WANHAO DUPLICATOR i3 TEMPERATURE FLUCTUATION FIX

WARNING

THIS PROCEDURE MAY CAUSE PERMANENT DAMAGE TO YOUR PRINTER IF PERFORMED INCORRECTLY AND MAY ALSO VOID YOUR WARRANTY. CONTACT YOUR RESELLER FOR DETAILS.

PROCEED AT YOUR OWN RISK AND WITH YOUR SKILL SETS IN MIND.

PURPOSE:

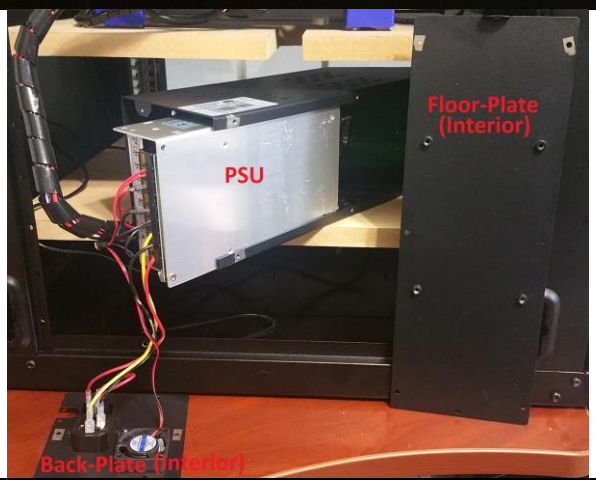
- Some of the Latest Wanhao Duplicator i3 Printers Suffer from a Large Degree of Temperature Fluctuation, Especially Noticeable at Higher Temperatures.
- This Method of Fixing this Issue is Recommended by Wanhao but is NOT the Only Way.
- This Issues Seems to be Limited to Printers with the Following Melzi Board Iteration and May Not be Limited to V1, V2, etc.

- **IF YOU HAVE A DIFFERENT MELZI, YOUR TEMPERATURE FLUCTUATIONS MAY BE CAUSED BY A DIFFERENT ISSUE.**
- **For an In Depth Discussion of the Issue and Its Possible Cause, Refer to the Google Groups Support Page.**

REQUIRED HARDWARE:

- Soldering Iron (A Good Quality 40W Pencil Recommended)
- Rosin Core Solder of Your Choice
- Approximately 10cm of Wire (At Least 18AWG)
- Set of Metric Allen Wrenches (2, 2.5 and 3mm)
- You May Refer to the Extra Resources at the End of this Guide for Further Help

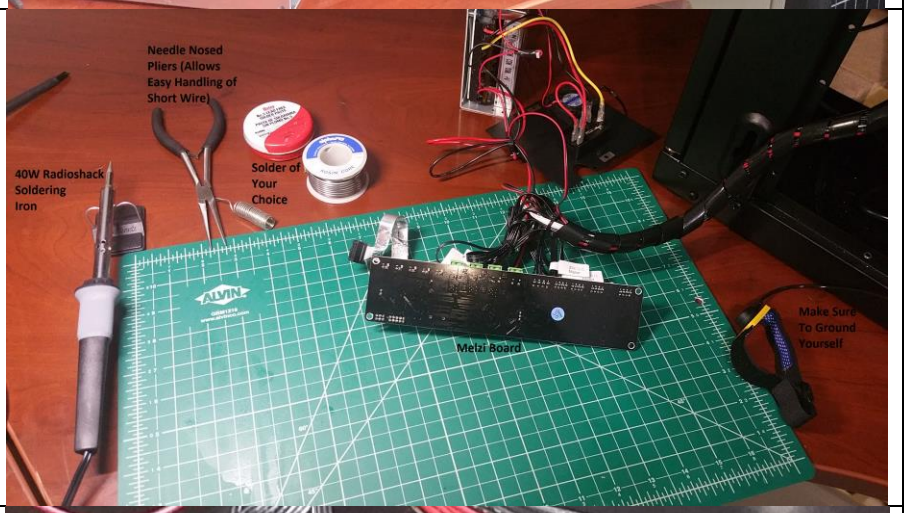
1. Position Your Printer in a Way that Allows Easy Access to the Control Box without Damage or Strain to the Rest of the Machine. Ensure that the Printer is Switched Off and the Power Cable is Removed to Avoid Injury to you or More Importantly, the Printer.	
2. Remove the 4 Screws Holding the Back-Plate in Place. Use Caution as this Plate is Attached to the Floor-Plate and also to Several Wires Which Are Semi-Permanently Attached. Place these screws in a safe place.	

3. Remove the 7 Screws Holding the Floor-Plate in Place. Do Not Attempt to Remove the Plate as it is Still Attached to the PSU. Place these screws in a safe place.	
4. Remove the 4 Screws Holding the PSU in Place Against the Floor-Plate. You May Now Remove the Floor-Plate. NOTICE: These screws are not the same size as the other. Keep them in a safe place.	
5. You May Now Partially Slide the PSU Out of the Control Box. Remember that it is Still Connected to the Back-Plate and the Melzi Board. NOTICE: You May Have to Slightly Force the Walls of the Control Box Open to Remove the PSU. Be Gentle.	
6. Set the PSU Aside, Remembering that It Is Attached to the Back-Plate and the Board. **7. MAKE SURE TO GROUND YOURSELF.** **8.** Gently Disconnect the Cable Connecting the Board to the LCD Screen. It is Safer and Easier to do this at the Connection Behind the LCD Rather than at the Board. (Red Square) **9.** Remove the 4 Matching Screws and Spacers that Hold the Board Against the Control Box Body at Each Corner (Red Circle). Do Not Lose the Spacers or the Screws as these are Different from the Rest. Keep them in a safe place. **10.** You May Now Gently Remove the Board from the Case. Remember that the USB Port and SD Card Slot are Against the Control Box Wall and be Careful Not to Damage Them (Red Rectangle).	

