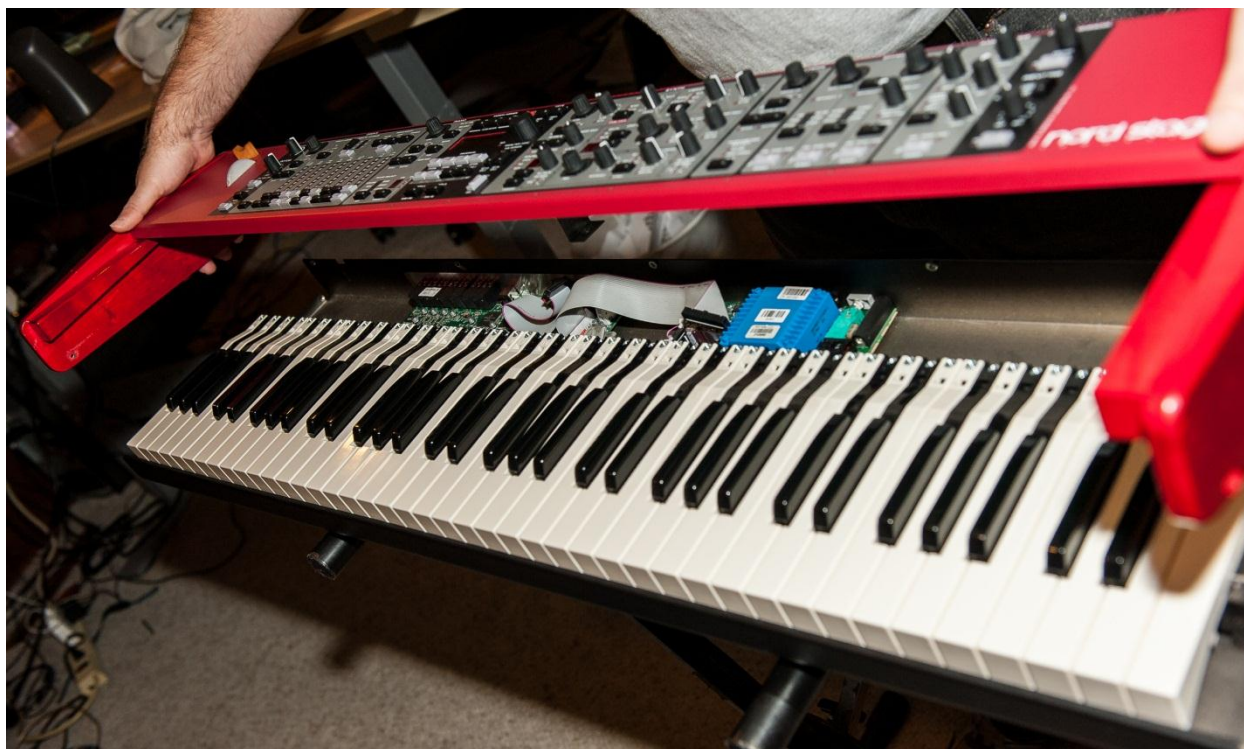


Figure 5 – Removal of control surface

7) Once the cables are disconnected, carefully lower the control surface, and remove the right rear screw and the left rear screw. Carefully lift the entire control surface straight up, and store somewhere safe. Do NOT lay it on the floor – it's almost guaranteed to get stepped on. Trust me on this...

Key Bed Removal

8) There are sixteen screws on the bottom of the keyboard that fasten the key bed into the chassis. There are four cables that will need to be disconnected as well. Exercise care on this next step so as to not damage these cables or connectors!!

Carefully tilt the keyboard onto its back, and remove fourteen screws as shown by green circles in Figure 6. The two screws circled in red should be left in to key the key bed from falling out!



Figure 6 - Key bed screw removal

9) Lay the keyboard back down on the stand, and working from the underside of the chassis, carefully remove the remaining two screws (circled in red) that were left in the previous step.

