

# LEXMARK™ E250/350/450 CARTRIDGE REMANUFACTURING INSTRUCTIONS



## LEXMARK™ E250/350/450 COLOR LASER PRINTER



## TONER CARTRIDGE

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## REMANUFACTURING THE LEXMARK E250/450 TONER CARTRIDGE

By Mike Josiah and the Technical Staff at Summit Technologies, a division of UniNet Imaging Inc.

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(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.

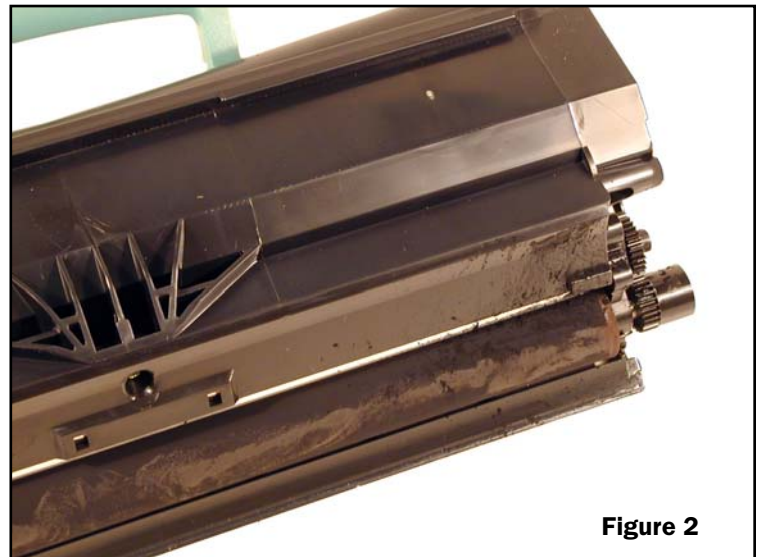
This series of machines according to Lexmark have some new designs that set them apart from other similar printers. They feature a "Quiet Mode" which optimizes the settings to deliver "one of the quietest laser printers in the industry". (Basically it just slows the printer down and drops the sound level 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.



**Figure 1**

**Figure 1** shows the cartridge with the new felt style cover, and **Figure 2** 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.



**Figure 2**

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

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**Cartridges For use in the E250/350; USA and Canada:**

Part#	Type	Yield	List Price
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
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, The Middle East and 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, The Middle East and 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

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**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:**

E250X22G	Drum cartridge	30,000	\$37.50*
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\*Pricing as of February 2007 from the Lexmark Website.

**Machines based on this engine are the:**

- Lexmark E250d, E250dn, E350d, E352dn, E450dn
- IBM InfoPrint 1601 Express, 1602 Express, 1612 Express and the 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

39V1642	Infoprint 1612* (E350) HY Return toner 9,000
39V1641	Infoprint 1612* (E350) HY STD toner 9,000

\*The 39V1638 and 1637 cartridges also work in the 1612 machines

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

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## SUPPLIES REQUIRED

Lexmark E250/450 toner 95g for the low yield E250, 230g for the high yield E350, 190g for the low yield E450, and 335g for the high yield E450.

Small bottle of Acetone  
(Available from your local hardware store)

