

## MiniSpinner Pro Anti-Static Retrofit

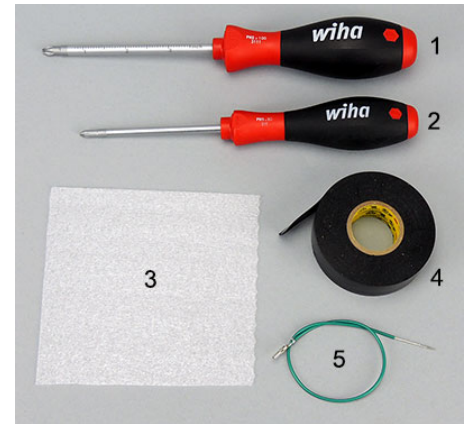
A few original miniSpinner Pros suffered from a variety of puzzling, random problems (unexpectedly stopping, display corruption, loss of memorized data), which we determined were caused by static electricity.

It turns out that the motor/drive band/flyer assembly behaves much like a Van de Graaff generator (remember science class?) and can build up a significant voltage, which eventually discharges through the controller electronics and causes all kinds of havoc.

This kit includes a short jumper wire that grounds the motor shell which prevents accumulation of static electricity buildup and resolves the issue.

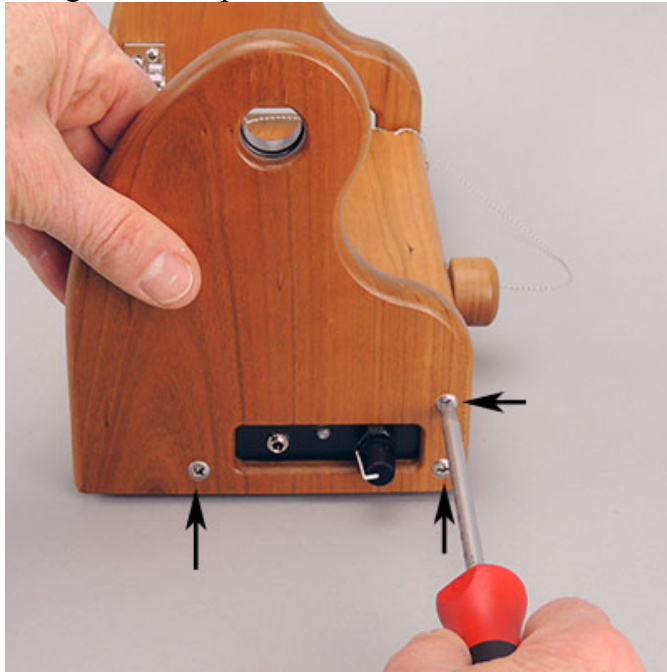
### *Tools needed:*

1. #2 Phillips screwdriver
2. #1 Phillips screwdriver
3. 4"/100mm square piece of thin foam, cardboard, or cloth
4. 1"/25mm piece of electrical tape
5. Green jumper wire from retrofit kit

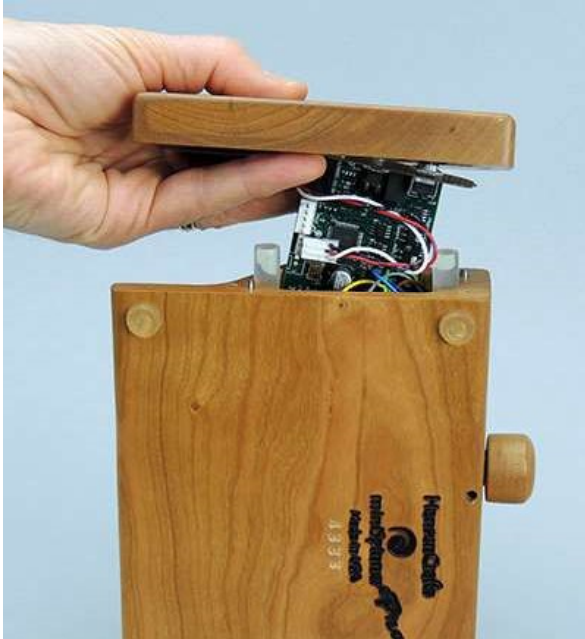


### *Instructions:*

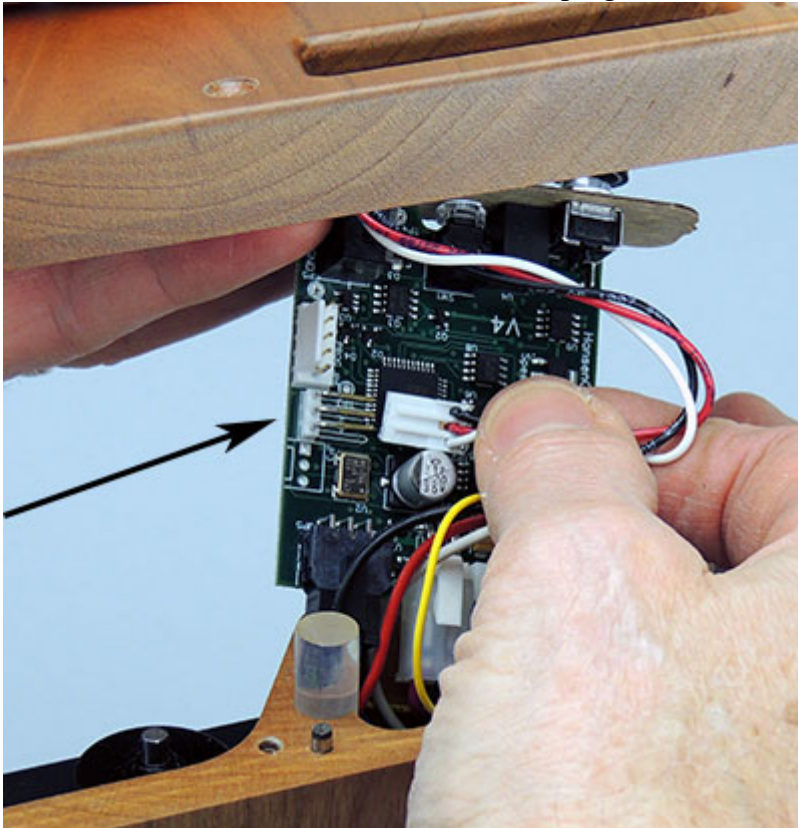
1. Unplug the power and remote switch from your miniSpinner, then remove the flyer and drive band and set them aside.
2. Using a #2 Phillips screwdriver, remove the 3 screws on the front of your miniSpinner.



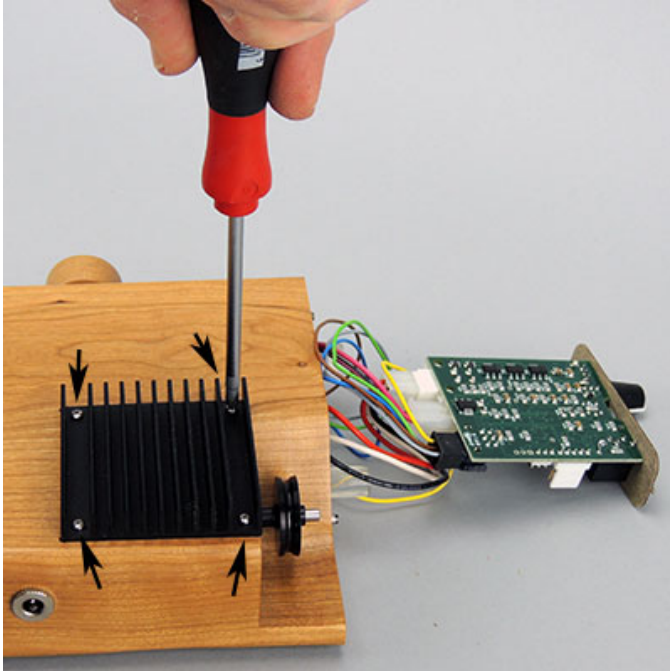
3. Set your miniSpinner on its “back” and gently remove the face. There are two locating pins that hold it in alignment with the base, so it may require you to rock it slightly as you pull to separate it from the base. Note: The face is connected to the controller board by the tachometer sensor wiring.



4. Pull the circuit board out of the base and unplug the tachometer sensor, then set the face aside.



5. Set your miniSpinner upright and use a #1 Phillips screwdriver to unscrew the four screws holding the heatsink in place.