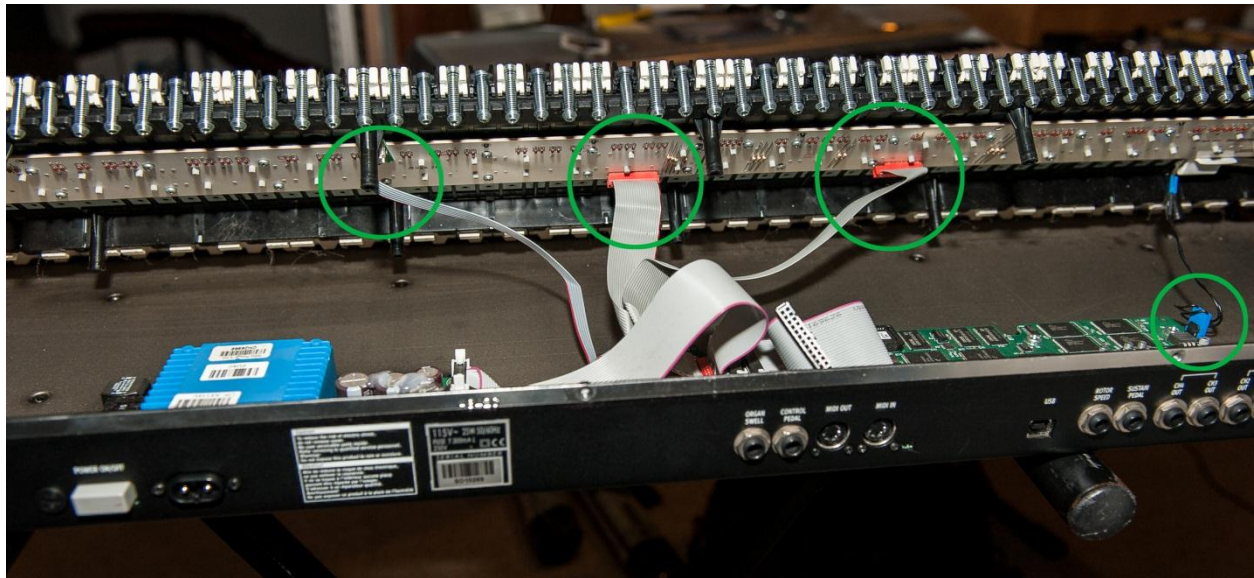


Figure 7 - Disconnecting cables from key bed

10) From behind the keyboard, carefully rotate the key bed up. Refer to Figure 7 and locate the six conductor ribbon cable and carefully disconnect it from the key bed.

The two orange connectors are next – they also get unplugged from the key bed.

IMPORTANT!!! At least on this particular keyboard, the rightmost orange connector is LARGER than the board connector. When you reinstall it, match the right edge of the connector to the cable as shown in Figure 8.

Finally, there is a blue connector – disconnect this from the chassis side, leaving the wires connected to the key bed.