Toner Magnet cloths

Lint-free synthetic cotton 4"x 4" pads

99% pure Isopropyl Alcohol

Cotton Swabs

## TOOLS REQUIRED

Phillips head screw driver

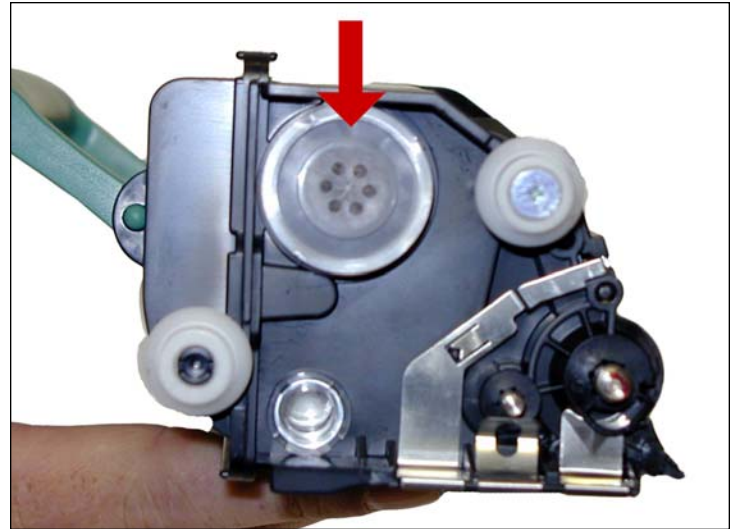
Small Common screw driver

Vacuum approved for toner

Needle Nose Pliers



1. Remove the developer roller screw & cover.



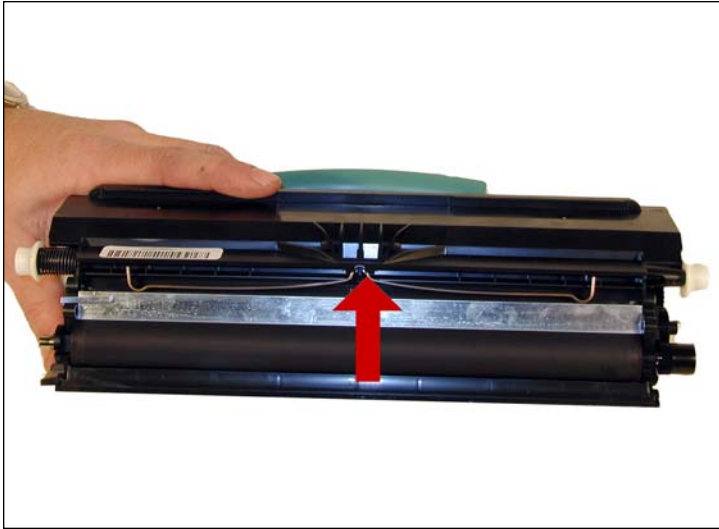
2. Remove the fill plug, and dump out any remaining toner.

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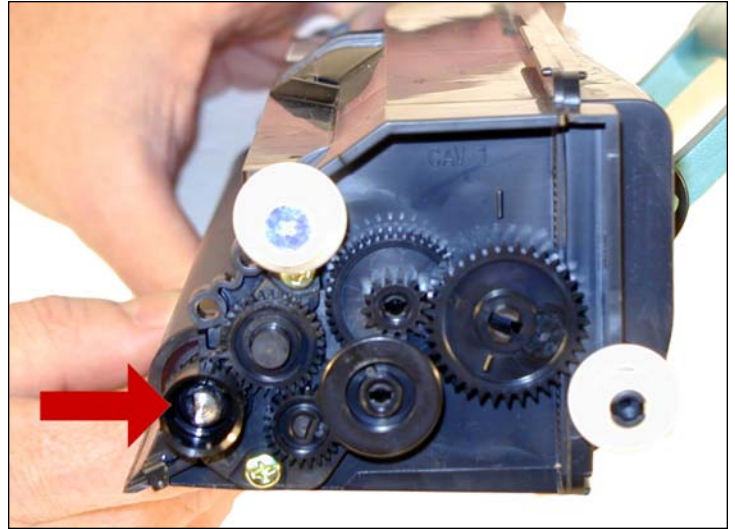
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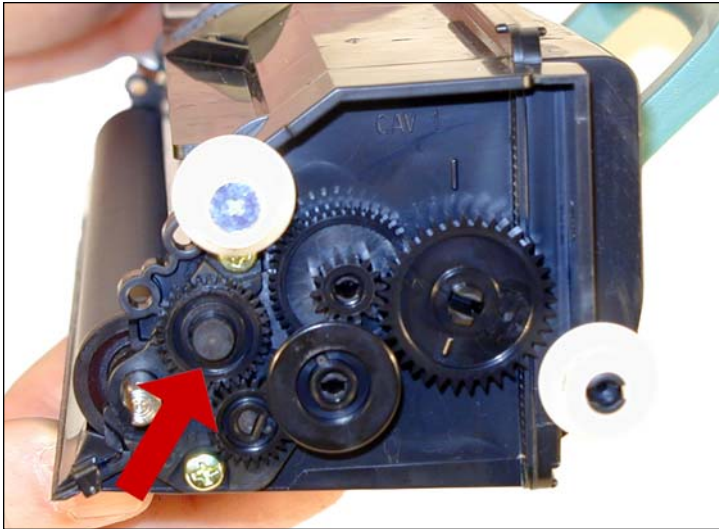




3. Remove the leaf spring. The doctor blade is a new type and will come loose. Place the blade aside.



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.