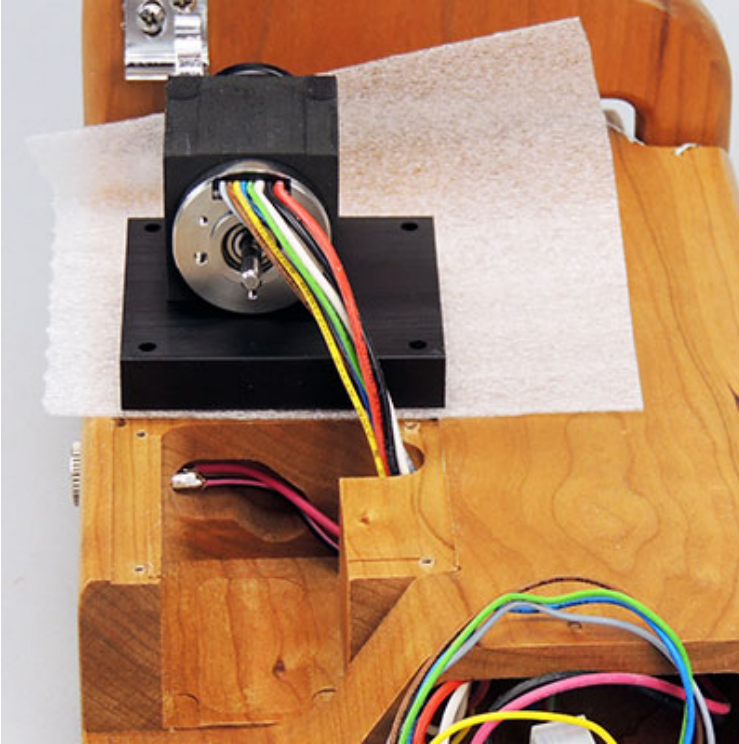


6. Pull up on the heat sink/motor assembly to remove it from the base. The motor is attached to the heat sink with thermally conductive tape and sits in an EPDM rubber cushion, which is a tight fit in the base.

