

HAWK800 - Troubleshooting

Troubleshooting the HAWK-800 Kit Installation

Use this document in cases where you have installed the HAWK-800 and plugged everything in and tried to power on but instead of getting "11 P" you see one of the following symptoms:

1. random characters on the display
2. a completely blank display
3. "88 88 88" flashes but then the Poly reboots endlessly or does nothing.
4. Display freezes with one display showing a very bright character.

Correct Software?

It is necessary to install the HAWK800 software into your HAWK800 board after you put the kit together and install it. If you have not installed the software then the HAWK800 will cycle through the following messages:

1. "88 88 88" flashes five times.
2. "POST 4" shows for 1 second.
3. "POST 5" shows for 1 second.
4. "POST 6" shows for 1 second.
5. Poly reboots and the cycle above repeats endlessly.

If you do see this behavior then you need to "flash" the software into your Poly-800 first. If you do NOT see this behavior at all then continue on.

Initial Checks

First, check the following:

1. See the Poly-800 service manual to adjust the power supply to the correct voltage levels.
2. Check that all cables and especially the HAWK800 ribbon cables are properly installed in their sockets. It is very easy to miss-align the pins of the two HAWK800 ribbon cables. Also check that none of the pins on the ribbon cable plugs have been bent over or broken.

If all the above checks out OK then move on to the next stage.

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HAWK-800 Board Checks

1. Check the HAWK-800 board for any sign of damage to the copper tracks.
2. Check that all IC socket pins are soldered and are not bridged.
3. Check that all chips are properly installed in their correct locations and with their correct orientation (see the HAWK-800 construction and installation instructions).
4. Check that all IC socket pins are soldered and are not bridged.
5. Check that the two 10K ohm resistors are installed correctly.
6. Check that the decoupling capacitors are correctly installed.
7. Check the ribbon cables for damaged or missing pins.
8. Check the ribbon cables for damage to the ribbon cable.

Detailed Checks

1. You will need an ohm multi-meter. Set the ohm-meter to 1 x ohms. If it is an analog meter then calibrate it to show zero ohms (an electrical "short") when the probes are bridged.
2. Ensure that your Poly-800 is powered off and the power pack is unplugged from the Poly-800.
3. Ensure that the "C" type batteries are removed from the battery compartment.
4. Disconnect the HAWK-800 flat ribbon cables from the main board. But leave the ribbon cables plugged into the HAWK-800 board.
5. Checking all of these pins can be quite tedious so it is necessary to be patient and thorough to ensure that all of the checks are made. You might want to use a pen to check off each successful pin test.

Main Board Checks

On the Poly-800 main board, check the following:

IC29 Socket

1. IC 29 socket between pins 16 and 6 should show zero ohms (shorted).
2. IC 29 socket between pins 16 and 6 should both show shorted to pin 28 on the IC 22 socket.
3. IC 29 socket between pins 4, 5 and 8 should show shorted.
4. IC 29 socket between pins 4,5 and 8 should also all show shorted to pin 14 on the IC22 socket.

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5. There should **NOT** be any shorts between IC29 pins 1, 2, 3, 7, 9, 10, 11, 12, 13, 14 and 15. Your ohm-meter might show some resistance but it should NOT show a zero ohms short.
6. IC29 socket pin 1 should show a short with IC24 pin 26.
7. IC29 socket pin 2 should show a short with IC24 pin 27.
8. IC29 socket pin 3 should show a short with IC24 pin 28.
9. IC29 socket pin 7 should show a short with IC26 pin 9.
10. IC29 socket pin 9 should show a short with IC16 pin 4
11. IC29 socket pin 10 should show a short with IC16 pin 9.
12. IC29 socket pin 11 should show a short with IC34 pin 4.
13. IC29 socket pin 12 should show a short with IC16 pin 12.
14. IC29 socket pin 13 should show a short with IC25 pin 8.
15. IC29 socket pin 14 should show a short with DTC2 pin E (emitter). It's difficult to figure out which pin is the emitter so just test all three pins on DTC2 until you get a zero ohms reading on one of the three.
16. IC29 socket pin 15 should show a short with IC22 socket pin 20.

IC22 Socket

1. IC22 socket between pins 1, 26, 27 and 28 should show a short.
2. IC22 socket pin 28 should show a short to Vcc on IC24 pin 40).
3. IC22 socket pin 14 should show a short to Ground on IC24 pin 20.

There should **NOT** be shorts between any of the other IC22 socket pins 2 to 13 and 15 to 25. Your ohm-meter might show some resistance between those pins but the meter should NOT show a zero ohms short between any of them. It is most important to check that neighboring pins are not shorted since neighboring pins are most likely to become an electrical short due to a solder bridge being formed when the socket was installed and soldered in. Work your way from pin 2 all the way down to pin 13, moving your probes from each pair of neighboring pins to the next always looking for a zero ohm short. Then work your way back up from pin 15 all the way up to 25 in the same manner.

1. IC22 socket pin 2 should show a short to IC24 pin 25.
2. IC22 socket pin 23 should show a short to IC24 pin 24.
3. IC22 socket pin 21 should show a short to IC24 pin 23.
4. IC22 socket pin 24 should show a short to IC24 pin 22.
5. IC22 socket pin 25 should show a short to IC24 pin 21.
6. IC22 socket pin 10 should show a short to IC23 pin 2.
7. IC22 socket pin 9 should show a short to IC23 pin 19.

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8. IC22 socket pin 8 should show a short to IC23 pin 5.
9. IC22 socket pin 7 should show a short to IC23 pin 16.
10. IC22 socket pin 6 should show a short to IC23 pin 6.
11. IC22 socket pin 5 should show a short to IC23 pin 15.
12. IC22 socket pin 4 should show a short to IC23 pin 9.
13. IC22 socket pin 3 should show a short to IC23 pin 12.
14. IC22 socket pin 11 should show a short to IC24 pin 12.
15. IC22 socket pin 12 should show a short to IC24 pin 13.
16. IC22 socket pin 13 should show a short to IC24 pin 14.
17. IC22 socket pin 15 should show a short to IC24 pin 15.
18. IC22 socket pin 16 should show a short to IC24 pin 16.
19. IC22 socket pin 17 should show a short to IC24 pin 17.
20. IC22 socket pin 18 should show a short to IC24 pin 18.
21. IC22 socket pin 19 should show a short to IC24 pin 19.

Once you have checked all of the above as OK, plug the ribbon cables back in and see if the Poly will power up properly.

Contact korgpolyex800@yahoo.com for more assistance.