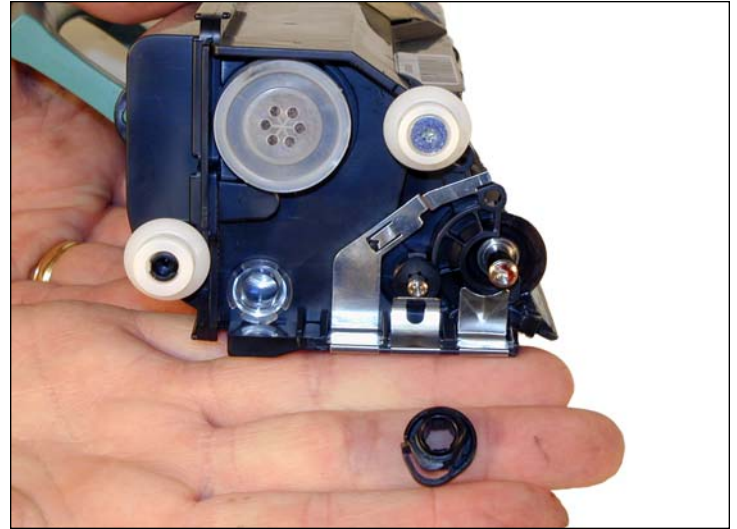
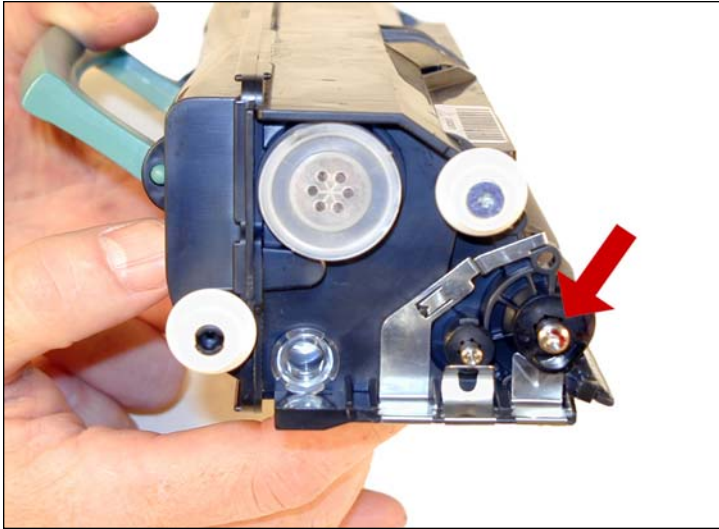
5. Remove the idler gear.

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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.

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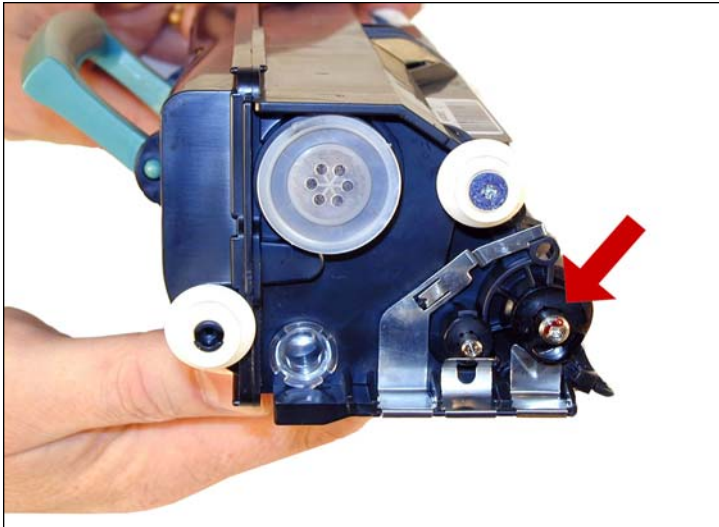
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8. Clean the white developer roller seals with a cotton swab.



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.