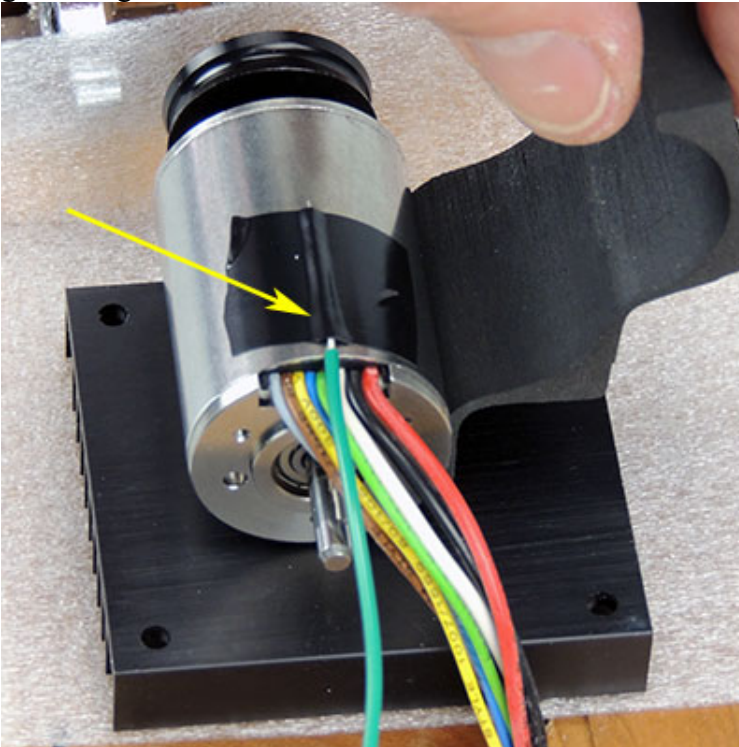




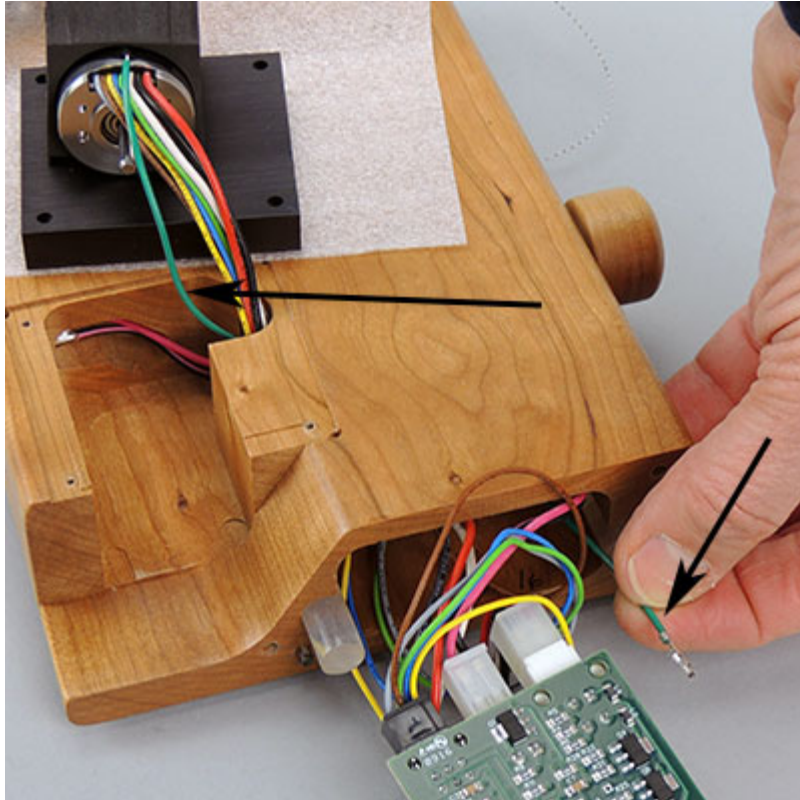
7. Use the pad to protect your miniSpinner from being scratched by the heat sink as you rotate the heat sink/motor assembly to the rear so it sits on the heat sink, upside down.



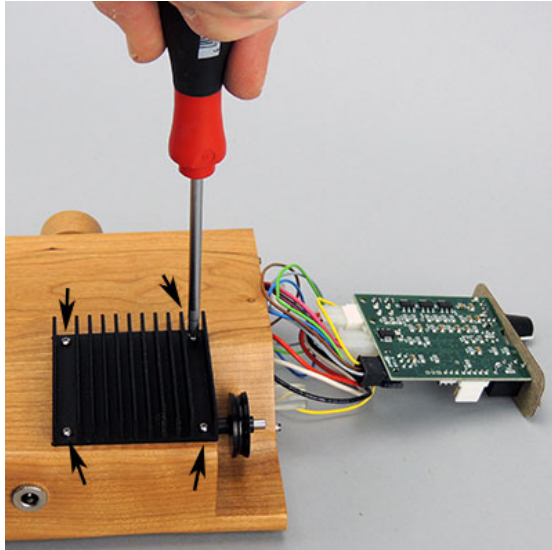
8. Pull back the EPDM rubber cushion, then use a short piece of tape to attach the bare end of the grounding wire to the motor. The wire's insulation is flush with the end of the motor (arrow).