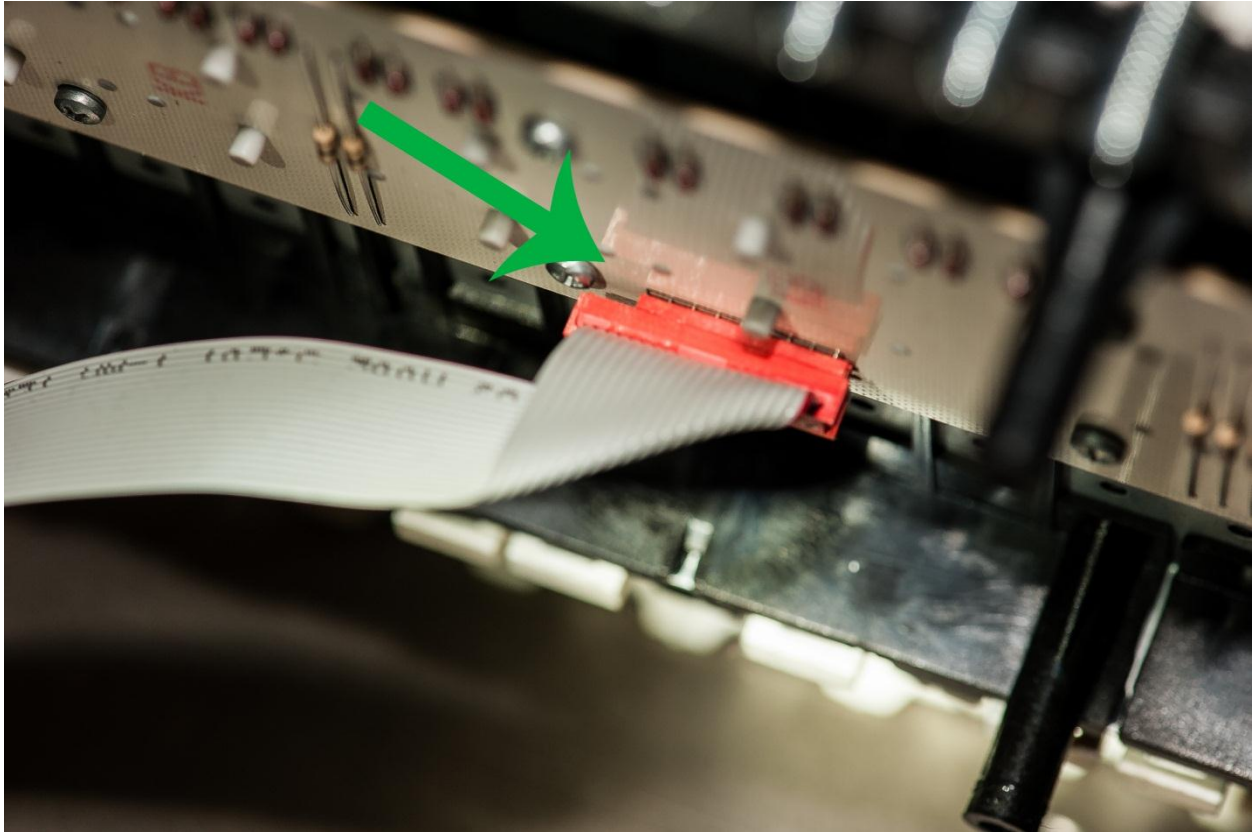


Figure 8 - Detail of connector offset

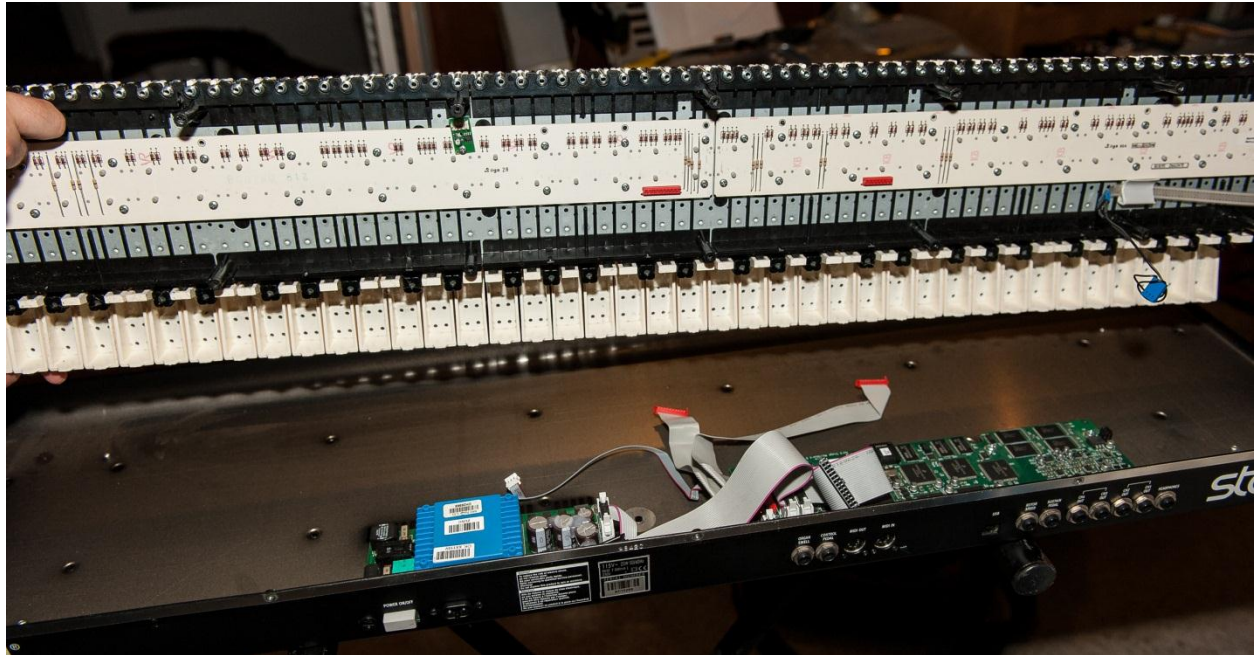


Figure 9 - Removal of key bed

12) At this point, the entire key bed can be carefully lifted free of the chassis. Arrange some soft cloths or suitable material, and carefully set the key bed upside down on it.

You can see the white rectangular circuit boards that run the length of the key bed.

Circuit Board Removal

My advice is to be minimally invasive; if you are only having an issue in one area, then just remove the side that is problematic.

