

# LEXMARK™ E250 • 350 • 450

## TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS



LEXMARK E250 • 350 • 450 TONER CARTRIDGE

# REMANUFACTURING THE LEXMARK E250/350/450 TONER CARTRIDGE

By Mike Josiah and the Technical Staff at UniNet

The Lexmark E250/450 were introduced in January 2006. They are replacing the E230/330/240/340 series of machines. These cartridges are not backwards compatible with the E230/240/series. The cartridges and chips are all new.

The new machines are based on a Lexmark 30, 35, or 45ppm (depending on the printer), 1200 DPI engine. With a street price of around \$265.00 USD (February 2007) for the E250, these machines continue to be very popular. It should be noted that the new cartridges have chips with new code. New E250/350/450 chips are now available. There are also different chips used for different regions of the world. It is too soon to say for certain, but I think it is a safe guess that it is the chips that are different.

This series of machines according to Lexmark have some new designs that set them apart from other similar printers. They feature a “quiet mode” which optimizes the settings to deliver “one of the quietest laser printers in the industry” (basically it just slows the printer down and drops the sound level while printing from 53dBA to 49dBA). They also feature a new type of laser scanner unit (print head). This new unit features a miniature pivoting mirror which reduces moving parts, and is supposed to increase reliability. Like most printers these days, these machines have an instant on fuser that has a first page out from sleep mode as fast as 6.5 seconds.

As with the E340 series, there are two cartridges used for this engine, a toner and drum unit. These machines also have standard and Return program (Prebate) cartridges and all have chips that shut them down. The “Return” chips must be replaced each cycle. It should also be noted that the OEM high yield cartridges only work in the E350 and E450 series, not the E250 series. To make it even more complicated, the HY cartridges for the E350 and E450 are different! A listing of the cartridges available as well as US pricing follows. As simple as these cartridges are, there is plenty of room for a nice profit.



**Left image shows the cartridge with the new felt style cover. Right image shows a sample of the leakage found on just about every cartridge tested so far. None of the leakage showed on prints past the first or second pages, but it did show.**

**NOTE: These cartridges are not backwards compatible with the E230/240/series. The cartridges and chips are all new.**

**CARTRIDGES FOR USE IN THE E250/350 - USA AND CANADA**

| Part#    | Type                      | Yield  | List Price USD |
|----------|---------------------------|--------|----------------|
| E250A11A | Std. Return cartridge     | 3,500  | \$95.50*       |
| E250A21A | Standard cartridge        | 3,500  | \$122.50*      |
| E352H11A | HY Return E350/352 ONLY   | 9,000  | \$175.50*      |
| E352H21A | HY Standard E350/352 ONLY | 9,000  | \$202.50       |
| E250X22G | OPC Drum cartridge (All)  | 30,000 | \$37.50*       |

**CARTRIDGES FOR USE IN THE E450 - USA AND CANADA**

| Part#     | Type                     | Yield  | List Price USD |
|-----------|--------------------------|--------|----------------|
| E450A11A  | Std. Return cartridge    | 6,000  | \$111.00*      |
| E450A21A  | Standard cartridge       | 6,000  | \$138.00*      |
| E450AH11A | HY Return cartridge      | 11,000 | \$167.75*      |
| E450H21A  | High Yield cartridge     | 11,000 | \$194.75*      |
| E250X22G  | OPC Drum cartridge (All) | 30,000 | \$37.50*       |

**CARTRIDGES FOR USE IN THE E250/350 - EUROPE, MIDDLE EAST & AFRICA**

| Part#    | Type                      | Yield  |
|----------|---------------------------|--------|
| E250A11E | Std. Return cartridge     | 3,500  |
| E250A21E | Standard cartridge        | 3,500  |
| E352H11E | HY Return E350/352 ONLY   | 9,000  |
| E352H21E | HY Standard E350/352 ONLY | 9,000  |
| E250X22G | OPC Drum cartridge (All)  | 30,000 |

