

A Good Label Keeps The Entire Journey Moving

1. Why Environment Matters

Thermal printers are sensitive to surroundings. Environment directly affects print quality.

Key Environmental Factors

- Temperature: Too hot → smudging; too cold → faint prints
- Humidity: High → label curl; low → static and dust attraction
- Dust: Causes streaks, blank spots, and alignment issues
- Airflow: Fans/vents blow debris into the print path
- Sunlight: Warps labels and overheats printers
- Vibration: Leads to inconsistent pressure and crooked labels

Environmental Best Practices

- Keep printers away from docks, vents, sunlight, and dusty areas
- Store labels in cool, dry conditions
- Avoid rapid temperature changes
- Use a stable, clean work surface

Proactive Thermal-Printer Maintenance Tips

1. Clean the Printhead Regularly

- Wipe the printhead using a manufacturer-approved cleaning pen or isopropyl alcohol (99%) on a lint-free cloth.
 - Clean every time you change a label roll, or at least once per week for heavy use.
 - A clean printhead prevents faded, streaked, or uneven print quality.
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2. Clean the Platen Roller

- Remove dust, adhesive buildup, and label residue from the rubber roller.
 - Rotate the roller while cleaning to ensure the entire surface is covered.
 - A clean platen roller ensures consistent label feeding and prevents misalignment.
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3. Use FedEx-Approved Labels

- Use certified label stock designed for thermal printers.
 - Poor-quality labels melt, smear, or curl, causing unreadable barcodes.
 - Using approved materials ensures optimal print contrast and durability.
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4. Check Printhead Pressure and Alignment

- Make sure latches are fully closed and pressure is evenly applied.
 - Uneven pressure can create light print on one side, dark print on the other.
 - If labels show inconsistent quality across the width, check pressure first.
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5. Set the Correct Darkness and Print Speed

- Darkness too high causes smudging; too low causes faint prints.
 - Print speed that's too fast reduces barcode clarity.
 - Follow the printer's recommended defaults, then fine-tune based on output.
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6. Keep the Printer in a Clean, Dust-Free Space

- Dust and debris build up quickly near packing stations.
 - Keep the printer away from fans, vents, or direct sunlight.
 - Environmental factors directly affect print quality and lifespan.
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7. Protect Against Label Adhesive Buildup

- Sticky residue is a major cause of printhead wear and misfeeds.
 - Inspect guides, sensors, and rollers regularly for adhesive buildup.
 - Address small buildups early to prevent larger feed issues.
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8. Perform a Test Print After Loading Labels

- Print a test label every time you load a new roll.
 - Confirm alignment, darkness, and barcode clarity before printing batches.
 - This helps avoid misprinted batches or full-trailer impacts.
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9. Keep Firmware and Drivers Updated

- Check for recommended firmware updates from the printer manufacturer.
 - Updated drivers improve barcode accuracy and print rendering.
 - Avoid outdated drivers that produce incorrect print dimensions.
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10. Replace Worn Parts Before They Fail

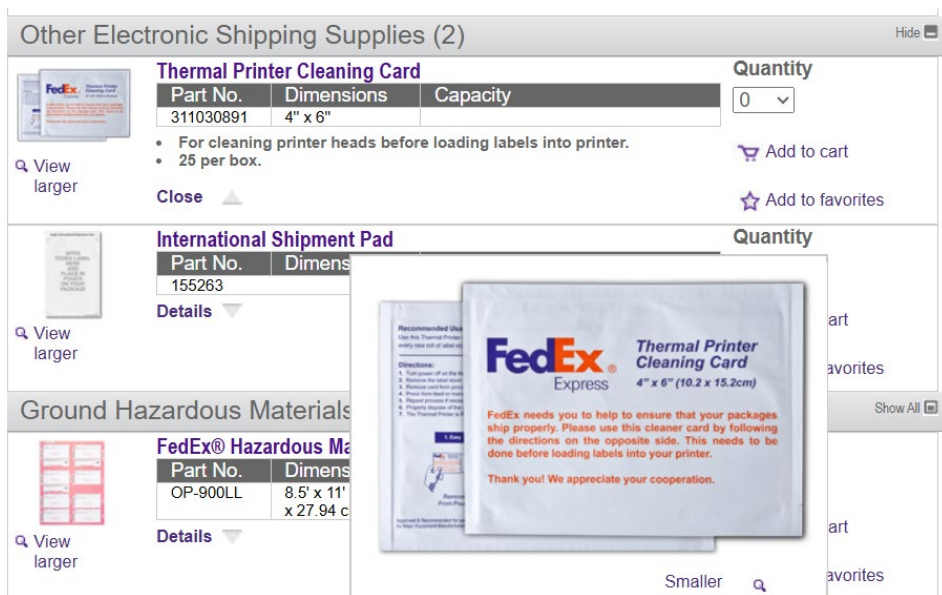
- Printheads and platen rollers wear down over time.
- Monitor gradual declines in print quality for early warning signs.
- Replacing worn parts early avoids bigger downstream issues.

Here are some options for cleaning and replacing your **Zebra ZP 505** printer head.

Cleaning the Printer Head

Cleaning the printer head can often resolve issues with fading or unprinted sections on labels. The **Zebra ZP 505** is a direct thermal printer, meaning it doesn't use ink or toner, but a dirty printhead can still affect print quality.

FedEx offers a "Thermal Printer Cleaning Card" with part number **311030891** for cleaning printer heads before loading labels.



Here is the link to order the cleaning card:

https://www.fedex.com/ordersupplies/wols.do?method=initOrderSupplies&locale=en_US

Procedure for Cleaning the Zebra ZP 505 Printer Head

This procedure will help improve print quality by removing dirt, dust, and adhesive residue from the printer head.