13) There are two circuit boards, one for each half of the keyboard. Each circuit board has two symmetrical rows of Phillips screws holding the circuit board down. Remove all the screws for the affected side. If you have to remove the little green circuit board that had the six conductor wire, no problem – it's simply held down by one of the screws. It's not critical where it goes back, but I took a Sharpie and marked its location so it could be returned there.

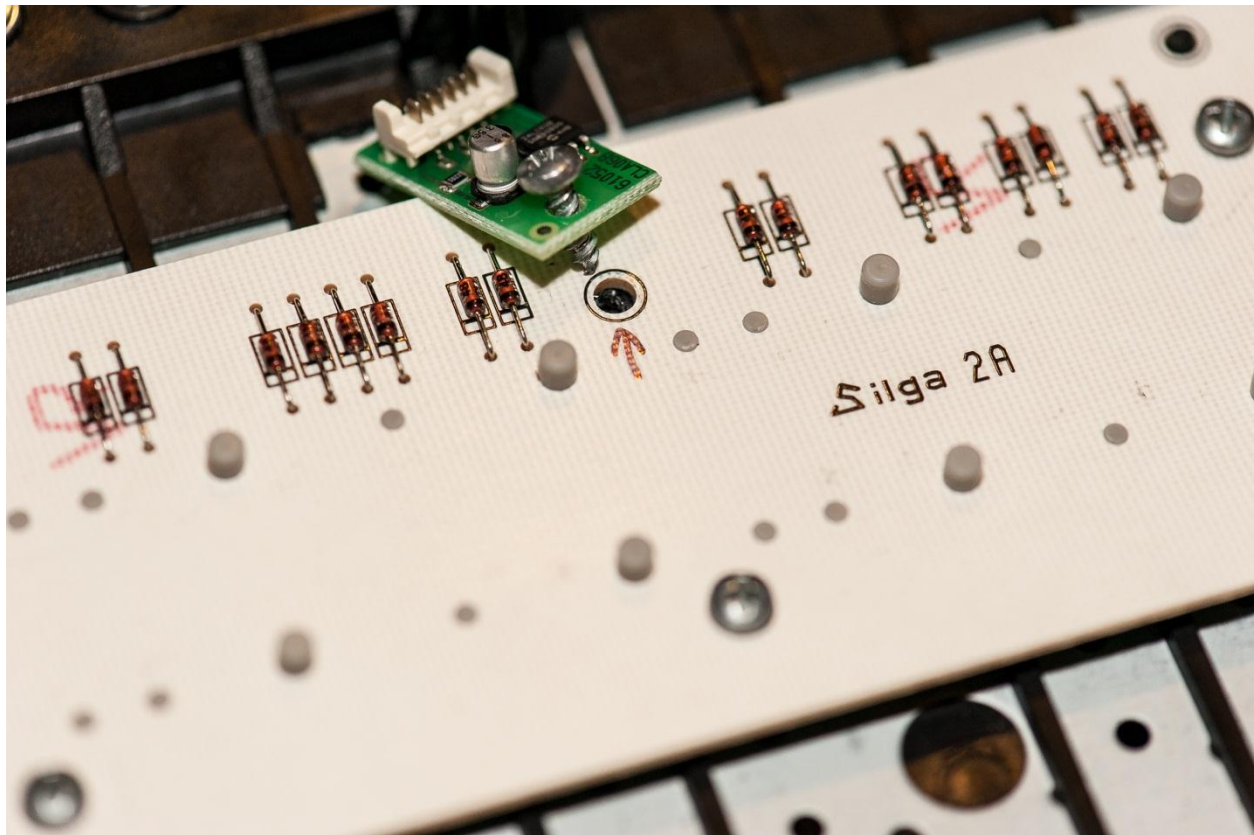


Figure 10 - Removing screws & small circuit board

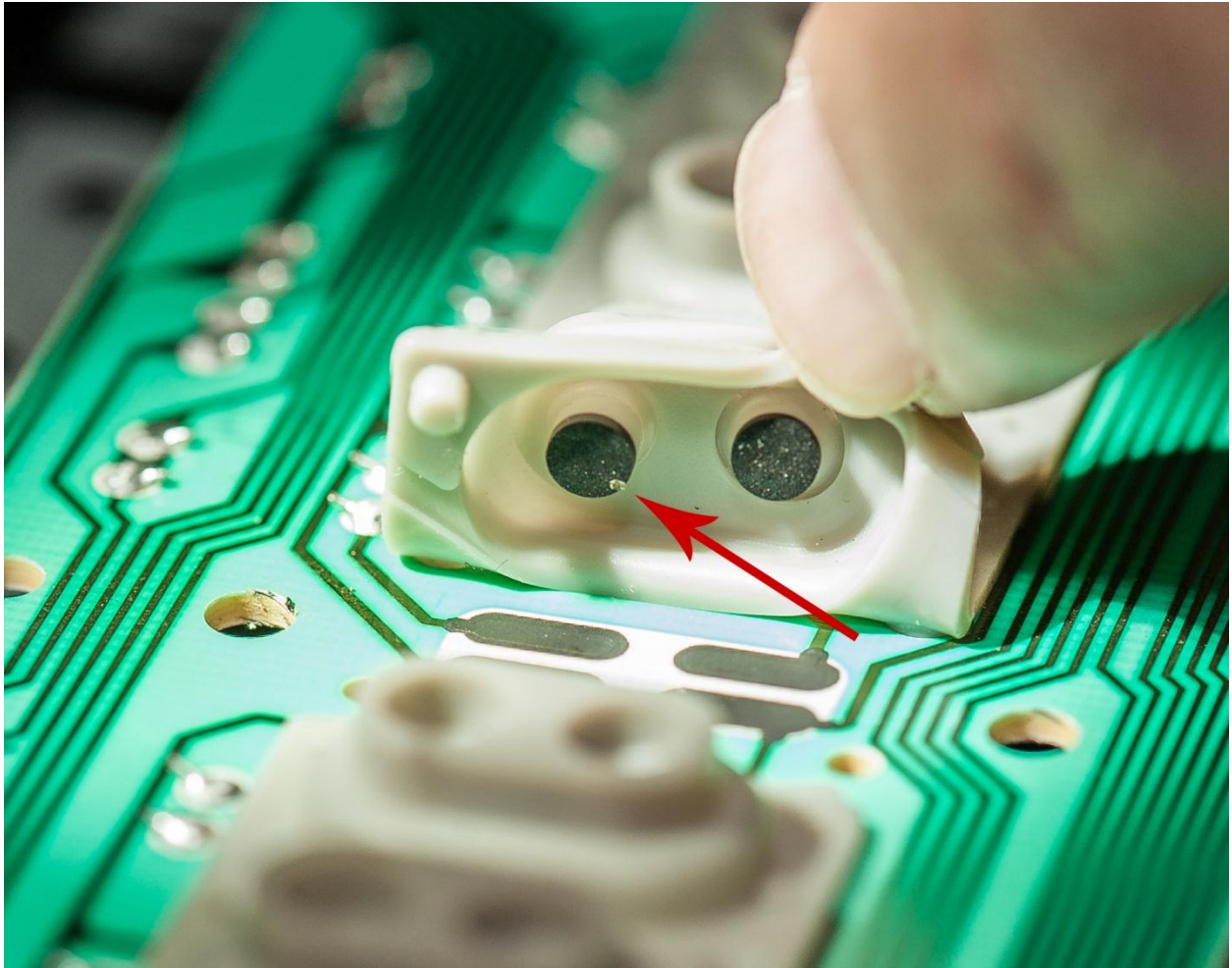


Figure 11

14) Gently flip the circuit board over.

The keys press down on the rubber covers. The rubber covers contain two carbonized nubs that each completes a circuit when pressed. The covers are held to the circuit board by more tiny nubs that are pressed through holes in the circuit board. These are fragile! You can gently peel them back if needed, but it's quite possible that you can just blow your compressed air underneath of them. If you do remove them, avoid getting finger oil on the carbonized area and on the contact area on the boards. I **STRONGLY** advise not using chemicals or spray cleaners.

If you remove the rubber covers, they need to go back on in the exact same orientation. If you install them backwards, your keyboard will behave strangely!

