

# Thermal Transfer Print Quality

## TROUBLESHOOTING CHART

### SYMPTOM: Poor edge definition (barcodes and alphanumeric)

Possible Cause	Corrective Action
Print speed is too high	Reduce print speed; do not rotate symbol
Ribbon and media are incompatible	Test alternative ribbon or media

### SYMPTOM: Bar codes smearing (bar code edges "bleeding" or "feathering")

Possible Cause	Corrective Action
Printhead energy setting is too high	Reduce energy setting until bar edges are clean
Print speed is too high	Reduce print speed
Rotated "ladder" style bar code is being used	Change label design to include normal "picket fence style" barcodes

### SYMPTOM: Bars in barcodes are too wide or too narrow resulting in a poor scan grade

Possible Cause	Corrective Action
Print speed is too high	Reduce print speed
Printhead energy setting is too high/too low	Adjust to optimize average bar growth (visually or with verifier)
Underburn (not enough ribbon transfer)	Increase printhead energy setting or use a ribbon with higher sensitivity (refers to ribbon requiring less energy)
Overburn (too much ribbon transfer)	Reduce printhead energy setting or use a ribbon with lower sensitivity (refers to ribbon requiring more energy)
Bars too thick	Reduce printhead energy setting

### SYMPTOM: Insufficient print contrast: bars are not dark enough, spaces are not light enough

Possible Cause	Corrective Action
Label surface is too dark to provide proper contrast between bars and background	Choose label with lighter surface color
Printhead energy setting is too low	Increase printhead energy setting

### SYMPTOM: Printed image is full, but grayish or translucent

Possible Cause	Corrective Action
Printhead energy setting is too high	Reduce energy setting
Printhead pressure is too high	Reduce printhead pressure
Ribbon and media are incompatible	Test alternative ribbon or media

### SYMPTOM: Repetitive voids in image

Possible Cause	Corrective Action
Printhead elements or "dots" are dirty or obstructed	Clean printhead with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol
Printhead elements or "dots" are burned out or worn down	Replace printhead

**SYMPTOM:** Voids in printed image: areas where there is no print

<b>Possible Cause</b>	<b>Corrective Action</b>
Dust on label	Remove dust with compressed air. Place static tinsel across label unwind
Tag or label surface is inconsistent (including color floodcoating)	Choose face sheet or flood coating inks specifically designed for thermal transfer
Ribbon and media are incompatible	Test alternative ribbon or media
Printhead elements or "dots" are dirty or obstructed	Clean printhead with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol
Printhead elements or "dots" are burned out or worn down	Replace printhead
Printhead is misaligned	Check for alignment related defects with a known, well-performing ribbon/media combination; realign if necessary

**SYMPTOM:** Streaks or dead spots in printed image

<b>Possible Cause</b>	<b>Corrective Action</b>
Ribbon is wrinkled	See ribbon wrinkling
Poor coating quality on tag or label surface	Contact LLT for assistance
Printhead elements or "dots" are dirty or obstructed	Clean printhead with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol

**SYMPTOM:** Not printing any image (or barely any image)

<b>Possible Cause</b>	<b>Corrective Action</b>
Ribbon is loaded backwards	Use tape to determine ink side of ribbon (ink will come off on tape). Then make sure the ink side of the ribbon is facing the media surface as it feeds through the printer.
Ribbon and media are incompatible	Test alternative ribbon or media

**SYMPTOM:** Ribbon Wrinkling

<b>Possible Cause</b>	<b>Corrective Action</b>
Printhead is misaligned	Realign printhead
Guide-bar is misaligned	Realign guide-bar
Printhead energy setting is too high	Reduce printhead energy setting
Rewind tension is greater than unwind tension	Adjust tension (unwind should be greater than rewind)
Ribbon is feeding unevenly	Remove supply roll and used ribbon from take-up shaft; reload ribbon making sure film is feeding straight to rewind shaft, not pulling in one direction.
Label liner is migrating out of feed path	Make sure label roll is flush against printer on label roll bar and label guide bar is up and just beyond outside edge of label liner
Ribbon rewind shaft is out of alignment	Service required to realign or replace ribbon rewind shaft
Printhead pressure is too high	Reduce printhead pressure
Ribbon is too narrow or wide for media	Make sure ribbon width is equal to or slightly greater than media width