Materials Needed:

- Thermal printer cleaning pen.
- Thermal printer cleaning card (available from FedEx with part number 311030891 see above link, or from other suppliers)

Step-by-Step Procedure:

1. **Turn Off and Disconnect Power:** Ensure the printer is turned off and unplugged from the power source to avoid electric shock and prevent damage to the printer.
2. **Open the Printer:** Open the printer's top cover to expose the label compartment and the printhead.
3. **Clean the Printer Head (Figure 1):**
 - **Using a Cleaning Pen:** Gently brush the tip of the cleaning pen across the dark gray or black line on the printhead. The pen's fluid will dissolve residue.
 - **Using a Cleaning Card:** Insert the cleaning card into the label slot and run it through the printer's path. The card is designed to clean the printhead and the rollers as it passes through. You may need to do this a few times to get a clean result.
4. **Allow to Dry:** Wait a few moments for any cleaning fluid to evaporate completely before closing the printer.
5. **Close and Reconnect:** Close the top cover, reconnect the power cord, and turn the printer back on.
6. **Test Print:** Print a test label to check if the print quality has improved. If the quality is still poor, the printhead may be damaged and need to be replaced.

Figure 1



Replacing the Printer Head

If cleaning the printer head doesn't resolve the issue, you may need to replace it. A compatible replacement printhead is available from multiple retailers.

- **Replacement Part:** The part number **105934-037** is compatible with several Zebra models, including the ZP 505.
- **Source:** The provided [Amazon link](#) and other retailers sell this compatible part.
- **Replacement Guide:** The link provides a step-by-step guide on how to perform the replacement. You can find the guide here: [Zebra ZP 505 Printhead Replacement](#).

Section 1: Printer Troubleshooting Checklist

Step 1: Power and Connections

- Is the printer turned on?
- Is the power cable securely plugged in?

Step 2: Printer Supplies and Lid

- Are labels loaded in the printer?
- Is the printer lid fully closed and locked?

Step 3: Printer Self-Test

- Turn the printer off.
- Hold the green button on the front of the printer.
- While holding the button, turn the printer on.
- Did the printer produce a self-test print?

Step 4: Windows Visibility and Test Page

- Is the printer visible in Windows under “Printers & Scanners”?
- Can you open the printer’s status page?
- Can you print a Windows test page?
- If the test page prints, proceed to FSM testing.

Step 5: FedEx Ship Manager (FSM) Test

- Open FSM and go to Utilities > Printer Setup.
- Select the Zebra printer from the dropdown.
- Click “Test Printer” or “Print Test Label.”
- Did the test label print?
- If no: driver issue is likely.

Step 6: Driver Setup

- Install or re-configure the Zebra printer drivers (see Section 2).

Section 2: Zebra Printer Setup & Configuration (FSM + FedEx.com)

(Now fully updated with the official driver instructions.)

Supported Zebra Models

- Confirm the Zebra model: ZP505, ZP506, ZT410, or ZT411.
 - These models are **thermal printers**—no toner or ribbon required.
 - Connect the printer via USB.
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Driver Installation — Official FedEx/Zebra Procedure

These steps reflect the official installation instructions provided for ZP500 / ZP505 / ZP506 printers.

(Information sourced from verified Zebra support materials.)

Before You Start

- Do NOT plug the USB cable into the printer yet.**
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Step 1 — Download the Driver

- Go to:

<https://www.fedex.zebra.com/drivers.asp>

- Download the driver that matches your Windows version.
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Step 2 — Extract the Driver Package

- Right-click the downloaded ZIP file.
 - Click **Extract**.
 - When prompted for a destination, choose **Desktop**.
 - Click **Extract** to finish.
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Step 3 — Run Setup

- Open the extracted folder (example: *FedEx_4_7_0_0_certified_w10*).
 - Double-click **Setup.exe** to begin installation.
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Step 4 — Begin Printer Driver Install

- Click **Install Zebra Printer**.
- When the model list appears, select **Zebra ZP500 (ZPL)**.

(Note: This is the correct driver for both ZP505 and ZP506.)

Step 5 — Select the USB Port

- Choose the correct USB port (example: USB001 or USB002).
- Click **Next**.

Step 6 — Complete Installation

- Uncheck optional items:
 - Font Downloader
 - Status Monitor
- Click **Finish** to end the installation.

Step 7 — Connect the Printer

- Now plug in the USB cable to the printer.
- Verify the printer's status light is **solid green**.

Step 8 — Confirm Windows Recognizes the Printer

- Open **Printers & Scanners** in Windows.
- Confirm **Zebra ZP500 (ZPL)** appears under actual printers, *not "Unspecified."*

If it shows under **Unspecified**:

1. Open **Device Manager**
2. Expand **USB controllers**
3. Right-click **USB Printing Support** → Uninstall
4. Click **Scan for hardware changes** to reinstall automatically

Step 9 — Print a Windows Test Page

- Right-click **Zebra ZP500 (ZPL)** → **Printer Properties** → **Print Test Page**.

FedEx Ship Manager Setup

- Load labels into the printer.
 - Connect printer to PC via USB.
 - Open FedEx Ship Manager.
 - Go to Customize > System Settings.
 - Set the system number (if required).
 - Select the Zebra printer as the default label printer.
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Testing the Printer in FSM

- Go to Utilities > Printer Setup.
 - Select the Zebra printer.
 - Click **Print Test Label**.
 - Confirm the test label prints correctly.
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FedEx.com One-Click Printing Setup

- Log in to FedEx.com.
- Go to Shipping > Create a Shipment.
- Under Settings, download the One-Click Printing app for your OS.
- Accept the license agreement.
- Paste the token provided by FedEx.com during setup.
- Choose: