

Zebra Printer Setup Instructions

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Initial Setup

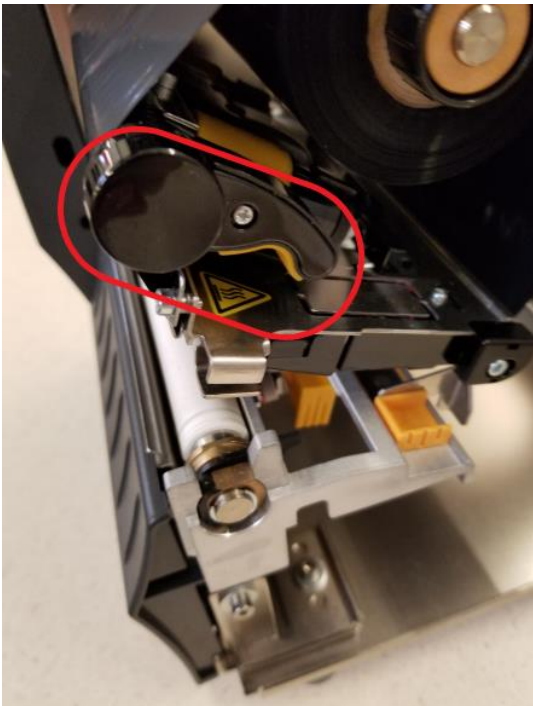
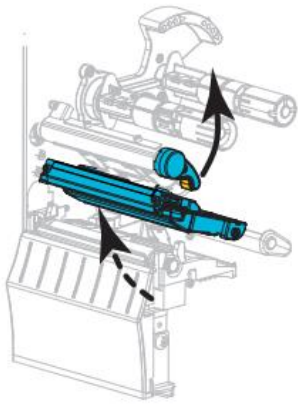
1. Open the box. Remove the printer, power cable and instructions. Discard the instructions



2. Open the side door
3. Remove the blue shipping tape if present



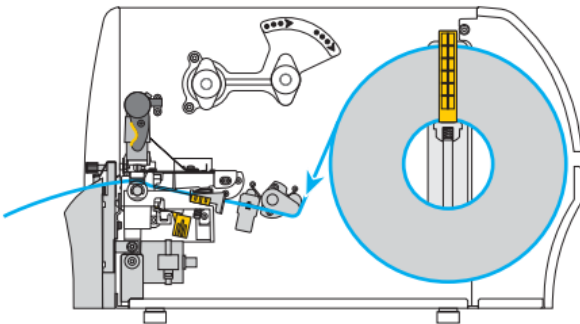
4. Lift the print head with the comma-shaped lever. It should swing back and up



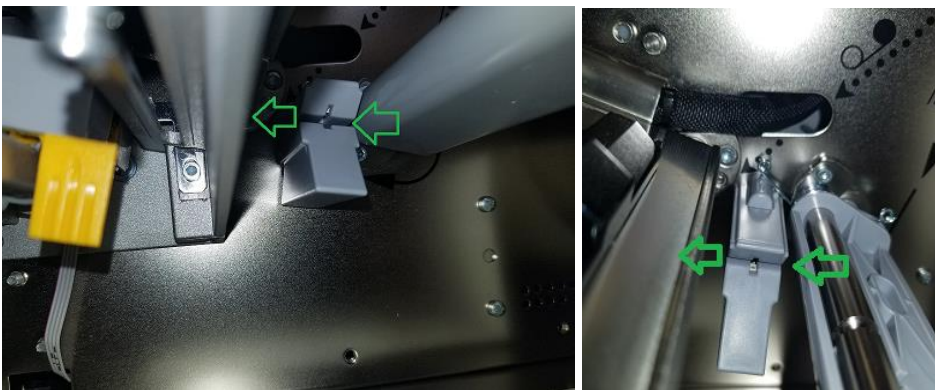
(You can see in the above diagram and pictures how the comma-shaped print head lever swings back and up separating the two platters above and below where the labels feed through)

5. Remove the white temporary shipping labels if present (just a couple of blank labels)
6. Flip down the rear yellow media supply guide first (three-inch yellow piece, see picture below, shown flipped down in the upper left corner of the picture)