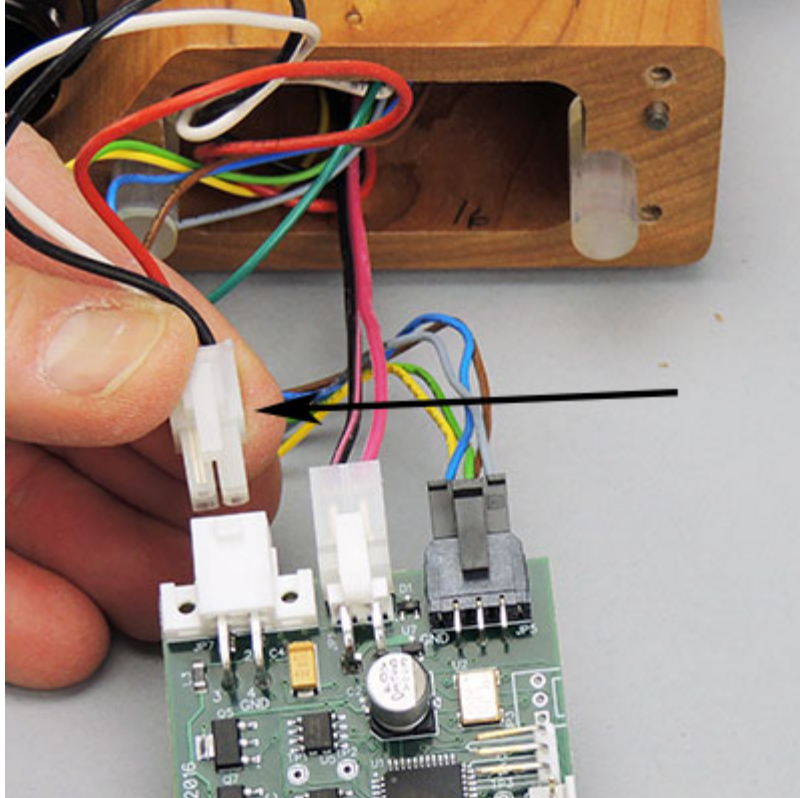
9. Pull the circuit board completely out of the pocket in the base, then thread the other end of the jumper wire into the circuit board pocket so that it sticks out the front (arrows).



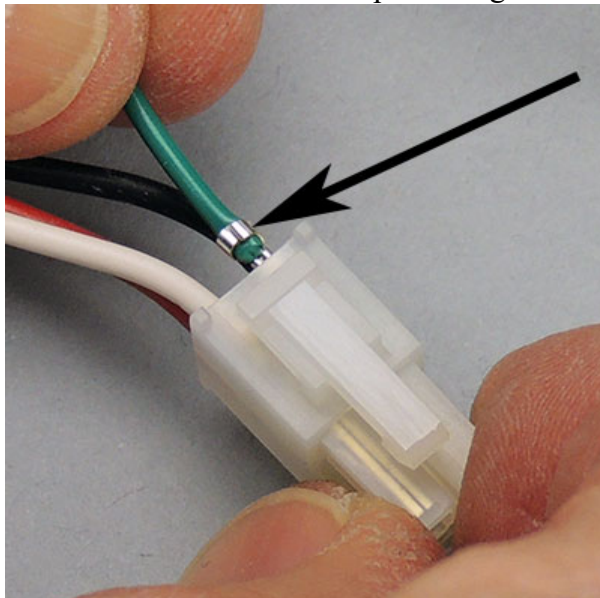
10. Replace the EPDM cushion around the motor, align it flush with the face of the motor, and gently push it back into place in the base. Pull gently on the motor wires as you push the motor into place to ensure the motor wires don't touch the motor's backshaft when installed. This is NOT usually a problem.
11. Screw the heatsink back into place, don't overtighten the screws to avoid stripping the threads.



12. Squeeze the latch on the TOP of the white motor plug (it has 3 wires) and unplug it from the controller board. Wiggle the plug as you pull, it is a very snug fit!