**CARTRIDGES FOR USE IN THE E450 - EUROPE, MIDDLE EAST & AFRICA**

| Part#     | Type                     | Yield  |
|-----------|--------------------------|--------|
| E450A11E  | Std. Return cartridge    | 6,000  |
| E450A21E  | Standard cartridge       | 6,000  |
| E450AH11E | HY Return cartridge      | 11,000 |
| E450H21E  | High Yield cartridge     | 11,000 |
| E250X22G  | OPC Drum cartridge (All) | 30,000 |

**CARTRIDGES FOR USE IN THE E250/350 - ASIA PACIFIC REGION**

| Part#    | Type                      | Yield  |
|----------|---------------------------|--------|
| E250A11P | Std. Return cartridge     | 3,500  |
| E250A21P | Standard cartridge        | 3,500  |
| E352H11P | HY Return E350/352 ONLY   | 9,000  |
| E352H21P | HY Standard E350/352 ONLY | 9,000  |
| E250X22G | OPC Drum cartridge (All)  | 30,000 |

**CARTRIDGES FOR USE IN THE E450 - ASIA PACIFIC REGION**

| Part#     | Type                     | Yield  |
|-----------|--------------------------|--------|
| E450A11P  | Std. Return cartridge    | 6,000  |
| E450A21P  | Standard cartridge       | 6,000  |
| E450AH11P | HY Return cartridge      | 11,000 |
| E450H21P  | High Yield cartridge     | 11,000 |
| E250X22G  | OPC Drum cartridge (All) | 30,000 |

**CARTRIDGES FOR USE IN THE E250/350 - LATIN AMERICA**

| Part#    | Type                      | Yield  |
|----------|---------------------------|--------|
| E250A11L | Std. Return cartridge     | 3,500  |
| E250A21L | Standard cartridge        | 3,500  |
| E352H11L | HY Return E350/352 ONLY   | 9,000  |
| E352H21L | HY Standard E350/352 ONLY | 9,000  |
| E250X22G | OPC Drum cartridge (All)  | 30,000 |

**CARTRIDGES FOR USE IN THE E450 - LATIN AMERICA**

| Part#     | Type                     | Yield  |
|-----------|--------------------------|--------|
| E450A11L  | Std. Return cartridge    | 6,000  |
| E450A21L  | Standard cartridge       | 6,000  |
| E450AH11L | HY Return cartridge      | 11,000 |
| E450H21L  | High Yield cartridge     | 11,000 |
| E250X22G  | OPC Drum cartridge (All) | 30,000 |

**THE DRUM CARTRIDGE AS NOTED ABOVE IS USED WORLDWIDE**

| Part#    | Type           | Yield  | List Price USD |
|----------|----------------|--------|----------------|
| E250X22G | Drum cartridge | 30,000 | \$37.50*       |

\*Pricing (in U.S. American Dollars) as of February 2007 from the Lexmark Website.

**MACHINES BASED ON THIS ENGINE**

|               |              |
|---------------|--------------|
| Lexmark       | E250d        |
|               | E250dn       |
|               | E350d        |
|               | E352dn       |
|               | E450dn       |
| IBM InfoPrint | 1601 Express |
|               | 1602 Express |
|               | 1612 Express |
|               | 1622 Express |

**THE IBM CARTRIDGES ARE AS FOLLOWS**

|   |   |
|---|---|
| 39V1638*  | Infoprint 1601/1602 (E250) Return toner 3,500     |
| 39V1637*  | Infoprint 1601/1602 (E250) Std toner 3,500        |
| *The 39V1638 and 1637 cartridges also work in the 1612 machines |   |
| 39V1642   | Infoprint 1612* (E350) HY Return toner 9,000      |
| 39V1641   | Infoprint 1612* (E350) HY STD toner 9,000         |
| 39V1640   | Infoprint 1622 (E450) Return toner 6,000          |
| 39V1644   | Infoprint 1622 (E450) HY Return toner 11,000      |
| 39V1643   | Infoprint 1622 (E450) HY STD toner 11,000         |
| 39V1645   | Photoconductor for entire 1610-1622 series 30,000 |

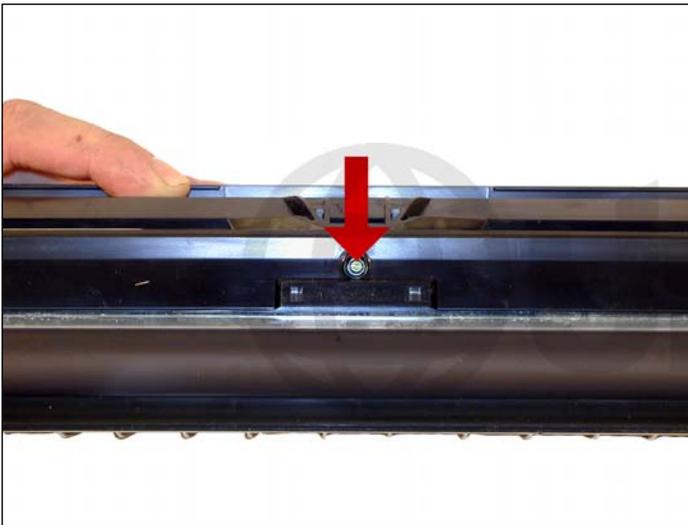
How to take test prints as well as cleaning the printer, a repetitive defect chart are covered at the end of the article.

**SUPPLIES REQUIRED**

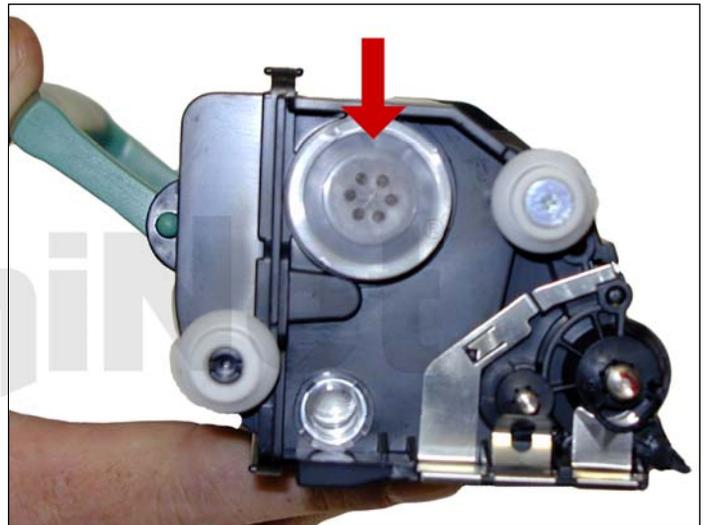
1. New toner for use in Lexmark E250/350/450:
  - 95g for the low yield E250
  - 230g for the high yield E350
  - 190g for the low yield E450
  - 335g for the high yield E450
2. Small bottle of acetone (available from your local hardware store)
3. Toner magnet cloths
4. Lint-free synthetic cotton 4"x 4" pads
5. 99% pure isopropyl alcohol
6. Cotton swabs

**TOOLS REQUIRED**

1. Phillips head screwdriver
2. Small common screwdriver
3. Vacuum approved for toner
4. Needle nose pliers



1. Remove the developer roller screw and cover.



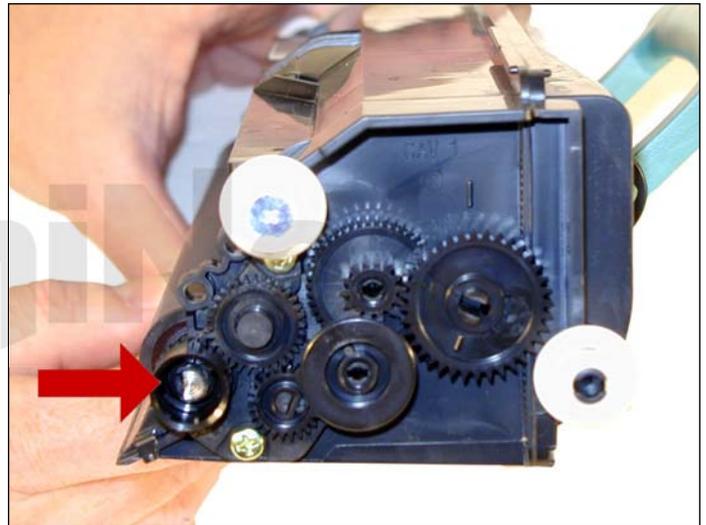
2. Remove the fill plug and dump out any remaining toner.



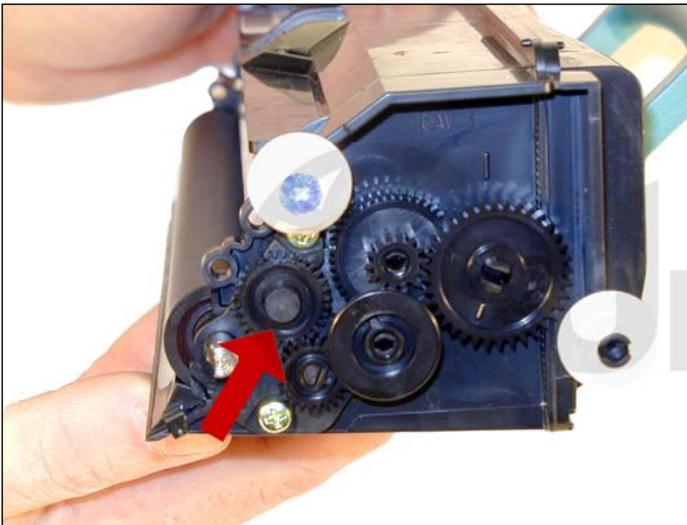
3. Remove the leaf spring.

The doctor blade is a new type and will come loose.

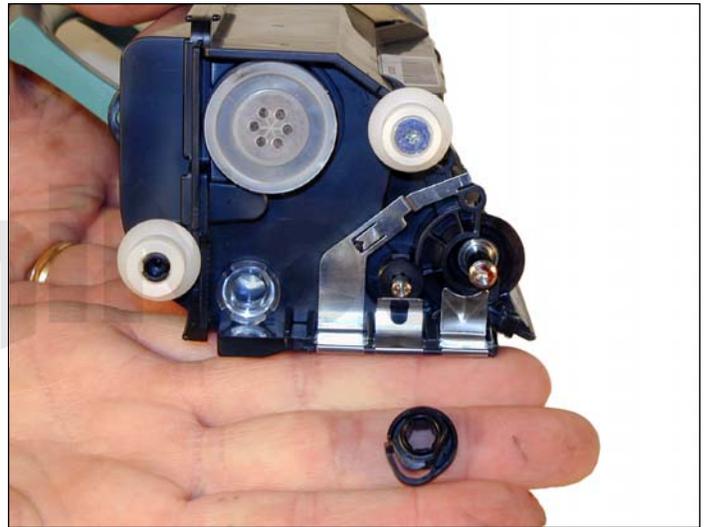
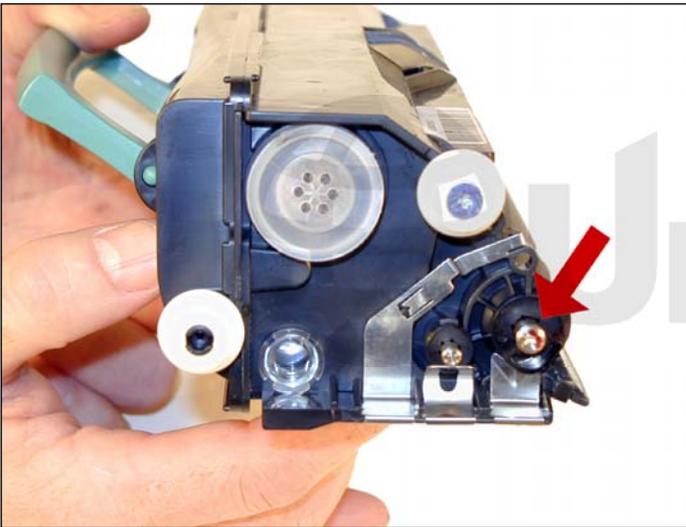
Place the blade aside.



4. On the gear side of the cartridge, remove the developer roller drive gear. This gear is on tight, and you may need a small screwdriver to pry it off.



5. Remove the idler gear.



6. On the non-gear side, spin the developer roller bushing so that it comes free.

Remove the bushing.



7. Remove the developer roller.

Clean the toner feed roller with compressed air if available.