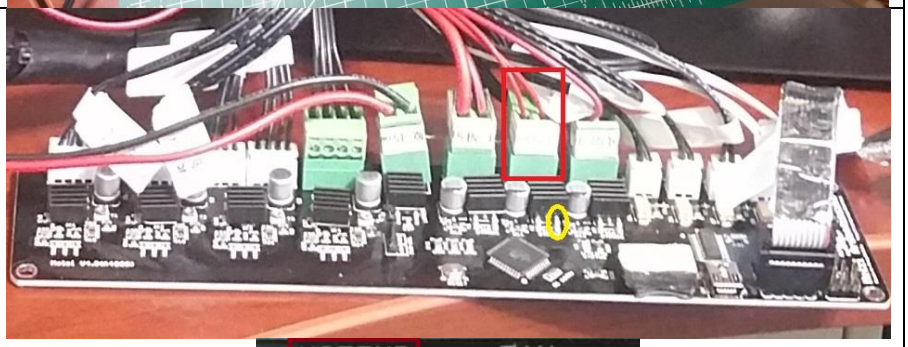
11. You May Now Place the Control Box Body Aside as it is No Longer Attached to Any Electronics Except the LCD.

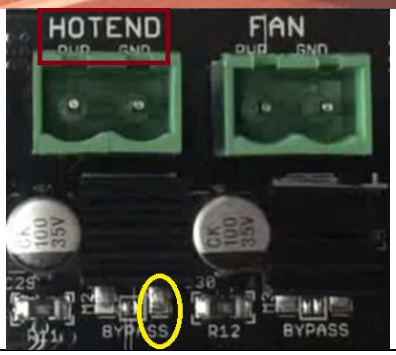
12. At this Stage You May Choose to Remove All Connections from the Printer and the PSU to the Board. I Did Not Do this as It May Inadvertently Damage the Board, Components or Connections/Wires and I Do Not Recommend This to the Average User. However, if you are comfortable, removing them does make the next step easier.

13. Set Up Your Work Area with Proper Ventilation and Lighting. See Image for Details.



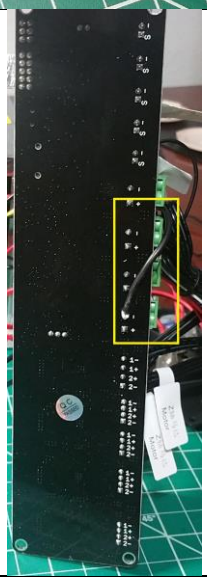
14. Using Proper Soldering Technique, Solder 1 End of the Wire to the HOTEND Bypass Connection on the Front of the Board. If Facing the SD Card Slot, this should be the 2nd Green Connection from the Right and the Right Solder Joint on the Bypass Terminal. **NOTE:** Be Very Careful and Use Proper Equipment. This area is very close to other components and you may damage your board or its components by not taking the proper precautions.





15. Find the Connection on the Board Labeled POWER and Note It's Position on the Front.
16. Turn the Board Around so that you Can See the Solder Joints on the Back and Identify the Joint that Corresponds to the GND Label of the POWER Connection on the Front.
17. Using Proper Soldering Technique, Solder the Other End of the Wire Here. Follow the Same Precautions as Step 14.

18. Here You Can See the Connection from Both Sides for Reference.

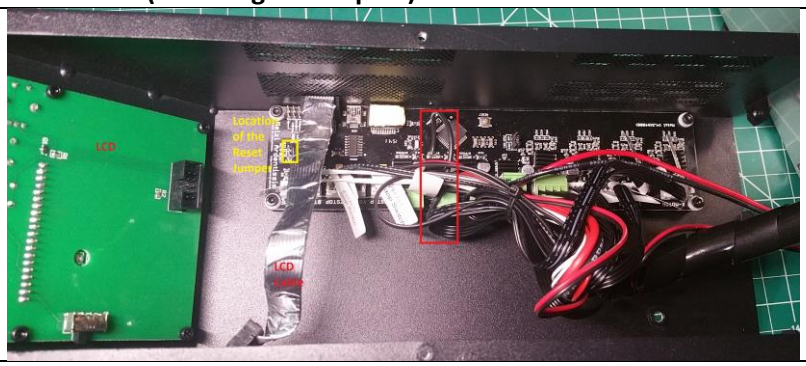


TESTING: ONLY DO THIS IF YOU ARE COMFORTABLE WITH ELECTRONICS.

Before Reassembling the Control Box, You May Choose to Connect the Power Cord and the LCD Screen and Using the Knob on the Control Box Test that the Printer is Fully Functional. You May Also Pre-Heat to ABS or PLA to Test Whether Your Connections are Solid.

BEFORE REASSEMBLY, ENSURE THAT ALL CONNECTIONS ARE SEATED PROPERLY.
YOU MAY ALSO CHOOSE TO REMOVE THE RESET JUMPER FROM THE BOARD IF YOU HAVE NOTICED ISSUES WITH YOUR USB CONNECTION (See Image in Step 19)

19. Here You Can See the Mezli Board as It Appears when Returned to the Control Box. Notice the Wire and its Placement Relative to the Control Box.



20. REASSEMBLE THE BOARD BY FOLLOWING STEPS 2-12 IN REVERSE ORDER. ENSURE THAT ALL CABLES ARE PROPERLY SEATED AND CONNECTED.

EXTRA RESOURCES

- https://groups.google.com/forum/#!forum/wanhao-printer-3d
- https://www.youtube.com/watch?v=Ak9kyObHr0Y

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