7. Load a roll of direct thermal labels on the rear horizontal post as shown in the picture and diagram below (these labels will darken when exposed to heat or scratched)
8. Once the roll is loaded, return the yellow media guide to the up position and push it firmly against the roll. It slides in and out so push it in tight bringing the whole roll flush against the inside of the printer

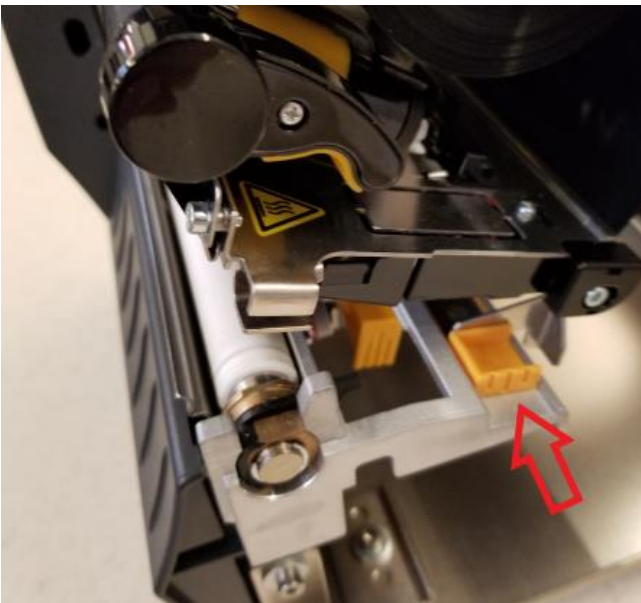


9. Unroll some of the labels and guide them under the grey “media dancer” flap (has spring) and then in between the two grey side guides (see below)



10. Continue feeding the labels in between the upper and lower platters of the print head (the two plates that separated when you swung the comma-shaped lever out) and then out the front of the printer. It is okay to have a few extra labels coming out the front

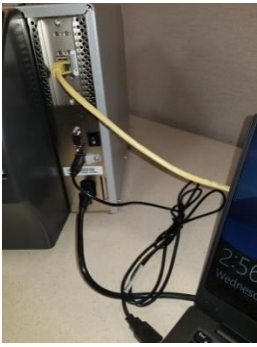
11. Gently push in the square yellow guide in to hold the labels firmly in place. It should be pushed in enough to ensure the labels are fed without moving around but not so tight that it causes the labels to curl up



12. Firmly close the print head with the comma-shaped lever. The labels should be held in place and not be able to move at all
13. Close the lid
14. Plug in the power and Ethernet cable
15. Turn on the printer with the rear power switch
16. The Ribbon Out message is normal and can be ignored (we are not using a ribbon)



17. If the printer is new out of the box, the firmware requires an update. Connect the printer to a computer or laptop with a Printer-to-USB cable (if the printer is not new, and the firmware is updated, move to the Update Printer Settings section below)



Update the Firmware

A FEW NOTES ABOUT FIRMWARE UPDATES:

- YOU WILL EXPERIENCE FEWER ISSUES SETTING UP THE PRINTER IF THE FIRMWARE IS UPDATED PRIOR TO MAKING ANY CHANGES
- WITHOUT UPDATING THE FACTORY FIRMWARE TO THE CURRENT VERSION, OCCASIONALLY ONLY PORTIONS OF ANY IP ADDRESS CHANGES WILL BE SAVED. MULTIPLE ATTEMPTS MAY BE NEEDED TO FULLY SAVE ANY NETWORK CHANGES (NOT RECOMMENDED)
- IT IS FASTER AND EASIER TO USE A USB CABLE TO UPDATE THE FIRMWARE THAN IT IS TO USE THE NETWORK
- YOU DO NOT NEED TO BE CONNECTED TO THE INTERNET TO UPDATE THE FIRMWARE
- WHILE NOT RECOMMENDED, IT IS POSSIBLE TO UPDATE THE NETWORK SETTINGS FIRST, THEN UPDATE THE FIRMWARE VIA THE NETWORK, BUT YOU MAY EXPERIENCE ISSUES SAVING CERTAIN SETTINGS

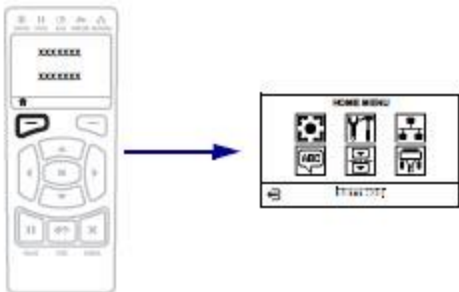
Refer to the most recent version of the instructions titled “Zebra Firmware Update Instructions” and update the firmware as needed

A Note About Pausing

If the printer is ever in a paused state, you can un-pause it by pressing the bottom left pause button

Update Printer Settings

1. Press the upper left Select button to go to the printer’s Home menu



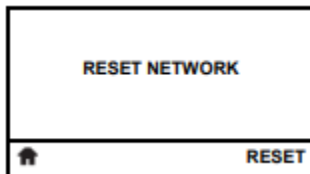
2. Press the middle OK button to enter the Settings menu
3. Press and hold in the Up button to change the **Darkness** to **21.0** (can be set higher if needed)
4. Press the Right button to the Print Speed menu
5. Press and hold the Up button to change the **Print Speed** to **6.0**
6. Press the Right button two more times to the Print Method menu
7. Press the Up button to change **Print Method** to **Direct Thermal**
8. Press the upper left Home button to finish

Update Network Settings

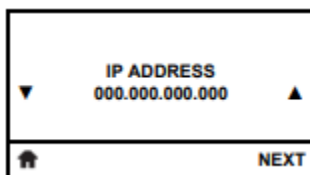
A FEW NOTES ABOUT MAKING NETWORK CHANGES:

- THE PRINTER'S DEFAULT SETTING IS TO GET TCP/IP SETTINGS FROM DHCP
- **THE SETTING FOR IP PROTOCOL MUST BE CHANGED FROM ALL TO PERMANENT IN ORDER TO ASSIGN THE IP ADDRESS SETTINGS MANUALLY**
- WHILE NOT RECOMMENDED, IT IS POSSIBLE TO SET THE NETWORK SETTINGS WITHOUT A NETWORK CONNECTION
- THERE CANNOT BE A DEVICE WITH THE SAME IP ADDRESS ON THE SAME NETWORK
- IF A BUTTON IS NOT PRESSED FOR FIFTEEN SECONDS DURING THE SETUP PROCESS, THE PRINTER WILL DEFAULT BACK TO THE MAIN MENU, DISCARDING YOUR CHANGES
- IT IS RECOMMENDED THAT THESE SETTINGS BE RECHECKED AFTER ANY FIRMWARE UPDATE
- FOR REFERENCE, A BRIEF SUMMARY OF THE STEPS DESCRIBED BELOW ARE: **CHANGE PROTOCOL TO PERMANENT, RESET NETWORK, CHANGE NETWORK SETTINGS, RESET NETWORK AGAIN, REBOOT**

1. Press the upper left Select button to go to the printer's Home menu
2. **Press the Right button twice and then the OK button to enter the Network menu**
3. **Press the Right button until you reach IP PROTOCOL**
4. **Press the Up button to change the option from ALL to PERMANENT**
5. Press the Right button until you reach RESET NETWORK



6. Press the upper right Reset button 2-3 times. There may be a delay. There will be no feedback
7. Press the upper left Home button once
8. Press the upper left Select button to go back to the printer's Home menu
9. Press the Right button twice and then the OK button to enter the Network menu
10. You should be on the IP ADDRESS menu



11. Press the upper right NEXT button to modify the first octet (first set of three numbers)
12. Press or hold the Up and Down buttons to scroll through the numbers
13. When the desired number is reached, press the upper right NEXT button again to advance to the second octet
14. When the third and fourth octets are set, press the Right button to move to SUBNET MASK
15. Follow the same process to change the SUBNET MASK
16. Press the Right button to move to GATEWAY
17. Follow the same process to change the GATEWAY
18. Keep pressing the Right button until you reach RESET NETWORK again
19. Press the upper right Reset button 2-3 times. There may be a delay. There will be no feedback
20. Press the upper left Home button once (the printer may show its old IP settings at this point which can be ignored)
21. Power the printer off with the rear power switch, wait five seconds and power the printer back on
22. Once the printer fully loads, wait a few seconds and the IP address will be displayed on the screen
23. You should verify the IP Address, Subnet and Gateway are all three set correctly
24. If the IP address was not saved correctly, ensure the IP PROTOCOL is set to PERMANENT, repeat all previous steps and change any IP address that is not correct

Turn on the Virtual Device

This step ensures that the printer can accept IPL (Intermec Printer Language) jobs from the AS400

1. Press the upper left Select button to go to the printer's Home menu
2. Press the Down and then middle OK button to enter the Language menu
3. Press the Right button until you reach Virtual Device
4. Press the Up button once so it reads APL-I
5. Press the upper right Use button
6. The printer will restart

Setup is now complete. You should be able to print from the AS400.

Note: It is normal for the Supplies light to be blinking yellow. This just indicates that no ribbon is needed in Direct Thermal mode



Password

If prompted, the username is **admin** and the default password is **1234**

Changing Network Setting via the Web Interface

- Follow these steps to change network settings over the network
 - Remember, once you change the IP address you will have to reconnect with the new IP address to make further changes
 - To avoid confusion, use three digits for each set of numbers (octets)
1. Open a web browser and navigate to the IP address of the printer
(If the page does not load correctly, clear your browser cache and try again)
 2. Click on **View and Modify Printer Settings**
 3. Enter the password
 4. Click on **Network Configuration**
 5. Click on **TCP/IP Settings**
 6. Ensure that the **IP PROTOCOL** is set to **PERMANENT** under the **Internal Wired** section
 7. Enter the desired **IP ADDRESS**, **SUBNET MASK** and **DEFAULT GATEWAY**
 8. Press the **Submit Changes** button. You will receive the message, "Changes were successfully saved (temporarily)."
 9. Click on **View and Modify Printer Settings**
 10. Press the **Save Current Configuration** button. You will receive the message, "Current configuration saved."
 11. Click on **View and Modify Printer Settings**
 12. Press the **Reset Network** button. You will receive the message, "Network has been reset. You will lose connectivity for up to 2 minutes."
 13. To access the web interface again, you will need to navigate to the new IP address

25. To verify the changes were permanent, power the printer off with the rear power switch, wait five seconds and power the printer back on
14. If the printer fully or partially reverts to its old IP address, try one of the following:
- Repeat the process
 - Update the firmware
 - Try resetting the network before AND after making changes
 - Try making the changes from the front LCD interface instead

Troubleshooting Common Problems

- **Network settings aren't being saved or are being partially saved**
 - Ensure you are resetting the network before AND after making changes
 - Ensure the IP Protocol is set to permanent
 - If using the web interface, ensure you are resetting the network, saving the configuration and resetting the network again
 - Ensure there are no other devices on the network with the same IP address
 - Can the default gateway be pinged?
 - Does the cable/port work with other devices? Does a laptop show a network connection?
 - Check to see if the device shows in Meraki
 - Cycle the power
 - Check the cable
- **The IP Address displayed on the front LCD panel shows all zeros or 0.0.0.0**
 - The printer is not receiving a valid or live network connection
 - Perform standard network troubleshooting
 - Check the cable
 - Move the printer to a new network jack
 - Test the current jack with another known good working device (terminal, laptop, receipt printer, etc.)
- **He Web Interface is showing Error Condition Paper Out**
 - The labels have not been loaded correctly
 - Remove the label roll and follow the loading instructions in this document exactly not skipping any steps
 - ENSURE YOU ARE RAISING THE PRINT HEAD BEFORE LOADING THE LABELS
- **The printer is showing a Ribbon In error**
 - Ensure you do not have an ink ribbon loaded
 - Remove and reinsert the cardboard placeholder ribbon rolls
 - Or remove the placeholder ribbon rolls
 - Pull out and push in the caps on the spindles



- Ensure there is no debris or stuck labels on the sensor (red laser near the front)
 - Power cycle the printer
 - Completely reload the label roll following these instructions exactly
- **The printer is showing an End of Roll error**
 - Ensure you are not at the end of the roll
 - The labels are not loaded correctly, or the media guides are not in the right place
 - Ensure the label roll is pushed up flush with the chassis or side plate. It should not be loose
 - Ensure the two yellow media guides are firmly in place

- Ensure the labels do not move side to side
- Open the print head and pull a few labels directly, straight out the front of the printer. Close the print head
- Power cycle the printer
- Ensure there is no debris or stuck labels on the sensor (red laser near the front)
- Completely reload the label roll following these instructions exactly
- **The supplies light is blinking yellow**
 - It is normal for the Supplies light to be blinking yellow. This just indicates that no ribbon is needed in Direct Thermal mode
- **Labels are not tearing off where they should, or labels are not printing in the middle of the label**
 - Check the media settings to ensure the media type is set to Non-Continuous and NOT Continuous
 - A clear sign that this is the case is that under **View Printer Configuration** on the web interface, the Media Length is showing anything other than roughly 623 for the ZT230 and 1215 for the ZT411
 - Completely unload the label roll (stock) from the printer. Unplug the printer. Reload the label roll using the guide at the beginning of this document. Plug the printer back in and turn it on
 - A calibration is automatically performed when the printer is turned on or the print head is closed
 - Compare all settings and media with a different location using the same hardware
- **The header text and/or header background is printing sideways, upside down, missing or there are any other slight defects in the printing for all or every other label**
 - The firmware has not been loaded correct. Reapply the firmware. If that fails, restore factory defaults, reapply the firmware and setup all settings again per this document.
- **Labels are coming out blank**
 - Ensure all packing tape and materials have been removed from inside and around the print head
 - Check the print head area for debris or stuck labels
 - Clean the area with a damp cloth or rubbing alcohol
 - Carefully remove any stuck labels
 - Ensure you are using the right type of label (and ribbon)
 - Direct Thermal meaning there is no ink involved. The label turns black wherever heat or hard pressure is applied
 - The direct thermal chemical coating acts like a white layer of “pixel bubbles” that get broken when heated or when the white barrier is removed
 - Use the scratch test to verify. Scratch your fingernail or some other hard object over the label. It should turn black
 - Chances are very high that if you are using the right type of label. BUT if questions remain about whether the label is direct thermal, the foolproof method is to apply some heat using a simple lighter. ONLY perform this test outside, making sure you are away from any gasses or combustible materials. DO NOT light the material on fire! Simply do a quick swipe with the flame almost touching the material. If the material has a direct thermal coating, it will turn black and darken when heat is applied
 - Non “Direct Thermal” don’t turn black when heat or pressure is applied
 - Scratch your fingernail on the label. It should not turn black
 - These use “Thermal Transfer” method meaning an ink ribbon is used to print (used so that when merchandise sits in a warehouse the labels do not fade)
 - If required, ensure you are using the right type of ink ribbon and that it is loaded correctly
 - Zebra printers can only use ribbons “inked” or coated on the outside
 - Using an incorrectly inked ribbon (inside) can damage the printer

- To test, using a piece of transparent tape or the sticky side of a label, touch the outside of the loaded ribbon. Black flakes should come off. If they don't, the ribbon is either loaded backwards or the ribbon is the wrong type. Try a different roll that passes the test or reload the ribbon

- **Labels have a white streak or line in the printing**



- Check the print head area for debris or labels stuck to the metal/plastic parts
 - Clean the area with a damp cloth or rubbing alcohol
 - Carefully attempt to remove any stuck labels
- For printers with ribbons, make sure there is appropriate tension on the ink ribbon
 - Increase tension by pulling out the caps on the spindles



- Ensure the yellow side guide is pushed in so everything feeds straight



External Links

(Note: Do not use any standard Zebra firmware at this time. We currently use a custom version. Eventually, our custom changes will be integrated with the publicly available version at which point it can be used)

ZT230 Support Page with User Manual, Guides and Lots of Videos:

<https://www.zebra.com/us/en/support-downloads/printers/industrial/zt230.html>

ZT411 Support Page with User Manual, Guides and Lots of Videos:

<https://www.zebra.com/us/en/support-downloads/printers/industrial/zt411.html>

ZT400 Ribbon Loading Guide with Video:

<https://www.zebra.com/us/en/support-downloads/knowledge-articles/zt-400-series--loading-the-ribbon-and-resolving-ribbon-issues-with-video.html>

ZT400 Verifying the Ribbon is Loaded Correctly:

https://support.zebra.com/cpws/docs/ZT400/ZT400_RibbonLoading.pdf

Zebra Technologies YouTube Channel:

<https://www.youtube.com/user/ZebraTechnologies>