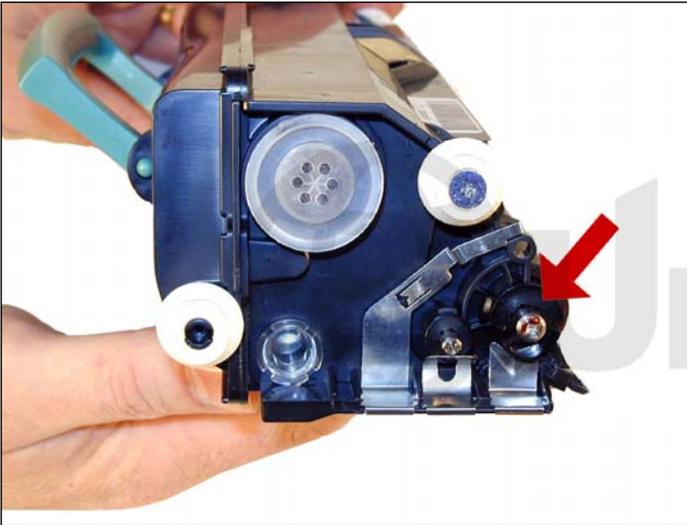
Clean the doctor blade with a cotton swab and 99% isopropyl alcohol.



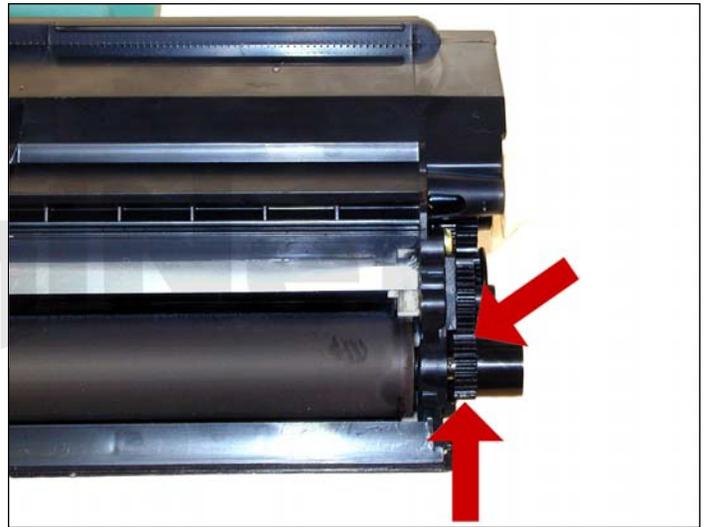
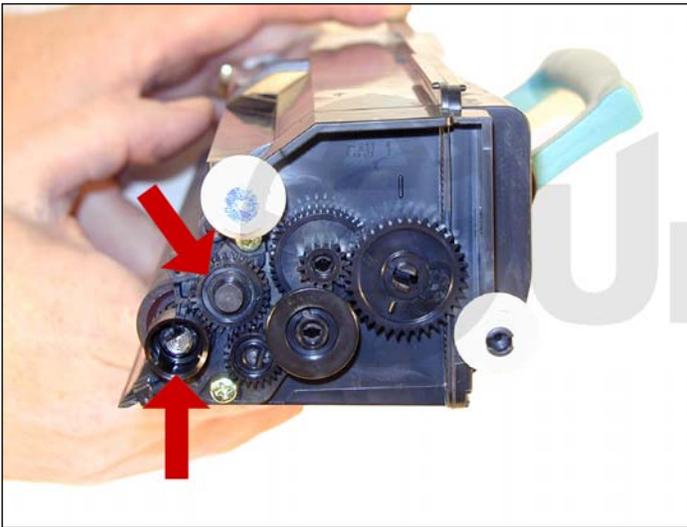
8. Clean the white developer roller seals with a cotton swab.



9. Wipe the developer roller with a clean lint free cloth, and re-install the developer roller. At this point we do not recommend that any chemicals be used to clean this roller. Install the keyed end of the roller to the gear side.



10. On the non-gear side, install the developer roller bushing and spin it so it locks in place.



11. Install the idler gear and the developer roller drive gear.

Make sure the developer roller drive gear meshes properly with the idler gear and that it is fully seated.