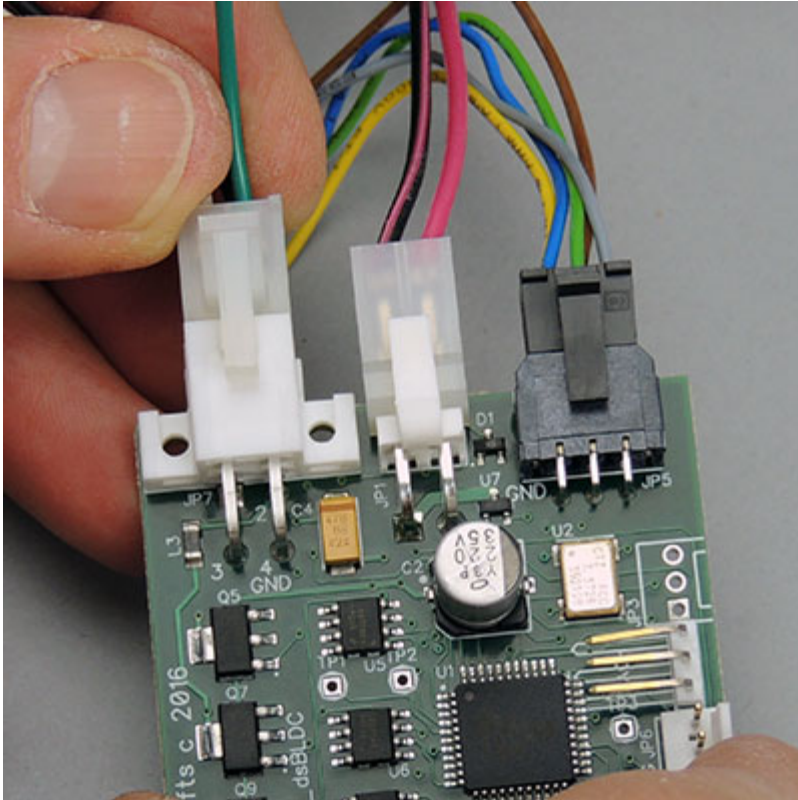


13. There is an unused position in the motor plug housing. The jumper wire goes into this hole. Rotate the pin so that the open end of the crimp (arrow) is on the same side as the plug's latch as shown by the arrow in the picture! Insert the pin into the plug housing and gently press while wiggling the pin side-to-side. When it is perfectly aligned it will latch into place, and you can see the inside end of the pin through the transparent housing of the plug. Do not force it!

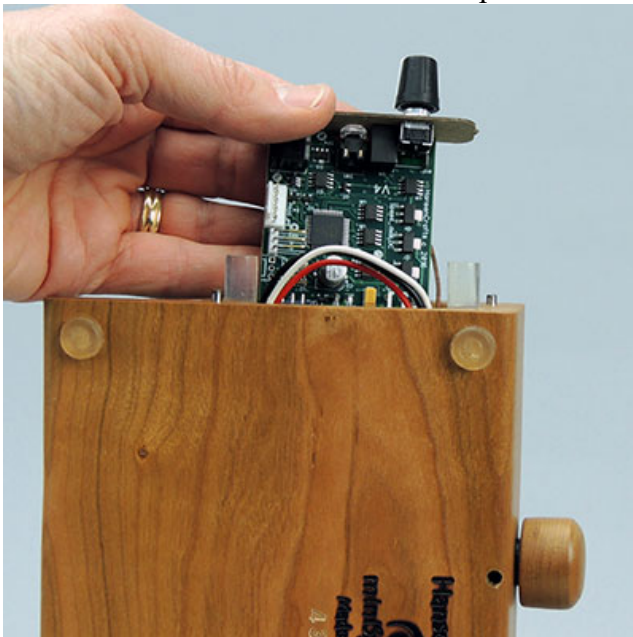




14. Plug the motor back into the controller board, making certain the plug latches into place, and that the pin you inserted in the plug for the green wire remains in place in the plug housing.



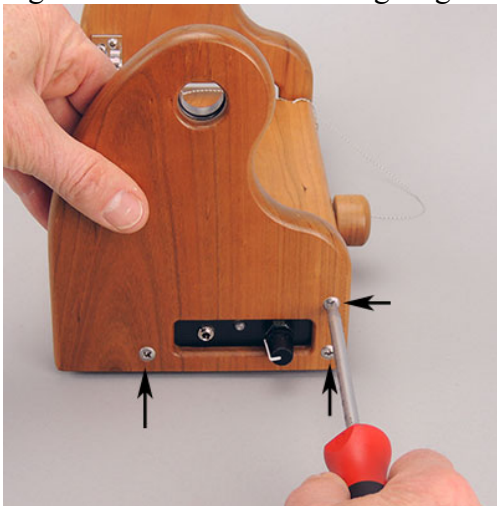
15. Arrange the motor wires on the top and bottom of the controller board and place the board halfway into its pocket. Try to arrange the wiring as you do this so it's not all jammed behind the circuit board at the bottom of the pocket. **Note the controller board is “upside down!”**



16. Insert the front panel of the controller board into the pocket of the miniSpinner's face piece, making certain the wiring for the tachometer sensor remains in its channel. While holding these together, plug the tachometer sensor wire into the controller.



17. Hold the controller and the face together as you slide the controller all the way into the base. Be careful to line up the alignment pins and the polyurethane rods that hold the controller board and face in place as you do this. Carefully tighten the 3 screws holding on the face, as you ensure that no wiring is caught between the face and the base at the seam where they come together. Do NOT force things together!



18. That's it!