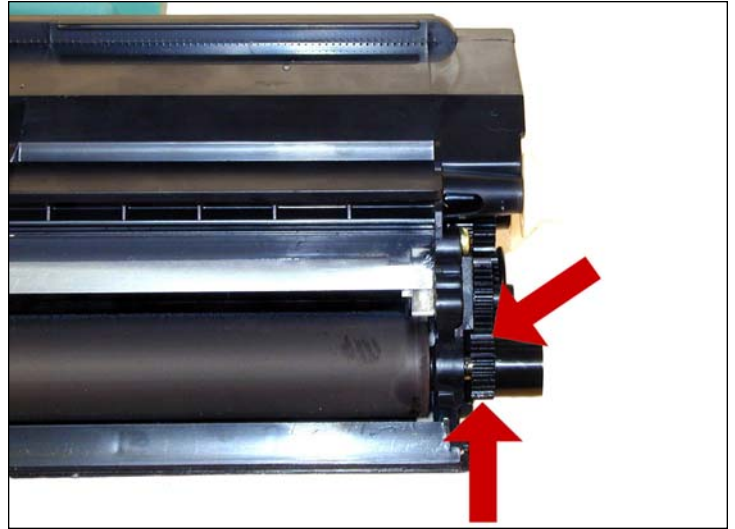
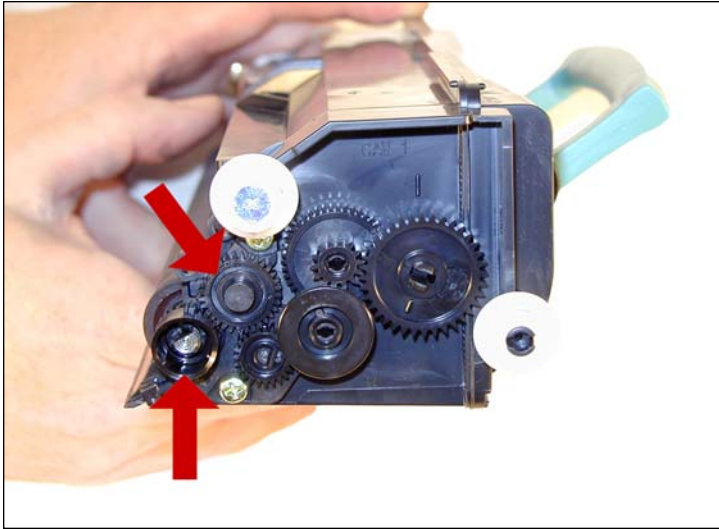
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11. Install the idler gear and the developer roller drive gear.  
Make sure the developer roller drive gear meshes properly with the idler gear and that it is fully seated.



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

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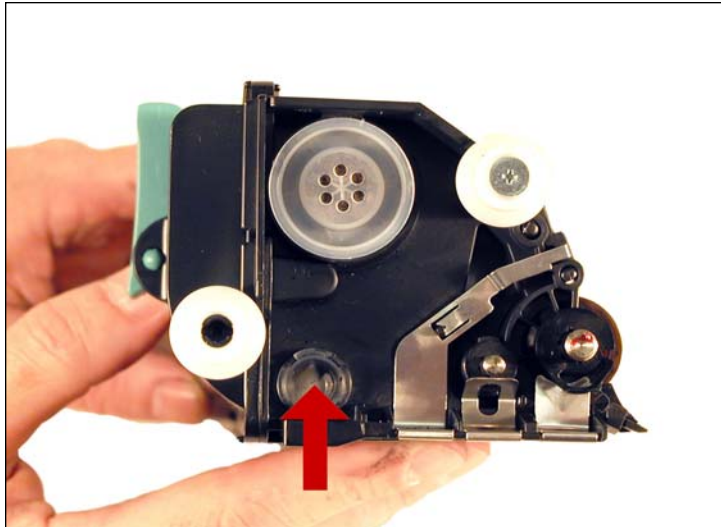
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13. Re-install the developer roller cover and screw.



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



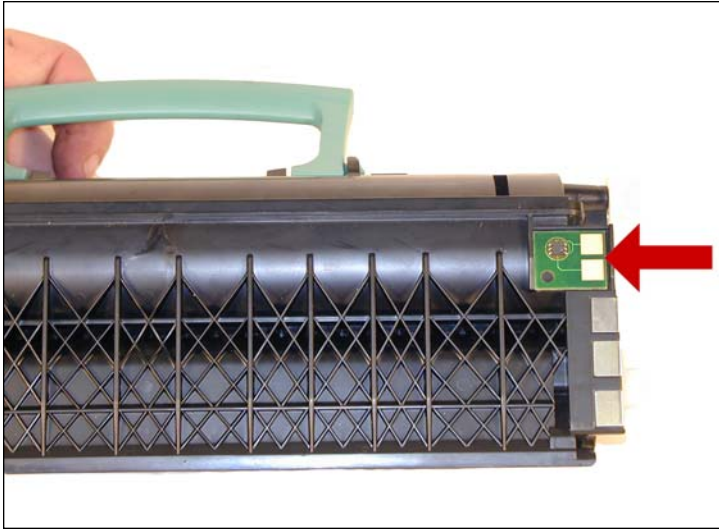
15. There is a small clear window located under the fill plug. Make sure this window is clean. It is used to determine toner low.

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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.

#### PRINTING TEST PAGES E450 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

38.2mm	PCR
47.8mmq	Developer Roller
51.7mm	Transfer Roller
79.8mm	Upper fuser Belt
95.5mm	Lower fuser Roller
96.7mm	OPC Drum

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### **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!

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).

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