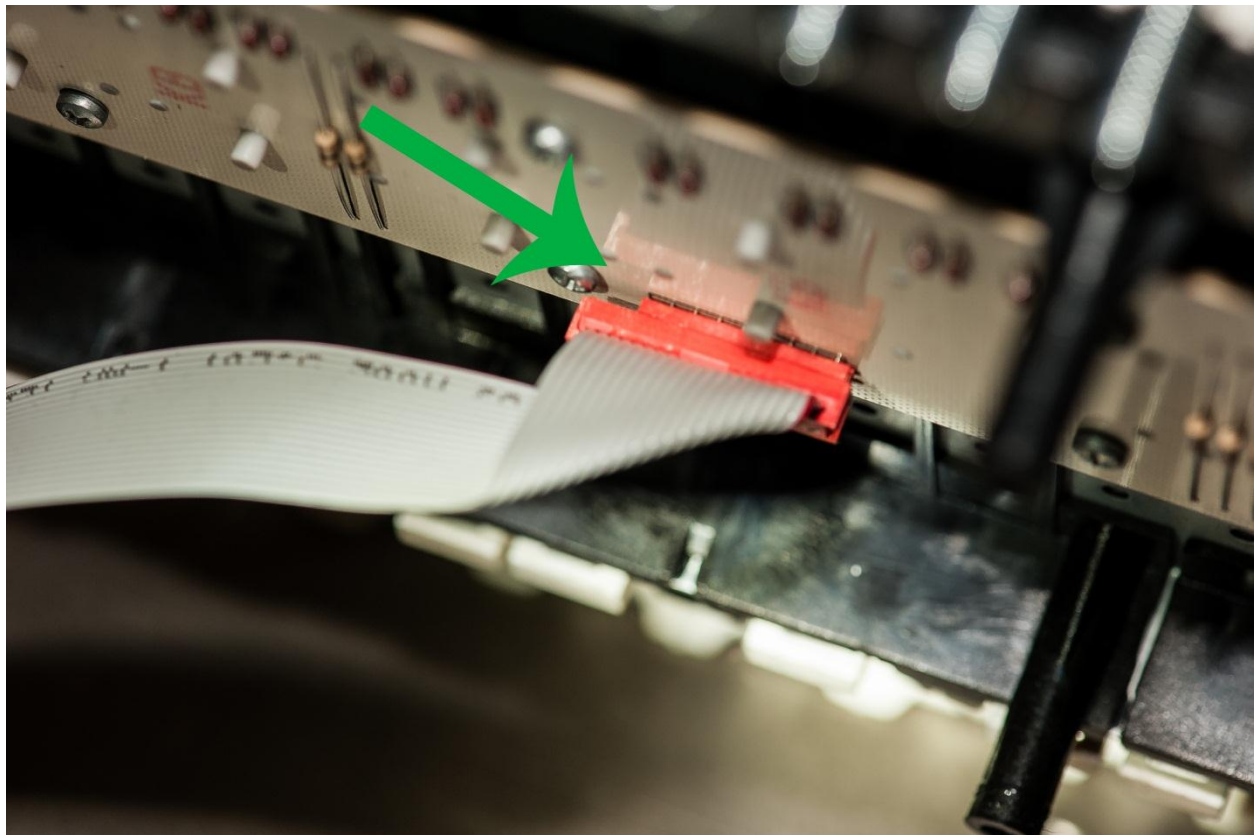


Here you can see a tiny speck of detritus that caused the problem with this particular key. The dirt was removed with a slight blast of compressed air and reassembled. There are also some very fine dirt particles that you can see; these were blown off with the compressed air nozzle. The rest of the contacts were cleaned by directing the air underneath the remaining rubber covers.

Reassembly

15) Place the circuit board back in place, and carefully make sure it's properly situated. When installing all the screws, start in the middle of the circuit board and work towards the ends. This will ensure that the circuit board doesn't arch in the middle. **DO NOT OVERTIGHTEN SCREWS.** Just snug is all you need! You can damage the board or strip out the mounts if you over tighten.

16) With the chassis sitting on the keyboard stand, carefully offer the key bed back into the chassis, tilt it slightly upward and reconnect the cables. Make sure to index the right hand orange connector as shown in Figure 8!



17) Refer back to Figure 6 - Reinstall the two screws into the bottom of the chassis (the same two screws you removed last). **DO NOT OVERTIGHTEN!!!** You will destroy the plastic mounts if you over tighten the screws!

18) Carefully stand the chassis on its back, and install the remaining fourteen screws.

19) Lay the chassis back down, and carefully offer the control surface into place. Loosely install a screw in the back right corner and one in the back left corner.

20) Lift the control surface as before, and carefully connect the two ribbon cables. Lower the control surface into place, making sure no wires or cables are pinched between the silver support and the chassis bottom.

21) Install the two remaining side screws and tighten the first two, and install the five screws in the back. Stand the keyboard on its back and install the remaining screw into the bottom of the chassis.

That's it!