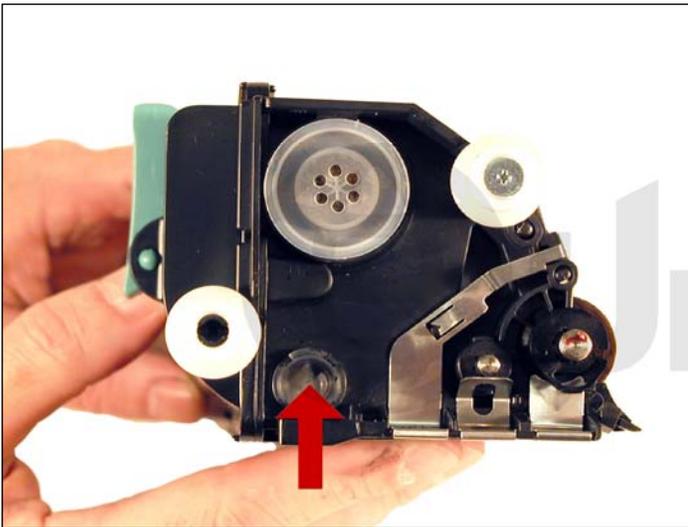
12. Install the doctor blade making sure it is positioned correctly and install the leaf spring.



13. Re-install the developer roller cover and screw.



14. Fill the cartridge with the proper amount of toner and install fill plug.



15. There is a small clear window located under the fill plug. Make sure this window is clean. It is used to determine toner low.



16. Replace the chip.



17. If the felt cover is available, wrap the cartridge as indicated. This cover helps protect the developer roller from damage.

**RESETTING THE LEXMARK E350/352/450 MACHINES (DISPLAY)**

1. With the printer off and the Press and hold the SELECT and BACK buttons, turn the printer on.
2. Press the right arrow until "RESET PC CNT" appears on the display.
3. Press the SELECT button. "RESET" appears on the display.
4. Press SELECT again. "RESETTING PC CNT VALUE" appears on the display
5. Turn the printer off, and on. The counter is reset!
6. You can confirm the counter was reset by printing a "menu settings" page.

**RESETTING THE LEXMARK E250 MACHINES (NON DISPLAY)**

1. Turn off the printer.
2. Open the front cover.
3. Press and hold the Continue button (Big silver button with Diamond shape symbol) and turn the printer on.
4. Hold the button down until the last light (error light) is on solid, release the button and close the front cover.
5. When the cover is closed, all the top 3 lights should be on solid.
6. Press the cancel button (triangle symbol) 4 times very slowly until you see the toner low light (second light from top) on solid.
7. Press the continue button and wait until you see the light sequence.
8. Press the cancel button and wait until you see the light sequence.
9. Finally power off the printer and power it back on to exit the configuration mode.

This resets the drum count on the printer (called the PC count by Lexmark).

**PRINTING TEST PAGES E350/450 SERIES**

1. Press the "Key" button on the control panel.
2. Press the "Down arrow" until REPORTS appears on the display.
3. Press the Select button.
4. Press the "Down Arrow" until the MENU SETTINGS PAGE, NETWORK SETUP PAGE, or PRINT FONTS appears on the display.

**PRINTING TEST PAGES E250 SERIES**

1. Make sure the printer is READY.
2. Press the "Continue" button.
3. Both the menu settings page and the network setup page will print out.

**CLEANING THE PRINTHEAD GLASS**

Open the front cover and remove the toner and drum cartridges. Locate the glass printhead lens in a recess above the cartridge bay. Wipe the glass down with a lint free dry cloth. Do NOT use any type of chemicals on the glass. Re-install the cartridges and close the cover.

**REPETITIVE DEFECT CHART**

|                           |               |
|---------------------------|---------------|
| <b>PCR</b>                | <b>38.2mm</b> |
| <b>Developer Roller</b>   | <b>47.8mm</b> |
| <b>Transfer Roller</b>    | <b>51.7mm</b> |
| <b>Upper fuser Belt</b>   | <b>79.8mm</b> |
| <b>Lower fuser Roller</b> | <b>95.5mm</b> |
| <b>OPC Drum</b>           | <b>96.7mm</b> |