**SYMPTOM:** Ribbon breaking

Possible Cause	Corrective Action
Printhead elements or “dots” are dirty or obstructed	Clean printhead with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol
Obstruction in ribbon feed path	Check for and remove label, tag or other particles from feed path and printhead assembly
Printhead energy setting is too high	Reduce printhead energy setting
Printhead pressure is too high	Reduce printhead pressure
Printer set on Direct Thermal mode	Set printer to Thermal Transfer mode
Unwind tension is too high	Reduce unwind tension
Backcoat - not there or insufficient	Replace ribbon, contact LLT for assistance

**SYMPTOM:** Ribbon slippage: Ribbon and label not advancing at the same rate

Possible Cause	Corrective Action
Rewind tension is too low	Increase rewind tension
Ribbon is sticking to printhead	Clean printhead with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol
Label surface is too slick for ribbon	Test different ribbon grades or change to a matte-coated label stock in place of gloss
Unwind tension is too high	Reduce unwind tension

**SYMPTOM:** Excessive sticking between ribbon and label

Possible Cause	Corrective Action
Printhead energy setting is too high	Reduce printhead energy setting
Printhead pressure is too high	Reduce printhead pressure
Angle at which label is exiting the printer is too steep	Adjust angle down

**SYMPTOM:** Excessive noise during printing

Possible Cause	Corrective Action
Printhead energy setting is too high	Reduce printhead energy setting
Strip plate on printer is not adjusted properly	Lower strip plate

**SYMPTOM:** Die-cut labels continue to feed without calibrating

Possible Cause	Corrective Action
Label sensor is dirty or obstructed	Clean sensor with pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol
Printer is set in “continuous” mode	Change setting to “label” mode in label software
Die-cut label length is less than minimum length for specific printer model	Change to a “two-up” format
Label sensor may not be aligned properly with gap between die cut labels	Realign label sensor

**SYMPTOM:** Trouble removing used ribbon from take-up shaft

Possible Cause	Corrective Action
Rewind tension is too high	Reduce rewind tension and/or begin using empty cores on rewind shaft as take-up cores

**SYMPTOM:** Printer doesn't stop when out of ribbon

Possible Cause	Corrective Action
Ribbon sensor is dirty or obstructed	Clean sensor with soft-stemmed Q-Tip and isopropyl alcohol or compressed air
Ribbon sensor is out of position	Align sensor properly
Ribbon "trailer" is incorrect for specific printer model	Contact LLT to confirm that the correct trailer is attached

**SYMPTOM:** Printer stalls or will not print

Possible Cause	Corrective Action
Ribbon or media is not loaded properly	Reload ribbon and media, making sure both pass under respective sensors
Ribbon ink density is too light to be "seen" by ribbon sensor	Consult printer manual or contact printer manufacturer for instructions on calibrating sensor
Ribbon or media sensors are dirty or obstructed	Clean sensors with soft-stemmed Q-Tip and isopropyl alcohol or compressed air
Label liner is too opaque to be "seen" by label gap sensor	Consult printer manual or contact printer manufacturer for instructions on calibrating sensor, or contact LLT for label liner alternatives
Printer is set in "label" mode and you are running "continuous" material	Change setting to "continuous" mode in label software

**SYMPTOM:** Premature printhead failure

Possible Cause	Corrective Action
Excessive thermal stress	Make sure printhead energy is set as low as possible while still printing an acceptable image
Printhead pressure is too high	Choose thinner gauge media or reduce printhead pressure
Insufficient printhead maintenance	Printheads must be cleaned after every ribbon or media roll change. Use a pre-saturated cleaning card, or soft-stemmed Q-Tip and isopropyl alcohol. The inside of the printer, including parts along with the media feed path, must also be wiped down using a slightly damp cotton cloth to eliminate plastic label liner dist which is drawn to the printhead while the machine is running and can fuse to printhead surface causing elements to burn out.
Rewind tension is too high	Reduce rewind tension
Label surface is uneven (containing a hologram or raised area)	Without a label design change, the edges of the raised surface will abrade the printhead more quickly than the rest of the label surface will
Ribbon width is not covering media width	Make sure ribbon width is equal to or slightly greater than media width

# Thermal Transfer Print Quality

## TROUBLESHOOTING VIDEOS

### Zebra ZT 230

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

ZT230: Media and Ribbon Loading

[https://www.youtube.com/watch?v=VNK\\_Y9jV\\_1o](https://www.youtube.com/watch?v=VNK_Y9jV_1o)

ZT230: Manual Calibration

<https://www.youtube.com/watch?v=QzKlJNOsog4>

ZT230: Printhead Pressure Adjustment

<https://www.youtube.com/watch?v=USp2fWw-mlc>

ZT200 Series: Printhead & Platen Cleaning

<https://www.youtube.com/watch?v=uJdt-9MAzG4>

ZT200 Series: Media Sensor & Exterior Cleaning

<https://www.youtube.com/watch?v=2kW7DvHF2ok>

### Zebra ZT 220

<https://www.zebra.com/us/en/support-downloads/industrial/zt220.html>

ZT220: Media and Ribbon Loading

<https://www.youtube.com/watch?v=BT2vhDP7b1w>

ZT220: Manual Calibration

<https://www.youtube.com/watch?v=-MM6WBejPdY>

ZT200 Series: Printhead & Platen Cleaning

<https://www.youtube.com/watch?v=uJdt-9MAzG4>

ZT200 Series: Media Sensor & Exterior Cleaning

<https://www.youtube.com/watch?v=2kW7DvHF2ok>

## **Zebra ZT 400 Series**

<https://www.zebra.com/us/en/support-downloads/industrial/zt410.html>

ZT400 Series: Ribbon and Media Loading

<https://www.youtube.com/watch?v=vgKGw--HVrQ>

ZT400 Series: Auto Calibration

<https://www.youtube.com/watch?v=KjDqeRkQWkw>

Zebra ZT400 Series: Manual Calibration

<https://www.youtube.com/watch?v=2hd-wDxfwuA>

ZT400 Series: Printhead Pressure Adjustment

<https://www.youtube.com/watch?v=l0a8q8RCo8E>

ZT400: Printhead & Platen Cleaning

<https://www.youtube.com/watch?v=veg6rhTKUiA>

## **Zebra 105SL Plus**

<https://www.zebra.com/us/en/support-downloads/industrial/105slplus.html>

105SLPlus: Ribbon & Media Loading

<https://www.youtube.com/watch?v=C0DxJRduluo>

105SLPlus: Ribbon & Media Sensor Calibration

<https://www.youtube.com/watch?v=26y1lPkVO0E>

105SLPlus: Printhead Pressure Adjustment

<https://www.youtube.com/watch?v=4Xaa4m-Zdn4>

105SLPlus: Printhead & Platen Roller Cleaning

<https://www.youtube.com/watch?v=sHrz-8MEhNM>

## **Zebra Xi4**

<https://www.zebra.com/us/en/support-downloads/industrial/110xi4.html>

Xi4: Ribbon and Media Loading

<https://www.youtube.com/watch?v=nfyv8JJ8bFg>

Xi4: Resetting Factory Defaults

<https://www.youtube.com/watch?v=KZKKuO0Lj5Q>

Xi Series: Printhead Cleaning

<https://www.youtube.com/watch?v=Dm1xtoxniwI>

## **Zebra GK Series**

<https://www.zebra.com/us/en/support-downloads/desktop/gk420d.html>

<https://www.zebra.com/us/en/support-downloads/desktop/gk420t.html>

## **Zebra GX Series**

<https://www.zebra.com/us/en/support-downloads/desktop/gx420d.html>

<https://www.zebra.com/us/en/support-downloads/desktop/gx420t.html>

G Series Factory Default

<https://www.youtube.com/watch?v=HTRf8mn2TKs>

G Series Config Label

<https://www.youtube.com/watch?v=UmdrmJ7rME8>

G Series Calibration

<https://www.youtube.com/watch?v=RfBPA62hbVw>

G Series Status Light Descriptions

<http://blogs.scansource.com/zebra-gk-gx-gc-series-printers-status-light-descriptions/>

G Series Power On Feed Button Codes

<http://blogs.scansource.com/zebra-g-series-printers-power-on-feed-button-codes/>

## **Zebra Legacy Printers**

Xi3: Ribbon and Media Loading

<https://www.youtube.com/watch?v=Vbtc3MHpxCM>

Z4Mplus: Ribbon & Media Load

<https://www.youtube.com/watch?v=4y-GjMe2sfo>

Stripe Series S4M: Ribbon & Media Load

[https://www.youtube.com/watch?v=fLmng\\_gzUZQ](https://www.youtube.com/watch?v=fLmng_gzUZQ)

105SL: Ribbon & Media load

<https://www.youtube.com/watch?v=jn0wDJ0JUEQ>

Zebra ZM400/ZM600: Resetting Factory Defaults

<https://www.youtube.com/watch?v=3Bw-aYjSWg4>

## Datamax Support FAQs

<http://www.datamax-oneil.com/do/de/en-us/home/support-downloads/faq-s>

### How do I set printer back to factory defaults?

A: To set the printer back to factory defaults, hold down the Pause, Feed, and Cancel buttons simultaneously while powering the printer up. Hold these buttons down until the "System Reset" message is in the display and then release the buttons. This will set the printer back to its default settings.

## Datamax H Class

Installing the Ribbon and Media on a Datamax-O'Neil H-Class Barcode Label Printer

<https://www.youtube.com/watch?v=xrUINmiNfcM>

## Datamax I Class Mark II

I-Class Mark II: How to Load Media

<https://www.youtube.com/watch?v=cbRO7rHM91Y>

## Datamax M Class Mark II

M-Class Mark II Loading Media

<https://www.youtube.com/watch?v=dV8AetF4ZK0>

## Datamax E Class Mark III

E-Class Mark III Loading Ribbon

[https://www.youtube.com/watch?v=1yHee1\\_qrFE](https://www.youtube.com/watch?v=1yHee1_qrFE)

E-Class Mark III Platen and Printhead Replacement

<https://www.youtube.com/watch?v=LOOfg97BH7o>

## E-Class Mark II

E-Class Mark II Media Loading <https://www.youtube.com/watch?v=oFA7OLerXT4>

### 3.3 Multi-Function Button

The multi-function button perform different functions depending upon the mode of the printer:

Button Action	LED 1 – Green Ready/Idle	LED 1 – Green Printing	LED 1 – Orange Paused	LED 2 – Red Faulted
<b>Momentary Press</b>	Printer feeds media to the next label.	Pauses Printer	Resumes printing	Clears Fault
<b>Press and hold for 5 seconds (release when LED blinks orange)</b>	Prints Network Report Label		Cancel Batch	Cancel Batch
<b>Press and hold for 10 seconds (release when LED blinks green)</b>	Performs the Quick Media Calibration		Performs the Quick Media Calibration	Performs the Quick Media Calibration
<b>Press and hold for 15 seconds (release when LED blinks red)</b>	Resets the printer's parameters to the stored Dealer Settings*		Resets the printer's parameters to the stored Dealer Settings*	Resets the printer's parameters to the stored Dealer Settings*
<b>Press and hold for 20 seconds</b>	Performs a 'warm reset'. Does not effect any stored printer settings.			